UNIVERSIDAD POLITÉCNICA DE VALENCIA

Study of evolution in human resources management programs in organizations. Application of "Path Dependence" and "Cladistics"

TESIS DOCTORAL

Doctorando:

Dña M Rosario Perello-Marin

Dirigida por:

Dr D. Juan A. Marin-Garcia

Dra Dña. Gabriela Ribes Giner

Valencia, Mayo 2015

Resumen

La presente tesis estudia la evolución del sistema de gestión de recursos humanos en las organizaciones. Es decir, cambios introducidos a través de la gestión de personas. El objetivo principal de la tesis es analizar cómo las empresas evolucionan y cambian a lo largo del tiempo a través del modo en el que se gestiona el capital humano. En los últimos años se ha demostrado que los niveles de adaptación y cambio que requieren las organizaciones para adaptarse a su entorno cambiante, son cada vez más elevados. Uno de los motores que facilitan este cambio organizacional, es la introducción de nuevos programas de gestión y herramientas que ayuden a las organizaciones a mejorar sus resultados empresariales. Este trabajo se centra en la identificación y análisis de estos programas en el ámbito de la gestión de recursos humanos. En particular: qué prácticas de RRHH se implementan, en qué tipo de empresas, en qué momento y, por último, en qué orden.

Aunque ya existen numerosos estudios que analizan las prácticas de RRHH, hasta el momento, no existen herramientas que introduzcan el factor orden o tiempo en este proceso gestión de RRHH. Ésta es la causa por la cual en esta tesis se utilizan los enfoques de '*path dependence*' y 'cladistics'.

El concepto de 'Path dependence', muestra cómo las decisiones de gestión que son tomadas en un momento determinado, influyen en las decisiones futuras. Este hecho hace que, antes de diseñar la estrategia a seguir en el futuro, se haya de analizar de dónde venimos y qué camino se ha seguido para llegar hasta aquí.

Bajo este enfoque, a lo largo de esta tesis, se utiliza la *cladística* como metodología de análisis de las organizaciones desde una perspectiva de gestión de personas diferente a

las habituales en este ámbito. La Cladistica es una metodología que puede ser empleada como herramienta de toma de decisiones, y que permite identificar qué resultado se obtendría tras implantar un conjunto determinado de prácticas de gestión de RRHH, en función de las que ya se han implantado previamente (y por tanto de la historia previa de la organización). Esta metodología de análisis y clasificación ha sido comúnmente empleada en el ámbito de la biología y a lo largo de la presente tesis, se muestra cómo puede transferirse al mundo empresarial y concretamente a la gestión de RRHH.

Los biólogos, emplean la *Cladística* para la construcción de mapas evolutivos denominados cladogramas. Éstos son representaciones gráficas de la evolución de las especies del reino animal. Si bien esta metodología se ha empleado ya en otros ámbitos diferentes a la biología, tales como la lingüística o la astronomía entre otros; en el área de *management* se ha desarrollado poco aún, estando enmarcados los ejemplos más relevantes en el área de la gestión de operaciones.

En este trabajo se extrapolan los conceptos básicos de la *Cladistica* al área de la gestión de recursos humanos. Para ello se estudian las prácticas de recursos humanos, tales como la selección de personal, sistemas de retribución, sistemas de evaluación, formación, etc… El tipo de prácticas de RRHH que ha implementado una determinada organización a lo largo del tiempo, es lo que determinará a qué tipo de organización pertenecen. Así, se construye un mapa evolutivo que puede emplearse como herramienta de *benchmarking* para ver qué practicas han implementado otros, dónde han llegado con ello y en qué tipo de organización se han convertido.

En esta tesis se muestra un ejemplo sencillo de evolución en el tiempo de empresas en el sector manufacturero español, considerando como factor evolutivo el crecimiento en tamaño de organización (número de empleados). Entendiendo que, a medida que se

incrementa el número de empleados, los programas de gestión de personas han de ser diferentes. Así mismo, se presenta el potencial de aplicación de la Cladistica al sector hospitality.

Palabras clave: Dependencia del Camino, Cladística, programas de RRHH, gestión evolutiva de los RRHH, benchmarking, clasificación

Abstract

This doctoral thesis analyses human resources management evolution in organizations. That is, changes introduced throughout people management. The key objective is to analyze how organizations evolve and change over time by means of human capital. Recent years have demonstrated that levels of adjustment and change required by organizations in order to adapt to a changing environment, are increasingly high. One of the main drivers behind this organizational change is the introduction of new programs and tools that help organizations to improve their business performance. This work is focused on the identification and analysis of such programs in the field of human resources management. In particular: what sort of HRM practices are implemented, in what sort of organization, at which point in time, and finally, in which order.

Although there are numerous studies to date analyzing HRM practices, none of them introduce methodologies that consider order or time factor within the management process of HR. This is the reason why 'path dependence' and 'cladistics' approaches are introduced in this doctoral thesis.

'Path dependence' approach shows how certain management decision taken at a certain point of time, influence future decisions. This makes it all the more essential to press ahead with analysis of where we come from and which path we have followed before being designed the future strategy of the organization.

According to this approach, throughout this doctoral thesis, cladistics is used as methodology for analyzing organizations from a different perspective of people management compared to the habitual viewpoints. Cladistics is a methodology that can be used in the decision-making process; moreover, it allows identifying the expected

result of implementing certain bundles of HRM practices, taking also into account HRM practices already implemented. It considers therefore, also prior organization history. This methodology, for the analysis and classification, has been commonly used in the field of biology for many years. Throughout this doctoral thesis, the transference of this methodology to HRM is shown.

Biologist use Cladistics in order to build evolutionary maps termed as cladograms. Cladograms are graphic representations of animal species evolution. This methodology has already been used in fields other than biology, such as linguistics or astronomy among others. In management, it has not yet been developed sufficiently; in particular, the most relevant examples in this field are in operations management area.

The purpose of this work is to extrapolate the basics of Cladistics to HRM field. In doing so, HRM practices have been analyzed, such as personnel selection, rewards systems, appraisal systems, training, etc… The bundle of HRM practices that certain organization has been implemented at certain point of time will determine what kind of organization is. Thus, a evolutionary map is built. It can be use as a benchmarking tool in order to analyze what sort of HRM practices has been implemented by competitors, haw far they have gone, and in what sort of organization have become.

In this work, a simple example of evolution in time of Spanish manufacturing companies is shown. The organization growth in size (number of employees) has been considered as evolutionary factor. This is due to the fact that, as number of employees increase, HRM programs have to be different. Furthermore, a preliminary application of Cladistics is offered in hospitality sector.

Key words: Path Dependence, Cladistics, HR programs, Evolutionary HR management, benchmarking, classification

Resum

Aquesta tesi estudia l'evolució del sistema de gestió de recursos humans a les organitzacions. És a dir, els canvis realitzats a través de la gestió de persones. L'objectiu principal de la tesi és analitzar com les empreses estan evolucionant i canviant en el temps a través de la capital humà. En els darrers anys s'ha demostrat que els nivells d'adaptació i canvi que requereixen les organitzacions a adaptar-se al seu entorn canviant, són cada cop més elevats. Un dels motors que facilita aquest canvi organitzacional és la introducció de nous programes de gestió i ferramentes que ajuden les organitzacions a millorar els seus resultats de negoci. Aquest treball es centra en la identificació i anàlisi d'aquests programes en l'àmbit de gestió de recursos humans. En particular: quines pràctiques RRHH estan implementades, a quin tipus d'empreses, quan i, finalment, en quin ordre. Encara que hi ha nombrosos estudis que analitzen les pràctiques RRHH, fins ara, no hi ha cap ferramenta que introdueixen el factor ordre o temps en aquest procés de gestió de recursos humans. Aquesta és la raó per la qual s'utilitzen en aquesta tesi els enfocaments de "*dependència del camí*" i 'cladística'.

El concepte de "Path dependence", mostra com les decisions de gestió que es prenen en un moment donat, influencien les decisions futures. Això significa que, abans de dissenyar l'estratègia a seguir en el futur, cal analitzar d'on venim així com el camí que s'ha seguit per arribar fins ací.

Davall este enfocament, al llarg d'esta tesi, s'utilitza la cladística com a metodologia d'anàlisi de les organitzacions des d'una perspectiva de gestió de persones diferent de les habituals en este àmbit. La Cladistica és una metodologia que pot ser empleada com a ferramenta de presa de decisions, i que permet identificar què resultat s'obtindria després d'implantar un conjunt determinat de pràctiques de gestió de RRHH, en funció de

què ja s'han implantat prèviament (i per tant de la història prèvia de l'organització). Esta metodologia d'anàlisi i classificació ha sigut comunament empleada en l'àmbit de la biologia i al llarg de la present tesi, es mostra com pot transferir-se a la gestió de RRHH.

Els biòlegs, usen la Cladística per a la construcció de mapes evolutius denominats cladogramas. Aquests són representacions gràfiques de l'evolució d' spècies animals. Si bé esta metodologia s'ha utilitzat ja en altres àmbits diferents de la biologia, com ara la lingüística o l'astronomia entre altres; en l'àrea de management s'ha desenvolupat poc encara, estant emmarcats els exemples més rellevants en l'àrea de la gestió d'operacions.

En aquest treball s'extrapolen els conceptes bàsics de la Cladistica a l'àrea de la gestió de recursos humans. Per a això s'estudien les pràctiques de recursos humans, com ara la selecció de personal, sistemes de retribució, sistemes d'avaluació, formació, etc... Les pràctiques de recursos humans que ha seguit una organització particular al llarg del temps, és el que determinarà a quin tipus d'organització pertanyen. Així, es construïx un mapa evolutiu que es pot utilitzar com a ferramenta de benchmarking per a veure què practiques ha implementat la competència, a on han arribat amb això, i en quin tipus d'organització s'han convertit.

A aquesta tesi es mostra un exemple senzill d'evolució en el temps d'empreses en el sector manufacturer espanyol, considerant com a factor evolutiu el creixement en grandària de l' organització (nombre d'empleats) . Entenent que, a mesura que s'incrementa el nombre d'empleats, els programes de gestió de persones han de ser diferents. Així mateix, es presenta una aplicació preliminar de la Cladistica al sector hospitality.

Paraules clau: Dependència del camí, Cladística, programes de recurs humans, gestión evolutiva del recurs humans, benchmarking, classificació.

Agradecimientos:

Antes de introducir mi trabajo, quisiera agradecer a todas las personas que han estado involucradas en este largo proceso, y que me han ayudado a llegar hasta aquí.

En primer lugar, quiero agradecer profundamente a mis directores de tesis D Juan A Marin García y Dña Gabriela Ribes Giner todo su apoyo y ayuda que han sido claves para poder llevar esta tesis doctoral a término. A ellos, mis más sinceros agradecimientos por toda su paciencia y dedicación. Gracias por comprenderme y animarme en cada uno de los momentos complejos de este recorrido, pero sobre todo, gracias por ayudarme a concluir este largo proceso. No hubiera podido tener mejores profesores, investigadores y compañeros en este arduo proceso.

También quiero agradecer a todas las personas que de alguna manera han hecho posible que llegase a este punto. En especial a José Pedro García Sabater quien, en esencia, fue la persona que me introdujo en el mundo de la "complejidad" y me facilitó los contactos que me llevaron a Cranfield en dos ocasiones. A Javier Marcos Cuevas por acogerme y guiarme durante mis dos estancias en Cranfield University. Gracias Javier por creer ciegamente en mi proyecto de tesis aun cuando ni siquiera yo tenía claro hacia donde me iba a conducir.

A mi madre, quien desde el silencio me ha mostrado su apoyo durante todo este tiempo. Ella ha hecho que las diversas ocasiones en las que me he tenido que ausentar de casa durante este largo recorrido fueran más llevaderas para todos. Su ejemplo de bondad, servicialidad, honradez y responsabilidad han dejado huella en la persona que soy hoy.

A mi marido Javier, por levantarse cada día conmigo. Por acompañarme en todos mis pasos y tropiezos, y ayudarme a encontrar la luz cada vez que me encontraba en un

callejón sin salida. Te estoy inmensamente agradecida por tu cariño, comprensión y paciencia durante estos años.

Finalmente, quiero agradecer a mis hijas, Lucía, Rosario, Irene y Soledad, su gran apoyo y comprensión en tantos momentos. Ellas han vivido muy de cerca la evolución de este trabajo. Sin su ilusión y apoyo este trabajo no hubiera sido posible.

Índice

CHAPTER 1

INTRODUCTION

1 Introduction

This Doctoral thesis is presented in a compendium of papers' format. Each of them addresses different and complementary aspects of this study in response to the different research questions. It is the totality of these documents which explain the full content of the Doctoral thesis.

In order to introduce the reader, in a simple way, to the doctoral thesis carried out, this chapter has been divided into five parts: introduction; background and purpose of the research; structure of the Doctoral thesis and research goals; methodology; and finally, extended abstracts of the papers. Therefore, in section hereafter, I lay out the research questions to which I response along the present Doctoral thesis. Furthermore, I include an overview of the structure of the Doctoral thesis, and I detail how I have covered the objectives. Finally, I present the extended abstract of the papers included in this Doctoral thesis

2 Background and purpose of the research

Evolution and change in organizations are issues widely studied by scholars in recent years. They all agree that organizations are facing unprecedented levels of change, and as a result, their adaptability, flexibility, learning capacity, and change management skills are key to their success, and even to their survival (Adamides & Pomonis, 2009; Allen, 2001; Antonelli, 2009; Burnes, 2004; Karisson & Ahlstram, 1996; van Driel & Devos, 2007).

One of the main driving forces behind evolution and organizational change, is the introduction of new programs and tools that help organizations to improve business results. They may be new to the organization under study although they may not be new to others. This work is specifically focused on human resources programs implemented at organizations .There are a large amount of research studies already published addressing the adoption of programs in this framework (Akdere, 2009; Albors & Hervás, 2006; Anand & Kodali, 2008; Collaine, Lutz, & Lesage, 2002; Doolen & Hacker, 2005; Herron & Braiden, 2006; Hipple, 2005; Marin-Garcia, Miralles Insa, Garcia-Sabater, & Perello-Marin, 2011; Mol & Birkinshaw, 2009; Pavnaskar, Gershenson, & Jambekar, 2003), whereas, it can be argue that when organizations try to implement certain programs searching for a competitive advantage, they do not always succeed. Moreover, some programs work well in certain organizations, but fail in others despite being similar organizations in comparable frameworks (Baxter & Hirschhauser, 2004; Bayo-Moriones, Bello-Pintado, & Merino-Diaz-De-Cerio, 2008; Corso, Giacobbe, Martini, & Pellegrini, 2007; Doolen & Hacker, 2005; Garcia-Sabater, Marin-Garcia, & Perello-Marin, 2011). When analyzing causes of success or failure of the implementation of these programs, there is no consensus to date among scholars (Mol & Birkinshaw, 2009).

The idea of this doctoral thesis arose of this background. With this work, I have intended to find a methodology to identify, from a given starting point of a particular organization, what would be the result that can be achieved in terms of the specific human resources programs implemented and the order in which they have been implemented.

In particular, I offer a methodology enabling, from a given initial set of HR programs (starting point), meet the best possible alternatives, in order to successfully implement a change in a particular organization. That is, a methodology that allows me to select which additional programs would be advisable to implement and which one to dismantle in order to achieve the desired goal. Such a tool may play a key role in the decision making process, since it would allow us to take decisions in a more thoughtful and orderly way.

To do so, I propose to adapt a methodology not used to date in managing people. In particular, it is an approach that, while derived from the biological sciences, it is widespread in the field of complexity. It is cladistics. Cladistics is an evolutionary classification tool that allows us to analyze the relationships between the different features considering similarity and kinship (i.e., considering also the previous history and where they come from). However, there are still too few applications to date in the field of business management (Baldwin, Allen, Winder, & Ridgway, 2005; Leseure, 2002), and specifically, I have not found any piece of research dealing with Cladistics applied to human resources management to date.

All in all, the main objective of this Doctoral thesis is to adapt Path Dependence and cladistics approach, as a benchmarking tool for evolution analysis of organizations in the field of HR, considering its application in operation management.

3 Structure of the doctoral thesis and research goals

This Doctoral thesis consists of seven chapters. Two of them located at the beginning and end of the document as introduction and conclusion chapters; five chapters that

correspond to the main papers written and published to meet the objectives of this doctoral thesis. The papers included in this thesis present a single unified format. They correspond to the 'preprint' version of the author. Some of the documents have been deliberately adapted. This adaptation helps make text easier to read and follow the guiding thread of this thesis. In any case both, citations referring where the documents have been published, and indication of text adaptations, where appropriated, are reflected at the beginning of each chapter.

Note that, although each paper corresponds to an independent and separate works, and so they can be read; there is a guiding thread among them providing answers to the research question posed in this doctoral thesis. The aim of this introductory chapter of the thesis document is to integrate the work done during these years, and to present in a holistic perspective which allows reader to better understand it and to integrate the objectives, structure and develop of the doctoral thesis as a whole. On the other hand, it is important to mention that I have not incorporate the paper in the thesis document in chronological order, but in the order that best fit the guiding thread of this piece of research.

It should be kept in mind that, due to the nature of this doctoral thesis, which is developed in a new field of knowledge within the field of human resources management, there is no solid theoretical framework on which to pose hypothesis. This fact has greatly hindered the development of this work.

Next, I list the research objectives to which I answer subsequently through this research:

O1. Through what lens can be studied evolution and change in organizations, considering the influence of framework and previous experience?

O2. Can path dependence and Cladistics be applied to the study of HRM programs?

O3. Is there any clear and generalizable classification of the HRM practices directly usable in the decision-making process in business?

O4. Which are the limitations of Cladistics and how should it be implemented in HRM field?

These research objectives are broadly answered through the scientific publication written as a result of this doctoral thesis. Some of the research objectives are addressed in more than one publication.

Below, I will explain the thread that encompasses all the publications. It is worth noting that, the publications included as chapters in this document are, among all the work carried out during these years, the most relevant piece of research and, at the same time, the publications that better reach the research objectives posed. However, I have developed some other pieces of research as a result of my doctorate thesis process not included in this document.

Through the first research paper (Perello-Marin, 2010), I introduce the research topic. This paper consists of a concise review of the concepts of evolution and organizational change trying to relate them to the influence of the previous experiences in the current decision making processes. It aims to lay the foundations for linking cladistics and path dependence. Furthermore, I establish the foundation for the potential use of both, cladistics and path dependence, in the field of Human Resource Management. It

is the first paper that I wrote when the research was still in its embryonic state. It first covers the research objective 1, although it is enlarged in subsequent papers.

In the second paper, (Perello-Marin, Marin-Garcia J A, & Marcos-Cuevas J, 2013) I develop research objectives 1 and 2. In doing so, I carry out a narrative literature review in order to clarify 'path dependence' concept as an application from Complexity theory to Management Innovation (MI). Thus the concept of MI is defined as the introduction of management practices or programs that are new to the organization and that contribute in improving its results (Mol & Birkinshaw, 2009). Through this work, the relevance of path dependence in studying the introduction of new management practices within organizations is highlighted. Furthermore, I argue that the order selected when introducing these changes affect the results. This is due to the fact that it depends greatly on the interaction between existing practices, and new ones. In this way, foundations have been laid for the subsequent use of path dependence in the application of cladistics in the field of human resources.

Through the third paper (this paper is not published yet, it is under review in BRQ journal), I develop clearly Cladistics. In so doing, I extrapolate idiosyncrasies of this methodology already defined in the field of biology, to the study of organization's evolution from a perspective of human resource management. I review also how this methodology has been applied to other knowledge fields apart from biology. Finally, I include, along with the detailed explanation of how to implement this methodology, a conceptual example of Cladograma applied to the Spanish manufacturing sector. By means of this example, I show an incipient cladistic tree (cladogram) with the evolution of organizations in terms of their growth in number of employees. Based on this

cladogram, I explain the necessary requirements to meet the input data in using cladistics. On the other hand, I justify the objectivity of the method and the comparability of results. It should be noted that the obtained results can be easily interpretable, regardless the author which helps in the knowledge building process, although they are not universally applicable (the framework influences). In this work, I include the difficulties to be faced to guarantee the appropriate use of Cladistics. All in all, I present Cladistics as a methodology that, being develop in the field of human resources management, can be very useful to identify what sort of actions should be implemented (or removed, as appropriate) in order to be able to introduce sustainable and successful changes to the organization. In this way, the research objectives 3 and 4 are covered.

At this point, the four research objectives have been covered; however, this doctoral thesis is more extensive. It has been expanded and completed by an additional research paper (chapter 5), and other additional research works, one of them included in chapter 6.

The forth paper I include in this doctoral thesis (Perello-Marin & Ribes-Giner, 2014), is another review of the literature. The aim of this paper is to identify a list of general HRM practices related to the improvement of organizational efficiency and therefore better business performance.

The main goal of this work is to provide a simple list that could be used as a starting point for the HR character identification in organizations when building more specific cladistic trees. Although there are a large variety of similar works, it is difficult to find a consensus on which one should be the composition of the complete catalog of HR

programs. As I have stated before, the main reason for writing this paper is to establish one of the first steps in the application of Cladistics to the study of evolving organizations under the lens of HRM. Particularly, it constitutes a help for identifying the basic characters of each type or organization. In the preceding paper, I state that this identification is one of the most sensitive and critical steps in the Cladistic process. However, the absence of a complete and based on consensus list of HR programs that includes the universe of HR programs which best describes any organization in terms of HR, and the disparity in the currently identified practices or programs definition, both entail great difficulty in the use of Cladistics. This is the main reason for undertaking this work. As a result, I identify a detailed but synthesized list of HR programs. This list can be used as starting point when characterizing a organization in terms of HR. It is a general list valid (only as starting point) for both industrial and service sectors. As we are talking about a generic list, it is only a starting point, but it is a great help to homogenize and facilitate data acquisition in further cladistic studies in HR field

I must emphasize that it is not a list containing all the possible characteristics to consider in a cladistics study, but the basic ones. The complete identification and thus the characterization of each specie (type of organization) to include in the cladistic tree, may require such a detailed study and customization that it could not be possible to generalize in a basic list. However, since the goal of building a complete cladistic map is too ambitious, my intention through this doctoral thesis is at least, to provide the necessary steps to complete the work in the next few years, but increasing the amount of researchers working in this issue.

In chapter six, I include a summarized adaptation of a work published as a book chapter (Perello-Marin & Ribes-Giner, 2015). Through this work, starting from the guiding list identified in the previous chapter, but supplemented by a specific literature review in hospitality sector, I identified the most common HRM programs implanted in this sector. Then, using focus group technique, we analyze the real existence and the relevance of such programs within restaurants in the metropolitan area of Valencia (Spain). This is an essential step previous to the building of a cladistic tree. This work aims to strengthen the research objective 3.

4 Extended abstract of the papers

At this section extended abstract of the papers included in this doctoral thesis are presented in order to make easier to understand the document as a whole. The aim of this section is to connect all the papers and to reinforce the storyline that links them.

4.1 Towards a methodology for identifying path dependence in the evolution of human resources practices

Over the last years, aspects such as the globalization of business markets, stronger pressures to achieve efficiency gains as well as quality, and shorter production and products life cycles are forcing firms to maximize the adaptability of their production systems (Adamides & Pomonis, 2009). In this context of globalization, re-engineering business processes, improving efficiency, improving quality, customization, etc.. we see that the evolution of organizations is particularly relevant (ElMaraghy, AlGeddawy, & Azab, 2008).

There are different methodologies to study transformations in firms. Recently, the biological concept of co-evolution has been adopted by some researchers in organization studies, they particularly use cladistics to classify the different stages of evolution of firms. However it has been found incremental and discontinuous trajectories in transformation processes. In this context, it is argued that path dependence approach helps understanding those discontinuous transformations. Particularly, it explains how some organizational decisions are influenced by decisions taken in the past.

Transformations in production system are often coupled with changes in human resource management policies and practices. One of the key transformations in work practices over the years has been the introduction of teams as a mechanism to deliver enhanced productivity and quality.

This paper aims to join these two lines of investigation opened by the scientific community. I will try to establish a framework for using cladistics in order to identify an evolution model in human resources practices.

We found that Path dependence approach and cladistics, although are not very extended at the moment in social science, they have been used mainly in management operations and supply chain management. However, they have not been broadly used in human resource management neither in collaborative teams. Therefore, a future research line is been opened: explaining path dependence in human resources and showing how to implement it.

4.2 Towards a path dependence approach to study management innovation

Innovation can occur in different areas of the company. Organizations can innovate in product/ service, in processes or in management. If we focus on innovation management, implementation of new approaches to HR practices is a good way to achieve a sustainable competitive advantage over time.

The aim of this paper is to identify under which conditions makes sense to talk about path dependence, and the relevance of using path dependence to the analysis of management innovation. Scholars in social sciences tend to use the term of path dependence without explaining exactly what they mean by it. However, path dependence is a useful approach to understand the success or otherwise of the implementation of management innovation (Perello-Marin, 2010).

Whitin this paper, we first link the concept of management innovation to change and evolution in organizations. Next, we explain how evolution of organizations can be studied from the lens of complexity. We present advantages over other more traditional perspectives. Particularly, we use path dependence as a complexity approach. We present the key different approaches of path dependence used in the literature, and finally we conclude with a clear definition of the concept and the conditions under which it occurs.

The methodology used for such a go is narrative review of the literature. The path dependence literature in different contexts and knowledge areas within social science is reviewed using a narrative approach.

As a main finding, we have found that the concept of path dependence can be used to study management innovation, particularly when analyzing the introduction of new management practices. We argue that the order in which management practices are introduced have a profound effect on the outcomes for the organization. When the appropriate practices are introduced first, these create enhanced capabilities for the implementation of subsequent practices. If inappropriate practices are rolled out, they may severely impede management innovation and thus evolution and change of the firm.

This work highlights the need to conduct further research to understand the interaction between existing practices and the new ones. This study can be extended with an empirical work to corroborate the results presents here.

By reviewing the different definitions of path dependence that exist in the literature, this paper should stimulate a debate on the necessary and sufficient conditions of path dependence and encourage a greater level of clarity in the management innovation area.

4.3 Considering evolution when classifying organizations. Lessons from biology applied to human resources management systems

As HRM system of organisations evolves, it seems necessary to develop models and supporting tools to represent this evolution. Biologic evolution theories can offer the basis for this study. We especially propose Cladistics classification to support such a modelling and propose a conceptual architecture for managing HRM systems evolution.

The argument for creating a classification in social science is, to some extent, demonstrated by a large number of typologies and classifications that have been produced by researchers from this area (McCarthy, Ridgway, Leseure, & Fieller, 2000; Amo, Montero, Biging, & Cutello, 2004; Marchington & Grugulis, 2000; Guest, 2011; Valverde, Ryan, & Soler, 2006; Fong, Cheng, & Ho, 1998). Particularly, this knowledge area needs for categories, typologies and configurations in order to improve its explanatory capacity (Luna-Arocas & Camps, 2008). However, not all classification systems provide the same advantages and information. When talking about human resources management (HRM) systems, classifications are not that obvious. Due to its complex nature, by classifying theoretically, the represented reality obtained can be unrealistic and oversimplified, leading to obviously wrong interpretations when comparing to a direct observation. Therefore, it is very important to choose the appropriate technique for classification according to the main purpose of the classification and the nature of the explanation needed.

On the other hand, although this classification schemes have been carried out for a long time now, it seems that it has not reached a definitive classification yet (Stavrou, Brewster, & Charalambous, 2010). Moreover, there is not only a wide range of methodologies used for classifying organizations in terms of their HRM systems, but also a lack of consensus regarding the terminology used (practices, policies, principles, functions…), or even the level of abstraction when regarding HR practices and organization performance (universalistic, contingency, or configurational approach) (Colbert, 2004; Marchington, 1992; Wood, 1999; Alcazar, Fernandez, & Gardey, 2013). There is a large number of studies dealing with the relations existing between certain HR practices considered as best practices (universalistic approach), or a combination of

them (‘best fit’ or bundles approach), that leads to a higher business performance as for instance (Huselid, 1995; Ichniowski & Shaw, 1999; Becker & Gerhart, 1996; Delery & Doty, 1996); however, it is still very difficult to generalized the conclusions drawn due to the differences in the examined practices, or the heterogeneity in the studies’ data collection (Marchington & Grugulis, 2000). Therefore, although previous studies draw a wide range of conclusions very interesting for both academics and practitioners, it is still not easy to establish guidelines directly applicable in the strategic decision-making process in organizations aimed at re-orient towards a more successful stage. We try to fill this gap by developing cladistics in this field.

The essential contribution of this paper is to explain what we can import from biologist in order to establish a useful and sensible classification in HR field; and particularly, how Cladistics can be used as a practical and useful benchmarking tool. We do not try to set a list of ‘best practices’, or the best combination of them (‘best fit’) but to judge whether this methodology is useful in HR studies and can help both academics and practitioners to homogenize field data in a objective, intelligible, simple and easily comparable format. As a result, we present Cladistics a methodology capable to identify what sort of actions or practices are having place at certain organization in certain context whether innovative or not (or in other words, where they are) and which path do they need to follow (what sort of action should they do) in terms of HRM to move to a new situation in the competitiveness map, taking into account what other companies have previously done.

There are some previous studies dealing with the different methodologies to analyze the relation between HR practices and performance, such as regression analysis,

cluster analysis, factor analysis or sequential tree analysis (MacDuffie, 1995; Guest, Conway, & Dewe, 2004), but our intention is not introducing another methodology to study this relation. We are looking for a classification methodology that allows the academia to draw a complete and dynamic map to be used by researchers and practitioners alike.

A Cladistics' key factor differing from the other methodologies used by other authors, is that it includes the concept of evolution within classifications. Therefore, when classifying by using Cladistics, we consider also past events and how do they influence in the decision made and therefore in the future situations. We take into account also the context of the organization, since it determines the decision made. Certain decision could be successful in certain context but a suicidal move for others.

Based on the work done previously in adapting Cladistics approach to social sciences (Leseure, 2002; McCarthy et al., 2000; Tsinopoulos & McCarthy, 2000), we present here a detailed explanation of the methodology applied to the classification of HRM systems considering their evolution.

The information presented provides an introduction to this school of classification, along with rules and guidelines on how to construct a HRM system cladogram. A conceptual example of Spanish manufacturing industry cladogram is built.

4.4 Identifying a guiding list of high involvement practices in human resource management

In a world where global competitiveness is one of the main keys to organizations' success; where innovation, flexibility, responsibility and cooperation become particularly relevant to ensure organizational success, or even mere survival (Zhang,

Wan, & Jia, 2008; Adamides & Pomonis, 2009; Allen, 2001; Antonelli, 2009; Burnes, 2004; Karisson & Ahlstram, 1996), the importance of human capital, as a source of competitive advantage, is gathering especial significance for both, researchers and practitioners alike. It is becoming increasingly frequent, the introduction of new management practices to the organization, seeking to enhance performance, as a form of Management Innovation (Perello-Marin et al., 2013; Paauwe & Boselie, 2005). This is so because such practices are usually difficult to replicate exactly from one company to another, provided they are well rooted in the organization's daily work, or in other words, they are part of their own identity (Thang, Rowley, Quang, & Warner, 2007; Mol & Birkinshaw, 2009). If we look at other resources as a source of competitive advantage, different from HR, we can state that they are becoming more accessible and easy to copy, and therefore, ephemeral sources of competitive advantage, which does not happen with complex social systems (Stavrou et al., 2010; Bowen & Ostroff, 2004).

This paper deals with Human Resource Practices (HRM practices) geared towards improving organizational effectiveness and hence better performance outcomes. Within the field of human resource management, selection and implementation of programs and practices have been widely studied. The pioneer studies appear twenty years ago (Arthur, 1994; Becker & Gerhart, 1996; MacDuffie, 1995; Huselid, 1995; Wright & McMahan, 1992). There is quite a lot of literature, since then to date, dealing with the relationship between HRM practices and improving organizational performance (Boselie, Dietz, & Boon, 2005; Huselid, 2011; Guest, 2011; Paauwe & Boselie, 2005). Some of the paper have focused on aspects such as market value (Huselid, 1995; Collins & CLARK, 2003), financial performance (Huselid, 1995; Delery &

Doty, 1996; Benson, Young, & Lawler III, 2006), profitability (Guerrero & Barraud-Didier, 2004; Gooderham, Parry, & Ringdal, 2008), operational measures of performance or productivity (MacDuffie, 1995; Ichniowski & Shaw, 1999; Datta, Guthrie, & Wright, 2005; Huselid, 1995; Guest, Michie, Conway, & Sheehan, 2003), social climate and culture (Pereira & Gomes, 2012; Prieto & Perez Santana, 2012; Alfes, Shantz, Truss, & Soane, 2013; Collins & Smith, 2006) or turnover (Alfes et al., 2013; Cho, Woods, Jang, & Erdem, 2006; Guchait & Seonghee, 2010; Huselid, 1995; Zatzick & Iverson, 2006).

There are myriad of programs and practices in HRM that firms implant in order to increase its performance. However we have not found a concise and clear definition of the group of practices to be selected in order to enhance performance. Most of the published works are partial or not easy to generalize.

Through this work, I have tried to identify and select the most common practices used by academics. Later, we have grouped them by using general categories in order to simplify the final list. The aim is to obtain a general list that could be used in an homogeneous way for latter studies. As a result, we have obtained a list grouped in the following categories: 1) Staffing; 2) training and development; 3) Appraisal and feedback; 4) Compensation; 5) Job design and Job Analysis; 6) Internal communication and knowledge management (Information sharing); 7) Employment security and commitment; 8) Quality, Active participation and Teamwork. We have used an adaptation of Guest's classification (Guest et al., 2003)

4.5 How important is the implementation of Innovative Human Resource practices in hospitality? The case of Valencia

Through this piece of research, I try to identify what has been done in hospitality sector in Valencia. I analyze HR programs specifically in restaurants.

In hospitality sector, the existence of HR practices is to help companies to provide services of better quality. High-performance HR practices put stress on mutually complementary, supportive and aliening characteristics of individual HR practice for promoting service related behaviors of employees as well as improving the quality of services (Tang & Tang, 2012). The aim of this paper is twofold. On one hand, we have review the most relevant High-performance HR practices within the literature, and on the other, we have analyzed the relevance of those practices and the interaction between them in hospitality (in service sector) in the area of Valencia.

Looking at the academic literature, we found that the list of HRM practices can be different depending on the author. We have gone through the literature of human resource management related to improve organizational performance by enhancing employee commitment and motivation, in order to be able to list a summary of the most common used HR practices in this area. At a later stage, a set of HR experts composed of three academics, and 4 HR professionals have checked, by a focus group the relevance on each of the practices for this sector.

The complete list of practices found in literature, have been classified into the 8 categories. For this classification, we have employed an adaptation of Guest's classification (Guest, 2011; Perello-Marin & Ribes-Giner, 2014): 1) Recruitment and selection; 2) training and development; 3) Appraisal and feedback; 4) Rewards and

incentives; 5) Job design; 6) Internal communication; 7) Employment security and commitment; 8) Active participation. Therefore, the most commonly used HR practices suitable for hospitality, in order to enhance organizational performance, resulted into 42 items. The emphasis was placed on what the literature would identify as 'high performance' or 'high commitment' as opposed to traditional practices.

Using a bundles approach, we have worked using the focus group technique. The group was formed by three HR academics, and 4 managers from hospitality sector in the studied region. We have analyzed the relevance of those practices and the interaction between them in hospitality (service industry), particularly, within a south-east region of Spain (Valencia); we have also analysed how they reinforce each other or cause dead-combinations, in order to identify all the possible successful combinations of High-performance HR practices bundles.

We have seen that there is not only one possible combination or High-performance HR practices that lead to a successful situation in hospitality sector. We leave for further research the extension of this study to a larger sample of companies within the sector, or even to other geographical areas in order to see if there are other factors that influence the final results, such as type of company (subsectors), size or location, for instance. We also found that it could be very interesting to compare not only the results coming from the managers of the company, but also from the point of view of the employees.

CHAPTER 2

TOWARDS A METHODOLOGY FOR IDENTIFYING PATH DEPENDENCE IN THE EVOLUTION OF HUMAN RESOURCES PRACTICES

Paper published in WPOM journal {Perello-Marin, 2010 PERELLOMARIN2010 /id}

TOWARDS A METHODOLOGY FOR IDENTIFYING PATH DEPENDENCE IN THE EVOLUTION OF HUMAN RESOURCES PRACTICES

Rosario Perello-Marin

Dpto. de Organización de Empresas. Universidad Politécnica de Valencia. Camino de Vera S/N 46021 Valencia. rperell@upvnet.upv.es

Abstract: The path dependence approach seems to be well suited for analyzing certain decisions in human resources management. Within this paper, we will try to establish a framework for the application of an evolution model in human resources practices by using cladistics.

Keywords: path dependence; human resources management; evolution of organization; collaborative teams.

1 Introduction

Over the last years, aspects such as the globalization of business markets, stronger pressures to achieve efficiency gains as well as quality, and shorter production and products life cycles are forcing firms to maximize the adaptability of their production systems (Adamides & Pomonis, 2009). In this context of globalization, re-engineering business processes, improving efficiency, improving quality, customization, etc.. we see that the evolution of organizations is particularly relevant (ElMaraghy, AlGeddawy, & Azab, 2008).

There are different methodologies to study transformations in firms. Recently, the biological concept of co-evolution has been adopted by some researchers in organization

studies, they particularly use cladistics to classify the different stages of evolution of firms. However it has been found incremental and discontinuous trajectories in transformation processes. In this context, it is argued that path dependence approach helps understanding those discontinuous transformations. Particularly, it explains how some organizational decisions are influenced by decisions taken in the past.

Transformations in production system are often coupled with changes in human resource management policies and practices. One of the key transformations in work practices over the years has been the introduction of teams as a mechanism to deliver enhanced productivity and quality.

This paper aims to join these two lines of investigation opened by the scientific community. I will try to establish a framework for using cladistics in order to identify an evolution model in human resources practices.

2 Theoretical context

Some authors start using, in a still incipient way, the biological concept of evolution, extrapolated to the evolution of organizations, products and production systems (Adamides & Pomonis, 2009; AlGeddawy & ElMaraghy, 2010; Lee & Jo, 2007).

This new evolutionary perspective for analyzing organizations and their production systems takes into account its history and identifying their likely future evolution (Baldwin, Allen, Winder, & Ridgway, 2005). This theory is based on the diversity of organizations and changes in their processes are governed by evolutionary mechanisms.

In this context, some author have began using cladistics in their researches (McCarthy, Ridgway, Leseure, & Fieller, 2000; Tsinopoulos & McCarthy, 2000; Leseure, 2002; Baldwin et al., 2005; ElMaraghy et al., 2008). Cladistic studies can provide organizations with a map of the ecosystem in which they exist. Subsequently, by phylogenetic analysis, it can be determine which action should be implemented to bring about change (McCarthy et al., 2000).

It has been found that faced with the same actions carried out in different firms, the results can be very varied. The Path Dependence Theory argues that decisions we take now are strongly conditioned by decisions taken in the past. This is the reason why, to the same action, or decision, not all the processes progress to a unique and predetermined equilibrium point. The final situation depends, in part, on the path taken to reach it. This evolution vision of the processes is substantially different from the 'universalist' vision. 'Universalist' vision, in a simplistic way, assumes that the results of deployment operation management practices are the same, regardless the initial conditions, or stages through which is passed (Schroeder, Bates, & Junttila, 2002; Galan & Sanchez-Bueno, 2009; Tzafrir, 2006).

For mathematicians, a random process is path dependent if the probabilities of transition to alternative states depend, not only on the present state, but also on the previous states that it had reached before (David, 1988). For the business organization researchers, we are interested, not only in identifying changes of the probabilities of implementation of states (practices), but also, changes on the probabilities of different result which can be reached in the future due to the implementation of the different practices in a determinate order. This concept is called, by mathematicians, not ergodic random process (David, 1988). By definition, a stochastic process is one in

which the averages calculated from past observations cannot differ consistently from the time average of the future events. Not ergonomic processes have some relation to chaotic systems. Chaotic systems are those in which an apparently insignificant incremental change results in large effects, and therefore it makes that the system evolves in a completely different way (Levy, 1994).

Path dependence consists of two, separate elements: lock-in mechanism and sensitivity to initial conditions (van Driel & Dolfsma, 2009). Once certain initial decisions have been taken, the decision-maker is averse to make radical changes. This fact explains why the effect of initial decisions tend to persist, even when circumstances that led to make these initial decisions have lost relevance or validity. As time passes and decisions are concatenated to each other, it becomes increasingly costly to change the direction that was traced perhaps without considering the long-term consequences (van Driel & Dolfsma, 2009).

3 Future research

At this point it has been found that Path dependence approach and cladistics, although are not very extended at the moment in social science, they have been used mainly in management operations and supply chain management. However, they have not been broadly used in human resource management neither in collaborative teams. Therefore, a future research line is been opened: explaining path dependence in human resources and showing how to implement it.

.

CHAPTER 3:

TOWARDS A PATH DEPENDENCE APPROACH TO STUDY MANAGEMENT INNOVATION

Paper published in Management Decision Journal: {Perello-Marin, 2013

PERELLOMARIN2013 /id}

Towards a path dependence approach to study Management Innovation

M. Rosario Perello-Marin[1], Juan A. Marin-Garcia[2], Javier Marcos-Cuevas[3]

[1] Department of Organizacion de Empresas, Universidad Politecnica de Valencia, Valencia, Spain

Email: rperell@upvnet.upv.es

[2] ROGLE- Department of Organizacion de Empresas, Universidad Politecnica de Valencia, Valencia, Spain

Email: jamarin@omp.upv.es

[3] Centre for Strategic Marketing and Sales. Cranfield School of Management, Cranfield, United Kindom

Email: javier.marcos@cranfield.ac.uk

Abstract

Purpose: Scholars in social sciences tend to use the term of path dependence without explaining exactly what they mean by it. Path dependence is a useful approach to understand the success or otherwise of the implementation of management innovation. The aim of this paper is to identify under which conditions makes sense to talk about path dependence, and the relevance of using path dependence to the analysis of management innovation.

Design/methodology/approach: The path dependence literature in different contexts and knowledge areas within social science is reviewed using a narrative approach.

Findings: The concept of path dependence can be used to study management innovation, particularly when analyzing the introduction of new management practices. We argue that the order in which management practices are introduced have a profound effect on the outcomes for the organization. When the appropriate practices are introduced first, these create enhanced capabilities for the implementation of subsequent practices. If inappropriate practices are rolled out, they may severely impede management innovation and thus evolution and change of the firm.

Research limitations/implications: This work highlights the need to conduct further research to understand the interaction between existing practices and the new ones. This study can be extended with an empirical work to corroborate the results presents here.

Originality/value: By reviewing the different definitions of path dependence that exist in the literature, this paper will stimulate a debate on the necessary and sufficient conditions of path dependence and encourage a greater level of clarity in the management innovation area.

Keywords: path dependence, management innovation, management practices, complexity

Article Classification: Literature review

1 Introduction

In an increasingly competitive environment, in which changes happen so rapidly, organizations endeavor to evolve in order to achieve a sustainable competitive advantage. Firms' emphasis on maximizing flexibility and adaptability to continuous change becomes key to ensure future success changes (Adamides & Pomonis, 2009; Antonelli, 2009; Burnes, 2004a; Karlsson & Ahlstrom, 1996; van Driel & Devos, 2007; Zortea-Johnston, Darroch, & Matear, 2012; Nielsen & Lassen, 2012; Farinos, Herrero, & Latorre, 2011). Management innovation (MI) is seen as inextricably linked to change and adaptive abilities (Mol & Birkinshaw, 2009; Lei-Yu, 2010).

We refer to Management Innovation (MI) as the introduction of management practices that are new to the firm and intended to enhance performance (Mol & Birkinshaw, 2009; Vaccaro, Jansen, Van Den Bosch, & Volberda, 2012). We specially focus on the implementation of innovation in management practices, which affect the day-to-day operational work of managers. The implementation of new practices to obtain a competitive advantage is often a challenge in firms. Whilst some practices succeed in certain organizations, these same practices fail in another, even in organizations operating in comparable environments (Baxter & Hirschhauser, 2004; Bayo-Moriones, Bello-Pintado, & Merino-Diaz-De-Cerio, 2008; Corso, Giacobbe, Martini, & Pellegrini, 2007; Doolen & Hacker, 2005; Garcia-Sabater, Marin-Garcia, & Perello-Marin, 2011; Caceres, Guzman, & Rekowski, 2011).

The literature focusing on the introduction of new practices and tools at the operational level reveals a number of gaps. The first, is lack of agreement about the reasons (or clusters of reasons) that explain success or failure in the implementation of

tools and practices (Akdere, 2009; Albors & Hervás, 2006; Anand & Kodali, 2008; Bhuiyan & Baghel, 2005; Collaine, Lutz, & Lesage, 2002; Doolen & Hacker, 2005; Herron & Braiden, 2006; Hipple, 2005; Marin-Garcia, Miralles Insa, Garcia-Sabater, & Perello-Marin, 2011; Mol & Birkinshaw, 2009; Pavnaskar, Gershenson, & Jambekar, 2003). Second, there is inconclusive evidence about the relationship between the introduction of new management practices and firm performance (Mol & Birkinshaw, 2009). Third, we know little about the importance of the order in which these practices are introduced in the organization. This paper aims to address the third gap.

The introduction of new management practices is a form of MI, this form of MI implies a change in organization, and thus a degree of evolution. Evolution and change in organizations can be studied form different perspectives. In this paper we show how MI can be studied adopting the lens of complexity, and particularly using the 'path dependence' approach. In so doing the path dependence approach is explained and how the order chosen to adopt new practices can affect the final outcomes in organizations. We will show that success or failure in implementing new practices and tools depends largely on the interaction between existing practices and the new ones, as well as psychological, organizational, institutional and economic constrains (Baldwin, Allen, Winder, & Ridgway, 2005).

The paper is structured as follows. First we link the concept of MI to change and evolution in organizations. Next, we explain how evolution of organizations can be studied from the lens of complexity and we present advantages over other more traditional perspectives. Particularly, we use path dependence as a complexity approach. We present the key different approaches of path dependence used in the

literature, and finally we conclude with a clear definition of the concept and the conditions under which it occurs.

2 Approach

MI can be defined as a difference in the form, quality, or state over time of the management activities in an organization, where the change is a novel or unprecedented departure from the (Birkinshaw, Hamel, & Mol, 2008). Thus, we can state that there is MI when a firm, seeking to enhance its competitiveness and to increase performance introduces new practices at operational level (Vaccaro et al., 2012; Cavagnoli, 2011). Higher levels of competitiveness and performance will occur provided the introduction of best practices trigger innovation and change.

Organizational change is a critical phenomenon in organizations, but at the same time, difficult to implement successfully (Burnes, 2005; Burnes, 2004b; Beckman & Burton, 2008; Wright, Sturdy, & Wylie, 2012). Implementing change has been widely studied and recent developments have drawn on complexity theory (Burnes, 2005; Allen, 2001). Complexity is used as a lens to study the evolution and change aspect of MI, and path dependence is adopted to understand how events or decisions occurred in the past, influence present and future decisions and thus intended change (Antonelli, 2009).

Overall the paper addresses the research question: *Can we study Management Innovation using path dependence approach?* To identify relevant and available studies using path dependence approach and its relevance to MI, we used a variety of search techniques. Electronic searches in citation databases as well as manual searches of

relevant journals were performed. Business Source Premier, Web of Knowledge and Science Direct databases where used filtering from 1985 through to June 2012. We began our review in 1985 to coincide with the publishing of David's (1985) study on path dependency of QWERTY and subsequently Arthur's (1989) contribution. International journals were searched using key words such as: 'path dependence', 'evolution', 'complexity' and/or 'management innovation'. We also limited our search to sources written in English.

Manual searches of journals that publish studies on management innovation, and evolution in organizations were also conducted. These journals included: Journal of Business Research, Academy of Management Review, Journal of Management Studies, International Journal of Innovation Management, International Journal of Management Reviews, Research Policy, Journal of Evolutionary Economics and Journal of Cleaner Production. Finally, we also examined the reference lists of the collected articles to identify further relevant papers. In total, the searches resulted in 425 potentially relevant articles that were further narrowed to a final set of 127 included for review.

3 Complexity

Complexity theories derive from different scientific disciplines such as biology, physics and mathematics. These theories are being increasingly used to understand the phenomenon of intended change in organizations. In particular, they are deemed useful in deciphering how the adaptability and the capacity to learn and manage change influence performance and survival (Allen, 2001). Complex evolutionary

perspectives contribute to our understanding of competitive advantage in a way that traditional research approaches to the study of change in organizations may not, since their underpinning paradigms are deterministic and predictive. In a changing environment, sustainable competitive advantage needs to reflect the dynamic and complex nature of phenomena such as how the organization identifies new niches, exploit them, and then adapt to them, whilst the environment also continues to change (Allen, 2001; Nielsen & Lassen, 2012). Organizations and their processes and practices are therefore viewed as complex systems. A complex system is such that has within itself a capacity to respond to its environment in more than one way (Antonelli, 2009; Burnes, 2005). Such systems have internal possibilities of choice and response over time, that are not always predictable (Allen, 2001).

Within this context, the evolution process of an organization consists of a set of decisions taken by different agents. There is a consensus that decision-making in general, and in management in particular, is plagued by unpredictability, risk and uncertainty (Baldwin et al., 2005; Bergh, Thorgren, & Wincent, 2011). Those decisions can be future-oriented or mindful of the past (Guth & Stadler, 2007). The first one corresponds to a pure traditional rational choice behavior, i.e. the traditional economics approach (forward looking deliberation), and the second one, to a new evolutionary theory approach, i.e. evolutionary economics and path dependence approaches.

4 Path dependence approach

The notion of path dependence is one of the main forays in the attempt to apply the emerging theory of complexity in economics (Antonelli, 2009). Path dependence is a specific form of complex dynamics: It provides an analytical framework to explain and assess the ever-changing outcomes of the combination of and interaction amongst factors of continuity / discontinuity, growth and development, hysteresis and creativity, routines and 'free will', which all characterize economic action in a dynamic perspective that is also able to appreciate the role of historic time (Antonelli, 2009).

The notion of path dependence in social sciences, was first explicitly used to explain prevailing technologies and standards by evolutionary economists in the 80's (David, 1985; Arthur, 1989). It has been adopted in recent decades as a useful way of analyzing the development of a range of other subjects, including technological development (David, 1985; Bruggeman, 2002; Soriano & Peris-Ortiz, 2011), politics (Webster, 2008; Bennett & Elman, 2006; Clark & Praneviciute, 2008; Kyriazis & Zouboulakis, 2005), health policy (Monk, 2008), national corporate governance systems (Schmidt & Spindler, 2002), urbanism (van Assche & Djanibekov, 2012; Palang, Spek, & Stenseke, 2011), organizational studies (Sydow, chrey, & och, 2009; Lichtenthaler & Muethel, 2012), tourism (Bramwell & Cox, 2009), transport (Low & Astle, 2009; Dooms, Verbeke, & Haezendonck, 2012; Mu, Jong, & Koppenjan, 2011), industrial clusters (Belussi & Sedita, 2009), management operations (van Driel & Dolfsma, 2009), scientific knowledge (Peacock, 2009; Choi, 2011; Niosi, 2000), export behavior (Casillas, Moreno, & Acedo, 2012), energy (Christiansen, 2002) and innovation systems (Alkemade,

Frenken, Hekkert, & Schwoon, 2009; Antonelli, 2009; Hakansson & Waluszewski, 2002; Rajneesh, 2002; Martinez-Noya & Garcia-Canal, 2011).

Most of the literature about path dependence has been developed from the point of view of technical paths or technical change; however, the study of organizational change presents specific problems due to its complexity and multifaceted nature compared to technological paths (van Driel & Dolfsma, 2009; Sydow et al., 2009).

Although there are increasing discussions of path dependence in social sciences, there is however, substantial disagreement on how best to define and apply the path dependence concept (Vergne & Durand, 2010; Pierson, 2000): whether a deterministic or stochastic approach. Despite the scientific relevance of the approach, path dependence is still contested (Vergne & Durand, 2010). The most commonly conception used by scholars is the deterministic one. It suggests that once a particular course of action has been chosen, it becomes increasingly difficult over time to reverse that course (Pierson, 2000; Webster, 2008; Schmidt & Spindler, 2002). In other words, decisions taken at the present are strongly conditioned by decisions taken in the past. Many contributions refer to path dependence to illuminate organizational rigidities, stickiness, or inflexibility, however most of them are related to similar concepts that are not exactly the same as path dependence (Sydow et al., 2009; Vergne & Durand, 2010) including imprinting (Beckman & Burton, 2008; Johnson, 2007), escalating commitment, abortive capacity, sunk cost (Schmidt & Spindler, 2002), structural inertia, reactive sequences or first-mover advantage (Choi, 2008; Chu, 2009).

The stochastic point of view for path dependence assumes that although this approach connects the past and the present, initial conditions do not determine the outcome. A

series of contingent (unpredictable or random) events influences on the path taken greater than the initial conditions themselves (Bellaiche, 2010; Marciano & Khalil, 2012). Therefore, novel paths emerge unexpectedly (Arthur, 1989; David, 1985; David, 2007; Allen, Strathern, & Baldwin, 2006; Baldwin et al., 2005).

Deterministic approaches have viewed path-dependence as 'historicity', whereby initial conditions typically exert strong effects on its development and on the final outcome (Antonelli, 2009). We argue that path dependence cannot be fully explained adopting extreme deterministic approaches, thus 'history matters' but do not fully determine future outcomes. Path dependence informs but cannot predict every possible reason why institutions, technological standards, or firm capabilities tend to persist over time (Vergne & Durand, 2010).

While the components that characterize path dependence taken individually can be commonly found in organizations, truly path dependent phenomena are rare. The combination of factors that is required to generate path dependence is less common (Vergne & Durand, 2010). This leads us to argue that path dependence is often defined rather narrowly, and used metaphorically rather than on solid theoretical foundations (Sydow et al., 2009). There are very few references outlining in detail the characteristics or drivers that make organizations path-dependent. Much literature refers to path dependence as a mere label for a particular class of dynamic phenomena, but not as a theory to explain the way in which systems behave and evolve (David, 2007; Vergne & Durand, 2010). Developing a full conceptualization of path dependence, may allow a better understanding of organizations' evolution when responding to external stimuli and planned change. Path dependence has potential in

enlightening the influence on the final results, of the order in which different practices are implemented (van Driel & Dolfsma, 2009).

Reviewing scholarly work of path dependence reveals two opposite positions: persistence versus novelty. On one hand there is a school of thought that defines path dependence as a mere persistence or rigidity, which can be easily confused by increasing returns, sunk costs or adaptive expectations. We find this approach limited and partial (Beckman, 2008; Sydow, 2009). On the other hand there are some other scholars who defend that novel paths emerge unexpectedly (Arthur, 1989; David, 1985; David, 2007; Allen et al., 2006; Baldwin et al., 2005). Accordingly, such mechanisms would contribute to path dependence only as amplifiers of 'small events and chance circumstances'. Following this view, the true origin of paths would be unexpected and non-deterministic (Vergne & Durand, 2010; van Driel & Dolfsma, 2009).

We argue that path dependence does not imply inflexibility or non-evolution but quite the opposite. It is a way to evolve taking into account the effect of the past. Path dependence is a specific form of complex system's dynamics most apt to understand the process and the outcomes of the interactions amongst agents embedded in their own context and constrained by their past decisions, yet endowed with creativity and able to generate new knowledge by means of both learning and intentional innovative strategies (Antonelli, 2009). Therefore, path dependence is a dynamic approach that differs from the deterministic one in that irreversibility arises from events along the path. They are not only the initial conditions that play a role in the multiplicity of possible outcomes in organizational evolution (Antonelli, 2009; Vergne & Durand,

2010). Path dependence is the conceptualization of historical dynamics in which one 'accident' follows another relentlessly and unpredictably. Yet the past narrows the scope of possible outcomes, shaping the corridor into which future dynamics take place (Antonelli, 2009).

5 Conclusion

There is no clear consensus on the exact definition of a path dependence process. We propose path dependence to be a stochastic process, that emerges under two conditions (contingency and self-reinforcement) and that causes lock-in in the absence of exogenous shock (Vergne & Durand, 2010). Path dependence can be useful to explain how an organization selects and implements best practices at an operational level, in order to achieve a competitive advantage.

Initial conditions, such as previously implemented practices, successfully or not, observed experiences in competitors, etc., influence the decisions taken in selecting the introduction of new sets of practices. Success or failure in implementing new practices and tools depends largely on the interaction between the existing practices and the new ones. If the appropriate practices are introduced first, these create enhanced capabilities for the implementation of subsequent practices. When inappropriate practices are rolled out, they undermine the organization's ability to introduce seamless management innovation jeopardising evolution and change of the firm.

Firms compete in an environment where the degree of change is ongoing. To ensure their survival, firms need to adapt the organization at all levels to new circumstances.

MI needs to be analyzed adopting dynamic perspectives such as those offered by complexity theories. We invite future research to focus on furthering our understanding of implementation of management practices. Fruitful work may derive from analyzing further when and how the order in which practices are implemented influence the achievement of specific results within the organization and also within networks of organizations.

CHAPTER 4

CONSIDERING EVOLUTION WHEN CLASIFYING ORGANIZATIONS. LESSONS FROM BIOLOGY APPLIED TO HUMAN RESOURCES MANAGEMENT SISTEMS

Paper sent to BRQ journal. Currently under review

CONSIDERING EVOLUTION WHEN CLASIFYING ORGANIZATIONS. LESSONS FROM BIOLOGY APPLIED TO HUMAN RESOURCES MANAGEMENT SISTEMS

M Rosario Perello-Marin

Universidad Politécnica de Valencia

Juan A Marin-Garcia

Grupo ROGLE-Universidad Politécnica de Valencia

Gabriela Ribes-Giner

Universidad Politécnica de Valencia

Abstract

As HRM system of organisations evolves, it seems necessary to develop models and supporting tools to represent this evolution. Biologic evolution theories can offer the basis for this study.

We especially propose Cladistic classification to support such a modelling and propose a conceptual architecture for managing HRM systems evolution. We suggest cladistics as a useful benchmarking tool from complexity. Cladistic can help researchers and practitioners to identify different possible paths taken by organizations evolving and changing over the time. The information presented provides an introduction to this school of classification, along with rules and guidelines on how to construct a HRM system cladogram. A conceptual example of Spanish manufacturing industry cladogram is built.

Key words: Classification, evolution, cladistics, HRM system, HR practices, growth

1 Introduction

The argument for creating a classification in social science is, to some extent, demonstrated by a large number of typologies and classifications that have been produced by researchers from this area (Amo et al., 2004; Fong et al., 1998; Guest, 2011; Marchington and Grugulis, 2000; McCarthy et al., 2000; Valverde et al., 2006). Particularly, this knowledge area needs for categories, typologies and configurations in order to improve its explanatory capacity (Luna-Arocas and Camps, 2008).

Generally speaking, classification is the action of assigning something to a category according to its characteristics. However, not all classification systems provide the same advantages and information. When talking about human resources management (HRM) systems, classifications are not that obvious. Due to its complex nature, by classifying theoretically, the represented reality obtained can be unrealistic and oversimplified, leading to obviously wrong interpretations when comparing to a direct observation. Therefore, it is very important to choose the appropriate technique for classification according to the main purpose of the classification and the nature of the explanation needed. Many examples of classifications can be met in HR academia. For instance, Stavrou et al. (2007) propose a classification of organizations into superior-performers and lower-performers considering, on the one hand, the implementation of certain 'best HRM practices' and on the other hand, how they affect to the results of the organization (performance). Other example can be found in Razouk and Bayad (2011). They group organizations by using cluster analysis into three different categories: administrative HRM, hybrid HRM or strategic HRM. This classification is made, taking into account the HR practices identified within the organizations. They

also introduce the concept of evolution in terms of HRM system in a firm. Swart and Kinnie (2013) classify firms in terms of the HR practices they implement; they illustrate empirically two different configurations of practices (organizationally and professionally focused) in professional service firms. Organizationally focused practices are designed to maximize employee's commitment; and professionally focused practices encourage individualism and facilitate mobility. They argue not only industry and firm specific differences, but also targeted and temporary differences in the same organization. They used study case as the research methodology.

Moreover, looking further at the literature, some studies do not only classify organizations, but also HR practices. Some examples of seminal works are for instance, Huselid (1995), Boxall (1996) or Patterson et al. (1997). Huselid (1995) identifies two groups of practices, entitled 'employee skills and organizational structures' on the one hand, and 'employee motivation' on the other hand. The first group includes job design, enhanced selectivity, formal training, various forms of participation and profit sharing, and the latter group comprises performance appraisal linked to compensation and focus on merit in promotion decision. Boxall (1996) divided HR practices depending on their relation with 'human capital advantage' (recruiting and retaining outstanding people) and 'human process advantage' (practices related to work effectiveness). He argued that the practices leading to a sustainable competitive advantage are those related to work effectiveness. Other seminal example in terms of HR practices classification can be found in Patterson et al. (1997). They grouped HR practices into 'acquisition and development of employee skills' and 'job design', however, this classification in not consistent with the one already made by Hueslid in 1995. They basically differ from him in where they place participation and teamwork.

They consider these practices as a part of the job design instead of including them in employee skills. However, although this classification schemes have been carried out for a long time now, it seems that it has not reached a definitive classification yet. In fact, at present, academy continues its search for a clarifying classification of HR practices. Thereby, it can be found some recent studies such as Wright and Boswell (2002), Birdi (2008), Stavrou et al. (2007), Valverde et al. (2006), Guest (Guest, 2011) or, Swart and Kinnie (2013) still dealing with this issue but from different points of view. The vast majority of the studies use data from USA or UK, but growing number of studies analyzing other contexts are currently been published referring to cross-cultural differences as for instance Morris et al (2009) or Rodriguez Ruiz and Martinez Lucio (2010).

As it can be seen above, there is not only a wide range of methodologies used for classifying organizations in terms of their HRM systems, but also a lack of consensus regarding the terminology used (practices, policies, principles, functions…), or even the level of abstraction when regarding HR practices and organization performance (universalistic, contingency, or configurational approach) (Alcazar et al., 2013; Colbert, 2004; Marchington, 1992; Wood, 1999). There is a large number of studies dealing with the relations existing between certain HR practices considered as best practices (universalistic approach), or a combination of them ('best fit' or bundles approach), that leads to a higher business performance as for instance Becker and Gerhart (1996), Delery and Doty (1996), Huselid (1995), or Ichniowski and Shaw (1999); however, it is still very difficult to generalized the conclusions drawn due to the differences in the examined practices, or the heterogeneity in the studies' data collection (Marchington and Grugulis, 2000). In fact, an accepted list of HRM systems automatically connected

to high performance remains absent (Stavrou et al., 2010). Therefore, although previous studies draw a wide range of conclusions very interesting for both academics and practitioners, it is still not easy to establish guidelines directly applicable in the strategic decision-making process in organizations aimed at re-orient towards a more successful stage. We try to fill this gap by developing cladistics in this field

Following the guidelines of Delery and Doty (1996), we consider that HRM system must be consistent and coherent both internally (strategy, structure and climate) and externally (local environmental and organizational conditions). Accordingly, a particular model can be successful in certain context but not in another. Therefore, there is no a unique possible solution for 'best practices', but depending on the type of organization and its context, 'the magic recipe' for success may be one or the other.

The essential contribution of this paper is to explain what we can import from biologist in order to establish a useful and sensible classification in HR field; and particularly, how Cladistics can be used as a practical and useful benchmarking tool. We do not try to set a list of 'best practices', or the best combination of them ('best fit') but to judge whether this methodology is useful in HR studies and can help both academics and practitioners to homogenize field data in a objective, intelligible, simple and easily comparable format. As a result, we present Cladistics a methodology capable to identify what sort of actions or practices are having place at certain organization in certain context whether innovative or not (or in other words, where they are) and which path do they need to follow (what sort of action should they do) in terms of HRM to move to a new situation in the competitiveness map, taking into account what other companies have previously done. There are some previous studies dealing with

the different methodologies to analyze the relation between HR practices and performance, such as regression analysis, cluster analysis, factor analysis or sequential tree analysis (Guest et al., 2004; MacDuffie, 1995), but our intention is not introducing another methodology to study this relation. We are looking for a classification methodology that allows the academia to draw a complete and dynamic map to be used by researchers and practitioners alike. Our purpose is to justify the use of Cladistics in SHRM as an adequate methodology for such a goal; but since it is a really ambitious goal, in this work we present the methodology, and we include a brief example of application.

Cladistics is a hierarchical classification methodology, used mainly in evolutionary studies to group organism that have evolved shared or similar characteristics. It does not look just at the similarities between individuals (analogy), but it looks beyond. It is based on common ancestors. So for example, if we borrow an example from the animal world, koalas, by simple observation of their characteristics, could be considered relatives of sloths, since they are tree dwelling and slow moving apart from other physical similitude. However, it has been shown that they are not; they are closer relatives to kangaroos. Another simple example which shows that the simple observation of apparent features is not enough to establish a consistent classification can be provided by corals. Corals, due to their appearance, resemble more plants than animals; however, they are marine invertebrate animals. This simple example illustrates how, by simple direct observation, relevant aspects can be ignore since they can not be seen by the naked eyes. Likewise, when we look at organizations, we may be tempted to classify them just considering their significant features, but ignoring

other aspects which indicate differences between them but are not so obvious. We suggest the use of Cladistics to prevent such a situation.

Although Cladistics is not very commonly used yet in social sciences, and particularly in business studies, it could be a very useful descriptive and explanatory technique as it will be shown in this paper. A Cladistics' key factor differing from the other methodologies used by other authors, is that it includes the concept of evolution within classifications. Therefore, when classifying by using Cladistics, we consider also past events and how do they influence in the decision made and therefore in the future situations. We take into account also the context of the organization, since it determines the decision made. Certain decision could be successful in certain context but a suicidal move for others. Considering this fact, Cladistics can be used, not only for classifying organizations, but also as a tool for assessment and benchmarking (Fernandez et al., 2001; Tsinopoulos and McCarthy, 2000). Based on the work done previously in adapting Cladistics approach to social sciences (Leseure, 2002; McCarthy et al., 2000; Tsinopoulos and McCarthy, 2000), we present here a detailed explanation of the methodology applied to the classification of HRM systems considering their evolution.

The remainder of the paper is structured as follows. First, the main reasons for considering evolution of HR systems are presented. Next, having explained the key features of Cladistics, along with the main differences over other classification methodologies, the singularities to take into account in building HR cladogram are identified. Other examples of Cladistics analysis in social science are exposed too.

Then, how to construct a cladogram in HR field is explained illustrated with a simple example. Finally, conclusions and future research are presented.

2 Evolution in HRM. Why looking backwards in the decision making process?

To date, little attention has been paid to past events in business discipline; on the contrary, much more attention has been put on looking forward trying to predict the best decision to be made. However, historical information gives us the context and framework where decisions should be taken and therefore, the lived and learned experiences that influence the selection of one path rather than the other in the organization's day to day decision making process (Perello-Marin et al., 2013). In order to better understanding any present organisational system and also, to be able to identify patterns of similarity between seemingly different organisations, we need to fully understand the cumulative impact of past event and context on them (Leseure, 2000). In other words, results of success or failure of the decision taken in organizations depend, to a great extent, on the experience and previous decision taken, and the context where the organization is competing. This fact that is broadly known by practitioners and researchers alike, used to be over-simplified in most of the classification techniques commonly used in social sciences. Therefore, if we look for a more realistic and useful technique that help us in the decision making process, it seems to be more accurate to choose any technique that considers evolution in the input data. This fact reinforces to great extent the apparent importance of Cladistics as a technique to be used within the decision making process in business studies.

Referred to HRM systems, if we consider evolution, the question therefore takes a greater dimension. We look for a tool that enables us to manage HR systems within its global context of the organization, and not to take punctual decisions to solve some punctual problems or situations. The real issue is not to find the adequate innovative HR program(s) or practice(s), but to identify and to use all HR programs or practices, available or in development, useful to the pursued goal, mutually compatible, and in the appropriate order. However, human resource management is an area in constant evolution and change. Moreover, there is no universal model or an ideal combination of HRM strategies, programs or practices, to serve all organizations. On the contrary, there are different models to explain HRM evolution and HR management (de Souza Freitas et al., 2011).

To date, few studies consider the evolution in HR management. We highlight the works published by Razouk (2011), de Souza Freitas et al. (2011) and Stritesky (2014). However, most of the work done so far is universalistic (they consider general stages followed over time). Moreover, we have not found any work able to map all different paths followed by organizations in certain context (geographic, or industry context for instance) in their evolution from the point of view of HRM. If academics and practitioner were able to map such evolution, it would be a benchmarking tool very useful in the decision making process.

3 Cladistics: what is it exactly? Advantages over other approaches.

Once we have found that looking backwards, and considering evolution in studying HRM systems make sense, we will briefly describe Cladistics methodology, applied to business studies as a methodology that includes evolution and path dependence in its foundations. We suggest Cladistics as a tool from complexity, to identify different possible paths to be taken by organizations which are evolving and changing over the time. Some scholars have started using this biological concept of evolution, in a still incipient way, extrapolated to the evolution of organizations, products or even production systems (Adamides and Pomonis, 2009; AlGeddawy and ElMaraghy, 2010; Baldwin et al., 2005; Barthelme et al., 1998; ElMaraghy et al., 2008; Lee and Jo, 2007; Leseure, 2002; McCarthy et al., 2000; Tsinopoulos and McCarthy, 2000). We support their suggestion of using this methodology as a benchmarking classification system (Baldwin et al., 2005; Fernandez et al., 2001).

3.1 Definition of cladistics

Taking the definition of Cladistics from its original context biology; it is an approach to classification of organism which are grouped together based on the fact of having one or more shared unique characteristics that come from their last common ancestor and that are not present in more distant ancestors (Camin and Sokal, 1965; Hennig, 1999; Kluge, 1998). This systematization technique reveals the complex orderly pattern of relationships between the specimens (Barthelme et al., 1998). It is fundamentally based on ancestral relationships. By using this classification approach, species can be

grouped based on similarities of change through space and time, and finally ordered into a cladogram (AlGeddawy and ElMaraghy, 2011; Kluge, 1998; Leseure, 2002).

Classification tools in biology have been very useful in managing information on living entities, their genetics, forms and behaviors. There are two different typologies of classifications, phenetics and phylogenetics (AlGeddawy and ElMaraghy, 2011; Barthelme et al., 1998). Phenetics describes entities as they are superficially, regardless their genetic properties in terms of evolutionary past and the ability to transmit its properties to the future. The groups are built according to any chosen similarity criteria. The most usual phenetic techniques are numerical taxonomy ones (such as for instance cluster analysis or classification trees). On the other hand, phylogenetics is based on evolutionary relationships. When classifying in phylogenetics, the characters of existing taxa (group of organism) are described based on its ancestral characters (properties or variables of the organism). It therefore indicates its potential capacity for transmitting its characters to the future (AlGeddawy and ElMaraghy, 2011). Cladistics responds to this latter classification type. The main difference between them is that while phenetic classification is built on direct observation, phylogenetic classification is a reconstruction of evolution relationships (Barthelme et al., 1998). Cladistics is also distinguished by its emphasis on parsimony and hypothesis testing, rather than subjective decisions that some other taxonomic systems rely on (maximum likelihood, or distance analysis). The set of evolutionary patterns are called phylogeny, i.e. the history and order of change of the different groups of specimens (Leseure, 2002). This approach to classification involves studying evolutionary relationships between entities in reference to the common ancestry group (i.e. an external reference point) (McCarthy et al., 2000).

One of the main advantages of Cladistics as a phylogenetic approach is that it is well suited for collective research due to its objectivity. In fact, while other classifications are artificial and subjective, Cladistics, by using evolution as an external reference point, can produce classifications that are natural, objective and unambiguous (Baldwin et al., 2005). On the other hand, one of the greatest strengths of it, is the fact that the representation of the classification (the cladogram), illustrates the data, assumptions and results, making them easy to be communicated, and therefore all decisions become transparent (Leseure, 2000; McCarthy et al., 2000; Tsinopoulos and McCarthy, 2000). While points of disagreement between researchers have been detected in previous studies using this technique, they are due to disagreements on the assumptions or character data, but not in the underlying philosophy (McCarthy et al., 2000).

As it has been stated before, although this methodology has its origins in biology, recently Cladistics has begun to be used in many other disciplines in which phylogenetic relations are significant. We have found examples in astrophysics (Fraix-Burnet et al., 2012; Fraix-Burnet et al., 2003; Smart, 2012), historical linguistics (Dunn et al., 2005; Hamed et al., 2005), philology (Robins, 2007), and business studies (AlGeddawy and ElMaraghy, 2011; Baldwin et al., 2005; Leseure, 2002; McCarthy et al., 2000; Rose-Anderssen et al., 2009), among others.

Traditionally, in business studies, classifications used to be made up of items grouped into families, regardless of past and future developments (AlGeddawy and ElMaraghy, 2011). However, some examples of cladistics have been already found, as we have mentioned above; most of them in automotive assembly industry. Examples within

this industry show the evolution of organizations from the point of view of the operation management system. They classify organizations from ancient craft shops to more competitive organization with more competitive operation management systems, such as lean production or agile production, as a result of introducing different operation management practices.

It is shown that this methodology can provide organizations with a map of the ecosystem in which they exist. Subsequently, by phylogenetic analysis, actions be implemented to bring about changes can be used to determine (McCarthy et al., 2000; Tsinopoulos and McCarthy, 2000). This approach may also be used by organizations as a tool for locating their position in evolution with respect to their competitors; and also for providing them the opportunity to engineer their organization's path in the future (Baldwin et al., 2005). This new evolutionary organizations' analysis lens take into account their history and identifies their likely future evolution.

Recalling the principles of the Darwinian Theory, and applying them to the evolution of organizations, it could be understood that organizations evolve, most of the time, due to a chance event or random mutation (Darwin, 1859), however, it has been probed they are selected through non-random process of natural selection but involving managers' decision (AlGeddawy and ElMaraghy, 2011; Leseure, 2000). In this context, Cladistics could show us the path to be taken by organizations in order to evolve to a superior stage, by comparison with path already taken by other organizations, or in other words, it offers a way to map the different pathways.

Within this paper, the use of Cladistics is proposed to model HRM system's evolution. We propose to classify organizations in terms of their HRM systems not only according

to similarities of criteria, but also evolution in the characteristics affecting HR. The justification for doing so is that if we focus only on the similarities criteria, we can identify only the organisations belonging to a certain category or group by the time in which de classification is performed, but we would be losing information about where it comes from or where it can evolve, which are very important facts to take into account for any decision making process.

3.2 Assumptions and singularities in building HRM cladograms

According to the guidelines of McCarthy et al. (2000) and Tsinopoulos and (McCarthy, 2000) for manufacturing cladistics, and based on the definition of the methodology made by biologists (Camin and Sokal, 1965; Hennig, 1999; Kluge, 1998), the following assumptions need to be done for using Cladistics and hence for the construction of a useful HRM system cladogram: HRM systems 1) evolve and have ancestors; 2) they can speciate; 3) they are subjected to the theory of natural selection whether unintentionally or affected by managers' decisions; 4) they are composed by characters that may be expressed in discrete states which can be arrayed in some logical order; 5) And finally, the ancestral state arose only once in the taxa at hand. Derived characters states, may however, have arisen repeatedly in different brunches of the group studied.

The fist assumption says that HRM systems evolve and have ancestors. That means that each HRM system has evolved from earlier forms, therefore, if we look at any organization, different HRM systems can be identified over time. Each HR system is characterised by the maturity of the company and its context. As a result, different HR programs are adopted resulting in different composition of bundles over time.

Moreover, as new HR systems emerge, it is possible to identify from where they come from and thus, to distinguish the characteristics from the former system.

Assumption regarding the speciation of HRM systems refers to the fact that, within a certain company, HRM systems can change over time evolving to new species or to new HRM systems with different bundle of HR practices and programs. Remaining essentially the same type of HRM system, it evolves to environmental fit, so some of its characteristics (not being basic characteristics of this particular HRM system typology) change. These changes occur as a result of adaptation to the environment in order to survive. We can find some examples of such changes in cultural adaptation, or legal adaptations due to different locations.

As far as the theory of natural selection theory concerns, this concept is supported by Hannan and Freeman (1977), who believe that selection pressures force organisations to imitate other successful organisations. As a result, there is a reduction in organisational diversity, and a net increase of a particular type of organisational form. Although some companies try to innovate through their management processes, both, in the field of HR, and other fields, when the results are not particularly successful, it is rare that other organizations follow their lead. When, in spite of not being successful, the decisions made are replicated, failure causes that many of these organizations would eventually disappear.

The fourth assumption of this approach is based on the fact that characters can be expressed in discrete states which can be arrayed in some logical order. When talking about HRM systems they are composed by bundles of HR practices (or programs, depending on the authors), so that given a list of HR practices we should identify if

they are implemented or not (yes or not as discrete states) in the organization under study. But the implementation of HR programs is usually not an all or nothing kind of a package. This assumption is rather generalist and it assumes a non-real simplification. Generally speaking, organizations can have different degrees of implementation of HR programs. This fact should be taken into account when characters were defined. Moreover, in order to draw the whole picture, when analysing HRM system evolution we should also consider any other characteristics of the organisation (apart from HR programs or practices) that allow us to distinguish between two different evolutionary stages.

The last important aspect to consider before building any cladogram is how to gather data relating to characters (practices or programs in terms of HRM and other relevant characteristics). Actually, this is one of the major issues in HR field. Considering the work done by Arthur and Boyles (2007), depending on the type of information that we want to obtain, we would choose single-informants (key informants) when assessing HR programs or policies (at the organisational level), whereas multiple-informants such as individuals when assessing HR practices (at the individual level). Depending on the type of information that we have collected, we will define different characters, and therefore, different kind of taxon, and cladogram will be obtained.

It is important to note that when presenting a cladogram we are not asserting that there is any specie (i.e. final state, or type of HRM system) superior than others in the classification model. We are not necessarily distinguishing between higher vs. lower perfomers. Each character (as practices or programs in terms of HRM systems) has positive and negatives effects at a certain point or in certain context. Thereby, each of

the species (types of HRM systems denominated taxa) in the cladogram has been, at some point in time and space, the champions of their kingdom (context of organizations and specific moment in timeline). Borrowing again an example from the animal kingdom, to make this concept easier to understand, we find the lion as king of the beasts per excellence. This animal species has been labelled as the *King of the Beast* for centuries, probably due to its majestic appearance and the fact of being at the top of the food chain. However, if a lion is moved, from the savannah (its natural habitat) to the desert (just a few miles far from it), it would lose its supremacy. It would be highly probable that this lion would die of starvation or dehydration. However, camels, which are apparently inferior animals, would persist much better in desert since their physiognomy is prepared to store large amounts of water and nutrient reserves to deal with desert conditions. If both animals meet in desert when the lion first arrived there, they would fight since lion is predator, and lion would win for sure. But if the meeting would take place after certain period of time, lion would lose its supremacy over camel unless it has speciated to adapt to the new circumstances of the environment.

This also happen in companies. Sometimes, especially successful companies in certain context, move to a new location. When this movement is done with an adequate velocity and strategy, they may succeed to the point of razing the autochthonous companies, breaking the previous balance. However, if they do not evolve adapting to new rules of the game demanded by the new situation, the initial supremacy it would be lost, and in such extreme situation the newcomers would disappear as well. But, on the contrary, if they are able to evolve adapting to the new environment, these companies will have speciated thus ensuring their success and survival. It can be

concluded that when referring to HRM systems, the situation is similar. Certain species can be obsolete in one kingdom but champions in another (Pichault and Schoenaers, 2003). Therefore, the process of creating new species is always going on; newer, more competitive forms keep appearing to achieve better fit with changing business environment (Leseure, 2002).

3.3 Other examples in social sciences

Compared to the large number of examples in other fields, only a few applications of this technique have been developed to date in social sciences. Most examples of Cladistics in social sciences deal with evolution of operation management systems (Tsinopoulos and McCarthy, 2000), particularly in automotive assembly industry (Baldwin et al., 2005; Leseure, 2000; Leseure, 2002; McCarthy et al., 2000) and aircraft industry (Rose-Anderssen et al., 2009). Probably, this striking development of cladistics in manufacturing systems compared with other social sciences areas is due to the existence of large amount of previous literature regarding classification of manufacturing organisations. The existing cladograms have been developed mainly to clarify the distinction between agile manufacturing or lean manufacturing and the prior manufacturing initiatives (such as mass production or large scale producers) (Tsinopoulos and McCarthy, 2000).

One of the most prolific authors in this field is MacCarthy (McCarthy, 1995; McCarthy et al., 2000; McCarthy, 2005; McCarthy and Leseure, 1997; McCarthy, 2004). In his pioneer works, McCarthy reviewed the concept of classification and the potential interest in studying manufacturing organizations. He went through the most relevant classification schemes already published and highlight the difference between them

and Cladistics. He referred to Cladistics as a classification approach that allows researchers and practitioners to increase the value and accuracy of any predictions. He went on researching on Cladistics and he several works giving more details and justifications about how to construct a formal classification of manufacturing systems using cladistics.

4 How to construct a cladogram. A Simple example in N HRM

To illustrate this methodology a cladogram is produced as a sample of classification for Spanish HRM systems within manufacturing industry. It is important to note that we are going to build a simplified cladogram, since there is no other HR cladistic analysis to date, and moreover that the scientific data available up to now are scarce and not homogeneous as it has been argued above. Therefore, we have built the cladogram just with morphological data since the characters are easily recognizable to the naked eye, and then we have used ancestral trait reconstruction to get an outline for a dichotomous key. This isn't a proper phylogeny, but is a valid use of the method and sufficient for the scope of this work. A proper phylogeny would take into account all the characters that can be mustered, including not visible characters, such as for instance characters related to the culture or values of the organization, and also a broader sample of species (types of organisations or HRM systems to be studied).

The cladogram build for this example, has been produced to the conceptual level. It has been compiled using data from several studies referred below. We use this example to explain how to construct a cladogram in an easy way for non-biology researchers. In this way, we aim to establish the foundations of Cladistics in HR field

and to encourage academia to start using Cladistics also in this disciple to allow HR practices research to be put into more objective and homogeneous terms.

Previous to the development of this section, we have reviewed previous work done in other disciplines (astrophysics, biology, philology, linguistics, and operations management). Having carefully analyzed and reconstructed several cladograms built in other fields, we propose the present parallel with a HRM system's cladogram.

Although there are different methodologies to construct a cladogram, we follow 4 stages by adapting the work made by Hall (Hall, 2013) Selecting the clade to be studied and identifying the observable differences among a certain number of species (characters); 2) encoding them in a data-matrix and establishing character polarity; 3) estimate a tree from the aligned sequences; 4) and finally explain the tree.

4.1 Select de HR clade and identify characters

As a first step, we need to clearly understand what a clade is and the difference between this term, and group or cluster (terminology commonly used in the literature). A group is certain number of entities (organisations, management system, practices...) which are formed or collected together on the basis of similarity, or common observable characteristics. On the other hand, cluster is a group of entities, or organizations which have been formed from a statistical population on the basis of similarity using cluster analysis techniques. Whereas taxa can be groups or clusters which have been arranged or placed into a taxonomic hierarchy and labelled according to the nomenclature rules which govern the hierarchy. Therefore, taxa are not necessarily clades. Clade, in particular, is a taxon (in plural taxa) which includes the most recent common ancestor and all the entities that have evolved from that

ancestor. Therfore, clade is a specific type of taxon (monopyhletic taxon), and specifically, it is the group of organizations that we are analyzing while using this methodology.

Now that we have distinguished clades from other types of groups, we start defining the specific clade to be studied through this example. Such a step requires a decision which in itself is a form of classification. Different clades can be defined within the whole population of organisations when studying the evolution of HR management systems such for instance on the basis of market industry, industry differentiation, or geographical location among others. This is an important point because, to date, there is no existing cladistic classification of organisations which could be used as a reference or starting point, therefore is recommendable to select a clade with high amount of information available and along high probability of dissemination interest of the obtained results (McCarthy et al., 2000). For this example we have selected Spanish manufacturing industry as a clade. Particularly, we analyze evolution of Spanish manufacturing organizations in terms of HR while they grow. In order to identify the observable difference (characters) between species in this clade. We have defined 4 different species classifying them in terms of size. We have considered growth in terms of size (number of employees) in this example since, on the one hand, it is one of the features that most aptly describe a firm; and on the other hand, it is broadly demonstrated that, as firms grow in size, emerge a need to reorganize their resources so that, they often require different management practices to achieve success. Company size influences choices made by managers regarding to HRM issues and thereby it causes organizations to differ in the actions they take within this area of company management (Bayo-Moriones and Merino-Diaz-De-Cerio, 2001). However,

there is no real evidence that there is a standard linear sequence of stages in firm growth (Phelps et al., 2007). We build on the work done by Phelps et al. (Phelps et al., 2007) grouping firms depending on the number of employees, but also considering that every firm may cope with certain situations while growing but not necessarily in a preset linear order. In that sense, the final picture may be not a road of growth but a map of evolution with different paths. Therefore, using a methodology like cladistics for the analysis, the final output may show a broader picture of this complex reality.

When mapping the cladogram, we assume that organizations may evolve over time from a micro-organization to a large one. But we do not assume a linear growth; i.e., organizations do not need to pass through all the stages while they grow. On the contrary, they could take a bigger step and skip any intermediates stages. For this reason, we propose to draw a map instead of just drawing a pathway of the evolution.

All in all, companies are compared considering the stage of evolution (in terms of growth) and the HR characteristics that they have developed. An adaptation of Bayo-Moriones and Merino-Díaz de Cerio's (2001), Kotey and Sheridan (2004), and Bartram (2011) models is adopted for the arguments in this paper. We propose a model with 4 stages of growth: micro, small, medium and large organisations. We follow the SMEs definition of the European Union in terms of number of employees (European Commission, 2005). Organisations are micro when they have less than 10 employees; small-size when they have between 10 and 50 employees; medium-size between 50 and 250 employees; and large when they have more than 250 employees.

Now that we have selected a clade, and we have also identified the possible species within it (4 possible groups in terms of size), the following step is to identify all the

possible characters (characteristics of the species under observation) and also decide which characteristics are present in the analyzed species (organizations in our study). This step is the most intellectually demanding. If not done well, the tree will be invalid or impossible to interpret or both. But, if done wisely, the remaining steps are easy, essentially mechanical, operations that will result in a robust meaningful tree (Hall, 2013).

A character, in biology, is an observable feature or attribute of an organism. In the context of HR, characters can be any characteristic of the organization that affects or determine what sort of HRM system the organisation has developed. They can be either general characteristics of the organisation, (such as type of organisational structure, or type of HR function), or other more specific HR characteristic such as HR programs (as for instance type of selection methods, rewards or performance appraisal systems, etc). We have decided to look at HR programs (at organizational level) rather than HR practices (individual level) as a first approximation to the HR systems' classification issue; although both perspectives are possible (see Arthur and Boyles (2007) for further details about levels of HRM systems). It should be noted that characters play a fundamental role in the resulting classification since specimens are grouped based on them. Therefore, the definition of the characters may be different depending on the classification methodology that we are using. All evolutionary studies are based on the choice of appropriate characteristics for rebuilding their phylogenies. The characters must meet two requirements, be homologous (in all organisms under study) and independent. Homologous characters are those that have both, the same origin, and also fulfil the same function. When characters are identified in Cladistics, they have to point to a homology between two organizations to be

acceptable whereas in phenetic classifications they have to contribute to the mathematical tightness of a cluster (McCarthy et al., 2000). It is important to distinguish between homology and analogy. The first concept, used in Cladistics, refers to characters that are similar because they were inherited from a common ancestor. While the second one refers to characters shared by a set of species, but not derived from a common ancestor; they have evolved through convergent evolution in two separate lineages (borrowing an example from the animal kingdom analogy can be found in the dorsal fins of sharks and dolphins). Analogies, although are easier to identify by observation, are not useful for reconstructing phylogenies, and building caldograms; however they are broadly used in other classification methodologies.

Characters are described in terms of their states, for example: “formal training present” vs. "formal training absent," where "formal training" is the character, and "present" and "absent" are its states.

Adapting the work done by Bayo Moriones and Merino-Díaz de Cerio (2001), we have selected characters only in 6 different aspects within HRM systems to be analyzed; the purpose is to make this task more manageably (as we have stated above, it is just a simple example and the first work in HR field). The selected aspects to analyze for this cladogram are 1) type of structure; 2) HR position; 3) staffing; 4) training; 5) compensation and 6) Communication. Those 6 HR aspects will turn into 10 characters related to those previous aspects. We could choose different aspects or more than those 6, but we have selected them because they were quite explicit in the literature used for this simple example. It is important to emphasise that those are not unique nor the most relevant.

The characters analyzed and used to build the cladogram, and their respective character states (CSs), are described in Table 1. There are a total of 10 characters and 25 CS. As it can be seen in the table, characters correspond to formal characteristics of the organization, the HR department, and the HR programs that they are using (HR practices in the terminology used by Bayo Moriones and Merino-Díaz de Cerio (2001)). We have not considered all the possible characters, as we have argued previously since this is a simplified cladogram and the first one in its nature. We have first identified the characters from this previous academic research, and treated them as arbitrary characters, as their identification for cladistic purposes must to be confirmed. Cladistics will eliminate characters which have no evolutionary significance in their data sets and therefore, an objective and efficient classification will be done (McCarthy et al., 2000).

Tabla 1. List of characters and character states (CS)

1.	**Type of structure**	**6.**	**Content of training when present**
1.0	Flat structure	6.0	Training directly geared to the job
1.1	Hierarchical structure with 2 or more levels	6.1	Training in social skills: teamwork, problem solving, etc
1.2	Matrix structure	**7.**	**Type of training when present**
2.	**HR position**	7.0	on the job training
2.0	Character not present	7.1	encourage external seminars
2.1	HR function shared with other functions	**8.**	**Compensation**
2.2	Specific HR department with specific qualification	8.0	Paid by position (content of job)
3.	**Staffing**	8.1	Seniority
3.0	Recruiting based on qualification	8.2	Performance
3.1	Recruiting based on personality and values	**9.**	**Communication practices**
3.2	Recruiting based on previous experience	9.0	Absent/present

4.	**Method of selection**	**10.**	**Communication practices when present**
4.0	Direct selection	10.0	suggestion systems
4.1	Advanced methods of selection	10.1	improvement groups
5.	**Training Actions**	10.2	attitude surveys
5.0	Absent/present	10.3	informative meetings
		10.4	open door days

4.2 Build data-matrix and establishing character polarity

The process of coding characters is one of the most sensitive steps within the whole process, since it affects tree search results. We have followed the Brazeau's guidelines (Brazeau, 2011) to avoid problematic coding methods looking for represent the most reliable Cladistic tree.

Once we have identified all the possible existing characters, we proceed to encode them, by using numbers. The rationale of this task is basically to facilitate the subsequent task of data processing by a computer. This process is also known as establishing character polarity. This task consists of determining the primitive character (i.e. those characteristics which are present in the ancestral specie, or in other words, in the original organization from which it is descended) and derived characters (i.e. those characters which are not present in the ancestral specie) from the comparison of different groups. At the end of this task, the order of character evolution and emergence could be defined so as to establish the sequence of HR characters over time.

In order to use the information later to build a cladogram, we have used the computing program WINCLADA to build the data matrix and define the polarity of characters (Nixon, 2002). In the example presented in this paper we have defined

binary and multistate characters. Binary characters are those having only two different possible states. Whereas, multistate characters are those that have more than 2 possible states. In the example of this paper, most of the characters are multistate charaters, as for instance, HR position, compensation, or type of communication practices. The polarity of the characters of the sample under study is shown in table 2.

The polarity of the characters has been established taking into account the guidelines of the work done by Bayo-Moriones and Merino-Díaz de Cerio's (2001), Kotey and Sheridan (2004), Bartram (2011), García Lorenzo and Prado Prado (2003), Tenhala et al (2014) and Valverde et al. (2006). It should be noted that, since this matrix has been built from the literature data, and it is a simplified example, it does not necessary consider the most relevant characters in HRM, just the ones there were included in the work done by the previously cited authors.

This data matrix is the entry data used for building the cladogram.

Tabla 2. Data matrix: Taxa versus Character State

Taxa	1.0	1.1	1.2	2.0	2.1	2.2	3.0	3.1	3.2	4.0	4.1	5.0	6.0	6.1	7.0	7.1	8.0	8.1	8.2	9.0	10.0	10.1	10.2	10.3	10.4
0	1	0	0	1	0	0	0	1	1	1	0	0	-	-	-	-	0	0	0	0	-	-	-	-	-
1	0	1	0	0	1	0	1	1	1	1	1	1	1	0	1	0	1	1	0	1	0	0	0	1	0
2	0	1	1	0	0	1	1	1	0	0	1	1	1	1	0	1	1	1	1	1	1	0	0	1	0
3	0	1	1	0	0	1	1	0	0	0	1	1	1	1	1	1	1	0	1	1	1	1	1	1	1

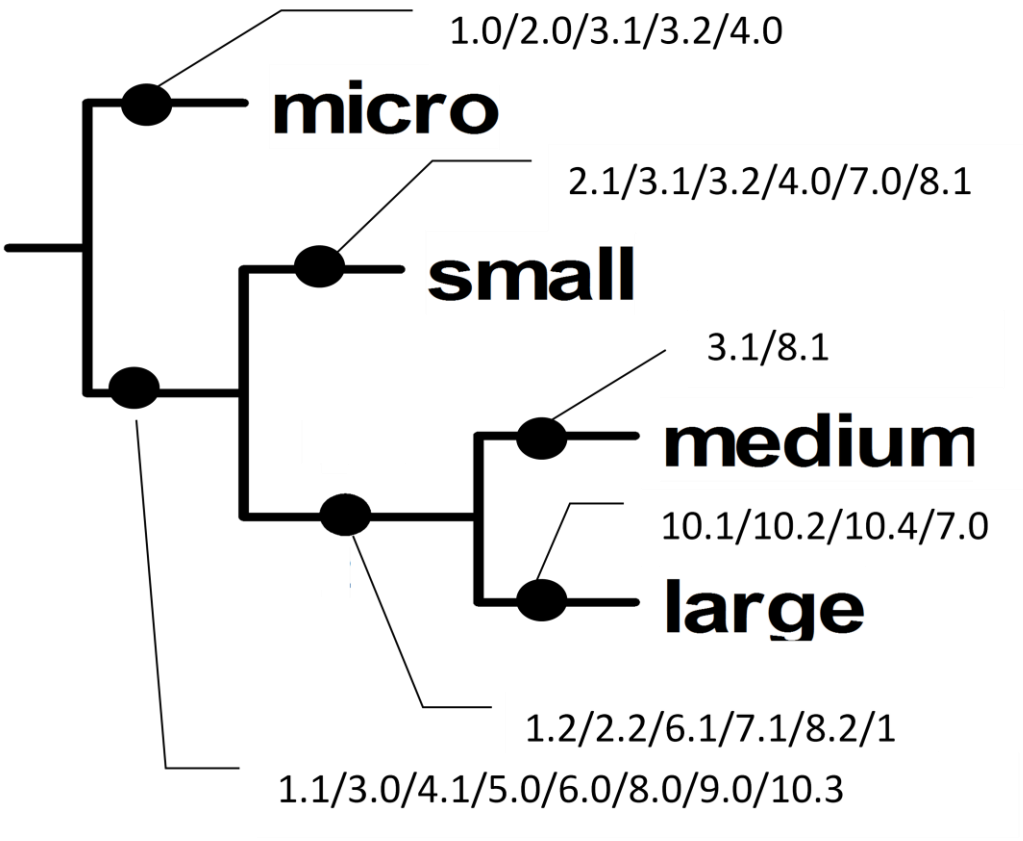
4.3 Estimate a tree from the aligned sequences

This step involves the construction of the original cladogram based on the data already collected and displayed in the previous data matrix. There are diverse tools to construct cladograms, which provide a ``best estimate'' of the evolutionary relationships contained within the data matrix. As a result, the tree that requires the fewest steps of modification is offered as a plausible model of the actual history of speciation.

In order to build the Cladogram of the example, we have used the computing program TNT (Goloboff et al., 2003; Goloboff et al., 2008). For the calculations, we have selected Farris algorithm (Farris, 1970) since in our definition of CS we have identified additive characters. This algorithm considers that the cost of transforming a character from one state to another is their numerical difference. For instance, given a character "X" with the states "0", "1", y "2", the cost of moving from 0 to 2, is the sum of moving first from 0 to 1 and then from 1 to 2. Moreover, we have considered parsimony principle. Although this principle is basic to all science, it is particularly useful in the calculations and estimations that supports Cladistics. Parsimony principle guide us to choose the simplest scientific explanation that fits the evidence. In terms of tree-building, that means that, over all other things being equal, the best hypothesis is the one that requires the fewest evolutionary changes.

As a result, the cladogram presented in figure 1 has been built.

Figure 1. Example of HRM cladogram in Spanish manufacturing industry



Before we could say that the cladogram is completed, there is one more step. This latter step aims to validate the existence of the characters identified during the previous stages. It will test the validity of any proposed tree structure by ensuring that the character data matrix is complete (i.e. no important historical events which relate to characters have been omitted) and that the assigned polarity is correct. Or in other words, we should check that the information given makes sense, and reflects the reality.

4.4 Explain the tree

The final step is to present the Cladistic tree or cladogram in such a way as to clearly convey the relevant information to audience.

The network of branches on the tree, are the evolutionary paths that have accompanied evolution in HRM systems. Each path is formed according to the

acquisition and polarity of certain characters (HR programs and other relevant characteristics of the organization that can affect to the way they manage employees). Those characters are included in Cladogram calculations, and they represent decisions made over the time in terms of HR that have allowed organisations survive and compete.

In our study, we have considered 4 different species: micro organizations, small, organizations, medium organizations and large organizations. Therefore we have got 4 branches in the final Cladistic tree. We have assumed that the out-group (i.e. the ancestor) is the specie *"micro organization"*. Hence, the characteristics that describe the other three species are descended from it. The resulting map shows the evolutionary relations between the other three types of organizations. In particular, a closer relation is found between large and medium organizations than the one between them and small organizations. This is due to the fact that the number of characteristics they share is bigger compared to the other taxon.

In this Cladistic tree, two different nodes are identified. They refer to two speciation events (or stages of evolution) from the ancestor to the following specie. The first speciation event occurs when micro organizations evolve from micro organisations to small organization. The second speciation event occurs when organisations evolve from small to bigger organizations. When talking about bigger organizations we refer to the clade comprised of medium and large organizations. Taking into account the assumptions introduced in section 3.2 together with the definition and polarity of the characters described above, this second speciation event imply that organisations can evolve directly or to medium or to large, but they do not need to do it linearly passing

through both stages. It could be discussed whether the state characters included in each brunch are more or less accurate, but considering the limitations of the information source used for building this cladogram, the obtained results are meaningful. It makes sense that medium-size and large-size organizations are closer related than small and micro organizations. The later are more distant in the evolutive map of the organizations.

5 Conclusion and future research

Through this work, we reviewed the relevance of classification schemes in social science and specifically in HRM. We have also reviewed some relevant examples of classification in the field of HR. To do this, we have analyzed roughly not only the type of classified information, but also from what perspective, for what purpose and with what methodology. We have found that although there are HRM classifications, the debate is still open. On the other hand, since the results may be affected by the type of data used, not all classifications are generalizable. Therefore, it is still not easy to establish guidelines for strategic decision making in terms of HRM. Most of the work done is related to partial and hardly comparable from one research to another.

The essential contribution of this paper is to explain how to use Cladistics as a methodology to establish an objective, practical and easy to use benchmarking tool. We present Cladistics as a methodology capable to identify what sort of actions or practices are having place at certain organization in certain context (whether innovative or not) and which path to follow in terms of HRM to move to a new situation in the competitive map.

Cladistics differs from other classification methodologies used to date in HRM field basically in two aspects: it considers homology as opposite of analogy (used in cluster analysis or classification trees). This fact implies that when using cladistics the organisations under study need to be described in terms of their evolutionary past (ancestral characteristics) and its potential to transmit its characters to the future.

Among all the advantages, Cladistics is especially useful for collective research due to its objectivity and easy interpretable output (the Cladistic tree). On the other hand, one of the most difficult issues is to define the characteristics defining every type of organization (characters in Cladistic language), and the groups under study (types of organisations or species).

We have presented a simple example of a Cladistic tree representing HRM evolution to explain how to build a cladogram in an easy way for non-biologist readers. This cladogram explains briefly the evolution of HRM systems in Spanish manufacturing industry. At it, different types of organizations have been represented and classified in terms of their HR characteristics as they grow in size.

The input data to build a cladogram are data arrays consisting of characters with discrete codes (encoded characters) for each taxon. In this example, 10 characters have been considered resulting in 25 character states describing the HRM situation in organizations. They are in a presumed evolutionary sequence from primitive or ancestral, to derived or advanced. All in all, a cladogram is tree-like in appearance that shows the similarities of change between systems ordered graphically. This tree structure represents the evolutionary history, the diversity and the relationships between different HRM systems. Cladograms are read from the tips to the root.

The Cladogram built during this piece of research it has been simplified, and based on literature evidences. It does not consider all the aspects related HRM systems that define the analyzed type of organizations. But it shows us that it makes sense to analyze HRM system as an evolution over time and that if this methodology would be spread over the academia, research results in this field would be more comparable and easier discussed.

To date, when studying HRM, classification has traditionally used simple grouping practices into bundles, regardless the past and future evolution of the whole system. We propose, by using cladistics, to classify a given set of practices or programs (depending on the level of study chosen) into nested families (bundles) in order to test an evolution hypothesis. This is a novel approach that has not been yet explored in the HRM literature. It has been already borrowed from biological science to be applied to other social science areas, and it has been proven its relevance. Within this paper we have presented not only the interest and reasons to apply it in HRM, but also the clues of how to do it, as well as a simplified example.

As future research it would be very interesting to continue providing scientific community cladistic maps on which we could all work. And thereby we could have comparable data useful for making business decisions.

Although it is not easy to achieve, as shown by the large amount of work already developed to date in biology (they have pioneered this methodology); this paper is a call for researchers to go on contributing to such effort which will redound for sure to the benefit of the whole (researchers and practitioners alike).

We firmly encourage academia to use Cladistics also in Human Resources Management, considering not only literature evidences but also field data, to be able to achieve a more objective and homogeneous context in this field.

CHAPTER 5

IDENTIFYING A GUIDING LIST OF HIGH INVOLVEMNT PRACTICES IN HUMAN RESOURCE MANAGEMENT

Paper published in WPOM journal {Perello-Marin, 2014 PERELLOMARIN2014 /id}

Identifying a guiding list of high involvement practices in human resource management

M. Rosario Perello-Marin[a], Gabriela Ribes Giner[b]

[a] Dpto. de Organización de Empresas, Universidad Politécnica de Valencia, Spain, rperell@upvne.upv.es and [b] Dpto. de Organización de Empresas, Universidad Politécnica de Valencia, Spain, gabrigi@upvnet.upv.es

Abstract

In today global competitiveness, it is becoming increasingly frequent, the introduction of new management practices to organizations, seeking to enhance performance as a form of Management Innovation (MI). This is so because such practices are usually difficult to replicate exactly from one company to another, provided they are well rooted in the daily work in the organization. The main purpose of this paper is, by reviewing the previous work done in this area, to present a general list of Human Resource Practices (HRM practices) geared towards improving organizational effectiveness and hence better performance outcomes. Many work have been done to date within this topic, but it is difficult to find a consensus about the best way to address to this practices, and this fact makes difficult to compare different studies and their results. We present a detailed but synthesized list of those HR practices to be used as a starting point in any sector whether industrial or services.

Keywords: HRM practices, High commitment HR practices, Innovative HR practices, High involvement HR practices, High Performance Work practices

1 Introduction: Purpose of the paper and related work

In a world where global competitiveness is one of the main keys to organizations' success; where innovation, flexibility, responsibility and cooperation become particularly relevant to ensure organizational success, or even mere survival (Zhang et al., 2008; Adamides & Pomonis, 2009; Antonelli, 2009; Burnes, 2004; Paauwe & Boselie, 2005), the importance of human capital, as a source of competitive advantage, is gathering especial significance for both, researchers and practitioners alike.

It is becoming increasingly frequent, the introduction of new management practices to the organization, seeking to enhance performance, as a form of Management Innovation (MI) (Perello-Marin et al., 2013; Paauwe & Boselie, 2005). This is so because such practices are usually difficult to replicate exactly from one company to another, provided they are well rooted in the organization's daily work, or in other words, they are part of their own identity (Thang et al., 2007; Mol & Birkinshaw, 2009). If we look at other resources as a source of competitive advantage, different from HR, we can state that they are becoming more accessible and easy to copy, and therefore, ephemeral sources of competitive advantage, which does not happen with complex social systems (Stavrou et al., 2010; Bowen & Ostroff, 2004).

Selection and implementation of those programs and practices have been extensively studied by the body of research called "strategic human resource management" (SHRM) (Combs, Liu, Hall, & Ketchen, 2006; Stavrou et al., 2010; Boselie et al., 2005; Benson et al., 2006; Lawler III, Mohrman, & Ledford, 1995; Way, 2002). Within these papers, myriad of programs and practices in HRM can be found to be implemented by the firms to increase its performance. The foregoing papers approach the study either

from the perspective of individual practices or on the contrary, as a whole system of practices (though often, with no clear identification of its composition).

The pioneer studies appear around twenty years ago (Arthur, 1994; Becker & Gerhart, 1996; MacDuffie, 1995; Huselid, 1995; Wright & McMahan, 1992). There is quite a lot of literature, since then to date, dealing with the relationship between HRM practices and improving organizational performance (Boselie et al., 2005; Huselid, 2011; Guest, 2011; Paauwe & Boselie, 2005; Wood & Wall, 2007; Roos, Fernström, & Pike, 2004). Some of the paper have focused on aspects such as market value (Huselid, 1995; Collins & CLARK, 2003), financial performance (Huselid, 1995; Delery & Doty, 1996; Benson et al., 2006), profitability (Guerrero & Barraud-Didier, 2004; Gooderham et al., 2008), operational measures of performance or productivity (MacDuffie, 1995; Ichniowski & Shaw, 1999; Datta et al., 2005; Huselid, 1995; Guest et al., 2003), social climate and culture (Pereira & Gomes, 2012; Prieto & Perez Santana, 2012; Alfes et al., 2013; Collins & Smith, 2006) or turnover (Alfes et al., 2013; Cho et al., 2006; Guchait & Seonghee, 2010; Huselid, 1995; Zatzick & Iverson, 2006).

We have found that an increasing body of work contains the argument that the use of certain practices (including comprehensive employee recruitment and selection procedures, incentive compensation and performance management systems, and extensive employee involvement and training) can improve the knowledge, skills, and abilities of a firm's current and potential employees, increase their motivation, reduce shirking, and enhance retention of quality employees while encouraging nonperformers to leave the firm (Huselid, 1995; Roos et al., 2004; Way, 2002). These practices can be referred differently in the academic literature as for instance, "high-

performance work practices" (Guest et al., 2004; Wood, Van Veldhoven, Croon, & de Menezes, 2012; Way, 2002), "high-involvement work practices" (Lawler III et al., 1995; Guerrero & Barraud-Didier, 2004; Benson et al., 2006; Zatzick & Iverson, 2006), "high commitment practices" (McClean & Collins, 2011) or "innovative human resource practices or best practices" (Ichniowski & Shaw, 1999; Marchington & Grugulis, 2000; Chang, Gong, & Shum, 2011; Paauwe & Boselie, 2005), depending on the author. Each term has little nuances that distinguish each other, but most of the authors agree with the fact that when business capabilities are combined with employees motivation, the resulting organization value is not a sum of its parts, but a multiplication (Ordiz Fuertes, 2002; Combs et al., 2006; Guest et al., 2004) or in other words the method used by firms to manage its workforce can have a positive impact on firm performance (Way, 2002).

This paper deals with Human Resource Practices (HRM practices) geared towards improving organizational effectiveness and hence better performance outcomes; that is, not merely traditional HR practices, but a set of distinct but interrelated HRM practices that together select, develop, retain, and motivate employees that, not only possess superior abilities, but also apply their abilities in their work-related activities; And as a consequence, their work-related activities (i.e. their output) result in these firms achieving superior intermediate indicators of firm performance and sustainable competitive advantage (Way, 2002). Although there are some works done considering this issue (Marin-Garcia & Conci, 2009; Boselie et al., 2005), we have not found a clear consensus about a clear and concise definition about which particular bundles of practices can be called 'high performance practices' (ie practices that lead to greater employee involvement and commitment and better business results as a consequence)

(Combs et al., 2006); and therefore we have gone through this study with a purpose of identifying a detailed but synthesized list of those HR practices called 'High involvement HR practices', 'High commitment HR practices', 'best HR practices' or 'innovative HR practices' by main authors to be used as starting point in any research, no matter the context of the study.

2 Methodology

In this work, we have gone through the literature of human resource management and related to improve organizational performance by enhancing employee commitment and motivation, looking for the most commonly used HR practices. We have focused only on high involvement practices, high commitment practices, or innovative HR practices, that lead to better performance, but not on traditional Human Resources practices. We do not address either in this work what it does mean by performance.

In doing so, we have employed several methods to guarantee content validity. We have started by a literature review and afterwards we have validated the results with expert panels combined with two steps Q-sorting (Petter, Straub, & Rai, 2007).

To identify all available studies, identifying and/or using this kind of HR practices, we dealt with this literature review by using a variety of search techniques. We specially conducted electronic keyword searches as well as manual searches of relevant journals to identify studies that appeared relevant.

To render the task manageable, and to provide a credible guarantee of quality, we restricted our search to articles that have been submitted to international journals specializing in general management, organization science, human resource

management and international human resource management that regularly publish studies on human resource management and organizational performance (e.g. *Academy of Management Review, Academy of management journal, Journal of management studies, Journal of International Business Studies, Journal of Business Research, International Journal of Operations and Management, British journal of industrial relations, Journal of World Business, International Journal of Human Resource Management, Human Resource Management Review or Human Resource Management*). This decision meant that we had to exclude valuable work published in books, reports, unpublished papers and dissertations. We went through each edition of the journals online, identified articles from their titles and abstract that seemed to match our criteria.

Finally, we examined the reference lists of the collected articles and we supplemented it with other academic and trade articles from outside these journals that appear to contain some identification of HR practices leading a better performance. Those later articles were identified through both the Business Source Premier, Web of knowledge and Science Direct article databases, for the period of time comprised between year 2000 up to mid-2012, by searching using certain keywords.

In order to select the most adequated key words to be used within the study, we worked in a small group of researchers using interactive brainwriting technique. We chose brainwriting eventhough it is less well known than traditional group brainstorming, since we found evidences that brainwriting often not only produces more ideas than group brainstorming, but also reduces the inconvenients. Writing ideas instead of speaking them in groups eliminates the problem of production

blocking since individuals do not have to wait their turn to generate ideas. It may also reduce evaluation apprehension since the written format eliminates the need for public speaking and is typically more anonymous than oral brainstorming, and finally brainwriting requires less specific training, especially interms of the moderator, than brainstorming (Paulus & Yang, 2000).

As a result of the brainwriting process, the list of keywords obtained was 'Human Resources Management practices', 'High Involvement work practices', 'innovative Human Resources practices', 'human resource bundles' and 'organizational performance', or 'business performance'. It is important to note that, although we began our review in 2000; however, we have included references prior to this date, but with the only condition of being especially relevant in this topic, as for instance (Huselid, 1995; Arthur, 1994; MacDuffie, 1995; Delery & Doty, 1996). All the articles were examined for HR practices leading to better performance content. The criteria used to select any article was the it may be focus on any aspect of this HR practices as we have defined in advance (but not traditional HR practices). In total, after all the different searches, our overview draws on a comprehensive sample of 265 articles. Finally, we read carefully the articles, in order to meet to settle on a final sample of 62articles.

Once all analyses had been completed satisfactorily, we listed all the practices we identify in the different papers, and we aggregated them. We aggregated only those that, even having different formulation, are equivalents in meaning[1]. Furthermore, on the basis of the literature review described above, a set of HR experts composed of

[1] The complete table with the whole conjunct of Human Resources practices, (not traditional) that authors use to study the enhancement of organizational performance, employee commitment and motivation containing the related references, is available to be consulted

three academics, and four HR professionals, considered that the relevant areas in which human resource practices could be grouped were eight. For this classification, we have employed an adaptation of Guest's classification (Guest et al., 2003) and Way's categories of practices (Way, 2002): 1) Staffing; 2) training and development; 3) Appraisal and feedback; 4) Compensation; 5) Job design and Job Analysis; 6) Internal communication and knowledge management (Information sharing); 7) Employment security and commitment; 8) Quality, Active participation and Teamwork.

At this point, the next step was, by using Q-sorting (Petter et al., 2007), to draw the final compendium of HR practices. We took the complete list of practices identified at the first step, and we classified them into those further eight categories. The process was as follows, once each member of the team has made his/her first classification, we read all the items within each category looking for aggregate any of them (there were, still, many practices referring to same concepts, but using different formulations). As a final step, all the experts shared their final classification in order to compare results and find a common final consensus classification and summary. So that, we obtained the final compendium of all the HR practices, grouped by categories. It becomes more manageable and easy to use in further researches, given the wide variety of conceptual topics covered.

It should be noted that in the first list of practices we made, there were some practices that, while called in this way by authors, they were referred to policies or programs instead. This is due to the lack of consensus in using the terms. In this work, we adopt (Arthur & Boyles, 2007) definition, who distinguish between principles, policies, programs, practices and climate, as different elements of any HR system. Although in

the initial table we have enclose all of them, for the final result we have refine it by selecting only real practices and programs.

3 Findings

We have summarized the most common HR practices used by scholars to be applied to any sector, location or firm size classifying them into the 8 groups described above. We show here such a general list, not because we follow a universalistic approach, but in order to draw a first-point picture to be used, and completed to any context. The final classification of the most commonly used HR practices to enhance organizational performance is shown in Figure 1.

Figura 1. Most commonly used HR Practices to enhance organizational performance

1.	**Recruitment and selection**	**Authors**
PR1	Usage of pre-employment test within the selection process as a means of assessment of abilities and personal skills (numerical, verbal, manuals, etc.). Eg. psychometric tests	(Guest et al., 2004) (Cho et al., 2006) (Huselid, 1995) (Guest et al., 2003)
PR2	Usage of knowledge or capability tests in the selection process: assessment of technical skills.	(Chuang, Chen, & Chuang, 2012)
PR3	Usage of techniques of simulation in the selection process: assessment of interpersonal skills.	(Bayo-Moriones et al., 2008) (Combs et al., 2006) (Melian-Gonzalez &

		Verano-Tacorante, 2004) (Wood & de Menezes, 2008) (Chuang et al., 2012)
PR4	Selection of employees focused on their overall fit to the company: values, personality…	(Chuang et al., 2012) (Bayo Moriones & Merino Díaz de Cerio, 2002) (Combs et al., 2006) (Melian-Gonzalez & Verano-Tacorante, 2004) (Wood & de Menezes, 2008) (Chuang et al., 2012) (Tang & Tang, 2012) (McClean & Collins, 2011) (Guest et al., 2003) (Collins & CLARK, 2003)
PR5	Internal candidates take priority over external for job openings: internal mobility	(Cho et al., 2006) (Huselid, 1995)

	or internal recruiting	(Chuang et al., 2012) (Tang & Tang, 2012) (Guest et al., 2004) (McClean & Collins, 2011) (Collins & CLARK, 2003)
PR6	Recruitment and selection process starting from a detailed job description.	(Ahmad & Schroeder, 2003)
2.	**Training and development (includes Talent Management)**	
PR7	Integration plan for new employees: structured training plan which aims to transmit history, culture and values of the company.	(Chuang et al., 2012)
PR8	Annual training plan covering needs of all employees. Continuous training (whether in-company or outside training).	(Huselid, 1995) (Cho et al., 2006) (Bayo Moriones & Merino Díaz de Cerio, 2002) (Tang & Tang, 2012) (McClean & Collins, 2011) (Ahmad & Schroeder,

		2003) (Guest et al., 2003) (Gooderham et al., 2008)
PR9	Job rotation and multitasking training for employees to gain experience by moving them across different functional areas or divisions.	(Chuang et al., 2012) (Ahmad & Schroeder, 2003) (Waal, 2007)
PR10	Training in interpersonal skills (eg. Teamwork, problem solving...)	(Altinay, Altinay, & Gannon, 2008) (Chuang et al., 2012) (Bayo Moriones & Merino Díaz de Cerio, 2002) (Guest et al., 2004) (Waal, 2007) (Benson et al., 2006) (Collins & CLARK, 2003)
PR11	Technical Training	(Bayo Moriones & Merino Díaz de Cerio, 2002) (Benson et al., 2006)
PR12	Leadership and management training	(Waal, 2007)

		(Benson et al., 2006)
PR13	Training plan taking into account future development: structured and defined internal promotion (promote long-term growth: career plan and succession plan included)	(Huselid, 1995) (Cho et al., 2006) (Bayo Moriones & Merino Díaz de Cerio, 2002) (McClean & Collins, 2011) (Guest et al., 2003) (Waal, 2007) (Gooderham et al., 2008)
3	**Appraisal and feedback**	
PR14	Employees receive formal evaluation or performance appraisal (managerial or not) based on objective results	(Combs et al., 2006) (Drummond & Stone, 2007) (Camelo, Martin, Romero, & Valle, 2004) (Melian-Gonzalez & Verano-Tacorante, 2004) (Combs et al., 2006) (Wood & de Menezes,

		2008) (Huselid, 1995) (Cho et al., 2006) (Tang & Tang, 2012) (Guest et al., 2004) (Guest et al., 2003) (Waal, 2007)
PR15	Employees receive regular feedback based on performance appraisal results	(Zatzick & Iverson, 2006) (Huselid, 1995) (Cho et al., 2006) (Tang & Tang, 2012) (Ahmad & Schroeder, 2003) (Guest et al., 2003) (Waal, 2007)
PR16	Attitudes, behaviour and performance of the individual employee as criteria of evaluation	(Camelo et al., 2004) (Huselid, 1995) (Cho et al., 2006) (Guest et al., 2004) (Collins & CLARK, 2003)
PR17	Criteria of evaluation based on team behaviour and team performance (not	(Waal, 2007)

	included whole company performance)	
4	**Rewards and incentives**	
PR18	Incentive plans: Employees (no matter whether managerial or not) are regularly rewarded based on performance appraisal	(Anand & Kodali, 2008) (Cho et al., 2006) (Huselid, 1995) (Ahmad & Schroeder, 2003) (Guest et al., 2003) (Waal, 2007) (Gooderham et al., 2008)
PR19	Part of pay related to individual or group performance	(Barrett & Mayson, 2007) (Camelo et al., 2004) (Zatzick & Iverson, 2006) (Guerrero & Barraud-Didier, 2004) (Guthrie, Spell, & Nyamori, 2002) (Guest et al., 2004) (Guest et al., 2003) (Benson et al., 2006)

PR20	Employee incentive plan or bonus based primarily on the performance of the organization (eg. profit sharing, gain sharing, stock ownership plans).	(Barrett & Mayson, 2007) (Guerrero & Barraud-Didier, 2004) (Guthrie et al., 2002) (Zatzick & Iverson, 2006) (Wood & de Menezes, 2008) (Cho et al., 2006) (Huselid, 1995) (Chuang et al., 2012) (Bayo Moriones & Merino Díaz de Cerio, 2002) (Tang & Tang, 2012) (Guest et al., 2003)
PR21	Employees are rewarded for learning new skills or be able to develop different jobs	(Barrett & Mayson, 2007) (Bayo Moriones & Merino Díaz de Cerio, 2002) (Camelo et al., 2004)

		(Guthrie et al., 2002) (Anand & Kodali, 2008)
PR22	Importance of job or position in the determination of the salary level (status differences)	(Camelo et al., 2004)
PR23	Compensation/rewards include benefits package (eg. Extra training, pay with time off…)	(Barrett & Mayson, 2007) (Guerrero & Barraud-Didier, 2004) (Tang & Tang, 2012)
5	**Job design & job analysis**	
PR24	The description of the jobs have been formally analysed and they are formally documented	(Huselid, 1995) (Cho et al., 2006) (Barrett & Mayson, 2007) (Camelo et al., 2004)
PR25	Job descriptions include skill and competencies required list	(Barrett & Mayson, 2007)
PR26	Employees often work in teams: Project teams, multi-functional teams, self-managed teams, mini-business units…	(Zatzick & Iverson, 2006) (Guerrero & Barraud-Didier, 2004) (Combs et al., 2006)

		(Chuang et al., 2012) (Bayo Moriones & Merino Díaz de Cerio, 2002) (Guest et al., 2004) (Guest et al., 2003) (Ahmad & Schroeder, 2003) (Waal, 2007) (Benson et al., 2006)
PR27	Actively tries to make jobs as interesting and varied as possible (Job enrichment, or Job enlargement)	(Zatzick & Iverson, 2006) (Guerrero & Barraud-Didier, 2004) (Wood & de Menezes, 2008) (Marin-Garcia et al., 2011) (Avella, Fernandez, & Vazquez, 2001) (Anand & Kodali, 2008) (Guest et al., 2004) (Benson et al., 2006)

		(Gooderham et al., 2008)
6	**Internal communication and knowledge management (Information sharing)**	
PR28	Downward communication: keeps employees well-informed (Eg. Internal newsletter, database with information for employees, regular meetings etc…)	(Guerrero & Barraud-Didier, 2004) (Tari, Molina, & Castejón, 2007) (Cho et al., 2006) (Huselid, 1995) (Bayo Moriones & Merino Díaz de Cerio, 2002) (Guest et al., 2004) (Guest et al., 2003) (Waal, 2007) (Benson et al., 2006)
PR29	Upwards communication: Employees are provided the opportunity to suggest to their supervisors (Eg. Team briefing, Individual suggestion systems, formal survey of employees', group meetings: face to face contact, survey feedback etc…)	(Cox, Zagelmeyer, & Marchington, 2006) (Wood & de Menezes, 2008) (Bayo Moriones & Merino Díaz de Cerio,

		2002) (Garcia-Lorenzo & Prado Prado, 2003) (Guerrero & Barraud-Didier, 2004) (Guthrie et al., 2002) (Tang & Tang, 2012) (Guest et al., 2003) (Waal, 2007) (Benson et al., 2006)
PR30	Inter-departmental communication (horizontal communication) to generate synergies and identify opportunities (Eg. Meetings to information sharing)	(Zatzick & Iverson, 2006) (Bayo Moriones & Merino Díaz de Cerio, 2002) (Guerrero & Barraud-Didier, 2004) (Combs et al., 2006) (Guerrero & Barraud-Didier, 2004) (Combs et al., 2006) (Hislop, 2003) (Waal, 2007)

PR31	Communication of strategic aspects to employees: company's strategy, business plan, finance, investment or salary determination criteria for instance	(Cox et al., 2006) (Guerrero & Barraud-Didier, 2004) (Combs et al., 2006) (Wood & de Menezes, 2008) (Ahmad & Schroeder, 2003) (Guest et al., 2003) (Waal, 2007) (Benson et al., 2006) (Gooderham et al., 2008)
PR32	Communication to employees of formal information on business operation and performance.	(Cox et al., 2006) (Wood & de Menezes, 2008) (Guest et al., 2003) (Waal, 2007)
PR33	Communication of new initiatives, innovation and continuous improvement.	(Hislop, 2003) (Guest et al., 2003) (Waal, 2007) (Benson et al., 2006)
7	**Employment security and commitment**	

PR34	Long-term employment for most of the employees (Eg. long-term contracts, avoiding compulsory or voluntary redundancies, etc.).	(Bayo Moriones & Merino Díaz de Cerio, 2002) (Camelo et al., 2004) (Melian-Gonzalez & Verano-Tacorante, 2004) (Combs et al., 2006) (Wood & de Menezes, 2008) (McClean & Collins, 2011) (Ahmad & Schroeder, 2003)
PR35	Active implementation of equal opportunity practices or single status (Eg. All employees are made aware of internal promotion opportunities)	(Tang & Tang, 2012) (Guest et al., 2004) (Guest et al., 2003)
PR36	Flexible working and family friendly practices (er. job-sharing, part-time work, flextime working hours...)	(Guest et al., 2004) (Barrett & Mayson, 2007) (Melian-Gonzalez & Verano-Tacorante,

		2004) (Combs et al., 2006)
PR37	The company sponsor various social events to encourage contact and relationship-building among employees.	(Chuang et al., 2012) (Bayo Moriones & Merino Díaz de Cerio, 2002) (Collins & CLARK, 2003)
8	**Quality, Active participation and Team Work**	
PR38	Employee regularly participating in problem-solving groups. There is a formal grievance procedure.	(Tari et al., 2007) (Huselid, 1995) (Cho et al., 2006) (McClean & Collins, 2011) (Guest et al., 2003) (Waal, 2007)
PR39	Employee participate in quality circles or other group suggestion systems	(Bayo Moriones & Merino Díaz de Cerio, 2002) (Garcia-Lorenzo & Prado Prado, 2003) (Guerrero & Barraud-Didier, 2004)

		(Combs et al., 2006) (Wood & de Menezes, 2008) (Avella et al., 2001) (Anand & Kodali, 2008) (Huselid, 1995) (Cho et al., 2006) (Tari et al., 2007) (Guest et al., 2003) (Benson et al., 2006)
PR40	Employees participate in work improvement teams	(Tari et al., 2007) (Guest et al., 2003) (Waal, 2007)
PR41	Employees have the responsibility of ensuring the quality of their own work. Individuals are allowed to make decisions in workplace.	(Bayo-Moriones & Merino-Diaz de Cerio, 2001) (Tang & Tang, 2012) (Guest et al., 2004) (Guest et al., 2003) (McClean & Collins, 2011) (Waal, 2007)
PR42	Visual management systems (employees	(Waal, 2007)

	have, to out of sight, information on the performance of their work using IT or not)	

Fuente: Elaboración propia

4 Research limitations and future research

This work presents a detailed but synthesized list of those HR practices called 'High involvement HR practices', 'High commitment HR practices', 'best HR practices' or 'innovative HR practices' by main authors. Although we agree there are differences between contexts (dos Santos Moreira, 2008; Cho et al., 2006; Bayo-Moriones et al., 2008; Ahmad & Schroeder, 2003) (sectors, dimensions, locations etc...) in implanting HR practices (contingency framework) (Dewettinck & Remue, 2011), we have found interesting to define a general simple list of practices to be used as starting point in any research, no matter the context of the study. Thus, this initial list might be extended, or particularized for any context, but, studies carried out starting from the initial general list of practices, could be comparable, which at the moment, we have found difficult despite the vast existing literature.

We leave for further research the identification of the success factors; ie those factor that explain that the implementation of certain practices leads to successful results. And also the study of the bundles or configurations of practices that lead to better organizational performance in each different context. It can be used to analyze combinations of HR practices at both, strategic level of the organization (or point of view of top management), and from the point of view of employees.

CHAPTER 6

HIGH-PERFORMANCE HUMAN RESOURCE PRACTICES IN HOSPITALITY. THE CASE OF VALENCIA

Work published as chapter of a research book {Perello-Marin, 2015

PERELLOMARIN2015 /id}

Text specifically adapted for this doctoral thesis

High-performance Human Resource practice in hospitality. The case of Valencia

Perello-Marin M R[2], Ribes-Giner G[3]

Abstract In hospitality sector, the existence of HR practices is to help companies to provide services of better quality. High-performance. HR practices put stress on mutually complementary, supportive and aliening characteristics of individual HR practice for promoting service related behaviors of employees as well as improving the quality of services. The aim of this paper is double. On one hand, we have done a literature review in order to identify a general list of High-performance HR practices, and on the other, we have analyzed the relevance of those practices and the interaction between them in hospitality (in service sector) in the area of Valencia.

Keywords: Human Resource Management practices, High-performance HR Practices, hospitality.

1 Research purpose

In service industry, innovation, flexibility, responsiveness, and cooperation are a key issue for organizational success or even only for survival, especially for service industry. In this context, we focus on human resource management (HRM) practices,

[2] M Rosario Perello-Marin (✉)
Departamento de Organización de Empresas.Facultad de Administración y Dirección de Empresas, Universidad Politécnica de Valencia, Camino de Vera s/n, 46021 Valencia, Spain
e-mail:
[3] Gabriela Ribes Giner
Departamento de Organización de Empresas. Facultad de Administración y Dirección de Empresas, Universidad Politécnica de Valencia.

since employees' performance in service industry is highly related to organizational performance. In fact, in this sector, a management innovation is more likely to provide competitive advantage than technological prowess (Bowen & Ostroff, 2004; Perello-Marin, Marin-Garcia J A, & Marcos-Cuevas J, 2013).

The aim of this paper is twofold; on the one hand, we have gone through the literature in order to identify the most common used Innovative or High-performance HR practices by scholars; and on the other, we have analyzed the relevance or, even in some cases, the mere existence of those practices in hospitality (in service sector), particularly, within the area of Valencia city.

2 Introduction

HRM practices have been broadly studied by the body of research labeled strategic human resource management (SHRM) as a set of tools geared towards improving organizational effectiveness and hence better performance outcomes (Boselie, Dietz, & Boon, 2005; Stavrou, Brewster, & Charalambous, 2010). Human resource practices that academics consider performance enhancing are known as high-performance human resource practices (Guest, Conway, & Dewe, 2004), high-involvement human resource practices (Lawler III, Mohrman, & Ledford, 1995), high commitment (Wood & Albanese, 1995), innovative human resources practices, or best human resource practices, depending on the author. But they all agree that when business capabilities are combined with employee motivation the result is not an addition but a multiplication of the created value in the organization (Combs, Liu, Hall, & Ketchen, 2006; Guest et al., 2004; Ordiz Fuertes, 2002).

In hospitality sector, the existence of HR practices is to help companies to provide services of better quality and therefore High-performance. HR practices put stress on mutually complementary, supportive and aliening characteristics of individual HR practice for promoting service related behaviors of employees as well as improving the quality of services (Tang & Tang, 2012).

3 Results

Looking at the academic literature, we found that the list of HRM practices can be different depending on the author. We have gone through the literature of human resource management related to improve organizational performance by enhancing employee commitment and motivation, in order to be able to list a summary of the most common used HR practices in this area. At a later stage, a set of HR experts composed of three academics, and 4 HR professionals have checked, by a focus group the relevance on each of the practices for this sector.

The complete list of practices found in literature, have been classified into the 8 categories. We have built on previous work of the authors ({Perello-Marin, 2014 PERELLOMARIN2014 /id}. For this classification, we have employed an adaptation of Guest's classification (Guest, 2011): Recruitment and selection; 2) training and development; 3) Appraisal and feedback; 4) Rewards and incentives; 5) Job design; 6) Internal communication; 7) Employment security and commitment; 8) Active participation. Therefore, the most commonly used HR practices suitable for hospitality, in order to enhance organizational performance, resulted into 42 items. See Table 1.

The emphasis was placed on what the literature would identify as ‘high performance’ or ‘high commitment’ as opposed to traditional practices.

Figura 1. HRM practices in hospitality

1.	Recruitment and selection	4	Rewards and incentives	6	Internal communication and Information sharing
PR1	Usage of pre-employment test within the selection process as a means of assessment of abilities and personal skills (numerical, verbal, manuals, etc.). Eg. psychometric tests	PR18	Incentive plans: Employees (no matter whether managerial or not) are regularly rewarded based on performance appraisal	PR28	Downward communication: keeps employees well-informed (Eg. Internal newsletter, database with information for employees, regular meetings etc…)
PR2	Usage of knowledge or capability tests in the selection process: assessment of technical skills.	PR19	Part of pay related to individual or group performance	PR29	Upwards communication: Employees are provided the opportunity to suggest to their supervisors (Eg. Team briefing, Individual suggestion systems, formal survey of employees', group meetings: face to face contact, etc…)
PR3	Usage of techniques of simulation in the selection process: assessment of interpersonal skills.	PR20	Employee incentive plan or bonus based primarily on the performance of the organization (eg. profit sharing, gain sharing, stock ownership plans).	PR30	Meetings to information sharing among departments
PR4	Selection of employees focused on their overall fit to the company: values, personality…	PR21	Reward plan based on skills	PR31	Communication of strategic aspects to employees: company's strategy, business plan, finance, investment or salary determination criteria for instance
PR5	Internal candidates take priority over external for job openings: internal mobility or internal recruiting	PR22	Importance of job or position in the determination of the salary level (status differences)	PR32	Communication to employees of formal information on business operation and performance.
PR6	Recruitment and selection process starting from a detailed job description.	PR23	Compensation/rewards include benefits package (eg. Extra training, pay with time off…)	PR33	Communication of new initiatives, innovation and continuous improvement.

Figura 1. HRM practices in hospitality (continuation)

2.	Training and development (includes Talent Management)	5	Job design	7	Employment security and commitment
PR7	Integration plan for new employees: structured training plan which aims to transmit history, culture and values of the company.	PR24	The description of the jobs have been formally analysed and they are formally documented	PR34	Long-term employment for most of the employees (Eg. long-term contracts, avoiding compulsory or voluntary redundancies, etc.).
PR8	Annual training plan covering needs of all employees. Continuous training (whether in-company or outside training).	PR25	Job descriptions include skill and competencies required list	PR35	Active implementation of equal opportunity practices or single status (Eg. All employees are made aware of internal promotion opportunities)
PR9	Job rotation and multitasking training for employees to gain experience by moving them across different functional areas or divisions.	PR26	Employees often work in teams: Project teams, multi-functional teams, self-managed teams…	PR36	Flexible working and family friendly practices (er. job-sharing, part-time work, flextime working hours...)
PR10	Training in interpersonal skills (eg. Teamwork, problem solving...)	PR27	Actively tries to make jobs as interesting and varied as possible (Job enrichment, or Job enlargement)	PR37	The company sponsor various social events to encourage contact and relationship-building among employees.
PR13	Training plan taking into account future development: structured and defined internal promotion (promote long-term growth: career plan and succession plan included)			8	Quality and Active participation
3	Appraisal and feedback			PR38	Employee regularly participate in problem-solving groups. There is a formal grievance procedure.
PR14	Employees receive formal evaluation or performance appraisal (managerial or not) based on objective results			PR39	Employee participate in quality circles or other group suggestion systems
PR15	Employees receive regular feedback based on performance appraisal results			PR40	Employees participate in work improvement teams
PR16	Attitudes, behaviour and performance of the individual employee as criteria of evaluation			PR41	Employees have the responsability of ensuring the quality of their own work. Individuals are allowed to make decisions in workplace.
PR17	Criteria of evaluation based on team behaviour and team performance (not included whole company performance)			PR42	Visual management systems (employees have, to out of sight, information on the performance of their work)

There are little studies on high-performance HR practices in hospitality, despite the importance of this aspect in the final result of the organization. Paying attention to the ones we have found (from other sectors), they have focused on the effects of HRM on the organization's performances such as sales growth, productivity, and considering only individual practices, such as training, salary levels, or performance-reward contingencies (Boselie et al., 2005; Combs et al., 2006; Guchait & Seonghee, 2010). Only a small number of scholars study HRM practices as a system. We use in our work a configurational or bundles approach (Guchait & Seonghee, 2010), ie, we assume that it is the matching of a set of HR practices to particular firm strategies that leads to greater effectiveness.

As a result of the study, with data gathered from a set of hospitality companies in the area of Valencia, it was found that although the HR function should be a cornerstone in hospitality, however it is one of the most neglected. Only Recruitment and selection is present in the majority of the firms and this is due to the high level of turnover. However when analyzing at great detail, we found that the main practices in use are traditional ones, no oriented to improve commitment or involvement of the employees.

We have worked using the focus group technique. The group was formed by three HR academics, and 4 managers from hospitality sector in Valencia. We analyzed the relevance of those practices and the interaction between them in hospitality (in service sector), particularly, within the area of Valencia city; and how they reinforce each other or cause dead-combinations, in order to identify all the possible successful combinations of High-performance HR practices bundles.

4 Conclusions and future research

We have seen that there is not only one possible combination or High-performance HR practices that lead to a successful situation in hospitality sector. We leave for further research the extension of this study to a larger sample of companies within the sector, or even to other geographical areas in order to see if there are other factors that influence the final results, such as type of company (subsectors), size or location, for instance.

If all the possible HRM practices were identified, a broader analysis of the evolution of this sort of companies towards the growth and success would be done, as it has been seen in previous work of the authors.In this way we could start building the cladogram of such industry which may be very useful for both academics and practitioners. We also found that it could be very interesting to compare not only the results coming from the managers of the company, but also from the point of view of the employees.

CHAPTER 7

CONCLUSIONS

1 Introduction

This last chapter addresses the main findings of this doctoral thesis, as well as those issues that could not been covered and potential future research.

2 Most relevant results

At this section, the most relevant results of this piece of research are summarized.

As described in the first chapter, the piece of work presented in this doctoral thesis comprises a set of documents, mostly research papers which they can be considered independently; and in fact, they have been sent to different journals; they form one single piece of research. They are linked by the same thematic thread.

Thus, as a result of this doctoral thesis, a total of four papers have been sent to research journals. Three of them have been already published, and only one of them is under review. Moreover, one chapter of a book has been published, as well as six conference papers. The covering pages of all the publications are included in the appendix. It is worth noting that some of the conference papers are embryonic stages of what it later became research paper.

The first result provided by this doctoral thesis is a clarified definition of *path dependence*. It could be concluded from the literature that path dependence is a stochastic process, that emerges under two conditions (contingency and self-reinforcement) and that causes lock-in in the absence of exogenous shock (Vergne &

Durand, 2010). This concept can be useful to explain how an organization selects and implements best practices at an operational level, in order to achieve a competitive advantage. Initial conditions, such as previously implemented practices, successfully or not, observed experiences in competitors, etc., influence the decisions taken in selecting the introduction of new sets of practices. Success or failure in implementing new practices and tools depends largely on the interaction between the existing practices and the new ones. If the appropriate practices are introduced first, these create enhanced capabilities for the implementation of subsequent practices (Perello-Marin MR, Marin-Garcia J A, & Marcos-Cuevas J, 2013).

The second contribution of this doctoral thesis is to adapt and to explain Cladistics as a methodology to establish an objective, practical and easy to use benchmarking tool. Cladistics is presented as a methodology capable to identify what sort of actions or practices are taking place at certain organizations in certain context and which path to follow in terms of HRM to move to a new situation. That is, Cladistics includes the context and previous experiences (path dependence) in the analysis. It differs from other classification methodologies used to date in HRM field basically because it considers homology as opposite of analogy (used in cluster analysis or classification trees). This fact implies that when using cladistics the organisations under study need to be described in terms of their evolutionary past (ancestral characteristics) and its potential to transmit its characters to the future.

Among all the advantages, Cladistics is especially useful for collective research due to its objectivity and easy interpretable output (the Cladistic tree). On the other hand, one of the most difficult issues is to define the characteristics defining every type of

organization (characters and polarity in Cladistic language), as well as the groups under study (types of organisations or species).

A simple example of a Cladistic tree representing HRM evolution is presented to explain how to build a cladogram in an easy way for non-biologist readers. This cladogram, with a tree-like appearance, explains briefly the evolution of HRM systems in Spanish manufacturing industry. At it, different types of organizations have been represented and classified in terms of their HR characteristics as they grow in size. It shows the similarities of change between systems ordered graphically. This tree structure represents the evolutionary history, the diversity and the relationships between different HRM systems. The Cladogram built during this piece of research has been simplified, and it is based only on literature evidences. It does not consider all the aspects related HRM systems that define the analyzed type of organizations. But it shows us that it makes sense to analyze HRM system as an evolution over time and that if this methodology would be spread over the academia, research results in this field would be more comparable and easier discussed.

As a conclusion, Cladistics is proposed as a methodology to classify a given set of practices or programs (depending of the level of study chosen) into nested families (bundles) in order to test an evolution hypothesis. This is a novel approach that has not been yet explored in the HRM literature. It has been already borrowed from biological science to be applied to other social science areas, and it has been proven its relevance.

The third contribution of this doctoral thesis is a guiding list of those HR practices called ‘High involvement HR practices’, ‘High commitment HR practices’, ‘best HR

practices' or 'innovative HR practices' by main authors. It is a generic list of practices to be used as starting point in any research, no matter the context of the study. Thus, this initial list might be extended, or particularized for any context, but, studies carried out starting from the initial general list of practices, could be comparable. This generic list could be especially useful as a starting point when describing organizations in order to be analyze by using cladistics.

Finally, this guiding list of HRM practices is checked in hospitality sector in the East coast of Spain.

The big challenge now is to build the set of Cladograms, or cladistic trees, that are part of the competitive map of the organizations. This doctoral thesis provides the foundations for this purpose, and it also shows the first results of the process. It is the starting point of the wide and extensive path that is opened as a result of this piece of research.

Finally, the main contribution of this doctoral thesis is the justification of Cladistics as a methodology capable to identify, from a giving starting point of any organization, what would be the results which can be achieved, depending on the HR programs they would implement, and the order chosen for this implementation.

3 Future research

Taking into account the limitations of the study, many lines of research are possible.

The first and foremost step is to identify the genetic material of the organizations from the point of view of HRM. In doing so, it may be desirable to detail different sectors or

geographical areas. This identification refers to a complete and comparable characterization of all de HR programs and other characteristics in terms of HR, along with their ancestral relations.

Since a simple cladogram in HRM has been already presented, the first and reasonable piece of research would be to extend this work by contrasting the obtained results from the literature and further results from field data.

In order to assure that field data is reliable and comparable, a questionnaire for the survey should be designed and validated. In this way, identifying the organizations' characteristics usable for cladistics, and establishing the polarity of the characters will be easier and agiler. Once data acquisition has been systematized, building cladograms will be a time consuming but not a complex task due mainly to the demanding information.

It should be noted that the piece of research included in this doctoral thesis presents the evolution of organizations only in terms of their growth in size (number of employees). The aforementioned cladogram is build from already conducted studios, but it could be completed and extended, based on field data, and as a result, more than 4 species would be identified.

On the other hand, the presented cladogram only considers evolution in terms of size; however, cladistics can be used to analyze evolution under other perspectives. In this way, once the universe of existing programs and practices have been defined, many other perspective of evolution may be considered.

It is noteworthy that building cladograms is a continuous process and it should be completed as new characters are being identified. Hence, in biology field, researchers

share extensive database with all the identifying data from all the existing species and they go on updating them as new relations and characters are identified.

This piece of research is a call for researchers to go on contributing to such effort which will redound for sure to the benefit of the whole (researchers and practitioners alike).

REFERENCES

Adamides, E. D. & Pomonis, N. (2009). The co-evolution of product, production and supply chain decisions, and the emergence of manufacturing strategy. *International Journal of Production Economics, 121,* 301-312.

Ahmad, S. & Schroeder, R. G. (2003). The impact of human resource management practices on operational performance: recognizing country and industry differences. *Journal of Operations Management, 21,* 19-43.

Ait Razouk, A. (2011). High-performance work systems and performance of French small- and medium-sized enterprises: examining causal order. *International Journal of Human Resource Management, 22,* 311-330.

Akdere, M. (2009). The Role of Knowledge Management in Quality Management Practices: Achieving Performance Excellence in Organizations. *Advances In Developing Human Resources, 11,* 349-361.

Albors, J. & Hervás, J. L. (2006). CI practice in Spain: its role as a strategic tool for the firm. Empirical evidence from the CINet survey analysis. *International Journal of Technology Management, 35,* 380-396.

Alcazar, F. M., Fernandez, P. M. R., & Gardey, G. S. (2013). Workforce diversity in strategic human resource management modelsA critical review of the literature and implications for future research. *Cross Cultural Management, 20,* 39-49.

Alfes, K., Shantz, A. D., Truss, C., & Soane, E. C. (2013). The link between perceived human resource management practices, engagement and employee

behaviour: a moderated mediation model. *International Journal of Human Resource Management, 24,* 330-351.

AlGeddawy, T. & ElMaraghy, H. (2010). Co-evolution hypotheses and model for manufacturing planning. *CIRP Annals - Manufacturing Technology, In Press, Corrected Proof*.

AlGeddawy, T. & ElMaraghy, H. (2011). A model for co-evolution in manufacturing based on biological analogy. *International Journal of Production Research, 49,* 4415-4435.

Allen, P. M. (2001). A Complex Systems Approach to Learning in Adaptive Networks. *International Journal of Innovation Management, 5,* 149.

Altinay, L., Altinay, E., & Gannon, J. (2008). Exploring the relationship between the human resource management practices and growth in small service firms. *Service Industries Journal, 28,* 919-937.

Amo, A., Montero, J., Biging, G., & Cutello, V. (2004). Fuzzy classification systems. *European Journal of Operational Research, 156,* 495-507.

Anand, G. & Kodali, R. (2008). Selection of lean manufacturing systems using the PROMETHEE. *Journal of modelling in management, 3,* 40-70.

Antonelli, C. (2009). The economics of innovation: from the classical legacies to the economics of complexity. *Economics of Innovation & New Technology, 18,* 611-646.

Arthur, J. B. (1994). Effects of human resource systems on manufacturing performance and turnover. *Academy of management Journal, 37,* 670-687.

Arthur, J. B. & Boyles, T. (2007). Validating the human resource system structure: A levels-based strategic HRM approach. *Human Resource Management Review, 17,* 77-92.

Avella, L., Fernandez, E., & Vazquez, C. J. (2001). Analysis of manufacturing strategy as an explanatory factor of competitiveness in the large Spanish industrial firm. *International Journal of Production Economics, 72,* 139-157.

Baldwin, J. S., Allen, P. M., Winder, B., & Ridgway, K. (2005). Modelling manufacturing evolution: thoughts on sustainable industrial development. *Journal of Cleaner Production, 13,* 887-902.

Barrett, R. & Mayson, S. (2007). Human resource management in growing small firms. *Journal of Small Business and Enterprise Development, 14,* 307-320.

Barthelme, F., Ermine, J. L., & Rosenthal-Sabroux, C. (1998). An architecture for knowledge evolution in organisations. *European Journal of Operational Research, 109,* 414-427.

Bartram, T. (2011). Employee management systems and organizational contexts: a population ecology approach. *Management Research Review, 34,* 663-677.

Baxter, L. F. & Hirschhauser, C. (2004). Reification and representation in the implementation of quality improvement programmes. *International Journal of Operations & Production Management, 24,* 207.

Bayo Moriones, A. & Merino Díaz de Cerio, J. (2002). Las prácticas de recursos humanos de alto compromiso: un estudio de los factores que influyen sobre su

adopción en la industria española. *Cuadernos de Economía y Dirección de la Empresa,* 227-247.

Bayo-Moriones, A., Bello-Pintado, A., & Merino-Diaz-De-Cerio, J. (2008). The role of organizational context and infrastructure practices in JIT implementation. *International Journal of Operations & Production Management, 28,* 1042-1066.

Bayo-Moriones, A. & Merino-Diaz de Cerio, J. (2001). Quality management and high performance work practices: Do they coexist? *International Journal o Production Economics, 73,* 251-259.

Bayo-Moriones, A. & Merino-Diaz-De-Cerio, J. (2001). Size and HRM in the Spanish manufacturing industry. *Employee Relations, 23,* 188-207.

Becker, B. & Gerhart, B. (1996). The impact of human resource management on organizational performance: progress and prospects. *Academy of management Journal, 39,* 779-801.

Benson, G. S., Young, S. M., & Lawler III, E. E. (2006). High-involvement work practices and analysts' forecasts of corporate earnings. *Human Resource Management, 45,* 519-537.

Birdi, K., Clegg, C., Patterson, M., Robinson, A., Stride, C. B., Wall, T. D. et al. (2008). The impact of human resource and operational management practices on company productivity: A longitudinal study. *Personnel Psychology, 61,* 467-501.

Boselie, P., Dietz, G., & Boon, C. (2005). Commonalities and contradictions in HRM and performance research. *Human Resource Management Journal, 15,* 67-94.

Bowen, D. E. & Ostroff, C. (2004). Understanding HRN–firm performance linkages: the role of the "strength" of the HRM system. *Academy of Management Review, 29,* 203-221.

Boxall, P. (1996). The Strategic Hrm Debate and the Resource-Based View of the Firm. *Human Resource Management Journal, 6,* 59-75.

Brazeau, M. D. (2011). Problematic character coding methods in morphology and their effects. *Biological Journal of the Linnean Society, 104,* 489-498.

Burnes, B. (2004). Kurt Lewin and complexity theories: back to the future? *Journal of Change Management, 4,* 309-325.

Camelo, C., Martin, F., Romero, P. M., & Valle, R. (2004). Human resources management in Spain: is it possible to speak of a typical model? *International Journal of Human Resource Management, 15,* 935-958.

Camin, J. H. & Sokal, R. R. (1965). **A Method for Deducing Branching Sequences in Phylogeny**. *Evolution, 18,* 311-326.

Chang, S., Gong, Y., & Shum, C. (2011). Promoting innovation in hospitality companies through human resource management practices. *International Journal of Hospitality Management, 30,* 812-818.

Cho, S., Woods, R. H., Jang, S., & Erdem, M. (2006). Measuring the impact of human resource management practices on hospitality firms performances. *International Journal of Hospitality Management, 25,* 262-277.

Chuang, C. H., Chen, S. j., & Chuang, C. W. (2012). Human resource management practices and organizational social capital: The role of industrial characteristics. *Journal of Business Research*.

Colbert, B. A. (2004). The Complex Resource-Based View: Implications for Theory and Practice in Strategic Human Resource Management. *Academy of Management Review, 29,* 341-358.

Collaine, A., Lutz, P., & Lesage, J. J. (2002). A method for assessing the impact of product development on the company. *International Journal of Production Research, 40,* 3311-3336.

Collins, C. J. & CLARK, K. D. (2003). Strategic human resource practices, top management team social networks, and firm performance: The role of human resource practices in creating organizational competitive advantage. *Academy of management Journal, 46,* 740-751.

Collins, C. J. & Smith, K. G. (2006). Knowledge exchange and combination: The role of human resource practices in the performance of high-technology firms. *Academy of management Journal, 49,* 544-560.

Combs, J., Liu, Y., Hall, A., & Ketchen, D. (2006). How much do high-performance work practices matter? A meta-analysis of their effects on organizational performance. *Personnel Psychology, 59,* 501-528.

Corso, M., Giacobbe, A., Martini, A., & Pellegrini, L. (2007). Tools and abilities for continuous improvement: what are the drivers of performance. *International Journal of Technology Management, 37,* 348-365.

Cox, A., Zagelmeyer, S., & Marchington, M. (2006). Embedding employee involvement and participation at work. *Human Resource Management Journal, 16,* 250-267.

Darwin, C. R. (1859). *On the Origin of Species by Means of Natural Selection*. London: J Murray.

Datta, D. K., Guthrie, J. P., & Wright, P. M. (2005). Human resource management and labor productivity: does industry matter? *Academy of management Journal, 48,* 135-145.

David, P. A. (1988). *Path-dependence: putting the past into the future of economics*. Institute for mathematical studies in the social sciences.

de Souza Freitas, R. W., Chiappetta Jabbour, J. C., & Almada Santos, C. F. (2011). Continuing the evolution: towards sustainable HRM and sustainable organizations. *Business Strategy Series, 12,* 226-234.

Delery, J. E. & Doty, D. H. (1996). Modes of theorizing in strategic human resource management: tests of universalistic, contingency, and configurations. Performance predictions. *Academy of management Journal, 39,* 802-835.

Dewettinck, K. & Remue, J. (2011). Contextualizing HRM in comparative research: The role of the Cranet network. *Human Resource Management Review, 21,* 37-49.

Doolen, T. L. & Hacker, M. E. (2005). A Review of Lean Assessment in Organizations: An Exploratory Study of Lean Practices by Electronics Manufacturers. *International Journal of Manufacturing Systems, 24,* 55-67.

dos Santos Moreira, P. M. (2008). Characterising human resources management practices in Portugal: an empirical analysis. *International Journal of Human Resource Management, 19,* 1864-1880.

Drummond, I. & Stone, I. (2007). Exploring the potential of high performance work systems in SMEs. *Employee Relations, 29,* 192-207.

Dunn, M., Terrill, A., Reesink, G., Foley, R. A., & Levinson, S. C. (2005). Structural Phylogenetics and the Reconstruction of Ancient Language History. *Science, 309,* 2072-2075.

ElMaraghy, H., AlGeddawy, T., & Azab, A. (2008). Modelling evolution in manufacturing: A biological analogy. *CIRP Annals - Manufacturing Technology, 57,* 467-472.

European Commission (2005). *The new SME definition. User guide and model declaration*. European Commission.

Farris, J. S. (1970). Methods for computing Wagner trees. *Systematic Biology, 19,* 83-92.

Fernandez, P., McCarthy, I. P., & Rakotobe-Joel, T. (2001). An evolutionary approach to benchmarking. *Benchmarking: An International Journal, 8,* 281-305.

Fong, S. W., Cheng, E. W. L., & Ho, D. C. K. (1998). Benchmarking: a general reading for management practitioners. *Management Decision, 36,* 407-418.

Fraix-Burnet, D., Chattopadhyay, T., Chattopadhyay, A. K., Davoust, E., & Thuillard, M. (2012). A six-parameter space to describe galaxy diversificationΓϊå. *Astronomy and Astrophysics (after Jan 1, 2001), 545*.

Fraix-Burnet, D., Choler, P., & Douzery, E. (2003). What can biologists say about galaxy evolution? *Astrophysics and Space Science, 284,* 535-538.

Galan, J. I. & Sanchez-Bueno, M. J. (2009). Strategy and Structure in Context: Universalism versus Institutional Effects. *Organization Studies, 30,* 609-627.

Garcia-Lorenzo, A. & Prado Prado, J. C. (2003). Employee participation systems in Spain. Past, present and future. *Total Quality Management & Business Excellence, 14,* 15-24.

Garcia-Sabater, J. J., Marin-Garcia, J. A., & Perello-Marin, M. R. (2011). Is implementation of continuous improvement possible? An evolutionary model of enablers and inhibitors. *Human Factors and Ergonomics in Manufacturing, In Press*.

Goloboff, P., Farris, J., & Nixon, K. T. N. T. (2003). TNT: Tree Analysis Using New Technology. Program and documentation, available from the authors [Computer software].

Goloboff, P. A., Farris, J. S., & Nixon, K. C. (2008). TNT, a free program for phylogenetic analysis. *Cladistics, 24,* 774-786.

Gooderham, P., Parry, E., & Ringdal, K. (2008). The impact of bundles of strategic human resource management practices on the performance of European firms. *International Journal of Human Resource Management, 19,* 2041-2056.

Guchait, P. & Seonghee, C. (2010). The impact of human resource management practices on intention to leave of employees in the service industry in India: the mediating role of organizational commitment. *International Journal of Human Resource Management, 21,* 1228-1247.

Guerrero, S. & Barraud-Didier, V. (2004). High-involvement practices and performance of French firms. *International Journal of Human Resource Management, 15,* 1408-1423.

Guest, D., Conway, N., & Dewe, P. (2004). Using sequential tree analysis to search for 'bundles' of HR practices. *Human Resource Management Journal, 14,* 79-96.

Guest, D. E. (2011). Human resource management and performance: still searching for some answers. *Human Resource Management Journal, 21,* 3-13.

Guest, D. E., Michie, J., Conway, N., & Sheehan, M. (2003). Human Resource Management and Corporate Performance in the UK. *British Journal of Industrial Relations, 41,* 291-314.

Guthrie, J. P., Spell, C. S., & Nyamori, R. O. (2002). Correlates and consequences of high involvement work practices: the role of competitive strategy. *International Journal of Human Resource Management, 13,* 183-197.

Hall, B. G. (2013). Building Phylogenetic Trees from Molecular Data with MEGA. *Molecular Biology and Evolution, 30,* 1229-1235.

Hamed, M. B., Darlu, P., & Vallee, N. (2005). On Cladistic Reconstruction of Linguistic Trees through Vowel Data. *Journal of Quantitative Linguistics, 12,* 79-109.

Hannan, M. & Freeman, J. (1977). The population ecology of organization. *American Journal of Sociology, 82,* 929-964.

Hennig, W. (1999). *Phylogenetic systematics*. University of Illinois Press.

Herron, C. & Braiden, P. M. (2006). A methodology for developing sustainable quantifiable productivity improvement in manufacturing companies. *International Journal of Production Economics, 104,* 143-153.

Hipple, J. (2005). The Integration of TRIZ with Other Ideation Tools and Processes as well as with Psychological Assessment Tools. *Creativity & Innovation Management, 14,* 22-33.

Hislop, D. (2003). Linking human resource management and knowledge management via commitment: A review and research agenda. *Employee Relations, 25,* 182-202.

Huselid, M. (1995). The impact of human resource management practices on turnover, productivity, and corporate performance. *Academy of management Journal, 38,* 635-672.

Huselid, M. A. (2011). Celebrating 50 Years: Looking back and looking forward: 50 years of Human Resource Management. *Human Resource Management, 50,* 309-312.

Ichniowski, C. & Shaw, K. (1999). The Effects of Human Resource Management Systems on Economic Performance: An International Comparison of U.S. and Japanese Plants. *Management Science, 45,* 704-721.

Karisson, C. & Ahlstram, P. (1996). The Difficult Path to Lean Product Development. *Journal of Product Innovation Management, 13,* 283-295.

Kluge, A. G. (1998). Total Evidence Or Taxonomic Congruence: Cladistics Or Consensus Classification. *Cladistics, 14,* 151-158.

Kotey, B. & Sheridan, A. (2004). Changing HRM practices with firm growth. *Journal of Small Business and Enterprise Development, 11,* 474-485.

Lawler III, E. E., Mohrman, S. A., & Ledford, G. E. (1995). *Creating high performance organizations: practices and results of employee involvement and total quality management in Fortune 1000 companies*. San Francisco CA: Jossey-Bass.

Lee, B. H. & Jo, H. J. (2007). The mutation of the Toyota Production System: adapting the TPS at Hyundai Motor Company. *International Journal of Production Research, 45,* 3665-3679.

Leseure, M. J. (2000). Manufacturing strategies in the hand tool industry. *International Journal of Operations & Production Management, 20,* 1475-1487.

Leseure, M. J. (2002). Cladistics as historiography: part I--introduction to cladistics. *Management Decision, 40,* 486.

Levy, D. (1994). Chaos Theory and Strategy: Theory, Application, and Managerial Implications. *Strategic Management Journal, 15,* 161-178.

Luna-Arocas, R. & Camps, J. n. (2008). A model of high performance work practices and turnover intentions. *Personnel Review, 37,* 26-46.

MacDuffie, J. P. (1995). Human resource bundles and manufacturing performance: organizational logic and flexible production systems in the world auto industry. *Industrial & Labor Relations Review, 48,* 197-221.

Marchington, M. (1992). *Managing the team: a guide to succesful employee involvement*. Oxford: Blackwell.

Marchington, M. & Grugulis, I. (2000). 'Best practice' human resource management: perfect opportunity or dangerous illusion? *International Journal of Human Resource Management, 11,* 1104-1124.

Marin-Garcia, J. A. & Conci, G. (2009). Exploratory study of high involvement work practices: Identification of the dimensions and proposal of questionnaire to measure the degree of use in the company. *Intangible Capital, 5,* 278-300.

Marin-Garcia, J. A., Miralles Insa, C., Garcia-Sabater, J. J., & Perello-Marin, M. R. (2011). Alternative tools to mass production and human performance indicators in

sheltered work centers of Valencian community (Spain). *Journal of Industrial Engineering and Management, 4,* 467-480.

Marin-Garcia, J. A., Perello-Marin, M. R., Canos-Daros, L., & Valero-Herrero, M. (2013). How to choose the best order when implanting HIWP in operations area. In (pp. 727-737).

McCarthy, I. (1995). Manufacturing classification: lessons from organizational systematics and biological taxonomy. *Integrated Manufacturing Systems, 6,* 37-48.

McCarthy, I. (2005). Toward a Phylogenetic Reconstruction of Organizational Life. *Journal of Bioeconomics, 7,* 271-307.

McCarthy, I. & Leseure, M. (1997). Building a manufacturing cladogram. *International Journal of Technology Management, 13,* 269.

McCarthy, I., Ridgway, K., Leseure, M., & Fieller, N. (2000). Organisational diversity, evolution and cladistic classifications. *Omega, 28,* 77-95.

McCarthy, I. P. (2004). Manufacturing strategy: understanding the fitness landscape. *International Journal of Operations & Production Management, 24,* 124.

McClean, E. & Collins, C. J. (2011). High-Commitment HR practices, employee effort, and firm performance: Investigating the effects of HR practices across employee groups within professional services firms. *Human Resource Management, 50,* 341-363.

Melian-Gonzalez, S. & Verano-Tacorante, D. (2004). A new approach to the best practices debate: are best practices applied to all employees in the same way? *International Journal of Human Resource Management, 15,* 56-75.

Mol, M. J. & Birkinshaw, J. (2009). The sources of management innovation: When firms introduce new management practices. *Journal of Business Research, 62,* 1269-1280.

Morris, S. S., Wright, P. M., Trevor, J., Stiles, P., Stahl, G. K., Snell, S. et al. (2009). Global challenges to replicating HR: The role of people, processes, and systems. *Human Resource Management, 48,* 973-995.

Nixon, K. C. (2002). WinClada ver. 1.00. 08 [Computer software].

Ordiz Fuertes, M. (2002). Prácticas de alto rendimiento en recursos humanos. Concepto y factores que motivan su adopcion. *Cuadernos de economia y direccion de empresa, 12,* 247-265.

Paauwe, J. & Boselie, P. (2005). 'Best practices... in spite of performance': just a matter of imitation? *International Journal of Human Resource Management, 16,* 987-1003.

Patterson, M. G., West, M. A., Lawthom, R., & Nickell, S. (1997). *Impact of people management practices on business performance*. (1 ed.) Institute of Personnel and Development London.

Paulus, P. B. & Yang, H. C. (2000). Idea Generation in Groups: A Basis for Creativity in Organizations. *Organizational Behavior and Human Decision Processes, 82,* 76-87.

Pavnaskar, S. J., Gershenson, J. K., & Jambekar, A. B. (2003). Classification scheme for lean manufacturing tools. *International Journal of Production Research, 41,* 3075.

Pereira, C. M. M. & Gomes, J. F. S. (2012). The strength of human resource practices and transformational leadership: impact on organisational performance. *International Journal of Human Resource Management, 23,* 4301-4318.

Perello-Marin, M. R., Marin-Garcia J A, & Marcos-Cuevas J (2013). Towards a path dependence approach to study management innovation. *Management Decision, 51,* 1037-1046.

Perello-Marin, M. R. (2010). Towards a methodology for identifying path dependence in the evolution of human resources practices. *WPOM, 1,* 56-58.

Perello-Marin, M. R. & Ribes-Giner, G. (2014). Identifying a guiding list of high involvement practices in human resource management. *WPOM-Working Papers on Operations Management, 5,* 31-47.

Perello-Marin, M. R. & Ribes-Giner, G. (2015). How important is the implementation of Innovative Human Resource practices in hospitality? The case of Valencia. In Universidad de Málaga (Ed.), *Tourism and Environment: from the green tourism to the eco-innovation* (Universidad de Málaga.

Petter, S., Straub, D., & Rai, A. (2007). Specifying formative constructs in information systems research. *Mis Quarterly, 31,* 623-656.

Phelps, R., Adams, R., & Bessant, J. (2007). Life cycles of growing organizations: A review with implications for knowledge and learning. *International Journal of Management Reviews, 9,* 1-30.

Pichault, F. & Schoenaers, F. (2003). HRM Practices in a Process of Organisational Change: A Contextualist Perspective. *Applied Psychology: An International Review, 52,* 120-143.

Prieto, I. M. & Perez Santana, M. P. (2012). Building ambidexterity: The role of human resource practices in the performance of firms from Spain. *Human Resource Management, 51,* 189-211.

Robins, W. (2007). Editing and Evolution. *Literature Compass, 4,* 89-120.

Rodriguez Ruiz, O. & Martinez Lucio, M. (2010). The study of HRM in Spain: the Americanization of Spanish research and the politics of denial? *The International Journal of Human Resource Management, 21,* 125-143.

Roos, G., Fernström, L., & Pike, S. (2004). Human resource management and business performance measurement. *Measuring Business Excellence, 8,* 28-37.

Rose-Anderssen, C., Baldwin, J., Ridgway, K., Allen, P., Varga, L., & Strathern, M. (2009). A cladistic classification of commercial aerospace supply chain evolution. *Journal of Manufacturing Technology Management, 20,* 235-257.

Schroeder, R. G., Bates, K. A., & Junttila, M. A. (2002). A resource-based view of manufacturing strategy and the relationship to manufacturing performance. *Strategic Management Journal, 23,* 105.

Smart, J. M. (2012). The transcension hypothesis: Sufficiently advanced civilizations invariably leave our universe, and implications for METI and SETI. *Acta Astronautica, 78,* 55-68.

Stavrou, E. T., Brewster, C., & Charalambous, C. (2010). Human resource management and firm performance in Europe through the lens of business systems: best fit, best practice or both? *International Journal of Human Resource Management, 21,* 933-962.

Stavrou, E. T., Charalambous, C., & Spiliotis, S. (2007). Human resource management and performance: A neural network analysis. *European Journal of Operational Research, 181,* 453-467.

Stritesky, M. (2014). New HR Organizational Structures in Czech and Slovak Organizations. *Procedia - Social and Behavioral Sciences, 110,* 130-139.

Swart, J. & Kinnie, N. (2013). Managing multidimensional knowledge assets: HR configurations in professional service firms. *Human Resource Management Journal, 23,* 160-179.

Tang, T. W. & Tang, Y. Y. (2012). Promoting service-oriented organizational citizenship behaviors in hotels: The role of high-performance human resource practices and organizational social climates. *International Journal of Hospitality Management, 31,* 885-895.

Tari, J. J., Molina, J. F., & Castejón, J. L. (2007). The relationship between quality management practices and their effects on quality outcomes. *European Journal of Operational Research, 183,* 483-501.

Tenhala, A., Giluk, T. L., Kepes, S., Sim+¦n, C., Oh, I. S., & Kim, S. (2014). The Research-Practice Gap in Human Resource Management: A Cross-Cultural Study. *Human Resource Management,* n/a.

Thang, L. C., Rowley, C., Quang, T., & Warner, M. (2007). To what extent can management practices be transferred between countries?: The case of human resource management in Vietnam. *Journal of World Business, 42,* 113-127.

Tsinopoulos, C. & McCarthy, I. P. (2000). Achieving agility using cladistics: an evolutionary analysis. *Journal of Materials Processing Technology, 107,* 338-346.

Tzafrir, S. S. (2006). A universalistic perspective for explaining the relationship between HRM practices and firm performance at different points in time. *Journal of Managerial Psychology, 21,* 109-130.

Valverde, M., Ryan, G., & Soler, C. (2006). Distributing HRM responsibilities: a classification of organisations. *Personnel Review, 35,* 618-636.

van Driel, H. & Devos, G. (2007). Path Dependence in Ports: The Persistence of Cooperative Forms. *Business History Review, 81,* 681-708.

van Driel, H. & Dolfsma, W. (2009). Path dependence, initial conditions, and routines in organizations: The Toyota production system re-examined. *Journal of Organizational Change Management, 22,* 49-72.

Waal, A. (2007). The characteristics of a high performance organization. *Business Strategy Series, 8,* 179-185.

Way, S. A. (2002). High Performance Work Systems and Intermediate Indicators of Firm Performance Within the US Small Business Sector. *Journal of Management, 28,* 765-785.

Wood, S. (1999). Human resource management and performance. *International Journal of Management Reviews, 1,* 367-413.

Wood, S. & de Menezes, L. M. (2008). Comparing perspectives on high involvement management and organizational performance across the British economy. *The International Journal of Human Resource Management, 19,* 639-683.

Wood, S., Van Veldhoven, M., Croon, M., & de Menezes, L. M. (2012). Enriched job design, high involvement management and organizational performance: The mediating roles of job satisfaction and well-being. *Human relations, 65,* 419-445.

Wood, S. J. & Wall, T. D. (2007). Work enrichment and employee voice in human resource management-performance studies. *The International Journal of Human Resource Management, 18,* 1335-1372.

Wright, P. M. & Boswell, W. R. (2002). Desegregating HRM: A Review and Synthesis of Micro and Macro Human Resource Management Research. *Journal of Management, 28,* 247-276.

Wright, P. M. & McMahan, G. C. (1992). Theoretical Perspectives for Strategic Human Resource Management. *Journal of Management, 18,* 295.

Zatzick, C. D. & Iverson, R. D. (2006). High-involvement management and workforce reduction: Competitive advantage or disadvantage? *Academy of management Journal, 49,* 999-1015.

Zhang, Z., Wan, D., & Jia, M. (2008). Do high-performance human resource practices help corporate entrepreneurship? The mediating role of organizational citizenship behavior. *The Journal of High Technology Management Research, 19,* 128-138.

APPENDIX

Working Papers on Operations Management Vol 1, Nº 1 (56-58) ISSN:1989-9068

Towards a methodology for identifying path dependence in the evolution of human resources practices

M. Rosario Perello-Marin[1]

Dpto. de Organización de Empresas. Universidad Politécnica de Valencia. Camino de Vera S/N 46021 Valencia. rperell@upvnet.upv.es

Abstract: The path dependence approach seems to be well suited for analyzing certain decisions in human resources management. Within this paper, we will try to establish a framework for the application of an evolution model in human resources practices by using cladistics.

Keywords: path dependence; human resources management; evolution of organization; collaborative teams.

1. Introduction

Over the last years, aspects such as the globalization of business markets, stronger pressures to achieve efficiency gains as well as quality, and shorter production and products life cycles are forcing firms to maximize the adaptability of their production systems(Adamides y Pomonis, 2009). In this context of globalization, re-engineering business processes, improving efficiency, improving quality, customization, etc.. we see that the evolution of organizations is particularly relevant (ElMaraghy et al., 2008).

There are different methodologies to study transformations in firms. Recently, the biological concept of co-evolution has been adopted by some researchers in organization studies, they particularly use cladistics to classify the different stages of evolution of firms. However it has been found incremental and discontinuous trajectories in transformation processes. In this context, it is argued that path dependence approach helps understanding those discontinuous transformations. Particularly, it explains how some organizational decisions are influenced by decisions taken in the past.

Transformations in production system are often coupled with changes in human resource management policies and practices. One of the key transformations in work practices over the years has been the introduction of teams as a mechanism to deliver enhanced productivity and quality.

This paper aims to join these two lines of investigation opened by the scientific community. I will try to establish a framework for using cladistics in order to identify an evolution model in human resources practices.

2. Theoretical context

Some authors start using, in a still incipient way, the biological concept of evolution, extrapolated to the evolution of organizations, products and production systems (Adamides y Pomonis, 2009; AlGeddawy y ElMaraghy, 2010; Lee y Jo, 2007).

This new evolutionary perspective for analyzing organizations and their production systems takes into account its history and identifying their likely future evolution (Baldwin et al., 2005). This theory is based on the diversity of organizations and changes in their processes are governed by evolutionary mechanisms.

In this context, some author have began using cladistics in their researches (Baldwin et al., 2005; ElMaraghy et al., 2008; Leseure, 2002; McCarthy et al., 2000; Tsinopoulos y McCarthy, 2000). Cladistic studies can provide organizations with a map of the ecosystem in which they exist.

The current issue and full text archive of this journal is available at
www.emeraldinsight.com/0025-1747.htm

Towards a path dependence approach to study management innovation

M. Rosario Perello-Marin and Juan A. Marin-Garcia
Organizacion de empresas, Universidad Politecnica de Valencia, Valencia, Spain, and
Javier Marcos-Cuevas
Centre for Strategic Marketing and Sales, Cranfield School of Management, Cranfield, UK

Abstract

Purpose – Scholars in social sciences tend to use the term of path dependence without explaining exactly what they mean by it. Path dependence is a useful approach to understand the success or otherwise of the implementation of management innovation. The aim of this paper is to identify under which conditions it makes sense to talk about path dependence, and the relevance of using path dependence to the analysis of management innovation.

Design/methodology/approach – The path dependence literature in different contexts and knowledge areas within social sciences is reviewed using a narrative approach.

Findings – The concept of path dependence can be used to study management innovation, particularly when analyzing the introduction of new management practices. The authors argue that the order in which management practices are introduced has a significant effect on the outcomes for the organization. When the appropriate practices are introduced first, these create enhanced capabilities for the implementation of subsequent practices. If inappropriate practices are rolled out, they may severely impede management innovation and thus evolution and change of the firm.

Research limitations/implications – This work highlights the need to conduct further research to understand the interaction between existing practices and the new ones. This study can be extended with an empirical work to corroborate the results presented here.

Originality/value – By reviewing the different definitions of path dependence that exist in the literature, this paper will stimulate a debate on the necessary and sufficient conditions of path dependence and encourage a greater level of clarity in the management innovation area.

Keywords Path dependence, Management innovation, Management practices, Complexity, Managers, Innovation, Organizational innovation

Paper type Literature review

1. Introduction

In an increasingly competitive environment, in which changes happen so rapidly, organizations endeavor to evolve in order to achieve a sustainable competitive advantage. Firms' emphasis on maximizing flexibility and adaptability to continuous change becomes key to ensure future success chances (Adamides and Pomonis, 2009; Antonelli, 2009; Burnes, 2004b; Furlan *et al.*, 2011; Karlsson and Ahlström, 1996;

The work described in this paper has been supported by the project "CORSARI MAGIC DPI2010-18243" by the Ministerio de Ciencia e Innovación del Gobierno de España within the Program de "Proyectos de Investigación Fundamental No Orientada".

WPOM

Working Papers on Operations Management
Vol. 5, Nº1 (31-47)
ISSN: 1989-9068

http://dx.doi.org/10.4995/wpom.v5i1.1495

Identifying a guiding list of high involvement practices in human resource management

M. Rosario Perello-Marín[a], Gabriela Ribes Giner[b]

[a] Dpto. de Organización de Empresas, Universidad Politécnica de Valencia, Spain, rperell@upvnet.upv.es and [b] Dpto. de Organización de Empresas, Universidad Politécnica de Valencia, Spain, gabrig@upvnet.upv.es

Recibido: 2013-04-25 Aceptado: 2014-07-07

Abstract

In today global competitiveness, it is becoming increasingly frequent, the introduction of new management practices to organizations, seeking to enhance performance as a form of Management Innovation (MI). This is so because such practices are usually difficult to replicate exactly from one company to another, provided they are well rooted in the daily work in the organization. The main purpose of this paper is, by reviewing the previous work done in this area, to present a general list of Human Resource Practices (HRM practices) geared towards improving organizational effectiveness and hence better performance outcomes. Many work have been done to date within this topic, but it is difficult to find a consensus about the best way to address to this practices, and this fact makes difficult to compare different studies and their results. We present a detailed but synthesized list of those HR practices to be used as a starting point in any sector whether industrial or services.

Keywords: *HRM practices, High commitment HR practices, Innovative HR practices, High involvement HR practices, High Performance Work practices.*

Introduction: Purpose of the paper and related work

In a world where global competitiveness is one of the main keys to organizations' success, where innovation, flexibility, responsibility and cooperation become particularly relevant to ensure organizational success, or even mere survival (Adamides y Pomonis, 2009; Antonelli, 2009; Barnes, 2004; Panuwe y Boselie, 2005; Zhang et al., 2008), the importance of human capital, as a source of competitive advantage, is gathering especial significance for both, researchers and practitioners alike.

It is becoming increasingly frequent, the introduction of new management practices to the organization, seeking to enhance performance, as a form of Management Innovation (MI) (Panuwe y Boselie, 2005; Perello-Marín et al., 2013). This is so because such practices are usually difficult to replicate exactly from one company to another, provided they are well rooted in the organization's daily work, or in other words, they are part of their own identity (Mol y Birkinshaw, 2009; Thang et al., 2007). If we look at other resources as a source of competitive advantage, different from HR, we can state that they are