

Abstract

The Development of a Research Scale for Neuroleadership[†]

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1. Introduction

Neuroleadership is an up-to-date leadership approach that brings together the general findings of research on people's brain structures and leadership, and as a result of this process, directs the leadership structure by revealing the facts behind people's emotions, thoughts, and behaviors. For this reason, there is a problem of scale in the field of social sciences. With this study, a scale on neuroleadership will be developed.

Leadership, which has an impact at every moment of life, is a historical concept that has existed since the beginning of humanity and persists to the present day. People need to come together and act collectively around determined ideas in order to achieve the common goals they set in their daily life cycles and business lives. Since they act in unity, there are individuals who guide and direct them in their work process or inspire people in the decisions that need to be taken. Generally speaking, these people are known as leaders. To define it, leaders are those who bring individuals together for common goals, mobilize people's own talents and skills to fulfill the common goal, and ensure their acceptance by conveying their ideas and thoughts to the individuals around them. Shaping and directing this activity process is leadership [1].

When examined throughout history, the process of the accumulation of knowledge, with the aim to understand and explain people, has a certain order and logic. Chronologically, this order includes social science, behavioral science, and is derived from neuroscience. To understand people and their behavior, first comes social science, followed by behavioral science, and then research on brains, performed on people. The fact that brain research on humans is not advanced enough to be conducted only under supervision, and instead requires advanced technology, has placed neuroscience at the bottom of the list. The aim of our study is to develop a scale that can be used to study people without switching to technological measurement tools such as fMRI and QEEG.

2. Methodology

Our scale study started by conducting the necessary literature review, and a scale pool of 70 items was created. After the item pool created by us, and then evaluated by experts in the field, it was sent to people, and responses were received from 15 people. The respondents consisted of nine people with academic expertise in the field of social sciences, one person in the field of neurology, two people in the field of neuropsychiatry, two people in the field of neuropsychology, and one expert who provides leadership training to corporate companies. The experts were informed that they should evaluate the submitted items as "Suitable", "Partly Suitable", or "Not Suitable", and if they were "Partly Suitable" or "Not Suitable", they should state their personal opinions and state their reasons in



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the “Explanation” field. Based on the feedback received from the experts, the items were evaluated by calculating the Scope Validity Rate (CVR) and Scope Validity Index (CVI). In a study consisting of 15 participants, the CVR must be 0.600 and above [2]. In our own study, seven items were excluded due to falling below this rate. A CVI was calculated among the remaining items, and the result was 0.824. The fact that the obtained CVI value was greater than the CVR value ($CVI > CVR$) indicates that the content validity of the remaining items in the scale was statistically significant [3]. A first pilot study consisting of 70 people was conducted by preparing a scale from 63 items that gained significance, and Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) were performed instantly on IBM SPSS Statistics 21. As a result of the results obtained, we propose that when they are confirmed by conducting a pilot study, a study will be completed by conducting a scaled study on the main target population.

3. Results

Since the scaled study is ongoing, a clear result cannot be given. However, unlike other scales in the literature, the “Humility Level” found in people affects people with regard to leadership. Thereupon, this factor definitely creates leadership qualities in people.

4. Applications

Recent scientific and technological advances have brought about changes in many areas and have also necessitated changes in the behavior of managers. For this reason, managers need to renew and improve themselves in the face of constant changes, have strong communication with the individuals around them and their colleagues in their team, and be leaders with visionary characteristics. Otherwise, all people in managerial positions, regardless of their sector, will be against innovations; if they do not pioneer, adapt to their colleagues, and adapt to the change, it does not seem possible for them to operate healthy and continuously in their field of work. Recent technological developments and scientific advances make it inevitable that individuals in managerial positions will go beyond the traditional management approach and adopt leadership and contemporary management approaches. This has become the key to successful advancement in business. These modern perspectives enable organizations to achieve their goals, maximize the potential of their employees, and adapt effectively to changing market conditions. In these innovation and development processes based on scientific and technological foundations, there will always be human beings and their own expressions of emotions and thoughts.

5. Original Value

Neuroleadership is an up-to-date leadership approach that brings together the general findings of research on people’s brain structures and leadership, and as a result of this process, directs the leadership structure by revealing the facts behind people’s emotions, thoughts, and behaviors. A neuroleader is a person who ensures the development of team members by continuously taking them into the necessary training programs, determines their current skills, and provides them with necessary guidance. The aim of neuroleadership is to increase people’s awareness of what is important for their brains and how they react in critical situations. The aim of developing a brain-focused leadership approach is to allow one’s own thoughts and actions, and for colleagues to be seen from a different perspective. With the development of neuroscience-research techniques, neuroscientific findings related to the way the human brain structure works are becoming increasingly popular. Beyond offering managers the chance to question the concept of leadership and evaluate it from a new perspective, neuroleadership can provide individuals with the ability to better understand the mental mechanisms underlying their thinking processes and behaviors.

6. Contribution

When there is a desire to measure the excitement levels in different brain regions, they can be measured using different technological devices. With these devices, it is

possible to monitor which parts of the brain structure are actively working when people think about their past memories, dream, or perform numerical operations. Some of the technological tools used in neuro-based research include EEG (Electroencephalography), fMRI (Functional Magnetic Resonance Imaging), MEG (Magnetoencephalography), and PET (positron emission tomography). However, using these measurement tools affects people both temporally and economically. The aim of this study is to develop a scale to detect the difference between people by conducting the necessary research on people before using technological measurement tools.

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