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The influence of organizational climate on sustainable relationships between organization and employees. The KION case study.

Cosimo Rota[1,*], Nikolai Reynolds[2] and Cesare Zanasi[3]

Abstract

This study considers factors influencing relationships on an employee and employer level (micro-level) as well as the effectiveness and performance of the organization as a whole (macro-level). The organizational climate plays hereby a central role as a determinant of the organizational behavior and success. However, few empirical studies consider the role of the organizational climate as a link between both the micro and macro levels and its influence on the creating sustainable business relationships leading to improved economic performance. To conduct the analysis, we derive a hypothesis building upon existing literature and test the hypothesis through survey of organizational members and by employing a structural equation model. The results show a very good relationship among all variables considered in the model, especially between innovation, trust, communication and sustainable relationships. The study provides also managers with a useful tool for evaluating the climate of the organization and the quality of relations with its members. Because only one organization was analyzed, the research results may lack generalizability. Future research would need to adopt the proposed model on other organizations and countries.

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[1] Department of Economics, University of Bologna, Italy,
e-mail: cosimo.rota@gmail.com
* Corresponding Author
[2] Ipsos InnQuest, Ipsos Germany, Frankfurt, e-mail: nikolai.reynolds@ipsos.com
[3] DIPROVAL – Economic Unit, University of Bologna, Italy,
e-mail: cesare.zanasi@unibo.it

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1 Introduction

Modern economic theories and approaches on organizational behavior can be mainly classified into two categories: (i) *micro*-approaches which consider the factors influencing the relations at the individual or group level (motivations, attitudes, individual or group performances); (ii) *macro*-approaches which focus on the factors influencing the effectiveness and performance of the organization as a whole; they include the organization's context, culture, climate, and human resource management [42,43].

When considered separately, these two approaches are often unable to explain the organization's behavior because of their partial nature [24]. While micro approaches do not take into account the political, social, cultural and market context in which the organization operates, the macro approaches do not effectively consider the internal processes and the human relations affecting the organizations' vision, growth and adaptation to an ever-changing environment. Consequently, *"until general psychological theories are linked to organizational contextual variables they will remain inadequate to explain what goes on in organizations"* [24].

According to some authors the inadequacy of the theoretical body can be overcome by adopting a *meso* approach able to explain the role of each variable in terms of *"bridging, or linking, proposition"* between the micro and the macro levels of the patterns of the organization's behavior analysis [28,44]. In literature, there are numerous theories that include both organizational (macro) and behavioral (micro) phenomena [24]. However, few empirical studies consider the role of the *organizational climate* as a linking variable between micro and macro analysis.

The *Social Context* model [14] considers the relation between macro-analysis (organization's context, culture, climate, and the HRM) and micro-analysis (individual's or group's attitudes and behavior) as the base for a theoretical framework able to identify the factors influencing the organization's effectiveness and efficiency. Other approaches define theoretical connections among the following micro and macro dimensions to unify inter and intra-organizational relationship analysis within a single framework: (i) organizational climate, (ii) human resource management, (iii) psychological contract, (iv) KSAs (Knowledge, Skills and Abilities) and (v) sustainable relationships [49].

In both of these approaches the organizational climate plays a central role as a determinant of the organizational behavior, by identifying how members should interact and address each other and how to manage personal relationships [20].

Hence, when building the *meso* interpretative paradigm it can be hypothesized that the organizational climate becomes the main link between the micro and macro level of the patterns of the organizations' behavior.

The goal of the present paper is an empirical analysis testing this hypothesis; in particular the influence of the organizational climate on the sustainability of the relation between the organization and its members will be analyzed.

2 Theoretical background and hypothesis

A common characteristic of microeconomic theories and approaches is the consideration of the economic consequences when assumptions of the neoclassical model are violated. The theories and approaches rely on results derived from day-to-day business practice but also build upon neo-classical theories. They add insights on economic factors influencing the performance of business relationships, such as cost of the relationship, optimization of the interfaces, acquisition of information, and business aims and strategies [37]. Within the set of modern economic theories and approaches, the interaction approach points out relationships being influenced by the environment in which they occur and the *climate*, they create. The climate affects and is affected by the interaction between business partners, i.e. inter-organizational, and employees and employers, i.e. intra-organizational. In addition, many elements of the interaction environment are external to the company and uncontrollable [27]. Intra- and inter-organizational relationships are important intangible assets that offer companies a source of long-term competitive advantage [12]. Against the background of the dominating climate, they need to be carefully managed, and may take place within an overall strategy for supplier and customer relationships. Moreover, since all parties in a chain define its structure and influence its performance, interactions between the links of the chain and intra-organizational links between employees have to be considered equally to the business atmosphere when studying relationships within it.

2.1 Organizational climate

The terms organizational *climate* and organizational *culture* are often considered as synonymous [4], thus creating interpretative ambiguity or conceptual overlapping, preventing their clear definition and effective use in the analysis of the organizations [38,41].

Organizational culture can be defined as a *"distinctive constellation of beliefs, values, work styles and relationships that distinguish one organization from another"* [20]. It is based on the assumptions and values shared within the organization [2,21,35,39], which influence the relations within the organization

members and the organization external relations with the other stakeholders [22]. The organizational culture main role is providing a meaning to the organization's life by defining its rules [1] and by guiding its members the direction to be taken in order to reach the organization's goals [45].

The organizational climate, on the other hand, is an indicator of the organizational culture [39]. It is defined by the individuals' perceptions, behaviors and attitudes [34], which influence the organization members' policies, procedures and daily actions [10].

Many studies show the influence of the organizational climate both on organizational effectiveness [32] and on individual motivation and behavior [31]. Therefore, the organizational climate is the main variable able to link organizational and individual behavioral phenomena.

2.2 Sustainable relationships

Recent contributions identified a set of variables defining a specific dimension of inter-organizational relations: their *sustainability* [15,37]. This dimension defines the efficiency and effectiveness of relations along a supply chain [9,19] and it is a key source of chain competitive advantage [40]. Sustainability refers to the expectations and desires of the individuals involved in the relationship relationships quality [47], and is defined by qualities such as trust, commitment and satisfaction [29]. Others studies considered conceptually similar variables (trust, power, frequency, time frame and maturity) as important factors defining the nature of both inter- and intra-organization dimension of relations [37], showing that the boundaries between the different explanatory variables of sustainability and their micro and macro perspectives of analysis are fading. Therefore the concept of sustainability, even though it is defined in an inter-organization relation context, can also be applied to a micro analytical level as it is *"considered as a higher order concept encompassing different inter-personal aspects"* [15].

2.3 Relations between organizational climate and sustainable relationships

The role of organizational climate, as a determinant of sustainable relationships within organizations, is often considered in project management studies when analyzing the factors influencing the relations and the collaborative attitude within teams [16,30,36]. Some authors group these factors into three categories: organizational variables (e.g. autonomy, interdependence, definition of the responsibilities); context variables (e.g. competencies and communication); mediation variables (cooperation, social cohesion) [17]. According to other

authors, the teamwork effectiveness is influenced by three factors: the project manager's leadership, the social cohesion among the teamwork's members and the intensity of the social relations [48]. Furthermore, the quality of the collaborative relations within teamwork is influenced by six variables: communication, coordination, balance of the contributions of individuals, mutual support, effort and cohesion [23]. Finally, interpersonal relationships, the team and the project manager are determined by the variables trust, communication and willingness to cooperate [11].

The *Social Context* model is a theoretical framework able to describe the complexity of the relations among the above-mentioned factors, including both the micro and the macro level of analysis [14]. The model considers the organizational culture as influenced by the context surrounding the organization. HRM is the way for the organizational culture to manifest itself and is defined as a *"maintenance subsystem"* [26] able to reinforce the organization's culture and values [10,21].

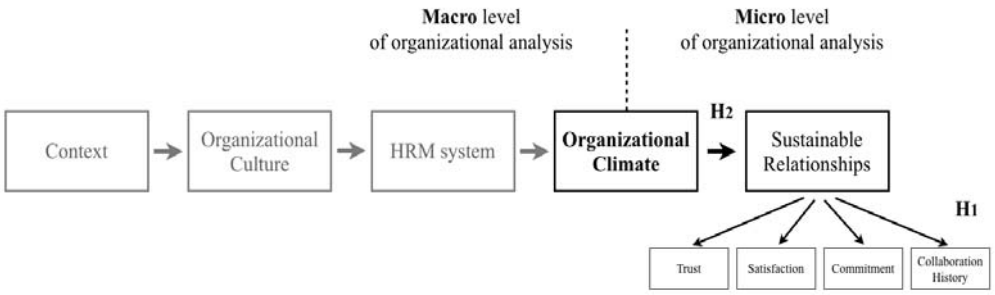

Figure 1: Theoretical framework and hypothesis

The organizational climate, on the other hand, stands between the HRM and the perceptions, attitudes and individuals' behavior [7] like trust [13], commitment [46] and job satisfaction [6] which define the concept of sustainable intra-organizational relationships and echo dimensions of sustainable inter-organizational relationships [15]. Hence, the organizational climate qualifies as one of the main variables explaining the relations between macro (organization, departments, functions) and micro (groups, team works, members) level of analysis (Figure 1).

The present study analyses the relations between individuals and the company, considered as a whole. The hypotheses that will be empirically tested, based on the literature examined, is the following:

H1: Trust, Satisfaction, Commitment, Collaboration History are reliable dimensions for intra-organizational relationships.

H2: A positive organizational climate improves sustainable intra-organizational relationships.

3 Research methodology

The method of SEM (Structural Equation Modeling) is used for hypothesis testing and for construct validity assessment. In this study two types of validity are considered important: (i) content validity and (ii) construct validity [18]. Content validity is assessed pretesting the finalized version of the questionnaire and consequently, based on feedback received, modifying or eliminating redundant and ambiguous items [3]. First-order construct validity and reliability are assessed using and Cronbach'alpha with SPSS software respectively; the second-order construct validity is tested using confirmatory factor analysis with AMOS software. Finally, an AMOS structural model is run to test the hypothesis developed in the framework.

The overall models fit is tested using the chi-square fit test (CMIN/DF), the normed fit index (NFI), comparative fit index (CFI) and the root mean square error of approximation (RMSEA). The chi-square fit test (CMIN/DF) adjusts the chi-square index for the degrees of freedom. For this statistic, a value less than 3.0 indicates a reasonable fit and a value less than 2.0 displays a good fit. Values of NFI and CFI equal or higher than 0.90 represent a good fit [8]. However, the NFI has a tendency to underestimate fit in small samples [8] and CFI takes sample size into account. Bentler [5] suggested that, of two, the CFI should be the index of choice. The RMSEA has to be less than or equal to 0.05 (0.08) for a good (adequate) model fit [25].

3.1 Field of analysis, data collection and measures

KION is an Italian company created by CINECA, providing information systems applications and value added solutions to the Italian Universities, particular related to the administration, teaching and students' service areas. Its management software is the most popular among the Italian Universities. To collect the information, a survey was carried out through an on-line questionnaire. Of the 149 organizational members constituting this study's sample, 135 returned their filled-in questionnaires. 3 questionnaires were excluded from further analysis because of missing data. Consequently, 132 complete and usable questionnaires remained leading to an effective response rate of 88.6 %.

The measure for the sustainability of relationships consisted of 4 items: trust, commitment, satisfaction and collaboration history [15,37]. The members of the organization were asked to respond on a 7-point Likert scale ranging from 1= Very Poor to 7= Very Good. The variable organizational climate is based on the five dimensions developed by Zeitz *et al.* [50]. These five dimensions, which consist of 19 items, are: job challenge, communication, trust, innovation and social cohesion. The respondents were also asked to respond to these items using the same Likert scale. The multiple items representing each of the constructs are listed in Annex A.

4 Research findings

4.1 Results for the measurement model

The organizational climate construct was initially represented by 5 dimension and 26 items. After the assessment of content validity, 7 redundant and ambiguous items were removed. The analysis of remaining 19 items revealed 5 factors with most loadings above .70, explaining 67% of the total variance (Table 1). The KMO test delivered a value of .821, indicating an adequate model fit to the observed data. For sustainable relationships the cumulative variance explained by the factor is 70.8%, whilst the KMO resulted in a value of .762 (Table 2). The reliabilities of organizational climate and sustainable relationships were assessed with Cronbach's alpha. The reliability values for all constructs are all greater than .70; the only exceptions being the dimension "communication" whose reliability value is .612.

Table 1: Factor analysis results for Organizational Climate

	Factors					Comm.ties	Reliability
	Job Challenge	Innovation	Social Cohesion	Trust	Communication		
JCH 3	.843					.799	.846
JCH 4	.798					.758	
JCH 5	.788					.689	
JCH 2	.732					.581	
JCH 1	.636					.563	
INN 3		.792				.784	.833
INN 1		.736				.692	
INN 5		.718				.625	
INN 2		.703				.705	
INN 4		.645				.592	
SCH 2			.847			.743	.763
SCH 1			.838			.723	
SCH 3			.702			.584	
TRS 1				.849		.796	.785
TRS 2				.804		.804	
TRS 3				.512		.521	
COM 3					.816	.688	.612
COM 2					.715	.668	
COM 1					.436	.411	
% of variance	17.569	17.103	11.293	11.247	9.768		
Cumulative % of variance	17.569	34.673	45.966	57.213	66.982		

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.

Table 2: Factor analysis results for Relation Sustainability

	Factor	Communalities	Reliability
Satisfaction	.922	.851	.857
Trust	.893	.798	
Commitment	.794	.630	
Col. History	.744	.553	
% of variance	70.783		

Extraction Method: Principal Component Analysis.

Table 3 shows means and correlations among dimension of climate and sustainable relationships. Most of coefficients are significant at .001 level.

Table 3: Means and correlations among dimension of organizational climate and sustainable relationships

	Variables	Mean	1	2	3	4	5	6
1.	Innovation	4.841	-					
2.	Trust	5.219	.620***	-				
3.	Social Cohesion	4.562	.248*	.327**	-			
4.	Communication	3.631	.575***	.343*	.453**	-		
5.	Job Challenge	4.930	.439***	.501***	.285*	.287*	-	
6.	Relations Sustainability	5.300	.630***	.507***	.212*	.590***	.410***	-

*** statistically different from zero at the 0.001 significance level (two-tailed)
** statistically different from zero at the 0.01 significance level (two-tailed)
* statistically different from zero at the 0.05 significance level (two-tailed)

4.2 Validation of second-order construct

Confirmatory factor analysis with AMOS was used to explain that organizational climate is defined by five first-order factors. All the measurements have significant loadings to their corresponding second-order construct, the β coefficients were all significant at $p < .001$. The model performs within the expected range: Chi-square = 229.378, df. = 147, p = .000; CMIN/DF = 1.560; RMSEA = 0.065; NFI = .811; CFI = .919. The findings were consistent with the original formulation proposed by Zeitz *et al*. [50].

To test the hypotheses proposed in the framework, structural equation modeling (AMOS) was used to assess the model fit with the data. The loadings for the model are statistically significant at the level of .001 (Table 4) and R^2 values are acceptably high as shown in Figure 2. Overall, the model has a moderate fit with: Chi-square = 353.792 df. = 224, p = .000; CMIN/DF = 1.579; RMSEA = 0.067; NFI = .791; CFI = .908 (Table 5). The results support the hypothesis that organizational climate has significant and positive impacts on sustainable relationships. The NFI fit index does not meet the minimum value. This index tends to underestimate the fit for samples less than 200 [33]. To overcome this drawback the CFI index was adopted; it is a revised NFI index which takes the sample size into account. CFI has been chosen in the present paper following other authors' advice [5].

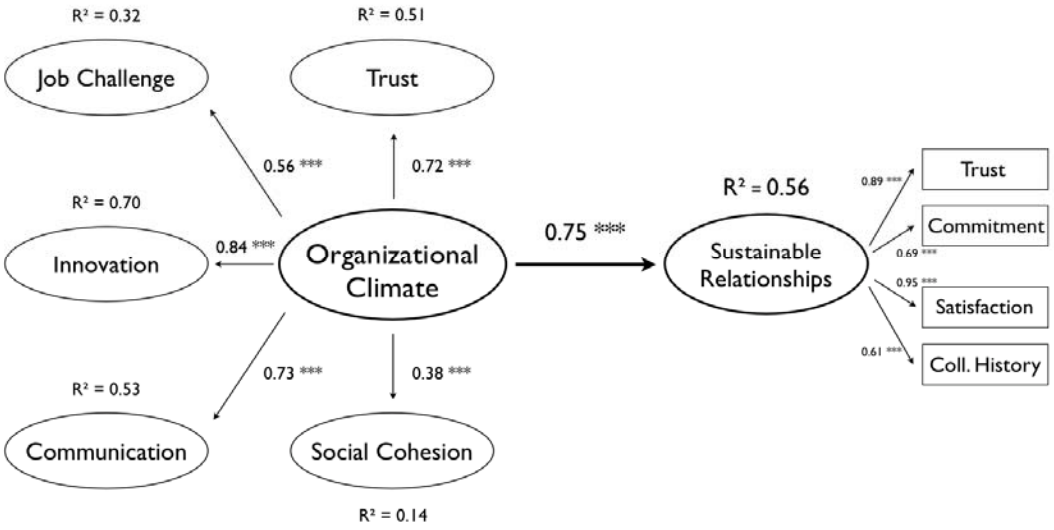

Figure 2: Path model for the structural analysis

Table 4: Properties of the structural model

			Estimate	S.E.	C.R.	R.W.	P
Innovation	<---	Organizational Climate	1.000			.836	
Social Cohesion	<---	Organizational Climate	.489	.154	3.182	.379	.001
Communication	<---	Organizational Climate	.610	.162	3.772	.731	***
Trust	<---	Organizational Climate	.850	.171	4.971	.717	***
Job Challenge	<---	Organizational Climate	.975	.198	4.918	.561	***
Sustainable Relationships	<---	Organizational Climate	1.089	.170	6.391	.750	***
JCH 4	<---	Job Challenge	1.059	.100	10.563	.866	***
JCH 3	<---	Job Challenge	1.010	.093	10.857	.894	***
JCH 2	<---	Job Challenge	.485	.076	6.418	.561	***
JCH 1	<---	Job Challenge	.510	.090	5.645	.499	***
INN 1	<---	Innovation	1.000			.784	
INN 2	<---	Innovation	1.182	.121	9.752	.802	***
INN 3	<---	Innovation	1.442	.132	10.892	.888	***
INN 4	<---	Innovation	1.123	.138	8.151	.690	***
INN 5	<---	Innovation	.642	.140	4.594	.411	***
SCH 3	<---	Social Cohesion	1.000			.655	
SCH 2	<---	Social Cohesion	1.258	.202	6.240	.807	***
SCH 1	<---	Social Cohesion	.940	.151	6.232	.724	***
TRS 3	<---	Trust	1.000			.606	
TRS 2	<---	Trust	1.607	.230	6.983	.902	***
TRS 1	<---	Trust	1.208	.180	6.715	.767	***
COM 3	<---	Communication	1.000			.455	
COM 2	<---	Communication	1.466	.376	3.899	.624	***
COM 1	<---	Communication	1.690	.425	3.977	.676	***
TRU	<---	Sustainable Relationships	1.000			.887	
COMM	<---	Sustainable Relationships	.731	.078	9.336	.691	***
SAT	<---	Sustainable Relationships	1.165	.075	15.515	.950	***
JCH 5	<---	Job Challenge	1.000			.777	
COL	<---	Sustainable Relationships	.767	.099	7.766	.606	***

*** statistically different from zero at the 0.001 significance level (two-tailed)
** statistically different from zero at the 0.01 significance level (two-tailed)
* statistically different from zero at the 0.05 significance level (two-tailed)

Table 5: Standardized measurement model fit

Property	Recommended value	Value
CMIN/DF	≤ 3.00	1.579
NFI	≥ 0.90	0.791
CFI	≥ 0.90	0.908
RMSEA	≤ 0.08	0.067

5 Discussion and conclusion

According to House *et al*. [24] a *meso* perspective contributes to the development of a more complete paradigm for the study of organizational behavior by facilitating a clear conceptualization and empirically testing the linkages among units at different level on analysis.

The paper adopts a *meso* perspective providing an analytical framework where the organizational climate becomes the main link between the micro and macro level of the organization's behavior patters.

It refers to the relative lack of studies regarding the influence of organizational-related factors on employees' behaviors. In particular, the paper provides empirical evidence that positive organizational climate improves sustainable relationships between one organization and its members. Furthermore it supports the finding of Zeitz *et al.* [50] that organizational climate is based on five interconnecting dimensions: job challenge, trust, innovation, social cohesion and communication. In addition, the study displays the relevance of the four dimensions: trust, commitment, satisfaction and collaboration history explaining sustainable intra-organizational relationships and comparing favorably to inter-organizational relationships [15]. All the measurement scales have been tested through rigorous statistical methodologies including confirmatory factor analysis, reliability and the validation of second-order construct by using structural equation modeling.

The results show a very good relationship among all variables considered in the model, especially between innovation, trust, communication and sustainable relationships (Table 3). This means that the effectiveness of communication between top management and employees (and between the employees themselves) together with an innovative and open-minded environment for creativity, problem solving and new ideas are important predictors (antecedents) of long-term and stable relationships between the organizations and its members.

The study also provides managers with a useful tool for evaluating the climate of the organization and the quality of relations with its members. Although some organizations realized the importance of organizational climate, they often do not know exactly what constitutes this theoretical construct and how to implement related policies. By understanding the role of climate and its

dimensions within organizations, managers could improve organizational life creating trust, stimulating commitment and generating satisfaction to overcome conflicts among members.

Being the organizational climate a variable linking macro and micro level of analysis, it may be influenced by others variables, like human resource practices, psychological contract [49] and many other external context-related factors such organizational size and structure. Future studies should examine the proposed relationships by bringing these contextual variables into the model and should also test the relationships/dependencies among five dimensions of organizational climate and sustainable relationships. Taking a single organization as an example, it is of interest also to investigate the interaction among all the participants within the organization and how the organizational climate and sustainable relationships differ across each organization department. Future researches should also enlarge the sample size considering the single organization as unit of analysis. The results apply to a single organization and are not easily generalizable but this study reports the first empirical evidence of this type of link.

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Annex A

Organizational Climate questionnaire

Consider the working environment of the organization. To what extent do you agree or disagree to the following statements?

Job Challenge

JCH 1 - The job requires me to use a number of complex or high-level skills
JCH 2 - The job requires me to do many different things at work, using a variety of skills and talents.
JCH 3 - I have new and interesting things to do in my work.
JCH 4 - My work challenges me.
JCH 5 – The job is quite simple and repetitive

Communication

COM 1 - Management here does a good job of communicating with teamwork's members.

COM 2 - There is poor communication between department in this organization.

COM 3 – Around here, conflicts are resolved to the satisfaction of those concerned

Trust

TRS 1 – My supervisor shows complete trust in employees'ability to perform their job well.

TRS 2 - I feel free to discuss problems or negative feelings with my supervisor.

TRS 3 - Within reason, people in this organization can say what they want without fear of punishment.

Innovation

INN 1 - We are encouraged to make suggestions for improvements in their work.

INN 2 – People in my work unit are encouraged to try new and better ways of doing the job.

INN 3 - Creativity is actively encouraged in this organization.

INN 4 - Innovators (those who come up with new ways of doing things) are the people who get rewarded in this organization.

INN 5 - Trying new ways of solving problems is discouraged here.

Social cohesion

SCH 1 - People in my work unit enjoy working with their co-worker.

SCH 2 - Co-workers in my work unit are like a family.

SCH 3 - I trust my co-workers to do what is in the best interests of the organization.

Sustainable Relationships questionnaire

Please rate this relationship on scale from 1 (very poor) to 7 (very good)

TRU - My trust in the organization

COMM - My commitment towards the organization

SAT - My satisfaction with the organization

COL - My past collaboration experience with the organization