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**ERGONOMÍA OCUPACIONAL**  
**INVESTIGACIONES Y APLICACIONES**

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**VOL. 15**

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# ERGONOMÍA OCUPACIONAL

## INVESTIGACIONES Y SOLUCIONES

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## **PILOT TEST OF AN INSTRUMENT FOR THE ASSESSMENT OF MOBBING, BURNOUT, JOB PERFORMANCE AND OCCUPATIONAL PERFORMANCE IN ADMINISTRATIVE PERSONNEL OF THE MAQUILADORA INDUSTRY**

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**Resumen:** Los cambios globales económicos y competitividad en México han modificado el modelo organizacional de las empresas incrementando el nivel de estrés y fatiga debido a la alta carga mental de trabajo, teniendo efectos importantes en el desempeño de los trabajadores. Adicionalmente, los factores estrés y mobbing han sido relevantes en investigaciones recientes donde se ha reportado su influencia en la carga mental y de igual manera en el desempeño. Los objetivos de este estudio son integrar una encuesta para valorar los factores mobbing, estrés y desempeño en trabajadores administrativos de la industria maquiladora, así como realizar una prueba piloto para conocer la consistencia interna de los instrumentos seleccionados en la encuesta. Se integraron los instrumentos Maslach burnout inventory, El IVAPT-PANDO (Inventario de Violencia y Acoso Psicológico en el Trabajo), Para la valoración del desempeño laboral y ocupacional se diseñó un constructo. La aplicación de la prueba piloto del instrumento se llevó a cabo en una empresa maquiladora de Ciudad Juárez encuestando se encuestaron cuarenta y cuatro empleados administrativos de la empresa. El valor del Alfa de Cronbach para todos los datos fue de 0.7671. Para el mobbing y el burnout el Alfa de Cronbach fue de 0.922 y 0.818, respectivamente. Mientras que para los dos instrumentos de desempeño ocupacional el Alpha de Cronbach fue de 0.844 y 0.946, respectivamente. Los valores obtenidos de Alfa de Cronbach se consideran buenos, por lo tanto, el instrumento cuenta con consistencia interna.

**Palabras clave:** Mobbing, burnout, estrés,

**Relevancia para la ergonomía:** La aplicación del instrumento nos permite, en esta fase de la investigación, determinar la confiabilidad del mismo antes de ser aplicado a un tamaño de muestra más amplia.

**Abstract:** Global economic changes and competitiveness in Mexico have modified the organizational model of companies, increasing the level of stress and fatigue due to the high mental workload, having important effects on the performance of workers. Additionally, stress and mobbing factors have been relevant in recent research where their influence on mental workload and performance has been reported. The objectives of this study are to integrate a survey to assess the factors mobbing, stress and performance in administrative workers of the maquiladora industry, as well as to perform a pilot test to know the internal consistency of the instruments selected in the survey. The Maslach burnout inventory, the IVAPT-PANDO (Inventory of Violence and Psychological Harassment at Work), and a construct was designed for the assessment of work and occupational performance. The application of the pilot test of the instrument was carried out in a maquiladora company in Ciudad Juarez and forty-four administrative employees of the company were surveyed. The Cronbach's alpha value for all data was 0.7671. For mobbing and burnout Cronbach's Alpha was 0.922 and 0.818, respectively. While for the two occupational performance instruments Cronbach's Alpha was 0.844 and 0.946. respectively. The values obtained for Cronbach's Alpha are considered good, therefore, the instrument has internal consistency.

**Keywords:** Mobbing, burnout, stress,

**Relevance to Ergonomics:** The application of the instrument allows us, at this stage of the research, to determine the reliability of the instrument before it is applied to a larger sample.

## 1. INTRODUCTION

In Mexico, NOM-035-STPS-2018 was implemented which seeks to identify and prevent psychosocial risk factors in work spaces. This standard proposes responsibilities and challenges for the social security system (Pérez, 2020). Information and communication technologies may impose greater demands for information processing in administrative work tasks. The working conditions of millions of people in Mexico were modified due to the pandemic caused by COVID 19 (declared by the World Health Organization (WHO) on March 11, 2020 (Cucinotta and Vanelli, 2020), performing their work activities from their homes when teleworking was implemented. This new normal increased the use of information and communication technologies, increasing the mental workload of the worker (Pinto and Muñoz, 2020).

## 1.1 Background

Nowadays, the relevance of information in production and administrative processes requires a mental effort. Because the pace of work has been increasing, better results must be achieved with a smaller number of workers, and technological innovation is a determining factor in the socioeconomic evolution of our society and business competitiveness. The International Labor Organization (ILO) reported that psychological problems caused by work have increased, due to the growing technological development and skills (Capmany, 2016). Working conditions demand high levels of attention, high responsibility, mental workload, work overload and long working hours. All these working conditions can deteriorate the work climate affect the physical and psychological well-being of the worker.

The work environment, work organization and work management are factors that, if deficient, will have negative consequences for workers' health in the form of work stress, burnout and mobbing. European data indicate that 9% of workers have reported feeling affected by mobbing, 20% of Europeans suffer from burnout and 22% suffer from some type of work-related stress (Uribe, 2020). According to the ILO, one in ten workers suffers from depression, anxiety, stress or fatigue, which in some cases lead to unemployment or hospitalization. Work-related stress is the second most frequent work-related health problem in Europe, after musculoskeletal disorders (León, Topa, & García, 2019).

In the Report on Mexico's Mental Health System (IESM) "public spending on health is equivalent to approximately 6.5% of GDP. Per capita social security spending varies in the states of the republic: the highest is \$3,816 pesos and the lowest is \$1,409. The budget allocated to mental health corresponds to 2% of total health spending (Villagómez, Salazar, & Franco, 2018). Mexico is experiencing an epidemiological transition, whose most notorious features are the decrease in infectious and contagious diseases and the increase in chronic degenerative conditions, a category that includes accidents, injuries, and mental disorders. Mental disorders are a major public health problem; depressive disorder ranks first in women and fifth in men. The Ministry of Health allocates 2% of its total allocated budget for mental health and of this percentage 80% is used for psychiatric hospital expenses (Villagómez, Salazar, & Franco, 2018). Recent estimates by WHO (2018) warn that in the world there are 264 million people suffering from depression, which is one of the leading causes of disability. The study entitled "Mental health in the workplace", points out that people present symptoms of anxiety (Perez, 2020).

The importance of this research work is to make known the Burnout syndrome, mobbing, occupational performance, work performance and how it is related to the work environment, these variables significantly affect the worker's performance and quality of life. They produce prolonged stressful situations, physical, emotional, and psychological damage. The reason for this study is that in our country there is little research on this line of ergonomics in business activities. The study offers a contribution to scientific research on how the variables of burnout syndrome,

mobbing, occupational performance, and work performance affect work performance.

## **1.2 Main concepts of this research and instrument integration**

Burnout syndrome: inadequate response to chronic work stress characterized by emotional exhaustion, depersonalization, and low personal fulfillment, which manifests itself in service professions involving intense and prolonged attention (Maslach & Jackson, 1981). There is a recognized instrument designed by Maslach called Maslach burnout inventory, which helps us to measure three aspects of burnout syndrome: emotional exhaustion, depersonalization, and personal fulfillment. The scale of the questionnaire indicates that a number from 0 to 6 must be placed as answers in each of the 22 items. It is necessary to meet the criteria in the three items so that, according to Maslach, it can be recognized that a burnout situation exists in the organization. The Maslach burnout inventory has a reliability close to 90% (INSP, 2017).

Mobbing: a phenomenon that occurs in the workplace, and in which an individual or several individuals exert psychological violence systematically and repeatedly on another individual or individuals, over a prolonged period (Nava, Reyes, Nava, & Cobos, 2020). The IVAPT-PANDO (Inventory of Violence and Psychological Harassment at Work), created by Manuel Pando Moreno, which measures the frequency and intensity of psychological violence and the presence of psychological harassment-mobbing, was used to measure mobbing. This instrument consists of 22 items, double likert scale response (Sotomayor and Pando, 2014).

Laboral performance. This is conceptually described as those actions and behaviors executed by workers that help to achieve the objectives proposed for the success of companies (Bautista, Cienfuegos, & Aquilar, Panduro, 2020).

Occupational performance: a process during which people are motivated and perform occupations, according to their trajectory in which their capabilities, occupational demands, environmental stimuli, and life meanings are contributed. This term refers to the person's ability to choose, organize and develop meaningful and culturally adapted occupations in a satisfactory manner (Trujillo, Sanabria, Carrizosa and Parra, 2011). For the assessment of work and occupational performance, a new construct was designed with the contribution of the Universidad del Rosario of Bogota, Colombia. This instrument consists of 54 items using a Likert scale response. The constructs and variables that will be analyzed and that make up the hypothetical model in this research are shown in Figure 1.1



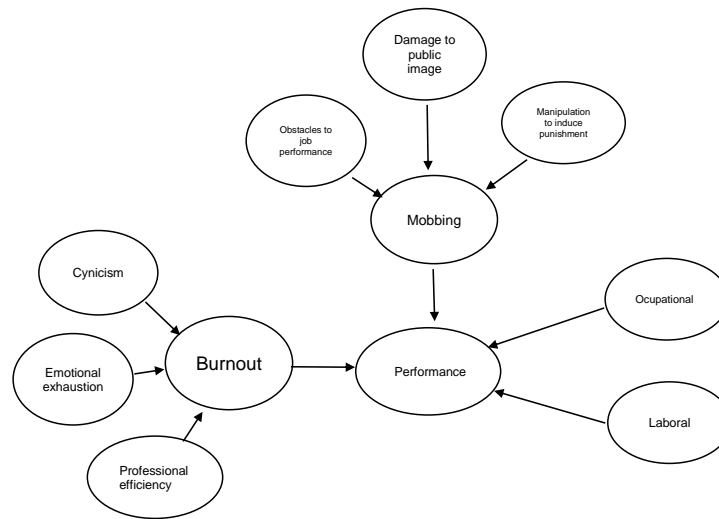


Figure 1.1 Hypothetical model

### 1.3 Objectives

- To design an instrument for the assessment of mobbing, burnout, and laboral and occupational performance in the administrative personnel of the maquiladora industry in Ciudad Juarez.
- To conduct a pilot test of the instrument.
- To validate the instrument through a pilot test.

### 1.4 Limitations

- a) Space: exclusively in the maquiladora industry of Cd. Juarez.
- b) Resources: this research will be carried out with the support of the administrative personnel of these companies.

## 2. METHODOLOGY

In the first instance, it was necessary to contact the human resources manager by sending a letter of presentation of the research project and the request for participation, in addition to some meetings were scheduled in which the acceptance and planning of the project were reviewed. Once permission was obtained, a date was set for the survey to be carried out in two plants.

This research is divided into two stages: the first stage explains the integration of the instruments and in the second stage the analysis of the results, as well as their validation.

## 2.1 Stages of the investigation and its elements

### 2.1.1 Phase 1. Survey design and validation

#### 2.1.1.1 Design of the performance evaluation instrument

The performance evaluation instrument was designed in collaboration with students who stayed at the UACJ and their advisor from the Universidad Del Rosario in Bogotá, Colombia.

#### 2.1.1.2 Integration of the burnout and mobing instruments to the performance questionnaire

The following instruments were integrated to the performance evaluation questionnaire:

- Questionnaire to assess burnout is the Maslach Burnout Inventory (Maslach & Jackson, 1981).
- Questionnaire to assess mobing IVAPT Pando Inventory of Violence and Psychological Harassment at Work (Franco et al, 2006).

#### 2.1.1.3 Annex to general information and consent section

Information sheet to collect general information with demographic data, information such as: age, gender, schooling, department where they work and seniority in the company, in this part the consent of the employees to participate in the research is requested and the privacy notice is mentioned.

### 2.1.2 Phase 2. Survey application and analysis

#### 2.1.2.1 Study Design

In this research a relational, prospective, and explanatory cross-sectional.

#### 2.1.2.3 Sample

The sample of this study is composed of administrative personnel of the maquiladora industry of Cd. Juarez, the total number of administrative personnel working in the company was considered. The total for this phase of the project is forty-four people. By means of non-probabilistic sampling, the inclusion criterion is the administrative personnel of the company, and the exclusion criterion is the operative personnel and administrative personnel who do not want to participate in this research.

#### 2.1.2.4 Field work

The questionnaires were applied in the maquiladora industry in Ciudad Juarez, duly reviewed in due time and form with the company's human resources.

### 2.1.2.5 Data analysis

#### A) Statistical validation of the information

A database was created in Microsoft Excel with the results of the forty-four surveys applied. The descriptive analysis of the sample of maquiladora industry administrative personnel will be performed using SPSS® v.20. In this phase, the percentages of sociodemographic information (sex, schooling, marital status, work seniority, current position, and department) of the sample will be described using descriptive statistics.

#### B) Data validation

For the reliability analysis and data validation, the Cronbach Alpha index was used, and all the information obtained was captured in the SPSS® v20 program, the results of the 44 surveys to each administrative employee of the company.

## 3. RESULTS

The most relevant characteristics of the sample are as follows:

- a) Gender: 81.81% are men and 18.19% are women.
- b) Marital status: 50% are married, 36.36% are single, 2.27% are divorced and 9.09% are in a consensual union.
- c) Education: 70.45% with undergraduate studies, 2.27% high school, 11.36% with technical level and 13.63% with graduate studies.
- d) Position held: 18.18% are managers, 34.09% are supervisors, 29.54% are engineers, 2.27% are buyers, 6.81% are technicians, 4.54% are assistants and 2.77% are nurses.
- e) Age: 25% are between 21-30 years old, 27.27% are between 31-40 years old, 27.27% are between 41-50 years old and 18.18% are between 51-60 years old.
- f) Children: 65.09% have children and 34.04% do not have children.

The results of the analysis of internal consistency were favorable, obtaining a general value for the whole instrument of 0.7871. For the five constructs used, values ranging from 0.844 to 0.946 were obtained, which are considered very good. The complete results are show in Table 1.

Table 1. Cronbach's alpha values obtained in the pilot test.

| Instrument                 | Dimension                         | $\alpha$ |
|----------------------------|-----------------------------------|----------|
| Mobbing<br>$\alpha$ :0.922 | Manipulation to induce punishment | 0.821    |
|                            | Damage to public image            | 0.758    |
|                            | Obstacles to job performance      | 0.578    |

|                            |                      |       |                         |
|----------------------------|----------------------|-------|-------------------------|
| Burnout<br>$\alpha$ :0.818 | Emotional exhaustion | 0.876 | Global values<br>0.7871 |
|                            | Cynicism             | 0.344 |                         |
| Occupational performance   |                      | 0.844 |                         |
| Laboral performance        |                      | 0.914 |                         |
| Laboral performance (2)    |                      | 0.946 |                         |

#### 4. CONCLUSIONS

The first group of instruments considering mobbing and burnout presents internal consistency values of 0.922 and 0.818 which are considered as good. The second group of instruments in which occupational performance, occupational performance (2) and job performance are considered shows a good reliability index with a Cronbach's alpha of .844, .914 and .946. The total scale presents an acceptable reliability index with a Cronbach's alpha of .7671 with values ranging from .818 to .946. The results of the internal consistency analysis for each subconstruct were favorable, obtaining a value for manipulation to induce punishment of 0.821, damage to public image of 0.758 and for obstacles to work performance of 0.578, emotional exhaustion of 0.876 and cynicism of 0.344. The subconstructs have an acceptable reliability index. In conclusion, the scale presents an acceptable reliability index.

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