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PATENTED

Green patents in the manufacturing sector: the influence of businesses' resources and capabilities
Patentes verdes en el sector manufacturero: el impacto de los recursos y las capacidades de las empresas

Sabina Scarpellini, Pilar Portillo-Tarragona, Luz María Marín-Vinuesa & José M. Moneva

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CARTA DEL DIRECTOR NÚMERO 56 UNIVERSIA BUSINESS REVIEW

En el primer artículo, Sabina Scarpellini, Pilar Portillo-Tarragona (Universidad de Zaragoza), Luz María Marín-Vinuesa (Universidad de La Rioja) y José M. Moneva (Universidad de Zaragoza). tratan de proporcionar a los profesionales un análisis de empresas con patentes verdes del sector manufacturero, relacionando las características económico-financieras de las empresas con el número de sus patentes verdes nacionales y Europeas. En particular se analiza la relación entre la colaboración con centros de I+D y la posesión de patentes verdes. Los resultados, obtenido a través de una base de datos ad hoc de 1606 empresas españolas, indican que la capacidad colaborativa para la investigación y el desarrollo (I+D) proporciona una útil explicación de la tenencia de patentes verdes en las empresas manufactureras españolas. Además, la performance financiera de las empresas, su antigüedad y tamaño, se consideran relevantes para el desarrollo de patentes verdes.

Para los profesores Andrés Salas-Vallina y Joaquín Alegre (Universidad de Valencia) el objetivo de su artículo es analizar el efecto de las variables edad, género, nivel laboral y seguridad laboral en el compromiso de los empleados, en un contexto intensivo en conocimiento. Las investigaciones previas muestran la necesidad de conocer cómo determinadas variables facilitan el compromiso laboral, y nuestro objetivo es proporcionar nuevas evidencias. Se ha analizado una muestra de 167 médicos especialistas en alergología. Los resultados ayudan a clarificar las contradicciones encontradas en investigaciones previas, pues evidencian que la edad no afecta al compromiso laboral, mientras que el género, el nivel laboral y la seguridad laboral son variables que si que afectan a dicho compromiso.

En el siguiente artículo Manuela Pérez-Pérez, María-José Vela-Jiménez, Silvia Abella-Garcés y Angel Martínez-Sánchez (Universidad de Zaragoza) analizan si la satisfacción laboral de los empleados tiene un efecto mediador entre la disponibilidad de medidas trabajo-familia y el compromiso organizativo de los empleados. Los datos del estudio proceden de una muestra de 322 empleados de empresas españolas que han sido galardonadas con el “Premio Empresa Flexible” o están certificadas como “Empresa Familiarmente Responsable” en los últimos años. Los autores concluyen que cuando los empleados perciben que disponen realmente de medidas trabajo-familia para conciliar su vida laboral y familiar, están más satisfechos con su trabajo, y dicha satisfacción explica además positivamente su compromiso organizativo.

Yaiza Armas-Cruz, M. Ángeles Sanfiel-Fumero y Olga González-Morales (Universidad de La Laguna), en el último artículo, analizan la gestión medioambiental de la industria hotelera y su relación con la gobernanza de un destino de masas condicionado por su consideración de área protegida (Reserva de la Biosfera). Para una muestra de 94 establecimientos de Fuerteventura (España) las autoras determinan el nivel alcanzado por su protección medioambiental, los factores impulsores y obstaculizadores. Concluyen identificando las diferencias entre oferta hotelera y extra-hotelera, contribuyendo a la

delimitación de un modelo de gobernanza turística sostenible basado en la coordinación público-privada.

Les animo a leer todos los artículos. Esperamos durante el año que empieza seguir contando con la confianza de todos: Editores Asociados, miembros del Comité Científico, Consejo Editorial, evaluadores, autores-colaboradores, empresas y sobre todo de los lectores, tanto de la Universidad como del mundo empresarial.

José Ignacio López-Sánchez
Director de Universia Business Review

LETTER FROM THE EDITOR IN CHIEF NUMBER 56 UNIVERSIA BUSINESS REVIEW

In the first article, Sabina Scarpellini, Pilar Portillo-Tarragona (University of Zaragoza), Luz María Marín-Vinuesa (University of La Rioja) and José M. Moneva (University of Zaragoza) aim to provide professionals with an analysis of manufacturing sector companies with green patents, associating their financial-economic characteristics with their number of national and European green patents. They especially analyzed the relation between collaboration with R&D centers and holding patents. The results, obtained through an ad hoc database of 1,606 Spanish companies, indicate that the collaborative capacity for R&D provides a useful explanation for Spanish manufacturing companies holding green patents. In addition, the companies' financial performance, maturity and size are considered relevant for the development of green patents.

For professors Andrés Salas-Vallina and Joaquín Alegre (University of Valencia) the goal of their article is to analyze how the variables of age, gender, job status and job security affect employees' job commitment, and our goal is to provide new evidence. A sample of 167 doctors specializing in allergology was analyzed. The results help clarify the contradictions found in prior research, as they show that age does not affect job commitment; while gender, job status and job security are variables that do.

In the following article, Manuela Pérez-Pérez, María-José Vela-Jiménez, Silvia Abella-Garcés and Angel Martínez-Sánchez (University of Zaragoza) analyze whether job satisfaction has a mediating effect among the availability of work-family reconciliation measures and employees' organizational commitment. The study data was obtained from a sample of 322 employees from Spanish companies which were recently given the "Flexible Company Award" or are certified as a "Family Friendly Company". The authors conclude that employees are more satisfied with their job when they perceive that they can truly rely on work-family measures to balance their professional and family lives, and this satisfaction also has a positive impact on their organizational commitment.

In the final article, Yaiza Armas-Cruz, M. Ángeles Sanfiel-Fumero and Olga González-Morales (University of La Laguna), analyze the environmental management of the hotel industry and its relation with governance of a mass destination constrained by its consideration as a protected area (Biosphere Reserve). For a sample of 94 establishments in Fuerteventura (Spain) the authors determine the level reached by their environmental protection and their driving and obstructing factors. They conclude by identifying the differences between hotel and extra-hotel infrastructure, contributing to the definition of a sustainable tourism governance model based on public-private coordination.

I encourage you to read all the articles. This year we hope to continue to earn the trust of everybody: Associate Editors, members of the Scientific Board, Editorial Board, evaluators, authors-collaborators, businesses and above all readers, both from the University and the world of business.

José Ignacio López-Sánchez
Editor in Chief
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MISIÓN DE UBR

Universia Business Review no es una publicación exclusiva del mundo académico en sentido estricto, sino que su misión principal **es trasladar a quienes tienen la responsabilidad de dirigir empresas y negocios las ideas y desarrollos más innovadores que el ámbito científico y académico sea capaz de generar.**

Por otro lado, *Universia Business Review* no renuncia a dar servicio a la comunidad universitaria y científica como la publicación de referencia, en la que los especialistas puedan efectuar un seguimiento sistemático de las aportaciones novedosas de los colegas de su misma especialidad. En particular, esta revista pretende ser un vehículo de unión y comunicación de las comunidades universitarias de habla latinoamericana dedicadas al estudio de la Empresa.

PROCEDIMIENTO EDITORIAL

Los originales recibidos y admitidos por el Comité de Dirección, serán enviados al Editor del área correspondiente para que analice si el trabajo debe continuar el proceso editorial y ser remitido a dos evaluadores anónimos (expertos ajenos a la entidad editora), de reconocido prestigio en el campo de estudio. Para desarrollar su labor se le envía el listado de evaluadores de los últimos años, pudiendo seleccionar e incluir aquellos nuevos revisores que el Editor de Área considere más acorde con el trabajo para su evaluación.

Una vez recibidas las dos evaluaciones el Editor de Área elevará al Comité de Dirección su propuesta de aceptar o rechazar el artículo para su publicación en UBR. Se pretende que, mediante la implantación de sucesivos “filtros” de calidad, el lector obtenga garantías de que la revista publica sólo aportaciones de nivel y de actualidad.

NORMAS PARA LOS ARTÍCULOS

UBR está abierta a la recepción para su publicación de originales preparados por miembros del mundo universitario, escuelas de negocios de todo el mundo, directivos y empresarios. Para que los trabajos puedan ser publicados los autores deberán atenerse a las siguientes normas:

- **Los artículos, que serán inéditos**, tendrán una extensión alrededor de 5.000 palabras, incluyendo notas a pie de página y bibliografía. **No deberá utilizarse un número excesivo de referencias bibliográficas.** Se considera que no deben superar las veinticinco.

- El artículo debe estar redactado de forma que facilite la lectura y comprensión de los contenidos a un público no académico. **Se debe evitar utilizar un lenguaje de corte excesivamente especializado**, en beneficio de una más fácil comprensión de las ideas expuestas y en la medida de lo posible, el abuso de términos muy académicos (metodología, hipótesis, etc.) y funciones matemáticas, aunque esto haya podido servir para que los evaluadores analicen el alcance de su investigación. Las **conclusiones no deben ser un resumen del trabajo**, sino una aplicación, una lección que se está trasladando a los responsables de las empresas para que estos la puedan considerar como un “buen consejo”, y lo que es más importante, que lo puedan entender y aplicar.

Si es necesario, o el evaluador lo requiere, se puede adjuntar como un fichero complementario (o anexo) todos los datos, técnicas econométricas, etc..., que hayan podido utilizar los autores para alcanzar las conclusiones de su investigación.

Una vez dado el visto bueno al trabajo, dicho fichero (o anexo) no se incorporaría en el artículo editado. Los autores deben hacer un esfuerzo para adaptar su trabajo a nuestros lectores, a los empresarios y directivos, no sólo al mundo académico.

• Los autores deberán subir un **fichero adicional “Archivo complementario” respondiendo a las siguientes preguntas:**

1. ¿cuál es el mensaje o idea principal del artículo? ¿pueden aplicarla los empresarios y directivos?
2. ¿por qué cree que los directivos deben conocer su artículo? ¿para qué tipo de empresas serviría y para qué tipo no?
3. ¿qué investigación se ha llevado a cabo para argumentar su propuesta? ¿sobre qué trabajos (artículos, teorías, etc...) fundamenta su propuesta?
4. ¿cuál es su experiencia personal, académica y/o profesional que avale sus conocimientos sobre el tema?

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• Los **artículos se publicarán en inglés y castellano**. Los autores pueden enviar el artículo en castellano, pero una vez finalizado el proceso editorial y antes de su aceptación definitiva, los autores se comprometen a enviar la versión íntegra en inglés para publicarse en los dos idiomas.

• **No deberá aparecer el nombre del autor/es en ninguna hoja**, con el fin de facilitar el proceso de evaluación, ya que los datos se incorporarán en el formulario digital.

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- o Takeuchi, H. (2013). “Knowledge-Based View of Strategy”. *Universia Business Review*, 40, 68-79.
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• La revista se reserva la **posibilidad de editar y corregir los artículos**, incluso de separar y recuadrar determinadas porciones del texto particularmente relevantes o llamativas, respetando siempre el espíritu del original.

• Los autores deberán estar en disposición de ceder a Universia Business Review los **derechos de publicación de los artículos**.

MISSION

As stated in our mission, *Universia Business Review (UBR)* is not a publication dedicated strictly and exclusively to the academic world; its primary mission is **to transmit the most innovative ideas and developments generated by the scientific and academic communities to business leaders.**

Nevertheless, UBR does not neglect to provide a service to the university and scientific community, as a publication of reference through which specialists can systematically follow the latest contributions made by colleagues in their field. In particular, the journal seeks to be a vehicle of communication and union among university communities that speak Latin American languages and are dedicated to the study of Business.

EDITORIAL PROCEDURE

The originals received and accepted by the Management Board will be sent to the Associate Editor for the relevant area who will determine whether the work should proceed through the editorial process and be forwarded to two anonymous evaluators (experts external to the publishing entity), renowned for their work in the field. The list of evaluators from the last few years is provided to support their work by enabling them to select and include new reviewers that the Associate Editor considers most appropriate for evaluation of the work.

Once the Associate Editor receives the two evaluations, they will submit a proposal to the Management Board to accept or reject the article for publication in UBR. It is intended that, through the implementation of successive quality "filters", the reader will be assured that the magazine only publishes contributions that are high quality and current.

STANDARDS FOR ARTICLES

UBR is open to receiving original documents for publication prepared by members of universities, business schools from around the world, and business owners and executives. To ensure that the work is suitable for publication authors must abide by the following rules:

- Check that **the articles, which must be unpublished**, are limited to around 5,000 words, including footnotes and bibliography. **There should not be an excessive number of bibliographical references**, which must not exceed twenty-five.
- Particular attention should be paid to the fact that the article must be worded in a way that enables the content to be read and understood by a non-academic audience. **The use of very specialised language should be avoided** in order to make the ideas presented more easily understood, as should the overuse of very academic terms (methodology, hypothesis, etc.) and mathematical functions as far as possible, even if that may have helped evaluators to analyse the scope of the research. **Conclusions should not be a summary of the work**, but an application: learning that is transferred to business leaders so that they will consider it "good advice" and, more importantly, something they can understand and apply.

If necessary or required by the evaluator, all of the data, econometric techniques, etc. that may have been used by the authors to reach the conclusions of their research may be attached as a supplementary file (or annex).

Once the work has been approved, the file (or annex) will not be incorporated as part of the edited article. The authors must make an effort to adapt their work to our readers –business owners and executives– not just the academic world.

- The authors must upload an **additional “Supplementary file”, responding to the following questions:**

1. What is the primary message or idea in your article? Can business owners and executives apply it?
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3. What research have you undertaken in order to argue your proposal? What pieces of work (articles, theories, etc.) is your proposal based on?
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- Each article must be preceded by the title, a short summary in Spanish and English of approximately 80 words in each case, and five key words in both languages. It should also incorporate a classification of the work according to the descriptors used by the Journal of Economic Literature.

- **Articles will be published in English and Spanish.** Authors can send the article in Spanish, but once the editorial process is completed and before it is finally accepted, the authors must undertake to send the full version in English for publication in both languages.

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- Web of Science, **Emerging Sources Citation Index (ESCI)** desde enero 2016. Universia Business Review ha estado indexada durante el período 2008-2012 en el **Journal Citation Report-Social Sciences Citation Index** (Category: Business). 2010 Factor de impacto: 0,228; 2011 Factor de Impacto: 0,150; 2012 Factor de impacto: 0,138 (actualizado junio de 2013).
- **Índice H de las Revistas Científicas Españolas según Google Scholar Metrics** (2011-2015). H:13. Posición UBR: 1/87 revistas del área de Economía y Empresa (Julio 2016).H:12.
- **IN-RECS** (Índice de Impacto de Revistas Españolas de Ciencias Sociales). Categoría: Economía. Índice de impacto 2011: 0,268; Q1; posición 15 de 133 revistas. UBR es revista fuente.
- **Repositorio Español de Ciencia y Tecnología (RECYT)**. Fundación Española para la Ciencia y Tecnología, Ministerio de Ciencia e Innovación (FECYT). En junio de 2016 ha renovado el certificado de revista científica de calidad contrastada habiendo sido calificada de **"EXCELENTE"**.
- **Categorización de las revistas españolas de ciencias humanas y sociales en Web of Science y/o Scopus (ISOC-CSIC)** Categoría: A; 21 puntos; Posición total revistas: 31/233; Posición revistas Empresa: 1/11 (junio 2015)
- Directorio, Catálogo e Índice **LATINDEX** (cumpliendo el 100% de los 33 criterios de calidad).
- **DICE** (Difusión y Calidad Editorial de las Revistas Españolas de Humanidades, Ciencias Sociales y Jurídicas, CSIC-ANECA). Cumpliendo los 33 criterios Latindex y todas las condiciones exigidas por DICE.
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Universia Business Review ha estado indexada durante el período 2008-2012 en el **Journal Citation Report-Social Sciences Citation Index** (Category: Business). 2010 Factor de impacto: 0,228; 2011 Factor de Impacto: 0,150; 2012 Factor de impacto: 0,138 (actualizado junio de 2013).

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- **H Index Spanish Science Journals, Google Scholar Metrics** (2011-2015): 13. UBR position 1/87. Area: Economic (July 2016)
- **Spanish Repository of Science and Technology (RECYT)**. Spanish Foundation for Science and Technology (FECYT). UBR bears the seal of an **"EXCELLENT"** journal.
- **IN-RECS** (Impact Index of Spanish Social Science Journals). First quartile. 2011 Impact Factor: 0.268, Q1. Position: 15/133) UBR is a source journal
- Directory, Catalogue and Index **LATINDEX** (meeting 100% of the 33 quality criteria)
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Green patents in the manufacturing sector: the influence of businesses' resources and capabilities¹

Patentes verdes en el sector manufacturero: el impacto de los recursos y las capacidades de las empresas

1. INTRODUCTION

It is generally accepted that long-term business competitiveness must walk a line between productivity and a resource consumption model which maximises efficiency—that is, 'doing more with less'. In fact, the increasing importance of environmental issues in the economic decision-making processes is often articulated through strategies that aim to achieve equilibrium between economic and environmental efficiency (Valero-Gil et al., 2017).

Eco-innovation contributes to the achievement of environmental objectives, generating competitive advantages (Porter and Van der Linde, 1995) and ultimately improving the financial performance of companies that practise eco-innovation. Therefore, eco-innovation—where 'innovation' is applied in a broad sense, as defined by the Oslo Manual (OECD, 2005)—can be described as the process of developing new ideas, modes of conduct, products, and processes that help reduce burdens or attain environmental objectives (Rennings, 2000).

Based on the theoretical framework of the Resource-Based View (hereafter RBV) previous studies have pointed to certain economic financial factors — such as financial resources, access to capital (Cruz-Cázares et al., 2013; Halila and Rundquist, 2011; Paraschiv et al., 2012), and the size of firms (Leitner et al., 2010) — as drivers or antecedents of eco-innovation. However, the measurement of

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EXECUTIVE SUMMARY

This paper, which is of interest to practitioners, will analyse companies in the manufacturing sector that hold Spanish and European environmental patents, linking the registered green patents with the economic and financial characteristics of the companies. Specifically, the relationship between green patents and the collaboration of companies with research and development (R&D) centres is analysed. The results of surveying an ad-hoc database comprising 1606 Spanish companies indicate that the ways in which the companies collaborate with R&D organisations can shed light on green patent holdings in the Spanish manufacturing companies. Moreover, the authors find that financial performance, age, and size are all significant factors in the development of green patents.

RESUMEN DEL ARTÍCULO

Este artículo proporciona a los profesionales un análisis de empresas con patentes verdes del sector manufacturero, relacionando las características económico-financieras de las empresas con el número de sus patentes verdes nacionales y Europeas. En particular se analiza la relación entre la colaboración con centros de I+D y la posesión de patentes verdes. Los resultados, obtenido a través de una base de datos ad hoc de 1606 empresas españolas, indican que la capacidad colaborativa para la investigación y el desarrollo (I+D) proporciona una útil explicación de la tenencia de patentes verdes en las empresas manufactureras españolas. Además, la performance financiera de las empresas, su antigüedad y tamaño, se consideran relevantes para el desarrollo de patentes verdes.

resources and the company's potential for eco-innovation are topics that require further research (Lee and Min, 2015).

Collaborative activities with research institutes and universities should be considered in analyses of the eco-innovation process (Horbach, 2016). In general, the development of eco-innovation is accompanied by major investment efforts which take place within an environment of high-level uncertainty; therefore, the inherent risk in innovation activities tends to be mitigated through co-operation with research and development (R&D) centres (Scarpellini et al., 2012).

In this paper, green patents are considered an indicator of environmental innovation and R&D; we undertook the objective

selection of companies that have played an active role in the environmental sustainability of production. In general terms, the measurement of resources and capabilities for eco-innovation and the analysis of green patents are areas which must be addressed within the framework of the RBV (Lee and Min, 2015). As such, the main purpose of this paper is to contribute to our understanding of how the economic and financial characteristics of companies influence the acquisition of green patents. Additionally, the relationship between companies' collaboration with R&D centres and green patent holdings is also analysed.

The sample under analysis is drawn from the Spanish manufacturing sector. At present, Spain remains labelled as only 'moderately innovative' within the framework of the EU (European Commission, 2016). The study of the issue

of eco-innovation benefits from two different economic perspectives: environmental and innovation economics (Rennings, 2000). For this reason, eco-innovative solutions have been implemented in a larger number of Spanish firms during the past decade (Scarpellini et al., 2016). Many authors have taken note of Spain, where companies' abilities to innovate depend not only on the exploitation of their internal resources but also, and to an increasing degree, on their abilities to apply information from other R&D organisations, such as universities and other research institutes (Barge-Gil and López, 2014). Collaboration with R&D centres is particularly critical to outcomes in the manufacturing industry, which absorbs technological knowledge from external sources to carry out eco-innovative activities (Scarpellini et al., 2012).

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In this context, those companies where more favourable conditions are present for the development of green patents, owing to their sectoral and regional circumstances, constitute interesting analytical cases regarding the characteristics of the resources and capabilities that allow a company to exploit registered innovations and improve their environmental performance.

The remainder of the paper is divided into five sections. The ensuing section presents a review of existing scholarship and outlines the research lines of enquiry for green patent holdings. Subsequently, the sample, methodology, and variables used in the analyses are described. In the fourth section, the main results are summarised and conclusions are presented in the fifth section.

KEY WORDS

Green patents; RBV; R&D collaboration; manufacturing; eco-innovation.

PALABRAS CLAVE

Patentes verdes; Recursos y Capacidades; I+D colaborativo; Sector manufacturero; Eco-innovación.

2. GREEN PATENTS AND THE MANUFACTURING SECTOR

Based on a review of scholarship in the field, we can assert that firms' resources and capabilities are relevant to the success of investment in eco-innovation (Díaz-García et al., 2015) and in green patents (Aragon-Correa and Leyva-de la Hiz, 2016).

The RBV is particularly useful because it helps to explain why some companies function better than others through the analysis of internal resources and capabilities as sources of sustainable competitive advantage (Kraaijenbrink et al., 2010). Certain authors have analysed the organisational resources that firms use for strategic innovation (Keupp et al., 2012). Financial resources and access to capital, and the availability of public funds for the environmental improvement of a firm, have been also analysed (Cruz-Cázares et al., 2013; Halila and Rundquist, 2011; Paraschiv et al., 2012), as have the firms' sizes, since size is often considered important for innovation (Leitner et al., 2010).

Environmental R&D investment and internal R&D activity facilitate eco-innovation in business (Lee and Min, 2015), and have both been linked to patent registration and ongoing innovation activity (Aragon-Correa and Leyva-de la Hiz, 2016; Doran and Ryan, 2012; Peiró-Signes et al., 2011).

However, the resources and capabilities that enable the creation of value and competitive advantage continue to be subject to debate, particularly with regard to the role green patents play in eco-innovative processes (Aragon-Correa and Leyva-de la Hiz, 2016).

Companies with eco-innovative profiles do not differ from one another in terms of their main operational objectives and priorities, but manufacturing companies may be connected to greater eco-innovative orientation in comparison to companies in other sectors (Peiró-Signes et al., 2011).

The manufacturing sector analysed within this theoretical framework constitutes a suitable platform for the implementation of green solutions because its environmental impact is more visible and direct than that of other sectors (Przychodzen and Przychodzen, 2015).

The environmental impact of the manufacturing companies, and their major technological developments, results in the exposure of businesses to greater pressure, both from the stakeholders' perspective (Henriques and Sharma, 2005) and from a regulatory perspective. Environmental regulation, as well as increasing consumer awareness of the environment and its possible impact on the financial performance of companies, has contributed to the introduction of such changes. For example, the significant impact of chemical industries on the environment and health has promoted innovation and the development of more sustainable technologies. Furthermore, the automotive industry, which is subject to significant production costs and is very sensitive to changes in demand for more efficient vehicles, is a significant driver of environmental innovation. In recent years, another manufacturing sector—the iron and steel industry—has achieved important innovations that are focused on environmental improvement by saving energy and reducing CO₂ emissions (Machiba, 2010).

2.1. The role of the R&D collaboration centres

In addition to the sector's relevance to the green patents development process, other factors, such as the ability of companies to develop R&D in collaboration with research institutes and universities, should be considered (Horbach, 2016). The creation of collaborative networks and increased co-operation between organisations have emerged as two determinant factors in promoting the dissemination of eco-innovation (Tessitore et al., 2010). More directly, concerning the protection of innovation through industrial property rights, empirical studies have demonstrated how industry-university co-operation can be linked to an increase in the number of recorded patents and that the participation of several companies in a consortium supported by a university is also positively connected to the number of generated patents (Schwartz et al., 2012).



The number of patents has been used to measure the results of R&D activity and knowledge transfer (Hall and Ziedonis, 2001; van Dongen et al., 2014).

Spain is not unique in this regard. Patenting continues to be one of the most frequently employed policy instruments for the promotion of innovation and the development of new technologies. Moreover, within the Spanish industrial sector, companies must incorporate technology and technological knowledge from external sources in order to compete both nationally and internationally in eco-innovation (Scarpellini et al., 2012). Thus, we suggest that the positive effects of collaboration between research organisations and such companies also extend to green patents. The following line of inquiry can therefore be proposed: “The more R&D centres that collaborate with a given Spanish manufacturing company, the more likely it is that, *ceteris paribus*, that green patents will be awarded”.

3. GREEN PATENTS ANALYSIS

For this study, an ad-hoc database comprising a sample of 1606 companies located in the Spanish regions of Catalonia, Navarre, or the Basque Country was developed. These regions were chosen for their interesting trajectories with regard to innovation and eco-innovation (OECD, 2015),³ within the framework of a research collaborative project carried out in these regions.⁴ The records of national and European green patents and the economic-financial data of the companies have been analysed in relation to the companies’ resources and capabilities (as applied to the green-innovation process) in order to test the proposed line of inquiry.

For the purposes of this analysis, the data have been taken from two sources of information: the SABI database for the year 2014 and the Spanish and European Patent Trademark Offices⁵. The number of patents is one of the variables used in the elaboration of the European ranking, and is, in fact, regularly used as a parameter of innovation in business. As such, green patent holdings can be considered an indicator of eco-innovation as carried out by private companies (Aragon-Correa and Leyva-de la Hiz, 2016; Segarra-Oña et al., 2014). The classification of the patents as green, a matter which is still under review in scholarship, is accepted in our research as corresponding to the codes listed by the United Nations Framework Convention on Climate Change (UNFCCC)⁶.



In the empirical phase of the study, a logistic regression model was developed to prove the effect of R&D collaboration on obtaining green patents (GP). In addition to the variables of R&D centres (RD), different economic and financial variables previously tested in other studies were also applied (Scarpellini et al., 2016). Therefore, the contrast model states, as a dependent variable, that ‘the existence of patents related to environmental technologies, or green patents (Eco-innovation)’ is a dichotomous variable which takes a value of 1 when the firm has a green patent and of 0 when the firm does not have a green patent. The model exhibits the following form:

$$\text{Green Patents (GP)} = f(\text{R\&D centres, financial performance, size, age, foreign activities, location}),$$

where

- Green Patent (GP), is a dichotomous variable that takes the value of 1 if the firm has green patent and of 0 otherwise. An objective method of measuring the eco-innovation variable may be examining the existence of patents taken out by the company — more specifically, patents that are environmental in nature (Teirlinck and Spithoven, 2013). Just as patents can exert an influence over innovative behaviour (Segarra-Ona et al., 2014), patents with an environmental content can exert an influence over eco-innovative behaviour. Along these lines, several works, such as those by Wagner (2007), Johnstone et al. (2010) and Marin (2014) use patent data to analyse environmental innovation.
- R&D centres variable (RD) is measured by the number of R&D centres collaborating with the company. The relevance of the collaborative framework to R&D development has been analysed fully in the previous section. The close collaboration between the industries and the companies and different R&D centres and other intermediate agents in the eco-innovation process is of great strategic importance (Kobayashi et al., 2011; Scarpellini et al., 2016), and has been measured through this specific variable.
- Financial performance variable (R) is quantified based on the return on equity (ROE), which is calculated as the ratio between the net income and common equity. Financial performance as a causal relation of innovative behaviour is measured through financial return (Mortazavi Ravari et al., 2016; Przychodzen and Przychodzen, 2015). Economic results positively affect



an enterprise's environmental responsiveness (Potocan et al., 2016). In line with Waddock and Graves (1997), better financial performance provides more freedom to invest in more socially responsible projects, such as innovation initiatives in products and environmentally favourable processes. In a revision of previous studies (Mortazavi Ravari et al., 2016) highlighted the return on investment as an assessment criterion for technological innovation capabilities.

- Size variable (S) is measured by the natural logarithm of the number of workers. The firms' potential access to R&D grows when greater access to resources gained, and thus small firms are disadvantaged when it comes to green innovations. Size may thus be regarded as a structural factor (Díaz-García et al., 2015; González-Benito et al., 2016). Small firms, therefore, face more obstacles when incorporating green concerns into their economic practices, and have more difficulty gaining competitive advantages, and, it follows, find it harder to profit from environmentally friendly investments (Revell and Rutherford, 2003). Despite this, there is evidence that some small firms have promoted green initiatives (Revell and Rutherford, 2003).
- Age variable (A) is the number of years since the date of incorporation of the company, as of 31 December 2014. The firm's age may be the factor that tilts the balance in favour of innovation, especially environmental innovation. Older firms have more public exposure, and their corporate image is more vulnerable to reputational risk, which makes them more likely to engage in eco-innovation (Jensen and Roy, 2008). Conversely, young firms may be more inclined to innovate as they have a greater ability to offer solutions to new challenges (Díaz-García et al., 2015; Jensen and Roy, 2008).
- For foreign activities (FA), three dummy variables have been included in order to study the relationship between green patent holdings and the openness of the company.
- Location variable (L) corresponds to two dummy variables which have been included in the model to examine the relationship between green patent holdings and the company's location.

The variables: financial performance (R), size (S) and age (A), are included as control variables in the logistic regression analysis. Moreover, other variables, such as foreign activities and location, are also included as control variables. For the reasons explained above,

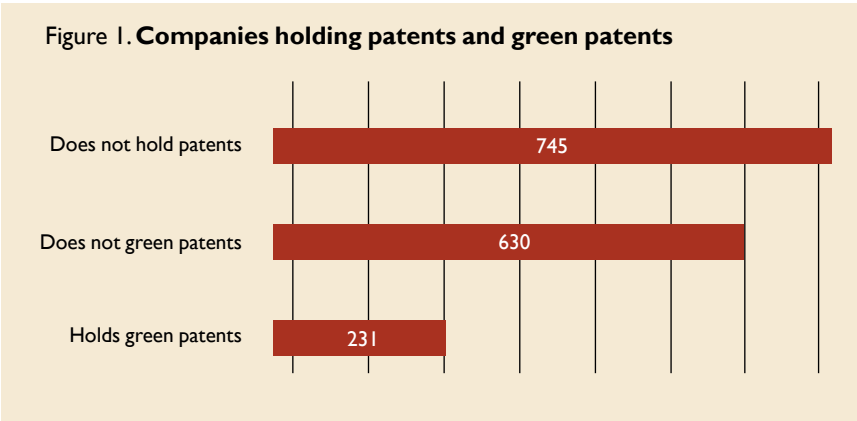


and considering the results of previous studies, we expect R, S and A variables to have a positive impact on the probability of obtaining green patents.

4. THE INFLUENCE OF BUSINESSES' RESOURCES AND CAPABILITIES FOR GREEN PATENTS

Having combined the different data sources mentioned in the previous section, we obtained a final sample comprising 1606 observations. Most of the companies in the sample are unlisted, are engaged in activities abroad ('import/export'), and have their headquarters in Catalonia. The firms in the sample have assets worth, on average, €62.6 million. Their average turnover is €67.4 million, and the average number of employees is 146.

Figure 1 illustrates that of the 1606 companies in the sample, those with green patents (231 companies) make up 14.4%, compared to 1375 companies without green patents, which account for the remaining 85.6%. In contrast, of the 861 companies that own some kind of patent, 231 (26.8%) have green patents whereas the remaining 630 companies (73.2%) do not.



An analysis has been carried out on the number of green patents and the proportion of green patents to total patents. **Table 1** summarises the results. Sample companies that own green patents (231 companies) have on average 357 patents and 14 green patents. Additionally, we conducted an analysis comparing top and bottom, i.e. companies with both high and low proportions of green patents in

Table 1. **Number of Patents and Green Patents**

	MEAN	STD. DEV.	MINIMUM	MAXIMUM
Number of patents	357	905.54	1	7410
Number of green patents	14	43.40	1	355
Proportion of green patents to total patents	0.08	0.11	0	1

total. We generated two groups of companies: those with a proportion of green patents higher than the mean of 8% (67 companies) and those with a lower proportion (164). We used ANOVA analysis to compare the two groups of generated companies, the mean values of the variables of R&D centres (RD), financial performance (R), size (S) and company age (A). With the exception of the size variable (S), the differences noted in the mean values between companies of both groups are not statistically significant in the ANOVA test. That is, among the companies with higher proportions of green patents, the average value of the size variable (4.86) is lower than that of companies with a higher proportion of green patents (5.45).

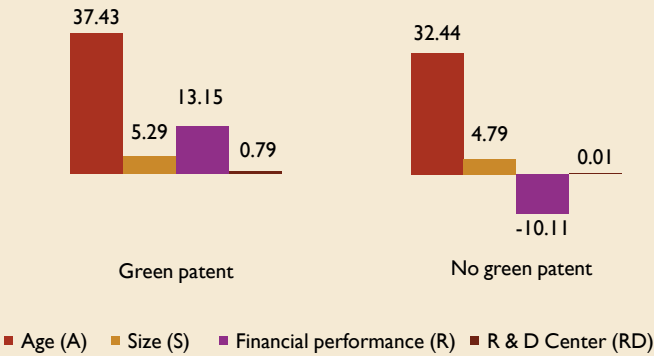
On the basis of these results, we analysed the factors that characterised those companies with green patents, compared to those without. A preliminary analysis was conducted to determine the relationships between pairs of the following variables: listing on stock exchange, foreign activities, location of companies, and the eco-innovation variable (GP). To this end, we applied the Pearson χ^2 test to the contingency tables. Regarding foreign activity, the results indicate that at a significance level of 99% ($\chi^2=12.76$ $p=0.005$), importing companies (18.67%) have a greater share in green patents compared to import and export companies (14.35%), export-only companies (12.32%), and those that do not perform activities abroad (4.32%).

The results also indicate that 16.29% of the companies in the Catalonia region have green patents, compared to slightly lower proportions of companies in Navarre (11.64%) and the Basque Country (10.40%). Therefore, we may conclude that the proportion of firms with green patents varies according to companies' locations and whether or not they are engaged in foreign activities.

Moreover, we used ANOVA to study the relationship between the eco-innovation variable (GP) and the following variables: R&D centres

(RD), financial performance (R), size (S) and age (A). **Figure 2** summarises the mean values of these variables: RD, R, S, and A for each of the two groups that define the eco-innovation-dependent variable. The two groups are those firms that have green patents and those that do not. Of the firms with green patents, the mean value of each independent variable is greater than that for firms without such patents. For all variables, significant differences were observed at 1% (for RD, $F=66.34$ sig=0.000; for S, $F=113.85$ sig=0.000 and for A, $F=12.61$ sig=0.000), and 5% levels for R ($F=2.94$ sig=0.032), relative to its value in both groups of companies.

Figure 2. Mean values of the variables for the groups that define the green patents



4.1. R&D collaboration and Green Patents

A binomial logit model was used to analyse the determinants of eco-innovation and, specifically, to respond to the question of whether collaboration with the R&D centres has positive effects on the acquisition of green patents by manufacturing companies.

Table 2 summarises the description of the variables in the logit model. The Pearson correlations (**Table 3**) for each pair of variables indicate weak or moderate associations in most cases, with values ranging between 0.04 and 0.26. Therefore, the inclusion of these variables is justified in order to explain the green patent possession.

Table 2. **Description of the final variables of the regression analysis**

	MEAN	D.T.	MINIMUM	MAXIMUM	OBSERVATIONS
R&D centres (RD)	0.12	1.39	0	47	1606
Financial performance (R)	-6.78	220.17	-5502.09	1306.81	1601
Size (S)	4.78	0.77	3.91	9.35	1605
Age (A)	33.15	19.84	0.20	115.66	1606
Green Patents (GP)	Dichotomous dependent variable 1/0		0	1	1606

Table 3. **Pearson correlations in the green patent holdings model**

	GP	AGE (A)	SIZE (S)	FINANCIAL PERF. (R)	R&D CENTRES (RD)
GP	1				
Age (A)	0.088**	1			
Size (S)	0.257**	0.157**	1		
Financial Perf. (R)	0.037*	-0.007	-0.001	1	
R&D Centres (RD)	0.199**	0.071**	0.111**	0.006	1

* $p < 0.05$ ** $p < 0.01$

The estimated results of the logit model are summarised in **Table 4** (see **Appendix**). Two analyses were carried out—one on the whole sample (1606 companies) and another on the companies holding patents (816). Similar results were obtained in both analyses. The line of inquiry is expressed by the coefficient of the R&D centres variable (RD). As expected, the results are positive and significant, indicating that collaboration with R&D centres leads to the acquisition of green patents. Moreover, the findings in this model are consistent with predictions regarding the relationship between economic-financial characteristics and eco-innovation in firms. The results demonstrate that the decision to register green patents is related to the size and age of the firm. On the other hand, the analysed data also demonstrates that better financial performance has a positive effect on the decision to register green patents. The remaining positive and significant coefficients indicate that engagement in foreign activities is related to the decision to register, or not to register, green patents for the protection of environmental innovations.

5. CONCLUSION

The main objective of this study has been achieved through a quantitative analysis of a sample of 1606 manufacturing companies located in Spain.

The analysis of both the main economic and financial resources of the companies and their R&D collaborative behaviour for green patents reveals that collaboration between firms and R&D centres working towards the development of green patents is significant and leads to a shared custody of these patents, which clearly demonstrates the efficiency of the process. Moreover, although companies have very different resources at their disposal, we suggest that resources such as age, size, and financial performance are key to attaining the crucial abilities necessary to develop green patents within an RBV theoretical framework.

Specific empirical evidence for eco-innovative firms is provided in this paper, in order to confirm the use of green patents as an indicator of eco-innovation for the decision-making processes in companies that have undertaken an active role in eco-innovation. These criteria may also be applied by practitioners: this would mean greater flexibility in the environmental management but would require more detailed knowledge of each instance of investment in environmental R&D.

This study highlights some of the relevant resources and capabilities of eco-innovative manufacturing firms. As such, it will be useful for future studies on the subject and for practitioners making decisions on investments in environmental R&D and its protection through industrial property in the form of green patents, as well as those practitioners seeking external sources of knowledge. First, our findings directly translate into practices which are the main determinants of green patents, and our findings provide information on how to strengthen these determinants in collaborative R&D activity in this field. Secondly, this study addresses the gap between academics and practitioners by examining the determinants of green patents within the conceptual framework of the resource-based view: the main results can be applied by managers to define and measure the specific firms' resources for application to the eco-innovative processes.

This study will be useful for future research, given the unprecedented number of companies analysed and the wide range of variables, in terms of the number of years analysed and the number of green patents recorded. However, the limitations of the obtained



results must be noted, in relation to the size of the sample and its regional profile. Our empirical analysis is limited to Spain and therefore may not be representative of other countries with different cultures of innovation. Therefore, further comparative studies are recommended.



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NOTES

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3. See Eco-Innovation Observatory: www.eco-innovation.eu/ (accessed May 2017).
4. For more information about the project, please see the Acknowledgements section.
5. Iberian Balances Analysis System (SABI) [online database], 2014. Madrid.
6. For more information, see: <http://www.wipo.int/classifications/ipc/en/est/index.html> (accessed May 2017).



Appendix

Table 4. Results of logistic regression.

	COEFFICIENT	MARGINAL EFFECT	COEFFICIENT	MARGINAL EFFECT
R&D centres (RD)	1.911 ***	0.217***	1.397 ***	0.296***
Financial Performance (R)	0.002 **	0.001 **	0.002 **	0.001 **
Size (S)	0.794***	0.090***	0.549***	0.116***
Age (A)	0.007**	0.001**	-0.002	-0.001
Importer	0.944 **	0.144 **	0.789	0.185
Exporter	0.450	0.057	0.245	0.053
Importer/Exporter	0.516**	0.055	0.157	0.328
Basque Country	0.187	0.022	-0.018	-0.004
Catalonia	0.553	0.059	0.376	0.078
Nagelkerke R ²	21.63%		18.38%	
Likelihood ratio Test	206.25		111.3	
Hosmer-Lemeshow Test	p=0.51		p=0.96	
Predicted capacity	87.69%		75.34%	
Sensitivity	16.23%		18.42%	
Specificity	99.56%		97.44%	
Model	Sample companies		Companies holding patents	

Note: Marginal effects are computed at sample means. Sensitivity: % of observations correctly predicted as 1; specificity: % of observations correctly predicted as 0.
, * indicate parameter significance at the 10, 5, and 1% level, respectively.





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The role of gender, age, job level and job security on physician's engagement in Spanish public hospitals¹

El papel del género, la edad, el nivel laboral y la seguridad laboral en el compromiso de los médicos españoles de hospitales públicos

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I. INTRODUCTION

The public sector aims to promote general social welfare, the protection of society and has deeper impact objectives than private firms. In this context, public employees might have more potential to show positive attitudes, such as engagement, satisfaction or commitment, compared to private employees (Salas-Vallina *et al.*, 2017). Positive attitudes are considered particularly intense affective experiences that are based on specific situations at work (Gray and Watson, 2001). However, there are contradictory findings in this research field. While some studies tend to show public health care physicians (Peña-Sánchez *et al.*, 2014), other studies evidence the contrary (Chivato Pérez *et al.*, 2011; Súnier-Soler, 2014). The concept of work engagement is understood as a vigorous and passionate state at work (Schaufeli *et al.*, 2002).

Research shows that engagement is one of the most important concepts in the management area, with important implications for employees and organizations (Schaufeli *et al.*, 2006). Engagement is frequently examined to raise organizational profitability and competitiveness (Bailey *et al.*, 2015), to reduce burn-out (Schaufeli and Bakker, 2004) and improves task performance and citizenship behavior (Rich *et al.*, 2010). But a lack of engagement is related to absenteeism, poor performance, bad working conditions and turnover intention (Schaufeli, 2017). In a recent research in Spain and Latinoamerican countries, Súnier-Soler (2014) found that Spain presented one of the greatest recognition of mistakes in the care provi-



Medical Team

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EXECUTIVE SUMMARY

The purpose of this paper is to examine how the variables of age, gender, job level and job security affect engagement in a knowledge intensive context. Literature shows a lack of research on how these variables facilitate engagement, and our aim is to provide further evidence on this issue. Using a sample of 167 Spanish public physicians, this found that age does not affect engagement, while gender, job level and job security should be considered as demographic engagement determinants.

RESUMEN DEL ARTÍCULO

El objetivo de este artículo es analizar el efecto de las variables edad, género, nivel laboral y seguridad laboral en el compromiso de los empleados, en un contexto intensivo en conocimiento. Las investigaciones previas muestran la necesidad de conocer cómo determinadas variables facilitan el compromiso laboral, y nuestro objetivo es proporcionar nuevas evidencias. Se ha analizado una muestra de 167 médicos especialistas en alergología. Los resultados ayudan a clarificar las contradicciones encontradas en investigaciones previas, pues evidencian que la edad no afecta al compromiso laboral, mientras que el género, el nivel laboral y la seguridad laboral son variables que sí que afectan al compromiso laboral.

ded because of the working conditions. In addition, Spain was one of the most prevalent countries where physicians considered giving up the profession. Once more, Spanish physicians revealed one of the greatest pessimistic perception with a high sensation of personal deterioration derivable from the working conditions.

In line with Bailey *et al.* (2015) this study highlights the lack of research in determining the demographic and labor variables that affect engagement. Gender, age and job security are analyzed in our study, with the aim of showing the employee profile that best fits to be engaged. Variables such as gender are supposed to be neutral because both men and women can equally be engaged. However,

women are exposed to lower pay and a significantly higher risk of unemployment (Rubery and Rafferty, 2013). Little research and contradictory results address the effect of age in engagement at work. Following the job demands-resources theory, it may be assumed that higher management level could lead to higher engagement. However, literature shows inconsistent results. For example, Súnier-Soler (2014) found that public employees are more dissatisfied at work, while Peña-Sánchez *et al.* (2014) revealed the contrary. Our research also analyses the effect of job security on engagement. Job security is increasingly valued in OECD countries (Anderson and Pontusson, 2007), and we found empirical evidence of its effect on engagement at work.

This paper is organized as follows. First, the concept of engagement is reviewed. Second, the effect of the demographic and labor variables of gender, age, management level and job security on engagement is examined. Finally, findings and discussion are explained.

2. WHAT DO WE KNOW ABOUT ENGAGEMENT?

According to the JD-R (Job demands-resources) model, every job contains demands as well as resources. Job demands refer to elements of the job that need high levels of physical and mental effort and are connected with physiological and psychological costs (Schaufeli, 2017). It means that job demands are negative aspects at work that reduce energy. For example, work overload or job insecurity are considered job demands. Job demands are considered a stress process that lead to negative outcomes, such as poor performance and low positive attitudes, such as commitment or engage-

...this study highlights the lack of research in determining the demographic and labor variables that affect engagement.

ment. When job demands are continuously high, employee's energy is drained, which finally leads to burn-out. On the other side, job resources are positive things that help to achieve goals, reduce job demands and promote personal growth and development. Support from others, job control and performance feedback are examples of job resources. Job resources foster engagement, which results in extra-role behavior and superior work performance. The JD-R model has been widely validated (Schaufeli, 2017) and links job characteristics, employee well-being and different outcomes. We understand well-being as a wide range of positive attitudes. However, it seems that engagement is one of the most representative positive attitudes (Schaufeli, 2017). Schaufeli *et al.* (2002, p. 74) defined engagement as "a positive, fulfilling work-related state of mind that is characterized by vigor, dedication and absorption". They suggested that vigor, dedication and absorption together they shape the concept of engagement. Vigor is characterised by high levels of energy and the ability to cope with adverse situations at work, including perseverance in difficult times. Dedication involves experiencing enthusiasm, significance, challenge. Absorption implies experiencing difficulties in disconnecting from work because the employee is at ease, deeply devoted to his/her work, and does not notice the passing of time. We understand engagement in the same way as Schaufeli *et al.* (2002), as "Employee Work Passion". Engagement is a special feeling of energy and motivation related to thrill and passion at work. Therefore, we circumscribe engagement in the field of feelings as a result of meaningfulness at work.

Engaged employees experience high well-being and perform better (Soane *et al.*, 2010). Other studies found that employee engagement was related to profit, productivity, and customer satisfaction, among others. Despite the fact that the concept of engagement is one of the most relevant contemporary concepts in management literature, literature claims further research on its antecedents, such as demographic and labour variables (Bailey *et al.*, 2015).

2.1. Engagement and gender

Reality demonstrates that women work much longer hours than man (United Nations, 2015, p. 87), and the Organization for Economic Co-operation and Development Employment Outlook 2015 shows that women are exposed to lower pay and a significantly higher risk of unemployment. These circumstances lead us to believe that wo-

KEY WORDS

engagement, age, gender, job security, job level.

PALABRAS CLAVE

compromiso, edad, género, seguridad laboral, nivel laboral.



men may be less engaged than man. Shantz *et al.* (2010) revealed that highly engaged women with children in their care feel burnout, which is the opposite to engagement. Schaufeli *et al.* (2006) stated that levels of engagement do not differ significantly between women and men. Gálvez (2016) highlighted that Spain presents one of the highest rates of discrimination against women at work, which clearly does not favour female happiness at work (HAW). Women have unfavourable conditions on promotion opportunities, job content and hiring or firing. However, they tend to feel more satisfied and committed at work (Marchiori and Henkin, 2004) because they expect less. Our research is focused in the public health sector, particularly in the allergy specialty, where the proportion of women is higher compared to men. If women bear the most home responsibilities, they will be more negatively affected by engagement. Under these circumstances, work-life balance might counterbalance it. Pasamar and Valle-Cabrera (2013) argue that while public employees benefit from better work-life programmes, the Spanish government supports relatively few family-work plans compared to other European countries. In addition, managers are essential to implement work-life balance programmes in organizations.

Engagement is supposed to be gender neutral, as other concepts in management literature. However, we cannot ignore gender in research because it might promote the permanence of discrimination in the workplace (Martin, 2000). Our research aims to clarify the following question: Do women and men differ in their engagement at work?

2.2. Engagement and age

Literature shows little and contradictory research on age as antecedent of employee engagement. In one hand, older workers could be less engaged because they are waiting for retirement. On the other hand, older workers expect job security and a regular increase in pay (D'Amato and Herzfeld, 2008), and they feel more engaged than younger workers. Robinson *et al.* (2004) found that engagement decreases with age, but from the age of 60 engagement increases. Nylen and Gulbrandsen (2005), in a longitudinal study among physicians, found that job satisfaction was slightly positively correlated with age. Bailey *et al.* (2015) claims for more research that investigates the antecedents of engagement from the perspectives of employees from various demographic backgrounds and raises the

possibility that engagement may vary across age groups. Schaufeli states that the relationship between age and engagement is weak and it can barely be seen as meaningful. Research shows that there are no systematic gender differences for engagement (Schaufeli *et al.*, 2006), and that the relationships between age and engagement should be interpreted with prudence (Schaufeli *et al.*, 2006). Therefore, our second question is: **Does age affect work engagement?**

2.3. Engagement and job level

Taking the Job Demands-Resources theory as a reference point, it can be assumed that job resources (physical, psychological, social, or organizational characteristics of a job) stimulate positive attitudes such as engagement or organizational commitment. Job level can be considered as a job resources, as it increases power and decision making capacity. As stated by conservation of resources (COR) theory, people aim to acquire, maintain and protect resources, including objects (material goods), personal characteristics (self-esteem, courage), conditions (status) and energies (time, money, knowledge). Besides this, resources enable individuals to secure other resources. (JD-R) connects resources with positive attitudes, stating that job resources promote positive attitudes and job demands explain burn-out. Personal resources are positive self-evaluations which are strongly related to positive attitudes and impact on the working environment successfully, and that stimulate personal growth and development.

A higher job level involves more prestige, status, prestige and power. Previous studies found that job level is connected with career satisfaction. Job level has been negatively related to burn-out (Kim *et al.*, 2017), the opposite to engagement (Schaufeli *et al.*, 2002). In a cross-sectional study of 33,000 employees across the globe, it was found that job level positively affected work engagement (IBM, 2014). However, our research is framed in the public sector, where limited opportunities are found for promotion (Barrows and Wesson, 2001). The characteristics of the public sector are different from the private sector, and this affects attitudes at work. In this sector, hospitals are organizations whose concerns are beyond financial profits, and are focused on social commitment (Meyer *et al.*, 2014). But also, hospitals are organizations under substantial stress. Health care professionals are expected to deal with technical developments, are demanded to be accessible and available, de-





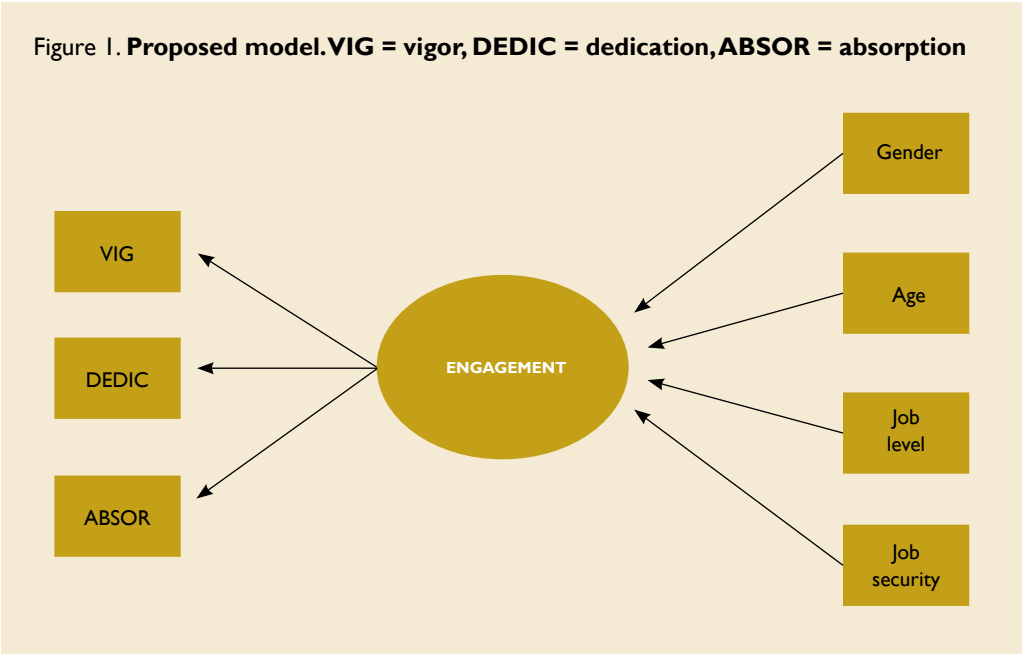
velop their own evidence-based competences and provide patient-centered care. Hospitals are singular organizations due to the fact that bad physicians result in medical errors, while bad patients promote more burnout physicians, and in turn, contribute to more medical error (Montgomery *et al.*, 2015). The negative working factors of physicians, such as stress, are derived from patient-driven demands and the organizational working context (Montgomery *et al.*, 2015). Young *et al.* (1998) could not evidence any significant connection between pay and job satisfaction in the public sector. On the other hand, public employees might have more potential to feel happier than private employees. The public sector promotes general social welfare, the protection of society and has deeper impact objectives than private firms. Public employees may feel greater task meaning than private sector employees, because public work involves important social concerns (Salas-Vallina *et al.*, 2017). Nevertheless, public employees generally have been considered as more dissatisfied at work than private sector employees (Súñer-Soler, 2014), presenting some of the lowest scores across industries (IBM, 2014), because despite they can satisfy higher-order needs, the structure of public organizations might obstruct the achievement of these altruistic goals. In addition, public employees present a lower willingness to exert extra effort and are less committed (Buelens and Van den Broeck, 2007). The fact is that there are contradictory findings of public job satisfaction. While some studies tend to show public satisfied employees (Peña-Sánchez *et al.*, 2014), other studies evidence the contrary (Súñer-Soler, 2014). Despite that a higher job level involves a higher salary, employees of public organizations note a weaker association between extrinsic rewards, such as pay or job security, and performance than do private sector employees. Public employee perceptions of weak relationships between rewards and performance, greater procedural constraints, and goal ambiguity may have a detrimental effect on their work motivation (Perry and Wise, 1990). **For all the above, our thirs questions is: Does job level affect work engagement?**

2.4. Engagement and job security

Job security is increasingly valued in OECD countries. Greece, Estonia and Spain present the highest exposure of workers with long-term earnings to unemployment. In these countries the average of time being unemployed exceeds two years. Temporary contracts

can facilitate work, but also can be a source of insecurity (2017 OECD Employment Look). The 2017 OECD Employment Look defined labour market insecurity as the risk of being unemployed, with temporal income protection. Job insecurity can be defined as the employee's perception of a possible and involuntary job loss. Job insecurity produces job stress with negative work consequences. For example, Mauno et al. (2007) evidenced a negative relationship between job insecurity and engagement. On the basis of the JD-R theory, job insecurity can be considered a job demand, as it is a work characteristic that increases uncertainty. High job demands lead to high stress levels and negative outcomes, such as burnout, while job resources (Schaufeli et al., 2002). Therefore, it seems that job insecurity could negatively affect employee's engagement. The fourth question proposed in this research is: Does job security affect work engagement?

Figure 1 graphically represents the proposed theoretical model. Vigor, dedication and absorption correspond to the three dimensions of engagement, and gender, age, job level and job security involve the variables that are expected to affect work engagement.



3. THE PUBLIC HEALTH SECTOR CHARACTERISTICS

The Spanish healthcare system is considered the seventh-best worldwide by the World Health Organization in 2000, and comprises tertiary and district hospitals and primary health care centers that provide preventive care, home-based care and rehabilitation. The 17 Autonomous Communities that compose Spain have been delegated most health care management responsibilities. Nevertheless, our study is framed in the medical staff working in allergy units, named allergists. This medical specialty presents similar characteristics across Spain, both from a management and clinical perspective. They usually work under a head of service, which lead a small group of allergists in each public hospital. This organizational structure is different from private allergists, but our work is focused in the health care public sector.

This sector had a considerable effect of the economic crisis, where pressure from Europe and the financial markets and the national and regional governments, has resulted in services being cut, sometimes harshly (Organización Médica Colegial, 2012). Austerity measures involve considerable diminution in public employees' salaries since 2010 and health spending reductions (Gené-Badia, 2012). These taken measures have often been understood as incoherent and are likely to damage the principles of equity and social cohesion. Data is very clear: The 2016 CIS national survey reveals that Spaniards gradually rate worse the public health system. From 2011 and up to today, Spanish citizens have decreased their rating of the health system from 24.24 in 2011 to 19.80 in 2016 (CIS, 2016).

From the point of view of physicians, these austerity policies might negatively impact on their attitudes at work. Physicians have to deal with high overload of work with less resources. The JD-R model facilitates the explanation of how the Spanish health care context affects physician's engagement. This model argues that less resources lead to burn-out, which is the opposite to engagement (Schaufeli, 2017). It seems that under circumstances of lower resources physicians' engagement will be affected. For example, Suárez-Soler (2014) evidenced high levels of burnout and turn-over intention, which are considered negative attitudes at work (Schaufeli et al., 2002). Moreover, Heras-Mosteiro et al. (2016) revealed that Spanish physicians presented high burnout levels as a result of lack of resources.



4. WHAT DOES REALITY REVEALS?

In **Table 1**, we present the main characteristics found in this study for engagement in relation to the type of job contract, which reflect the levels of job security (temporary or permanent), the management level (head of service or staff), gender.

Table 1. **Descriptive statistics of engagement**

	N	AVERAGE	STANDARD DEVIATION	STANDARD ERROR
Temporary	43	3.35	1.19	.18
Permanent	124	3.80	1.23	.11
Head of service	79	3.17	1.17	.13
Staff	88	4.15	1.11	.12
Woman	101	3.43	1.10	.11
Man	66	4.08	1.34	.12
Age	167	44.00	9.55	.16

This study reveals that job security as well as job level play a significant role in engagement. As evidenced in **Table 1**, permanent workers and higher job level employees feel more engaged at work. In contrast, age is not related to engagement. In addition, we found that gender does not affect work engagement.

Table 2. **Anova test**

	SUM OF SQUARES	DF	ROOT MEAN SQUARE	F	SIG.
Job security	6.519	1	6.519	4.358	.038
Job level	39.687	1	39.687	30.654	.000
Age	6.555	4	1.639	1.076	.370

Table 3. **Gender Brown-Forsythe test (equality of means test).**

	STATISTIC	DF1	DF2	SIG.
Gender	6.519	1	6.519	.038

Table 4. Classification table, Omnibus test and variables in the equation

STEP 0	SELECTED CASES	NOT SELECTED CASES
Pre-classification	54.900	50.000
OMNIBUS TEST	CHI-SQUARE	SIG.
Step 1	8.518	.004
Step 2	17.841	.000
Step 3	25.359	.000
STEP 3 VARIABLES IN THE EQUATION	EXP (β)	SIG.
Gender	3.538	.001
Job level	5.360	.000
Job security	3.330	.008
Post-classification	70.600	78.600

Results show (Table 4) that for each head of service highly engaged, there are 5.360 staff employees highly engaged. For each temporary employee highly engaged, there are 3.330 permanent employees highly engaged. For each woman highly engaged there are 3.538 men highly engaged.

5. CONCLUSIONS

Spanish health care professionals present one of the greatest rates of turnover intention, burnout and emotional exhaustion compared to other countries (Súñer-Soler, 2014). Family and personal deterioration are further negative effects of the working conditions of health care Spanish physicians (Súñer-Soler, 2014).

Our first conclusion is that public physicians present low engagement levels. The reason behind those low engagement levels, might be explained but the public lack of resources in both the healthcare and education sectors, derived from strong financial cuts coming from the economic crisis.

Our second conclusion is that engagement engagement depends on gender. Despite engagement is considered to be gender neutral, reality shows that women that bear the most home responsibilities,

will be more negatively affected by engagement, may be because of their overcharged life.

Our third conclusion is that engagement does not vary across age groups. Age seems to be less significant in assessing engagement than other factors such as gender, management level and job security.

Our fourth conclusion is that the management level affects engagement. Higher job position does not guarantee that employees will feel more engaged. Public employees perceive greater procedural constraints, and goal ambiguity that may negatively affect work motivation. Besides this, public employees feel a poor relationship between rewards and performance. Following this, our results show that a higher management position (head of health unit services) involves lower engagement levels.

Our fifth conclusion is that job security affects engagement at work. It seems reasonable to hold that job security is a key element to feel good and comfortable at work. Job insecurity derived from temporary work entails lower engagement at work. Job insecurity, leads to lower engagement levels (Schaufeli et al., 2002).

We can suggest that staff employees, male and with permanent contracts present higher probability of being engaged in their work. Besides this, the variable with a higher effect on engagement is management level.

This study offers practitioners new clues to decode why some employees are more engaged compared to others. In particular, our research reveals powerful results to human resource managers. Heads of human resource departments now can focus their engagement human resource policies towards the right direction, devoting more attention and resources where it is more vital, namely, less engaged employees. Physicians in charge of other employees, females and temporally hired workers define the profile of employees more likely of not being engaged. Salary, high working pressures and a lack of power in relation with their responsibilities might be the cause of low engagement among physicians in charge of other employees. In addition, policies focused on gender equality policies should become a priority of human resource managers in health care organizations. Further, accurate HRM policies might help to raise employees capabilities (López-Cabrales et al., 2017), and as a result their work engagement. Finally, it has been proved that job instability negatively affects work engagement. It is a fact that Spa-



nish physicians present one of the highest temporary rates, and this involves less engaged employees and further negative consequences (Schaufeli, 2017). A reduction in temporary employment rates urgently needs to be implemented.

It is our aim to raise awareness among human resource managers of how critical it is for organizations and employees to be engaged.



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THE ROLE OF GENDER, AGE, JOB LEVEL AND JOB SECURITY ON PHYSICIAN’S ENGAGEMENT IN SPANISH PUBLIC HOSPITALS
EL PAPEL DEL GÉNERO, LA EDAD, EL NIVEL LABORAL Y LA SEGURIDAD LABORAL EN EL COMPROMISO DE LOS MÉDICOS ESPAÑOLES DE HOSPITALES PÚBLICOS

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NOTES

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Appendix I

Encuesta de Bienestar en el Contexto Académico (UWES-S-17) ©

Las siguientes preguntas se refieren a los sentimientos de las personas en el trabajo. Por favor, lea cuidadosamente cada pregunta y decida si se ha sentido de esta forma. Si nunca se ha sentido así conteste “0” (cero), y en caso contrario indique cuántas veces se ha sentido teniendo en cuenta el número que aparece en la siguiente escala de respuesta (de 1 a 6)

NUNCA	CASI NUNCA	ALGUNAS VECES	REGULAR-MENTE	BASTANTES VECES	CASI SIEMPRE	SIEMPRE
0	1	2	3	4	5	6
Ninguna vez	Pocas veces al año	Una vez al mes o menos	Pocas veces al mes	Una vez por semana	Pocas veces por semana	Todos los días

- 1. Mis tareas como estudiante me hacen sentir lleno de energía (VI1)*
- 2. Creo que mi carrera tiene significado (DE1)
- 3. El tiempo “pasa volando” cuando realizo mis tareas como estudiantes (AB1)
- 4. Me siento fuerte y vigoroso(a) cuando estudio o voy a clases (VI2)*
- 5. Estoy entusiasmado(a) con mi carrera (DE2)*
- 6. Olvido todo lo que pasa alrededor de mí cuando estoy abstraído con mis estudios (AB2)
- 7. Mis estudios me inspiran cosas nuevas (DE3)*
- 8. Cuando me levanto por la mañana me dan ganas de ir a clases o estudiar (VI3)*
- 9. Soy feliz cuando estoy haciendo tareas relacionadas con mis estudios (AB3)*
- 10. Estoy orgulloso(a) de estar en esta carrera (DE4)*
- 11. Estoy inmerso(a) en mis estudios (AB4)
- 12. Puedo seguir estudiando durante largos períodos de tiempo (VI4)
- 13. Mi carrera es retadora para mí (DE5)
- 14. Me “dejo llevar” cuando realizo mis tareas como estudiante (AB5)*
- 15. Soy muy “resistente” para afrontar mis tareas como estudiante (VI5)
- 16. Es difícil para mí separarme de mis estudios (AB6)
- 17. En mis tareas como estudiante no paro incluso si no me encuentro bien (VI6)





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Work-family practices and organizational commitment: the mediator effect of job satisfaction¹

Medidas de flexibilidad trabajo-familia y compromiso organizativo: el efecto mediador de la satisfacción laboral

1. INTRODUCTION

Employees who feel satisfied at work are usually more committed to their organizations than those who are not satisfied. This result, which is frequently being observed in late research (De Sivatte *et al.*, 2015) indicates to the departments of human resources the need to contribute to such job satisfaction. One way to achieve it is to facilitate employee's work-family balance. Indeed several institutions –government, trade unions, etc.- have been demanding for a long time the implementation of flexibility practices (which we will call work-family practices in this article) that help employees to combine their family and work responsibilities. Additionally, there are already a growing number of companies that support such initiatives in order to attract and retain qualified and talented personnel. The implementation of work-family practices may, therefore, be beneficial for both employees and organizations.

Nevertheless, the existence of these practices is not sufficient *per se*, because offering work-family practices does not mean that employees are able to use them. Some studies point out that the employee's perception about the possibility of using these practices is more important than their only existence (Allen, 2001; Behson,



WORK – FAMILY

EXECUTIVE SUMMARY

This article analyzes the mediator effect of job satisfaction in the relationship between the availability of work-family practices and employees' organizational commitment. Empirical data from employees working for family-friendly awarded firms shows that when employees perceive that work-family practices are really available to them, they are more satisfied in their jobs and demonstrate more organizational commitment.

RESUMEN DEL ARTÍCULO

Este artículo analiza si la satisfacción laboral de los empleados tiene un efecto mediador entre la disponibilidad de medidas trabajo-familia y el compromiso organizativo de los empleados. Los datos del estudio proceden de una muestra de 322 empleados de empresas españolas que han sido galardonadas con el "Premio Empresa Flexible" o están certificadas como "Empresa Familiarmente Responsable" en los últimos años. Los resultados indican que cuando los empleados perciben que disponen realmente de medidas trabajo-familia para conciliar su vida laboral y familiar, están más satisfechos con su trabajo, y dicha satisfacción explica además positivamente su compromiso organizativo.

2005). Employees may not use work-family practices if they perceive that they are going to affect them negatively, for example, in their professional development or job stability (Dikkers *et al.*, 2007).

Most descriptive studies support the idea that implementing work-family practices further from legal requirements, may contribute to improve employee's job satisfaction, because these practices reduce work-family balance difficulties (Hornung *et al.*, 2008; Selvarajan *et al.*, 2013). The assistance that employees receive from their companies in order to improve work-family balance is what contributes to a feeling of "being in debt" with the company which motivates them to carry out additional efforts –for example, with extra work-time for developing

and launching a new product- or value their company more positively. All this, in the end, may be an indication of a greater employee's organizational commitment, due to the beneficial effect of work-family practices.

The literature of management indicates this effect, but our literature review does not allow establishing clear conclusions because the relationship is not a direct one and it could be indirect or even deferred in time. The reviewed studies evidence that work-family practices are positively related to employee's job satisfaction. Based upon that, we could propose that job satisfaction has a mediator effect between the availability of work-family practices and employee's organizational commitment. It is this commitment which is more related to the employees' performance, so that the verification of the mediator effect could better explain why the availability of work-family practices increases

employees' organizational commitment. This would enable to use more arguments to justify the implementation of these practices by companies.

Therefore the main objective of our study is to analyse if employees' job satisfaction mediates the relationship between the availability of work-family practices and organizational commitment. This analysis would contribute to justify the use of work-family practices by organizations, as it offers new arguments for their adoption in the way that are beneficial for both employees and companies.

The article is structured as follows: the next two sections justify the research. Next, we explain the origin of the data and how we analysed it, followed by the results and the lessons or conclusions that may be deduced from them.

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2. WORK-FAMILY PRACTICES AND ORGANIZATIONAL COMMITMENT

In order to be able to better balance their family and labour activity, employees may use some of the work-family practices offered by their companies, either by legal imperative or by a human resource family-friendly strategy. Work-family practices “refer to the services that allow employees to better manage the interconnection between work and family” (Thompson *et al.*, 1999, p. 395) such as flexitime or telework. Those practices and the way they are offered to employees may influence their perception about how companies support employees to balance their work and family life.

Our article focuses on the availability of work-family practices, that is to say, not just on their simple existence but about how employees perceive they can use those practices without negative consequences for professional development or job stability. Several studies highlight the “informal support” to work-family balance that is needed from the employees’ managers, supervisors and colleagues (Allen, 2001; Behson, 2005; Thompson *et al.*, 1999). Our study also recognises the importance of “informal support” for the adoption of work-family practices, and therefore we directly focus on the ‘real’ availability of these practices. That is the reason why we will ask employees about how they have real access to use work-family practices without negative consequences. The use of work-family practices may help to improve absenteeism, rotation and, eventually, employees’ organizational commitment (De Sivatte and Guadamillas, 2013; De Sivatte *et al.*, 2015; Grover and Crooker, 1995; Thomson *et al.*, 1999). An employee’s organizational commitment may be defined as “the relative strength to individual identification and implication towards a particular company, put forward as the desire to continue in the company, make efforts to its benefit and accept its values and goals” (Betanzos and Paz, 2007). Such commitment is considered as a key element to retain good employees and improve company performance. Nevertheless, there is not consensus in the literature because some studies do not find significant relationships between work-family practices and organizational commitment (Allen, 2001; Behson, 2005).

One argument that may explain the positive relationship between work-family practices and organizational commitment has its roots in the theory of social exchange as work-family practices may improve the employee’s feeling of gratitude towards the company. Thus

KEY WORDS

Work-family benefits;
Job satisfaction;
Organizational
commitment.

PALABRAS CLAVE

Medidas trabajo-
familia; Conciliación
laboral y familiar;
Satisfacción laboral;
Compromiso
organizativo.

employees could compensate the work-family support received with extra labour effort whenever they have opportunity to do it (Blau, 1964).

Another argument is based on the resource-based view and capabilities theory (Teece *et al.*, 1997). The firm's intangible resources are more difficult to imitate and replicate by competitors. Among intangible resources, human resources management is a particular and idiosyncratic feature for each company. Although work-family practices could *a priori* be very similar between companies and some of them are even regulated by law, it is how companies manage their bundle of work-family practices what constitutes an intangible resource difficult to imitate. This intangible resource may allow obtaining differentiated results such as, for example, a greater organizational commitment in those companies whose employees are more satisfied with the work-family practices. We can not forget that retaining talent is a critical competitive variable for many companies nowadays, and therefore human resource strategies influence those practices that improve employees' labour conditions (Allen, 2001). In particular, developed societies and knowledge-intensive companies pay more attention to the employees' work-family interface. Such interaction may have an impact in the company, to the extent that it may condition employees' productivity, absenteeism, job rotation and eventually their organizational commitment (Betanzos and Paz, 2007).

3. THE MEDIATOR EFFECT OF JOB SATISFACTION

One of the factors that favors the employees' wellness and job satisfaction is the balance between their family and work responsibilities (Frye and Breaugh, 2004). In this sense, some empirical studies indicate that employees in family-friendly companies do not experience significant difficulties to balance work and family (Allen, 2001; Selvarajan *et al.*, 2013), but our review of the literature also points out that, although work-family practices reduce such difficulties (Hornung *et al.*, 2008; Griggs *et al.*, 2013; Selvarajan *et al.*, 2013), the results are not always conclusive.

Some authors point out that combining multiple work and family roles may also be positive in terms of productivity and job satisfaction, as people must learn new abilities and improve their problem-solving capabilities, all which may yield them satisfaction later on (Boyar and



Mosley, 2007). Besides, people with multiple responsibilities may as well search for and find support in their supervisors, colleagues and family. One variable that may work out in a discriminant way among employees with difficulties to balance but who have access to work-family practices is job satisfaction. Not all employees who have difficulties to balance work and family will be similarly affected in their organizational commitment: some employees will diminish their level of commitment, and even question their own attachment to the company, whereas others may maintain their commitment levels due to the job satisfaction obtained thanks to work-family practices. The positive relationship between the employees' job satisfaction and organizational commitment has been previously tested in several studies (Frenkel *et al.*, 2013) but those that analyse the relationship between work-family practices and organizational commitment are not conclusive. We have previously mentioned the theory of social exchange (Blau, 1964) in order to justify that a satisfied employee at work would wish to express his/her gratitude to the company as a compensation for the support to solve balance difficulties. That is to say, a more satisfied employee at work would be potentially more committed to his/her company.

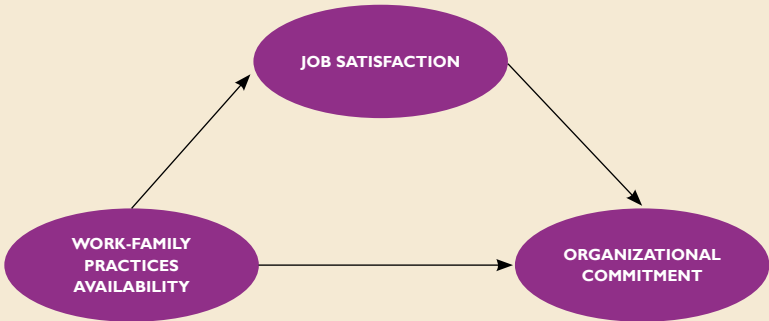
Similarly, the resource and capabilities theory may help to justify the mediator effect of job satisfaction. Intangible resources are the most difficult to imitate and, therefore, they are a source of sustainable competitive advantage. Two important intangible resources in the human resources field are employees' job satisfaction and organizational commitment, and both need an appropriate human resources management. Employees will feel more satisfied at work if, among other conditions, they consider that the work-family practices offered by the company help them when they need to balance work and family. If this compensation does not exist, employees may even feel disappointed with the offer of work-family practices and, therefore, reluctant to develop organizational commitment and would even try to find another company more family-friendly. That is, the retention of talented employees (intangible resource) goes hand in hand with the intangible effect of job satisfaction and this, in turn, with a real availability of work-family practices.

Therefore it is difficult to have organizational commitment without job satisfaction. The offer of work-family practices does not guarantee employees' commitment. If employees are more satisfied at work



because they can balance work and family much better thanks to the availability of work-family practices, they will be more willing to contribute with additional efforts or with ideas and suggestions of improvement which also result in the company's benefit. The positive relationship between the availability of work-family practices and employee's organizational commitment would therefore need job satisfaction as a mediator. When the perception of the availability of work-family practices enhances employees' job satisfaction, the employees would feel more committed to their companies, but if the offer of work-family practices arises suspicions and distrusts, then we should not expect more commitment because that offer will not be able to improve job satisfaction. According to these arguments we propose to analyse the research model shown in **Figure 1** with the data we explain in the next section.

Figure 1. **Research model**

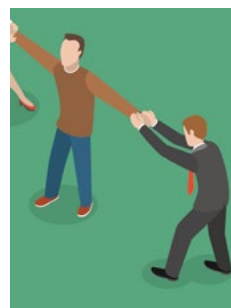


4. DATA FOR THE STUDY

Data were obtained by a survey aimed at employees from the population of Spanish firms that had obtained a 'Flexible Firm Award' organized by the company CVALORA in the period 2002-2013. This award is an initiative of this company (<http://www.cvalora.com/>), starting in 2002, that aims to detect and spread the best flexible practices in the company. It is a referent in terms of management and has the support of private enterprises, communication media, business schools and regional governments in Spain. Companies certified as 'family-responsible companies' (EFR) are also included.

The initiative EFR, developed by *Mas Familia* (More Family) Foundation (<http://www.masfamilia.org/>), has been recognized as Good Practice for the United Nations. It responds to a new labour culture and socio-based flexibility, mutual respect and commitment through private certification. Both initiatives are the most important in Spain regarding the visibility of those firms that are family-friendly and Best Places to Work (<http://www.greatplacetowork.es/>). Our study includes the last 30 firms that had been recognized by the CVALORA's award or the EFR certificate in previous years. We did not include more ancient firms to make sure that all firms in our sample were family-friendly at the time of survey. Older firms might have diminished their commitment to family-friendliness from the time they received awards and recognition.

The survey was conducted during the last quarter of 2012 by using a structured questionnaire that was elaborated after a literature review and previously pretested with academicians and professionals to validate content and terminology. The final number of valid questionnaires was 322 from the 30 firms of our sample. The questionnaires were sent directly to employees by their own firms through the Intranet. Given that our sample of firms is limited in number it was decided to have more than one observation per firm. Having more than one observation per firm enables to analyze the individual differences of employees since our study assesses subjective perceptions of work-family interface in a homogeneous context of organizational support towards family-friendliness. The average time taken by employees to fill out the questionnaire was 30 minutes. The response rate was 38% regarding the number of employees that were using or needed to use work-family policies in their firms. **Table 1** shows the main characteristics of the sample. The employees who answered the survey were 90 per cent urbanites and belong to a balanced demographic group between men and women but with family situations of children and elders in care. Thus the employees in our sample are more in need of work-family support than other demographic groups. The average employee's age is 40 years (30 per cent of employees are between 23 and 34 years old, 60 per cent between 35 and 50 years old, and the remaining 10 per cent between 51 and 64 years old). The employee's average work experience in the firm was 10.4 years (30 per cent of surveyed employees had less than 5 years' experience, 35 per cent an experience between 5 and 10 years, and



the remaining 10 per cent between 10 and 41 years). Finally, the employee’s average experience in his/her job was 6.8 years (35 per cent of employees had less than 3 years’ experience, 40 per cent between 3 and 8 years, 15 per cent between 8 and 15 years, and the remaining 10 per cent between 15 and 20 years).

Table 1. **Sample of employees.**

Sex*	55.4% female/44.6% male
Employees with partner*	78.9%
Employees with children*	61.8%
Employees with elder care responsibilities*	28.5%
Age*	40 years
Live in urban area	90%
Years in the firm*	10.4 years
Years in the present position	6.8 years
Sector*	Services 80.1%; Industry 19.9%

Note: *Variable used as a control variable in our model

Table 2 shows the composition of the variables used in the statistical analysis. The variable “*Work-family practices availability*” is a perception variable measure with a 5-items construct adapted fromMatthews et al (2010) and measured in a 7-point Likert scale from 1 “totally disagree” to 7 “totally agree”. These ítems refer to the positive effect on the employees’ lives by accessing and using several work-family practices: flexitime, telework, possibility to reduce the working day, part-time fix contract, intensive working day any time, hours-poolandpersonal or family leaves. The other two variables are “*job satisfaction*” that was measured with the 5 items-construct adapted from Anderson et al. (2002), and “*organizational commitment*” thatwas assessed with the 8 items adapted from Allen and Meyer (1990), all also measured in a 7-point Likert scale. All these variables were checked for reliability, unidimensionality and convergent validity.

Table 2. Composition of variables

DIMENSION	ÍTEMS	DESCRIPTION
Work-family practices availability	Flex1	I am able to arrive and depart from work when I want in order to meet my family and my personal life responsibilities
	Flex2	If the need arose, I could leave work early to attend to family related issues
	Flex3	If something came up in my personal life, it would be all right if I arrived to work late
	Flex4	While at work, I can stop what I am doing to meet responsibilities related to my family and personal life
	Flex5	From a family and personal life standpoint, there is no reason why I cannot rearrange my schedule to meet the demands of my work
Organizational commitment	CO1	I would be very happy to spend the rest of my career with this organization
	CO2	I enjoy discussing my organization with people outside it
	CO3	I really feel as if this organization´s problems are my own
	CO4	I do not think I could easily become as attached to another organization as I am to this one
	CO5	I feel like “part of the family” at my organization
	CO6	I feel emotionally attached to this organization
	CO7	This organization has a great deal of personal meaning for me
	CO8	I feel a strong sense of belonging to my organization
Job satisfaction	SAT1	The work I do on my job is meaningful to me
	SAT2	At the company or organization where I work, I am treated with respect
	SAT3	I feel I am really a part of the group of people I work with
	SAT4	I look forward to being with the people I work with each day
	SAT5	I am very satisfied with the opportunities that I have at work to learn new skillsthat could help me get a better job or find another equally good job if this one doesn't work out

Table 3 shows the correlations between the model variables and their descriptive statistics. In order to analyze the mediator effect of job satisfaction between work-family practices and organizational commitment we follow the methodology proposed by Baron and Kenny (1986) with structural equations. We control for industry and firm size, and for employee´ sex, age, experience and family situation.

Table 3. **Basic statistics of variables: mean, standard deviations and correlations**

VARIABLE	MEAN	DEVIATION	AVAILABILITY	COMMITMENT
W-F practicesavailability	5.05	1.31		
Organizational commitment	5.01	1.46	0.416**	
Job satisfaction	5.93	1.11	0.440**	0.648**

Level of significance **p<0.01

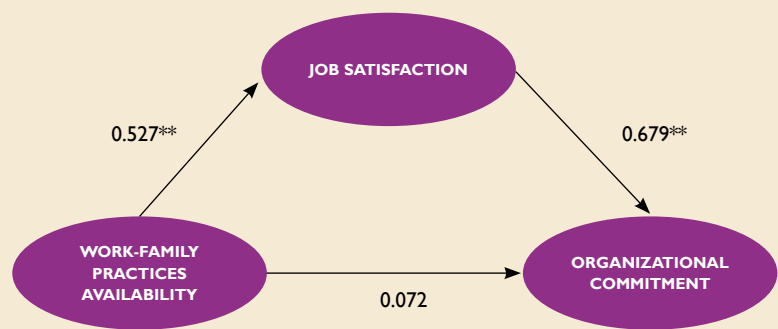
5. RESULTS

Figure 2 shows the results of the mediator model. Previously we checked with three partial models, all statistically significant, that the relationship between work-family practices availability and organizational commitment is positive, that the relationship between job satisfaction and organizational commitment is positive, and that the relationship between work-family practices availability and job satisfaction is also positive. Then we tested the proposed mediator model with all three variables of availability, satisfaction and commitment. Figure 2 indicates that there is a mediator effect which is total and not partial because the relationships between availability and satisfaction and between satisfaction and commitment are statistically significant but there is not a significant relationship between availability and commitment. These results validate our research model which indicates that job satisfaction is a causal mechanism that makes work-family practices influence employees' organizational commitment. The availability of work-family practices may enhance organizational commitment through employees' job satisfaction. The control variables (sector, employee's age, etc.) are not statistically significant which means that the mediator effect is independent of demographic variables.

6. CONCLUSIONS

Our study indicates that job satisfaction may be a mechanism through which the availability of work-family practices translates into a greater organizational commitment. Although employees' organizational commitment is nowadays an important element for

Figure 2. Results of the mediator model



Goodness of fit indicators	Chi-Square= 291.28.d.f= 132. NFI= 0.898.NNFI= 0.932. RMSEA= 0.063. CFI= 0.941. IFI= 0.942.
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Notes.- Level of significance **p<0.01 d.f.= degrees of freedom; χ^2 S-B= Satorra-Bentler scaled chi-squared; RMSEA= Robust root Mean Square Error of Approximation; NFI= Robust Normed Fit Index; CFI= Robust Comparative Fit Index.

the success of human resources management, it is necessary to analyse how commitment is created and how it evolves through the employees' work and family relationships. It is also necessary to clarify what is the influence of these relationships in different areas of human resource management. We have proposed job satisfaction as a potential mechanism that materialises the availability of work-family practices into greater organizational commitment.

The companies which are perceived by employees to be more family-friendly because they are not penalized for adopting work-family practices, could as a consequence retain more key employees as well as, other factors being equal, attract more qualified personnel. This implies that managers should not waste energies when implementing work-family practices, because if the implementation effort is insufficient the employees' job satisfaction would not improve and would not be possible to increase their organizational commitment either.

As a consequence managers should focus efforts in offering work-family practices in a context that is perceived positively by employees. Perhaps it would be a good idea to identify previously those employees with more unfavourable circumstances in order to control their experiences and use them afterwards to develop

a family-friendly policy for the whole organization. Positive antecedents are always very important if the company wants to become an attractive place to work and retain talent because this requires intangibles resources (job satisfaction, etc.) that take a long time to create but are easy to ruin with bad experiences and ambiguous decisions. If intangible resources constitute nowadays the main source of sustainable competitive advantage, satisfied and committed employees may be paradigmatic examples of something more difficult to imitate and replicate.

Therefore, human resources managers and CEOs should implement work-family practices according to all the considerations usually recognised in the literature for successful adoption: open and explicit support by CEOs; training for supervisors and employees in order to avoid limitations and negative externalities for those who use work-family practices; feedback analysis with the observed effects and adopted solutions, etc. More specifically, the questionnaires that assess periodically the employees' job satisfaction and organizational commitment should have to include the employee's specific situation regarding his/her use of work-family practices during that period. These reports will constitute a demonstration effect that will allow evaluating the real impact of work-family practices on organizational commitment and other employees' performance measures. Additionally, it would be necessary to add specific indicators in the company's balance scorecard to control the implementation of strategies in the area of human resources. It would also be required that the visibility of these results reach CEOs' level, as their explicit support is necessary for the real and permanent availability of work-family practices beyond their initial implementation.

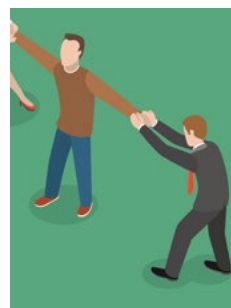
These conclusions and practical recommendations must be assessed taking into account the limits of our research design. This is a cross-sectional study, so that the suggested casual relationship should be validated with another longitudinal study in order to be able to generalise the obtained result. This longitudinal study could also assess if there exists a delayed effect of the use of work-family practices on organizational commitment. Besides improving the research design, it could also be of interest to analyse the company's organizational culture as a moderator variable, since the organizational context is an important factor which conditions the



necessary “informal support” for the implementation of work-family practices without negative consequences for those employees who use them.

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NOTES

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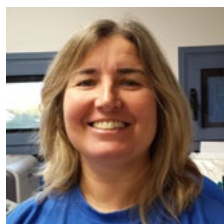




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Medidas de flexibilidad trabajo-familia y compromiso organizativo: el efecto mediador de la satisfacción laboral¹

Work-family practices and organizational commitment: the mediator effect of job satisfaction

1. INTRODUCCIÓN

Un empleado que está satisfecho en su trabajo se siente normalmente más comprometido con su empresa que uno que no lo está. Este resultado que se viene observando con frecuencia en las investigaciones de los últimos años (De Sivatte et al., 2015) plantea a las áreas de recursos humanos la necesidad de como contribuir a dicha satisfacción laboral. Una forma de conseguirlo es facilitando la conciliación laboral y familiar de los empleados. Lo cierto es que desde diversas instancias –gobierno, sindicatos, etc.– se viene demandando hace tiempo la implantación de medidas de flexibilidad (a las que denominaremos medidas trabajo-familia en este artículo) que ayuden a los empleados a compatibilizar sus responsabilidades familiares y profesionales. Asimismo, cada vez más empresas toman iniciativas en este sentido para atraer y retener personal cualificado y con talento. La implantación de medidas trabajo-familia puede ser así beneficiosa tanto para los empleados como para las propias empresas.

Sin embargo, la existencia de estas medidas no es suficiente

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WORK – FAMILY

RESUMEN DEL ARTÍCULO

Este artículo analiza si la satisfacción laboral de los empleados tiene un efecto mediador entre la disponibilidad de medidas trabajo-familia y el compromiso organizativo de los empleados. Los datos del estudio proceden de una muestra de 322 empleados de empresas españolas que han sido galardonadas con el “Premio Empresa Flexible” o están certificadas como “Empresa Familiarmente Responsable” en los últimos años. Los resultados indican que cuando los empleados perciben que disponen realmente de medidas trabajo-familia para conciliar su vida laboral y familiar, están más satisfechos con su trabajo, y dicha satisfacción explica además positivamente su compromiso organizativo.

EXECUTIVE SUMMARY

This article analyzes the mediator effect of job satisfaction in the relationship between the availability of work-family practices and employees' organizational commitment. Empirical data from employees working for family-friendly awarded firms shows that when employees perceive that work-family practices are really available to them, they are more satisfied in their jobs and demonstrate more organizational commitment.

per se ya que el que las empresas las ofrezcan no garantiza necesariamente su uso por parte de los empleados. Algunos estudios señalan que es más importante la percepción que tienen los empleados sobre la disponibilidad de usar este tipo de medidas que su simple existencia (Allen, 2001; Behson, 2005). Los empleados pueden no usar dichas medidas si perciben que van a afectarles negativamente en, por ejemplo, su desarrollo profesional o la estabilidad en el empleo (Dikkers et al., 2007).

La mayoría de los estudios descriptivos apoya la idea de que implantar medidas trabajo-familia más allá de los requerimientos legales, puede contribuir a mejorar la satisfacción laboral de

El objetivo principal de nuestro estudio es por tanto analizar si la satisfacción laboral de los empleados puede mediar y explicar la relación entre la disponibilidad de medidas trabajo-familia y el compromiso organizativo.

los empleados porque dichas medidas reducen las dificultades de conciliación laboral y familiar (Hornung et al., 2008; Selvarajan et al., 2013). La ayuda que reciben los empleados por parte de la empresa para mejorar su conciliación es lo que contribuye a que estos se sientan “en deuda” con la empresa y estén dispuestos a realizar esfuerzos adicionales –por ejemplo con la carga extra de trabajo derivada del desarrollo y lanzamiento de un nuevo producto- o a que valoren más positivamente a la organización donde trabajan. Todo ello en última instancia puede ser un exponente de un mayor grado de compromiso organizativo del empleado con su empresa, debido al efecto beneficioso de las medidas trabajo-familia.

Si bien la literatura de gestión preconiza este efecto, no es concluyente dado que su relación no es directa sino que puede ser indirecta e incluso diferida en el tiempo. Los estudios analizados evidencian que las medidas trabajo-familia están relacionadas positivamente con la satisfacción laboral de los empleados. Con esta base, podríamos plantear que la satisfacción laboral tiene un efecto mediador entre la *disponibilidad de medidas trabajo-familia* y el compromiso organizativo de los empleados. Es este compromiso el que está más relacionado con el desempeño de los empleados, por lo que la constatación del efecto mediador podría explicar mejor por qué la *disponibilidad de medidas trabajo-familia* aumenta el compromiso organizativo de los empleados. Ello permitiría justificar con más argumentos la adopción de estas medidas por parte de las empresas.

El objetivo principal de nuestro estudio es por tanto analizar si la

satisfacción laboral de los empleados puede mediar y explicar la relación entre la *disponibilidad de medidas trabajo-familia* y el compromiso organizativo. Este análisis constituye una aportación novedosa, tanto desde el punto de vista empírico como por la justificación de las medidas trabajo-familia en el seno de las organizaciones, al ofrecer nuevos argumentos que justifiquen su adopción de forma que resulten beneficiosas para ambas partes, empleados y empresas.

El artículo se estructura de la siguiente manera. Los dos próximos apartados justifican la investigación planteada. A continuación se explica la procedencia de los datos y como se han analizado para describir después los resultados obtenidos y las lecciones o conclusiones que pueden extraerse de ellos.

PALABRAS CLAVE

Medidas trabajo-familia; Conciliación laboral y familiar; Satisfacción laboral; Compromiso organizativo.

KEY WORDS

Work-family benefits; Job satisfaction; Organizational commitment.

2. LAS MEDIDAS TRABAJO-FAMILIA Y EL COMPROMISO ORGANIZATIVO

Para poder conciliar mejor su actividad laboral y familiar, los empleados pueden utilizar alguna de las medidas trabajo-familia que les ofrecen las empresas, ya sea por imperativo legal o por una estrategia familiarmente responsable de recursos humanos. Las medidas trabajo-familia “hacen referencia a los servicios que permiten a los empleados dirigir mejor la interconexión entre trabajo y familia” (Thompson et al., 1999, p. 395) como, por ejemplo, el horario flexible o el teletrabajo. Dichas medidas y la forma en que se ofrezcan pueden influir en la percepción de los empleados acerca del apoyo que les presta la empresa para conciliar su vida laboral y familiar.

Nuestro artículo se centra en la *disponibilidad de medidas trabajo-familia*, es decir no tanto en la mera existencia de las mismas sino en que los empleados perciban que pueden utilizarlas sin consecuencias negativas para su desarrollo profesional y estabilidad en el empleo. Por ello, los estudios hacen hincapié en el “apoyo informal” a la conciliación que debe emanar de directivos, supervisores y colegas de los empleados adoptantes de medidas trabajo-familia (Allen, 2001; Behson, 2005; Thompson et al., 1999). Aún reconociendo la importancia del “apoyo informal” para que las medidas trabajo-familia funcionen, nuestro estudio se centra directamente en la disponibilidad de estas medidas, y por este motivo pediremos a los empleados encuestados que nos indiquen



en qué grado tienen realmente acceso al uso de dichas medidas sin que haya consecuencias negativas para su desarrollo profesional y estabilidad en el empleo. El uso de las medidas trabajo-familia puede ayudar a mejorar el absentismo, rotación y, en definitiva, el compromiso organizativo de los empleados con su empresa (De Sivatte y Guadamillas, 2013; De Sivatte et al., 2015; Grover y Crooker, 1995; Thomson et al., 1999). El compromiso organizativo de un empleado puede definirse como “la fuerza relativa a la identificación individual e implicación con una organización en particular, manifestado como el deseo de permanecer en ella, esforzarse en beneficio de ésta y aceptar sus valores y metas” (Betanzos y Paz, 2007). Dicho compromiso es considerado por las empresas como un elemento sustancial para retener a los buenos empleados y produce una mejora de los resultados de las empresas. No obstante, no existen resultados concluyentes en la literatura a este respecto porque algunas evidencias empíricas no encuentran relaciones significativas entre medidas trabajo-familia y compromiso organizativo (Allen, 2001; Behson, 2005).

Un posible argumento para explicar la relación positiva entre medidas trabajo-familia y compromiso organizativo tiene su raíz en la teoría del intercambio social ya que las medidas trabajo-familia pueden mejorar el sentimiento de gratitud del empleado hacia la empresa, correspondiendo con mayor esfuerzo laboral cuando tenga oportunidad de hacerlo, en contraprestación al apoyo recibido por estas medidas (Blau, 1964).

Otro argumento explicativo procede de la teoría de recursos y capacidades (Teece et al., 1997). Dentro de los recursos de una empresa, son los de carácter intangible los mas difíciles de imitar y reproducir por los competidores. A su vez y dentro de los recursos intangibles, la gestión de los recursos humanos es una característica particular e intrínseca de cada empresa. Aunque las medidas trabajo-familia puedan ser a priori las mismas en casi todas partes y alguna de ellas esté incluso tipificada por ley, es la gestión que hace la empresa del conjunto de medidas trabajo-familia lo que puede constituir un recurso intangible. Este intangible puede permitir obtener resultados diferenciados como, por ejemplo, el de un mayor compromiso organizativo en aquellas empresas cuyos empleados estén más satisfechos con las medidas trabajo-familia.

No hemos de olvidar que retener el talento es una variable crítica

de competitividad para muchas empresas, por lo que las estrategias de recursos humanos inciden en mayor o menor grado en todas aquellas medidas que mejoran las condiciones laborales de los empleados (Allen, 2001). En particular, en las sociedades más desarrolladas y en las empresas del conocimiento, se presta cada vez más atención a la interacción de la vida laboral de los empleados con su vida familiar. Dicha interacción puede tener un impacto en la propia empresa, en la medida en que puede condicionar la productividad, absentismo y rotación de los empleados y con ello su compromiso organizativo (Betanzos y Paz, 2007).

3. EL EFECTO MEDIADOR DE LA SATISFACCIÓN LABORAL

Uno de los factores que favorecen el bienestar y la satisfacción laboral de los empleados es el equilibrio entre sus responsabilidades familiares y laborales (Frye y Breaugh, 2004). En este sentido hay estudios empíricos que muestran que los empleados de empresas familiarmente responsables no experimentan dificultades significativas para conciliar su vida laboral y familiar (Allen, 2001; Selvarajan et al., 2013), pero nuestra revisión de la literatura indica también que a pesar de que las medidas trabajo-familia reducen dichas dificultades (Hornung et al., 2008; Griggs et al., 2013; Selvarajan et al., 2013) los resultados no son siempre concluyentes. Algunos autores señalan que compatibilizar múltiples roles laborales y familiares puede también ser positivo en términos de productividad y satisfacción laboral ya que las personas han de aprender nuevas habilidades y mejorar sus capacidades de resolución de problemas, todo lo cual puede reportarles después satisfacción (Boyar y Mosley, 2007). Además, las personas con múltiples responsabilidades pueden asimismo buscar y encontrar apoyo en sus supervisores, colegas y familiares. Una variable que puede funcionar de forma discriminante entre empleados con dificultades de conciliación pero que tienen acceso a medidas trabajo-familia es la satisfacción laboral. No a todos los empleados que tengan dificultades para conciliar les va a afectar de la misma manera en su compromiso organizativo. Habrá quien disminuirá en gran medida su nivel de compromiso, lo que le podría llevar incluso a plantearse dejar la empresa mientras que habrá quien pueda mantener su compromiso gracias a la satisfacción laboral que le dé el acceso a medidas trabajo-familia.



La relación positiva entre la satisfacción laboral y el compromiso organizativo de los empleados ha sido contrastada previamente en varios estudios (Frenkel et al., 2013) pero los que analizan la relación entre medidas trabajo-familia y compromiso organizativo no son concluyentes. Ya hemos aludido con anterioridad a la teoría del intercambio social (Blau, 1964) para justificar que un empleado más satisfecho laboralmente desearía querer expresar su gratitud a la empresa en contraprestación por la ayuda para solventar dificultades de conciliación. Es decir, que un empleado más satisfecho en su trabajo sería un empleado potencialmente más comprometido con su empresa.

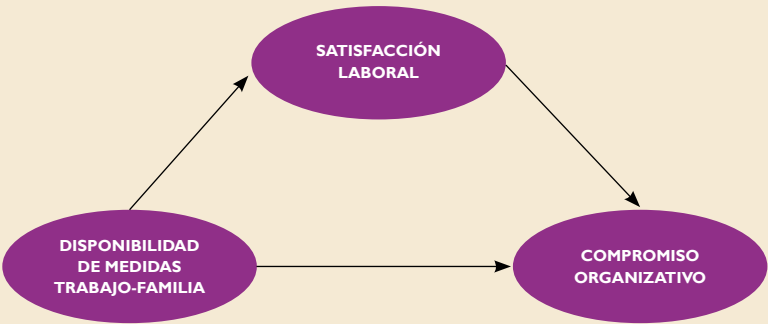
Similarmente, la teoría de recursos y capacidades puede ayudar a justificar el efecto mediador de la satisfacción laboral. Los recursos intangibles son más difíciles de imitar y por tanto constituyen una fuente de ventaja competitiva sostenible. Dos importantes recursos intangibles en el ámbito de los recursos humanos son la satisfacción laboral y el compromiso organizativo de los empleados, y ambos requieren una adecuada gestión de los recursos humanos. Los empleados se sentirán satisfechos en su trabajo si, entre otras condiciones, consideran que la oferta de medidas trabajo-familia de la empresa les ayuda cuando necesiten conciliar su vida laboral y familiar. De no existir esta contraprestación, los empleados pueden incluso sentirse decepcionados con la oferta de medidas trabajo-familia y por tanto reacios a comprometerse con la organización y buscar otro lugar de trabajo que sea más familiarmente responsable. Es decir, la retención del talento (recurso intangible) va unida al efecto intangible de la satisfacción laboral y este a su vez, a una disponibilidad real de medidas trabajo-familia.

Por tanto, sin satisfacción laboral es difícil que haya compromiso organizativo. La oferta de medidas trabajo-familia no garantiza el compromiso de los empleados. Si un empleado se encuentra más satisfecho en el trabajo por poder conciliar mejor gracias a la *disponibilidad de medidas trabajo-familia*, estará más dispuesto a contribuir con esfuerzos adicionales en los momentos necesarios o a aportar ideas y sugerencias de mejora que redunden en beneficio de la empresa porque lo estaría haciendo también en su propio beneficio. La relación positiva entre la *disponibilidad de medidas trabajo-familia* y el compromiso organizativo de los empleados necesitaría entonces de la satisfacción laboral como variable mediadora. Cuando la percepción de *disponibilidad de medidas*



trabajo-familia sea tal que aumente la satisfacción laboral de los empleados, estos podrán sentirse más comprometidos con su empresa pero si la forma en que se ofrecen dichas medidas trabajo-familia en la organización despierta recelos y suspicacias, entonces no debería esperarse un mayor compromiso organizativo de los empleados porque esa oferta de medidas no estará en condiciones de mejorar su satisfacción laboral. En base a estos argumentos nos planteamos analizar el modelo de investigación de la **Figura 1** con los datos que explicamos a continuación.

Figura 1. **Modelo de estudio**



4. DATOS DEL ESTUDIO

Los datos para este estudio proceden de una encuesta enviada a los empleados de la población de empresas españolas que obtuvieron el “Premio Empresa Flexible” organizado por la empresa CVA en el periodo 2002-2013 así como a los de las empresas certificadas como “Empresas Familiarmente Responsables” (EFR). El Premio CValora es una iniciativa de la empresa CVA (<http://www.cvalora.com/>), que comenzó en el año 2002 e intenta detectar y difundir las mejores prácticas flexibles en las empresas, otorgando anualmente el Premio Empresa Flexible. Este premio está valorado en términos del reconocimiento de gestión que avala y que tiene el apoyo de empresas privadas, medios de comunicación, escuelas de negocios y gobiernos autonómicos en España. Por su parte, la iniciativa EFR fue desarrollada por la Fundación Más Familia (<http://www.masfamilia.org/>) y ha sido reconocida como Buena Práctica por las Naciones Unidas. El certificado EFR que otorga



esta fundación española responde a una nueva cultura laboral y sociológica flexible, respeto mutuo, apoyo a la igualdad de oportunidades y compromiso respecto a la conciliación laboral y familiar. En la actualidad la Fundación Más Familia es la propietaria del esquema privado de certificación EFR, único en conciliación en España. Ambas entidades son referentes en España respecto a la visibilidad de aquellas empresas que se esfuerzan en crear un lugar de trabajo familiarmente responsable y se les ha asignado la misma importancia. Por ese motivo, nuestro estudio se ha dirigido hacia las últimas 30 empresas que habían sido reconocidas, previamente al envío de cuestionarios, por el Premio CValora o el certificado EFR con el fin de asegurarnos que en todas ellas existía un ambiente de trabajo familiarmente responsable. No se ha incluido en la población de estudio a empresas más antiguas por no tener la constatación asegurada de que el ambiente de trabajo no hubiera experimentado algún tipo de deterioro en lo familiarmente responsable.

La recopilación de datos se realizó durante el último cuatrimestre de 2012 utilizando un cuestionario estructurado que se elaboró tras una revisión de la literatura especializada y que fue testado, antes del envío definitivo, por académicos y profesionales para validar su contenido y terminología. El número final de cuestionarios válidos que se recibieron fue de 322 empleados que pertenecían a las 30 empresas objeto de estudio. Los cuestionarios fueron remitidos directamente por la empresa a sus empleados a través de la Intranet de la empresa. Dado que el número de empresas al que se dirige nuestro estudio es limitado, por la razón anteriormente apuntada, se optó por no limitar a una observación por empresa la cumplimentación del cuestionario. Disponer de observaciones múltiples de una misma empresa permite valorar la influencia de las diferencias personales de cada empleado puesto que se están valorando percepciones subjetivas sobre la conciliación y el efecto de las medidas trabajo-familia pero manteniendo controlado el efecto de la empresa o sector en el que se encuentra. El tiempo promedio utilizado por los empleados para responder al cuestionario fue de 30 minutos. La tasa de respuesta del estudio fue del 38% respecto a las personas que habían utilizado o estaban en situación de poder necesitar medidas trabajo-familia para conciliar. La **Tabla 1** muestra las principales características de la muestra. Las personas que respondieron la encuesta son urbanitas en un 90% de los casos y pertenecen mayoritariamente a un grupo demográfico equilibrado

entre hombres y mujeres, pero con predominio de situaciones familiares con niños e incluso personas mayores a su cuidado, todo lo cual plantea más necesidades de conciliación que a otros grupos demográficos. La media de edad es de 40 años (un 30% de empleados tenían entre 23 y 34 años, un 60% entre 35 y 50 años, y el 10% restante entre 51 y 64 años). La antigüedad laboral en la empresa de los empleados encuestados era en promedio de 10,4 años (un 30% tenía una antigüedad inferior a 5 años, un 35% entre 5 y 10 años, un 15% entre 10 y 15 años, y el 10% restante entre 15 y 41 años). Por último, la antigüedad promedio en su actual puesto de trabajo era de 6,8 años (un 35% de los empleados tenía una antigüedad en el puesto inferior a 3 años, un 40% de 3 a 8 años, un 15% de 8 a 15 años, y el 10% restante de 15 a 20 años).

Tabla 1. **Características de la muestra de empleados**

Sexo*	55,4% mujeres/44,6% hombres
Empleados con pareja*	78,9%
Empleados con niños*	61,8%
Empleados con personas mayores a su cuidado*	28,5%
Edad*	40 años
Viven en área urbana	90%
Años en la empresa*	10,4 años
Años en el puesto actual	6,8 años
Sector donde trabajan*	Servicios 80,1%; Industria 19,9%

Nota: *Variable utilizada como control en el modelo

La composición de las variables del modelo de estudio se presenta en la **tabla 2**. La variable “*Disponibilidad de medidas trabajo-familia*” es una variable de percepción que se ha medido con un constructo de 5 ítems adaptado de Matthews et al (2010) y valorado en una escala Likert de 7 puntos de 1 “totalmente en desacuerdo” a 7 “totalmente de acuerdo”. Los ítems del constructo hacen referencia al efecto positivo que en las vidas de los empleados tiene el acceso y uso de un conjunto de medidas trabajo-familia: horario flexible, teletrabajo, reducción de jornada, tiempo parcial, jornada intensiva, anualización de horas y permisos. Las otras dos variables del modelo son la de “satisfacción laboral” que se midió con un

constructo de 5 ítems adaptado de Anderson et al. (2002) y la de “*compromiso organizativo*”, medida con un constructo de 8 ítems adaptado de Allen y Meyer (1990). Para todas estas variables se comprobó la fiabilidad, unidimensionalidad y validez interna de las respectivas escalas.

Tabla 2. Ítems de las principales variables del estudio

DIMENSIÓN	ÍTEM	DESCRIPCIÓN
Disponibilidad de medidas trabajo-familia	Flex1	Tengo la posibilidad de llegar y salir del trabajo cuando quiero para poder cumplir con mis responsabilidades personales y familiares
	Flex2	Si se presenta una necesidad, podría dejar el trabajo antes para atender cuestiones relacionadas con la familia
	Flex3	Si algo surge en mi vida personal, no habría problema si llegase tarde al trabajo
	Flex4	Cuando estoy en el trabajo, puedo parar lo que estoy haciendo para atender a responsabilidades relacionadas con mi vida personal y familiar
	Flex5	Desde el punto de vista de la vida personal y familiar, no hay razón por la que no pueda reorganizar mi horario para atender las demandas de mi trabajo
Compromiso organizativo	CO1	Sería muy feliz de pasar el resto de mi carrera en esta empresa
	CO2	Disfruto hablando de mi empresa con personas de fuera de ella
	CO3	Siento realmente que los problemas de esta empresa son como si fueran míos
	CO4	No me resultaría tan fácil comprometerme con otra empresa como con ésta
	CO5	Me siento como “parte de una familia” en mi empresa
	CO6	Me siento emocionalmente unido a esta empresa
	CO7	Esta empresa tiene un gran significado personal para mí
	CO8	Tengo un fuerte sentido de pertenencia a mi empresa
Satisfacción laboral	SAT1	El trabajo que hago en mi empresa tiene sentido para mí
	SAT2	En la empresa donde trabajo me tratan con respeto
	SAT3	Siento que formo realmente parte del grupo de personas con las que trabajo
	SAT4	Me siento con ganas de estar con la gente con que trabajo cada día
	SAT5	Estoy muy satisfecho con las oportunidades que tengo en mi trabajo para aprender nuevas habilidades que me puedan ayudar a mejorar en el trabajo o conseguir otro en caso necesario

En la **tabla 3** se presentan las correlaciones entre las variables del modelo así como sus estadísticas descriptivas. Para el contraste específico del efecto mediador de la satisfacción laboral entre

la disponibilidad de medidas trabajo-familia y el compromiso organizativo se ha seguido la metodología propuesta por Baron y Kenny (1986) con un análisis de ecuaciones estructurales. Se han utilizado como variables de control el sector y tamaño de la empresa y el sexo, edad, experiencia y situación familiar del empleado.

Tabla 3. Estadísticas básicas de las variables: media, desviación típica y correlaciones

VARIABLE	MEDIA	DESVIACIÓN	DISPONIBILIDAD	COMPROMISO
Disponibilidad de medidas	5.05	1.31		
Compromiso organizativo	5.01	1.46	0.416**	
Satisfacción laboral	5.93	1.11	0.440**	0.648**

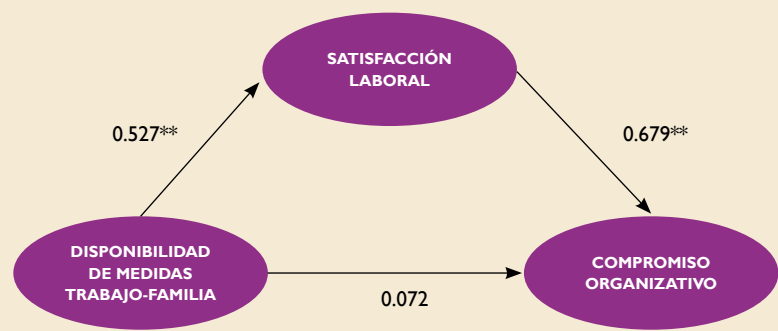
Grado de significación **p<0,01

5. RESULTADOS

La **figura 2** presenta los resultados del modelo mediador. Previamente se ha comprobado en tres modelos parciales, todos significativos, que la relación entre disponibilidad de medidas y compromiso organizativo es positiva, que la relación entre satisfacción laboral y compromiso organizativo es positiva, y que la relación entre la disponibilidad de medidas y la satisfacción laboral también es positiva. Con estas comprobaciones, podemos ahora constatar la viabilidad del modelo propuesto con las 3 variables de disponibilidad, satisfacción y compromiso. Los datos de la **figura 2** indican que el efecto de mediación existe y que es además total y no parcial porque las relaciones entre disponibilidad de medidas y satisfacción laboral y entre satisfacción laboral y compromiso organizativo son estadísticamente significativas pero no lo es ahora la relación entre disponibilidad de medidas y compromiso organizativo en este modelo conjunto. Todo ello valida nuestro modelo de investigación, indicando por tanto que la satisfacción laboral representa un mecanismo causal a través de la cual la disponibilidad de medidas puede influir en el compromiso organizativo de los empleados. La disponibilidad de medidas puede mejorar el compromiso organizativo apoyándose en la satisfacción laboral de los empleados. Las variables de control (sector, edad,

etc.) no han resultado significativas lo que indica que el efecto mediador y las otras relaciones son independientes de las variables demográficas del estudio.

Figura 2. Resultados del modelo mediador.



Índices de ajuste	Chi-Square= 291,28, d.f= 132, NFI= 0,898, NNFI= 0,932, RMSEA= 0,063, CFI= 0,941, IFI= 0,942.
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Notas.- Grado de significación **p<0,01 d.f.= grados de libertad; χ^2
S-B= Satorra-Bentler scaled chi-squared; RMSEA= Robust root Mean Square Error of Approximation; NFI= Robust Normed Fit Index; CFI= Robust Comparative Fit Index.

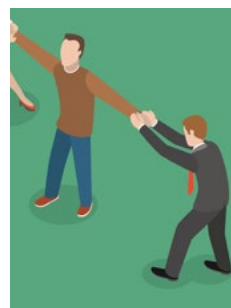
6. CONCLUSIONES

Nuestro estudio ha evidenciado que la satisfacción laboral puede ser un mecanismo a través del cual la disponibilidad de medidas trabajo-familia se traduce en un mayor compromiso organizativo de los empleados. A pesar de que el compromiso organizativo es actualmente un elemento importante en muchas organizaciones para el éxito de su gestión de recursos humanos, es necesario analizar cómo se crea y evoluciona a través de las relaciones laborales y familiares de los empleados. También es preciso aclarar cuál es la influencia de estas relaciones en diferentes aspectos de la gestión de recursos humanos. En nuestro trabajo hemos propuesto a la satisfacción laboral como un potencial mecanismo que materializa la disponibilidad de medidas trabajo-familia en mayores compromisos organizativos.

Las empresas que son percibidas por los empleados como más familiarmente responsables porque es allí donde no va a penalizarse la adopción de medidas trabajo-familia, podrán en consecuencia retener mejor a sus empleados clave así como, a igualdad de otros factores, atraer personal cualificado por encima de la competencia. Ello implica que no se deben desperdiciar esfuerzos al implantar medidas trabajo-familia pues si se quedan cortas y no consiguen mejorar la satisfacción laboral de los empleados, tampoco se logrará que aumente su compromiso organizativo dentro de la empresa.

La prioridad ha de ir dirigida en consecuencia a ofrecer las medidas trabajo-familia en un contexto que sea percibido de forma favorable por los empleados. Quizás sería una buena idea poder identificar con antelación a aquellos empleados con unas circunstancias más desfavorables con el fin de que sean objeto de prueba más controlada y cuya experiencia pueda servir con posterioridad para asentar las bases de políticas familiarmente responsables que se amplíen al conjunto de la organización. Los precedentes son muy importantes si la empresa aspira a convertirse en un lugar atractivo para trabajar y retener talento pues estamos hablando en última instancia de elementos todos ellos intangibles (satisfacción laboral, etc.) que cuesta mucho crear pero es mucho más fácil arruinar con malas experiencias y decisiones ambiguas. Si los recursos intangibles constituyen actualmente la fuente principal de ventaja competitiva sostenible para muchas empresas, unos recursos humanos satisfechos y comprometidos con su organización pueden ser ejemplos paradigmáticos de algo más difícil de imitar y reproducir.

Por tanto, los directivos de recursos humanos y la alta dirección de las empresas han de implantar las medidas trabajo-familia con todas las consideraciones reconocidas habitualmente en la literatura: apoyo abierto y explícito de la alta dirección, sesiones de formación para supervisores y empleados que eviten limitaciones y externalidades negativas para quienes utilicen las medidas trabajo-familia, análisis de realimentación con las incidencias observadas y las soluciones adoptadas, etc. Más en concreto, los cuestionarios de evaluación de la satisfacción laboral y compromiso organizativo que se estén realizando periódicamente en la empresa, ya sea anual o trimestralmente, habrán de incluir la situación específica del empleado en cuanto al uso que ha hecho de las medidas trabajo-





familia en el periodo considerado. Estos informes constituirán un efecto demostración que permitirá valorar el efecto real de las medidas trabajo-familia sobre el compromiso organizativo y otros resultados del trabajo de los empleados. Asimismo, sería necesario que se incorporarán indicadores específicos en el cuadro de indicadores (tipo cuadro de mando integral) que utilizan las empresas en sus reuniones directivas para controlar la implementación de estrategias dentro del capítulo de recursos humanos. La visibilidad de estos resultados es preciso que llegue también a nivel de la alta dirección puesto que su apoyo explícito y manifiesto es necesario para que la disponibilidad de medidas trabajo-familia sea real y continúe siéndolo en el futuro y no solo tras su implantación.

Todas estas conclusiones y lecciones o recomendaciones deben valorarse en todo caso a la luz de las limitaciones del diseño de investigación. Así nuestro estudio es de corte transversal por lo que la relación causal sugerida debiera validarse con otro estudio de corte longitudinal para poder generalizar el resultado obtenido. Dicho estudio longitudinal también podría valorar si existe un efecto diferido del uso de medidas trabajo-familia sobre el compromiso organizativo. Aparte de mejorar el diseño de investigación, también podría ser de interés el analizar la cultura organizativa como variable moderadora pues el contexto organizativo es un factor importante que condiciona el “apoyo informal” necesario para que la implantación de medidas trabajo-familia no sea perjudicial para los empleados que las utilizan.

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NOTAS

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Environmental management of the tourist accommodation industry and sustainable governance in a protected area¹

Gestión medioambiental de la industria de
alojamiento turístico y gobernanza sostenible
en un área protegida

I. INTRODUCTION

Sustainability is a pillar for tourism competitiveness, particularly in destinations whose natural heritage is protected, such as Biosphere Reserves (Saeidi *et al.*, 2015; Wilson *et al.*, 2009). The role of the tourist accommodation providers is critical in this respect. In addition to the direct environmental impact of the volume of business, the close, direct relationship with the customer is a decisive factor in the tourists' experience of the destination. Therefore, in a sustainable governance model, profitability needs to be reconciled with the preservation of the basic support of the business, which is the natural and socio-cultural environment (Bagur-Femenías *et al.*, 2015).

From this perspective, the present study aims to perform an exploratory analysis on the scope of the environmental protection policies of the accommodation sector in a mass tourism destination classified as a protected area (Biosphere Reserve), identifying the reasons which motivate that environmental behaviour (particularly, the relevance of economic and market incentives) and main obstacles faced. Moreover, we aim to assess the extent to which such environmental management is aligned and coordinated with the governance policies of the



EXECUTIVE SUMMARY

The environmental management of the hotel industry related to the governance of a mass tourist destination under the particular conditions of the protected area consideration (Biosphere Reserve) is analysed. The empirical study is performed with a sample of 94 tourist accommodation establishments in Fuerteventura (Canary Islands – Spain) and determines the scope of the environmental protection measures, the motivating factors and barriers. Differences between hotel and non-hotel establishments are identified so that a better delimitation of a sustainable governance model based on public-private coordination can be formulated.

RESUMEN DEL ARTÍCULO

Se analiza la gestión medioambiental de la industria hotelera y su relación con la gobernanza de un destino de masas condicionado por su consideración de área protegida (Reserva de la Biosfera). Para una muestra de 94 establecimientos de Fuerteventura (España) se determina el nivel alcanzado por su protección medioambiental, los factores impulsores y obstaculizadores. También se identifican las diferencias entre oferta hotelera y extra-hotelera, contribuyendo a la delimitación de un modelo de gobernanza turística sostenible basado en la coordinación público-privada.

destination, particularly those derived from its status as a Biosphere Reserve. Finally, we intend to contrast whether, in the aspects analysed, there are significant differences between hotels and non-hotels (tourist apartments).

With these objectives this study aims to contribute to the following gaps delimited in the literature, as well as to respond to knowledge needs in the managerial and institutional scope.

Research developing frameworks to evaluate ‘good’ protected areas governance is growing, and now the challenge is to measure the effectiveness of that protected area governance (Kisingo *et al.*, 2016). Additionally, interest in social and environmental responsibility

as an approach to tourism governance and management is nevertheless growing (Coles *et al.*, 2013). So, we want to contribute to a developing research topic which needs empirical advances (Erkus – Öztürk & Eraydin, 2010). Likewise, Jamal & Stronza (2009) emphasize the need to explore the scope of collaborations to get the challenge of sustainability in a protected tourist destination, that means, how the tourism system fits with the protected area system.

The inclusion of Fuerteventura in the World Network of Biosphere Reserves in 2009 implies the commitment of local institutions to promote a balanced relationship between conservation and development, favouring the participation of diverse sectors. That justifies the need to analyse the link between firms’ environmental management and governance policies in this special protected touristic area.

On the other hand, the majority of studies have focused on the industrial sector, however, there exist significant differences in the nature of environmental management depending on the sector and its level of orientation to the client (Armas-Cruz, 2011). According to Coles *et al.* (2013), additional research in travel and tourism is needed and we aim to contribute in this way.

With respect to motivations to environmental behaviour, prior literature suggests that, in general terms, small and medium sized enterprises (SMEs) does not strategically orientate their environmental management to the achievement of competitive advantages and, in their majority, limit themselves to compliance with legal requirements and those of their principal stakeholders (Brammer *et al.*, 2012). However, Murillo-Luna *et al.* (2008) contrast that firms located in a protected natural space demonstrate a more proactive attitude,

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influenced by a more demanding environmental standard. Thus, we try to contribute with an empirical study applied in a sample of accommodation establishments, mainly small and medium sized, located in a Biosphere Reserve. In the same way, the barriers that limit the environmental performance in that conditions are also analysed. Finally, another novel contribution of this study is to determine if there are differences due to the characteristics of each type of offer (hotel vs. non-hotel), which constitutes an important gap in previous literature. Font *et al.* (2016) conclude that the level of sustainable proactivity of tourism companies located in protected areas and their motivations are not homogeneous within the tourism sector, although these authors focus their attention on the differences explained by the firm's size. Therefore, this paper raises the objective of evaluate if the type of accommodation implies significant differences in its environmental performance.

The paper starts by analysing conceptually the link between governance and sustainability of the tourism system and, particularly, the relevance of environmental protection for the competitiveness and long-term survival of the hotel sector. Secondly, the empirical study analyses the situation in the hotel and non-hotel sector of Fuerteventura, (Canary Islands – Spain) one of the most important tourist destinations in Spain, included in the World Network of Biosphere Reserves in 2009. Finally, conclusions drawn from the quantitative analysis are presented, as well as the limitations and future lines of research.

2. GOVERNANCE, SUSTAINABILITY AND COMPETITIVENESS IN THE HOTEL SECTOR

The tourism system involves multi-conditioned processes that interact in a network with other socioeconomic and environmental systems, determined unequally by the interests of its public and private actors. From this systemic approach, governance is indispensable for the development of tourism and territorial policies as it incorporates the representation of diverse agents by developing relationships of integration and interdependence (Santana, 2009).

Specifically, in sustainable tourism management models, governance significantly improves decision-making helping to preserve natural and cultural values without undermining tourism business competitiveness. So, coordination with the public administration in the exercise of the socio-environmental responsibility of tourism

KEY WORDS

Tourist governance, environmental management, Biosphere Reserve, hotel and non-hotel tourist accommodation.

PALABRAS CLAVE

Gobernanza turística; gestión medioambiental; Reserva de la Biosfera; alojamientos hoteleros y extra-hoteleros.

companies contributes to the improvement of the competitiveness of this sector in a globalized environment (Álvarez-González & González-Morales, 2008).

On the other hand, protected areas make novel demands on governance institutions and policy, across the diversity of ownership and responsibility arrangements (Lockwood, 2010). That 'good' governance is essential to the effective delivery of protected area benefits (Kisingo *et al.*, 2016). The quality of that environmental governance policy outputs increases with increasing intensity of local participation and the dialogue to stakeholders, which favors network building (Kochskämper *et al.*, 2016).

In the case of protected tourist areas, Wilson *et al.* (2009) speak of a 'new management paradigm' in which close collaboration is required in the working relationships, where the managers of these protected areas must identify and incorporate the particular interests of each of the agents involved. This perspective provides a heuristic framework for the analysis of the systems to be governed, institutional arrangements and principles and values in use. In this respect, there is little information in the literature addressing these cooperative relationships, especially with tour operators, what the authors call public-private partnerships (PPPs).

Definitely, collaborative and associative forms of governance among tourism companies and other related agents are growing in importance in the drive for sustainable and environmentally sensitive tourism (Erkus – Öztürk & Eraydin, 2010).

This adds a further justification to the interest and relevance of this study applied in a Biosphere Reserve, which implies to test sustainable development methods at the regional level. Thus, 'regulatory' and 'community' stakeholders (Murillo-Luna *et al.*, 2008) favour the greater business involvement in that global commitment to a sustainable development model in this protected touristic areas.

Most references in the literature affirm that minimizing environmental impact and designing products of ecological quality can be powerful differentiation and value creation tools (Armas-Cruz, 2011; Saeidi *et al.*, 2015), as well as a means to achieve greater efficiency in the production ('Eco-efficiency'). From this perspective, hotel companies, facing a dynamic and competitive future, must incorporate the environment into their strategic planning, furthermore, the increasing pressure of stakeholders (legislation, lobbyists, clients, etc.) forces the accommodation sector to adapt to, and even anticipate, these

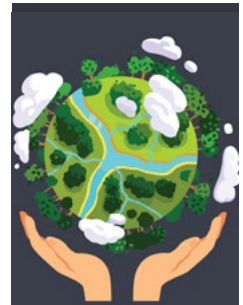


new conditions to guarantee their survival. Thus, arguments about the impact of the environment on business competitiveness point to the desirability of prevention versus control. Proactive strategies are the most appropriate for converting environmental challenges into opportunities that can generate competitive advantages for the hotel (López-Gamero *et al.*, 2011; López-Gamero & Molina-Azorín, 2016). However, the effective implementation of their social and environmental responsibility places important constraints on the companies, such as implementation costs, difficulties in dialogue with the community, motivation of managers and employees and the availability of economic, human and time resources (Huimin & Ryan, 2011; López-Gamero *et al.*, 2011). Besides which, in the particular case of the hotel sector, there is the need for managers to manage and reconcile certain tensions that still remain between the commercial and philanthropic activities of the company. In order to achieve this, it is essential to consider not only the legal and ethical perspectives of the company's socio-environmental responsibility, but also the moral perspective, which will facilitate improvements in medium and long term profitability (García & Armas, 2007; Henderson, 2007).

Environmental performance in the hotel company can influence the two main sources of competitive advantage: cost leadership and product or company differentiation, as well as through the improvement of the quality of the service. Several empirical studies show that, in the environmental protection of hotel establishments, there is a predominance of actions directly related to the reduction of costs (saving energy, water, etc.), since they can mean significant increases in profitability in the short term (Manganari *et al.*, 2016; Molina-Azorín *et al.*, 2015).

As far as the market is concerned, it increasingly values a respectful attitude towards the environment, reflecting the strong social concern for its conservation. This assessment is made either directly by consumers requesting products and services respecting the environment (Bagur-Femenías *et al.*, 2015), or indirectly through different intermediaries (mainly tour operators and travel agencies), environmental groups, shareholders, etc. (Armas-Cruz, 2011; García & Armas, 2007; López-Gamero *et al.*, 2011).

After highlighting business opportunities that the sector is exploring regarding its environmental challenges, a useful contribution would be to analyse how this is being achieved in a mass destination subject to the restrictions applying to the protection of its environment. This



is the previous step to diagnose the coherence of the destination's collaborative governance in terms of sustainability.

With respect to motivations and barriers behind corporate environmental behavior, in relation to protected areas governance, firstly it is necessary to consider the influence of public administration. Lawrence *et al.* (2006) findings indicate that government pressure to establish environmental protection practices is less than would be thought and a greater institutional involvement in the role of stimulator of corporate environmental practices, favouring also the configuration of networks is needed. However, other empirical references obtain that the principal stimulus for the progressive inclusion of environmental preoccupation in the management of SMEs is compliance with legislation, followed by the pressure of stakeholders like supply chain pressure Hofmann *et al.* (2012)

These different results in empirical studies suggests to us that the motivation of environmental commitment, and the pressure perceived in favour of it, are aspects which may depend on the sector of activity and the geographical and institutional ambit in question, which justifies the interest in examining this subject further. From this point of view, the present study evaluates not only regulatory motivations and pressure from stakeholders (suppliers, clients, the administration, etc.), but also economic motives (cost saving), market reasons (differentiation, attracting new market segments, etc.) and ethical commitment of the company itself.

On the other hand, the literature is in broad agreement when identifying the principal barriers faced by SMEs in adopting environmental protection practices. Firstly is the lack of resources and experience and strategic knowledge for the environmental management. To this must be added the perception of the firm of the slight impact which it individually causes, the lack of adequate information about the benefits of environmental management, such as competitive advantages, and the lack of institutional support, of workers, clients and/or suppliers (Brammer *et al.*, 2012; Lawrence *et al.*, 2006). Thus, this study aims to determine the most pressing needs for the strengthening of the environmental implication of the accommodation sector in the context of Biosphere Reserve and as a result, should become a starting point for the definition of public policies and for the strategic and operative re-planning of management.



3. THE CASE OF THE ACCOMMODATION SECTOR IN FUERTEVENTURA BIOSPHERE RESERVE

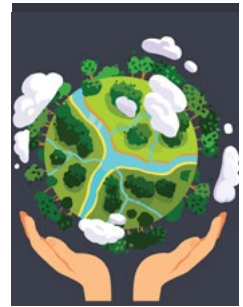
The Canary Islands is one of the most important destinations in Spain, which was ranked third in the world for international tourist arrivals in 2015³, and Fuerteventura hosted 15.79% of these 13,301,251 tourists who mainly choose Fuerteventura⁴ for its climate and beaches. Therefore, the bond with the physical environment and the landscape of Fuerteventura's tourism offer is particularly close. This offer is made up of 43,981 hotel beds and 17,423 non-hotel beds, with a predominance of high categories (four stars or more) in the hotel sector and lower categories (three stars or less) in the non-hotel sector.

Based on institutional sources, a list of all hotel and non-hotel accommodation in Fuerteventura was drawn up and this was the population under study, with 130 establishments, of which 51.5% are hotels.

The information was collected with a questionnaire sent electronically to the managers and completed in the first quarter of 2015. The resulting sample was 94 establishments (72.3% of the total), classified by type of accommodation (49 hotels and 45 non-hotel), with a confidence level of 95% and a sampling error of +/- 5.34%.

The questionnaire was designed by adapting previous models (Armas-Cruz, 2011; Bos-Brouwers, 2010; Brammer *et al.*, 2012; Oreja-Rodríguez & Armas-Cruz, 2012) to the specificities of this study. It included questions⁵ about the environmental management practices applied by tourist accommodation establishments, the reasons for integrating these practices as well as the difficulties faced in their application. The questionnaire also evaluated the interrelationship of the environmental policies of these companies with those developed by the reference institutions in the sustainable governance of the destination.

A Likert scale is used to code the answers, where 1 is the lowest value of the analysed characteristic and 5 is the highest. Cronbach's Alpha coefficient guarantees the internal consistency of the scale ('environmental protection measures': 0.873, 'motivations': 0.921, 'difficulties': 0.843). Statistical analysis of the data was performed with SPSS-19.



3.1. Applied environmental management

Figure 1 shows the mean level of application of these environmental protection activities, distinguishing between hotel and non-hotel and indicating the rank of each of the environmental protection practices 'based on the size of the factor's mean rating relative to the size of the other averages' (Brammer et al., 2012, p. 428).

Compliance with legislation (P3.8) and reduction in the use of hazardous substances and/or pollutants (P3.5) are the activities with the best results. Widening their environmental marketing actions (P3.11) and developing integrated management systems according to reference standards like ISO 14000 or EMAS (P3.2) are the areas where respondents have made the least progress so far.

3.2. Motivating factors and barriers

Figures 2 and 3 show the statistics of the 'motivations' and 'difficulties' for the practice of their socio-environmental responsibility, respectively.

In the first case, hotel and non-hotel establishments coincide in reporting variables P4.13 and P4.3 as the most relevant motivating factors, and P4.10 as the least important. The ability to attract financial resources (P4.1) and social pressure (P4.12) have a low level of importance for both types of establishments. Finally, because of their particular relationship with the destination's governance, managers say that public incentives (subsidies, tax benefits, etc.) to compensate for the economic effort involved in environmental protection are insufficient to foster the commitment of these companies (P4.4).

As regards barriers, there is a consensus on placing scarcity of financial resources (P5.2) in first place and items P5.6, P5.7 and P5.8 in the bottom places in terms of their importance, referring to the lack of commitment on the part of the main influential external agents in the management of the company.

In addition, the Spearman's Rho coefficient (**table 1**) determines the correlation between the motivations and difficulties for environmental management and the level reached in the environmental management, measured by the continuous variable P3, obtained by Factor Analysis (extraction method: Principal Component Analysis) by the reduction to one factor of the 11 items indicative of the environmental protection practices applied by the accommodations (P3.1 – P3.11).



Figure 1. Descriptive statistics of environmental management actions

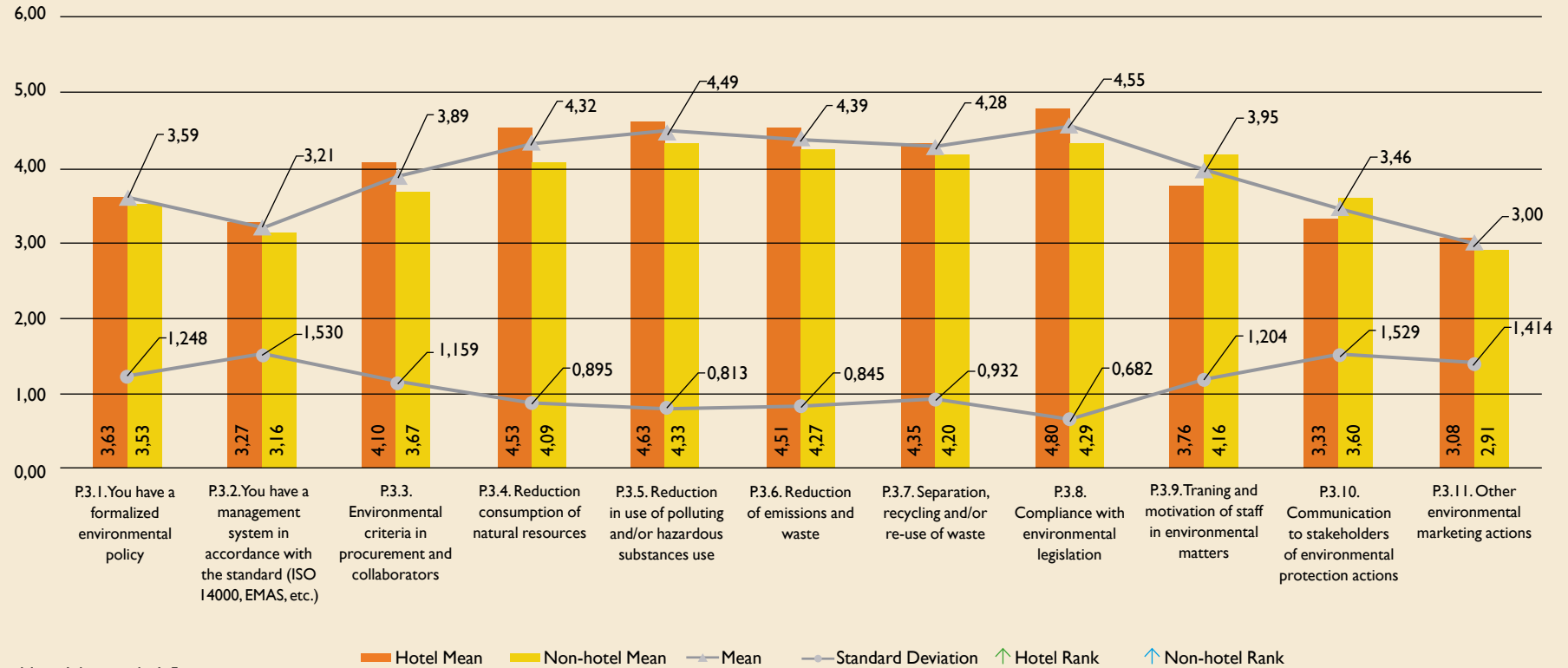


Figure 2. Descriptive statistics of the motivations

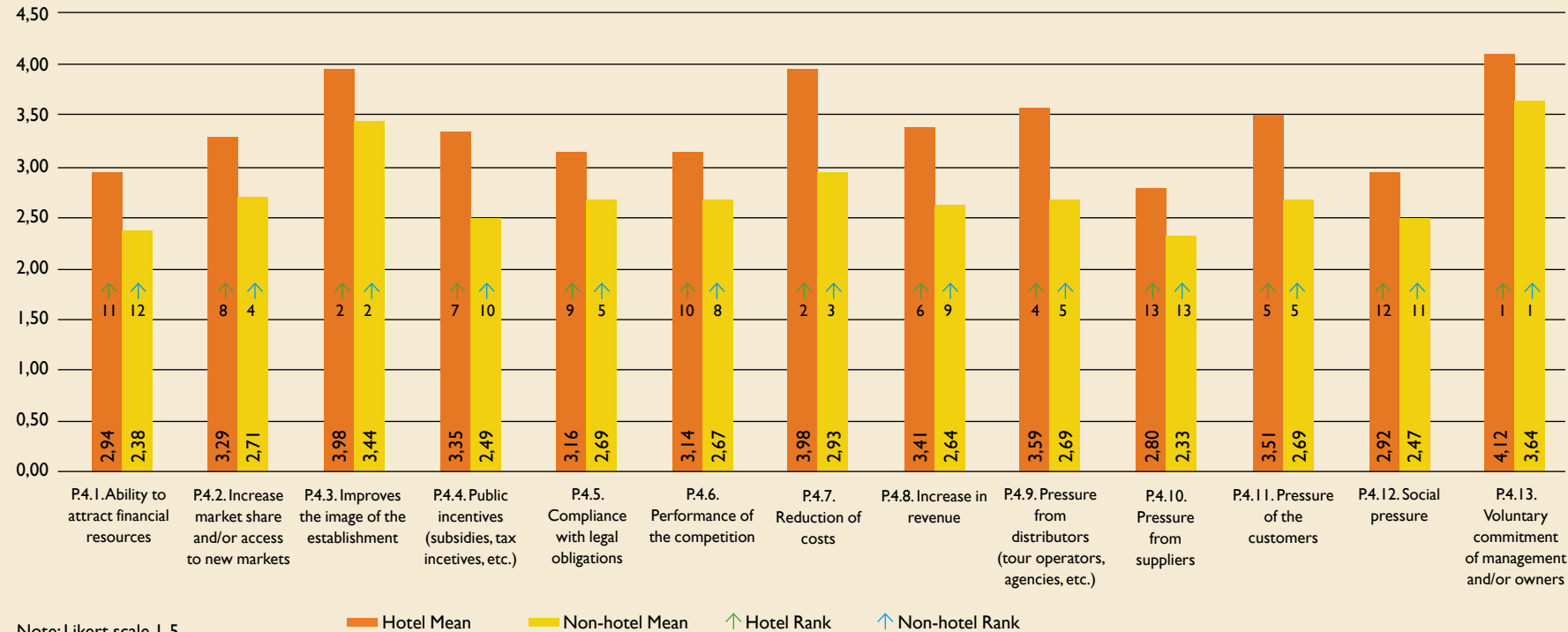
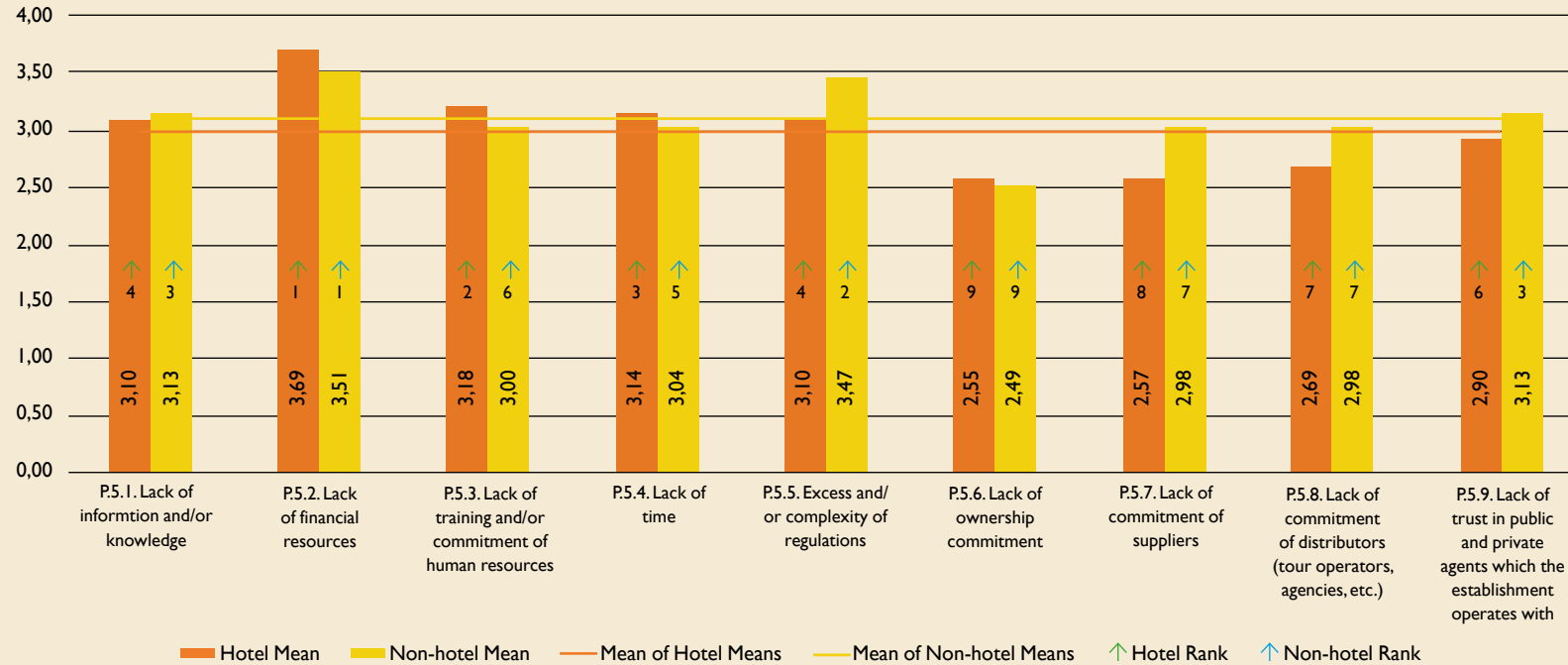


Figure 3. Descriptive statistics of the difficulties



Note: Likert scale 1-5

For comparative purposes, it is particularly interesting the co-variation analysis in the case of those incentives and barriers that managers consider less important (P4.1, P4.10 and P5.6), in case, contrary to the managers' perception, they present a behavioural pattern correlated with the improvement of environmental management. The correlations between P3 and those incentives and barriers that managers consider more and less important (except P4.10 'Pressure from suppliers' and P5.6. 'Lack of ownership commitment') are significant. In all cases the correlation is positive or direct and the intensity of the relationship is mostly moderate or low (except the motivations P4.3 'Improves the image of the establishment', and P4.13 'Voluntary commitment of management and/or owners', highly correlated with P3). Additionally, the positive correlation (low intensity) of the level of environmental management of the establishments (P3) with their motivations P4.2, P4.5, P4.6, P4.8 and P4.9 has also been significant. It should be noted that the correlation of P3 with the barriers is significant only in the case of P5.2. 'Lack of financial resources'. According to the previous literature (Armas-Cruz, 2011, Brammer *et al.*, 2012, Lawrence *et al.*, 2006), the positive relationship between both variables could be explained because SMEs suffer greater pressure of this financial barrier and this favors, as can be seen in the present results (**figure 1**), that these companies prioritize those environmental protection actions aimed at saving costs and relegate those practices that require greater investment of resources.

Table I. **Correlation analysis. Spearman's Rho**

VARIABLES		CORRELATION COEFFICIENT	SIG. (2-TAILED)
P3	P4.1. Ability to attract financial resources	.528	.000***
P3	P4.2. Increase market share and/or access to new markets	.611	.000***
P3	P4.3. Improves the image of the establishment	.604	.000***
P3	P4.4. Public incentives (subsidies, tax incentives, etc.)	.107	.306
P3	P4.5. Compliance with legal obligations	.223	.031**
P3	P4.6. Performance of the competition	.281	.006***
P3	P4.7. Reduction of costs	.149	.151
P3	P4.8. Increase in revenue	.224	.030**

P3	P4.9. Pressure from distributors (tour operators, agencies, etc.)	.280	.006***
P3	P4.10. Pressure from suppliers	.195	.059
P3	P4.11. Pressure of the customers	.100	.338
P3	P4.12. Social pressure	.176	.090
P3	P4.13. Voluntary commitment of management and/or owners	.483	.000***
P3	P5.1. Lack of information and/or knowledge	.035	.738
P3	P5.2. Lack of financial resources	.248	.016**
P3	P5.3. Lack of training and/or commitment of human resources	-.087	.405
P3	P5.4. Lack of time	.021	.841
P3	P5.5. Excess and/or complexity of regulations	.168	.105
P3	P5.6. Lack of ownership commitment	-.052	.618
P3	P5.7. Lack of commitment of suppliers	-.146	.162
P3	P5.8. Lack of commitment of distributors (tour operators, agencies, etc.)	-.176	.090
P3	P5.9. Lack of trust in public and private agents which the establishment operates with	-.097	.355

** The correlation is significant at level 0.05 (2-tailed).

*** The correlation is significant at level 0.01 (2-tailed).

3.3. Environmental management and governance

The next step is to determine the existence of a correlation between the environmental management of the hotel sector in Fuerteventura and the action of the managing institutions of the sustainable governance of this destination, more specifically, the governing body of the Biosphere Reserve and other competent public administrations. **Table 2** shows the existence of a significant positive relationship, of low intensity, between P3, proxy of the level of environmental management, and P1.2 ('The fact that Fuerteventura is a Biosphere Reserve has meant that your establishment places more importance on social responsibility')⁶.

Table 2. Correlation analysis of sustainable destination governance. Spearman's Rho

VARIABLES		CORRELATION COEFFICIENT	SIG. (2-TAILED)
P3	P1.2	.316	.005***
P3	P7.7	.580	.000***

*** The correlation is significant at level 0.01 (2-tailed).

Likewise, this correlation is significant in the case of item P7.7 ('You implement socio-environmental sustainability actions in collaboration with the public sector'), linking progress in the environmental management of the accommodation sector with the coordination and collaboration with the public authorities responsible for sustainability.

3.4. Accommodation supply features

Finally, the Mann-Whitney U-test determines the existence or not of significant differences between the two types of accommodation (hotel and non-hotel), both in their environmental behaviour and in their influence on the destination governance. **Table 3** shows the items for which the difference, positive or negative in each case, between the mean values of the responses from the two types of establishment is significant.

Table 3. Contrast of difference of means.

ITEM	HOTEL	NON-HOTEL	MANN-WHITNEY U-TEST	ASYMP. SIG. (2-TAILED)
	Mean	Mean		
Governance in the area of sustainability				
P7.7.Your establishment implements socio-environmental sustainability actions in collaboration with the public sector	2.96	2.31	846.5	0.042**
Environmental management applied by the establishments				
P3.4.Reduction in consumption of natural resources	4.53	4.09	842	0.029**
P3.8.Compliance with environmental legislation	4.80	4.29	724	0.001***
Reasons that motivate your socio-environmental responsibility				
P4.4. Public incentives (subsidies, tax incentives, etc.)	3.35	2.49	735	0.004***
P4.7. Cost reduction	3.98	2.93	738.5	0.004***
P4.8. Increased revenue	3.41	2.64	770.5	0.01***
P4.9.Pressure of distributors (tour operators, agencies, etc.)	3.59	2.69	683.5	0.001***
P4.11.Pressure of the customers	3.51	2.69	751	0.007***

* Correlation is significant at level 0.1 (2-tailed). Level of confidence: 90%.
** Correlation is significant at level 0.05 (2-tailed). Level of confidence: 95%.
*** Correlation is significant at level 0.01 (2-tailed). Level of confidence: 99%.

With regard to barriers, there are no significant differences between the two groups of establishments. Neither do they differ in their perception of the positive influence exerted on their environmental performance by the consideration of Fuerteventura as a Biosphere

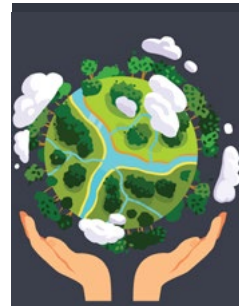
Reserve and, therefore, the governance actions of the destination associated with that special protection.

4. CONCLUSIONS

As the destination is a protected area (Biosphere Reserve), firstly we wanted to evaluate, in an exploratory manner, the level of environmental commitment made by the hotel sector. The data show a medium-high development, focused on practices linked to regulation and those that do not involve a large amount of resources (economic, human or technical) or even entail a reduction of direct costs, coinciding with Font et al. (2016). This is the case of savings in natural resources (water, energy, etc.), and reducing the use of harmful substances in the operational management of accommodation and restaurant services. Comparatively, there are lower levels of systematization and integration of environmental management in the strategic planning process of these companies under recognized standards such as ISO 14000 and EMAS.

Therefore, Fuerteventura tourist accommodation is progressing, depending on the availability of resources, with initiatives such as formalization of environmental policy and training and motivation of the personnel to include them in corporate environmental objectives. Likewise, effective communication of the efforts made in socio-environmental responsibility, directed to influential agents (distributors, customers, public administration, environmental protection agencies, pressure groups, local community, etc.), is necessary. A better and greater diffusion would favour the confluence of accommodation interests and stakeholders.

To better understand the determinants that explain the situation described above, the analysis of the motivating factors and barriers reveals that the environmental performance of these companies originates, fundamentally, in the voluntary commitment of the management and/or the owners. The managers also declare that responsible and sustainable behaviour significantly improves the reputation of the establishment, even though they say that they do not feel significant pressure from society in this regard. On the other hand, it is worth reflecting on the scarce motivational capacity of the economic-financial and market stimuli, that is to say, accommodation managers do not perceive, at least in the short term, commercial benefits (increase of market share, potential for generating higher



incomes by means of prices, etc.) deriving from their greater commitment to environmental protection, although they do recognize the possibility of relative savings in terms of direct (operational) costs. These conclusions, which agree with previous evidence (Lawrence et al., 2006; Hofmann et al., 2012), have important implications for the governance of the protected destination. Public administrations must take into account that the collaboration of the accommodation sector is essential for the maintenance of the objectives and the inherent requirements in the consideration of Fuerteventura as a Biosphere Reserve. However, such collaboration involves a considerable effort for these companies which, to date, is almost exclusively voluntary and limited to compliance with legislation. Therefore, in order to make significant progress, coordination and governance systems should be proposed to increase incentives or at least to remove the barriers to greater corporate commitment to sustainability.

The conclusions about the motivations of the tourist accommodation sector to develop its environmental management are congruent with those that are extracted when analysing the difficulties faced. According to its managers, the hotel sector in Fuerteventura does not meet the advanced level of environmental protection, as noted in the first objective of this study, due to the scarcity of financial and human resources - specifically in terms of lack of training and involvement of staff, time, information and knowledge. This corroborates the precedents of Carmona-Calvo et al. (2016). This scarcity of resources is partially offset by the voluntary commitment of the owners and management and the collaboration of the main stakeholders, such as customers, distributors (tour operators, agencies, etc.) and suppliers. On the other hand, in relation to the destination's governance, the disconformity of the establishments with the quantity and complexity of the regulation is noteworthy. The establishments also demand greater trust in relations with public agents in the area of sustainability, especially in non-hotel accommodation. Once again, these aforementioned points are clear indicators of challenges to be addressed, through public-private collaboration, in the face of the challenge of sustainable governance of a Biosphere Reserve destination.

Previous conclusions, resulting from the direct perception of the managers, are put in perspective with the global level of environmental protection reached by the establishments. In this sense, the analysis of correlations (table 1) complements the vision



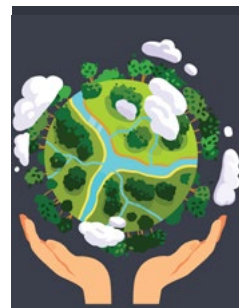
of the accommodations on the factors with greater influence to encourage and hinder their environmental commitment. In this sense, on the side of barriers, only the scarcity of financial resources appears significantly correlated with the level of environmental management of the sample analysed. On the other hand, the improvement of the image of the establishment is the most intensely correlated motivation with environmental action, accordingly with managers' perception.

Up to this point, there has been an analysis of the role played by the hotel industry in the environmental conservation of a protected area such Fuerteventura, which is under great pressure from the number of tourists who visit it. The next step is to analyse whether this role is aligned with an institutional and governance reference framework oriented towards sustainable development.

In this sense, the present study reveals that the environmental performance of the sector improves in line with the direct collaboration with the competent administration and, particularly, from the classification of the island as Biosphere Reserve. In the opinion of the managers surveyed, the Biosphere Reserve status has favoured the environmental progress experienced by the sector, and there is still much potential for improvement. Therefore, the data show that public-private collaboration is favourable both to the sustainable governance of the destination as a whole and to the improvement of the environmental performance of the companies involved. However, at the same time the results indicate the need for greater and better public-private coordination, as well as regulatory simplification and greater institutional support in terms of resources such as information and training aimed at the sectors especially linked to tourism governance such as the accommodation industry.

Finally, it is necessary to distinguish between the two types of accommodation on the island -hotel and non-hotel-, which are clearly differentiated in their organizational configuration. The aim is to determine whether there are peculiarities that require a differentiated treatment for both accommodation groups in the design of policies and in the configuration of the destination's governance. This is another novel contribution of the study and relevant because it advances in the identification of guidelines, both for management and for public administration, specific to the management of each type of offer.

In this regard, the data reveal, on the one hand, that the environmental protection of hotel and non-hotel accommodation is



highly homogeneous, differing only in the reduction of consumption of natural resources and compliance with regulations, where the hotel sector is better. On the other hand, differences are more visible in motivations, where the hotels perceive more pressure from stakeholders (mainly customers and distributors) than the non-hotel businesses, as well as more economic and financial incentives such as cost reduction and increased revenues. However, as explained above, these motivations have a low level of importance for both accommodation groups.

These findings, particularly relevant to the managers of non-hotel accommodations who perceive a lower level of external pressure, indicate that they have the opportunity to voluntarily improve their environmental commitment while increasing their cost efficiency. This initiative could be reinforced through collaboration with the managing administration of the protected destination. In this sense, hotels' managers perceive public incentives for environmental management to a greater extent (subsidies, tax incentives, etc.).

There are also no differences between both types of establishments in those indicators that reflect the most advanced level in environmental management, such as having a formalized environmental policy or strategic and operational planning according to demanding standards such as ISO 14000 or EMAS. The latter shows that the mean level of environmental commitment made so far is homogeneous across the industry, which has direct implications for public decision-making on policies to promote and encourage excellence in environmental quality.

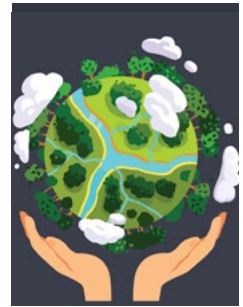
However, collaboration between the sector and administrations concerning environmental protection is greater in the case of hotels than in the non-hotel establishments. The managerial and administrative implications in this regard are clear, indicating the need to promote links and a greater integration of the non-hotel sector in environmental protection public initiatives and vice versa. The latter will be key to the success of the sustainability governance model designed for this destination.

In summary, these findings contribute, on the one hand, to the need for empirical advances in the knowledge of sustainable governance in protected areas and, secondly, focusing on the particularities of the tourism sector, much less studied than others like the industry.

Finally, with regard to the limitations and future lines of research, it should be pointed out that this work is a descriptive and preliminary



approach and will be followed by a further development of aspects that are beyond the scope of the exploratory analysis. The incorporation of additional variables, measuring and contrasting the perspective of the institutions, and the application of complementary methods of analysis (e.g. linear regression) will provide more conclusive results. For example, priority will be given to studying the implications of the 'sustainable' governance of the destination in the competitiveness of the hotel sector, for which it would also be advisable to extend the geographical scope of the study, thereby making comparisons with other destinations with similar characteristics.



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NOTES

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 3. Data from: World Tourism Organization Network (2016). UNWTO Tourism Highlights, 2016 Edition. Available at: <http://mkt.unwto.org/publication/unwto-tourism-highlights-2016-edition>.
 4. Data from: Promotur (2016). Turismo de Canarias 2016. Available at: <http://www.turismo-decanarias.com/promoturturismocanarias/informes-y-estadisticas/>
 5. The complete definition of the items (environmental protection practices, motivations and barriers) is included in the results graphs 1 to 3, respectively.
 6. Likert scale 1-5.
- The items included in this paper are extracted from a larger questionnaire designed for a national research project, with a larger scope and additional objectives.

