



## Reliability of Instruments to Measure Climate and Job Satisfaction in A Public Entity in The State of Tlaxcala

Juan Cuapio Tecuapacho • José Luis Moreno Rivera • Elizabeth Montiel Huerta •  
Alejandra Torres López • Kathy Laura Vargas Matamoros

Postgraduate Studies and Research Division, Technological Institute of Apizaco. Technologic National of Mexico, Tlaxcala, Mexico

[juan\\_cuapio7@hotmail.com](mailto:juan_cuapio7@hotmail.com)

**Abstract.** The organizational climate corresponds to the environment between the members of the organization. It is related to the level of motivation of employees and specifically indicates the motivational properties of the organization's environment (Chiavenato, 2009). Satisfaction, on the other hand, is an attitude towards work, which is defined as the emotional state of workers. The research presented aims to design and validate the reliability of the instruments to measure the variables of occupational satisfaction and working climate in a public entity of the state of Tlaxcala. For this purpose, two instruments are designed: the first for working climate, consisting of nine dimensions and 43 items; the second consisting of two dimensions and 24 items, on both with Likert measuring scale. The instruments were applied to a representative sample of the population under study. In order to determine the reliability of the two constructs, the Cronbach Alpha coefficient is used, resulting in 0.85 and 0.90 respectively, indicating that they are highly reliable for application on the entity.

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### 1. Introduction:

Currently it is important that organizations worry about knowing that it motivates their employees to give their best, studying the organizational climate is of interest, because the dissatisfaction of employees in the organization results in an environment that will affect both individuals and the achievement of the objectives of the organization.

In these changing times when values evolve rapidly and resources become scarce, it is necessary to know and understand what influences the performance of workers in their work environment. Therefore, assessing the sources of conflict, dissatisfaction or stress that result in negative attitudes on the part of employees towards the company is one of the primary reasons why the working climate should be diagnosed and analyzed in any organization (Brunet, 2007).

Analyzing the organizational climate allows you to study the perception that employees have of your organization, so the work environment also affects business performance (Calva & Hernández, 2004). It is important to mention that the first studies on organizational climate were conducted by Kurt Lewin in the 1930s. It took the concept of "psychological atmosphere", which would

be an empirical reality, so its existence could be demonstrated as any physical fact.

It should be noted that this type of research is carried out mainly in private companies; however, this research enters the public sphere, with the interest of contributing to the development of agencies dedicated to providing service to citizens.

### 2. Methods:

#### 2.1 Variables

It is important to know the theoretical aspects that make up the study such as: the concepts and theories that were used to formulate and develop the arguments, for this research the variables analyzed were, working climate and job satisfaction.

#### 2.1.1. Working Climate

According to the various research that has been done it was identified that the main pioneers of the organizational climate were Lewin, Lippitt and White, Fleishman, etc., between 1939 and 1958 from those dates to the present day several writings of books, articles, magazines with very diverse constructs have been made.

For Chiavenato (2009) the working climate corresponds to the prevailing environment among members of the organization. It is related to the level of motivation of employees and specifically indicates the motivational properties of the organization's environment. It is therefore favorable when it provides the satisfaction of the personal needs and high morale of team members, and unfavorable when those needs are not met.

Soria (2009) refers to the organizational climate itself being defined as a set of properties or characteristics of the internal working environment, perceived directly or indirectly by employees of an institution, because it is considered as a force that influences the behavior of the employee.

For Litwin and Stinger (1978), the organizational climate is a filter through which the company's objective phenomena (structure, leadership, decision-making) pass through, hence that by studying the climate you can access the understanding of what is happening in the organization and the impact that these phenomena are generating on the motivations of its members and on their corresponding behavior and reactions, his theory proposes the existence of nine dimensions or approaches (structure, responsibility, reward, challenge, relationships, cooperation, standards, conflicts, identity.) that shows the climate existing in a given organization.

#### 2.1.2. Job satisfaction

Job satisfaction is an attitude of workers towards work, which is defined as the emotional state of workers.

Palma (2005) defines job satisfaction as the relatively neutral disposition or trend towards work, considering beliefs and values developed from his work experience.

In this context, when a worker has positive feelings, thoughts or emotions regarding different situations, objects or people, he will always show a positive attitude towards them, (Rodríguez & González, 2009).

According to Canton and Téllez (2016) there is no unique concept of job satisfaction, it is determined that most of the definitions of scholars on the subject, point to the fact that it is a phenomenon that represents an emotional state of the employee, considering the work and personal circumstances that show their satisfaction or dissatisfaction with their work.

The pattern proposed by Warr et al. (1979) is based on the premise that satisfaction can be extrinsic and intrinsic.

For the purposes of this research, job satisfaction is considered to be the emotional state shown by public servants with respect to their work environment, it has a close relationship with their attitudes.

#### 2.2. Systematization and analysis

Methodological steps for the systematization and adequacy of the measurement and analysis instruments of the results are described.

##### 2.2.1. Adaptation of the working climate questionnaire

In order to establish the questionnaire, it began with the search for different sources of scientific research both national and international, analyzing the dimensions of study, it was chosen to take as a reference the questionnaire that was applied in the international research "Perception of the organizational climate and the job satisfaction of the servers of the municipal basic sanitation company of Puno Peru" (Vele, 2016), consisting of 53 items with Likert type opinion scale, it was validated and approved in the opinion of 3 experts, with a Cronbach Alpha of 0.89, which supports the validity of content.

In the case of this research, to measure the working climate of public servants, a questionnaire consisting of 43 items was structured where nine dimensions of Litwin's theory & Stringer (structure, responsibility, reward, challenge, relationships, cooperation, standards, conflict and identity), with Likert-like scale of opinion (never, almost never, sometimes, almost always, always), in the same questionnaire I ask public servants sociodemographic data such as; sex, age, marital status, academic level, position and seniority.

##### 2.2.2. Adaptation of the job satisfaction questionnaire

With regard to the job satisfaction questionnaire, it began with the search for different sources of scientific research where the structure of its instruments was analyzed as well as the subject dimensions of study, it was chosen to take as reference the questionnaire that was applied in the international research entitled relationship between the organizational climate and job satisfaction of workers in the particular Adventist educational unit of Ecuador, (Apaza 2018), this is composed of 27 items with Likert type opinion scale, it was validated and approved in the opinion of 3 expert and reliability resulted in a Cronbach Alpha of 0.95.

Under the same context to measure the job satisfaction of public servants, a questionnaire consisting of 24 items was applied where intrinsic and extrinsic satisfaction is evaluated, with Likert-like scale of opinion (never, almost never, sometimes, almost always, always), the items considered in the questionnaire are necessary to know the level of satisfaction of the public servants.

##### 2.2.3. Sample description

The sample on which the study was conducted was 20 public servants out of a total of 70 workers who make up the staff of the government entity, and were randomly selected supported by the government's workforce.



**2.2.4. Application of questionnaires**

With regard to the implementation of the questionnaire, health measures and social estating were taken this due to the covid 19 pandemic currently being lived around the world, this was personal, and without time control, all participants received the printed survey, it was explained what the objective of the research was, similarly the respective indications were given, specifying that it was anonymously.

**3. Results:**

**3.1. Description of sociodemographic data**

Sociodemographic data are very useful because they serve us to obtain a deeper view of the social characteristics of the study population and create strategies that adapt to their needs.

It describes the data of the workers surveyed of the public entity, sex is most representatively women with 84.2% compared to men as young as 15.8%, with regard to age 47.4% are between 31 and 40 years old, on the other hand, 57.9% of workers are single), as far as the academic level is concerned it is important to mention that 36.8% have bachelor's degrees , secondly, the secondary level is 31.6%, it is also highlighted that 52.6% of respondents are auxiliaries and 47.4% hold the position of directors.

The information described from the sociodemographic data was obtained from the information that the surveys produced, creating an array in Excel template, and then exported to the SPSS software for analysis and interpretation.

**3.2. Reliability of the working climate instrument**

To determine the reliability of the instruments developed, Cronbach Alpha reliabilitycoefficient was applied which is an internal consistency index, (Kerlinger & Lee, 2002), in this sense they are also calledhomogeneity coefficients (homogeneity of the items, i.e. they all measure the same).

Its interpretation states that when the index is closer to one the instrument will be more reliable as shown in Table 1, the scale that determines reliability is given by the following values:

*Table 1: Ranges and magnitudes.*

Ranges	Magnitude
0.01 to 0.20	Unreliable
0.21 to .40	Low reliability
0.41 to 0.60	Moderate reliability
0.61 to 0.80	High reliability
0.81 to 1.00	Very high reliability

Source: Ruiz Bolívar 2002.

To know the Cronbach Alpha of the working climate instrument, the survey data in the statistical program were emptied, for analysis knowing the degree of

consistency and accuracy, Table 2 shows the obtained alpha that is 0.85 indicating high reliability.

*Table 2: Statistics on the reliability of the working climate*

Variable	Total respondents	Number Items	Cronbach Alpha
Occupational Climate	20	43	.852

Source: Own elaboration with SPSS data.

**3.3. Reliability of the job satisfaction instrument**

In the case of the labour satisfaction instrument, the same procedure was performed to determine the Cronbach Alpha, data was emptied from the surveys applied in the statistical programme, table 3 shows the alpha obtained which is 0.90 indicating high reliability, as well as the working climate.

*Table 3: Statistics on job satisfaction reliability*

Variable	Total respondents	Number Items	Cronbach Alpha
Job Satisfaction	20	24	.900

Source: Own elaboration with SPSS data.

**3.4. Analysis of the working climate and job satisfaction**

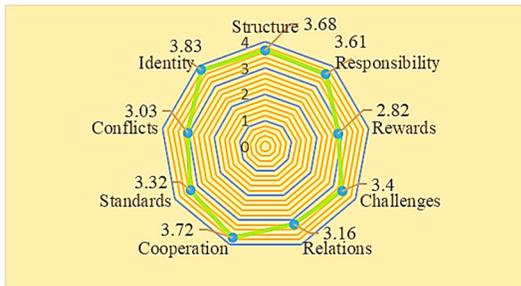
In order to be able to carry out a more detailed analysis with respect to the variables of working climate and labour satisfaction present in the public entity, a comparison of the dimensions that make up the instrument of measurement of the same, using radial graphs, was carried out.

A radar chart compares the aggregated values of each data series, is based on the application of commonly sourced radial axes and standardized scales, each axis is used to indicate the specific value, for comparison purposes., (Abad & Huapaya 2009).

**3.5. Working climate**

With the data collected, the analysis of the different perceptions that respondents have regarding the dimensions that make up the working climate instrument is carried out in radial chart 1, the comparisons of the averages obtained from each of them are presented.

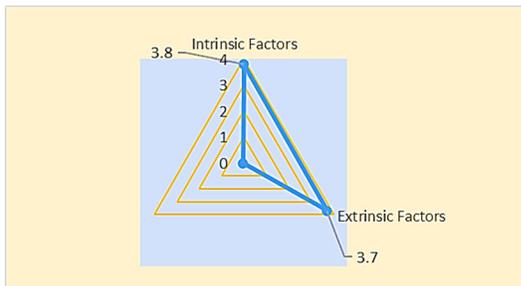
It is clearly identified that the dimensions of conflicts and rewards are the ones with the lowest scores in their assessment, as respondents disagree on how conflicts are resolved, just as they consider that the rewards they receive are not adequate, while the best-evaluated was identity, where most employees are proud of their job performance at the institution.



**Graph 1.** Average dimensions of the working climate.  
Source: Own elaboration.

**3.6. Job satisfaction**

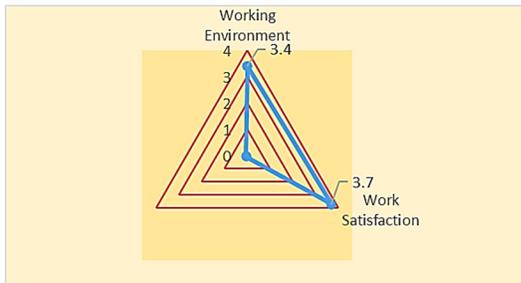
Radial graph 2 shows a comparison between the different scores obtained from the intrinsic and extrinsic factors of the job satisfaction variable obtained from the perception of respondents, (c)It can be noted that intrinsic factors were the best valued, as workers consider that they are comfortable with the roles they perform, on the other hand, the extrinsic factors are at a lower score, as public servants think that they do not always receive praise and recognition for the work performed.



**Graph 2.** Average dimensions of job satisfaction  
Source: Own elaboration.

**3.7. Working climate and job satisfaction**

Radial graph 3 shows the comparison of the averages of both variables, it is observed that the best evaluated was that of job satisfaction with 3.7, while working climate was evaluated with 3.4, the difference is minimal. These averages are reflected in the reliability of the instruments, with the Cronbach Alpha obtained.



**Graph 3.** Comparison of workplace climate and job satisfaction variables  
Source: Own elaboration.

**4. Conclusions:**

The instruments used to measure the working climate and job satisfaction work well enough in the public sector of the state of Tlaxcala, as demonstrated in the reliability coefficients obtained, the items actually relate to the variables that are measured.

Within the instruments, the scales of working climate and job satisfaction are adequate, the results are close with the results of (Apaza 2018) and (Vele 2016) where the instruments were referenced.

In addition, the instruments of working climate and labour satisfaction applied in the pilot test have content validity, since the reliability obtained in this study approximates the original version, the data obtained in comparative radial graph 3, presents a sufficient and positive relationship between the variables.

In conclusion we can say that the scales of organizational climate and job satisfaction, are validated for this sample, can be used to make an assessment of the working climate and its relationship with the satisfaction of work with all workers in the public bodies, proposing alternatives of solution and thereby improving the quality of service granted to their internal and external clients, can also be used as a reference for future investigations that enter the public sphere.

**Conflict of Interest:**

There was no conflict of interest by authors.

**Corresponding author:**

Juan Cuapio Tecuapacho, Eng.  
Postgraduate Studies and Research Division,  
Technological Institute of Apizaco. Technologic  
National of Mexico, Tlaxcala, Mexico.  
E-mail: [juan\\_cuapio7@hotmail.com](mailto:juan_cuapio7@hotmail.com)

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