

## Organizational Justice and Job Satisfaction: Causality or Correlation?

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**Abstract:** This paper aims to analyze the relationship between organizational justice and job satisfaction in employees of the petroleum industry in México. The research is quantitative, ex post facto confirmatory, transversal over time, with explanatory scope, through SEM data analysis. The sample consists in 251 workers in a maintenance area. Key variables were measured with the Organizational Justice scale (Niehoff and Moorman, 1993) adapted to Mexican population by Patlán-Pérez, Flores, Martínez and Hernández (2014). Also, there was used the official short version in Spanish of the Satisfaction Questionnaire of Minnesota (Weiss, Dawis, England & Lofquist, 1967). As result, it was found a reciprocal causal relationship between the constructs organizational justice and job satisfaction, also between distributive justice and organizational justice, between procedural justice and organizational justice, between interactional justice and organizational justice. It was obtained also a correlation between the dimensions of organizational justice and the dimensions of job satisfaction.

**Key words:** organizational justice; job satisfaction; intrinsic satisfaction; extrinsic satisfaction; causality; correlation

**JEL codes:** M12, M52, M54

### 1. Introduction

Organizational justice is a topic of interest to organizations because during the psychological interaction between the employee and his organization a reciprocity process is experienced, where the organization performs certain things aimed at the worker such as remunerating him and giving him security and status, while the worker responds by working and performing his tasks. In this exchange, the organization expects the worker to obey his authority, while the worker expects the organization to behave correctly and fairly with him (Chiavenato, 2000).

The study of job satisfaction also becomes relevant in organizations, as it expresses the feeling of employees about their work context, which translates into individual attitudes towards it (Chiang & Ojeda, 2013). Also, the relationship between organizational justice and job satisfaction is also important for organizational researchers, because it allows to identify which factors can be improved, changed or avoided to improve the attitudes of employees and their performance in the organization.

A problem that motivates the study of the relationship between organizational justice and job satisfaction is the divergence of results between several investigations about the relationship between distributive justice, procedural justice and interactional justice with intrinsic and extrinsic job satisfaction. In some researches, the perception of distributive justice turned out to be more related to job satisfaction than to procedural and

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interactional justice (Choi, 2011; Ali, Mousavi, Siavash & Kiarash, 2012; Nadiri & Tanova, 2010; Samad, 2012). However, in a research conducted at the Extension Department of Ohio University, its employees were found to have an uncertain perception about organizational justice, as well as a positive perception about procedural and interactional justice, and a negative perception on distributive justice; they also manifested a high job satisfaction (Schmiesing, Safrit & Gliem, 2003).

The relationship between procedural justice and job satisfaction has been reported as the most significant in contrast to the relationship between distributive justice and job satisfaction, among employees of the Applied Research Unit of the Canadian Armed Forces (Lissak, Mendes & Lind, 1982). On the other hand, it has been also obtained results of factor analysis that suggest that both procedural justice and distributive justice are important for the satisfaction of employees of cable companies, pharmaceutical companies and credit unions in the United States (Greenberg, 1986). In contrast, a study published in Canada developed among employees of a medical school, reported that no relationship was found between procedural justice and job satisfaction in the sample studied (Bakhshi, Kumar & Rani, 2009).

In regard to the relationship between interactional justice and job satisfaction, in a study aimed at Chinese employees of Joint Venture Hotels (in holding), no relationship was found (Leung, Smith, Wang & Sun, 1996). However, in another study conducted in various organizations of both local and foreign employees in Saudi Arabia, it was found that interactional justice predicted job satisfaction more strongly, than distributive justice and procedural justice (Elamin & Alomaim, 2011). Likewise, in Jordan, an investigation was conducted to administrative personnel of middle and senior management in various companies in the Industrial City of Sahab, finding non-significant relationships between distributive and procedural justice with job satisfaction, and a significant relationship between interactional justice and work satisfaction (Mansour, 2012). In Mexico, Patlán-Pérez, Martínez and Hernández (2012) conducted an investigation aimed at teachers of higher education institutions, finding that distributive and procedural justice are positively and significantly associated with job satisfaction, meanwhile interactional justice is negatively associated with job satisfaction, which indicates that although less fair treatment is perceived, high levels of job satisfaction prevail.

Therefore, it exists the need to investigate the relationship between distributive justice, procedural justice and interactional justice with intrinsic and extrinsic job satisfaction, because the relationship between the dimensions of organizational justice and job satisfaction is inconclusive (Samad, 2012).

As a starting point, the definitions of organizational justice and job satisfaction are carried out, considering its dimensions. Organizational justice is the equity in the workplace and it is associated with the perception of employees about justice in the treatment received in their jobs and the influence of this perception of the employee on other variables related to the job (Moorman, 1991). Organizational justice is composed of three dimensions: distributive justice, procedural justice and interactional justice (Greenberg, 1990). Distributive justice is the equity of the results that a worker receives, such as payment, promotions and rewards (Ruder, 2003). Procedural justice refers to equity in the policies and procedures used for decision making (Greenberg, 1990). Interactional justice describes equity in interpersonal treatment and communication that is received (Ambrose, 2002).

By its side, job satisfaction corresponds to an attitude or set of attitudes developed by an employee towards his labor situation (Chiang & Ojeda, 2013), when comparing the current results with the desired results (Mosadeghrad, 2003). For this study, the following sub dimensions will be considered: intrinsic satisfaction and extrinsic satisfaction. The first relates to the opportunities for work development, and the second refers to satisfaction towards the company's policies and the quality of working conditions (Tziner, Bar, Oren & Kadosh,

2011). Also, for this study, the relationship between organizational justice and job satisfaction will be based on the theory of work adjustment (Dawis, Lofquist & Weiss, 1968) and on the equity theory by Adams and Freedman (1976).

The theory of work adjustment assumes that each individual seeks to correspond with each other (their skills, abilities, interests and needs) and the work environment (the requirements of work skills and abilities, as well as with the rewards offered to the individual for their work) (Hesketh, 2004). Among its advantages is dynamism, since it conceives the correspondence between work environment and employee as a process that can change with the variation of expectations of the work environment or the employee (Dawis & Lofquist, 1978). From this theory, various instruments were generated within which is the Minnesota Satisfaction Questionnaire (MSQ) to measure the satisfaction of individual needs through work (Weiss, Dawis, England & Lofquist, 1967).

Adams and Freedman's equity theory (1976) conceptualizes the individual's judgment of justice, which is made regarding a group perception that may be relevant for comparative purposes (Campbell & Pritchard, 1976), and also argues that individuals employ a moral system that promotes an equitable balance between what they give to their work and what they get from it, in terms of equity in the distribution of benefits, in the application of procedures and in human relationships.

To measure the justice and the satisfaction of an individual, an indirect measurement can be used through the quantification of perception, which is influenced by the products that the individual receives from the organization, by organizational practices and by the characteristics of the individual (Cohen-Charash & Spector, 2001). In the temporal approach two types of perceptions, perceptions of the event and perceptions of the social entity, are considered (Fischer, 2012). The perceptions of the event are related to the evaluation of specific events such as promotions and payment decisions, and the perceptions of the social entity are related to global evaluations of social entities such as supervisors, groups or organizations. However, it has been found that in situations of favoritism in a promotion decision or in the procedure to obtain a promotion, the perception of justice of employees significantly predicts commitment and job satisfaction, not only when the event occurs but also before of the decision and a year later (Ambrose & Cropanzano, 2003).

The aim of this study is to evaluate the relationship between organizational justice and job satisfaction from the perspective of staff affiliated to Oil Industry Union in the state of Tabasco, Mexico. The hypothesis to be tested is the following: Organizational justice has a reciprocal causal relationship with job satisfaction from the perspective of personnel affiliated to the Oil Industry Union that works in the state of Tabasco, Mexico.

## 2. Literature Review

**Table 1 Research Related to the Study**

Research title	Author(s)	Year	Constructs	Instruments used	Sample size	Country
"Job Satisfaction and Employee's Unionization Decision: The Mediating Effect of Perceived Union Instrumentality".	Shan, Hu, Zhi, Zhang and Zhang.	2016	Job Satisfaction, Perceived Instrumentation Association and Union Affiliation.	Job Satisfaction: Guest and Dewe Scale (1988). Union Instrumentation: Scale of Shan, Hu, Zhi, Zhang and Zhang (2016). Union Affiliation: Kochan Scale (1979).	390	China
"Organizational Justice's Relationship with Job Satisfaction and Organizational	Qureshi, Frank, Lambert,	2016	Job Satisfaction, Organizational Justice,	Job Satisfaction: Brayfield and Rothe (1951) Affective Commitment: Mowday, Porter	1000	India

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Research title	Author(s)	Year	Constructs	Instruments used	Sample size	Country
Commitment among Indian Police”.	Klahm and Smith		Organizational Commitment	and Steers (1982). Distributive Justice: Price and Mueller (1986). Procedural Justice: Saylor and Wright (1992) and Tang and Sarsfield-Baldwin (1996).		
“The Effect of Organizational Justice Perception on Job Satisfaction on Health Employees”.	Akbolat, Isik, Yilmaz and Akca	2015	Intrinsic Satisfaction, Extrinsic Satisfaction, Distributive Justice, Procedural Justice, Interactional Justice.	Extrinsic Satisfaction and Intrinsic Satisfaction: Long version of the Minnesota MSQ-100 Job Satisfaction Questionnaire, by Weiss, Dawis, England and Lofquist (1967) Distributive Justice, Procedural Justice and Interactional Justice: Niehoff and Moorman Scale (1993)	279	Turkey
“Environment and Organizational Justice and its effect on Job Satisfaction”.	Patlán-Pérez, Martínez and Hernández	2012	Job Satisfaction, Organizational Justice, Distributive Justice, Procedural Justice, Interactional Justice.	Job Satisfaction: Long version of the Minnesota MSQ-100 Job Satisfaction Questionnaire, by Weiss, Dawis, England and Lofquist (1967) Organizational Justice and its dimensions: Niehoff and Moorman Scale (1993).	307	Mexico
“Examining the Predictors of Employee Work”.	Samad	2012	Procedural Justice, Distributive Justice, Interactional Justice, job Satisfaction, organizational commitment.	Job Satisfaction: Long version of the Minnesota MSQ-100 Job Satisfaction Questionnaire, by Weiss, Dawis, England and Lofquist (1967) Organizational Justice and its dimensions: Niehoff and Moorman Scale (1993).	300	Malaysia
“The Mediating Role of Organizational Justice Components in the Relationship between Leadership Styles and Job Satisfaction”.	Mansour	2012	Procedural Justice, Distributive Justice, Interactional Justice, Job Satisfaction	Job Satisfaction: Short version of the Minnesota MSQ-20 Job Satisfaction Questionnaire, by Weiss, Dawis, England and Lofquist (1967) Organizational Justice and its dimensions: Niehoff and Moorman Scale (1993)	134	Amman Jordania
Avoidance of work in thirteen Mexican organizations	Littlewood, Alviter and Robles	2012	Organizational Justice, Job Satisfaction, Work avoidance, Emotional well-being, abuse.	Littlewood (2009)	803	Mexico
“An empirical study of the relationship among job satisfaction, organizational commitment and turnover intention”.	Aydogdu and Asikgil	2011	Job Satisfaction	Short version of the Minnesota MSQ-20 Job Satisfaction Questionnaire, by Weiss, Dawis, England and Lofquist (1967)	182	Turkey
“The Study on Relationship Between Organizational Justice, Organizational Citizenship Behavior, Job Satisfaction and Turnover	Akbar, Reza, Rabiei, Salamzadeh and Takallo	2012	Organizational Justice, organizational citizenship behavior, Job	Organizational Justice: Niehoff and Moorman (1993)  Organizational citizenship behavior: Organ and Konovsky (1989)	364	Iran

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Research title	Author(s)	Year	Constructs	Instruments used	Sample size	Country
Intentions a Comparison between Public Sector and Private Sector”.			Satisfaction and rotation intentions	Job Satisfaction: Lucas, Babakus and Ingram (1990) Rotational intentions: Camman, Fichman, Jenkins and Klesh (1979)		
“An analysis of correlation between organizational justice and job satisfaction”.	Yaghoubi, Ahmadzadeh , Ebrahimi, Abdollahi and Ebrahimi	2011	Procedural Justice, Distributive Justice, Interactional Justice, job Satisfaction	Organizational Justice: Niehoff and Moorman (1993) Job Satisfaction: Fernand and Awamleh (2006)	229	Iran
“A Study of Relationship between Organizational Justice and Job Satisfaction”.	Ali	2010	Procedural Justice, Distributive Justice, Interactional Justice, Job Satisfaction	Organizational Justice: Niehoff and Moorman (1993) Job Satisfaction: Fernand and Awamleh (2006)	229	Jordan
"An inquiry about the effect of justice value on justice perception”.	Özmen, Arbak and Özer	2007	Value of justice, Organizational Justice, Distributive Justice, Procedural Justice, informational justice and interpersonal justice.	Value of justice: Instrument by Mueller and Wynn (2000) Organizational Justice and its dimensions: Colquitt Scale (2001)	197	Turkey
“Public v. Private Perceptions of Formalization, Outcomes, and Justice”.	Kurland and Egan	1999	Distributive Justice, Procedural Justice, outcome evaluations, formal communication, formalization of work, supervisor satisfaction	Results evaluations and work formalization: instrument developed by Kurland and Egan (1999). Distributive Justice: Price and Mueller (1986). Procedural Justice: Leventhal (1976), Moorman (1991) and Niehoff and Moorman (1993) Employee satisfaction: Hackman and Oldman (1980)	174	United States

*Note:* Own elaboration based on the investigations of Shan, Hu, Zhi, Zhang and Zhang (2016), Qureshi, Frank, Lambert, Klahm and Smith (2016), Akbolat, Isik, Yilmaz and Akca (2015), Patlán-Pérez, Martínez and Hernández (2012), Samad (2012), Mansour (2012), Littlewood, Alviter and Robles (2012), Aydogdu and Asikgil (2011), Akbar, Reza, Rabiei, Salamzadeh and Takallo (2012), Yaghoubi, Ahmadzadeh , Ebrahimi, Abdollahi and Ebrahimi (2011), Ali (2010), Özmen, Arbak and Özer (2007), Kurland and Egan (1999).

### 3. Methodology

#### 3.1 Design of the Investigation.

Quantitative ex-post-facto confirmatory, cross-sectional in time and with explanatory scope. It uses the Structural Equation Systems (SEM) as a statistical method for modeling and hypothesis testing.

### **3.2 Instrument**

The measurement method is indirect. The variables were measured with questionnaires that were distributed by collecting information face to face in natural operating conditions without manipulating or conditioning any behavior of the selected subjects. The data related to the measurable variables (or items) were obtained to explain organizational justice and job Satisfaction as constructs, the latent variables that integrate them and the relationships between them.

To measure organizational justice, the Niehoff and Moorman scale (1993) was used for two reasons. The first is the result obtained in the investigation of Özmen, Arbak and Özer (2007) in a public institution in Turkey, where the scale of Colquitt (2001) was applied with the dimensions of distributive justice, procedural justice, informational justice and interpersonal justice, finding that organizational justice is composed of three factors that are distributive justice, procedural justice and interactional justice. The second reason to study the perception of Organizational Justice with the scale of Niehoff and Moorman (1993) is its wide use in both literature and empirical evidence in different countries with different work cultures, where it has been proved its validity and reliability in places like Saudi Arabia (Elamin & Alomaim, 2011), Israel (Tziner, Bar, Oren & Kadosh, 2011), Turkey (Gürbüz & Mertz, 2009), United States (Ruder, 2003) and Mexico in academia (Patlán- Pérez, Flores, Martínez & Hernández, 2014). This is relevant because Solano (2011) has indicated that the psychological process of perception is not the same in all cultures, and that this phenomenon, coupled with the moral values of the study environment, has an impact on the way of conceiving justice. It is worth mentioning that the Niehoff and Moorman scale (1993) was translated into Spanish and verified in its psychometric properties, validity and reliability in the Mexican population in the context of teaching staff (Patlán-Pérez, Flores, Martínez & Hernández, 2014), resulting of interest to use this instrument in other contexts in Mexico.

Table 2 shows the validity and reliability of the scale of Organizational Justice of Niehoff and Moorman (1993) reported in the literature.

**Table 2 Reported Reliability Coefficients of Organizational Justice Dimensions**

Author(s) and year	Reliability coefficient		
	Distributive Justice	Procedural Justice	Interactional Justice
Niehoff and Moorman (1993)	0.786	0.826	0.894
Ali (2010)	0.79	0.82	0.80
Yaghoubi, Ahmadzadeh, Ebrahimi, Abdollahi and Ebrahimi (2011)	0.79	0.82	0.80
Patlán-Pérez, Flores, Martínez and Hernández (2014)	0.733	0.881	0.947
Akbolat, Isik, Yilmaz and Akca (2015)	0.804	0.857	0.917

The literature has indicated that the diversity of criteria to define job satisfaction can influence the construct validity of its measurement (Evans, 1998). For this research, the short version of the MSQ that considers the scales of intrinsic satisfaction, extrinsic satisfaction and general aspects of satisfaction (Weiss, Dawis, England & Lofquist, 1967) has been preferred for three reasons. The first is that it is a stable instrument over time with acceptable alpha coefficient values and is a parsimonious scale that has been widely studied and validated

(Martins & Proença, 2012). The second motivation to choose this instrument is the existence of empirical evidence that the short version of MSQ distinguishes between intrinsic and extrinsic satisfaction that is consistent with the group-value model (Lind & Tyler, 1988) and with the Adams and Freedman's equity theory (1976) (Arvey, McCail, Bouchard, Taubman & Cavanaugh, 1994). The third reason to choose the short version of MSQ is that, to prove its reliability, Weiss, Dawis, England and Lofquist (1967) considered maintenance personnel within their sample, which is the work area will consider for this investigation, obtaining acceptable values of reliability. In addition, the content and construct validity of this instrument has recently been tested in a sample that considered maintenance workers of a parastatal entity (Buitendach & Rothmann, 2009). The short version of MSQ has been questioned by some researchers regarding its validity of content and construct, precisely because it is a short version (Spector, 1997). However, this instrument has proven its construct validity by reporting the independence between satisfaction and the quality of the satisfactors (Weiss, Dawis, England & Lofquist, 1967), whose theoretical support is found in the theory of work adjustment (Dawis, Lofquist & Weiss, 1968). Weiss, Dawis, England and Lofquist (1967) point out that they have found reliability coefficients that vary from 0.87 to 0.92 with this scale. Table 3 shows the validity and reliability of the Weiss, Dawis, England and Lofquist job satisfaction scale (1967) reported in the literature.

**Table 3 Reported Reliability Coefficients of Job Satisfaction Dimensions**

Autor(es) y año	Reliability coefficient		
	Extrinsic Satisfaction	Intrinsic Satisfaction	General Satisfaction Aspects
Weiss, Dawis, England y Lofquist (1967)	0.79	0.86	0.89
Buitendach y Rothmann (2009)	0.82	0.79	0.86
Akbolat, Isik, Yilmaz y Akca (2015)	0.848	0.897	0.92

### **3.3 Sampling and Sample Method**

The questionnaires were distributed through simple random sampling to members of the Oil Industry Union of the municipalities of Cardenas and Comalcalco, in the state of Tabasco, Mexico. The study sample for this investigation was limited to unionized personnel because a union represents a voice mechanism through which justice can be transferred to their workplaces (Freeman & Medoff, 1984) based on collective bargaining (International Labor Office, 2003). Union membership is not only affected by the benefits expected by its members in terms of education or income, but also by attitudes towards inequality (Checchi, Visser & Van de Werfhorst, 2007).

Regarding the sample to be used, Krejcie and Morgan (1970) consider that the desirable sample size in research activities is 248 for a population of 700 workers, with 95% confidence level and error of 5%, according to the simple random sampling formula. In this formula, it is assumed that the proportion of favorable and unfavorable cases is 50% (i.e., 0.5). For its part, Arriaza (2006) points out that for a population of 600 workers and considering a level of accuracy of +/- 5%, the sample must be 240 workers, and for a sample of 700 workers the sample must be 255 workers.

In order to have a representative sample of the population, the response rate of respondents from previous

studies is considered, with a participation slightly higher than 80% by respondents, as recorded in the research by Khodaparast, Ghorbanalizadeh and Morteza (2012) and of Ladebo, Adamu and Olaoye (2005), where there was a response rate of 82.5% and 88.07%, respectively.

Based on the above, 300 questionnaires were distributed, considering a response rate of 82.5%, through a simple random sampling. This sampling method was used in the investigation of Mansour (2012), also focused on the study of organizational justice and job satisfaction.

Before applying the instrument and to verify the clarity in the drafting of the questionnaire and its application to the context of the study, a copy was given to fifty volunteers from the population considered for reading and recording responses, where notes were made regarding doubts in the writing, the writing was corrected and the final version was read to the participants to verify the clarity of the items. In this exercise, participants were able to ask the researcher directly any questions in the writing. This technique was performed with thirty participants in the research of Heidari and Saeedi (2012).

### **3.4 Data Analysis.**

Once the questionnaire responses have been received, they are encoded and captured in the Statistical Package for the Social Sciences) version 20, placing the case studies in the rows and in the columns the measurement items. Subsequently, a comparison is made between the data captured in the software and the data contained in the surveys, correcting the deviations identified by errors during the transcription of the data of the respondents in the database. In turn, the missing data for each item is quantified. The presence of missing information is a common problem in any investigation, and cannot be ignored in the data analysis, because there is a risk of loss of analysis power and the appearance of unacceptable biases (Segura & Torres, 2014). The missing data is replaced by the value 3, which indicates that the participant does not agree or disagree with the item, being a Likert scale of 1 to 5.

A tolerance criterion of 5% of missing data is established in relation to the total data per case, which is within the range of 1 to 20% of missing data from the total raised by Useche and Mesa (2006). The maximum tolerable missing data per case is 2, because each case is made up of 40 items that make up the questionnaire.

For data analysis, a 95% confidence level is considered for all statistical tests and methods. Confirmatory analysis is performed in the Analysis of Moment Structures software (AMOS) version 20, where the 40 items of the measuring instrument are captured as observed variables. To conduct the confirmatory analysis, the recommendations made by Uriel and Aldas (2005) are applied, which consist of the following:

- 1) Verify that the model has sufficient degrees of freedom to perform the analysis, comparing the number of data with the number of parameters to estimate.
- 2) Set the variance of common factors or the regression coefficient (factor load) of one of the variables observed by factor, to a value of 1, to establish a scale for common factors and avoid the problem of indeterminacy between variance and factor loads.
- 3) Analyze the number of observed factors and variables that load on each factor in order to verify that they meet a minimum of three variables per factor, that the errors associated with them are not related to each other and that each variable loads only on one factor. The factors can covariate with each other.
- 4) Assign the value of 1 to the error regression coefficients.

## **4. Statistical Analysis**

#### 4.1 Descriptive Statistics

80.2% of participants surveyed said they belonged to the male sex and 19.8% to the female sex. The majority of study subjects are under 40 years old. 26.9% reported an age less than or equal to 30 years, 30.7% indicated having an age in the range of 31 to 40 years, 26.9% indicated an age between 41 and 50 years and 16.5% indicated an age of 51 years or more. Regarding to the last academic level of the participants, 3.7% of the sample reported that their studies ended with the completion of primary school, 19.9% finished secondary school, 42.1% completed high school, 31.0% completed the university and 3.2% attended one or more postgraduate degrees. In relation to the worker length service in the company, the majority of the personnel surveyed has less than 19 years old. 19.6% of the personnel surveyed reported that they have been in the company for a period of less than or equal to six years, 21.9% indicated that they have worked in the company between seven and 12 years, 35.2% indicated being in the range of 13 and 18 years, 11.4% stated a length of service in the company between 19 and 24 years and 11.9% indicated to have 25 years or more in the company. With regard to the worker current position permanence, it is observed that the majority of the subjects have seven years or less in their current position, equivalent to 59%. 16.7% said they have stayed between seven and 12 years in their current position, 12% indicated a permanence in their position between 13 and 18 years, 7.6% reported in their current position between 19 and 24 years, 2.4% said they had 25 years or more, and 2.4% of the personnel surveyed did not provide information. These results are consistent with the scaffold growth policy contemplated in the union regime.

#### 4.2 Inferential Statistics

The normality of each item and the multivariate normality were evaluated. To evaluate the normality of each item, histograms and Q-Q Graphs were developed that show normality of the data with acceptable ranges of negative asymmetry and mesocortic distribution. The asymmetry and kurtosis were also determined in the AMOS Software, finding that all the data have a normal distribution for presenting critical radii less than three and eight, respectively.

To evaluate the linearity between model items, a bivariate correlogram was made based on the Kendall correlation coefficient in Software R version 1.0.136 for the dimensions distributive justice, procedural justice, interactional justice, intrinsic satisfaction and extrinsic satisfaction, finding relationships greater than 0.3 between items of the same dimension, showing the relationship between items of the same dimension.

Homoscedasticity analysis was carried out using the Levene test, whose null hypothesis is that the variances are equal (there is homoscedasticity) and its alternate hypothesis indicates that the variances are not equal (there is heteroscedasticity). When evaluating the significance of the Levene test in relation to gender, the results indicate that there is no heteroscedasticity between the variables, because all dimensions have significance greater than 0.05.

Multicollinearity analysis was performed to evaluate the independence between exogenous variables. For its execution, the collinearity statistics, called tolerance and inflation value of the variance, were taken into consideration. When the tolerance is greater than 0.1, a probable collinearity between the items that make up each dimension is rejected (Arias, 2008). The inflation value of the variance is the inverse of the value of the tolerance, and when reflecting values less than 10, it is rejected that the variables are redundant (Arias, 2008). When collinearity statistics were evaluated, multicollinearity between the dimensions of the measuring instrument was rejected and the dimensions were redundant.

A discriminant and convergent validity analysis of the latent variables was carried out to test if the variables

of a measurement construct are conceptually different or if they should be integrated into a single variable. As a result, the organizational justice subdimensions were maintained by being conceptually distinct, and the job satisfaction subdimensions were unified.

The distributive justice factor analysis showed a single component, acceptable loads above 0.60, explained variance of 49.7% of the original data, adequate Kaiser-Meyer-Olkin sample adequacy measure of 0.716; Bartlett's sphericity test significance with value of 0.000 that is less than 0.05 which confirms that the factor analysis is relevant due to the existence of significant correlations between variables. With this reliability analysis, one-dimensionality and optimal measurement of the variables that make up the distributive justice scale are argued.

The procedural justice factor analysis showed a single component, outstanding loads above 0.80, adequate Kaiser-Meyer-Olkin sample measure of 0.901, Bartlett's test of sphericity with a value of 0.000 which is less than 0.05 what confirms that the factor analysis is relevant due to the existence of significant correlations between variables. With this factor analysis, one-dimensionality and optimal measurement of the variables that make up the procedural justice scale are argued.

Factor analysis of justice interactional showed a single component, outstanding loads above 0.90, measured sampling adequacy Kaiser-Meyer-Olkin of 0.929 adequate significance test of sphericity Bartlett value of 0,000 which is less than 0.05 what confirms that the factor analysis is relevant due to the existence of significant correlations between variables. With this factor analysis, one-dimensionality and optimal measurement of the variables that make up the interactional justice scale are argued.

Having validated the observed variables of the organizational justice construct, the complete construct was validated by analyzing the convergent validity of the distributive justice, procedural justice and interactional justice variables. The elimination of an item was required for a better fit of the model and for the model parsimony. As a result, acceptable values of item loads, composite reliability of 0.988 and variance extracted from 0.880 are observed. The correlation between distributive justice and procedural justice is 0.75, between procedural justice and interactional justice is 0.71 and between distributive justice and interactional justice is 0.66, which validates that the variables maintain covariance within the organizational justice construct. Regarding to the goodness fit, it was obtained  $\chi^2$  of 0.163,  $\chi^2/df$  of 1.192, GFI of 0.956, RMSEA of 0.030 and CFI of 0.996.

In the calculation of the factorial analysis of job satisfaction with a component, higher loads were obtained with values above 0.73, the Kaiser-Meyer-Olkin sample adequacy measure of 0.924 is adequate and the significance of Bartlett's sphericity test with a value of 0.000 that is less than 0.05 confirms that the factor analysis is relevant due to the existence of significant correlations between variables. With this factor analysis, the one-dimensional and optimal measurement of the variables that make up the intrinsic satisfaction scale are argued.

When evaluating the reciprocal causal relationship model between Organizational Justice with its subdimensions in relation to job Satisfaction, factor loads were obtained above 0.8. Multiple square correlations saturate above 0.66. The composite assurances have values greater than 0.98 and the extracted variances are greater than 0.87. The multiple correlation coefficients of the adjusted model reflect association values between the variables Distributive Justice (JD), Procedural Justice (JP) and Interactional Justice (JI), with values that explain their variance of 86.48%, 84.6% and 81.7%, respectively. R2 values are less than 0.90, rejecting a probable multicollinearity or redundancy (Arias, 2008).

When performing the double-tail normality test with the Student's t-test between the organizational justice and labor satisfaction constructs, a probability value  $p \leq 0.01$  and  $CR \geq 4$  is observed for all items and

dimensions, so that, the regression weight for the variables distributive justice, procedural justice, interactional justice, job satisfaction and organizational justice in the prediction of items towards dimensions and dimensions to constructs is significantly different from zero at the level of 0.001 (two tails).

This result represents a significant relationship between the items and dimensions and between the dimensions and the constructs, when obtaining a critical radius greater than 1.96 and a value of P with significance less than 0.001, which represents that the non-recursive model (Arbuckle, 2010) of causal relationship between the organizational justice and job satisfaction constructs has a good fit to the data. In turn, a stability index of 0.129 was obtained, which is less than one and means that the non-recursive model is stable (Arbuckle, 2010).

Based on the statistical analyzes, the following model is obtained:

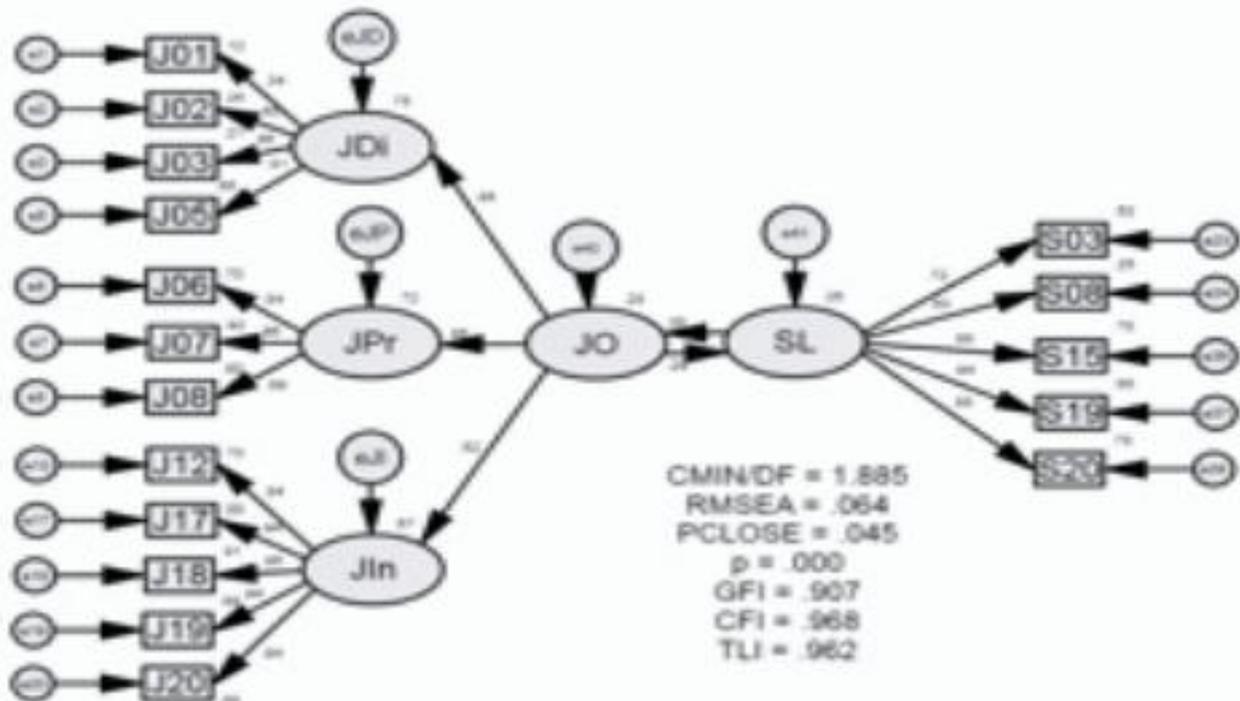


Figure 1 Global model of reciprocal causal relationship between Organizational Justice and Job Satisfaction

Indicators of goodness of fit of the overall model have a proper fit of the data to the model. The radius of Chi-square similarity, which is the ratio  $\chi^2/df$ , predicts the adjustment of the general model to the correlation matrix with a value less than 3, so that the model is adequate. The Goodness Fit Index (GFI) determines that 90% of the variance is explained by the model and represents a good fit. The root mean square error of approximation (RMSEA), being less than 0.08 represents an adequate adjustment of the model with the population, not only with the sample. The rmsea refers to an almost perfect fit of the model with reality based on a comparison between variances and covariance of the sample and those calculated with the model. The GFI being close to 0.90 shows adjustment to the model by adjusting the degrees of freedom between two models. The Tucker Lewis Index is acceptable, considering the degrees of freedom of the proposed model in relation to the sample size. The Normalized Adjustment Index is acceptable when comparing the proposed model and the null model. The Parsimony Standard Adjustment Index shows the adequacy of the constructs with the theory that supports them.

Based on the statistical analysis, it can be affirmed that the model explains 64% of the reciprocal causal

relationship between organizational justice and job satisfaction, where job satisfaction affects organizational justice more significantly with a value of 0.35, while justice organizational influences job satisfaction with a value of 0.29. According to these results, it can be statistically affirmed that the perception of organizational justice is significantly conditioned by job satisfaction and that job satisfaction is significantly conditioned by the perception of organizational justice of workers, which in turn is explained by distributive justice with a value of 0.86, for the procedural justice with a value of 0.85 and for the interactional justice with a value of 0.82. Positive values of the standardized regression weights between the dimensions of the model were obtained, so that the values of the variables vary in a similar way (Hair et al., 2010), observing a positive and significant association, above 0.80, between the organizational justice construct and the distributive justice, procedural justice and interactional justice dimensions.

**Table 4 Hypothesis Evaluation Result**

Hypothesis	Result
Organizational Justice has a reciprocal causal relationship with job Satisfaction from the perspective of the personnel affiliated to the Oil Industry Union that works in the state of Tabasco, Mexico.	The hypothesis is not rejected. CR = 8.528, $p \leq 0.001$ Positive relationship.

## 5. Discussion and Conclusion

This study provides empirical evidence that statistically significant and positively relates to the perceptions of Organizational Justice with the job Satisfaction of personnel affiliated with the Oil Industry Union, which supports the reciprocal causal effect between distributive justice and interactional justice with job satisfaction, contributing to the increase of the empirical evidence available. The effect of the perception of organizational justice on job satisfaction is consistent with the obtained in other investigations (Tremblay, Sire & Balkin, 1998; Priesemuth, Arnaud & Schminke, 2013; DeBoer, Bakker, Syroit & Schaufeli, 2002; Ambrose & Cropanzano, 2003), contributing support to the theory of work adjustment (Dawis, Lofquist & Weiss, 1968) relative to the correspondence sought between workers and their work environment when comparing the minimum established level of satisfaction of all individuals with the satisfaction observed by each individual. This study considered a sample of employees directly involved with operational personnel that generates income, allowing the development of strategies by administrators to increase job satisfaction and organizational justice of workers.

A limitation of this study is the dependence between predictor variables and criteria variables with the same measurement resource. Therefore, for future research it would be useful to use quantitative indicators to validate the findings obtained in this investigation.

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