

Issues in Organizational Assessment: The Case of Frustration Tolerance Measurement in Mexico

David Ruiz, Carlos Nava, Roberto Carbajal

Abstract—The psychological profile has become one of the most important sources of information when it comes to individual selection and the hiring process in any organization. Psychological instruments are used to collect data about variables that are considered critically important for performance in work. However, because of conceptual chaos in organizational psychology, most of the information provided by psychological testing is not directly useful for Mexican human resources professionals to take hiring decisions. The aims of this paper are 1) to underline the lack of conceptual precision in theoretical testing foundations in Mexico and 2) presenting a reliability and validity analysis of a frustration tolerance instrument created as an alternative to a heuristically conduct individual assessment in organizations. First, a description of assessment conditions in Mexico is made. Second, an instrument and a theoretical framework is presented as an alternative to the assessment practices in the country. A total of 65 Psychology Iztacala Superior Studies Faculty students were assessed. Cronbach's alpha coefficient was calculated and an exploratory factor analysis was carried out to prove the scale unidimensionality. Reliability analysis revealed good internal consistency of the scale (Cronbach's $\alpha = 0.825$). Factor analysis produced 4 factors for the scale. However, factor loadings and explained variation give proof to the scale unidimensionality. It is concluded that the instrument has good psychometric properties that will allow human resources professionals to collect useful data. Different possibilities to conduct psychological assessment are suggested for future development.

Keywords—Psychological assessment, frustration tolerance, human resources, organizational psychology.

I. INTRODUCTION

FOR human resources professionals, one of the most important factors to be considered when making decisions about hiring an individual for a work position is his/her psychological profile. Whether if we want to hire a high experienced individual for a very prominent company or if we are looking for new human talent, we need to know something about the psychological background of those who are willing to apply for a position. Traditionally in Mexico, several psychological tests are used in order to know more about psychological variables that are thought to affect (and sometimes supposedly predict) behavior in organizations. Two problems arise in the current situation. First, within the conceptual chaos in psychological measurement, most of the information provided by the tests is not directly useful for human resources professionals to take hiring decisions. Second, as a consequence, most of human resources professionals use "out of context" psychological tests to

measure variables that are considered critically important for a work position, prompting an eclectic approach in the area. On the following lines, it will be explained the importance of systematic psychological instrument building. An instrument was created under specific theoretical guidelines. The results of an internal consistency analysis and an exploratory factor analysis of the instrument will be presented.

II. ON THE CONCEPTUAL CHAOS IN PSYCHOLOGY

Modern psychology cannot be considered as a perfectly articulated body of knowledge. Despite current advances, Psychology has been known for his idiosyncratic position as a discipline. Remarkably stated out by Keller [12], there is almost no agreement on the subject matter and, due to this condition, it seems unclear what a psychological event is. However, a lot of theories and mini models have been created in order to understand elusive psychological phenomena [17]. But, rather than giving an answer to psychology's subject matter problem, those different proposals represent mutually exclusive alternatives that are immeasurable in nature. One of the most common consequences of this condition is that psychologist try to take the best of the wholly different existent psychologies to create an eclectic approach for research or applied endeavors. Nevertheless, those psychologies are so different from each other that the final result usually led to even more conceptual confusion. We cannot embrace an eclectic position if we are looking to achieve conceptual precision and a systematic epistemological foundation for scientific and applied psychological activities [16]. Added to this, laying underneath this confusion and epistemological chaos, there is a belief that affects most of the basic and applied psychological research, also harming the applied efforts of the discipline, we mean the myth of the mind. There are different variations of this myth, commonly known as dualism (body-mind). From understanding mind as a quasi-ethereal substance parallel to the body to portraying it like an epiphenomenon caused by brain's biological activity, mind myth is almost in every psychological explanation. It is not the aim of this paper to discuss this specific topic as there are several pieces of work that deal with it directly [11], [14], [19], however, it is important to underline that psychological constructs that explain behavior as a result of some hidden or private event will constantly face serious epistemological flaws and limitations. In words of Fryling & Hayes [8]:

"...Hypothetical entities are, by definition, non-existent, and thus, cannot be identified in the spatiotemporal event matrix that is the natural world" p. 54.

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III. MEXICAN PSYCHOLOGY AND HUMAN RESOURCES: A CRITICAL APPROACH

In applied psychology, the influence of conceptual confusion and non-naturalistic psychological explanations is currently affecting practitioner psychologists. In the context of Mexican applied scenarios, the lack of a general behavior theory and the blurry nature of the subject matter have deeper effects in the applied activities that psychologist actually conduct in the country. Particularly in organizational psychology, there are two problems that must be underlined relative to psychological assessment.

The first problem is closely related with the conceptual chaos in psychology and the nature of the theory behind organizational activities: the lack of conceptual precision. The key aspects of the problem are the psychological constructs that we are actually looking to measure and the heuristic value of the results obtained to decision taking. A numerous amount of studies is giving into account the conceptual weaknesses and methodological flaws that psychologists and other professionals are facing when attempting to conduct psychological testing [3], [6]. Added to this, mentalistic approaches are abundant, causing even more difficulties to understand and clarify operational and constitutive variable definitions under a single theoretical frame. Christian, Garza & Slaughter [5] conducted a study about work engagement that can be considered as an example of how organizational professionals are detecting and trying to clarify the ambiguous nature of the concepts used to describe different dimensions in behavior. Most of the times, the divergence in the terms usage is so humongous that specific analytical strategies have to be conducted in order to coherently explain a single behavioral dimension in organizations [20]. Because of this, often inaccurate information is obtained while testing, creating limited psychological profiles that, most of the time, tell nothing about psychological related performance factors at work. On the other hand, in the search of reliable and accurate psychological instruments, Mexican psychologists are using scales that have been constructed under different theoretical frames, in an effort to measure those psychological variables that they consider fundamental. It is important to clarify that a concept that describes a specific psychological happening could describe a whole different thing in another theoretical frame. Due to this lack of conceptual agreement between psychological constructs, the usage of those different instruments can be considered as "out of context" and can lead to contradictions. Furthermore, the lack of research and conceptual precision while describing and representing the data from those instruments creates confusion and methodological bias in psychological assessment. Aguilar & Vargas [1] made a historical analysis of Organizational Psychology research in Mexico. They claimed that the total research efforts in the field are: "...small and disorganized..." critically stating that "...there are periods when there was not a single line of inquiry" p.86. In this context, many human resources professionals in Mexico are conducting individual assessment without systematic theoretical and methodological guidelines, causing the misuse and misinterpretation of the

collected data [2]. As a consequence of this, many psychologists do not consider psychological profiling as the main component in the decision making and hiring process of those candidates who apply for a work position, as the information they are collecting is not a reliable source to predict the candidate future work performance.

IV. AN EXAMPLE OF A HEURISTIC APPROACH: FRUSTRATION TOLERANCE SCALE

The human resources professionals need to know how an individual behaves in a particular situation, as well as to predict a subject future work performance based on the variables measured. Most of the instruments that are used in Mexico to evaluate individuals in organizations come from other areas of psychology. Furthermore, the theoretical framework in which those instruments were created has nothing to do with organizational psychology and its needs.

The first step for a coherent and systematic assessment process in organizations is defining a unique theoretical framework to work with. The importance of doing so relies on the unequivocal use of conceptual categories to describe behavioral happenings in which we are interested in. Second, under specific applied conditions, the theoretical proposals must be synthesized into specific definitions that allow us to create psychological technology directed towards assessing, predicting and controlling behavior. Third, the technology created must follow the specific needs that psychologist have in the area, and the validity of the created products can be put to test by its usefulness in the applied activities. We followed the steps previously mentioned to create the Frustration Tolerance Scale.

A. Theoretical Framework

Behavioral oriented experimental research has shown that personality cannot be defined using the traditional trait definition, but as intra individual consistent responding across time under different stimuli settings and under different arrangements [9]. The interactive style concept refers to the [subject's] idiosyncratic way of responding under specific situations. Every individual is unique, so what is identified as "his/her style" is the responding consistency in a structured situation across time [18].

Particularly, the conception of Frustration Tolerance amongst psychologists requires the researcher(s) to adopt a 'mentalistic' approach when analyzing the phenomenon. For example, Wilde [21] states that: "frustration intolerance can be thought [of] as the inability or unwillingness to persist in an activity due to the unpleasant feelings associated with the task", p.3. From behavior theory, Ribes, Contreras, Martínez, Doval & Viladrich [18] use a situational taxonomy to empirically explore individual's interactive styles. One of the contingencial arrangements developed is the Frustration Intolerance Arrangement. The operational definition is:

"Performance maintenance under non-signalized conditions of interference, decrease, loss or delay of consequences"

B. Instrument Characteristics

Frustration tolerance is understood as a consistent pattern of behavior that involves constant subject performance in a specific situation when decrease, loss or delay of the consequences takes place. The instrument was created as a unidimensional scale. It is constructed by 13 Likert type items that measure the degree (magnitude) in which a person reports a tendency to keep performing a task when a decrease, loss or delay of consequences occur. Every item refers to a specific condition in which and individual may or might not keep responding. The response options are: never (1), almost never (2), sometimes (3), very often (4), and always (5). With this conceptual basis we conducted a preliminar study with the objective of testing the instrument psychometric properties.

V. METHOD

A. Participants

A non-probabilistic convenience sampling was conducted. The sample consisted in 65 Psychology Iztacala Superior Studies Faculty students. 30 were male and 35 were female with a 21.24 mean age (D.S. 2.30). The inclusion criterion was to be performing professional practices in real scenarios.

B. Instrument

The Spanish version of the Frustration Tolerance Scale was used. The scale is structured by 13 items oriented to measure the extent in which an individual maintains or suspends his/her performance under specific situations. The contingencial dimensions correspond to the diminishing, loss or delay of consequences.

C. Reliability and Factor Structure Analysis

To test internal reliability in the instrument, Cronbach's Alpha coefficient was calculated. To examine instrument validity, an exploratory factor analysis was conducted. Primary components were extracted using Varimax rotation. As a methodological criterion eigenvalues greater than 1 were calculated to assess the amount of variance accounted by factor. Previous to factor analysis, we used the Kaiser-Meyer-Olkin measure (KMO) and Bartlett's sphericity test to identify whether it was feasible to conduct a factor analysis. All analysis was performed using SPSS ver. 21.

VI. RESULTS

The Cronbach's alpha total scale index was .817. Total and per item correlation values are shown on Table I. As a methodological criterion, we considered eliminating those items with corrected item-total correlation values lesser than .30. Item 9 was eliminated due to his item-total correlation value. Final Total Scale Cronbach's alpha was .825.

Before running an exploratory factor analysis, fit indices were calculated. Bartlett= χ^2 (66) 272.177 ($p < .000$); KMO = 0.775. Both measures indicate that the data sampled were adequate to carry out a factor analysis. It was decided to run an exploratory factor analysis extracting Primary components using Varimax rotation. The extraction criterion was Eigen

values bigger than 1 per factor. The factor analysis showed 4 factors with Eigen values superior to 1. The first factor showed an Eigen value of 4.421 with a total of explained variation of 36.842%, the second factor showed an Eigen value of 1.448 with a total of explained variation of 12.065%, the third factor showed an Eigen value of 1.287 with a total of explained variation of 10.727 %, and third factor showed an Eigen value of 1.046 with a total of explained variation of 8.720%. Factor loadings are presented in Table II.

TABLE I
CORRECTED ITEM-TOTAL CORRELATIONS

Item	Value
1. I keep working on a project, even when I don't get the same results as before	.332
2. I try to solve a problem even though I may not be successful	.496
3. I immediately abandon a procedure or method if it stops giving me results	.303
4. I proceed with my work regardless of the obstacles in/ along the way	.593
5. I give up on a task if an unexpected event interferes with my results	.548
6. I abandon a task if it's too hard to get it done	.590
7. I keep working to solve a difficult problem	.325
8. I continue working on a project even when I don't know when am I going to be successful	.520
9. I stop to follow a strategy when results take too long to come to fruition	.185
10. I make an extra effort, if solving a problem requires it	.674
11. I desist when I have to work harder to achieve a particular/ given result	.490
12. I continue working on a project, even if things aren't going well	.498
13. I keep on working, despite a lack of positive results	.543

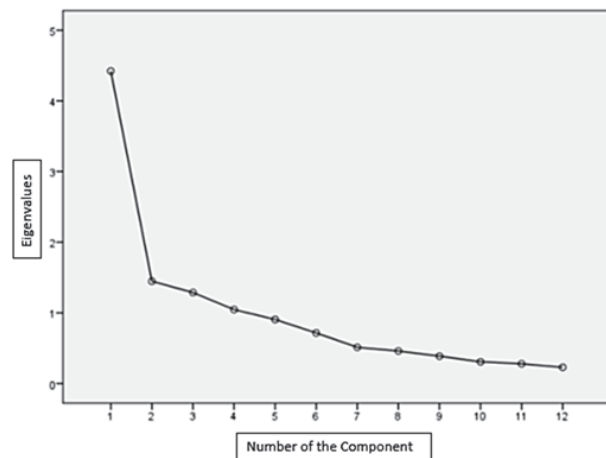


Fig. 1 Sedimentary Graph

As a methodological criterion to determine scale unidimensionality a sedimentary graph was represented in Fig. 1. In the graph, there is just one factor before the inflexion point, this factor has the highest accounted variance (36.842%). Due to the fact that the scale was assumed to be unidimensional since its creation, Ferrando y Anguiano-Carrasco [7] warn that when Kaiser is used, from 3 to 5 factors can emerge despite the scale being unidimensional. Considering that: 1) theoretically, the scale was built to be unidimensional, 2) one factor accounted variance was

36.842%, and 3) sedimentary graph shows one factor before the inflexion point, we consider the scale to be unidimensional.

VII. DISCUSSION

Results showed that internal consistency inferred with Cronbach's Alpha was $\alpha = 0.825$. According to Huh, Delorme

& Reid [10], an exploratory research Cronbach's alpha coefficient must be equal or greater than 0.6 and, in confirmatory studies, it should be between 0.7 y 0.8. Nunally [13] proposes that a .7 Cronbach's alpha value is acceptable in an exploratory analysis. We consider the instrument to have good reliability according to the coefficient value obtained.

TABLE II
ROTATED COMPONENT MATRIX

Items	Factor Loadings
1. I keep working on a project, even when I don't get the same results as before	-.039 .189 -.002 .775
7. I keep working to solve a difficult problem	.542 -.227 .022 .611
9. I stop to follow a strategy when results take too long to come to fruition	.388 .419 .076 .618
12. I continue working on a project, even if things aren't going well	.306 .195 .303 .478
2. I try to solve a problem even though I may not be successful	.130 .142 .765 .252
3. I immediately abandon a procedure or method if it stops giving me results	.056 .024 .844 -.030
11. I desist when I have to work harder to achieve a particular/ given result	.493 .284 .548 -.136
10. I make an extra effort, if solving a problem requires it	-.134 .694 .341 .304
5. I give up on a task if an unexpected event interferes with my results	.230 .827 .107 .034
6. I abandon a task if it's too hard to get it done	.376 .762 -.004 .195
8. I continue working on a project even when I don't know when am I going to be successful	.809 .190 .062 .135
4. I proceed with my work regardless of the obstacles in/ along the way	.767 .207 .217 .162

The scale was originally built to be unidimensional. The importance of this property is based on the measure robustness in the context of the classical Test Theory [22]. Some authors like Carmines and Zeller [4] consider as a way to assess scale unidimensionality to identify if the first factor accounts 40% of the variance. Other authors like Reckase [15] consider enough unidimensionality evidence if the first factor accounts more than 20% of the variance. In the current study, the first factor accounts 36.842% of the variance. This is the reason why we conclude that there is enough evidence of the scale unidimensionality.

VIII. CONCLUSION

Currently, FTS is used by two organizations in Mexico to conduct assessment in the human resources area. However, different studies should be done to explore theoretically and empirically the categories used to create the instrument. Experimental analysis should also be conducted taking behavior parameters as the main indicators of an individual performance during the task. The main objective of those research endeavors should focus on finding behavior consistencies across time on functionally equivalent tasks (same behavior patterns). On the technological aspect, new psychological tests must be developed in order to fully explore the theory potential. Currently, we are focusing in developing criterion-referenced tests in order to approach better to the operational definition of frustration tolerance.

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