

## Assessing Organizational Climate: Psychometric properties of the ECALS Scale

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**Título:** Evaluación de Clima Organizacional: Propiedades psicométricas del ECALS.

**Resumen:** *Antecedentes:* El clima organizacional (CO) es un constructo fundamental en entornos laborales y organizacionales, ya que permite la exploración de comportamientos individuales y grupales dentro de las organizaciones. El objetivo del presente estudio fue desarrollar una nueva escala llamada Escala de Clima Organizacional del Ambiente Laboral Subjetivo (ECALS) en el contexto chileno. *Método:* La muestra estuvo formada por 1,442 trabajadores con una media de edad de 30.48 años ( $DT = 11.13$ ). Un total de 55% fueron trabajadores públicos, un 34.5% fueron trabajadores de organizaciones privadas con fines de lucro y un 10.5% pertenecían a organizaciones privadas sin fines de lucro. Se llevaron a cabo diferentes análisis factoriales exploratorios y el mejor modelo exploratorio se comprobó en un análisis factorial confirmatorio. Además, se analizó si existían diferencias en las dimensiones del ECALS entre los trabajadores pertenecientes a las diferentes organizaciones. *Resultados:* La escala estuvo formada por 38 ítems con adecuadas propiedades psicométricas y una estructura bifactor, con un factor general (CO) y cinco dimensiones específicas (Confianza organizacional, Tensión laboral, Apoyo social, Retribución, y Satisfacción laboral). *Conclusiones:* Estos resultados indican que la nueva escala tiene adecuadas propiedades psicométricas, permitiendo evaluar de manera fiable y válida el clima organizacional en el contexto chileno.

**Palabras clave:** Clima organizacional. Propiedades psicométricas. Evaluación. Bifactor.

**Abstract:** *Background:* Organizational Climate (OC) is a basic construct in work and organizational environments, since it allows exploration of individual and group behaviours within organizations. The object of the present study was to develop a new scale called the Subjective Work Environment Organizational Climate Scale (Escala de Clima Organizacional del Ambiente Laboral Subjetivo – ECALS) for the Chilean context. *Method:* The sample consisted of 1,442 employees, mean age 39.48 years ( $SD = 11.13$ ). A total of 55% were public employees, 34.5% were employees in commercial private organizations and 10.5% belonged to not-for-profit private organizations. Different exploratory factorial analyses were applied and the best exploratory model was tested in a confirmatory factorial analysis. We also analysed whether differences existed in the dimensions of ECALS between employees belonging to the different types of organization. *Results:* The scale consists of 38 items with adequate psychometric properties and a bifactorial structure, with one general factor (OC) and five specific dimensions (Organizational trust, Job strain, Social support, Reward and Job satisfaction). *Conclusions:* The results indicate that the new scale has adequate psychometric properties, providing reliable, valid evaluation of the organizational climate in the Chilean context.

**Keywords:** Organizational climate. Psychometric properties. Evaluation. Bifactor.

### Introduction

The dynamic of an organization is a multidimensional concept configured from the inter-relation of internal organizational variables, including factors of structure, social environment, personal variables and physical environment (Ehrhart et al., 2014). Pérez-Luco (2008) proposes a generic construct within the work environment called the Subjective Work Environment (Ambiente Laboral Subjetivo – ALS) as a conceptual model in which specific dimensions of organizational climate and culture, work-related stress and confrontation techniques inter-relate. This model would describe comprehensively the subjective organizational dynamic of the employees. The combination of the specific dimensions of organizational climate and culture in the ALS construct offers better understanding of the expressive, communicational and human dimensions of organizations, and their importance in the constitution of organizational life (Ehrhart et al., 2014; González-Romá & Peiró, 2014). Recently, researchers into organizational climate and culture have taken a step forward, concentrating on how and why the two constructs can be integrated to offer a more parsimonious view of the upper order social structure of an organization (Chatman & O'Reilly, 2016; Schneider et al., 2013; Schneider et al., 2017). Within this field of investigation, the debate on organizational culture and climate (OC) has been productive, contributing to understanding of how people give meaning to their organizational contexts and how these collective significates shape attitudes and behaviour subsequently (Arvey et al., 2016; Ostroff & Schulte, 2014). The ALS construct, in its specific dimensions of work-related stress and confrontation techniques, fits directly with Job Demands-Resources (JD-R) theory (Bakker & Demerouti, 2018). JD-R theory seeks to understand the factors that determine employee welfare (e.g. burn-out, health, motivation) and work performance. According to this theory, job contexts can be divided into two categories: job demands and resources. The theory can be applied to all kinds of professions and their respective work environments (Schaufeli, 2017). Job demands are defined as those aspects of the job (physical, psychological, social or organizational) that require an effort by the employee, with associated consequences. Job resources refer to those aspects of job contexts (physical, psychological, social or organizational) that help the employee to cope with the demands, facilitating the achievement of objectives and stimulating his/her growth and development (Bakker & Demerouti, 2018; Hakanen et al., 2017).

OC reflects the shared significates that the members (work units) attribute to the events, policies, practices and procedures that they experience, as well as the behaviours

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that they see are rewarded (Chatman & O'Reilly, 2016; Ehrhart et al., 2014; Loh et al., 2019; Schneider et al., 2013). OC is theorised as a group construct which represents the collective perceptions of the work environment, assessed individually and based on self-reporting by which the employee assesses his/her own perceptions of these aspects (Méndez et al., 2017; Trógolo et al., 2019). According to the ALS model, the OC is influenced by the culture of the or-

ganization and the support given by its leader, which in turn moderates individual perceptions and exercises reciprocal influence on intersubjective processes. It also considers processes of work-related stress (demands) and confrontation techniques (personal and job resources) as important variables affecting occupational welfare and organizational performance (Figure 1).

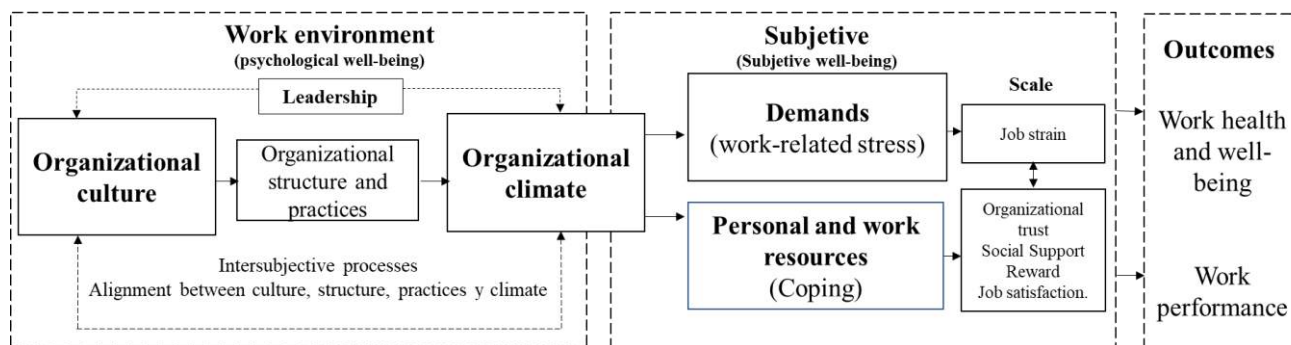


Figure 1. Subjective Work Environment Model for Organizational climate.

A distinction is made in the literature between whether the climate is a property of the organization or of the person who perceives it. In this context "Psychological climate" is used to refer to the climate in the organization assessed by the individual, while "Organizational climate" refers to the collective level. Furthermore, there is no unanimous agreement on the specific dimensions which make up the OC construct, where the specific dimensions of organizational attributes have mingled with individual attributes (Ehrhart et al., 2014; Zohar & Hofmann, 2012). The five specific dimensions identified for OC in the ALS model (Organizational trust, Job strain, Social support, Reward and Job satisfaction) provide evidence of dimensions which supposedly characterise the OC variable (Akbaba & Altindag, 2016; Pedraza & Bernal, 2018).

This wide variety of proposals is reflected in the questionnaires created to assess OC, which vary with language and culture. Questionnaires in English include *Psychological Climate Questionnaire* (Jones & James, 1979), *Organizational Climate Measure* (Patterson et al., 2005), and *Survey of Organizational Characteristics* (SOC) (Thumin & Thumin, 2011). In Spanish-speaking countries there are measurement scales like the FOCUS-93 questionnaire (González-Romá et al., 1996); IPAO, the instrument used to measure OC in Colombian companies (Gómez, 2004); the organizational climate element in the design of the *Balanced Scorecard* (BSC) (Silva, La Torre, López and Bastos, 2011); and the Organizational Climate Scale (Escala de Clima Organizacional – CLIOR) (Peña-Suárez et al., 2013).

Noted instruments in the Chilean context are: the Organizational Climate Questionnaire (Cuestionario de Clima Organizacional) (Chiang et al., 2007), composed of 12 specific dimensions (internal communication, recognition, interpersonal relations at work, quality at work, decision-making,

physical surroundings, objectives of the institution, commitment, adaptation to change, delegation of activities and functions, external coordination, productivity efficiency); the Work Climate Scale (Escala de Clima Laboral) of Ramírez (2008), which consists of 8 specific dimensions (extrinsic commitment, colleagues and cohesion, supervisor support, job description, infrastructure, fairness and autonomy, recognition of merit and intrinsic commitment); and the Organizational Climate Questionnaire for High Complexity Hospitals (Cuestionario de Clima Organizacional para Hospitales de Alta Complejidad) (Bustamante-Ubilla et al., 2015), which has 14 specific dimensions (structure, responsibility, reward, risk, warmth, support, conflict management, identity, supervision style, work motivation, job stability, development opportunities, communications, teams and distribution of personnel and material). Nevertheless, these instruments are designed preferentially for the assessment of health teams, and therefore incorporate the context and organizational dynamics of the health sector. Moreover, other aspects could be included to highlight their importance for the construction of a new OC scale for the Chilean context. The Subjective Work Environment Organizational Climate Scale (ECALS) proposes a more comprehensive construct than those in current use for diagnosing the subjective work dynamic of complex organizations, both public and private. It is also intended to respond to the absence of OC scales in the Chilean population, using a wide sample of Chilean employees for subsequent application in various areas of the productive sector. Thus the proposed scale is a contribution to the clarification and technical updating of the field of OC evaluation, since it will allow OC to be evaluated in different organizational contexts, favouring more accurate diagnosis of the work environment. Furthermore, with the new organizational climate scale we hope to establish a first step to-

wards the future development of the ALS construct in the evaluation of the dynamics of complex organizations, understood as those with four or more divisions in their organizational structure, three or more levels of hierarchy and a minimum of 200 employees (Pérez-Luco, 2008; Rodríguez, 2002).

In this framework, the principal object of the present investigation is to construct a new instrument for measuring OC in the Chilean context, which can be applied in different organizational contexts, to provide a more precise diagnosis of the work environment. A secondary object is to try to compare the psychosocial dimensions of the employment experience of employees in public organizations, commercial private organizations and not-for-profit private organizations, to try to distinguish between conditions which have a positive or negative impact on employees in the different types of organization.

## Method

### Participants

The sample consisted of 1,442 employees in service and production organizations, seven public and two private, located in different cities distributed throughout Chile. In total, 55% of the sample worked in public organizations, 34.5% in commercial private organizations and 10.5% in not-for-profit private organizations (social development). The mean age was 39.48 years ( $SD = 11.13$ ). Women made up 45% of the sample. The organizations which participated in the study were selected intentionally to represent different production sectors and ensure nation-wide representativeness. Inside each organization, stratified sampling was carried out (hierarchy layers) by conglomerates (units) with a margin of error of 5% to ensure internal representativeness. In all cases, larger quotas were obtained than were estimated according to the procedure of Scheaffer, Mendenhall and Ott (1987).

### Procedure

To select the participant organizations, a theoretical field was defined of eight fields, considering ownership (public/private), orientation (production/services) and purpose (profit-making and social development). Then different complex organizations were identified for each case (four or more divisions, three or more hierarchical levels and a minimum of 200 employees) with presence in two or more regions of the country. Their boards were approached, through formal and informal channels, to invite them to participate in the study. Of the eight types identified, representation was obtained in seven cases; it was not possible to recruit a commercial public organization.

The agreement to participate involved a general evaluation of ALS, with the results reported to the board of each organization; in all cases a director was appointed as the

counterpart for the study. In each organization a representative sample was estimated. The individuals were approached remotely over a period of 15 to 30 days, as the instrument was set up online.

### Instruments

#### *Subjective Work Environment Organizational Climate Scale (ECALS)*

ECALS is a questionnaire intended to evaluate five specific dimensions, identified in the literature, that represent the different aspects related with OC: Organizational trust, Job strain, Social support, Reward and Job satisfaction (Bakker & Demerouti, 2017; Lee et al., 2017; Mabaso & Dlamini, 2017; Van Woerkom et al., 2016).

To draft the questionnaire, a qualitative pilot study was carried out to explore the respondents' understanding of the items. Pérez-Luco (2008) took pre-existing questionnaires as his basis, such as the version of the Organizational Climate Questionnaire (OCQ) (Litwin & Stringer, 1968) adapted to the Chilean work context, as well as the organizational stress factors questionnaire of ILO-WHO. This is intended to obtain a general factor inherent in OC which contains a variety of specific dimensions that contribute to a dynamic, inter-related configuration of the OC.

The elements which make up the battery follow a Likert-type format with five response categories (1 never, 5 always); this is in line with the established psychometric literature, which indicates that between four and six response categories produce the best estimations of psychometric parameters (Lozano et al., 2008). Apart from this, the instrument follows the recommendations for the construction of tests based on the criteria established by the European Federation of Psychologists' Associations (EFPA) for test evaluation (Evers et al., 2013) and the Standards for Educational and Psychological Testing (American Educational Research Association, American Psychological Association and National Council on Measurement in Education, 2014), as well as the recommendations proposed in current psychometric literature (Downing & Haladyna, 2006; Evers et al., 2013; Lane et al., 2016; Moreno et al., 2006, 2018).

Each of the specific dimensions is described briefly here. *Organizational trust* (10 items) represents the acceptance and backing of the people placed in positions of authority in the different levels of the hierarchy, allowing a degree of trust to be established that favours good organizational functioning (Acosta et al., 2012; Pérez-Luco, 2008; Vanhala et al., 2016). *Job strain* (10 items) refers to organizational contexts of work-related stress which determine a negative perception of the organization or sensations of unwillingness and distaste for the job, resulting in an uncommitted attitude and reduced productivity (Bakker & Demerouti, 2017; Pérez-Luco, 2008). *Social support* (8 items) denotes the perception of human quality and warmth at work, showing acceptance of the relations established with colleagues which is a sign of trust between

peers and approval of joint performance (Pérez-Luco, 2008; Van Woerkom et al., 2016). *Reward* (7 items) refers to the perception of the employees about how they are treated by the organization, specifically in their remuneration, recognition, promotion and career development (Mabaso & Dlamini, 2017; Pérez-Luco, 2008;). *Job satisfaction* (4 items) is defined as positive evaluation of the job done, expressed in feelings of pleasure and satisfaction with work (Lee et al., 2017; Pérez-Luco, 2008; Sureda et al., 2019).

### Data analysis

In the first place we analysed the items, calculating descriptive statistics (mean, standard deviation, asymmetry and kurtosis), and the corrected item-test correlation (indices of discrimination). We eliminated items with scores lower than .20 (Muñiz et al., 2005). We then assessed the differential functioning of the items (*Differential Item Function*; DIF) based on sex. Logistic regression was carried out, fitting three models in different stages (Hidalgo et al., 2005). In the first stage, the total individual scores in the test were entered in the equation, fitting Model 1 (M1) for the absence of DIF. In the second stage the group variable was introduced (Model 2, M2). If the explanation of this model with respect to M1 was statistically significant ( $p < .01$ ), it would indicate a uniform DIF. In stage 3 we introduced the interaction between the group and the total score (Model 3, M3). If the explanation added by this model to the others was significant, the DIF would not be uniform (Hidalgo et al., 2005).

*Job strain* was the only dimension of the five proposed that, according to the theoretical model, gave a negative measure of the OC. The items were therefore recoded to give this dimension a positive sense for OC, changing it to *Absence of Job strain*. Pearson's correlation between the different scales was analysed to study the relation between them. The sample was then divided at random into two sub-samples: the first sub-sample (742 participants) was used to apply different Exploratory Factorial Analyses (EFAs); in the second sub-sample (700 participants) a Confirmatory Factorial Analysis (CFA) was applied to the model with the best fit in the exploratory approach. In the first sub-sample, four EFA models were fitted to the matrix of polychoric correlations: a unidimensional model, a model with five first order factors, a model with five first order factors and one second order, and an exploratory bifactorial model. KMO and Bartlett's sphericity test were used to study the fit of the data to the Factorial Analysis. In the second sub-sample, CFA was applied to the model which showed the best fit in the exploratory test. In the different EFAs and the CFA, Weighted Least Squares with Mean and Variance Adjusted (WLSMV) was used to estimate the matrix of polychoric correlations as the recommended method for the type of data used (Ferrando & Lorenzo-Seva, 2014, 2017; Lloret-Segura et al., 2014).

RMSEA and CFI were used as goodness-of-fit indices; the fit of the model was considered good when RMSEA  $< 0.08$ , and CFI  $> 0.95$  (Hu & Bentler, 1999; Kline, 2011). The BIC was calculated for each model. It was determined that a difference of 9 points or more indicates that the model with the lower index presents a better fit with the data (Anderson, 2008). Once the factorial structure had been studied, the reliability of each of the specific dimensions, and that of the general factor, were analysed using Cronbach's Alpha Coefficient for ordinal data (Oliden & Zumbo, 2008) and McDonald's Omega (McDonald, 1999).

To obtain evidence of convergent validity between the scales of the ECALS test, the average variance extracted (AVE) was calculated. AVE values  $\geq 0.5$  were considered adequate (Hair et al., 2009). Discriminant validity, understood as the fact that the items representing one dimension are not strongly correlated with other dimensions, was evaluated by comparing the AVE of the scales with the squared correlation between them (Fornell & Larcker, 1981; Marôco, 2014). For two factors,  $x$  and  $y$ , if  $AVE_x$  and  $AVE_y \geq r_{xy}^2$  there is evidence of discriminant validity.

Finally, we analysed whether there were differences between employees in public companies, commercial private companies and not-for-profit private companies (social development), both in the five scales and in the global OC construct. This was done by Multivariate Analysis of the Variance. As there were three groups to be compared, Bonferroni's post-hoc test was used to study between which groups there were differences in those variables for which the ANOVA showed statistically significant differences. For size of effect we used Cohen's  $d$  (Cohen, 1988); values between 0.2 and 0.4 indicate a small effect, between 0.5 and 0.7 a moderate effect and from 0.7 a large effect. Finally, the direct scores in the different specific dimensions and in the general OC factor were transformed into typical scores for the whole group to facilitate interpretation.

The analyses were carried out using the following programmes: SPSS 24.0 (IBM Corp, 2016), FACTOR 10.5.03 (Lorenzo-Seva & Ferrando, 2013), Mplus (Múthen & Múthen, 2017).

## Results

The items were analysed separately for each of the five scales. Table 1 shows the descriptive statistics and the indices of discrimination of the items, as well as the reliability of each of the scales and of the global OC score. The indices of discrimination of each of the items were adequate, ranging between .27 and .79, except for item 26 in the Job strain scale, which was eliminated as its index of discrimination was very low.

**Table 1.** Descriptive statistics, indices of discrimination of the items and reliability of the specific dimensions of ECALS.

Dimensions	Item	Mean	Standard deviation	Asymmetry	Kurtosis	Discrimination index	$\alpha$	$\omega$
Organizational trust	4	3.17	1.21	-0.147	-0.869	.68	.91	.93
	7	3.89	1.13	-0.727	-0.378	.57		
	8	3.12	1.12	-0.125	-0.709	.59		
	14	3.26	1.33	-0.23	-1.082	.77		
	15	3.29	1.24	-0.228	-0.918	.79		
	20	3.62	1.22	-0.554	-0.669	.72		
	23	3.67	1.07	-0.482	-0.399	.67		
	27	3.33	1.26	-0.269	-0.894	.75		
	29	3.33	1.28	-0.254	-0.99	.67		
	33	3.84	1.1	-0.77	-0.061	.64		
Job strain	5	4.18	1.11	-1.292	0.754	.42	.75	.78
	6	3.03	1.24	-0.016	-0.971	.44		
	10	3.13	1.22	-0.188	-0.884	.49		
	13	2.82	1.16	-0.056	-0.904	.50		
	25	3.38	1.12	-0.483	-0.486	.47		
	31	3.41	1.32	-0.496	-0.869	.37		
	35	2.45	1.13	0.343	-0.695	.28		
	36	3.56	1.1	-0.514	-0.424	.41		
37	2.45	1.24	0.353	-0.925	.46			
Social support	2	3.75	0.99	-0.546	-0.104	.55	.82	.86
	9	3.98	1.01	-0.823	0.132	.41		
	11	3.87	1.08	-0.691	-0.306	.60		
	12	3.31	1.04	-0.16	-0.429	.55		
	18	3.89	0.89	-0.526	0.005	.56		
	21	3.3	1.21	-0.254	-0.871	.51		
	28	3.36	1.18	-0.278	-0.708	.60		
34	3.86	0.92	-0.596	0.111	.60			
Reward	16	3.09	1.24	0	-0.972	.57	.79	.82
	17	3.14	1.05	0.001	-0.521	.50		
	22	3.04	1.34	-0.049	-1.136	.47		
	24	3.11	1.23	-0.149	-0.847	.64		
	30	2.7	1.19	0.297	-0.799	.46		
	32	2.73	1.32	0.161	-1.098	.57		
	39	2.69	1.29	0.258	-0.962	.44		
Job satisfaction	1	3.9	1.03	-0.884	0.346	.57	.78	.83
	3	4.18	0.98	-1.181	0.981	.48		
	19	4.1	0.96	-1.026	0.675	.65		
	38	4.01	1	-0.836	0.131	.65		
Organizational climate	-	128.94	22.79	-0.12	-0.31	-	.93	.93

The matrix of correlations between the scores in the subscales of the battery (Table 2) indicates that the five specific dimensions of ECALS are positively inter-related ( $p < .001$ ).

**Table 2.** Correlations between the specific dimensions of ECALS.

	AT	SS	R	JS
Organizational trust (OT)	.490**	.601**	.608**	.491**
Absence of Job strain (AT)		.408**	.306**	.295**
Social support (SS)			.449**	.509**
Reward (R)				.424**

\*\* The correlation is significant at 0.01 (bilateral).

Note. JS: Job satisfaction.

In the different exploratory models tested, the data were adequate for Factorial Analysis (KMO > .80; Bartlett  $p < .001$ ). The indices of fit of the different models are shown in

Table 3, where the exploratory bifactorial model presents the best fit with the data (Anderson, 2008; Hu & Bentler, 1999).

**Table 3.** Indices of fit of the different exploratory approaches.

Model	CFI	RMSEA [CI 90%]	BIC
Unidimensional	.936	0.078 [0.05 – 0.08]	4,153.13
Five first order factors	.989	0.039 [0.01 – 0.05]	2,608.79
Second order	.997	0.036 [0.01 – 0.05]	2,608.75
Bifactor	.996	0.026 [0.01 – 0.05]	2,485.56

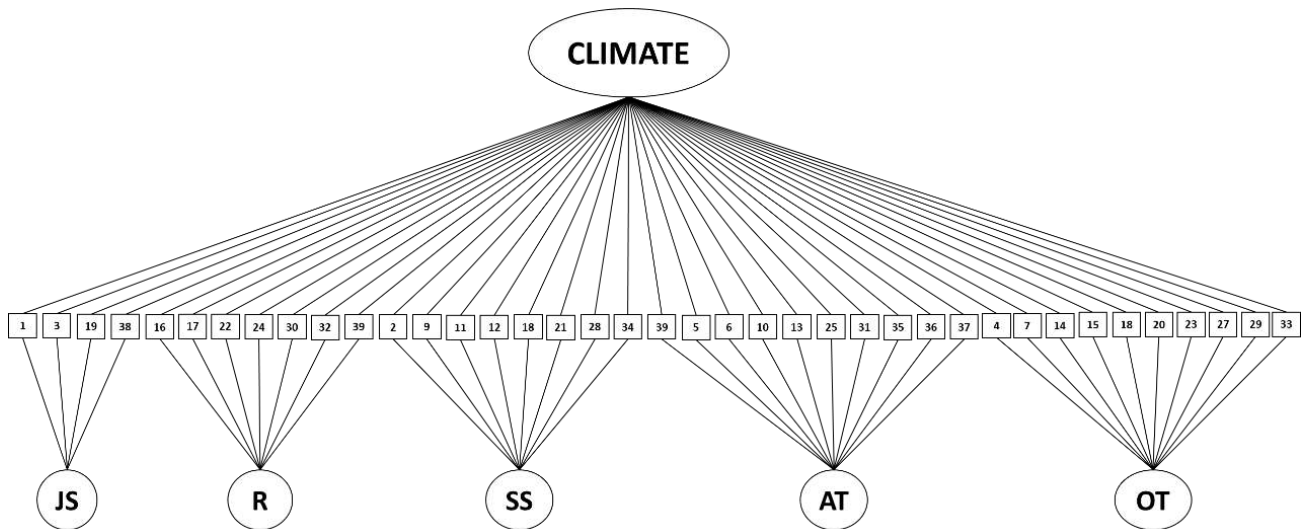
As the exploratory bifactorial model presented the best fit with the data, and is also the best adapted to the proposed theoretical model, the factorial structure was confirmed through a bifactorial CFA in the second sub-sample, showing an adequate fit with the data (CFI: 0.93; RMSEA: 0.06). Table 4 shows the factorial weights of each item with

the general factor of the confirmatory bifactorial model, and the factorial weights of each item with each of the specific dimensions. The conceptual diagram is shown in Figure 2. ; SS: Social support; R: Reward; JS: Job satisfaction; FL: Factorial load.

**Table 4.** Factorial loads of the Bifactor model in the general factor and specific factors.

TA									
Item	FL	Item	FL	Item	FL	Item	FL	Item	FL
1	0.511	11	0.556	21	0.541	32	0.374		
2	0.603	12	0.595	22	0.565	33	0.697		
3	0.48	13	0.357	23	0.639	34	0.484		
4	0.697	14	0.696	24	0.511	35	0.190		
5	0.361	15	0.761	25	0.429	36	0.277		
6	0.499	16	0.612	27	0.690	37	0.508		
7	0.674	17	0.718	28	0.517	38	0.589		
8	0.664	18	0.363	29	0.671	39	0.192		
9	0.435	19	0.541	30	0.441				
10	0.434	20	0.717	31	0.280				
Group factors									
OT		AT		SS		R		JS	
Item	FL	Item	FL	Item	FL	Item	FL	Item	FL
4	0.244	5	0.432	2	0.284	16	0.177	1	0.440
7	0.101	6	0.320	9	0.270	17	0.009	3	0.356
8	0.138	10	0.516	11	0.479	22	0.145	19	0.663
14	0.558	13	0.498	12	0.294	24	0.704	38	0.626
15	0.466	25	0.366	18	0.642	30	0.201		
20	0.345	31	0.368	21	0.310	32	0.765		
23	0.303	35	0.229	28	0.465	39	0.609		
27	0.454	36	0.446	34	0.588				
29	0.384	37	0.293						
33	0.258								

Note. OT: Organizational trust; AT: Absence of Job strain



**Figure 2.** Conceptual diagram of the empirical results from a Bifactor model.  
 Note. JS: Job satisfaction; R: Reward; SS: Social support; AT: Absence of Job strain; OT: Organizational trust.

Table 1 shows the reliability of each of the specific dimensions, and also of the general factor; it is adequate in all of them ( $\alpha = .75 - .95$ ;  $\omega = .78 - .93$ ). The convergent validity in AVE was satisfactory for Organizational trust = .58 and Job satisfaction = .56. It was slightly low in Absence of Job

strain = .30, Reward = .42 and Social support = .43. Discriminant validity was reached in all cases, as shown in Table 5 (Marôco, 2014).

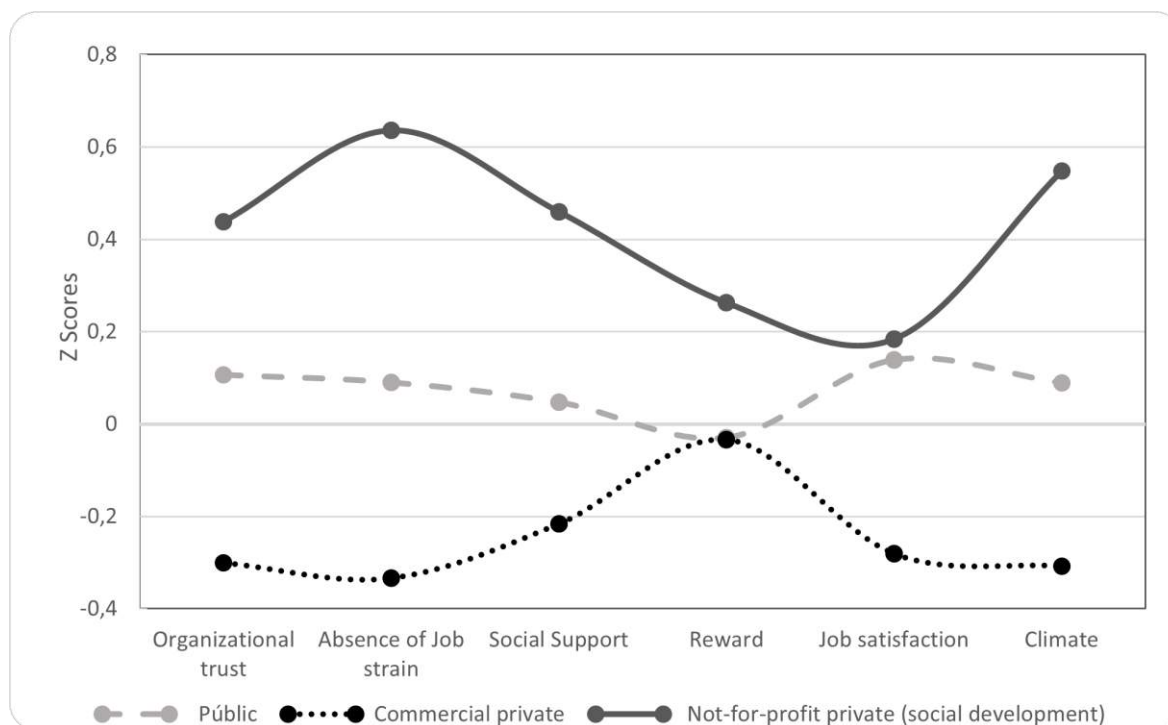
**Table 5.** Evidence of convergent and discriminant validity of ECALS.

Scales	AVE1	AVE2	r <sup>2</sup>
JS-AT	.56	.30	.09
JS-R	.56	.42	.18
JS-SS	.56	.43	.26
JS-OT	.56	.58	.24
AT-R	.30	.42	.09
AT-SS	.30	.43	.17
AT-OT	.30	.58	.24
R-SS	.42	.43	.2
R-OT	.42	.58	.37
SS-OT	.42	.58	.37

Note. JS: Job satisfaction; AT: Absence of Job strain; R: Reward; SS: Social support; OT: Organizational trust.

Finally, we studied if there were differences, in either the general OC factor or in the specific dimensions of ECALS, between employees in public and private organizations, commercial and not-for-profit (social development). The ANOVA showed that there were statistically significant differences both in the general OC factor and in each of the specific dimensions ( $p < .001$ ). We then studied which groups presented differences between them using Bonferroni's post-hoc test, which showed statistically significant

differences in each of the variables ( $p < .001$ : Organizational trust  $d = 0.88$ ; Job strain  $d = 1.04$ ; Social support  $d = 0.80$ ; Job satisfaction  $d = 0.83$ ; Organizational climate  $d = 0.81$ ), between not-for-profit private organizations (social development) and commercial private organizations, in favour of the former. In the comparison between public organizations and commercial organizations, except in Reward, there were statistically significant differences in all the variables ( $p < .001$ ; Organizational trust  $d = 1.56$ ; Job strain  $d = 0.45$ ; Social support  $d = 0.28$ ; Job satisfaction  $d = 0.39$ ; Organizational climate  $d = 0.42$ ). Finally, between public organizations and not-for-profit organizations (social development), there were statistically significant differences in all the variables except Job Satisfaction ( $p < .001$ ; Organizational trust  $d = 0.34$ ; Job strain  $d = 0.62$ ; Social support  $d = 0.45$ ; Reward  $d = 0.29$ ; Organizational climate  $d = 0.48$ ). All these results can be seen in Figure 3, which reflects the highest score among employees in not-for-profit private organizations (social development), followed by those in public organizations; the lowest scores are found in employees of commercial private organizations.



**Figure 3.** Comparative analysis between public organizations, commercial private organizations and not-for-profit private organizations in each of the specific dimensions of ECALS.

## Discussion and conclusions

The object of this investigation was to study the psychometric properties of a new OC scale (Subjective Work Environment Organizational Climate Scale – ECALS) for evaluating

the ALS construct in the Chilean context. ECALS includes 38 items divided into five dimensions (Organizational trust; Job strain; Social support; Reward; Job satisfaction) which evaluate the OC understood as the shared perception of what the organization is in terms of organizational policies, practices, procedures, routines and rewards expected by the

employees as a function of the natural interactions among people (Ehrhart et al., 2014; Schneider, et al., 2011).

Each dimension of ECALS proved to have good internal consistency and high corrected item-test correlations in its psychometric properties (Muñiz et al., 2005; Muñiz & Fonseca-Pedrero, 2019); item 26 was eliminated due to its low discriminant power. None of the items presented DIF for men and women. The 38 final items represent the following aspects of OC: Organizational trust, Job strain, Social support, Reward and Job satisfaction. In the comparison between the different exploratory models, the bifactorial model presented the best fit with the data, and we concluded that ECALS presented a structure of five specific dimensions and one general OC dimension; this enables it to produce not only a general OC score but also a study of the OC profiles within organizations (Ehrhart et al., 2014; Ostroff & Schulte, 2014).

The results obtained from the analysis of the specific dimensions of ECALS reflect the capacity of the instrument to discriminate between the three groups compared: employees belonging to public organizations, employees in commercial private organizations and employees belonging to not-for-profit private organizations (social development). In this way we tried to characterise the psychosocial dimensions of the subjective work dynamic of employees in complex organizations. From our analysis of the specific dimensions we observe that the commercial private organizations group is tensioned with a strong tendency towards an unhealthy work environment which is sensitive to direct association between employee and manager, since this has a negative impact on emotional state at work and increases the potential for internal conflict in the organization. Public organizations in contrast reflect better levels of trust and relations with direct su-

periors, with acceptable levels of tension which favour commitment and the perception of work stability, even though recognition levels are lower. It is interesting to note that although employees of public organizations receive little recognition, they present higher levels of involvement and satisfaction than employees of the commercial private organizations that participated in the study. Finally the not-for-profit private organizations (social development) show better work environment levels than public organizations and commercial private organizations, except in Job satisfaction which is equalled in public sector organizations (Barría & Henríquez, 2017; Schuster et al., 2019). In future work our intention is to follow the same line to analyse OC at group level (Le Blanc, González-Romá, & Wang, 2019; Paulin & Griffin, 2016).

This study presents a new instrument (Subjective Work Environment Organizational Climate Scale – ECALS) for evaluating OC in the Chilean population, contributing satisfactory psychometric properties. Given the scarcity of investigation in this field in Chile, research is needed to contribute to knowledge about public and private sector organizations using organizational variables, in order to evaluate the impact of management strategies on organizations of both kinds. It would be of interest to diagnose organizations using ECALS, and use the results to develop programmes to improve employee self-efficacy so as to respond more effectively to stress factors at work.

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