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## **The emerging impact of neuroscience in Human resource management and in the public sector**

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### **Abstract**

The study of the nervous system has opened the gates into exploring the depths of the conscious trying to unlock the cerebral function, its structure and mechanisms that impact human behavior. Implementing the neuroscience paradigm for public organizations is expected to enhance inspiration and innovation for the employees, to transform the organization into a best working place for employees that witness a feeling of integration and accomplishment in the realization of organizational success. A non-fearful or -stressful working environment that was the one that characterized the old public administration where Managers managed through fear and punishment, is leading the way to a more consensual way of doing things where employees are supported to take risks, think laterally and creatively, challenge the status quo, stand up and be counted. The accumulated capital of knowledge is already used in various settings of social life but also and mostly around human resources management at an organized professional context. Indeed, private corporations are already taking advantage of some of the available techniques while the public sector is also catching up slowly as best practices from the private sector are being transferred to the public.

Bearing in mind that the linkage of social cognitive neuroscience to human resources development presents a great opportunity to explore further, in this research, we will examine the impact that Neuroscience claims to have on human resources by putting an emphasis on the framework of public sector and the opportunities that lay ahead in order to build a more robust and committed personnel. First, we will start our analysis with the brain structure following with the multiple factors that affect human behavior in organizational settings through the lens of neuroscience. The reference of sectorial human resources policies under the prism of neuroscience can explain how they affect the human reactions in any organizational setting from hiring to training and assessment (job satisfaction, performance management, career management, etc., Schaufenbuel, 2017). Evidently, it will be argued that modern organizations could seek actions that stimulate the reward and pleasure centers of the brain while making the person experience feelings of acceptance and recognition. In the same direction, we will discuss that neuroscience is decoding the societal engagement and exploring the human behavior in working places supporting the overall struggle for maximization of performance.

**Keywords :** neuroscience and human resources, public administration, innovation, sectorial Human resource policies, commitment, performance

## **Introduction**

Neuroscience is a field of research that has been associated with the science of medicine and biology. Over the years, neuroscience transgressed from the Academic sphere to the pragmatic world with its implications infiltrating the modern workplace and the Human Resources (HR) departments. It has become an interdisciplinary field of research of social sciences permitting thus the exploration of the dynamics of human performance. Furthermore, developments in technology have enabled researchers to investigate the encephalon and to decode the human perception of the world by using a variety of tools (functional Magnetic Resonance Imaging (MRI), positron emission tomography, electroencephalograms, etc.). The accumulating knowledge advocates for the utilization of neuro-techniques by Human Resources Management (HRM) departments to support them in their effort to guide humans towards a purposeful action that supports the organizational goals and satisfies the wellbeing of the personnel.

## Brain structure

The brain is part of the central nervous system along with the spinal cord and is composed by : the cerebrum, the cerebellum, and the brain stem. The *cerebrum* located at the highest part of the brain accounts for two-thirds of its total weight (Augustyn, et al., 2005) and it splits into two hemispheres : the first one is controlling language, speech, corporal senses, memory, auditory, visual reception, scent, taste, and emotions, while the second one is interpreting optic and spatial data. The *cerebellum* is positioned at the back of the brain and even though it accounts for approximately 10% of the brain's volume, it contains over 50% of the total number of neurons (Knierim, 2019). It receives information from the sensory systems, the spinal cord, and other parts of the brain, and modifies the commands, making the movements coordinated and accurate. Other tasks involve maintaining balance, posture, and some cognitive functions. The *brain stem* or "Truncus encephali" constitutes a relay station between the higher centers and the spinal cord (Nicholls and Paton, 2009). It is responsible for vital functions, such as breathing, cardiac regulation, consciousness, the sleep cycle, etc.. If an injury occurs to the brain stem, usually it is followed by irreversible coma and death. Attached to the brain stem, encased in the bony vertebral column, resides the spinal cord (Zhang, 2008) that transmits information from the rest of the body to the brain and vice-versa. Upon the person's experience, the synapses vary depending on reciprocal interconnections between genes and external stimuli that alter the structure and function of the encephalon throughout the lifespan. Influences from the environment may include cultural background, experiences, beliefs, and emotions as it will be examined further in this study. With every interaction a change occurs in the cerebral map and new patterns are created for future use.

The human brain can be roughly separated into three areas: a) the **lizard** : it is responsible for the surviving mechanisms and its main functions include respiration, digestion and heart beating, b) the **mammal** (limbic system) : its main responsibilities revolve around safety. Memories and experiences are restored here. Since it desires safety, it disregards any change and pushes for repetitive safe actions, c) the **neocortex**: It is the most consciously accessed area. It houses rational thought, learning, decision making, empathy and creativity (McGurran, 2017). All these sectors are covered with neural networks which expand or scale down depending on their use. These three areas are not necessarily in accordance all the time, for instance when a new experience is pursued by the neocortex, the mammal brain tries to obstruct it by creating feelings of anxiety or fear.

Furthermore, the encephalon consists of neurons, synapses, and glia. The cells appear to be the same while the densities of synapses and neurons vary. Neurons are specialized interconnected body cells that are bounded by membranes of the brain. The special functions of the cells and how they interact specify the functions of the brain (Zhang, 2008). Some of them eject axons (extended slim filament of axoplasm) that may expand to remote parts of the “soma” and are responsible of transmitting electrical signals, affecting thus the reactions of other glands, neurons, or muscles at their termination points. A single axon in the central nervous system can synapse with many neurons and induce responses in all of them simultaneously (Lodish et al., 2000). Neurons communicate with each other solely at specialized points of appositions called synapses. It is estimated that the human brain consists of approximately *100 billion neurons, interacting through trillions of synaptic connections, function both as single units and as larger ensembles* (Braslow et al., 2019).

Apart from the state of one’s brain in a physical way of thinking, the environment within which it develops is of equal importance if one wants to interpret the way it will react in the face of challenges. Numerous of factors affect the functioning and the state of one’s mind and emotional state that we will delve into the next section.

## **Factors affecting the human behavior in organizational settings**

### ***a. Environmental factors***

One of the fundamental factors that deeply affect human behavior is culture in which are found imprinted the history, the rituals, the traditions, the civilization and the habits of its members (Hofstede, 2001). Culture is reflected in every person’s action, attitudes, and positionings in the specific surroundings. For example, concerning the consumption of canine, if for many civilizations it would be unthinkable to eat a dog, for others, such as the Vietnamese, it is not only desirable, but also related to good fortune and considered as an aphrodisiac (Avieli, 2011). Undoubtedly, culture shapes beliefs and values, and contributes to the person’s self-determination via the construction of its identity. Culture also affects dramatically the individual’s reactions, since it is environmental and biological factors that format the mind, brain, and behavior (Chiao, 2018). This external environment is in constant state of change as Heraclitus pointed out: “All things succumb to change even reality itself is in a continuous motion within the framework of the cosmos”. The above-mentioned

environmental fluctuating exposures take the form of experiences and determine the way people conceive their current reality which also leads to a consecutive attitude.

### ***b. Experiences, beliefs and emotions***

The formation of one's identity lies in majority in its experiences and experience-based tasks result in higher correlation between studied brain variables and behavior (Yechiam and Aharon, 2012). Experiences alter the circuitry in the person's brain and create mental paths providing support when the person encounters ambiguity and mixed information but must take a decision. By that mean, *patterns* of behavior are created and retrieved when similar situations arise, and a person tends to respond accordingly to an external stimulus. Pavlovian's conditioning illustrates how patterns are created as he conducted an experiment by presenting a sound stimulus while feeding dogs. After many repetitions, in order to test his hypothesis on an effective learning procedure he proved that the dogs salivated in response to the sound stimulus without even the presence of the food (Rehman et al., 2020). Apparently, an association of stimuli based on senses could lead to instinctive behaviors. Accordingly, positive engagement and empowerment may improve *neural* plasticity and aid in the growth of mesolimbic dopaminergic pathways (Dreyer, 2010) making it easier for people to perform better. On the opposite, negative experiences affect the prefrontal cortex and augment the appearance of learning disabilities, behavioral and emotional abnormalities, and a broad range of other disorders (Tost et al., 2015).

Furthermore, experiences that are linked to a strong emotional situation (Rozinet al., 1999) constitute a substantial factor of positive or negative influence of behaviors, since emotional events, more than neutral, are remembered strongly and for long periods of time (Tyng et al., 2017). Evidently, emotions are a key element of decision-making in the process of choice making, both as an input and an output (Han, 2009). This argument becomes even stronger bearing in mind that for Klain (2004) almost 90% of decisions are taken through the feelings and the intuitions provoked by a situation (Negulescu, 2014, p.112). Apart from a reaction or a decision based on the anticipation of a feeling- the belief that the same situation will emerge as in previous similar circumstances -, (Biggs, 2009, p.294), since patterns of neural connections (neural pathways) are created, any decision is adopted consequently which then results to emotions fueling future decision procedures. In this context, the orbitofrontal cortex<sup>1</sup> is involved in delivering emotional influences on decision making by evaluating the

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<sup>1</sup>The ventral surface of the frontal lobe and is critical for functions ranging from olfaction and emotion to learning and behavioral flexibility (The Science of Psychotherapy, 2019).

relevance of information (Beer and Bhanji, 2009). Anger and fear as negative emotions also influence this process, since they can promote or reduce the risk-taking, respectively. The impact of emotional responses has been extensively investigated in the field of neuroscience and important correlations have been drawn among emotions, contemplation, and behavioral reactions.

The human resources policies are tremendously associated with the above-mentioned assumptions and current behaviors can be influenced, for example, these biases once identified they may be changed through specific strategies provided by an HR specialist.

### *c. Cognitive bias*

Cognitive bias influences the individual's beliefs and may result in the distortion of the thinking process. Cognitive bias is considered as a form of an error when the brain attempts to simplify current information from the surrounding environment. A wide range of environmental factors could potentially create enduring effects on brain circuits and behavioral reaction such as the parental and the educational factors that contribute to the formulation of the behavior. In order to simplify judgmental operations, people rely on a limited number of *heuristic* principles that create shortcuts in assessing probabilities and predicting values (Tversky and Kahneman, 1974). Even though these heuristics are helpful, in certain occasions they can lead to errors as biases interfere effortlessly and people are somewhat unaware of their impact. To overcome the cognitive biases a deep reflection of the subject is suggested which may obstruct their infiltration into the working arena.

This section discussed the impact that various external stimuli have on cerebral alterations. Within the societal or professional context, cultural landmarks, emotions, cognitive biases, experiences, memories, educational and parental background, all affect the functions of the brain and contribute to the formulation of one's reaction towards the specific context. Depending on the case, each situation changes, promotes, or even obstructs the creation of neurons and the respective physiological growth of the mind.

The next part will concentrate on the emerging impact of neuroscience on Human resources management in the public sector.

## **Contribution of Neuroscience to Human Resources Development in the public sector**

In the endeavor to explore modern working environments neuroscience merits to be considered and provide the best conditions for high quality personnel development. Human Resources, as the “long arm” of management, identify performance gaps, assist in the achievement of short-and long-term goals, support leadership development programs and coach the personnel. Under the neuroscience *lens*, choices are grounded on the “feedback system” from the frontal lobes to the limbic system, as well as on the “dopamine levels” which are linked to desirability and motivation. The experiences and perception of the world that affect every day’s decisions are intensively molded with *environmental factors, culture, experience, beliefs, and emotions* as it was analyzed in the previous section. These elements are closely interconnected with neurons which are responsible for memory, the state of body and mind and the appreciation of the world (Plessis, 2011). Neuroscience is equipped with the tools that explain the *do’s* and the *dont’s* for creating better workplaces and competitive advantage, enhancing productivity, cultivating the commitment of the personnel, promoting and uplifting the organisational performance. In this propice working environment, suitable for efficient and effective employees, better services are expected to be delivered for the society and the end users of public administration. This comes as an urgent pression within the framework of new modern public organizations that need to offer innovative solutions for current wicked problems (COVID-19, climate change, drugs, young delinquency, etc.) which demand improvisation and thinking “out of the box” that only the best working places can offer.

By interpreting the organizational and cerebral functions through neuroscience, the business developers enable the creation of the most appropriate context for the human factor to reach an outstanding performance (Pillay, 2011, p.5). The application of neural methodology is used as a tool to understand an individual’s mental state, especially when staff may not always be willing to communicate the state that they are in (Butler and Senior, 2007, p.7). The accurate outline of the employees’ emotional state could trigger a proper response and create a more targeted supportive approach during the HR development. By using emotional regulation and neuroscience techniques, HR practitioners try to cultivate the desirable emotions, steer the personnel’s behavior (Waldman et al, 2011, p.1098) and limit negative unconscious emotional states.

Under this paradigm, the following part will be dedicated to the analysis of sectorial HR policies and the influence that may have from neuroscience.

## **HR practices combined with neuroscience in the public sector**

The main practices of human resources development that we will refer to for the purposes of this study include the recruitment, retention, motivation and commitment of the workforce. Inspired approaches from the field of neuroscience can support and enhance the effectiveness of HR management policies as well as empower the personnel to achieve success and higher performance.

### ***a. Recruitment***

An effective recruitment process constitutes the essential pillar to develop the right human resources policies suitable for the specific organisational context that we refer to. Talent acquisition can turn into a challenging task since unconscious biases can affect the final selection. Supplementary processes based on neuroscience could enhance the end result and contribute to a successful hiring procedure. First, the unconscious mind could be reached through the reptilian part of the brain, by hitting directly the dopamine hormone that can augment the applications for a job post (Slater, 2020). P.e. visual portrayal of the administration would enable candidates to approach the organization's culture without physical interaction. By envisaging their future in the organization and their multiple possibilities for wellbeing and development, they would be motivated to join the organizational community. Second, an improved interviewing process with the inclusion of familiar rituals, would increase serotonin and allow people to relax : a warm handshake or even a slight touch - culturally and socially appropriate- increases oxytocin, the neuromodulator related to forming bonds (Sasscer-Burgos, 2014). All these gestures of course are adjusted regarding the specific culture that we refer to. In order to establish further connection in the emotional and psychological level a good starting point for the interviewer could be to offer a comfortable chair and a warm beverage, since these tactics may influence impressions (Ackerman, et al, 2010) and promote the feeling of trust (Williams and Bargh, 2008).

Neuroscience advocates for a better integration of people from all spectrums. To do so, it proposes to expand the diversity and to introduce candidacies from bigger talent pools including people with special needs or from the autism spectrum. The public sector should



embrace such methodology so as to give equal opportunities for the disantaged people by attracting specific categories of the society that may exceed in performing in some areas, such as mathematics, technical proficiency and facility for details (Thibodeaux, 2018).

### ***b. Learning and training***

Training is a necessary method in the struggle to keep updated the qualifications and the competencies of employees and to make them capable to deal effectively with new missions and unforeseeable problems that were not in the organisational agenda when they were hired. For the successful learning procedure, it is necessary to proceed with a training needs analysis of the personnel and arrive to specific desired learning outcomes that each training session should aim to. Retention, better employee performance and job satisfaction are some of the beneficial outcomes of training sessions.

As a matter of fact, training is the solution to problems associated with the *weakening of neural connections* due to disuse or age (Strauch, 2009) that may lead to lack of attention, fatigue and lower levels of information receipt. Training, along with other learning opportunities (workshops, congresses, study visits, etc.), challenge the brain and promote the neural generation creating new pathways that result in better knowledge acquisition, personal development and satisfaction. As good practices are recommended : small intervals between the training sessions, a better acoustic environment that promotes the amplification of cognitive functions, restructure of neural pathways and promotion of neuroplasticity (Fields, 2012). Indeed, the proper use of tunes may alter the human perception (Jolij and Meurs, 2011). Colors could also be used during a training session for the eye stimulation, since the use of the right color, and the correct selection and placement can seriously affect feelings, attention, and behavior during the learning period (Elliot, 2015). P.e. green color improves concentration (Lee et al., 2015), orange increases the perception of comfort (Cherry, 2010), and finally blue may enhance performance and alertness (Elliot, 2015, p.2).

### ***c. Incentives, rewards, professional environment***

Reward strategies should be based on the person's existing or created needs. The tangible and non-tangible rewards stimulate the reward and pleasure centres of the brain while they contribute to the secretion of dopamine. The creation of an optimal working environment is also another particularly important factor that influences the performance. For instance, there is evidence that green-certified working spaces can boost cognition by 26%, reduce sick days by 30% and increase sleep quality by 6% (JM Electrical, 2018).

In this area of research some beneficial parameters for the employees' well-being and the progress of organisational performance include:

- **optimal natural light, indoor air quality, and thermal conditions** since they stimulate creativity and job satisfaction, prevent diseases and decrease mental fatigue. **Ergonomic** furniture is opted, so that the personnel can remain motivated and be put at ease.

- **open-layout** structure favours face to face collaboration, while **selecting colours** to affect positively the employees' feelings can help them remain calm and concentrated on the goals (as it was explained in the previous section). The selected room color should be complementary to tasks requested in the given premises and should take into consideration the surrounding environment (Thatcher and Yeow, 2018, p. 176). On the opposite, as an example, the white color on the walls that prevails in almost all administrations in the Greek public service it is not recommended for increasing the performance of civil servants or for enhancing the sense of belongingness in the public sector's community. Furthermore, according to Bernstein and Turban (2018), it appears that in practice, the concept of open-spaces instead of creating an ambiance of collaboration and equality, triggers a natural human response to socially withdraw from team working !

- **Adequate physical exercise** of the personnel can contribute to the stress management while it prevents neurodegeneration. Therefore, organisations offer free gym memberships, healthy food options, coaching and programs designed to boost health (Microsoft, 2020). Also, a 30-min workout daily has benefits on the person's health, while group programs create bonds among the employees.

- **Acoustic environment** is another underestimated aspect which can either promote or inhibit productivity and well-being of the personnel. A specialist on the acoustic sector is recommended to be hired so as to control the transfer of noise and if necessary to install sound insulation (Evidence space, 2020). An accessible place to privacy for concentration and confidentiality (Vischer, 2015 p. 12) would also promote acoustic comfort.

One example of a public corporation that is interested into implementing such strategies at its human resources management is SAGE Therapeutics (USA). They claim to place the personnel at the center of their policies and that they are committed to support their well-being while rooting for their balanced life outside the corporation (SAGE Therapeutics, 2020). Apart from healthcare, financial benefits and time offs, this industry offers programs and resources to support the welfare of the personnel.

Having a satisfied, and if possible, happy personnel is a prerequisite for outstanding performance as Achor (2010) quoted : “For success to occur, happiness must pre-exist”. The cultivation of positive mindset contributes to exceeding motivation, efficiency, resilience, creativity, and productivity, which then uplifts performance. It is a fuel for achievement since happiness maximizes the brain’s capacities. The brain literally is hardwired to perform at its best when it is in a positive and not in a negative state (ibid, p. 23). A possible training of the brain to focus on positive aspects could lead to the harvest of this biological advantage. It is estimated that a period of roughly 20 days/one month is necessary to replace old “bad” behaviors with new, reprogram one’s mindset and finally adopt new patterns – daily routine- (Salati and Leoni, 2017). The ability to adjust one’s mindset and to find happiness even in the most difficult situations by focusing on discovering possibilities could be done within that timeframe.

#### ***d. Evaluation and feedback assessment towards the personnel’s development***

Assessment is another essential sectorial policy of Human Resources management as it gives a clear information about the qualities and the potential of the personnel within the public sector. Any misguidance, wrongdoing or misleading can be acknowledged and corrected in time through the appropriate assessment tool. Though the assessment itself is traditionally associated with fear, insecurity, and risk that the job holder might fail to satisfy the needs of the organization, neuroscience offers a large variety of options to avoid these bad feelings and accept the useful and valuable practice that it represents. Especially for the Greek public administration for instance, it has been for many years a difficult endeavor to introduce an assessment system for the personnel and one of the main reasons behind it was the recognized resistance of the Union of public servants claiming that the system is not an objective one and that the hierarchical superiors just want to invent a method to promote favoritism instead of meritocracy (Aspridis, 2012, p.136).

Even though a plethora of methodologies advocate for the implementation of assessment, one of them stands out and is recognized as the most valid and that is assessment through the “Management by Objectives”. By breaking down a goal into small manageable tasks it will make it more achievable and easier as well as fair for the management to appreciate performance of employees. The criteria to guide in the objective setting are already characterized by Doran in 1981 as S.M.A.R.T. goal setting. More specifically, each goal should be Specific, Measurable, Assignable/Agreed, Realistic and Time-related. By fulfilling all the above, it is more likely to achieve an objective.

HR personnel should be attentive while delivering feedback after the accomplishment of goals in a certain period of time. During that process, even if it is about a negative comment when people hear extremely bad news, or even expect to, hormones are secreted in the brain that literally make it impossible for them to comprehend most of what is being said or presented to them (Snyder, 2016, p.xiv). On the contrary, when people experience positive feelings, they tend to perform better (Goleman and Boyatzis, 2008, p.76). The power of emotions could be summed up in the phrase attributed to Carl W. Buehner; “People will forget what you said or what you did, but they will never forget how you made them feel” (Seales, 2017). By setting a positive emotional tone, it will be able to bring the best out of people while leading them and articulating the corporate vision.

An evaluation based upon neuro-scientific variables may provide a sound alternative that can be added to the existing psychometric assessments (Balthazard et al., 2012). Neurofeedback or Electroencephalograph (EEG) biofeedback, a method often used as a treatment by psychologists, promises optimization of the cerebral functions. In healthy participants this peak-performance training can be used to enhance cognitive performance (Enriquez-Geppert et al, 2017) since it is based on a rewarding system that teaches the brain how to function in a more optimal range (Bolhuis, 2017). While working in an entirely subconscious level, it allows persons to obtain control over their physiological activity, to improve their health (ibid), sleep patterns, mental clarity (Smythe, 2019) and attention span; and gives access to the practitioner to modify the neural mechanisms of behavior (Chaad, 2020).

## **Conclusions**

Findings in the domain of neuroscience promise to assist people to embark in a journey towards a better understanding of the encephalic functioning and the consciousness that can lead to advanced human resources management in the public sector. Neuroscience suggests that almost each action a person undertakes is simply the product of accumulated experience, and that, biological impulses escape from direct human control (Henry and Plemmons, 2012). By utilizing plans of actions focused on encephalic features, organizations aim to closely monitor all the stages of productivity and evaluate the expected employee actions. Furthermore, through the neuroscience, the HR departments are elaborating useful data to combine the accomplishment of operational/strategic objectives and goals with the enhancement of the personnel’s satisfaction, engagement, and commitment. Neuroscience

assists HR specialists in their endeavor to overcome the stressors in the workplace, to augment the personnel's wellbeing, to inspire the human capital to foster innovation and finally to increase the sense of belongingness in the organizational community. Employees' mental possibilities are developed; performance and retention are increased; educational opportunities, places to relax at the office and multiple healthy nutritional choices are being offered to the personnel. Other methods that are helpful for implementing these techniques concern the apprehension of the external contributing factors to retain the employees' attention span and promote efficiency. Smarter approaches are incorporated by taking into consideration the cultural and educational background of everyone, investigating their experiences, beliefs and emotions while taking into consideration the cognitive bias. Overall, through these techniques' employees regain their place at the epicenter of the organizational strategy and can significantly expand their knowledge, qualifications, and capacities.

Furthermore, even though a positive impact of these practices exists, there is still not adequately enough evidence concerning the repercussions it might have on brains. Professional misconduct is a bad case scenario, while misinterpretation of the data, statistical errors, and absence of the possibility of replicability are also potential cases to deal with in the future. For further investigation we should then notice that in this endeavor it is imperative to be aware and understand the moral and ethical repercussions that intervene in the knowledge derived from neuroscience which is located at the intersection of cognitive, societal, and neural realms. In this field there is a need to set the boundaries, regulate and legitimate the interventions that stem from the neuroscience field so that they acquire a formal and acceptable form of intervention in sensitive personal information that lays in the core of neuroscience.

The present research has briefly, and in a friendly way - even for those who are not specializing in the neuroscience field -, examined the impact of cerebral mechanisms on the organizational setting, putting emphasis on the human development processes. It has been suggested that emotions play a pivotal part in the perception of the world affecting simultaneously memory, temper, and performance. The frame of mind is also set by the environmental factors, the societal traits, the education, the beliefs and values that one possesses. In order to be able to control or to be aware of attempts of manipulation one must be self-conscious and have elaborated emotional intelligence. Furthermore, the in depth understanding of theories is required so that the tools of handling become apparent and available for usage in human resources development.

Even though the aforementioned good neuroscientist practices are promising optimum results, they seem challenging for the public sector to apply them into the workplace. Public administrations are usually designed in a monolithic way, a tactic that may present an obstacle in the employees' performance and commitment and it may thus represent a very innovative way of handling Human resources. Neuroscience is stressing the need to promote the power of the psychological comfort and security for employees that are acknowledged, grateful and committed to their mission as important members of the public sector, promising to contribute as much as they can to higher productivity, qualitative performance, and motivating teams.

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