A healthy public administration through healthy organizational practices

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Abstract: In the present study we have proposed a theoretical model based on Kopelman, Brief & Guzzo’s model (1990), in which transformational leadership is positioned as an antecedent of organizational climate, and the psychological capital, as a consequence of that climate. The theoretical model was tested using structural equations in a sample of 277 employees of a public Administration. The good fit of the data according to the revised goodness of fit indexes, both in the confirmatory analysis for each variable and in the structural model statistically validates our theoretical model, accepting the study hypotheses. This makes clear the need for the Administration to propose transformational leadership measures at the individual, team and organizational levels to strengthen the achievement of positive outcomes through positives organizational climate and psychological capital.

Key words: organizational climate; leadership; psychological capital; structural equations; public Administration.

Introduction

Public sector in Spain accounts for 41% of the expenditure of Gross Domestic Product and its relevance is higher than that of any other economic sector or organization. The central role of Administration, in both numerical data and development of the country, deserves the concentration of efforts so that its operation is suitable (PerC Spain, 2012). This research started out as an analysis derived from changes in the structure and practices of the institutions in this sector with the aim of checking how management practices affect both climate and psychological capital of employees.

Since the studies carried out by Lewin, Lippitt & White (1939), whose research on experimentally created social climates can be considered the starting point for the scientific study of climate, a rise concerning its study has become more prominent in recent decades due to its wide significance in organizational outcomes (Salgado, Remesero & Iglesias, 1996).

Psychological climate is based on the descriptions of the work environment perceived by the employees (Schneider, 2000). As logical climate is subject to contextual and social influences, socially constructed and common beliefs can emerge producing a shared sense of meaning of the work context, or organizational climate (Kozlowski & Klein, 2000). It is necessary to distinguish between psychological climate and organizational climate. The first refers to the individual perception of work environment, that’s to say a worker or work environment. On the other hand, organizational climate refers to the shared perceptions of employees concerning the practices in a particular setting (Schulte et al. 2009). Employees share similar interpretations of those events that have an influence on their assessment so that the potential difference is such that climate can become key to achieving goals (Ostroff & Bowen, 2000).

At the same time, that research on organizational climate is constantly increasing, as can be contrasted in the number of search results from Scopus and ProQuest. The focus on the study of climate has been changing from the original investigations to recent times; besides, its conceptualization remains a matter of debate (Moran & Volkwein, 1992; Schneider, Ehrhart & Macey, 2013). Early research on climate, including the aforementioned study by Lewin, Lippitt & White (1939) emphasized the employees’ overall perception of their organizations, and this was based on the belief that people create consistent cognitive representations of the total situation (Lewin, 1951). Later, the interest in the study of climate jumps squarely into the field of organizations. Somewhat independently of the author or theory of reference, organizational environment is composed of dimensions of variable number, and these dimensions will characterize specific aspects of the organizational environment (Salgado, Remesero & Iglesias, 1996; Schneider, Ehrhart & Macey, 2013). This paper based the study of climate on the position of the Competing Value Framework of Quinn & Rohrbaugh (1983), proposing two main axes around which four dimensions of the variable are linked: the axis “structure,” with the ends of “flexibility” versus “control” and the axis “focus” with the ends of “internal orientation” versus “external orientation”. The combination of these two axes results in the dimensions of support, innovation, rules and goals. As indicated in Boada i Grau, De Diego Vallejo & Aguilló (2004),

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some dimensions of the resulting spatial model will predomi-
ninate in the environment of an organization over others. In
addition, it is generally unknown whether the pattern of re-
sults in research on climate can be generalized to other or-
ganizations or institutions, for example to the public sector.
When conducting assessments to measure the same variable,
different instruments from different theoretical models can
be used, and they do not necessarily coincide with the Com-
peting Value Framework of Quinn & Rohrbaugh (1983) ab-
out climate in which this research is based.

As climate is based on descriptive employee’s perceptions
of human resources practices, among which leadership
styles are included (Kopelman, Brief & Guzzo, 1990), it is
justified that the relationship between leadership and climate
has been widely studied in organizational literature. The no-
tion of leadership as a climate antecedent has hardly changed
over the past five decades (Zohar & Tenne-Gazit, 2008) and
plenty of studies have shown a direct correlation between
leadership and organizational results. For example, accord-
ing to Bass & Avolio (2000), transformational leadership style
would rather enhance the development of organizational re-
sults than a style based on transactional leadership, which
is based on the satisfaction or fulfillment of a contractual obli-
gation by both parties. Transformational leadership refers to
the leader moving the employees through attitudes, beliefs
and values; achieving a performance above expectations
(Bass, 1985). The fundamental difference is that the trans-
formational leader knows how to lead others towards a goal
that ends up being perceived as shared and achieves the
organization and organization commitment (Salanova, 2008). On
the other hand, in the study conducted by Zohar & Tenne-
Gazit (2008) it was shown, with a sample of 1328 soldiers,
that transformational leadership predicts the emergence and
subsequent strength of climate, both in a direct relationship
and in a relationship mediated through the creation of social
networks between members of the groups. In general, be-
behaviors that correspond with transformational leadership are
those that transmit an attractive view; serve as role models
for employees; and respond to individual values, needs and
goals training employees and strengthening a climate of trust
(Syrek, Apostol & Antoni, 2013). Our paper takes the theo-
retical proposition by Rafferty & Griffin (2004), which is
based on the model of Bass (1985) for transformational lead-
ship. In a different way from previous studies, our sample
consists of employees of a public administration and the rela-
relationships will be tested in a structural model (Rosseel,
2012a). Thus, we propose our first hypothesis:

H1: Transformational leadership is positively and signifi-
cantly related to organizational climate.

We have positioned transformational leadership as an an-
tecedent of organizational climate (see Figure I), and we have
checked this relationship with psychological capital of em-
ployees as a consequence of such climate. This structure fol-
lows the model of Kopelman, Brief & Guzzo (1990). Ac-
cording to which, organizational culture influences manage-
ment practices of Human Resources in the organizations,
among which are leadership practices. These, as a whole, in-
fluence organizational climate and, finally, productivity
(Bowen & Ostroff, 2004). Therefore, practices such as tran-
sformational leadership influence productivity through its ef-
ects on climate (Mañas, González-Romá & Peiró, 1999).

Climate also plays an important role in the attitudes of
workers. For a little more than a decade, the relationship be-
tween climate and attitudes, such as job satisfaction, com-
mitment and even turnover intentions, have been demon-
strated (Carr, Schmidt, Ford & DeShon, 2003). Psychological
capital, attitudinal component of our theoretical proposal,
has its starting point in the studies of Luthans & Youssef
(2004), and is defined as the positive appraisal of circum-
stances and probability for success based on motivated effort
and perseverance. At the same time, a positive psychological
capital has been linked to positive outcomes. Using a sample
of 79 police leaders and 264 subordinates, Walumbwa, Peters-
on, Avolio & Hartnell (2010) found that leader’s psycholog-
ical capital was positively related to the performance of the
subordinates and with this relationship mediated by climate
relationship, in such a way that the relationship was stronger

![Diagram of the theoretical model proposed for study.](image-url)
when service climate was perceived to be high versus low. Furthermore, psychological capital predicted nominal performance. One explanation given is that leaders are described by their followers as role models; thus, when they perceive that leader’s behavior is positive, they behave similarly in an attempt to emulate their ways so that the psychological capital of the leader would positively influence the psychological capital of employees (Walumbwa et al., 2010).

In another research, Luthans, Avolio, Avey & Norman (2007) analyzed the four dimensions of psychological capital that we stand in the present work: efficacy, hope, resilience and optimism and they found a significant positive relationship between these and performance and satisfaction. The grouping of these four dimensions into one, psychological capital, is congruent as it predicts better variables, such as performance and satisfaction, than these four dimensions taken individually. Currently, there are studies that indicate that psychological capital is related to attitudes, behaviors and performance in organizations; and that performance can be improved to develop psychological capital of employees (Luthans, Avey, Avolio & Peterson, 2010; Luthans, Luthans & Luthans, 2004). As our second hypothesis we have checked the relationship between organizational climate and psychological capital, composed of the four dimensions resulting from the study by Luthans et al. (2007). It will be tested an influence relationship between the two variables object of study rather than a mediating relationship of psychological capital, as studied in the aforementioned research by Walumbwa et al. (2010). Thus, understanding the psychological capital and its component dimensions in accordance with the proposal of Luthans & Youssef (2004), we propose the second hypothesis of this research:

H2: Organizational climate has a positive and significant relationship with psychological capital.

In order to position the present study in the literature about organizations, it should be noted that the proposed relationship between climate and psychological capital has not been previously studied, and that is based on a sample of public employees and integrates a variable on practices of human resources management, transformational leadership. On this variable will be viable intervention if the structural equation modeling is adjusted to the goodness of fit indices to revise. Today, most of the research conducted has explored the mediation role of psychological capital in the relationship between climate and organizational results, as Organizational Citizenship Behavior (Suifan, 2016; Qadeer & Jaffery, 2014; Luthans, Norman, Avolio & Avey, 2014). However, the direction of this relationship still remains ambiguous and psychological capital has not been fully studied as a mediating mechanism in research literature (Qadeer & Jaffery, 2014). Instead, we will test other proposal based on Kopelman, Brief & Guzzo’s model (1990).

Method

Participants

Participants in this study were 277 employees from a public Administration in the province of Almería. Regarding age, the most represented group of participants, 64.4%, was between 35 and 50 years. According to sex, men comprised 45.5%, while women comprised 54.5% of the sample. The most representative academic level was college degree, with 69.8%, followed by vocational training, with 18.7% of the total.

Instruments

Each variable was measured by administering a questionnaire. In the case of organizational climate, FOCUS-93 questionnaire was applied in its 12-item version, with 3 items for each dimension (support, goals, innovation and rules). This questionnaire, which was originally developed by Van Muijen et al. (1999), is based on the Competing Value Framework by Quinn & Rohrbaugh (1983). All the items are on 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). For the transformational leadership variable, the questionnaire by Rafferty and Griffin (2004), based on the Bass model (1985), was used after review. The instrument consists of 15 items, with 3 items for each dimension (vision, inspirational communication, intellectual stimulation, supportive leadership and personal recognition). All the items are on 7-point Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree). Finally, the psychological capital variable was measured by the instrument developed by Luthans et al. (2007) in its reduced version of 12 items. All items use a 6-point Likert scale response format, with answers ranging from 1 (strongly disagree) to 6 (strongly agree), with 2 or 3 items for each dimension (efficacy, hope, resiliency and optimism).

Procedure

The questionnaires were applied to each employee considering the working groups of the administration, respecting their working day, and on the premises of the institution itself. Instructions required for the completion of the instruments were given previously and all doubts were resolved individually. Confidentiality and anonymity in information processing was guaranteed by the use of codes in the questionnaires. The information was treated by creating a database on IBM SPSS program, version 22. Subsequently, the base was exported to R, version 1.65, for structural equation modeling (Fox, 2006), to which the following packages were installed: "lavaan" version 0.5-16 (Rosseel, 2012b), "e1071" for studying the univariate normal, "MVN" package for multivariate normality, "foreign" for reading data from SPSS and "qgraph" and "semPlot" packages for graphic models. Using R, the proposed theoretical model will be determined and
validated so that if our model produces a covariance matrix of the population that is consistent with the observed matrix covariance, our theoretical model will be validated (Rosseel, 2014).

Confirmatory factor analysis (CFA) models were applied, after exploring the data in SPSS software, on the bases of the criteria for fitting the models suggested by Hu & Bentler (1999). The models were adjusted using Diagonally Weighted Least Squares (DWLS) or Robust Maximum Likelihood (RML), depending on the fitted model (Chou, Bentler & Satorra, 1991; Jöreskog & Sörbom, 1996). In particular, since DWLS method requires a great amount of data in order to be applicable: number of data need for parameters to be estimated is approximately $p(p+1)/2$, the RML method was used when the amount of parameters to be estimated in the model were so large that the DWLS method could not be applied (Hox, Maas & Brinkhuis, 2010). Standardized values were taken for both latent and observed variables, what is called "completely standardized solution" (Rosseel, 2012a). In addition, in order to measure the internal consistency of the dimensions the Cronbach's alpha was obtained for each of the constructs (Cronbach, 1951).

**Results**

Table 1 summarizes the results of goodness of fit index for each variable. The normality assumption was not met for any of the variables. In the case of organizational climate, the estimation method used was MLR (see Figure 2).

<table>
<thead>
<tr>
<th>Model</th>
<th>CFI</th>
<th>TLI</th>
<th>RMSEA</th>
<th>LO90*</th>
<th>HI90*</th>
<th>SRMR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational climate</td>
<td>0.972</td>
<td>0.962</td>
<td>0.052</td>
<td>0.036</td>
<td>0.068</td>
<td>0.035</td>
</tr>
<tr>
<td>Transformational leadership</td>
<td>0.958</td>
<td>0.945</td>
<td>0.075</td>
<td>0.063</td>
<td>0.087</td>
<td>0.036</td>
</tr>
<tr>
<td>Psychological capital</td>
<td>0.988</td>
<td>0.984</td>
<td>0.037</td>
<td>0.008</td>
<td>0.058</td>
<td>0.065</td>
</tr>
<tr>
<td>Final SEM</td>
<td>0.996</td>
<td>0.995</td>
<td>0.023</td>
<td>0</td>
<td>0.044</td>
<td>0.059</td>
</tr>
</tbody>
</table>

*LO90 = Lower limit of a 90% confidence interval for RMSEA index, and HI90 = Upper limit of a 90% confidence interval for the same index.

Based on the relative fit indices (Comparative Fit Index) $= 0.972$ and TLI (Tucker Lewis Index) $= 0.962$, we obtain a good data adjustment; both indices can lead to a result between 0 and 1, with 0 indicating a poor fit and 1 a perfect fit, considering good those results above 0.9 (Hu & Bentler, 1999). The results of the indices of absolute fit, RMSEA (Root Mean Square Error of Approximation) $= 0.052$ (90% confidence interval with lower and upper limit of 0.036 and 0.068, respectively) and SRMR (Standardized Root Mean Residual) $= 0.035$, indicated a good data fit. Scores below 0.08 in both indices indicate a correct fitting model (Hu & Bentler, 1999).
In the confirmatory analysis for the transformational leadership variable (see Figure 3), the estimation method was again MLR. The fit of the data was based, as in the previous variable, on relative and absolute fit indices, $\text{CFI} = 0.958$; $\text{TLI} = 0.945$; $\text{RMSEA} = 0.075$ (90% confidence interval with lower and upper limit of 0.063 and 0.087, respectively) and $\text{SRMR} = 0.036$. Table 2 shows the covariance matrix of the confirmatory model for transformational leadership.

![Figure 3](image_url)

**Figure 3.** Confirmatory model of transformational leadership, estimated using the MLR method. See Table II for checking the values of the missing covariance estimates. $^*p < .01$.

**Table 2.** Covariance matrix of the confirmatory model of transformational leadership.

<table>
<thead>
<tr>
<th>Dimensions</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Vision</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Inspirational comm.</td>
<td>.848*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Intellectual stimul.</td>
<td>.838*</td>
<td>.852*</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Supportive leadership</td>
<td>.833*</td>
<td>.791*</td>
<td>.793*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>5. Personal recognition</td>
<td>.729*</td>
<td>.723*</td>
<td>.738*</td>
<td>.877*</td>
<td>1</td>
</tr>
</tbody>
</table>

$^*p < .01$

DWLS estimation method was chosen for confirmatory analysis of the psychological capital variable (see Figure 4). We worked again on the same indices we used to test the fit: $\text{CFI} = 0.988$; $\text{TLI} = 0.984$; $\text{RMSEA} = 0.037$ (90% confidence interval with lower and upper limit of 0.008 and 0.058, respectively) and $\text{SRMR} = 0.065$. In this way, the fit of the data was good. In addition to the fit indices, the reliability was calculated using Cronbach’s alpha coefficient for each of the confirmatory models (Cronbach, 1951). In the case of organizational climate, a score of 0.907 was obtained, it increased to 0.938 for the transformational leadership variable, and it was 0.853 in the case of the psychological capital variable.
Regarding the final structural model (see Figure 5), it was chosen the DWLS method for the estimation, obtaining the following results of the goodness of fit indices: $CFI = 0.996$; $TLI = 0.995$; $RMSEA = 0.023$ (90% confidence interval with lower and upper limit of 0 and 0.044, respectively), and $SRMR = 0.059$. Positive and significant regressions were found between transformational leadership with organizational climate ($\beta=0.523; p < .01$), and organizational climate with psychological capital ($\beta=0.256; p < .01$). Cronbach's alpha coefficient, calculated from the final model, was 0.844. The above indices indicate a good fit of the data of the proposed theoretical model. All estimates, both in the final model and in the confirmatory analysis of each of the variables, were statistically significant at $p < 0.01$.

**Figure 5.** Final model, calculated using structural equations with DWLS estimation method. Positive and significant regression between transformational leadership and organizational climate of 0.523 and positive and significant regression between organizational climate and psychological capital of 0.256. $p < .01$.

**Conclusions**

The aim of this study is to test the influence of management practices on organizational climate and employees’ psychological capital. Starting with our first hypothesis of study, this has been validated obtaining a positive and significant relationship between transformational leadership and organizational climate. The results of our research are consistent with the most current research on this relationship (i.e., Zohar & Tenne-Gazit, 2008). In this way, we refer to the importance...
of developing leaders capable of directing people towards a shared purpose and achieving the commitment, as it will lead to the strengthening of a positive organizational climate. This, compared with transactional leaders, must assume the reference point in organizations to achieve a positive psychological capital among their workers, like other affective variables and positive attitudes, such as job satisfaction or motivation. Validated in our study a relationship between transformational leadership and organizational climate, it becomes clear for the organization to train transformational leaders and to propose measures for individuals, work teams and organization to strengthen a positive climate. Among other measures, we can highlight the need to promote institutional loyalty, generate enthusiasm among the members of the organization with the aim of reaching a collective identity of all workers or that they actively participate by forming working teams to establish dynamics on continuous improvement processes of the administration and, at the same time, to check the effectiveness of the participation system.

The second hypothesis of study has also been validated with a well-fitting model, obtaining a positive and significant relationship between organizational climate and psychological capital. We proposed a differential approach connecting organizational climate and psychological capital, suggesting in our research a direct relationship between the two variables instead of posing psychological capital as a mediating variable of the relationship between climate and organizational results (see, for example, the aforementioned article by Suñán, 2016). The data obtained in our study supports our hypothesis, based on the model by Kopelman, Brief & Guzzo (1990). Being the psychological capital a variable of recent study (Luthans & Youssef, 2004), further research is needed to support either approach and to support integrating theories with the variables under study. Direct practical implications derived from this finding also express the need to foster a positive organizational climate on employees. Although we obtained a regression of 0.256 between organizational climate and psychological capital, a direct relationship can be attributed as they show a statistically significant result with the well-fitted model, according to the goodness of fit indices reviewed.

With both study hypotheses accepted, our theoretical proposal has been statistically validated. In this proposal, the transformational leadership variable is positioned as antecedent of organizational climate; and psychological capital, as resulting therefrom. The contribution of our study was to strengthen the importance of transformational leadership as a new management style; its impact on organizational climate; and how the latter is a catalyst for psychological capital of administration employees. Therefore, the benefit to the employees of this public Administration lies in making a diagnosis of labor welfare through the relationships between the variables under study and how to improve it.

Despite the contributions of this paper, it is important to consider different limitations of statistical analysis, participants and results. Regarding statistical analysis, we are aware of the fact that if a model gets a good fit with a sample, it does not eliminate the possibility of others alternative theoretical models that can adjust well to the data collected. The relevance of statistical analysis conducted in this study gives way to further research in order to reaffirm the validity of the relationship of variables proposed. Inferences should not be regarded as definitive as no casual relationships have been studied. Our research has been conducted within the framework of the model of Kopelman, Brief & Guzzo (1990), which supports the results obtained in the present study. With respect to the sample, we have been able to show the validity of the model when collecting variables of more recent studies on public employees, but we do not have data in this research that support other kinds of organizations. As a last limitation, regarding the capacity of generalization of the results, research using structural equations can only be generalized to that sample population.

Concerning future research, a comparative study of the theoretical model could be an object of interest reviewed in other than public administration. On the other hand, a study with transcultural participants should be introduced. With respect to other proposals of statistical analysis, if we performed a multilevel analysis, we could test the relationship among individuals, work groups and the organization with its formal leader. Similarly, a longitudinal study would allow continuous evaluation of changes in the organization, data which have not been collected in this study.

References
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