



Study of Organizational Management through measures of implicit and explicit associations to demonstrate the need and possibilities for innovation in public and private management

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1. Introduction

The aim of this work is to present the methodology to identify the main characteristics of organizations regarding the perceptions, paradigms and prejudices of collaborators at the Institute for Energy and Nuclear Research (IPEN-SP) and the University of Rio Verde (UniRV - GO) in relation to organizational management models (public and mixed). Topics such as bureaucracy, organizational participation and innovation, among others, are covered.

Due to the cultural diversity in Brazil and consequently in companies, there are various organizational management models. However, for the scope of this work, two models are considered: participative management, focused on innovation, and its opposite, defined as autocratic management. These two management models were chosen to stimulate the behavioral profile of employees, indicating their stance in response to specific questions and stimuli. In other words, it is a way to understand and identify the employee's reaction or position in a specific situation.

The analysis model used is that of implicit associations (Implicit Association Test - IAT) and explicit (questionnaire) in order to verify whether or not there are preferences on the part of employees in relation to a type of management [1].

However, for innovation to have a place in organizations, some factors must be present, such as characteristics of an innovation culture, clear and open communication, encouragement of expression and opinions, knowledge sharing, and tolerance for human errors.

2. Methodology

Initially, a literature review was carried out to provide theoretical foundations for the proposed study, according to Table I, which contains the main works.

In a later phase, was made a quantitative research approach using a Likert-type questionnaire, employing degrees of adherence ranging from 1 to 6, explicit test (conscious responses). The questions are formulated with a focus on organizational management, climate and culture. For this application, was used Microsoft tool through Google Forms.

Subsequently, a study will be carried out using a widely used tool, the Implicit Association Test (IAT), designed to measure implicit (unconscious) attitudes and beliefs [1,2,3,4,5]. The IAT is a chronometric procedure that measures the strength of the participant's associations through the test response time [1]. Based on the analysis of response latency, the authors propose that exposure to an object to evaluate behaviors involving values, attitudes and norms can activate automatic mental reactions that will affect the speed of responses.

Thus, it will be easier to provide a behavioral response, such as pressing a key when two concepts are strongly associated with each other. Therefore, this technique does not require the intentionality of the person; it is capable of measuring attitudes and beliefs that individuals may be resistant or unable to consciously express [1].

Table I: Relevant Work to Support the Proposed

Management/Culture			
Reference	Title	Abstract	Year
Schein, Edgar H.	Organizational Culture and Leadership	- Levels of Organizational Culture. - Complexity of the Social System	1992
Martin, J.	Culture in organizations: three perspectives.	Groups the different theoretical expositions on culture in organizations: 3- perspectives: -Integration - unified culture. -Differentiation - culture not solely focused on values or meanings. -Fragmentation - lack of consistency and ambiguity of culture.	1992
Implicit Association Test - IAT			
Reference	Title	Abstract	Year
Greenwald et al.	Understanding and using the implicit Association Test	- Analysis of the Test's Predictive Validity	2009
Bassili, J. N. et al.	Implicit and explicit attitudes: research, challenges and theory	- Awareness of Thought and Behavior. - Implicit Psychological Influence. - Measurement of Psychological Phenomena.	2005

The IAT, software FreeIAT, allows the use of any two pairs of categories whose associative strengths one wishes to compare: A1 versus A2 (target categories); and B1 versus B2 (attribute categories). The concepts used in each pair must be antagonistic and easily identifiable. Thus, the test was structured using categories of participative management and autocratic management, as shown in Tables II and III [6].

Table II: Target Category Stimuli

PARTICIPATIVE MANAGEMENT	X	AUTOCRATIC MANAGEMENT
Participation		Centralization
Interaction		Authority
Collective		Individual
Collaboration		Dependency
Commitment		Unknown
Information		Obscure
Universal		Particular
Emotional		Neutral
Specific		Diffuse
Achievement		Assignments

Table III: Attribute Category Stimuli

GOOD	X	BAD
Courage		Cowardice
Loyalty		Betrayal
Creativity		Destructive
Peace		Tragedy
Security		Horrible
Joy		Sadness

The calculation of implicit association is done by the difference between the number of responses in congruent (A) and incongruent (B) blocks, according to the following Eq. 1:

$$IAT = A - B \tag{1}$$

This difference in average response latency between pairs (A and B) reflects the relative strength of the underlying association [7].

To correct for variability in scores due to differences in processing speed among all participants, [8] introduced a more efficient method to calculate this score: the D score. Specifically, TAI scores from Eq. 1 are divided by the standard deviation of all individual response latencies in both blocks. According to Eq. 2:

$$Score D = \frac{(A - B)}{Standard\ Deviation} \tag{2}$$

Thus, after completing the test, each participant is assigned a D score ranging from -2 to +2, where values close to -2 indicate a very strong implicit attitude against the research object, and values close to +2 indicate a very strong implicit attitude in favor of this object [9,10,11].

3. Results and Discussion

It is important to consider that this work is ongoing and is going through several phases of development to obtain the first results. In this work, the theoretical foundation, bibliographical references, and the methodology being used were presented. The next steps consist of the application of explicit and implicit tests, initially it will be a pre-test, to adjust the terms used in the tests. Later training will be applied, in order to give a clear vision of the two types of management and finally the implicit association test will be reapplied to verify whether or not there has been a paradigm shift.

4. Conclusions

As an initial conclusion, it was verified, through the literature, that the explicit tests and mainly the implicit (IAT), have the potential to mainly measure the prejudices that exist between the collaborators of IPEN and UniRV regarding the management used in each of the institutions. It was also found that through training that clarifies the advantages and disadvantages of each type of management, prejudices can be demystified, and there can be certainty that paradigm shifts, known in neurosciences as the brain plasticity. Previously, it was believed that the brain had a limited capacity to adapt and change its structure. However, research reveals that the brain is highly malleable and can reorganize itself in response to learning, experience, and

even injury. Therefore, this initial phase of work has been successfully achieved.

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