

# Neuromanagement; key to maintaining performance literature review

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**Abstract:** In an uncertain environment, today's companies have an interest in attracting and retaining employees who are able to manage change. Knowing and managing your employees well is of paramount importance. They would therefore benefit from broadening their vision of human resources management while drawing on neuroscientific contributions. The combination of these two disciplines makes it possible to create a new management style that is nothing other than neuromanagement, which aims to study the conditions and processes that contribute to the development and well-being of individuals and the optimal functioning of companies. The objective of this work is to study the impact of neuromanagement on human resources performance. This research will then be completed by a quantitative empirical study with a sample of large Moroccan companies.

**Keywords:** Human Resources, Neuromanagement, Performance, Professional environment, work

## I. Introduction

In the current context, the company is concerned about its sustainability, which can only be ensured thanks to the human resources that make it up. But unfortunately, too much energy is wasted in tensions, conflicts and sterile competition between staff members, something that weakens most employees in the face of stress and illness, which inevitably influences their performance. Companies would therefore benefit from expanding and revisiting their human resources management methods, while offering advantageous working conditions, it becomes more than necessary to implement innovative and creative practices in human resources management.

Today we are seeing more and more the emergence of a new vision of human resources management that has emerged thanks to a rapprochement between management and neuroscience, whose ultimate objective is to take into account the human being in his realities and his multiple resources. It promotes the manager's knowledge of his own internal functioning, that of his employees. This new vision, which mainly refers to neuroscientific contributions, aims to study the conditions and processes that contribute to the development and well-being of individuals and the optimal functioning of companies, and to build a renewed vision of the company: it is both a challenge in terms of well-being and performance. The originality of this scientific research work is to propose a study that highlights Neuromanagement and Human Resources performance within the company. In this perspective, our problem would be to answer the following question: *To what extent does neuromanagement influence human resources performance?*

In an attempt to address this issue, this paper attempts to analyze the influence of neuromanagement on human resources performance. This research will then be supplemented by a quantitative empirical study.

## II. Neuromanagement; neuroscience for management

Neuroscience has recently made considerable progress, making it possible to completely revise the understanding of human functioning, which has created a revolution in the human and social sciences, from education to marketing and management, something that has given a rise to new names and concepts quickly adopted by those who hear them (Neuromanagement, Neuromarketing, Neuroeconomics, Neuropédagogie, Neurocoaching).

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Human resources management to maintain its place in the human and social sciences, it must take advantage of neuroscientific contributions. The interest of neuroscience applied to management can only be greater, insofar as it provides new insights into how we operate and is useful for the well-being, motivation, decision-making and performance of human resources within the company. It is new; science brings us new techniques of awareness and personal and professional development.

The temptation to revisit human resources management based on neuroscience is not a magic wand of self, others and business transformation, but it is a combination of skills and good practices that can change our vision and go beyond the limits of traditional human resources management, and even be up-to-date in a changing environment and a world characterized by the amount of scientific research that grows exponentially day after day. The idea of taking advantage of neuroscientific contributions therefore seemed quite natural, something that has given a rise to a new approach to human resources management that merges neuroscience and management and obviously opens the door to a new world of knowledge, which is Neuromanagement.

### 1.1 Definitions and history of neuromanagement

Neuroeconomics is the first disciplinary field that was created by economists (Tversky and Kahneman 1974), whose objective is to better understand the decision-making processes of economic agents based on paradigms and knowledge of neuroscience and cognitive psychology. Zak proposed the following definition: "*Neuroeconomics is an emerging interdisciplinary field, which uses neuroimaging techniques to identify neural substrates associated with economic decisions*"<sup>1</sup>. Following the same reasoning, we can define Neuromanagement as follows: "*Neuromanagement is an emerging interdisciplinary field, which uses neuroimaging techniques to identify neural substrates associated with human resource decisions and behaviors in the professional environment*". It is therefore a new management approach designed to clarify human functioning, human behavior in various professional situations and how to encourage this resource to live its professional life to the full. To this end, knowledge, if not mastery, of new neuroscientific study techniques seems necessary, insofar as they provide and will provide new, richer and more solidly established perspectives; they make it possible to pre-test and validate good management practices. This contributes to the advancement of human resources management, while providing clear and clear answers to questions that have long been of concern to managers and human resources managers alike.

Consequently, the possible use of neuromanagement in the company today is necessary, given its growing influence not only on individual but also on collective and organizational performance. The concept of Neuromanagement is composed of two terms; neuro, because we rely on the most recent mechanisms in brain processes, and management, which refers to all the techniques implemented for the management of the company, in other words it is the art of directing human resources to obtain better organizational performance, so we can say that "*Neuromanagement is the art of directing human resources to obtain better organizational performance based on the most recent mechanisms in brain processes*".

Neuromanagement is a new concept, which links neuroscience, behavioral and organizational sciences and management. It is a generic theme and opens up an undefined field of investment. It is the result of research on neuroscience and human behavior, the aim of which is to provide business leaders and the human resources that make up the company with neuroscientific tools that are scientifically validated, based on a detailed understanding of how the brain works.

Neuroscience has now provided important insights into self-knowledge, the activation of our potentials, and also into understanding how we function, how we think, act or react, we are increasingly coming to understand how humans function in this or that situation, when we have fear, anxiety, stress, and demotivation, all this can be explained. Neuromanagement is very broad, it aims to understand human behavior in its entirety, which makes it possible to have people who are able to adapt, even if they have very few skills.

This approach has been developed since 1987 by Jacques Fradin and a group of French researchers at the Institute of Environmental Medicine, to remedy the management problems encountered within the company, designed to improve human resources, it is not a therapy but rather a scientifically validated approach to effectiveness, "its objective is neither to replace nor to be close to psychoanalysis. The aim is to help leaders understand basic emotions, intentions and behavioral changes based on neuroscience" Chantal Vander Vorst (2013).

<sup>(1)</sup> Zak P.J. (2004), Neuroeconomics, *Philosophical Transactions of the Royal Society London B*, 359, 1737-1748.

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In the same vein, David Rock <sup>2</sup> also points out that "Neuromanagement has nothing to do with reading minds or controlling them. It is a question of decoding human functioning and building companies taking these data into account", it is the fact of applying the knowledge of neuroscience to company management. "By thinking from the brain, we introduce a completely new language to describe mental and relational experiences (...), he explains. Of course, we do not yet know everything about the brain, but we do know that learning and knowledge are damaged by high stress, for example, while creativity is also surprisingly reduced when there is low stress. We should therefore no longer follow biology, use interesting discoveries, and push back the boundaries of our knowledge. (...). About 3% of American companies are now in the process of radically changing their performance management systems and many are influenced by our research, which shows that existing systems reduce exchange, creativity and performance".

According to the American organization NeuroLeadership Institute, nearly 1,000 large American companies use Neuromanagement in their performance management systems. David Rock confirmed that in the United States, companies are inspired by the precepts of Neuromanagement, one of whose particularities is to totally reject the effectiveness of the threat on the employee to "reorganize personal interviews, focusing on the objective of being less in the threat and more in understanding to bring about changes in behavior".

Also adopted by European companies for nearly five years, where training on this track is booming, by offering solutions adapted to the needs of the company's employees, to reconcile performance, adaptability and well-being at work.

Neuromanagement is a very broad cocktail of knowledge, combining neuroscience, psychology, cognitivism and behaviourism. HR managers must therefore always take a critical look at new discoveries in neuroscience in order to identify what could really boost their company.

### **III. Human resources performance**

Performance has long been analysed as a one-dimensional concept, measured by profit alone, and in this context its measurement is aimed only at creating value for shareholders. Then it becomes a multidimensional concept because the company considers itself as a meeting place for the motivations of all stakeholders, who do not all have the same perception of performance. The perception changes if we put ourselves from the point of view of employees, managers and customers. Therefore, the concept has several meanings. For an employee, it may be the working climate; for a manager or executive, it may be competitiveness or profitability; and for a client, the quality of the services provided. This diversity of the actors that make up the company makes performance an indeterminate concept (Jean-Yves Saulquin, Guillaume Schier, 2007). Human resources performance is a crucial component of overall performance.

Improving and maintaining the performance of human resources, is a concern of all companies, how to achieve this goal in the current context, is the main issue, borrowing neuroscientific input into human resources management is a new approach to improve HR performance.

#### **1.2 Definition of the concept of performance**

The concept of performance has given rise to numerous debates in the literature (Bouquin H, Bescos P.L, Bourguignon A, Lorino P, Lebas, bessire, Rugman, Verbeke, 2002. Penrose (1959, Charreaux and Desbrières, 1998, Waddock, Graves, 1997, Orlitzky et al., 2003). Moreover, it is a subject treated by several scientific disciplines, each in its own way (Bourguignon, 1995). Outside the corporate sphere, performance refers to the results achieved (Mazouz and Tardif, 2006). The root of the word performance is Latin, but it was English that gave it its meaning (KHEMAKHEM Abdellatif, 1986). The French and English terms are close and mean accomplishment and success (Gauzente, 2000).

The terms productivity, efficiency and performance are used in several theoretical (Pinder, 1984; Katzell and Thompson, 1990) and empirical (Blau, 1993) studies as being very similar. According to Morin et al., (1994), productivity is a purely economic term, while the concept of efficiency is used to assess organizational success (Pradhan, Kumar, Singh and Mishra, 2004; Brassard, 1996; Morin, Savoie and Beaudin, 1994), while performance is used to measure individual work.

A. Bourgignon (1996) defined it from an etymological and semantic analysis, in three different meanings:

<sup>(2)</sup> David Rock, "Your Brain at Work": the effective instructions for use, InterEditions, 2009.

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- ✓ The performance is a success. Performance does not exist in itself; it is a function of the representations of success, which vary according to the companies and actors.
- ✓ Performance is the result of the action, an ex-post evaluation of the results obtained.
- ✓ Performance is action, reading as the process that leads to success.

Morin et al., (1994) represent four dimensions of organizational performance, namely: The economic dimension, the social dimension, the systemic dimension and the political dimension.

The reconciliation between the different types of performance, in particular economic performance, financial performance and social performance (HR Performance), has been regularly addressed in the literature for the past fifteen years or so (Charreux and Desbrières, 1998, Waddock, Graves, 1997, Orlitzky et al., 2003). Indeed, all forms of performance interact and evolve jointly upwards or downwards. In this perspective, Preston and O'Bannon, 1997, point out that social performance influences financial performance by increasing or decreasing it, the idea that individual employee performance influences financial and economic performance is a given among researchers and practitioners.

In our research work we will focus our attention on the social approach to performance, which emphasizes the human dimension of the organization; it comes from the contributions of the school of human relations. It also integrates the climate and working conditions and well-being. It is based on a very significant observation that assumes that achieving social objectives allows financial and economic objectives to be achieved.

In the literature, the notion of resource is a fundamental element to achieve performance. They refer to the elements necessary for the optimal functioning of the company (Wernerfelt, 1984; Grant, 1991; Arrègle, 1995, 1996; Véry and Arrègle, 1997; Moingeon et al., 1998). Wernerfelt (1984) defines a company's resources as "the tangible or intangible assets, which are attached to the company". Indeed, resource theory considers that a company's HR is a competitive advantage. For this advantage to emerge from HR, four factors must be combined (Wright and McMahan, 1992):

- ✓ HR must create value in the firm's production process;
- ✓ Human resources must be considered as a scarce resource;
- ✓ The combination of human capital investments within the firm is not easily imitable;
- ✓ Human resources must not be subject to easy replacement by technological progress.

The Resources Based approach suggests that HRM practices can affect employee performance through impacts on motivation, skills, and organizational structures designed to improve working conditions. This leads to an improvement in turnover and productivity, which will also influence financial performance indicators (Barney, 1991).

After this general vision on the notion of performance, it is necessary to address the measurement and evaluation of HR performance.

### **1.3 Measuring and evaluating human resources performance**

Performance measures are, in most cases, performance evaluations conducted by the supervisor (Dorfman et al., 1986; Barrick et al., 2002; Blau, 1986; Campbell, 2007). Indeed, performance can be measured by results (Bernardin and Beatty, 1984; Blau, 1993; Klehe and Anderson, 2007; Locke and Latham, 1984; Rau, Goa and Wu, 2008; Tauer and Harackiewicz, 2004), where performance is defined as "the total results generated by the individual during an activity over a certain period of time". In this case, the supervisor may have to evaluate the performance level of his employees; high, medium or low, (Roy and Gosselin, 2006). It can also be measured by behaviour (1994; Motowidlo, 2003; Campbell et al., 1996; McCloy et al.; Viswesvaran and Ones, 2000). Here the supervisor can evaluate the actions of his employees over a period of time (Eisenberger et al., 1999; Motowidlo, 2003).

Also for Chloé Guillot-Soulez (2008), "evaluation is a judgment made on the behaviour of an employee in the performance of his duties. Judgment can be expressed in different forms: by a rating; by an inventory of strengths and weaknesses in relation to the function performed; by a professional assessment in relation to the objectives of the period preceding the interview.... ». For Tania Saba et al (2008), "evaluation is a structured and formal system to measure, evaluate and modify the characteristics, behaviors and outcomes of an employee in a given position". According to Jean-François Dhénin and Brigitte Fournier (1998), "the annual appraisal interview makes it possible to establish a professional assessment: it consists of a direct interview between the employee and his direct superior where career development and promotion are examined". It consists in comparing the results of the criteria or indicators selected

with reference values and making a significant judgement. It has therefore become a priority for today's company, because the main objective is to achieve good results and develop employees' skills and performance, evaluation is therefore a managerial act that affects almost all HRM practices, and consists of making an objective and global judgment on a person about the exercise of his activities during a given period in a company, based on explicit criteria and established standards (SEKIOU, 1986, p. 304).

According to PERETTI, (2005-1994), performance evaluation is an important tool for employees insofar as it provides feedback on their work and efforts, it also makes it possible to identify strengths and weaknesses both in terms of knowledge; know-how and know-how, motivation and support for employees in their career development. For the manager and the company insofar as it serves to justify decisions taken in terms of training, promotions, transfers and other actions.

We therefore note that performance evaluation is a set of procedures whose ultimate objective is to assess the merits and qualifications of the people who make up the company. It may be biased due to insufficient knowledge of the information by evaluators (SEKIOU, 1995, p. 289). According to Gérard-Philippe REHAYEN (2008, p.147) "the supervisor is not entirely immune to errors of judgment. Thus, it must avoid making the mistake of comparing employees with each other; instead, it must compare their respective work results with established performance standards. In the same context, M. Emeriaud (2006) states that "to assess the skills or performance of its employees, the company must have a good knowledge of its businesses, the main skills required for their exercise and the level required for each of them to lead to the maximum performance of the employee. Without this prerequisite, the company manager or line manager will not have objective elements to compare the level acquired with the level required when he is in a position to evaluate his employee(s)".

Christel Decock, Good, Laurent Georges (2003), stipulates that performance evaluation can be based on a number of variables, including:

- ✓ The remuneration
- ✓ The training
- ✓ Working conditions
- ✓ The social climate
- ✓ The resignation rate
- ✓ Absenteeism rate

In the same context, C.P. VINCENT (1990) states that the company expects a very high performance from its human capital that can be measured through:

- ✓ The degree of competence of individuals in their tasks, also their ability to give the best of themselves and the ability to identify strengths and weaknesses;
- ✓ The degree of integration into the organization, relying on his or her talents and energies;
- ✓ The extent of responsibility and initiative;
- ✓ Team spirit. <sup>(3)</sup>

The method of developing the measurement can:

- ✓ Be direct and simple: using technical means in terms of physical processes (stopwatch,...);
- ✓ Be carried out on the basis of data collection through questionnaires, surveys or market studies and their interpretation by statistical tools;
- ✓ Be carried out using mathematical or physical operations, for example productivity calculation (labour/machine ratio).

The frequency of the measurement is decided according to the nature and importance of the phenomenon to be measured. It can be continuous in order to identify the progress of the activity to be measured; or event corresponding to an event or phenomenon or at the end of its execution. The debate on performance is enriched, in particular, with the emergence of concepts such as social responsibility, stakeholders...

<sup>(3)</sup> C.P. VINCENT, 1990. « Des systèmes et des hommes : pour une nouvelle approche du management », Les éditions d'Organisation, p.193.

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After defining the notion of neuromanagement and performance, we will discuss the relationship between the two concepts.

### **IV. Neuromanagement; key to maintaining performance**

At present, HRM practices seem to become a major concern for researchers and companies, and much HRM research has recently attempted to examine the link between certain practices and performance (Bogaert and Vloeberghs (2005). This link has been empirically tested by many studies, but to our knowledge, there are no studies that have tested the link between neuromanagement practices and HR performance, as the subject is quite new. Indeed, we consider as Hesketh and Fleetwood (2006) underline it "that the absence of empirical relationships between HRM practice and performance does not mean that there is no relationship between the two concepts". It is quite possible that a link exists but it is not yet tested or the relationship between the two concepts is difficult to capture. However, it would be interesting for us to discuss this relationship; this study is not an end in itself, but a starting point for understanding this relationship. The initial idea is to analyze whether neuromanagement practices have an effect on human resources in terms of motivation and well-being, which in turn have an effect on HR performance.

Today's efforts by companies have led to managerial innovation that can be defined as "the implementation of new management practices, processes and structures that differ from established standards" (Birkinshaw and Mol, 2006).

Shultz (1961) and Becker (1975) focus on human capital and not the firm, questioning the essential importance of investment in training. Black (1995); Lynch and Bartel (1991) show that, training undoubtedly increases productivity within the company. Each structure is called upon to set up a collaborative and innovative management method, enabling each employee to be in a position to give the best of him.

We have extraordinary performances in us, both cognitively and physically, and we can release them under certain conditions. For example, in a work situation, where an employee is called upon to make a decision or perform an important task, this person can give extraordinary things if he/she feels motivated. Of course, his motivation depends on several factors (respect, recognition, integration, quality of the manager, good atmosphere, challenge, self-accomplishment, consideration, achievement of objectives, etc.) which also depend on each person.

In this context, IDRISI ABERKANE (2016) states that "*The existence of captive performances confirms that we can*" free our brain "*from its automatisms and fears. What we know is greater than what we think we know, and what we know how to do is greater than what we think we know how to do. On the other hand, our brains tend to conform to what they believe of themselves, and in fact, when we convince ourselves that we are unable to perform a task, we are much more likely to fail*". This is the phenomenon of self fulfilling prophecy or pygmalion effect <sup>(4)</sup>

Human resources managers and managers therefore have an interest in treating employees as highly qualified and efficient people to motivate them and encourage them to give their best, which encourages them to progress to the highest level, to develop new know-how and a great ability to adapt to all situations, as well as a very practical sense of initiative, even those who are incompetent and have a low level of performance will try to prove the contrary. The signs of recognition and respect we express to others are visible actions of our beliefs and prejudices. They can be incredible factors of success, motivation and inclusion. Developing the Pygmalion effect in the workplace will be beneficial for all.

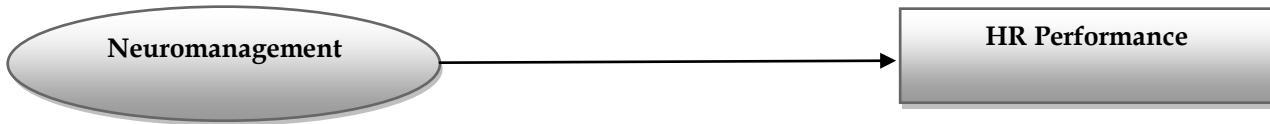
The link between Neuromanagement and social performance deserves to be addressed, questioning the link between the two concepts is of crucial importance, insofar as Neuromanagement constitutes a new discipline with the objective of revisiting HRM, while influencing motivation, well-being and performance, but as researchers we note the rarity of documents (articles or books) dealing with the link between the two concepts, and even empirical results on this subject. Indeed, Neuromanagement highlights the development of individuals, teams and companies, and is particularly relevant to work on the added value of human resources management.

Neuromanagement creates a working atmosphere where understanding, motivation and collaboration become the main drivers of the company's success, it allows employees to integrate quickly into the company, find balance and fulfillment at work, improve their ability to mobilize and motivate staff, use a coaching method to recruit staff and improve team performance. Certainly the neuromanager, who exploits neuroscientific contributions in the management of his teams, has a head start. He or she will not need a long apprenticeship to decipher behaviors, manage change and control stress.

<sup>(4)</sup> MERTON ROBERT K. (1948). « The self fulfilling prophecy», Antioch review, 8.

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It would therefore seem that Neuromanagement is significantly linked to HR performance. From this perspective, our research model is as follows:



**Figure 1:** Research model

### V. Empirical envisaged research

#### 1.4 Hypothesis

Research conducted as part of the resource-based approach (Huselid, 1995 and Grinyer et al., 1990) suggests that HRM practices can have an impact on motivation and can lead to an improvement in working conditions and social climate (Wellbeing), which would increase HR productivity and performance. This leads to the following hypothesis: *Neuromanagement has a positive influence on human resources performance.*

This hypothesis will be analyzed and discussed in the light of the results of a future quantitative study.

#### 1.5 Materials and methods

Within the framework of our research work, it is a question of approaching neuromanagement in relation to the performance of human resources, from this perspective it seemed relevant to us to test and measure the impact of neuromanagement on performance.

In this context, our research is positioned from the epistemological point of view, in the principles of the positivist paradigm, based on a postulate of objectivity of reality (Girod and Perret).

Our research problem is clearly oriented towards testing and verification, our research objective is aimed at theoretical construction within the framework of a hypothetical-deductive reasoning mode, which concludes from premises, hypotheses to the truth of a proposal by using inference rules (Chalmers, 1987), we have therefore considered it important to be part of a quantitative approach, insofar as quantitative tools are most frequently used to serve the test logic (Thiéstart, 1999).

The test phase is dominated by the use of a questionnaire survey followed by statistical processing (Ackroyd, 1996), so we plan to use a questionnaire to be administered to a sample of large Moroccan companies.

### VI. Conclusion

The objective of this research work is to examine the link between Neuromanagement and Human Resources performance, the literature has shown that there are strong correlations between the two variables.

Through this theoretical work we have tried to show that the contributions of neuroscience make HRM a new vision that will go further. Renewing human resources management through neuroscience is an evolving vision of HR management, essentially promoting knowledge and understanding of human foundations. Its impact on performance is very significant. Because it allows the interests of the individual, the group and the organization to converge, to design an organization that integrates human reality as a key factor for performance and efficiency.

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