



The magnitude and continuity of the impact of organizational justice on job performance from the point of view of public-school teachers in Algeria

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Abstract :

The study aims at determining the extent and continuity of the effect between organizational justice with its dimensions and job performance. In this study, a questionnaire and an interview were used to collect data and analyze the results; therefore, the questionnaire was distributed to a sample of 378 teachers of public schools in Algeria. The study findings showed that the teachers' perception of the two variables is average. Moreover, with the use of Artificial Intelligence techniques; it showed that there is a 33.8% of continuous effect of organizational justice on job performance. The study recommends finding modern assessment methods to assess job performance and reconsider the salary scale

Key Words: Organizational Justice; Job performance; Artificial Intelligence; public schools; teacher;

JEL Classification : D83, D73

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Introduction:

Organizational justice is considered an important topic in the field of management, as it has gained increasing attention through numerous studies in understanding the relationships between Organizational justice and other organizational variables, most notably performance. Performance contributes to creating a dynamic work environment, enabling the efficient and effective achievement of goals, reducing costs and resource waste, and thus ensuring continuity, growth, and meeting customer expectations.

One of the sectors that society pays **special** attention to is the field of National Education, which has taken steps towards change in recent years, particularly in its educational curricula. As it belongs to the public sector, it is subject to public employment laws, which affect the expectations of employees in this sector.

This study sheds light on Organizational justice as an independent variable and its relationship with performance as a dependent variable. Hence, the following problem can be posed:

Is there a continuous impact of Organizational justice on the job performance of teachers in public educational institutions?

This question encompasses several sub-questions, including:



- What is the level of perception of Organizational justice?
- What is the level of perception of job performance?
- Is there a statistically significant impact of Organizational justice on the job performance of teachers in public educational institutions?
- If such an impact exists, what is its magnitude, and is it continuous?

To answer these questions, a questionnaire was used as a data collection tool, and artificial intelligence techniques were employed to predict the size and continuity of the relationship, if any.

Study hypotheses:

The level of perception of Organizational justice among teachers in public educational institutions is **high**.

The level of perception of job performance among teachers in public educational institutions is **high**.

There is a statistically significant impact of Organizational justice on the job performance of teachers in public educational institutions.

Study significance:

The significance of the study lies in the importance of its variables under examination: Organizational justice and job performance. The study attempts to determine their levels of perception and highlight the practical relationship between them, if present. This allows us to identify optimal ways to achieve Organizational justice and enhance job performance.

Study objectives:

The main objective of the study is to investigate the perceived impact of Organizational justice on job performance among teachers in the education sector in Algeria by:

- ✓ Attempting to determine the levels of perception of Organizational justice and job performance from the perspective of teachers in the education sector.
- ✓ Exploring the nature of the relationship between Organizational justice and job performance among teachers in the education sector.
- ✓ Identifying the magnitude and continuity of the impact between the variables, if any.
- ✓ Providing results, interpretations, and suggestions that contribute to enhancing Organizational justice and job performance.

Research methodology:

Given the nature of the study, which requires exploring the impact between Organizational justice and job performance, a descriptive methodology was chosen. This methodology involves analyzing the phenomenon in its various dimensions, with subsequent generalizations.

Previous studies:

Several studies have been reviewed that have examined both variables.

1-Study (Kalay, 2016) : An article entitled “**The impact of Organizational justice on the employee performance**”



The purpose of this study was to examine the impact of Organizational justice, including distributive justice, procedural justice, and interactional justice, on the performance of teachers in public schools in Turkey. The study aimed to address the following research question: Does Organizational justice, in its various dimensions, have an effect on employee performance? A total of 942 questionnaires were distributed to teachers in three major cities in Turkey. The study concluded that there is a positive impact of overall Organizational justice on the performance of teachers, with distributive justice having the greatest influence on performance, while procedural justice and interactional justice had the least impact.

2-Study (Haryono, Yusda , & Mohd , 2019): An article entitled “**The impact of the organizational climate and Organizational justice on Enhance job performance**”

This study analyzed the impact of organizational climate and Organizational justice on the job performance of statistical area coordinators at the Central Statistics Office. The sample consisted of 75 participants, predominantly male (82% of the sample). Smart-PLS was utilized for structural equation modeling. The study revealed a significant influence of Organizational justice on job satisfaction, while Organizational justice had no effect on the job performance of statistical area coordinators. The study recommended further evaluation of internal and external factors that impact job performance.

3-Study (Dalia & Zain, 2022) “**Analyze the relationships between performance and Organizational justice**”

The aim of this study was to analyze the relationship between Organizational justice as an independent variable and job performance as a dependent variable. The study originated from the question regarding the nature of the relationship between these variables. A questionnaire was used as a data collection tool, distributed to 120 participants from a private organization in Iraq, with 112 valid responses for analysis. The study found a statistically significant positive relationship between Organizational justice and job performance, with procedural justice having the strongest impact on job performance. The study also recommended the use of a performance measurement scale.

I. The theoretical side

1. Theories of justice:

Organizational justice was not come up with by a single researcher in a specific timeline but rather it was an evolution of many ideas throughout the years. Adams is considered to be the pioneer of this term through the theory of equity, which deals with inequalities resulting from social injustice (Adams, 1963). One of the most important theories explaining employee motivation in achievement is Vroom's expectancy theory which indicates that individuals choose to act in a certain way due to what they expect the result will be. He points out that the individual motivation to put in more efforts is the product of his expectancy to achieve the desired results, the first expectancy (Chris & Wes, 2011). The second expectancy addressed in this theory is that of organizational justice, in which an individual is expecting a desirable



reward that meets his needs in return of his favorable performance. However, dissatisfaction may occur in case the reward didn't meet the individual expectations which negatively affects his perception of organizational justice.

The employee has three expectations:

- ✓ **Effort-performance relationship:** What is the likelihood that the employee's effort is recognized in his performance assessment?
- ✓ **Performance-reward relationship:** The extent to which an employee believes that getting a good performance appraisal result in organizational rewards.
- ✓ **Rewards-personal goals relationship:** It is all about the employee's potential reward appeal.

Maslow (1943) claims that people have motives to achieve things that satisfy their needs. However, a tendency for other higher needs emerge as the fulfilled needs are no longer motivating (Tezcan , 2017).

Blau assumes that human is a social being living in interactive communities where social exchange takes place such as mutual give and take kind of interaction. Blau considers someone's output is another's input and comparing the number of social contributions received determines justice. So, feeling injustice helps in perceiving the sense of justice while feeling justice increases stability in social exchange (Blau, 1986) .

Proactive content theory, one of the modern theories, focuses on predicting people's decisions on allocating rewards in which Greenberg believes that applying several allocation rules (equity, contributions and needs) would be of great support to the management decision. For example, equity norms are needed to maintain harmony between group members while using contributions rule would be more feasible to increase productivity. Beside all that, the needs rule is emphasized on to foster personal welfare (GREENBERG, 1987).

Testing the theory of equity and social exchange on a group of individuals about their perceptions of distributive justice shows that there are three groups of individuals (Mamri, 2014):

- ✓ **Justice Sensitive employee:** is a person who assesses justice of equity and social exchange theories, continually seeks to create a balance in social exchange and build his or her perception on the basis of:
 - Input increase or output decrease while experiencing anger.
 - Output increase or decrease while experiencing guilt.
- ✓ **Philanthropist (influencer):** is a person who feels justice only when achieving greater outputs than his inputs and seeks to make more commitments to others even if it exceeds his own benefits from social exchanges relationships.
- ✓ **Non-charitable employee:** is usually a selfish employee who feels justice only when he achieves greater inputs than his outputs and seeks more benefits from others; otherwise, he becomes unsatisfied with any unfavorable outcomes (Rifat, 2003).



Thus, the justice sensitive employee as well as the philanthropist are considered to be more valuable to the Organization.

2. Dimensions of organizational justice

Scholars have divided justice into three dimensions: distributive justice (outcomes), procedural justice (decision-making), and interpersonal justice (interactive) (Russell & Agustin, 2015) .(Piyali , Alka, & Apsha, 2014) ‘ (Diana, Karen, & Kristine, 2014)

3. Performance and state intervention:

Organizations' performance is affected by the intervention of the government since the only concern of the government is to provide consumers with their necessary needs neglecting the organization's chances to compete. In response to that, a call to privatize public organizations has been risen to foster performance. although the private sector is more expected to thrive, it is not taken for granted that the private sector is linked to success or that the public sector is a total failure. (Bel mekadam & bouchaour, 2014).

II Applied side:

1. Preparing the study tool:

The questionnaire consists of three parts: The first part is the personal characteristics of the respondent, such as: gender, age, and educational qualification and years of experience. The second part is related to the organizational justice variable, which in turn consists of three dimensions (A: Distributive Justice (fairness of resource distribution), B: Procedural Justice (fairness of decision-making processes), C: Interactional Justice (fairness of interpersonal treatment)). As for the third part, it is related to the job performance variable. In this context, the questionnaire was pilot tested with a small group of respondents before it was administered on a large scale to ensure clarity, understandability and reliability of the data collected.

2. Sample distribution test method:

Reviewers of research reports often criticize parametric statistical methods, and this criticism may be justified, for example:

Small sample size: Parametric tests often assume a sufficient sample size for accurate inference. When sample sizes are small, the assumptions underlying parametric tests may be violated, leading to inaccurate or unreliable results. In such cases, non-parametric tests or alternative statistical methods may be more appropriate;

3. Normal data distribution: Parametric tests may yield misleading results if the data distribution is highly skewed or contains outliers. Alternatives include using robust statistical methods or non-parametric tests;

4. Use of Likert scale: Likert scales are commonly used to measure subjective responses in surveys or questionnaires. However, the scale itself does not guarantee that the underlying data follows a continuous and normally distributed interval. The use of parametric tests with Likert scale data may violate assumptions and may not be appropriate. Data from Likert scales can be analyzed using non-parametric techniques like ordinal regression or non-parametric testing.



On the other hand, many studies dating back to the 1930s showed that parametric statistics are powerful and can Use it without worrying about getting wrong results (Geoffrey , 2010).

Regarding the sample selection: The sample was selected by applying a formula (Steven , 2012, pp. 59,60) as shown in the following formula:

$$n = \frac{N * p(1-p)}{(N-1)(d^2 \div z^2) + p(1-p)}$$

Where; N is the statistical population size, Z is the standard score corresponding to the level of significance and equal to 1.96, d is the error rate is 0.05, and P is the neutrality ratio, equal to 0.5.

In this regard, in this study, after applying eq. No. (1), the sample size of the questionnaire was estimated at 378 individuals to ensure the clarity, comprehensibility, and reliability of the collected data.

5. Internal consistency:

Internal consistency refers to the extent to which the items or questions within a questionnaire or scale measure the same underlying construct or dimension. It assesses how consistently the items relate to each other within a particular dimension. In other words, it evaluates the reliability or coherence of the questionnaire.

To measure internal consistency, one commonly used method is calculating *pearson* coefficient. where is provides an estimate of the average correlation between items within a scale. It ranges from 0 to 1. However, it is not the correlation coefficients between each individual question and the dimension that are calculated, but rather the inter-item correlations. Each paragraph (or question's) correlation with every other paragraph within the dimension is considered.

Table 1. Correlation coefficients

distributive justice	Paragraph	1	2	3	4			
	Correlation	**0.426	**0.732	**0.714	**0.744			
	Paragraph	5	6			7		
	Correlation	**0.664	**0.659			**0.722		
procedural justice	Paragraph	8	9	10	11	12	13	
	Correlation	**0.797	**0.774	**0.836	**0.685	**0.842	**0.782	
transactional justice	Paragraph	14	15	16	17	18	19	20
	Correlation	**0.525	**0.674	**0.679	**0.639	**0.708	**0.798	**0.760
performance	Paragraph	21	22	23	24		25	
	Correlation	**0.570	**0.594	**0.680	**0.804		**0.678	

Source: Prepared by the authors based on SPSS outputs

Through Table.1, it appears that the study, analyzing the correlations between the variables, shows a medium to strong correlation with a degree of statistical significance at the significance level of 0.000. And after comprehensively evaluating the consistency of the study by reviewing the methodology, analyzing the data, and interpreting the results based on the theoretical context and research objectives, and



after taking into account other factors such as the sample size, the quality of the data used, and the extent to which the sample is representative of the target segment, it can be said that the study has good consistency.

6. Stability of the study tool:

The stability of the study means that the questionnaire gives the same results if it is redistributed more than once under the same conditions, knowing the extent of stability in the results and not changing them significantly if it was distributed to the sample members several times, and the Cronbach's Alpha coefficient was adopted, the coefficient value was as follows: 0.745 This value means a good stability level of the study tool.

7. The attitudes and tendencies of the respondents:

We will calculate arithmetic averages, and standard deviations, through which the dominant trend of each the dimension as a whole can be known

Table 2 attitudes and tendencies

dimension	arithmetic averages	standard deviations	general direction
distributive justice	2.64	0.784	medium
procedural justice	3.10	0.868	medium
transactional justice	3.58	0.659	medium
performance	2.93	0.764	medium

Source: Prepared by the authors based on SPSS outputs

The perception on all dimensions was average; and the standard deviation is small, which means little dispersion in tendencies, Therefore the study can continue, and the hypotheses are tested.

Hypothesis testing:

To validate the hypotheses, simple linear regression was analyzed, the results are in the following table

Table 3 Hypothesis testing

Variants	Regression coefficient	Standard error	The calculated (t) value	Statistical significance
Constant	2.132	0.118	18.089	0.000
performance	0.333	0.039	8.578	0.000
Calculated f-value: 73.577 Sig: 0.000 degrees of freedom (1.376)		Regression Equation Model: $Y = 2.132 + X0.333 + e_i$		
The coefficient of determination $R^2 : 0.164$				
correlation coefficient R :0.405				

Source: Prepared by the authors based on SPSS outputs

It is clear from the table that the model is valid for testing the hypothesis, as the significance level for the calculated f is 0.000 and it fulfills the condition for the significance level $\alpha \leq 0.05$, as well as the value of the calculated f (73,577) is greater than its tabulated value (3.86), and the value of the coefficient of determination was



estimated by : 0.164 This means that job performance is affected by *Organizational Justice* by 16.4%, and the remaining 73.6% is attributed to other factors.

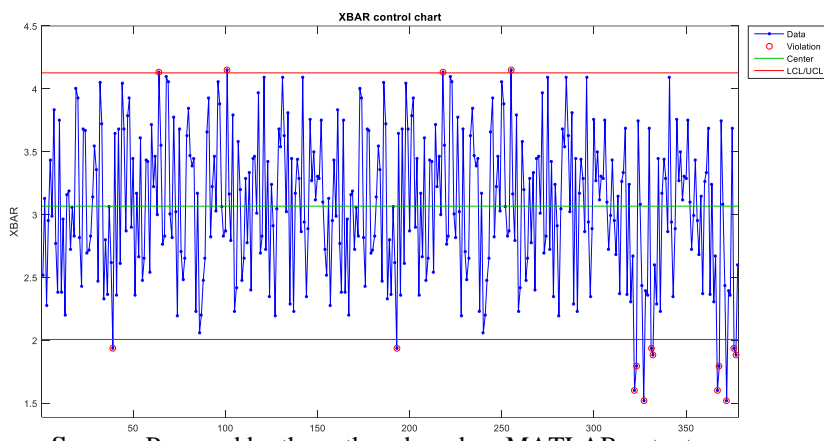
In addition, the significance level for the calculated T value of 0.00 is less than 0.05

Accordingly, we reject the null hypothesis and accept the alternative hypothesis, which says that: There is a statistically significant effect at the level of significance $\alpha \leq 0.05$ between organizational justice and job performance of teachers of the national education sector in Algeria. To determine the size and continuity of this impact, Artificial Intelligence 'AI' techniques were used

8. Control Limits Model:

The function "controlchart" was used to find the control limits and eliminate the outliers, , any points that fall outside the control limits are considered potential outliers or signals of special cause variation. These points indicate that something unusual or unexpected has occurred in the process that needs to be investigated and addressed

Figure 1 : Control limits for the variables of organizational justice and performance



Source: Prepared by the authors based on MATLAB outputs

In this figure, we notice that there are 14 items outside the field of control that do not reflect the general orientation of the sample, as follows:



Table 4. Vocabulary beyond censorship limits

Single number	distributive justice	procedural justice	transactional justice	the performance	Note
39	2.57	1.17	2	2.00	low
64	4.86	4.33	4.14	3.20	High
101	4.00	4.00	5.00	3.60	High
193	2.57	1.17	2.00	2.00	low
218	4.86	4.33	4.14	3.20	High
255	4.01	4.01	4.99	3.59	High
322	1.29	1.00	2.71	1.40	low
327	1.57	1.33	1.57	1.60	low
332	1.29	1.67	2.57	2.00	low
367	1.30	1.02	2.72	1.40	low
368	1.29	2.18	1.72	2.01	low
372	1.57	1.33	1.58	1.60	low
376	2.57	1.17	2.00	2.00	low
377	2.14	2.17	3.29	2.80	low

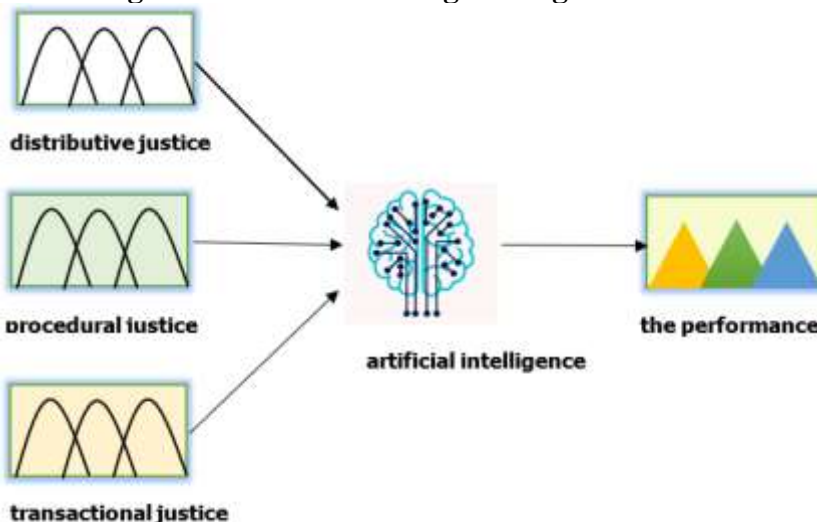
Source: Prepared by the authors based on MATLAB outputs

To develop an AI algorithm with better accuracy of predictive model, the items that are outside the control limits had to be deleted, so we have a database of 364 items (or elements) instead of 378 items, where the impact on model performance was assessed through rigorous testing and evaluation. On the other hand, we engage domain experts who have a deep understanding of our subject matter and who can provide insights into outliers and help determine whether their removal is appropriate or necessary in the context of building an artificial intelligence algorithm.

9. Proposed Model for Artificial intelligence Algorithm:

In our study, we have three inputs (distributive justice, procedure justice, and transactional justice), which represent the organizational justice variable, and we also have one dependent variable (performance).

Figure 2: Artificial intelligence algorithm model



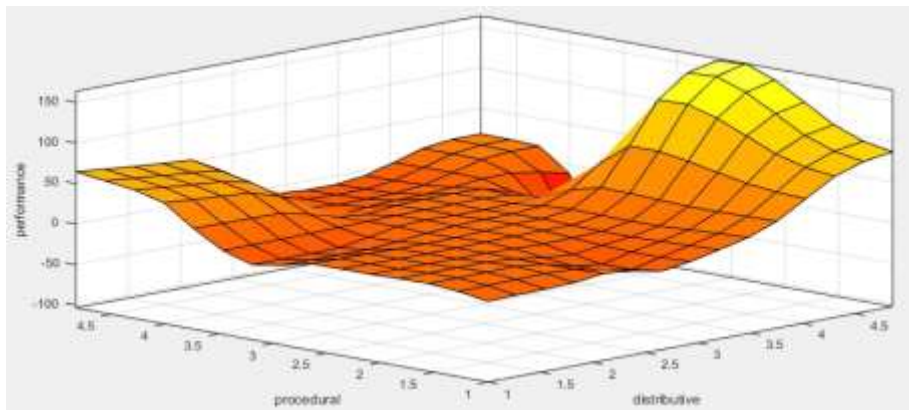
Source: Prepared by the researchers

On the basis of this model, the adaptive inference system ANFIS (Adaptive Neuro Fuzzy Inference System) was used in training the prediction algorithm, where the database was divided into three parts, a part consisting of 290 items, training the algorithm, a part consisting of 60 items testing the learning outcomes, and a motorized part of 14 items. Intent to manually check the prediction algorithm. The training was carried out with the previous data, and the number of training runs (Epoch) was determined by 100 runs, and the internal training model "GAUSSMF" was determined, so we got an error rate in the prediction process estimated at 17.8%, and this is a good percentage compared to using the multi-layered neural network integrated with SPSS program.

10. Form Validity:

By using the "Surf." function for drawing, it is possible to verify the validity of the model, and this is because there are no sharp breaks in the three-dimensional surface and the presence of a gradual transition between the colors of the surface, and because it is not possible to observe four dimensions on paper, the (performance) dimension was fixed and changed every time the dimensions of organizational justice (justice distribution, fairness of procedures, fairness of dealings).

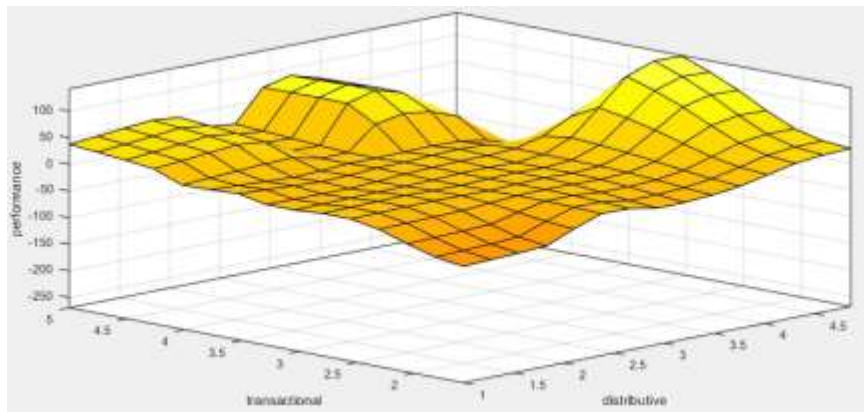
Figure 3: Validity of the distribution fairness model and the fairness of procedures with performance



Source: Prepared by the authors based on MATLAB outputs

Through this form, it can be said that the model of fairness of distribution and fairness of procedures with performance is valid due to the absence of sharp refractions as well as a gradual transition of colors on the surface.

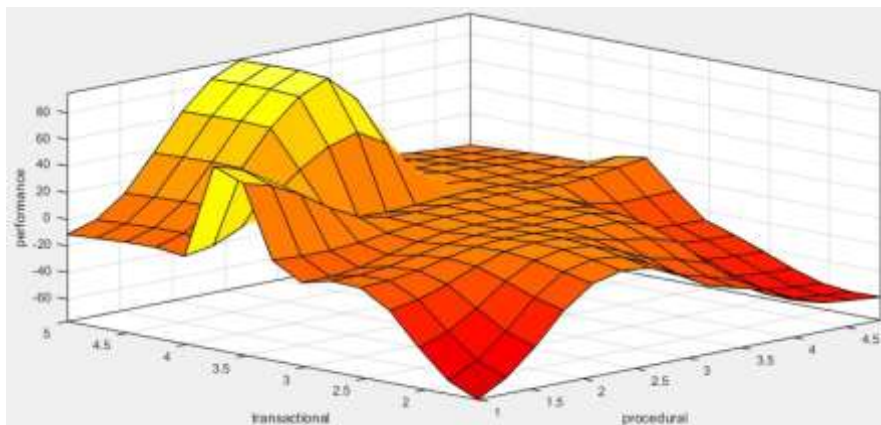
Figure 4: Validity of the distribution fairness model and the fairness of transactions with performance



Source: Prepared by the authors based on MATLAB outputs

Through this figure, it can be said that the model of fairness of distribution and fairness of dealings with performance is valid due to the absence of sharp refractions, as well as a gradual transition of colors on the surface, so we notice the transition from yellow to red passing through orange.

Figure 5: Validity of the model of fairness of procedures and the fairness of dealings with performance



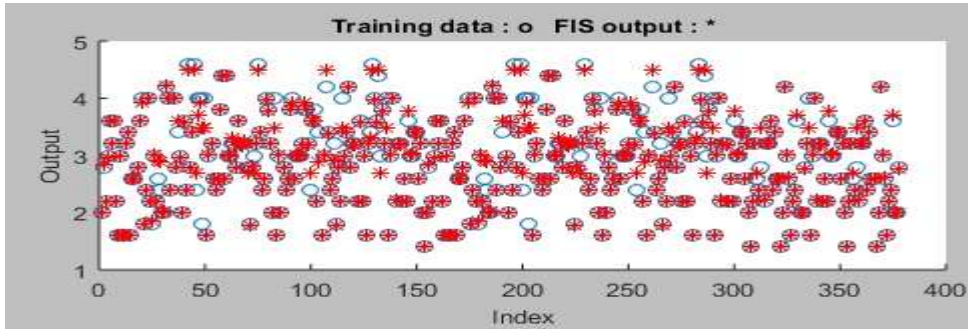
Source: Prepared by the authors based on MATLAB outputs

Through this form, it can be said that the model of fairness of procedures and fairness of dealings with performance is valid due to the absence of sharp refractions

The model is also characterized by flexibility and durability at the same time, due to the presence of a smooth transition between colors and the absence of a direct transition between red and yellow without going through orange. (HADROUG, HAFIFA, KOUZOU, & CHAIBET, 2016)

11. The results of the training process:

Figure 6: Results of the training process of the prediction algorithm



Source: Prepared by the authors based on MATLAB outputs

The blue circles symbolize the questionnaire data prepared for the purpose of training, while the red stars symbolize the expected outputs (performance) based on the same data for the blue circles.

Through this figure, we notice that most of the blue circles representing the sample data and the red stars correspond to the expected value, and this indicates that the prediction effectiveness of the algorithm is good.

12. View the predictive results of the algorithm:

By analyzing the results, it is possible to reach:

- The lowest value of organizational fairness that can affect performance is 1.50 units;
- The maximum value of organizational fairness that can influence the level of performance is 4.45 units;
- The lowest value of organizational fairness that can achieve the greatest level of performance is 3.26 units;
- The maximum achievable level of performance with organizational justice is 3.36 unit;
- The lowest value that can be recorded for the level of performance in the presence of a low level of organizational justice is: 1.57 units;
- And the impact of organizational justice in the domain (3.92 to 4.45) is proven on the level of performance, as whatever the level of organizational justice in this domain is, we will get a level of ≈ 3.7 units of performance;

13. Study results:

- Perception level of organizational justice “medium”.
- Perception level of performance job “medium”.
- There is a statistically significant effect of organizational justice on the job performance of teachers in public educational institutions.



- There is an impact of organizational justice on the performance of workers in the public sector "Directorate of Education in the state of Djelfa".
- The size of the impact of the level of organizational justice on the level of performance will not exceed 1.69 units, or 33.8%, at its best.
- There is a continuous impact of organizational justice within the domain [1.50, 4.45] on performance in the range of 33.8%.
- The largest impact of organizational justice on performance is at 3.26.
- Proves the level of performance, and this may explain the stability of motivation towards achievement once the individual's needs for organizational justice are satisfied (belaid & belaadi, 2022).

Conclusion:

The levels of perception of organizational justice depend on the levels of employee expectations on the one hand and what is the reality on the other hand, so we find transactional justice the most difficult in terms of perception, as it is not subject to quantitative standards, unlike distributive justice and procedural justice, and public performance is considered one of the topics that are still under research, especially methods of evaluating performance in public facilities, This study concluded that there are average levels of awareness of Organizational Justice in its dimensions and job performance from the point of view of teachers of public educational institutions in Algeria, and there is a continuous, statistically significant effect of Organizational Justice on job performance in the range of 33.8%. The study also recommends the need to find modern methods of evaluation of job performance as well as reconsidering the wage scale in line with the purchasing power of a professor in light of the high prices.

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