# **Organizational Climate and Performance**

'The relation between organizational climate and performance and an investigation of the antecedents of organizational climate'

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## **Summary**

In this study, the relationship between organizational climate and organizational performance is tested for a large multinational company. Besides, I tested what influence management support and organizational unit size have on organizational climate perception. In total, 30.892 employees among 49 operating companies participated in the study. Regression analyses showed that there is a significant relation between organizational climate and profitability, sustainability & growth, EBIT margin, productivity and employee engagement. No relation between organizational climate and employee turnover was identified. Besides, I did not found evidence that the relation between organizational climate and profitability, sustainability & growth, EBIT margin and productivity is mediated by employee engagement. Furthermore, it was found that organizational climate is strongly influenced by management support, and that the relation between organizational unit size and organizational climate is mediated by management support. These results contribute to the literature on organizational climate and performance. Besides, these results are of great value to the business world, as managerial implications have been identified that can be used to improve organizational climate, and thus, company performance.

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# 1. Introduction

Companies nowadays are more and more active in turbulent competitive environments, in which it has become easier to imitate products, and it is necessary to adapt to changes fast. To survive within these competitive environments, it is very important to generate sustainable competitive advantages. Contrary to the industry-based strategic management perspective, which focuses on the external environment of a company, the resource based strategic management perspective has a focus on the internal environment of the company. In the resource based view of the firm, traditional sources of competitive advantages, like natural resources and technology, are no longer sufficient; companies can only develop sustained competitive advantage by building unique competencies (firm-wide capabilities). Embracing this view on strategy, human resource strategies may be an important source of sustained competitive advantage (Lado & Wilson, 1994). The human resource value creation process is complex, making it a valuable, rare, inimitable, and non-substitutable source of competitive advantage (Barney, 1991).

Several studies examined the relationship between human resource management and organizational performance (e.g. Becker & Gerhart, 1996; Huselid, 1995; Arthur, 1994). The common thought of these studies is that human resource practices affect organizational performance. These studies focus on the type of human resource practices, rather than on how these human resource practices are perceived by organizational members. Wright and Nishii (2010), however, developed a model in which they state that intended human resource (HR) practices of management are different from the perceived HR practices by employees, and that these perceived HR practices have greater predictive value for organizational performance than the intended HR practices. According to Bowen and Ostroff (2004) organizational climate is the shared perception of what the organization is like in terms of practices, policies, procedures, routines and rewards, based on shared perceptions of organizational members. Practices and policies, procedures, and rewards are integrated aspects of the human resource management practices of an organization. Organizational climate, thus, can be seen as a representation of the perception of these human resource practices, making organizational climate of more predictive value for organizational performance than only human resource practices themselves. In this thesis, therefore, I consider organizational climate as *the* predictor for organizational outcomes.

Several authors have found links between organizational climate and organizational performance. However, most of these studies only consider single aspects of organizational climate and outcomes related to these aspects, for example, the relation between innovation climate and creativity (Pirola-Merlo & Mann, 2004). However, to get insights in how the overall configuration of organizational climate is related to overall performance of a company, additional research is required.

In this research project, organizational climate survey results of a large multinational company have been used to test the relation between organizational climate and performance. The main research question of this thesis is:

To what extend does organizational climate leads to organizational performance?

Management plays an important role on the organizational climate perceptions of organizational members as they are responsible for the implementation of the human resource practices. Therefore, I will also investigate the role management plays on organizational climate by examining how management support perception of employees is related to their organizational climate perception. There is some evidence that small organizations have a more positive organizational climate than large organizations (Payne & Mansfield, 1974), however, how organizational unit size affects organizational climate is less clear. Therefore, I will further investigate this relation by proposing management support as mediator in the relation between organizational unit size and organizational climate.

This research project is valuable to the scientific community, because it further provides empirical support on the relationship between organizational climate and performance. Besides, it also provides valuable insights on the antecedents of organizational climate, a topic on which little information is yet available. This study is also valuable to the business world, as a number of managerial implications are discussed on how to create an organizational climate that leads to high performance.

# 2. Theoretical background

## 2.1 Organizational climate

Due to its multifaceted character a wide range of definitions is available for organizational climate. Schneider and Reichers (1983) define organizational climate as a shared or summary perception that people attach to particular features of the work setting. According to Watkin and Hubbard (2003) organizational climate is "how it feels to work in a particular environment and for a particular boss, more precisely it is a measure of employees' perception of those aspects of their environment that directly impact how well they can do their jobs" (pp. 380). Another, more elaborate, definition of organizational climate is given by Bowen and Ostroff (2004):

"Organizational climate is a shared perception of what the organization is like in terms of practices, policies, procedures, routines, and rewards- what is important and what behaviors are expected and rewarded- and is based on shared perceptions among employees within formal organizational units."(pp.205)

In literature, organizational climate is conceptualized across different levels of analysis: individual, work, and organization. In this thesis, I consider organizational climate as a construct that belongs to a group of people (organization), rather than considering it as something that is assigned to an individual person. Using this approach makes it possible to compare organizational climate with organizational outcomes (instead of individual outcomes). As each organization has its own specific organizational climate *and* organizational outcomes, different organizations can be compared to each other.

Organizational climate and organizational culture are closely related, but are certainly not the same. Both deal with how individuals try to make sense of their environments, and are learned through interaction among persons belonging to a certain group (Kuenzi & Schminke, 2009). However, fundamental differences between these two phenomena exist. After an extensive research on both climate and culture literature, Denison (1996) identified several differences between organizational climate and culture. According to him, organizational culture refers to the underlying structure of an organization, embedded in the values, beliefs, and assumptions of organizational members. Organizational climate, on the other hand, is reflected in practices and procedures that are observable at the surface of the organization. Organizational climate is emphasized to be temporary, subject to direct control, and limited to aspects that are consciously perceived by members of an organization. From a managerial point of view, therefore, organizational climate is a very interesting phenomenon. It can be influenced relatively easily, and changes in organizational climate can be observed on a short time span.

## 2.2 Organizational climate: an outcome of human resource management

Organizational success is largely dependent on the quality and effort of the people that work for the organization. Flexible, productive and knowledgeable people within an organization are a source of (sustainable) competitive advantage for companies. Top managers increasingly acknowledge that the people within the organization make the difference by creating value for the organization (Verburg & Den Hartog, 2006).

Human resource management concerns the management of people within organizations. Regardless of the type of organization, all firms need to manage their workforce using appropriate policies and practices. Policies and practices need to be coordinated with each other, as well as with the needs of the organization. The latter is also known as strategic human resource management, and is based upon the recognition that organizations can be more effective if they manage their human resources in such a way that they deliver the right number of people with the appropriate behaviors, the necessary competencies, and the right levels of motivation to the organization (Schuler & Jackson, 2007).

Human resource management involves the use of several policies and practices. Human resource practices can be summarized into three specific groups: entry, performance, and exit practices (Verburg & Den Hartog, 2006). Entry practices include practices that are aimed at the recruitment and selection of new employees, performance practices at managing and developing employee performance, and exit practices at managing the exit of employees.

Top and line management play a central role in human resource management (Verburg & Den Hartog, 2006). Top management uses human resource management as an integrated part of their business strategy, translated in a human resource management strategy. Line management, on the other hand, is responsible for managing the employment relations. Human resource professionals have an important advisory role to line management supporting the management and helping to develop and distribute human resource policies and practices. Line managers, however, recruit new employees, do the performance appraisal, and are responsible for the development of the core employees, making them the actual practitioners of human resource management.

Ideally, the HR strategy top management has in mind is transferred exactly as intended to the lower employee levels, however, this is often not the case. Wright and Nishii (2010) developed a model to represent the HR practices implementation process by making a distinction between intended HR practices, actual HR practices and perceived HR practices. The intended HR practices are the outcomes of the HR strategy developed by top management and intend to achieve employee reactions that are necessary for organizational success. Middle management implements the intended HR practices. Often, the intended practices are implemented in a different way as intended by top management or they are not implemented at all. The practices that are actually implemented by middle management are the actual HR practices. Actual HR practices are interpreted and perceived by employees, resulting in perceived HR practices. Thus, top management is responsible for establishing the HR strategy of the organization, while middle management interprets and distributes the HR strategy among the organizational members using several HR practices. Several studies examined the relationship between human resource management and organizational performance (e.g. Becker & Gerhart 1996; Huselid, 1995; Arthur, 1994). The common thought of these studies is that HR practices affect organizational performance. However, choosing the type of human resource practices is only part of the total human resource management process. According to Wright and Nishii (2010), not the human resource practices as intended by management will be determinative for organizational outcomes, but the human resource practices as *perceived* by organizational members. This is confirmed by Den Hartog, Boon and Verburg (2009) who found that *perceived* human resource management mediates the relation between actual human resource management (what is implemented) and performance. Thus, actual human resource management influences perceived human resource management, and perceived HRM affects performance. According to the organizational climate definition of Bowen and Ostroff (2004), organizational climate is 'a shared perception of what the organization is in terms of practices, policies, procedures, routines and rewards'. Practices and policies, procedures, and rewards are integrated aspects of the human resource management practices of the organization. Organizational climate, thus, is a representation of the employee perception of these practices. This idea is supported by Rogg, Schmidt, Shull and Schmitt (2001) and Gelade and Ivery (2003) who found the relationship between human resource practices and organizational outcomes is mediated by organizational climate. Thus, rather than a direct relation between human resource practices, their results indicate that human resource practices influence organizational climate, and that organizational climate influences performance.

Management plays a crucial role on employee's perception of organizational climate, as management is responsible for implementing the human resource practices. Thus, management can create a desired organizational climate using specific human resource practices, but employee perception of these practices is crucial for realizing the organizational climate as intended. Therefore, I consider organizational climate as predictor for organizational performance, rather than the human resource practices themselves.

## 2.3 Organizational climate and performance

Several researchers have studied (and proved) the relation between organizational climate and organizational performance. In the following part, I will give an overview of the available studies, and I will discuss the differences between these studies in terms of climate approach and type of outcomes.

A large group of studies only considers certain aspects of organizational climate and outcomes that are related to these aspects. For example, the relation between service climate and customer satisfaction (Johnson, 1996; Dietz, Pugh & Wiley, 2004), the relation between safety climate and safety outcomes (Hofmann & Mark, 2006; Wallace & Chen, 2006), the relation between risk taking climate and knowledge creation in the unit (Smith, Collins, & Clark, 2005), and the relation between innovation climate and creativity (Pirola-Merlo & Mann, 2004).

Others have studied the relation between certain aspects of organizational climate and more global company outcomes. For example, Baer and Frese (2003) studied the relation between climates for initiative and psychological safety, and company performance, at 47 mid-sized German companies. Their results showed that climates for initiative and psychological safety are positively related to two measures of firm performance: return on assets and firm goal achievement. Borucki and Burke (1999) did a large research project among more than 30.000 employees at 594 stores of a large US retail company. Their results indicated a positive relation between service climate, personnel service performance, and store financial performance.

Studies on the relation between global climate (a broad range of climate aspects) and global performance outcomes are limited. Patterson, Warr and West (2004) did a study on the mediating effect of job satisfaction on the relationship between global organizational climate and productivity at 39 manufacturing companies containing 4503 employees in total. They found a positive significance correlation between 5 of the 17 climate dimensions and company productivity. Another global climate study has been performed by Gelade and Ivery (2003). In their study, conducted at the branch network of a retail bank among 14.390 employees, they found global climate to be positively related to sales against target, staff retention, clerical accuracy, customer satisfaction, and overall performance (combination of previous indicators).

In this thesis, I conceptualize organizational climate as a global construct, covering a broad range of climate aspects: innovation, responsibility, standards, rewards, and clarity. This provides a good representation of the organizational climate within a company, and gives detailed information on how specific climate aspects are related to company performance (and each other). Having this representation of organizational climate will make it possible to implement actions that improve specific climate aspects *and* global climate in the most effective way (i.e. improvement in climate aspects of innovation would be more effective than improvements in aspects of rewards, when innovation aspects are stronger related to company performance then rewards aspects are). Furthermore, I use global performance indicators that are crucial for business success: financial performance indicators, operational performance indicators and employee engagement.

*Hypothesis 1: Organizational climate is positively related to financial performance, operational performance and employee engagement.* 

Relatively few is known on the underlying mechanisms that explain the relation between organizational climate and these performance indicators. Patterson et al. (2004) suggest employee affect as mediator between organizational climate and company performance, and found that the relation between organizational climate and company performance is mediated by job satisfaction. Although they highlight employee affect as mediator between organizational climate and organizational performance, they do not explain *why* employee affect mediates the relation between organizational climate and organizational performance.

The relation between organizational climate and organizational performance can be explained using the Social Exchange Theory. This theory is based upon the assumption that social exchanges involve several actions that create obligations, and that relationships evolve over time into trusting, loyal, and mutual commitments (Cropanzano & Mitchell, 2005). These relationships can exist among two or several persons, but also among persons and organizations. Reciprocity or repayment is the most common exchange rule; the action of one party initiates a response of the other party that wants to 'repay' this action. Employers can reward employees in two different ways using economic and socio-emotional resources. Economic resources are tangible and often are financial rewards, socio-emotional resources are intangible and address the social needs of employees. Employing these resources, employers can create strong relationships with their employees, as employees have the tendency to repay these rewards with 'better' work behavior and positive employee attitudes (Cropanzano & Mitchell, 2005).

Organizational climate is part of these socio-emotional and economic resources. Thus, when employers establish an organizational climate that is perceived as positive by their employees, this will result in better organizational performance and higher levels of commitment, motivation and job-satisfaction. Employee engagement, which is an umbrella term for aspects of organizational commitment, job satisfaction and job involvement, therefore, will also be affected positively by organizational climate.

Macey and Schneider (2008) propose that high states of employee engagement lead to discretionary effort of employees. Discretionary effort on its turn will lead to better organizational performance (Corporate Leadership Council, 2004). Thus, organizational climate does not only seem to have a direct influence on financial and operational performance, but also indirectly via employee engagement. Therefore, I hypothesize:

# *Hypothesis 2: The relationship between organizational climate and financial and operational performance is partially mediated by employee engagement.*

Employee engagement has rapidly become popular among human resource management practitioners. The term has evolved from research on work attitudes (e.g. organizational climate research), and was first introduced by (HR) consulting firms, in order to create a people oriented measure that could be related to business performance. The speed of introduction of this term had a negative effect on the theoretical foundation; the components of employee engagement have not been conceptualized very well (Macey & Schneider).

Employee engagement both refers to psychological states and behaviors, as well as their antecedents. Engagement as a psychological state represents some form of absorption, attachment, and enthusiasm to the work and organization (Macey & Schneider, 2008), and is often an umbrella term for aspects of organizational commitment, job satisfaction and job involvement. Behavioral aspects of engagement are often referred to as discretionary effort: "Employee willingness to go "above and beyond" the call of duty, such as helping others with heavy workloads, volunteering for additional duties, and looking for ways to perform the job more effectively" (Corporate Leadership Council, 2004). Antecedents concern aspects that lead to the psychological states and behaviors of employee engagement, which often include aspects very similar to organizational climate. For example, Towers Perrin (2005) measured employee engagement by measuring rational and emotional engagement. Rational engagement includes both behavioral aspects (i.e. discretionary effort), and aspects of what I would refer to as organizational climate (i.e. the extent to which employees understand their role, and their unit's role, relative to the company objectives), while emotional engagement includes psychological state aspects (e.g. pride, commitment, (job-) satisfaction). Harter, Hayes and Schmidt (2002) refer to employee engagement as 'the individual employees involvement and satisfaction with as well as enthusiasm for work" (pp.269). They measure employee engagement using the Gallup Workplace Audit (GWA), which is composed of 1 overall satisfaction item and 12 items that measure employee perceptions of work characteristics. The 12 items include several items that are rather antecedents of employee engagement than measures for psychological state and behavioral aspects of engagement, and are highly similar to measures for organizational climate (e.g. 'I know what is expected of me at work', 'I have the materials and equipment I need to do my work right').

In this thesis, I will refer to employee engagement as a psychological state only, rather than a combination of antecedents, psychological states, and behavioral outcomes.

## 2.4 Antecedents of organizational climate

Organizational climate has an important influence on organizational outcomes. Therefore, it is of great importance to know what factors influence organizational climate. Meanwhile, there is considerably less information on the antecedents of organizational climate than on its consequences.

The influence leadership has on organizational climate has been established as the main driver for organizational climate. Roughly, leadership can be divided in 3 types of behavior: consideration, initiating structure and charismatic (transformational) leadership:

"Consideration is the degree to which a leader acts in a friendly and supportive manner, shows concern for subordinates, and looks out for their well-being. Initiating structure is the degree to which a leader defines and structures his or her own role and the roles of subordinates toward attainment of the group's formal goals. Transformational or charismatic leadership adds to these behaviors by introducing the visionary aspect of leadership as well as the emotional involvement of employees within the organization" (Koene, Vogelaar & Soeters, 2002, pp. 194)

Koene et al. (2002), in a study at 50 supermarket stores of a large supermarket chain, found consideration to have a significant effect on organizational climate. Other studies identified the relationship between transformational leadership and specific organizational climate aspects: for example, climate for innovation (Jung, Cho & Wu, 2003), and involvement climate (Richardson & Vandenberg, 2005).

Thus, the way management interacts with its subordinates has a significant effect on organizational climate perception. This indicates that the way managers implement human resource practices will be of great importance on organizational climate perception of organizational members. A supportive manager, that shows concern and looks out for subordinates, while stimulating and making clear what is expected, will be more successful in creating a favorable organizational climate than a manager who does not employ these behaviors. These behaviors, which include aspects of both consideration and initiating structure, I will refer to as management support. In line with the results from Koene et al. (2002), management support will have a positive influence on organizational climate:

# *Hypothesis 3: there is a positive relation between management support and organizational climate.*

Organizational unit size has important implications for the structure and systems within an organization. Large organizations are standardized, often mechanistically run, and complex (Daft, 2004). In small organizations, communication is informal and face-to-face, because (top) management usually works directly with employees on day-to-day operations. For larger organizations, the distance between managers and workers in the non-managing functions increases; formal systems and procedures are implemented to deal with the increase in information and complexity. This has far-reaching consequences for management support perception; management support perception will be more positive in small organizations than in large organizations. *Hypothesis 4: there is a negative relation between organizational unit size and management support.* 

Payne and Mansfield (1973) studied the relationships among contextual, structural and climate variables. They concluded that "perhaps the best conclusion to draw is that organizational climate is independent of organizational context and structure. However, accepting the present results as our best estimates of these relationships, the pattern of relationships, using means and levels, between aspects of size and dependence are strong enough to suggest that these variables do influence climate (pp. 525)". Thus, they did not found much evidence on the relationship between organizational structure and context *and* organizational climate, but they did found preliminary evidence that organizational unit size influences organizational climate. However, they do not provide *any* explanation on *how* organizational unit size affects organizational climate.

Organizational unit size has a negative effect on management support (see hypothesis 4); it is more difficult for management in large organizations to give the appropriate amount of management to its subordinates. Management on its turn has a significant impact on organizational climate perception (see hypothesis 3). Therefore, I expect management support to be the factor that explains the relation between organizational unit size and organizational climate. Thus, rather than a direct relation between organizational unit size and organizational climate, I expect management support to mediate the relationship between organizational unit size and organizational climate. Therefore, I hypothesize:

*Hypothesis 5: the relationship between organizational unit size and organizational climate is mediated by management support perception.* 

## 2.5 Employee level and organizational climate perception

According to the model of Wright and Nishii (2010) top management is responsible for creating the HR strategy, while middle managers are responsible for implementing the HR practices. This gives them (especially top management) a principal impact on organizational climate. As a consequence of this, their climate perceptions will be more positive than non-management's climate perception. Evidence for differences in climate perceptions among employee levels is found in the studies of Payne and Mansfield (1973) and Patterson et al. (2004). Payne and Mansfield (1973) studied the effect of hierarchical level on organizational climate perception and found that persons higher in the organization tend to have a more positive climate perception than lower hierarchical levels. In their study, they collected data in 14 different work organizations ranging in size from 262 employees to 4580 employees. However, not all of the employees were questioned in their study, their results were only based on a sample of 387 employees in total. Patterson et al. (2004) studied the relation between organizational climate of management and non-management in 42 manufacturing companies ranging in size from 70 to 1150 employees. Their results indicate that management perceives climate more positive than non-management.

In this thesis, I investigate climate perception of three employee levels: top-management, middle management and non-management. Non-management consists of people performing the basic work of producing the products and delivering services, top management includes managers overseeing the whole organization, while middle management is a hierarchical line between non-management and top management: managers of non-managers and managers of managers. The studies mentioned before do not make a distinction between middle management and top-management. Results from top management, however, are very interesting, as they are responsible for establishing the human resource strategy. Therefore, it is plausible to assume that their results will give an indication of the organizational climate that is desired within an organization.

Hypothesis 6: Organizational climate perception is more positive for employees higher in the organization, such that, top management's climate perception is more positive than middle management's climate perception, and middle management's climate perception more positive than non-management's climate perception.

## 2.6 Theoretical framework

In Figure 1, the theoretical framework that is tested in this thesis is presented. I tested what influence organizational climate has on several organizational outcomes: financial performance, operational performance, and employee engagement. Besides, I investigated whether employee engagement (partially) mediates the relation between organizational climate and financial/operational performance.

Additionally, antecedents of organizational climate are analyzed. In my model, I suggest organizational climate is directly affected by management support, and indirectly by organizational unit size; the effect of organizational unit size is (fully) mediated by management support.



Figure 1, theoretical framework; the solid lines indicate direct relations, while the dashed line indicates an indirect relation (fully mediated relation).

## 3. Methodology

## 3.1 Sample and Procedure

The study is conducted in a large multinational company that is active in the fast moving consumer goods market. The multinational's activities are divided among several operating companies, active in different countries and regions. The operating companies all perform comparable activities, but differ in size. The smallest operating company has only 23 employees, while the largest has a workforce of about 6064 employees.

Employees on all levels (top management, middle management, and non-management) received a questionnaire via either email or paper. A total of 41.693 questionnaires in 49 operating companies were distributed of which 30.892 employees filled out usable questionnaires (approximately 75% response rate), among them 469 top-managers, 3717 middle managers, and 17646 non-managers. For 9215 employees no employee level was specified.

For some operating companies detailed data on employee levels are available, while for others this is less detailed. For 14 operating companies detailed information on three levels (Top Management, Middle Management, and Non-Management ) is available, for 18 operating companies only nonmanagement and middle management scores', and for 17 operating companies no employee level was specified at all. The number of employees in top Management ranges from 5 to 163 employees, for middle management this is from 12 to 491 employees, while the amount of employees in nonmanagement ranges from 18 to 2698.

Individual climate scorers are aggregated to provide operating companies level scores (see 3.7 aggregation), and company performance indicators are gathered from the company's reporting systems. Five different company performance indicators are used in this study: profitability, financial sustainability & growth, EBIT margin, productivity. Not all of the 5 performance indicators were available for each operating company. Productivity, profitability, financial sustainability & growth, and EBIT margin is available for 42 operating companies, while numbers on employee turnover are only available for 29 operating companies.

## **3.2 Employee survey**

Measures for organizational climate, management support, and employee engagement were derived from responses on an employee survey. As stated, the survey was spread among the employees of the different operating companies. Each operating company (OpCo) had its personalized survey in its local language. The employee survey consists of 49 items, asking employees their opinion about their organizational climate, management support and engagement. A total of 35 items were on organizational climate, 10 on management support, and 4 items on employee engagement. Furthermore, each operating company was asked to specify questions that would allow for identification of different demographic groups within an operating company (i.e. employee level, functional level, age, gender, tenure). Each operating company asked these questions in their own preferred way. All questions in the survey were answered on a 5 point Likert scale, ranging from 5) strongly agree, 4) agree, 3) neither agree nor disagree, 2) disagree, 1) strongly disagree or from 5) very good, 4) good, 3) average, 2) bad 1) very bad.

## 3.3 Organizational Climate measure

In this thesis, organizational climate is measured by 21 items of the employee survey on organizational climate, divided into 5 aspects of total climate perception: innovation, responsibility, standards, rewards and clarity. The total climate score is calculated by averaging the scores on the 5 climate aspects. This approach is preferred above averaging the 21 units, because the number of items for each climate aspects differs. Averaging the 23 units would give some climate aspects more weight than others, something that is not preferred for this study. An overview of the dimensions, including the number of items, reliability and sample items is presented in Table 1. The complete set of items that is used to measure the organizational climate aspects is presented in Appendix 2.

Dimension	Number of items	Cronbach alpha	Sample items
Innovation	4	0,799	"I am encouraged to be innovative in my job (i.e., to come up with new or better ways of doing things)"
Responsibility	3	0,748	"I have enough authority to carry out my job effectively"
Standards	4	0,762	"Within [Name OpCo] we compare ourselves to the external market to perform better"
Rewards	4	0,780	"I receive recognition when I do a good job"
Clarity	8	0,857	"[Name OpCo] business strategy and goals are clear to me"

Table 1, climate aspects and total climate score.

To get an operating company score for the separate climate aspects (and total climate score) individual climate scores are averaged per operating company (see 3.7 aggregation). The scales for measuring organizational climate in this study are in line with comparable dimensions in the literature. Table 2 provides an overview of dimensions from the literature. The definitions for the dimensions can be found in appendix 1.

Koys and DeCotiis (1991)	Pritchard and Karasick (1973)	Hay Group/McBer (1995)	Common dimensions		
Innovation	Flexibility/Innovation	Flexibility	Flexibility/Innovation		
Autonomy	Autonomy	Responsibility	Autonomy		
Autonomy	Decision centralization	Responsibility	Autonomy		
	Level of rewards				
Recognition	Performance reward dependency	Rewards	Rewards		
Cohesion	Conflict vs. cooperation	Team Commitment	Team Commitment		
Trust	Social realtions	reall communent	ream communent		
Support	Supportiveness		Support		
	Motivation to achieve	Standards	Standards		
Pressure	-	-			
Fairness	-	-			
-	-	Clarity			
	Structure	-			
	Status Polarization	-			

Table 2, Organizational climate dimensions from literature

### **3.4 Management support measure**

Management support is measured by individually asking the employees how they perceive the management support they get from their direct manager. In the employee survey, they filled out 8 items covering accessibility, feedback, career support, trust, consistency and stimulation. Sample items are: 'How would you rate your direct manager on: Being accessible/available when you need him or her' and 'My direct manager provides clear and regular feedback on my performance'. The other items are presented in appendix 3. The questions were asked on 5 point Likert scale. Cronbach's alpha is 0,940. Again, to get an operating company score, the scores are averaged per operating company (see 3.7 aggregation).

### 3.5 Organizational unit size measure

Organizational unit size is measured by the amount of employees within an operating company. The operating companies in this study differ in size considerably. As said, the largest operating company has 6064 employees, and the smallest has only 23 employees. Average number of employees is 851, with a standard deviation of 1131. I classified organizational unit size in three groups: 1) small, 2) medium, 3) large. Descriptive statistics for the classification are presented in Table 3.

Organizational unit size	Employee range	Number of OpCo's	Average	Standard deviation	
1.Small	<250	17	74	50	
2.Medium	250-1000	21	598	243	
3.Large	>1000	11	2535	1319	

Table 3, classification of organizational unit size

### **3.6 Performance measures**

Kaplan and Norton (1992) developed a measurement tool for company performance which they called the balanced scorecard. Observing and working with many companies, they came to the conclusion that both financial and operational measures are needed to monitor performance on critical areas. The financial perspective indicates whether the tactics and strategies the company performs contribute to the desired (financial) results. Typical financial indicators are related to profitability, growth and shareholder value, while operational performance indicators are related to critical processes and competencies.

In this research project, I employ both financial and operational performance measures. Furthermore, to cover the employee-oriented perspective of company performance, I use employee engagement as a measure for performance. Measures are selected on availability and relevance.

### **3.6.1. Financial performance measures**

### 3.6.1.1 Profitability: EBIT per FTE (EBIT/FTE)

Earnings before interest and tax (EBIT) is a measure for the profitability of a company excluding interest and tax expenses. To increase the comparability of the operating companies that are analyzed in this research, EBIT is chosen above net profit, because the operating companies are active in different countries with different tax rates and financial structures. EBIT is provided on yearly results. The operating companies that are analyzed in this research differ in size. Therefore, EBIT is divided by the number of employees in an operating company, to make a comparison between operating companies possible.

### 3.6.1.2 Financial sustainability and growth: Revenue per FTE (Revenue/FTE)

Revenue is the income that a company generates from its operating activities, and is an important indicator for financial sustainability and growth. On the long term a company's revenue should grow (or at least remain constant) to ensure its market position and income. Again, the measure is normalized by dividing by the number of persons.

# 3.6.1.3 EBIT margin: EBIT divided by the number of units produced and sold (EBIT/#units produced and sold)

This indicator gives an impression on how much a specific operating company earns per unit that is sold. Thus, it is a measure on how *effective* an operating company is in conversing sales into profit.

### 3.6.2 Operational performance measures

3.6.2.1 Productivity: number of units produced and sold per FTE (# units produced and sold/FTE) This measure gives an indication on the productivity of an operating company: how much is produced and sold per full time equivalent within a year.

# 3.6.2.2 Employee turnover (# of persons that left the company voluntary within a year/ total number of persons)

Skilled personnel is essential for company performance in terms of learning, innovation and task accomplishment. When people leave the company part of these capabilities could be lost. This will damage a company's operational activities, having a negative influence on the performance of a company. Furthermore, hiring new persons and getting them acquainted with the company's practices and activities is a costly process. People that are not valuable to the organization and left the company involuntary are not included in this measure. The measure used in this work only measures *voluntary turnover*. Voluntary leavers are employees who resigned from the company due to compensation reasons, lack of career perspectives, job related and work environment issues, and other voluntary leave.

#### 3.6.3 Employee engagement

Employee engagement is measured by individually asking all employees to fill out 3 items covering pride, well being, and satisfaction. Sample items are: 'I feel proud to work for [Name OpCo]' and 'Considering everything, how would you rate your overall satisfaction working for [Name OpCo] at the present time' (see appendix 4). 5 point response scales were used. Cronbach's alpha is 0.908. Operating company scores are acquired by averaging the scores per operating company (see 3.7 aggregation).

### **3.7 Aggregation**

Organizational climate, management support, and employee engagement are measured on individual level, though the level of analysis of this thesis is on operating company level. Individual scores, therefore, need to be aggregated to operating company level. Aggregation however is only justifiable when the scores show certain within group agreement (Gonza'lez-Roma & Peiro, 2002). Burke, Finkelstein and Dusig (1999) developed a model to test within group agreement by examining the interrater agreement. In their model, interrater agreement is the degree to which judges (respondents) assign the same raw scores to a rated object (i.e. organizational climate). Interrater agreement is evaluated with the "average deviation" (AD) index. Using this index, average deviation indices for each of the organizational climate aspects (and total climate score), management support and employee engagement scale can be assessed. First, the average deviations for each of the items in a scale are computed:

$$AD_{M(j)} = \frac{\sum_{n=1}^{N} \left| x_{jk} - \overline{x_j} \right|}{N} \tag{A}$$

In this equation  $AD_{M(j)}$  is the average computed from the mean for an item *j*, *N* is the number of respondents on that item,  $x_{jk}$  is the k<sup>th</sup> respondent's score on item *j*, and  $x_j$  is the the arithmetic mean of the respondents' scores on item *j*. Following, the average deviations for each of the measures can be computed:

$$AD_{M(j)} = \frac{\sum_{j=1}^{J} AD_{M(j)}}{J}$$
(B)

Where  $AD_{M(j)}$  is the average deviation computed from the mean for the *J* items of that measure.  $AD_{M(j)}$  is calculated as in (A).

Using the AD is a practical index to asses interrator agreement, as it is a measure of variability that only uses the units of the original scale. Other indices to asses interrater agreement make use of estimates and null hypothesis (e.g. James, Demaree & Wolf, 1993). The AD indices for the total climate scores (and 5 climate aspects), management support measure, and employee engagement measure are calculated for each operating company. Average interrater agreement (and standard deviation), calculated from the AD indices from each of the operating companies, are presented in Table 4.

	AD <sub>M</sub> (Average)	AD <sub>M</sub> (Standard deviation)		
Total climate score	0.992	0.142		
Innovation	1.000	0.169		
Responsibility	0.982	0.173		
Standards	0.901	0.121		
Rewards	1.137	0.160		
Clarity	0.983	0.152		
Management support	1.049	0.153		
Employee engagement	0.908	0.084		

 Table 4, average interrater agreement for the measures.

Most of the measures in my research have average deviation indices that are below the value of 1, while some of them are slightly above the value of 1. A value of 1 stands for a 1 scale step in the ordinal likert scale (i.e. strongly agree versus agree). I will accept aggregation of individual scores, when the rounded value (zero decimals) of the average deviation index is equal or smaller than the value of 1. This is in close agreement with the criteria of Burke et al. (2004) who specify an average deviation index below the value of 1 (for 5-point likert scale) as acceptable for aggregation.

In addition, I tested whether the average operating company scores on the measures differ significantly between operating companies. An F-test from a one-way analysis of variance (ANOVA) indicated that significant differences exist between operating companies (see Table 5).

	F-ratio
Total climate score	52.868***
Innovation	52.017***
Responsibility	40.143***
Standards	65.146***
Rewards	59.891***
Clarity	60.926***
Management support	37.617***
Employee engagement	107.774***

Table 5, ANOVA F ratios for the measures in this study.\*\*\*\*p<.001</td>

The F-tests (as well as the average interrator agreement) support aggregation of individual scores to operating company level scores. Consequently, individual item scores of the surveys are aggregated to total climate scores (and climate aspects scores), management supports scores, and employee engagement scores for each operating company.

### 3.8 Analyses

The analyses of this thesis include three parts. In the first part, the relation between organizational climate and performance is investigated. In the second part, the antecedents of organizational climate are assessed, while in the third part of the analysis, the role of employee level on organizational climate perception is investigated. The methods I used for these analyses are described below.

### 3.8.1 The relation between organizational climate and performance

Hypothesis 1 states that there is a positive relation between organizational climate and financial performance, operational performance and employee engagement. For organizational climate, both the total climate score (weighted average of the 23 items), as well as the 5 climate aspects separately, are considered. This gives information on how the total climate score, as well as the separate climate aspects, are related to the different performance indicators.

Testing these relations is done by regressing the outcomes (dependent variables) on the predictors (independent variables). The outcomes are regressed separately on the different predictors (independent variables). The first step was to regress the first indicator of financial performance 'profitability' on the total climate score, and then repeat this regression for the single climate aspects separately. Next, the same regressions were done, but the next performance indicator 'sustainability & growth' was used as dependent variable, instead of 'profitability'. This process was repeated until all the performance indicators were regressed on the total climate score and separate climate aspects. The regression analyses that have been performed to test hypothesis 1 are summarized in formula (1).

$$P_i = \alpha^{1}{}_{i,j} + \beta^{1}{}_{i,j}C_j \tag{1}$$

Where  $P_i$  stands for the i'th performance indicator, i ranging from profitability (financial), sustainability & growth (financial), EBIT margin (financial), productivity (operational), employee turnover (operational), to employee engagement.  $C_j$  stands for the organizational climate, j ranging from total climate, innovation, responsibility, standards, rewards, to clarity.  $\alpha^{1}_{i,j}$  and  $B^{1}_{i,j}$  are the regression coefficients for these regressions for, respectively, the constant term and organizational climate.

The performance indicators in this study are measured in different units of measurement. As a consequence of this, the (unstandardized) regression coefficients cannot be used to compare the impact of organizational climate on the different performance indicators; the changes in dependent variables (performance indicators) caused by changes in the independent variable (organizational climate) are indicated by different units.

Therefore, I used standardized coefficients to find out which performance indicators are *most* affected by organizational climate. Contrary to (unstandardized) regression coefficients, standardized coefficients can be used to compare different outcome units, because they are based on changes on standard

deviation rather than on absolute values (see Textbox 1).



A standardized regression coefficient is a regression coefficient that results from a regression

#### Standardized regression coefficients

The performance indicators I used in this study are not only dependent on organizational climate. Market position, intensity of competition, and other (external) factors are also of great importance on company performance. Whereas regression coefficients indicate how the dependent variables (performance indicators) change when the independent variable (organizational climate) is varied, the coefficient of determination (R<sup>2</sup>) indicates which part of the variation in an outcome (performance indicators) is accounted for by the predictor (organizational climate). Thus, the regression coefficient indicates the magnitude of change in the dependent variable, caused by the independent variable, while the coefficient of determination is a measure of which proportion of performance is predicted by organizational climate, rather than by other factors. A higher coefficient of determination indicates that organizational climate is of more predictable value for performance, and that the performance indicator is likely to be influenced by less other variables. The coefficient of determination is determined by comparing the total variance in the independent variable (performance indicators) to the variance explained by the dependent variable (organizational climate) (see Textbox 2).

Textbox 1, standardized regression coefficients

### Coefficient of determination

The total variance in the dependent variable sample (performance indicators variances) is equal to the total sum of squares:

$$SS_{tot} = \sum_{i} (p_i - \overline{p})^2$$

 $SS_{tot}$  stands for the total sum of squares,  $p_i$  for the observed values (performance indicators of different operating companies) and p for the average of the observed values (average of performance indicators).

The variance that is explained by the dependent variable (organizational climate) is equal to the regression sum of squares (explained sum of squares):

$$SS_{reg} = \sum_{i} (f_i - \overline{f})^2$$

 $SS_{reg}$  stands for the explained sum of squares,  $f_i$  for the predicted values of the regression analysis and  $\overline{f}$  for the average of the predicted values.

The coefficient of determination (for a linear regression model) is equal to:

$$R^2 = \frac{SS_{reg}}{SS_{tot}}$$

The coefficient of determination has a value between 0 and 1. A value of 1 indicates that all variance in the dependent variable is explained by the independent variable, while a value of 0 indicates that the dependent variable does not explain any variance in the dependent variable.

Textbox 2, the coefficient of determination

# 3.8.2 Employee engagement: mediator between organizational climate and financial/operational performance.

Hypothesis 2 states that employee engagement (partially) mediates the relation between organizational climate and financial/operational performance. To test this mediation hypothesis I used the approach from Baron and Kenny (1986). In general, a variable functions as a mediator if it accounts for the relation between a predictor and outcome. To clarify the meaning of mediation, they introduced a path diagram (see Figure 2)



Figure 2, path model to test mediation (Baron & Kenny, 1986)

This model assumes a three variable path model, in which two variables impact the outcome variable. The outcome variable is directly impacted by the independent variable (path c). In addition, the mediator variable has an impact on the outcome variable (path b), and the mediator variable on his turn is impacted by the independent variable (path a). According to Baron and Kenny (1986) a variable does function as a mediator when three conditions are satisfied. First, the independent variable should be significantly be associated with the mediator variable (path a). Second, the mediator variable should be significantly be associated with the outcome variable (path b). Third, when paths a and b are controlled, a previously significant relation between the independent variable and outcome variable is reduced. Full mediation occurs when path c turns into a non-significant value, while partial mediation is present if path c is reduced to a lower significant value.

Testing whether employee engagement functions as a mediator involves three steps. In the **first** step employee engagement is regressed on organizational climate, while in the **second** step the financial/operational performance indicators are regressed on organizational climate. These steps involve the same regression analyses as hypothesis 1. In the **third** step, the financial/operational performance indicators are regressed on organizational climate *and* employee engagement. These multiple regression analyses are presented in formula (2).

$$P_i = \alpha^2_{i,j} + \beta^2_{i,j} C_j + \beta^3 ENG$$

Where  $P_i$  stands for the i'th performance indicator, i ranging from profitability (financial), sustainability & growth (financial), EBIT margin (financial), productivity (operational), employee turnover (operational).  $C_j$  stands for the organizational climate, j ranging from total climate, innovation, responsibility, standards, rewards, to clarity. ENG stands for employee engagement.  $\alpha^2_{i,j}$ ,  $\beta^2_{i,j}$ ,  $\beta^3$  are

(2)

the regression coefficients of these multiple regression analyses for respectively the constant term, organizational climate, and employee engagement.

The mediation hypothesis is supported when significant relations are found for the first two regression analyses, and when in the third regression analysis, employee engagement is significantly related to the financial/operational performance indicators. Additionally, the relation between organizational climate and financial/operational performance in the third regression analysis, has to be reduced compared to relation found in the second regression analysis.

# 3.8.3 The relation between organizational unit size, management support and organizational climate.

Hypothesis 3 states that there is a positive relation between management support and organizational climate, while hypothesis 4 specifies a negative relation between organizational unit size and management support. These relations are tested using linear regression analyses. To test the first relation, total organizational climate score (and the separate climate aspects) are regressed on management support:

$$C_j = \alpha^3_j + \beta^4_j MS \tag{3}$$

Where  $C_j$  stands for the organizational climate, j ranging from total climate, innovation, responsibility, standards, rewards, to clarity. MS stands for management support perception.  $\alpha^{3}_{j}$  and  $B^{4}_{j}$  are the regression coefficients for these regression analyses for, respectively, the constant term and management support.

The second relation, the relation between organizational unit size and management support, is tested by regressing management support on organizational unit size:

$$MS = \alpha^4 + \beta^5 S \tag{4}$$

Where MS stands for management support and S for organizational unit size.  $\alpha^3$  and  $\beta^5$  are the regression coefficients for this regression analysis for, respectively, the constant term and organizational unit size.

Hypothesis 5 indicates that management support acts as a mediator of the relation between organizational unit size and organizational climate. Again, I will use the same approach as used to test the mediating effect of hypothesis 2. Thus, **first** management support is regressed on organizational unit size, which are the same regression analyses as for hypothesis 4. **Second**, organizational climate is regressed on organizational unit size:

$$C_j = \alpha_j^5 + \beta^6_j S \tag{5.1}$$

Where  $C_i$  stands for organizational climate, j ranging from total climate, innovation, responsibility, standards, rewards, to clarity. S stands for organizational unit size.  $\alpha_i^5$  and  $\beta^6_i$  are the regression coefficients for this regression analysis for, respectively, the constant term and organizational unit size.

**Third**, organizational climate is regressed on both management support *and* organizational unit size (multiple regression analyses):

$$C_{j} = \alpha_{j}^{6} + \beta^{7}_{j} S + \beta^{8}_{j} MS$$
(5.2)

Where  $C_j$  stands for organizational climate, j ranging from total climate, innovation, responsibility, standards, rewards, to clarity. S stands for organizational unit size and MS for management support perception.  $\alpha_j^6$ ,  $\beta^7_j$ , and  $\beta^8_j$  are the regression coefficients for this regression analysis for, respectively, the constant term, organizational unit size and management support.

The mediation hypothesis is supported if significant relations are found for the **first** and **second** regression analyses, and when in the **third** regression analysis, management support is significantly related to organizational climate. Additionally, the relation between organizational unit size and organizational climate, in the third regression analysis, should turn into a non-significant value.

### 3.8.4 Organizational climate perception of different employee levels

Hypothesis 5 states that organizational climate perception is more positive for employees higher in the organization than for lower level employee levels' climate perception. To examine the effects of hierarchical level on organizational climate perception, one-way analyses of variances of the individual climate scores, categorized by hierarchical level (top management, middle management, non-management) are performed

## 4. Results

## 4.1 Descriptive statistics, reliability and correlations of measures

The data in the present study includes data on organizational climate (aspects), management support, employee engagement and several financial and operational performance indicators. To give an impression on the scores of these measures, as well as their reliability, descriptive statistics and Cronbach alpha's for these measures are presented in Table 6.

CronBach Alpha	Average	Standard deviation	Minimum value	Maximum value
0.838	3.523	0.225	2.993	4.261
0.799	3.555	0.278	2.981	4.290
0.748	3.672	0.261	3.077	4.274
0.762	3.544	0.292	2.459	4.179
0.780	3.080	0.348	2.438	4.050
0.857	3.762	0.231	3.125	4.515
0.940	3.697 0.256		2.913	4.317
0.908	3.719	0.336	2.906	4.577
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
	equice of the second se	equility         and bound of the second	equilibrium         and between the second seco	eq dic by by by by by by by by by by by by by

Table 6, descriptive statistics and reliability for the measures of this study

To get a first idea on how the different measures are related to each other, correlations between the measures are presented in Table 7. In turns out that the organizational climate aspects are (strongly) correlated to each other. Regarding the performance indicators commonly, it becomes clear that profitability is significantly related to all of the other financial and operational performance indicators, while sustainability & growth is significantly related to all the other financial and operational performance indicators, except employee turnover. EBIT margin and Productivity are only significantly related to profitability and sustainability & growth, and employee turnover is only significantly related to profitability. Employee engagement is significantly related to profitability, sustainability & growth, and productivity.

How the climate scores and performance indicators are related to each other, and how management support and organizational unit size are related to the climate scores, is discussed in depth in the next part of the results, where the hypotheses of this study are tested.

	Total Climate Score	Innovation	Responsibility	Standards	Rewards	Clarity	Organizational Unit Size	Management Support	Employee engagement	Profitability	Sustainability & Growth	EBIT Margin	Productivity	Employee Turnover
Total Climate Score	1	.82**	.71**	.73**	.84**	.89**	.41**	.82**	.78 <sup>**</sup>	.48 <sup>**</sup>	.36*	.36*	.32*	12
Innovation	.82**	1	.47**	.43**	.74**	.60**	.50**	.63**	.66**	.31 <sup>*</sup>	.49**	.20	.31 <sup>*</sup>	10
Responsibility	.71**	.47**	1	.37**	.47**	.57**	.11	.71**	.71 <sup>**</sup>	.27	.26	.19	.23	.02
Standards	.73 <sup>**</sup>	.43**	.37**	1	.39**	.77**	.11	.57**	.44**	.45**	.05	.39*	.24	.00
Rewards	.84**	.74 <sup>**</sup>	.47**	.39**	1	.67**	.49**	.64**	.69 <sup>**</sup>	.43**	.40**	.30*	.25	14
Clarity	.89 <sup>**</sup>	.60**	.57**	.77**	.67**	1	.41**	.78 <sup>**</sup>	.63**	.50**	.25	.37*	.26	24
Organizational Unit Size	.41**	.50 <sup>**</sup>	.11	.11	.49**	.41**	1	.34 <sup>*</sup>	36 <sup>*</sup>	.24	.16	.37*	24	11
Management Support	.82**	.63**	.71**	.57**	.64**	.78**	.34*	1	.71 <sup>**</sup>	.26	.21	.18	.16	30
Employee engagement	.78 <sup>**</sup>	.66**	.71**	.44**	.69**	.63**	36*	.71**	1	.37*	.40**	.28	.32*	22
Profitability	.48 <sup>**</sup>	.31*	.27	.45**	.43**	.50**	.24	.26	.37 <sup>*</sup>	1	.62**	.85**	.37*	51**
Sustainability & Growth	.36 <sup>*</sup>	.49 <sup>**</sup>	.26	.05	.40**	.25	.16	.21	.40**	.62**	1	.32*	.61**	09
EBIT Margin	.36*	.20	.19	.39 <sup>*</sup>	.30 <sup>*</sup>	.37*	.37*	.18	.28	.85**	.32*	1	06	38
Productivity	.32*	.31*	.23	.24	.25	.26	24	.16	.32*	.37*	.61**	06	1	32
Employee Turnover	12	10	.02	.00	14	24	11	30	22	51**	09	38	32	1

Table 7, correlations between the measures. \*\*p<.01 \*p<.05

## 4.2 The relation between organizational climate and performance

Hypothesis 1 states that organizational climate is positively related to financial performance, operational performance and employee engagement. To test this hypothesis, the performance indicators are regressed on the organizational climate scores as described in 3.8.1. The results of these regression analyses are presented in Table 8. The results of Table 8 **Error! Reference source not found.** show that there are positive significant relations between organizational climate score and respectively profitability, sustainability & growth, EBIT margin, productivity and employee engagement. These relations partly confirm hypothesis 1, due to the lack of significant relations between total climate and employee turnover, hypothesis 1 cannot fully be confirmed.

Organizational climate has most impact on employee engagement ( $\beta^*$  = 0.781) and profitability ( $\beta^*$  = 0.481). An increase of one standard deviation in the total climate score will result in 0.613 standard deviation increase in employee engagement. For profitability, this is an increase of 0.481 standard deviation, while for the other performance indicator the relations are considerably less strong (or insignificant); sustainability & growth (0.365), EBIT margin (0.357), productivity (0.316) and employee turnover (insignificant). An overview of these relations is presented in Figure 3.

The coefficients of determination indicate that organizational climate has most predictive value for employee engagement and profitability; total climate accounts for 61.0% of the variation in employee engagement and for 23.1% of the variation in profitability. For the other performance indicators, the total climate score accounts for considerably less of the variation; sustainability & growth (13.3%), EBIT margin (2.7%), Productivity (10.0%) and employee turnover (1.3%). The coefficients of determination are also presented in Figure 3.





Independent variable	Dep. Variable	Employee engagement	Profitability	Sustainability & Growth	EBIT Margin	Productivity	Employee Turnover
Total climate score		$β=1.165^{**}$ SE=.136 $β^*=.781$ <b>α=.606</b> SE=.338 R <sup>2</sup> =.610	$\beta = 75.149^{**}$ SE=21.417 $\beta^* = .481^{**}$ $\alpha = -234.724^{**}$ SE=75.628 $R^2 = .231$	$\beta$ =222.706 <sup>*</sup> SE=88.851 $\beta^*$ =.365 $\alpha$ =-536.462 SE=313.756 R <sup>2</sup> =.133	$β=20.302^*$ SE=8.283 $β^*=.357$ α=-58.466 SE=29.250 R <sup>2</sup> =.128	$β=1.465^*$ SE=.687 $β^*=.316$ α=-2.800 SE=2.427 $R^2=.100$	β=.637 SE=1.052 $β^*=.116$ α=-1.216 SE=3.701 $R^2=.013$
Innovation	β=.791 <sup>**</sup> SE=.133 <b>α=.347</b> SE=.328 R <sup>2</sup> =.429	$\beta$ =41.176 <sup>*</sup> SE=19.468 $\alpha$ =-116.117 SE=69.326 R <sup>2</sup> =.098	$\beta = 253.308^{**}$ SE=69.653 $\alpha = -651.035^{*}$ SE=248.039 R <sup>2</sup> =.244	β=9.674 SE=7.291 <b>α=-21.278</b> SE=25.964 R <sup>2</sup> =.041	β=1.203 <sup>*</sup> SE=.578 <b>α=-1.908</b> SE=2.060 R <sup>2</sup> =.095	β=.355 SE=.673 <b>α=227</b> SE=2.375 R <sup>2</sup> =.010	
Responsibility	β=.915 <sup>**</sup> SE=.132 <b>α=.152</b> SE=.308 R <sup>2</sup> =.507	β=36.114 SE=20.287 <b>α=-102.348</b> SE=74.586 R <sup>2</sup> =.072	β=138.417 SE=79.378 α=-259.256 SE=291.832 R <sup>2</sup> =.069	β=9.533 SE=7.501 <b>α=-21.885</b> SE=27.577 R <sup>2</sup> =.038	β=.913 SE=.608 <b>α=985</b> SE=2.235 R <sup>2</sup> =.052	β=076 SE=.683 <b>α=1.301</b> SE=2.508 R <sup>2</sup> =.000	
Standards		$\beta$ =.502 <sup>**</sup> SE=.151 $\alpha$ =1.048 <sup>**</sup> SE=.374 R <sup>2</sup> =.190	$\beta$ =58.343 <sup>**</sup> SE=17.923 $\alpha$ =-177.810 <sup>**</sup> SE=64.060 R <sup>2</sup> =.205	β=25.683 SE=78.451 <b>α=156.737</b> SE=280.406 R <sup>2</sup> =.003	$\beta$ =18.019 <sup>*</sup> SE=6.738 $\alpha$ =-51.134 <sup>*</sup> SE=24.083 R <sup>2</sup> =.149	β=.930 SE=.578 <b>α=951</b> SE=2.067 R <sup>2</sup> =.059	β=009 SE=.818 <b>α=1.057</b> SE=2.947 R <sup>2</sup> =.000
Rewards		β=.660 <sup>**</sup> SE=.103 <b>α=.353</b> SE=.301 R <sup>2</sup> =.469	$\beta = 42.646^{**}$ SE=14.178 $\alpha = -100.812^{*}$ SE=43.817 R <sup>2</sup> =0.181	β=155.454 <sup>**</sup> SE=56.179 <b>α=-228.831</b> SE=173.623 R <sup>2</sup> =.157	β=11.081 <sup>*</sup> SE=5.419 α=-20.939 SE=16.748 R <sup>2</sup> =.093	β=.732 SE=.450 <b>α=.188</b> SE=1.392 R <sup>2</sup> =.061	β=.397 SE=.554 <b>α=182</b> SE=1.688 R <sup>2</sup> =.019
Clarity		$β=.917^{**}$ SE= .164 α=.229 SE=.370 $R^{2}=.398$	$\beta = 77.263^{**}$ SE=20.920 $\alpha = -261.148^{**}$ SE=79.006 R <sup>2</sup> =.250	β=148.820 SE=91.451 <b>α=-312.672</b> SE=345.363 R <sup>2</sup> =.061	β=20.967 <sup>*</sup> SE=8.137 <b>α=-65.961<sup>*</sup></b> SE=30.728 R <sup>2</sup> =.139	β=1.213 SE=.691 <b>α=-2.209</b> SE=2.609 R <sup>2</sup> =.070	β= 1.645 SE=.1.264 <b>α=-5.149</b> SE=4.746 R <sup>2</sup> =.059

Table 8, the relation between organizational climate and performance indicators.  $p^* < 0.05$ 

A detailed analysis on the relation between the climate aspects of total organizational climate and the performance indicators is presented below. In this analysis, aspects of organizational climate that have most effect on each of the performance indicators are identified.

### 4.2.1 Financial performance indicators

The total climate score has a strong significant effect on profitability ( $\beta$ =75.149, SE=21.417, p<0.01). An increase of 1 point on the total climate score will result in 75.149 increase in profitability. Considering the separate climate aspects, it can be observed that clarity has most impact on profitability ( $\beta$ =77.263, SE=20.920, p<0.01) and that innovation has the least strong impact on profitability ( $\beta$ =41.176, SE=19.468, p<0.05). For responsibility, no significant relation with profitability could be identified. An overview of these relations can be found in Figure 4.

The coefficient of determination indicates that clarity has most predictive value for profitability; 25.0% of the variation in profitability is accounted for by clarity. This number is slightly higher than for total climate score, which only clarifies 23.1% of the variation in profitability. Standards and rewards clarify, respectively, 20.5% and 18.1% of the variation in profitability, while innovation and responsibility only account for, respectively, 9.8% and 7.2%.



Figure 4, the relation between total climate (and the separate climate aspects) and profitability.  $*^{*}$ p<.01 \*p<.05

Total climate score also significantly affects sustainability & growth ( $\beta$ =222.706, SE=88.851, p<0.05). Innovation has the strongest impact on sustainability & growth ( $\beta$ =253.308, SE=69.653, p<0.01), which is considerably stronger than the impact of rewards ( $\beta$ =155.454, SE=56.179, p<0.01). For the other climate aspects, no significant relations with sustainability & growth could be identified. An overview of these relations can be found in Figure 5.

Innovation has far the most predictive value for sustainability & growth; 24.4% of the variation in sustainability & growth is explained by innovation. For rewards and total climate score these numbers

are, respectively, 15.7% and 13.3%. The other climate aspects have low predictive value for sustainability & growth; responsibility (6.9%), clarity (6.1%) and standards (0.3%).



Figure 5, the relation between total climate (and the separate climate aspects) and Sustainability & Growth. \*\*p<.01 \*p<.05

For the third financial performance indicator, EBIT margin, I also identified a significant positive association with total climate score ( $\beta$ =20.302, SE=8.283, p<0.05). Clarity ( $\beta$ =20.967, SE=8.137, p<0.05) and standards ( $\beta$ =18.019, SE=6.738, p<0.05) have the most effect on EBIT margin, while rewards has the least strong influence on EBIT margin ( $\beta$ =11.081, SE=5.419, p<0.05). For innovation and responsibility, I did not identify any significant relations with EBIT margin.

Standards and clarity account for, respectively, 14.9% and 13.9% of the variation in EBIT margin. This number is slightly lower for total climate (12.8%) and rewards (9.3%), while responsibility (3.8%) and innovation (4.1%) clarify significantly less variation in EBIT margin.





### 4.2.2 Operational performance indicators

The total climate score has a significant influence on productivity ( $\beta$ =1.465, SE=.687, p<0.05). From the climate aspects, only innovation has a significant impact on productivity ( $\beta$ =1.203, SE=.578, p<0.05). For the other climate aspect, I did not found any significant relations.

Total climate score accounts for the most variation in productivity (10.0%). Innovation, clarity, rewards, standards and responsibility account for respectively 9.5%, 7.0%, 6.1%, 5.9% and 5.2% of the variation in productivity. These relations are summarized in Figure 7.





No significant relations between organizational climate and employee turnover could be identified, nor for the total climate score, neither for the separate climate aspects. Hardly none of the variation in employee turnover is accounted for by organizational climate; total climate (1.3%), innovation (1.0%), responsibility (0.0%), standards (0.0%), rewards (1.9%), clarity (5.9%).

### 4.2.3 Employee engagement

Total climate score has a strong impact on and employee engagement ( $\beta$ =1.165, SE=.136, p<0.01). Considering the separate climate aspects, the strong influence of responsibility ( $\beta$ =0.915, SE=.132, p<0.01) and clarity ( $\beta$ =.917, SE=.164, p<0.01) on employee engagement stands out. The other climate aspects also have a significant impact on employee engagement; innovation ( $\beta$ =.791, SE=.133, p<0.01), rewards ( $\beta$ =.660, SE=.103, p<0.01) and standards ( $\beta$ =.502, SE=.151, p<0.01).

The total climate score accounts for 61.0% of the variation in employee engagement. From the climate aspects, responsibility and rewards have the most predictive value for employee engagement; responsibility and rewards clarify, respectively, 50.7% and 46.9%, of the variation in employee engagement. For innovation this percentage is 42.9 %, for clarity 39.8% and for standards only 19.0%.

An overview of these relations is presented in Figure 8.



Figure 8, the relation between total climate (and the separate climate aspects) and Employee engagement. The numbers in this figure are unstandardized regression coefficients. \*\*\*p<.01 \*p<.05

# 4.3 Employee engagement as mediator of the relation between organizational climate and financial/operation performance.

Hypothesis 2 indicates that employee engagement functions as (partial) mediator of the relation between organizational climate and financial/operational performance. The first condition that must be satisfied for is that there is significant relation between organizational climate and employee engagement, while the second condition prescribes a significant relation between organizational climate and financial/operational performance. The first and second condition are satisfied for; there is a significant positive relation between total climate and employee engagement and between total climate score and profitability, sustainability & growth, EBIT margin and productivity (see Table 9). The third condition requires employee engagement to be significantly related to financial/operational performance when financial/operational performance is regressed on organizational climate *and* employee engagement. The results of these regression analyses show that the third condition is not satisfied for; employee engagement is not significantly related to profitability, sustainability & growth, EBIT margin, or productivity. Employee engagement is significantly related to employee turnover, however, this performance indicator is not significantly impacted by organizational climate (second condition).

Independent variable	Dependent variable	Profitability	Sustainability & Growth	EBIT Margin	Productivity	Employee Turnover
Total climate score		в=84.414 <sup>*</sup>	в=70.067	в=22.395	β=.758	β=2.532
		(37.741)	(153.955)	(14.608)	(1.205)	(1.301)
Employee engagement		β=7.577	β=124.824	β=-1.712	β=.578	β=-1.458 <sup>*</sup>
		(25.276)	(103.106)	(9.783)	(.807)	(.656)
constant term		α=-239.152 <sup>**</sup>	α=-463.515	α=-59.467	α=-2.462	α=-2.472
		(77.895)	(317.754)	(30.149)	(2.486)	(3.504)
coefficient of determination		R <sup>2</sup> =.233	R <sup>2</sup> =.164	R <sup>2</sup> =.128	R <sup>2</sup> =.111	R <sup>2</sup> =.171
Innovation		в=12.371	<i>β=222.171<sup>*</sup></i>	в=.035	в=.629	<i>в=1.113</i>
		(28.099)	SE=102.770	(10.576)	(.846)	(.770)
Employee engagement		β=31.528	β= 34.081	β= 10.550	β= .629	β=-1.110
		(22.416)	(81.983)	(8.437)	(.675)	(.608)
constant term		α=-131.275	<b>α=-667.420<sup>*</sup></b>	α=-26.350	α=-2.210	α=1.178
coefficient of determination		(69.356) R <sup>2</sup> =.141	(253.661) R <sup>2</sup> =.247	(26.104) R <sup>2</sup> =.077	(2.088) R <sup>2</sup> =.115	(2.410) R <sup>2</sup> =121

Table 9, the (multiple) regression analyses from the performance indicators on organizational climate *and* employee engagement. The values in parenthesis are the standard errors of the regression coefficients.

ble		th			
Dependent varia	ofitability	stainability & Grow	T Margin	Productivity	ployee Turnover
Independent variable	Pro	Sus	EBI		Em
Responsibility	β=350	β=-30.910	β=789	β=039	<i>β=.721</i>
Employee engagement	(28.880)	(111.250)	(10.843)	(.873)	(.868)
	β=38.918	$\beta=180.726^*$	β=11.017	β=1.016	β=980
	(22.432)	(86.412)	(8.422)	(.678)	(.678)
constant term	α=-113.597	α=-311.493	α=-25.069	α=-1.279	α=2.013
	(73.110)	(281.627)	(27.449)	(2.211)	(2.508)
coefficient of determination	R <sup>2</sup> =.137	R <sup>2</sup> =.161	R <sup>2</sup> =.077	R <sup>2</sup> =.102	R <sup>2</sup> =.075
Standards	<i>β=46.041<sup>*</sup></i>	<i>6=-104.881</i>	<i>β=15.408</i>	<i>β=.412</i>	<i>β=.210</i>
	(20.796)	(83.323)	(7.906)	(.663)	(.831)
Employee engagement	β=19.506	β=207.024 <sup>**</sup>	β=4.141	β=.822	β=652
	(16.917)	(67.781)	(6.431)	(.539)	(.543)
constant term	α=-206.625 <sup>**</sup>	α=-149.079	α=-57.251	α=-2.166	α=2.683
coefficient of determination	(68.524)	(274.549)	(26.051)	(2.185)	(3.222)
	R <sup>2</sup> =.231	R <sup>2</sup> =.191	R <sup>2</sup> =.157	R <sup>2</sup> =.111	R <sup>2</sup> =.052
Rewards	<i>β=32.570</i>	в=90.757	<i>β=7.818</i>	<i>β=.142</i>	<i>β=.870</i>
Employee engagement	(19.716)	(77.250)	(7.551)	(.616)	(.599)
	β=15.231	β=97.797	β=4.933	β=.892	β=998
constant term	(20.586)	(80.659)	(7.884)	(.643)	(.572)
	<b>α=-126.613</b> <sup>*</sup>	<b>α=-394.501</b>	<b>α=-29.295</b>	<b>α=-1.394</b>	<b>α=2.079</b>
coefficient of determination	(56.192)	(220.166)	(21.520)	(1.755)	(2.082)
	R <sup>2</sup> =.192	R <sup>2</sup> =.187	R <sup>2</sup> =.101	R <sup>2</sup> =.104	R <sup>2</sup> =.121
Clarity	β=71.027 <sup>*</sup>	β=-25.478	в=19.160	<i>β=.408</i>	в=2.538
Employee engagement	(28.666)	(118.641)	(11.156)	(.929)	(1.298)
	β=6.257	$\beta = 174.898^{*}$	β=1.814	β=.808	β=-1.002
constant term	(19.413) α=-260.948 <sup>**</sup>	(ου.340) α=-307.092	(7.555) α=-65.903 <sup>*</sup>	α=-2.183	(.532) α=-4.789
coefficient of determination	(79.886)	(330.629)	(31.089)	(2.589)	(4.542)
	R <sup>2</sup> =.252	R <sup>2</sup> =.160	R <sup>2</sup> =.141	R <sup>2</sup> =.107	R <sup>2</sup> =.172

 Table 9 (continued), the (multiple) regression analyses from the performance indicators on organizational climate and employee engagement. The values in parenthesis are the standard errors of the regression coefficients.

## 4.4 The relation between organizational unit size, management support and organizational climate

Hypothesis 3 indicates a positive relation between management support and organizational climate. To test this hypothesis, the climate scores are regressed on management support as described in 3.8.3, and are presented in Table 10. A strong significant relation is identified between management support and total climate score ( $\beta$ =.724, SE=.073, p<.01). Management support has strong predictive value for total climate perception; 67.8 % of the variation in total climate score is accounted for by the perception of management support.

In addition, the separate climate aspects are influenced significantly by management support. Management support has most impact on rewards ( $\beta$ =.866, SE=.153, p<.01), while the impact of management support on the other climate aspects is comparable to the impact on the total climate score. Management support accounts for most variation in clarity (60.6%), and for least variation in standards (31.9%).

Hypothesis 3 is confirmed by the results of this study; there is a significant relation between management support and organizational climate.

Independent variable	Dependent variable	Total climate score	Innovation	Responsibility	Standards	Rewards	Clarity
Management Support	L	$\beta$ =.724 <sup>**</sup> SE=.073 $\alpha$ =.847 <sup>**</sup> SE=.269 R <sup>2</sup> =.678	$β=.679^{**}$ SE=.123 $α=1.043^{*}$ SE=.457 R <sup>2</sup> =.392	$\beta$ =.727 <sup>**</sup> SE=.104 $\alpha$ =.984 <sup>*</sup> SE=.386 R <sup>2</sup> =.509	$\beta$ =.643 <sup>**</sup> SE=.137 $\alpha$ =1.165 <sup>*</sup> SE=.508 R <sup>2</sup> =.319	β=.866 <sup>**</sup> SE=.153 <b>α=122</b> SE=.566 R <sup>2</sup> =.406	$\beta$ =.702 <sup>**</sup> SE=.083 $\alpha$ =1.167 <sup>**</sup> SE=.306 R <sup>2</sup> =.606

Table 10, the relation between management support and organizational climate.

p<.01 p<.05

Hypothesis 4 states that there is negative relation between organizational unit size and management support. This hypothesis is tested by regressing management support on organizational unit size. The result of this regression analysis is presented in Table 11. The results of Table 11 indicate that there is a significant negative relation between organizational unit size and management support ( $\beta$ =-.115, SE=.047, p<.05). 11.4 % of the variation in management support perception is accounted for by the organizational unit size.

	Dependent variable:		
	Management support		
Independent variable:	β=115 <sup>*</sup> (.047)		
Organizational Unit Size	α=3.913 <sup>**</sup> (.094)		
	R <sup>2</sup> =.114		

Table 11, the relation between organizational unit size and management support. The number in parenthesis is the standard error of the regression coefficient.

<sup>\*</sup>p<.01 <sup>\*</sup>p<.05

According to hypothesis 5, management support acts as a mediator of the relation between organizational unit size and organizational climate. The first step for testing this mediating effect is satisfied for by the results of hypothesis 4; there is a significant relation between organizational unit size and management support. The second requirement is that organizational unit size must be significantly be associated with organizational climate. This requirement is satisfied for; organizational unit size has a significant negative effect on total climate score ( $\beta$ =-.123, SE=.040, p<.01).

The third step involves the (multiple) regressions of organizational climate *on* organizational unit size and management support. This regression analysis shows that management support has a significant influence on total climate ( $\beta$ =.679, SE=.076, p<.01). Furthermore, it turns out that the *previous* significant relation between organizational unit size and total climate scores is reduced to an insignificant value (from  $\beta$ =-.123, SE=.040, p<.01 to  $\beta$ =-.045, SE=.026, p>.05). Therefore, the relation between organizational unit size and total climate score is fully mediated by management support (see Figure 9). The regression analyses involved to test hypothesis 5 are summarized in Table 12.



Figure 9, the (full) mediation of management support of the relation between organizational unit size and total climate perception. The dashed line indicates that there is only an indirect relation. \*\*p<.01 \*p<.05

Independent variables	Total climate score	Innovation	Responsibility	Standards	Rewards	Clarity
Organizational Unit Size	β=123 <sup>**</sup>	$\beta$ =184 <sup>**</sup>	$\beta$ =039	$\beta$ =042	$\beta$ =225 <sup>**</sup>	$\beta$ =125 <sup>**</sup>
	SE=.040	SE=.047	SE=.050	SE=.056	SE=.059	SE=.041
	<b>α=3.753<sup>**</sup></b>	$\alpha$ =3.900 <sup>**</sup>	$\alpha$ =3.746 <sup>**</sup>	$\alpha$ =3.622 <sup>**</sup>	$\alpha$ =3.501 <sup>**</sup>	$\alpha$ =3.997 <sup>**</sup>
	SE=.080	SE=.094	SE=.102	SE=.113	SE=.119	SE=.082
	R <sup>2</sup> =.169	R <sup>2</sup> =.248	R <sup>2</sup> =.013	R <sup>2</sup> =.012	R <sup>2</sup> =.236	R <sup>2</sup> =.167
Organizational Unit Size	β =045	β=120 <sup>**</sup>	β =.050	β =.036	β=141 <sup>**</sup>	β =050
	SE=.026	SE=.041	SE=.037	SE=.050	SE=.029	SE=.029
Management support	β=.679 <sup>**</sup>	β=.561 <sup>**</sup>	β=.777 <sup>**</sup>	β =.679 <sup>**</sup>	β=.726 <sup>**</sup>	β= .652 <sup>**</sup>
	SE=.076	SE=.122	SE=.110	SE=.146	SE=.152	SE=.086
Constant term	α=1.097 <sup>**</sup>	α=1.706 <sup>**</sup>	α=.708	α=.965	α=.662	α=1.446 <sup>**</sup>
	SE=.300	SE=.484	SE=.435	SE=.580	SE=.603	SE=.341
Coefficient of determinatio	n R <sup>2</sup> =.699	R <sup>2</sup> =.485	R <sup>2</sup> =.527	R <sup>2</sup> =.327	R <sup>2</sup> =.489	R <sup>2</sup> =.630

Table 12, the relation between organizational unit size, management support *and* organizational climate. the first value is the parameter estimate, and the value in parentheses is the standard error. \*\*\*p<.01 \*p<.05

Equally, full mediation by management support occurs for the relationship between organizational unit size and clarity perception (from  $\beta$ =-.125, SE=.059, p<.01 to  $\beta$ =-.050, SE=.029, p>.05). This relation is presented in Figure 10.



Figure 10, the (full) mediation of management support of the relation between organizational unit size and clarity perception. The dashed line indicates an indirect relation. \*\*\*p<.01 \*p<.05 When entering management support to the relations between organizational unit size and innovation perception, and organizational unit size and clarity perception, the *previous* significant relations turn into significant lower values: innovation (from  $\beta$ =-.184, SE=.047, p<.01 to  $\beta$ =-.120, SE=.041, p<.01) and rewards: (from  $\beta$ =-.225, SE=.059, p<.01 to  $\beta$ =-.141, SE=.029, p<.01). Thus, the relations between organizational unit size *and* innovation perception, and organizational unit size *and* clarity perception, are not (fully) mediated by management support, but management support functions as a partial mediator of these relations. The partial mediation of management support of the relations between organizational unit size and innovation perception, and organizational unit size and rewards perception, are presented in Figure 11 and Figure 12.



Figure 11, the (partial) mediation of management support of the relation between organizational unit size and innovation perception.

<sup>\*\*</sup>p<.01 <sup>\*</sup>p<.05



Figure 12, the (partial) mediation of management support of the relation between organizational unit size and rewards perception.

<sup>\*\*</sup>p<.01 <sup>\*</sup>p<.05

Hypothesis 4 is supported by the results of this study; the relation between organizational unit size and total climate is fully mediated by management support. The mediating effect has also been found for the separate climate aspects: clarity (full mediation), innovation and rewards (partial mediation).

The results of hypothesis 1, 2, 3, 4 and 5 are summarized in Figure 13. Total climate perception is directly significantly related to employee engagement, profitability, sustainability & growth, EBIT margin and productivity (h1). Employee engagement does not mediate the relation organizational climate and financial/operational performance indicators (h2) Regarding the antecedents of total climate perception, I have found that management support is significantly related to total climate perception (h3), and that organizational unit size only has an indirect effect on total climate perception; the relation between organizational unit size and organizational climate is fully mediated by management support (h4, h5).



Figure 13, overview of the results of hypothesis 1, 2, 3,4 and 5. The numbers in parenthesis are standardized coefficients. A green line color indicates that there is a significant relation, while a red line indicates that there is no significant relation. The dashed line indicates that there is not a direct relation, but only an indirect relation. \*\*p<.01 \*p<.05

## 4.5 The effect of hierarchical level on organizational climate perception

Hypothesis 5 states that organizational climate perception is more positive for employees higher in the organization. In Table 13, the one-way ANOVA on the individual total climate scores (as well as on the separate climate aspects), categorized by top management, middle- management and non-management is presented. Mean total climate scores (as well as the mean separate climate aspects scores) show significant differences. In general, top management scores are higher than middle management scores, and middle management scores are higher than non-management scores. The only exception is the climate aspect standards, for which middle management's scores are slightly higher than top management's scores, *but* still higher than non-management's scores. These results broadly support hypothesis 5, which states that organizational climate perception is more positive for persons higher in the organizational hierarchy.

	Top Management (N=469)	Middle Management (N=3717)	Non-management (N=17646)	F-Ratio
Total climate score	3.787	3.633	3,361	344.870***
Innovation	3.809	3.695	3.333	344.979**
Responsibility	4.021	3.815	3.619	121.539**
Standards	3.501	3.516	3.479	3.817 <sup>*</sup>
Rewards	3.545	3.241	2.796	457.225**
Clarity	4.045	3.891	3.581	330.353**

Table 13, mean scores on total climate score (and climate aspects) for top management, middle management and nonmanagement.

<sup>\*\*</sup>p<.01 <sup>\*</sup>p<.05

## 5. Discussion

The purpose of this thesis was to investigate the relation between organizational climate and performance, and to increase the understanding on antecedents of organizational climate. This is tested by examining *how* organizational climate affects company performance, and what influence management support for employees *and* organizational unit size have on organizational climate perception. This thesis is a valuable contribution to the literature, because it further establishes the relation between organizational climate and performance, and it contributes to the understanding of the antecedents of organizational climate. Additionally, the results of this thesis can be employed by business managers to undertake focused improvement actions on organizational climate aspects that have most influence on company performance (see managerial implications).

The results of this study show that total organizational climate perception is positively related to several company performance indicators: profitability (EBIT per FTE), sustainability & growth (Revenue per FTE), productivity (number of units produced and sold per FTE), EBIT margin (EBIT/number of units produced and sold) and employee engagement. A relation between organizational climate and employee turnover was not identified in this study.

Employee engagement has not been found to mediate the relation between organizational climate and profitability, sustainability & growth, productivity and EBIT margin. Employee engagement is thus not the underlying mechanism that clarifies the relation between organizational climate and company performance. I only found a direct relation between organizational climate and company performance; organizational climate itself leads to better company performance rather than via employee engagement. Employee engagement is a (positive) side effect of organizational climate, but not the explanatory variable for better financial/operational performance.

From the financial/operational performance indicators, profitability is most affected by organizational climate. The strong impact of organizational climate on profitability is encouraging for climate advocates; profitability is the *main* performance indicator for determining the success of a company's strategy. If all the other performance indicators are positive, but profitability is negative, company strategy should be reexamined to see whether it is beneficial to continue the current strategy. Only if the profitability expectations on the long term (due to the positive other performance indicators) can compensate for the current unfavorable profitability, the company can continue with the executed strategy.

Regarding the influence of the separate climate aspects (that build up to the total organizational climate score), this study also delivers interesting insights. Profitability is most affected by clarity, and least affected by innovation perception. If the business goals and objectives are clear to employees and they know what their role is in reaching these business goals, profitability of the operating company seems to be higher. The direct influence of innovation on profitability is less strong. However, of all the climate aspects, innovation is strongest related to sustainability & growth. This tends to indicate that innovation perception is crucial for sustainability and growth, but less important for profitability (on the short term). The results of the relations between the separate climate aspects and the company performance

indicators also indicate that standards and clarity perception have the strongest association with EBIT margin. Apparently, when 'standards' and clarity perception is high within an operating company, the ratio between EBIT and products produced and sold is also higher, indicating that an operating company has the ability to get more profit out of its sales. Employee engagement has found to be strongest related to responsibility. Providing employees with the resources, information and authority to do their jobs effectively, has important implications for engagement perception among employees.

Another finding of this thesis is that there is a positive relation between management support and organizational climate, and that the relation between organizational unit size and organizational climate is mediated by management support. For total organizational climate (and clarity), the impact of organizational unit size is fully mediated by management support, while for innovation and rewards the relation is only partially mediated. Thus, total climate score (and clarity perception) are not directly influenced by organizational unit size, but via management support; management support is impacted by organizational unit size and total climate (and clarity perception) by management support. For innovation and rewards perception the relation is only partially mediated by management support, indicating that other mechanisms than only management support mediate the relation between organizational unit size and organizational climate. The impact of management support, however, is significantly higher than the impact of organizational unit size, making management support, of these two, the most important antecedent for organizational climate.

Additionally, I investigated what the role of employee hierarchy is on the perception of organizational climate. The results indicate that people higher in the organizational hierarchy perceive organizational climate more positive than people in lower hierarchical levels; top management has a more positive climate perception than middle management, and middle management perceives organizational climate more positive than non-management. This confirms what was found in earlier studies by Payne and Mansfield (1973) and Patterson et al. (2004). These results have an important methodological implication: when analyzing organizational climate you should always have a sample that represents the ratio management non-management of that specific organization.

## 5.1 Strengths, limitations and conclusions

This thesis has several strengths, including the large sample that has been used. An additional strength of my study is that the company performance indicators also include independent, fact based measures, instead of only *perceptions* of company performance.

Nevertheless, this thesis also has some limitations. First, organizational unit size of the operating companies differs considerably and the operating companies were active on markets in different countries. This reduces the comparability of the operating companies. Likely, when operating companies would have been more comparable, more significant relations between organizational climate and performance would have been identified.

Another limitation of this study is that the model for testing the relation between organizational climate and performance does not take into account the possible effect of reversed causality. Thus, that better performance also could lead to a more positive organizational climate. To exclude this possibility for once and forever, it is necessary to do longitudinal analyses. Including past company performance indicators, as independent variable in the model to predict present company performance from present organizational climate, can be used to exclude reversed causality. Results of other studies are encouraging; for example, Patterson et al. (2004) considered reversed causality in their method, and found that organizational climate affects company performance, indicating a causal relationship between organizational climate and company performance.

The items I used to measure organizational climate are measured on a different level of analysis. Whereas most items are asked on individual level (i.e. 'I receive recognition when I do a good job' or '[Name OpCo] business strategy and goals are clear to **me**'), some items are asked on operating company level (i.e. 'Within [Name OpCo] **we** compare ourselves to the external market to perform better' or '**Employees** are encouraged to take reasonable risks' ). Asking people to give their judgments for the whole organization is different from only asking them about their own situation. Likely, some employees are not able to give an accurate answer, as they do not always have a clear picture on the whole organization. Therefore, it would have been better when the items were asked on individual level only.

In this study, I considered employee engagement as a psychological state only. This type of engagement appears to be strongly correlated to organizational climate. It seems that employee engagement has substantial overlap with organizational climate and that when measuring organizational climate also employee engagement is partly covered in this measure. To have a construct more distinct from organizational climate, it would have been better to measure the behavioral aspect of employee engagement (i.e. discretionary effort). In the line of reasoning I used for employee engagement to be the mediator between organizational climate and company performance, I assumed that higher (psychological) states of employee engagement automatically lead to discretionary effort, an assumption that not has to be necessarily true. It is well possible that psychological state engagement does not go hand in hand with the behavioral aspect of employee engagement, employee engagement does mediate the relation between organizational climate and company performance.

For this study, it would have been interesting when organizational climate of operating companies could have been identified for different functions (i.e. Supply chain, Marketing & Sales, Finance, HR). First, this would give information on how organizational climate of different functions is related to each other. Besides, organizational climate of different functions could have been related to performance. This could have given interesting insights on which functional organizational climate has most influence on bottom line performance.

All together, the results of this study are very meaningful. I have identified strong evidence that organizational climate affects company performance in terms of profitability, sustainability & growth, EBIT margin and productivity. Besides, I found that organizational climate leads to higher employee engagement (psychological state), but that this type of employee engagement is not the explanatory factor for the relation between organizational climate and company performance.

Regarding the antecedents of organizational climate, I can conclude that managers play an important role on organizational climate perception of the organizational members. The extent to which employees have a positive perception of their organizational climate depends strongly on the behaviors of managers in an organization. Organizational members perceiving high management support, consider organizational climate considerably better than organizational members with a low management support perception. There is a relation between organizational unit size and organizational climate, but this relation is mediated by management support. Not organizational unit size is determinative for organizational climate perception, but management support for organizational members. Organizational unit size only makes it more difficult for managers to deliver the management support desired by organizational members.

Although the results of this study originate from a company active in the fast moving consumer goods market, the results of this study can be generalized to all type of organizations. Each organization consists out of people; the organizational climate in which they have to do their work, will affect how good they perform their tasks, and contribute to business success. The effect of organizational climate can be expected to be bigger for some type of organizations. For example, for innovative organizations, for which human capital is the *main* and sometimes only resource of competitive advantage, organizational climate will be even of more importance. Times that innovation only was something from centralized R&D labs have long been gone. To keep pace with fast changing external environments, innovation should come from employees on all levels and different departments. Organizational climate, which concerns all employees within an company, therefore, is of main importance in creating the work environment that stimulates innovative behavior *and* company performance.

Organizational climate is actually a representation of the perception of human resource practices employed *and* implemented by management. This makes it at the same time a measure for both the type of human resource practice *and* for *how* the human resource practice is implemented, giving an impression of the success of the whole human resource management process. In the final part of this thesis, I will identify managerial implications that can be used to increase organizational climate, and thus business results. However, first I will present some recommendations for further research.

## **5.2 Recommendations**

A valuable addition to this thesis would be to investigate the moderating role of geographical region on the relationship between organizational climate and performance. Possibly, for operating companies in different geographical regions (*and* cultures), organizational climate is of more importance on performance than for others.

Another interesting research project would be to examine the moderating role of climate strength on the relation between organizational climate and performance. Climate strength is the degree of withinunit agreement among unit members' climate perceptions. For an organizational climate that is widely supported and shared among organizational members, the relation between organizational climate and performance will probably be stronger than for organizational climates in which huge differences exist among organizational members perceptions'. Preliminary evidence of the positive moderating role of climate strength on the relation between organizational climate and performance is provided by Gonza'lez-Roma & Peiro (2002), but additional research is needed to further establish this relation.

Additionally, to exclude effects of reversed causality, longitudinal research projects on the relation between organizational climate and performance are of importance.

## **5.3 Managerial Implications**

Organizations have to be well aware that organizational climate really matters for bottom line business results. Therefore, I would first recommend to distribute the results of this report among all organizational members. First, this will create awareness by (top) management that organizational climate really matters and that it needs the appropriate degree of attention. Second, employees will feel that they are of importance to the organization. Below, I summarized several remarks that should be taken into account for creating a high performance organizational climate.

- Be aware that management must be responsible for organizational climate, rather than the HR department. HR departments should facilitate actions and improvement, but business should be in lead, as they are in direct contact with employees. Make managers responsible for organizational climate perception by including it in part of their performance review. However, take into account that managers are not the *only* factor influencing organizational climate. Furthermore, be aware of the possibility that managers try to influence organizational climate scores unfairly.
- Steering at organizational climate must be done by all management levels. Line management is in direct contact with most of the employees in the organization. Though, the effect of senior management on organizational climate perception should not be underestimated. Therefore, involve senior management, and let employees feel that they are also valued and supported by them. This can be done by arranging meetings, in which employees from lower hierarchical levels get into touch with senior management. For example, let senior management take over

the work activities from a blue collar employee for a (part of the) day, or let senior management have lunch with employees once in a while.

- It is crucial that management knows what is going on the work floor. If management wants their support to be appreciated, it is indispensible that they know what is valued. Therefore, as a manager, make free some time every week to chat with your subordinates. Do this in a structure way, but try to avoid these chats seems planned. To make these chats most effective, employees should have the idea that it is just an informal conversation.
- Steering on organizational climate must be an everyday business, rather than incidentally taking improvement actions. Furthermore, it must be a tailored approach for different cultures *and* persons; different people have different perceptions.
- Organizational climate is a measure of *perception*. Therefore, it is very important that management takes visible actions; organizational members have to *perceive* that something has changed/improved in their work environment.
- For large organizations, it cannot be an excuse for management to have a low(er) organization climate just because of their size. Although, organizational size makes it harder for management to create a more positive organizational climate, they are responsible their selves for creating the organizational climate.
- The extent to which organizational members appreciate their organizational climate depends strongly on the ability of management to provide the necessary management support for its subordinates. Keep this in mind when assigning persons to managerial positions. A specialist on a certain field does not have to be a good people manager.
- Employee engagement is only of importance on company performance when the psychological state of employee engagement leads to discretionary effort. Therefore, introduce actions that challenge engaged people to do extra work besides their normal activities.

This all looks simple, but in practice, often these "simple" things are not that obvious for all organizations. Great steps in organizational climate can already be made when taking into account these remarks.

Due to limitations of time and resources, management has to choose which actions on organizational climate will be most effective to reach desired outcomes. The results of my study are very valuable for this purpose. Below, I will provide some focused improvement actions on specific aspects of organizational climate that can be used to affect specific organizational outcomes:

- **Employee engagement**: Employee engagement can be best stimulated by increasing organizational climate perception of responsibility. Thus, giving employees the authority, information, and resources to do their jobs effectively, will be most effective for improving employee engagement.
- **Profitability**: profitability of the organization can be improved most effectively by improving organizational climate perception on clarity. Making clear to organizational members what the business goals are and how their specific tasks relate to these goals will affect profitability most effective.

- Sustainability & growth / productivity: Sustainability & growth and productivity can be
  increased most effectively by improving organizational climate perception on innovation.
  Encouraging employees to be innovative and to take reasonable risks will have important
  implications for sustainability & growth (revenue generation) and productivity (produced and
  sold goods).
- **EBIT margin**: EBIT margin can be increased most effectively by improving the organizational climate on standards. Establishing a high standards organizational climate within an operating company will increase EBIT margin most effectively.

Taking actions on specific climate aspects, always take into account, how much effort it will cost to increase a certain climate aspect. Likely, it will be easier to improve a certain climate aspect from a low score to an average score, than from an average score to a high score (diminishing returns). Besides, it is well possible that certain climate aspects are easier to improve than others.

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# Appendices

## Appendix 1: climate dimensions from the literature

Koys and DeCotiis (1991) identified over 80 different separate labeled dimensions of climate in literature. To reduce these number of dimensions to a manageable (and comprehensive) set of dimensions they applied the following decision rules on these dimensions: the measure had to be a (1) a measure of perception, (2) had to be a measure evaluating (not describing) activities, and (3) could not be an aspect or task of organizational structure. After this first selection, they categorized the remaining dimension into eight new dimensions, which can be found in Table 14.

Dimension	Definition
Autonomy	The perception of self-determination with respect to work procedures, goals and priorities.
Cohesion	The perception of togetherness or sharing within the organization setting, including the willingness of member of provide material aid.
Trust	The perception of freedom to communicate openly with members at higher organizational levels about sensitive or personal issues with the expectation that the integrity of such communications will not be violated.
Pressure	The perception of time demands with respect to task completion and performance standards.
Support	The perception of the tolerance of member behavior by superiors, including the willingness to let members learn from their mistakes without fear of reprisal.
Recognition	The perception that member contributions to the organization are acknowledged.
Fairness	The perception that organizational practices are equitable and non- arbitrary or capricious.
Innovation	The perception that change and creativity are encouraged, including risk taking into new areas or areas where the member has little or no prior experience.

 Table 14. Definition of each of the eight dimensions of the Universe of psychological climate dimensions (Koys & DeCotiis, 1991)

Another set of dimensions to measure organizational climate is presented by Pritchard and Karasick (1973). Using a literature research and interviews with managers of several different organizations, they selected the dimensions on: (1) expected stability and clarity, (2) theoretical relevance, and (3) importance in light of past research. The eleven scales they used are presented in Table 15.

Dimension	Definition
Autonomy	degree of freedom managers have in day-to-day operating
	decisions such as when to work, when not to work, and how to
	solve job problems.
Conflict vs cooperation	degree to which managers either compete with each other or work together in
	getting things done and in the allocation of scarce resources such as materials, clerical help, etc.
Social relations	degree to which the organization has a friendly and warm social atmosphere.
Structure	degree to which the organization specifies the methods and procedures used
	to accomplish tasks; the degree to which the organization likes to specify and
	codify, and write things down in a very explicit form.
Level of rewards	degree to which managers are well rewarded; this includes salary, fringe
	benefits, and other status symbols.
Performance-reward	extent to which the reward system (salary, promotions, benefits, etc.) is fair
dependency	and appropriate; degree to which these rewards are based on worth, ability,
	and past performance rather than factors such as luck, who you know, how
	well a manager can manipulate people, etc.
Motivation to achieve	degree to which the organization attempts to excel; the strength of its desire to
	be number one. A high rating reflects a lack of complacency even in the face of
	good profits, growth, etc.
Status polarization	degree to which there are definite physical distinctions (e.g., special parking
	places and office decorations) as welt as psychological distinctions (informal
	social boundaries, treatment of the subordinate as inferior, etc.) between
	managerial levels in the organization.
Flexibility and innovation	willingness to try new procedures and experiment with change which is not
	really necessary due to some potential crisis situation, but rather to improve a
	situation or process which
	may currently be working satisfactorily.
Decision centralization	extent to which the organization delegates the responsibility for making
	decisions either as widely as possible or centralizes it as much as possible.
	Decentralization includes the idea of shared authority in decision making.
Supportiveness:	degree to which the organization is interested in and is willing to support its
	managers in both job- and non-job-related matters. The organization's degree
	of interest in the welfare of its managers.

 Table 15. The 11 scales to measure organizational climate by Pritchard and Karasick (1973)

Interest for Organizational climate measures also arises from a managerial perspective, as it gives valuable insights for focused performance improvement (Watkin & Hubbard, 2003). Hay group/McBer (1995), inspired by the work of Litwin and Stringer (1968), identified 6 dimensions of organizational climate that have consistently demonstrated a direct effect on individual and work-unit level performance (Watkin & Hubbard, 2003). An overview of these dimensions is presented in Table 16.

Dimension	Definition
Flexibility	the feeling employees have about constraints in the workplace; the
	degree to which they feel there are no unnecessary rules,
	procedures, policies, and practices that interfere with task
	accomplishment, and that new ideas are easy to get accepted.
Responsibility	the feeling that employees have that a lot of authority has been
	delegated to them. It is also the degree to which they can run their
	jobs without having to check everything with their boss
	and feel fully accountable for the outcome.
Standards	the emphasis that employees feel management puts on improving
	performance and doing one's best, including the degree to which
	people feel that challenging but attainable goals are set for both
	the organization and its employees.
Rewards	Rewards are the degree to which employees feel that they are
	being recognized and rewarded for good work, and that such
	recognition is directly and differentially related to levels of
	performance.
Clarity	the feeling that everyone knows what is expected of them and that
	they understand how those expectations relate to the larger goals
	and objectives of the organization.
Team Commitment	the feeling that people are proud to belong to the organization and
	will provide extra effort when needed. It is also the feeling that
	people trust that everyone is working toward a common objective.

Table 16. The dimensions of organizational climate by Hay group/McBer (1995), definitions from Snow (2002) (pp. 394)

## Appendix 2: items of the organizational climate aspects measures

#### A. Innovation

- 1. I am encouraged to learn from others (colleagues, other departments, comparison with other companies)
- 2. I am encouraged to be innovative in my job (i.e., to come up with new or better ways of doing things)
- 3. Employees are encouraged to take reasonable risks (e.g., try new ideas, new ways of doing things)
- 4. My job provides me with the opportunity to learn new skills and develop new talents

#### **B.** Responsibility

- 1. I have the resources (tools, systems, et cetera) I need to do my job effectively
- 2. I have the information I need to do my job effectively
- 3. I have enough authority to carry out my job effectively

#### C. Standards

- 1. Within [Name OpCo] we compare ourselves to the external market to perform better
- 2. How would you rate [Name OpCo]on responding effectively to changes in the business environment?
- 3. How would you rate [Name OpCo] on being customer focused (seeking to understand and meet it's internal and external customers' needs and requirements)?
- 4. [Name OpCo] is effective in implementing decisions that have been made

#### **D.** Rewards

- 1. I believe I am paid fairly for the work I do
- 2. The better my performance, the better my pay will be
- 3. I receive recognition when I do a good job
- 4. The better my performance, the better my opportunity for career advancement

#### E. Clarity

- 1. [Name OpCo] business strategy and goals are clear to me
- 2. The objectives of my Department are clear to me

- 3. I understand the relationships between my job and [Name OpCo]'s overall direction and goals
- 4. I understand the relationships between my job and my Department's overall direction and goals
- 5. I believe the way [Name OpCo] operates on a day-to-day basis is consistent with its business direction and goals
- 6. I believe the way my Department operates on a day-to-day basis is consistent with its business goals
- 7. I have a clear picture on how [Name OpCo] sees my career
- 8. I have a clear understanding of how my job performance is judged

## **Appendix 3: items of the management support measure**

### F. Management Support

- 1. My direct manager keeps me informed keeps me informed about important company developments
- 2. My manager stimulates me to improve my performance
- 3. I have trust and confidence in my direct manager
- 4. Day to day decisions of and actions of my direct manager are consistent with his/her words
- 5. My direct manager provides clear and regular feedback on my performance
- 6. How would you rate your direct manager on: dealing fairly with with everyone, playing no favourites
- 7. How would you rate your direct manager on: Being accesible/available when you need him or her
- 8. Rate your manager on coaching/counseling you in your career development

## Appendix 4: items of the employee engagement measure

### G. Employee Engagement

- 1. I feel proud to work for [Name OpCo]
- 2. How would you rate [Name OpCo] on taking a genuine interest in the well being of its employees
- 3. Considering everything, how would you rate your overall satisfaction working for [Name OpCo] at the present time