Time Precedence in the Relationship between Climate and Performance: A Cross-lagged Study at the Business Unit Level

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Abstract – This paper presents a two-wave cross-lagged study (average interval of two years) on time precedence in the relationship between organizational climate and organizational performance in 171 branches of a financial services organization in the Netherlands. It is argued that four HRM – induced organizational climate dimensions influence organizational performance. Additionally, it was also hypothesized that high organizational performance influences the four organizational climate dimensions through investments in HR practices and through signaling effects. Finally, it was reasoned that possibly both processes are present simultaneously. Results of testing a series of competing models in AMOS showed that organizational climate at time point 1 influenced organizational performance at time point 2 rather than the reverse, or both processes being present simultaneously.

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INTRODUCTION

Managers and researchers have been assuming that organizational climate has an important effect on organizational performance (e.g. Ashkanasy, Wilderom & Peterson, 2000; Schneider, 1990). The underlying process is generally described as follows: human resource management practices influence employee perceptions of their working environment and employee behaviors, and these behaviors in turn will result in improved organizational performance (e.g. Borucki & Burke, 1999; Kopelman, Brief & Guzzo, 1990; Ostroff & Bowen, 2000). Gelade and Ivery (2003) found that the effects of HR practices on performance were mediated by organizational climate. Less attention is being paid in the literature to the possibility that organizational performance might also influence organizational climate. However, Siehl and Martin (1990) argued for such reverse causation: high performing organizations have the resources through which they can develop or sustain an organizational climate. Another alternative viewpoint is that both directions of causality are present at the same time (James & Jones, 1976; Ostroff, Kinicki & Tamkins, 2003) i.e. organizational climate influences organizational performance and at the same time organizational performance influences organizational climate.

Most of the empirical studies fail to provide a design to demonstrate that the effect of organizational climate on organizational performance is actually causal: organizational climate results in higher organizational performance (Patterson, Warr & West, 2004). Exceptions are studies by Ryan, Schmit and Johnson (1996) and Schneider, White and Paul (1998). Both studies have provided mixed results: reverse causation and dual causality was found. So, uncertainty exists about the temporal order in the relationship between organizational climate and organizational performance. Besides, Ryan et al. (1996) used employee attitudes instead of an organizational climate measure and Schneider et al. (1998) used customer perceptions in contrast to objective data as a performance outcome. Appropriately testing the relationship between organizational climate and organizational performance and the possible recursive nature of this relationship requires a cross-lagged design (Cook & Campbell, 1979) with measurement of both organizational climate and objective performance over time. To date, as far as we know, such a research design has not been used in this specific literature.

This paper reports a two-wave study (average interval two years) that investigates the temporal order in the relationship between four generalized organizational climate dimensions and organizational performance. This study uses archival organizational climate and objective performance data of business units within one company as recommended by Gelade and Ivery (2003) and by Ryan et al. (1996). The major contribution

of this study is testing this relationship with a cross-lagged design. Demonstrating temporal order between organizational climate dimensions and financial performance is important from a theoretical and a pragmatic perspective. After all, in simple conceptual models only a forward causal chain is assumed and in more complex models a reversed causal chain is usually only noted as a possibility, whereas this old proposition has not been sufficiently proved in academic research (e.g. Ostroff et al.,

2003; Paauwe, 2007; Wiley & Brooks, 2000; Wright, Gardner, Moynihan & Allen, 2005). In addition, longitudinal studies until now provided mixed results. In case the results of this study affirm the assumed forward chain of causality, then this study confirms the importance of monitoring and changing organizational climate dimensions within companies.

To start with, we will first clarify the organizational climate and organizational performance concepts. Subsequently, we will discuss the issue of temporal order in the relationship between organizational climate and organizational performance. The second part describes the sample, our measures and statistical approach. The third part presents the empirical results. Finally, we conclude with implications of our findings for science and practice.

THEORY

This paper is built upon climate literature. This research tradition makes use of specific constructs. Therefore, we will start by defining organizational performance and organizational climate. We then theorize about the linkages between organizational climate and organizational performance. Finally, we will discuss prior longitudinal organizational climate research.

ORGANIZATIONAL PERFORMANCE

Organizational performance can be defined in a variety of ways (Guest, 1997). Wright and Gardner (2003) categorized performance measures into employee outcomes (such as turnover and absenteeism), organizational outcomes (such as productivity and service quality) and financial outcomes (such as market value). In this study we include an organizational outcome closely related to productivity. Productivity is a concept that expresses the relationship between output value and input costs (Kopelman et al., 1990). The measurement of productivity in climate literature faces two challenges.

First, in much organizational climate research productivity is only partially measured, only one or a few inputs are measured, for example labor productivity or non-controllable costs (Koys, 2001), or some indirect estimates of outputs are used, for example customer satisfaction (Schneider et al., 1998). So, in most of the studies a proxy for measuring productivity is used. The full productivity ratio (outputs and inputs) is seldom assessed in the climate literature (Kopelman et al., 1990).

A second challenge concerns the level of analysis. In some research the relationship between organizational climate and performance is studied at the corporate level (Schneider et al., 1998). Comparing performance across companies in different industries might be problematic due to industry effects (Wright & Gardner, 2003). Within industry studies researching variance in performance at the business unit level provide the opportunity to control for industry and company effects.

In this study we will use an objective productivity measure (in terms of full costs and revenues) of business units within a large financial services organization. We study to what extent business unit performance can be predicted by organizational climate, and the other way around. In the next session we will introduce the organizational climate concept.

ORGANIZATIONAL CLIMATE

Researchers face a number of conceptual challenges in the measurement of organizational climate (e.g. Patterson, West, Shackleton, Dawson, Lawthom, Maitlis et al., 2005). Organizational climate refers to employees' shared perceptions of the types of behaviors and actions that are rewarded and supported by the organization's policies, practices, and procedures (Schneider, 1990). Sharing means that there is enough perceptual agreement between individual employees, so that climate perceptions can be treated as an organizational-level construct (Patterson et al., 2005). Although we can define the organizational climate concept as shared employees' perceptions of aspects in their working environment, there is still little agreement on the specific elements of an organizational climate.

In this chapter we choose to adopt five global dimensions: goal emphasis, means emphasis, reward orientation, task support and socio-emotional support, as common elements of an organizational climate (Kopelman et al., 1990). Kopelman et al. (1990) argued how these five core dimensions act as performance resources of the working environment needed for organizational performance. Moreover, these organizational climate elements are applicable across multiple work environments and strategic foci.

Additionally, all the five dimensions are highly relevant from an HR perspective as well. Kopelman et al. (1990)

explicitly described how six HR practices: hiring, placing, rewarding, monitoring, developing and promoting influence the climate dimensions. Besides, Kopelman et al.'s (1990) approach is frequently used in previous studies as a basis for exploring the relationship between organizational climate and organizational performance, for example in frameworks of Sparrow (2001) and of Tesluk, Hofmann and Quigley (2002). Finally, this approach is also frequently used for interpreting empirically observed organizational climate categories (Gelade & Ivery, 2003). Kopelman et al. (1990: 296) defined the five core elements as follows:

1. Goal emphasis – the extent to which management makes known the types of outcomes and standards that employees are expected to accomplish

2. Means emphasis – the extent to which management makes known the methods and procedures that employees are expected to use in performing their jobs

3. Reward orientation – the extent to which various organizational rewards are perceived to be allocated on the basis of job performance

4. Task support – the extent to which employees perceive that they are being supplied with the materials, equipment, services and resources necessary to perform their jobs

5. Socio-emotional support – the extent to which employees perceive that their personal welfare is protected by a kind, considerate, and generally humane management

Although the constructs are applicable across multiple work contexts, the content focus of the dimensions, in particular of the goal and means emphasis dimensions is related to the strategic focus in the work context (Kopelman et al., 1990). In the organization studied here quality focus is the most important strategic goal for all business units, but at the same time much emphasis is placed by the organization on efficiently delivering high quality service to customers (Rabobank, 2000). Therefore, the dimensions of goal emphasis and means emphasis are combined into one dimension aimed at the strategic goals of the business unit and the way they are achieved.

A second challenge climate researcher's face in the measurement of organizational climate is whether to combine the dimensions into one general climate index or to include specific climate dimensions in the analysis. In this study we decided to include the dimensions of our climate construct separately. We reasoned that constructing one climate index could hide relationships between specific climate dimensions and productivity. Moreover, Ostroff et al. (2003) argued that there is a need to study the relative importance of climate dimensions for a global effectiveness indicator like productivity. So, apart from studying the temporal order, we also investigate the relative effects of four specific climate dimensions on organizational productivity. In the next section we will discuss theoretical explanations for relationships between the four organizational climate dimensions and organizational performance.

ORGANIZATIONAL CLIMATE - PERFORMANCE RELATIONSHIPS

Forward causation: Organizational climate influences organizational performance. In organizational climate literature, usually a causal direction is assumed where a positive organizational climate results in higher organizational performance via employee behaviors (e.g. Siehl & Martin, 1990). Kopelman et al. (1990) have presented a model that makes more explicit the intervening processes between organizational climate and organizational productivity. They propose 'cognitive and affective states' (primarily work motivation and job satisfaction) and 'salient organizational behaviors' like attachment (attending and staying in the organization), job performance (tasks in one's organizational role) and citizenship (helpful contributions that are not mandatory) as linking mechanisms.

In line with goal setting theories, Kopelman et al. (1990) reasoned that goal and means emphasis reduce role conflict and ambiguity, and reward orientation signals to workers the consequences of their behaviors, resulting in employee motivation. These dimensions provide employees with knowledge about the goals of the organization and about how to align their behavior. Schneider (1975) argued that climate perceptions can serve as a frame of reference for guiding appropriate and adaptive task behaviors. In addition, facilitating performance through a context where goals are clear, work methods are made known, and rewards are aligned, adequate resources and supportive leadership are needed to facilitate work accomplishment (Schneider et al., 1998; Schneider, Bowen, Ehrhart & Holcombe, 2000; Tesluk et al., 2002). Task support reduces physical strain and motivates employees, because they are supplied with the necessary materials, equipment, services and resources to perform their jobs (Kopelman et al., 1990). In line with the organizational support theory (Rhoades & Eisenberger, 2002), Kopelman et al. (1990) argued that employees' beliefs that the organization values their contribution and cares about their well-being will contribute to their overall well-being.

Results of a meta-analysis (Parker, Baltes, Young, Huff, Altmann, Lacost, et al., 2003) indicate that the relationship of climate with performance is mediated by employees' work attitudes at the individual-level of analysis. In addition, Iaffaldano and Muchinsky (1985) and Judge, Thoresen, Bono and Patton (2001) found relationships between job satisfaction and job performance. Positive work attitudes do also generally predict withdrawal behavior like absenteeism (Muchinsky, 1977), turnover (Griffeth, Hom & Gaertner, 2000), and citizenship (Organ, 1988). Furthermore, Viswesvaran and Ones (2000) argued in their literature overview of job performance that withdrawal behavior can negatively affect organizational performance, and job performance and citizenship behavior can positively affect organizational effectiveness. Although we won't investigate mediating mechanisms here, we expect in line with the forward chain of causality between organizational climate dimensions and productivity that:

Hypothesis Ia. Goal and means emphasis at time point 1 have a positive effect on productivity at time point 2

Hypothesis 1b. Reward orientation at time point 1 has a positive effect on productivity at time point 2

Hypothesis 1c. Task support at time point 1 has a positive effect on productivity at time point 2

Hypothesis 1d. Socio-emotional support at time point 1 has a positive effect on productivity at time point 2

Reverse causation: Organizational performance affects organizational climate. The possibility that organizational performance influences organizational climate (reversed causality) is mentioned in the organizational climate and organizational culture literature (Cooke & Szumal, 2000; Siehl & Martin, 1990) and in the HRM literature (Wright et al., 2005). Siehl and Martin (1990) argued that organizations with high profits might have more resources and might reveal a greater willingness to invest in workplace interventions than those organizations that do not have high profits. Godard (2001) indeed found that organizations with more resources implement more successfully workplace interventions than organizations with fewer resources.

High productivity provides employees with the knowledge that their branch is performing well, and that it is accomplishing its productivity goals. At the same time this signals to employees what the goal of the organization is (in this study customer quality) and it reinforces the way how these goals are achieved (in this study efficiency). As a result it can be expected that high productivity scores positively influence the organizational climate dimensions means and goal emphasis. It is also argued that organizations with high profits pay their employees more, yielding in higher scores on the reward orientation dimension (Schneider, Hanges, Smith & Salvaggio, 2003). High organizational performance can positively influence the task support dimension. Organizations with higher profits have more room for investments in materials, equipment, services and resources. Besides, money can be invested as a buffer for lowering the risk of excessive workloads for instance by hiring temporary workers (Van Veldhoven, 2005). In the same way, high productivity can positively influence socio- emotional support; high performing organizations have additional resources available to protect their employees' well-being, including their interpersonal relationships.

Moreover, high organizational performance could also positively affect employees' perceptions and attitudes. Most employees are motivated by personal as well as organizational success; excellent business performance results in feelings of pride (Paauwe & Boselie, 2005). As a result employees' general perceptions of all organizational climate dimensions might be more positively biased. So, we expect that:

Hypothesis 2a. Productivity at time point 1 has a positive effect on goal and means emphasis at time point 2

Hypothesis 2b. Productivity at time point 1 has a positive effect on reward orientation at time point 2

Hypothesis 2c. Productivity at time point 1 has a positive effect on task support at time point 2

Hypothesis 2d. Productivity at time point 1 has a positive effect on socio- emotional support at time point 2

Both directions of causality are present at the same time. Finally, it is possible that both processes as described above are present at the same time. Organizational climate influences organizational performance, however simultaneously organizational climate is influenced by organizational performance. Kopelman et al. (1990) admitted that their proposed model is a simplification; they did not include feedback loops and reciprocal relationships in their model. James and Jones (1976) proposed a complex framework for exploring relationships between organizational climate and outcomes. In their detailed model the relationship between organizational climate and outcomes is described as an open system, in which reciprocal influencing occurs. Ostroff et al. (2003) also included feedback loops in their integrated multilevel model of culture and climate. Schneider et al. (2003) proposed a recursive model, in which HR practices influence job satisfaction, job security and pay satisfaction through organizational performance, and in which pay satisfaction has an effect on organizational performance

through organizational citizenship behavior. Wiley and Brooks (2000) proposed a recursive model, in which climate influences performance, and performance subsequently influences climate. In line with these conceptual models we expect that:

Hypothesis 3a. Goal and means emphasis at time point 1 have a positive effect on productivity at time point 2 and productivity at time point 1 has a positive effect on goal and means emphasis at time point 2

Hypothesis 3b. Reward orientation at time point 1 has a positive effect on productivity at time point 2 and productivity at time point 1 has a positive effect on reward orientation at time point 2

Hypothesis 3c. Task support at time point 1 has a positive effect on productivity at time point 2 and productivity at time point 1 has a positive effect on task support at time point 2

Hypothesis 3d. Socio-emotional support at time point 1 has a positive effect on productivity at time point 2 and productivity at time point 1 has a positive effect on socio-emotional support at time point 2

RESEARCH DESIGN ISSUES

The most prevalent research design in the literature is one where organizational climate measures are taken from the same period and are coupled with financial performance data derived from a period that overlaps or precedes the organizational climate measures (Patterson et al., 2004). However, this type of design does not allow any conclusions on directions of causality, since temporal precedence of the cause is a necessary condition for causal inference (Cook & Campell, 1979). In the next section we will give an overview of some exceptions to this general research design i.e. the few longitudinal studies on organizational climate in relation to organizational performance.

Ideally, research questions on temporal ordering require both measurement of organizational climate and performance over time. We expect that work environments remain to a certain extent stable across time. As organizational climate is formed by the HR practices of the organization (Kopelman et al., 1990), we expect, in line with Schneider, Brief and Guzzo (1996), that organizational climate is difficult to change and rather stable. Moreover, we expect that the relative financial position of branches is predictive of their future financial position, implying stability. In order to control for the stability in organizational climate and productivity scores, it is recommended to make use of a cross-lagged panel design in research on temporal order (Zapf, Dormann & Frese, 1996). In this way we are able to determine whether a change in organizational climate precedes a change in performance. Four previous studies in this field made use of multiple data waves.

Borucki and Burke (1999) studied 596 stores of a large retail company using two waves of employee and customer survey data and financial store data. They found that service climate is predictive of sales personnel service performance, and sales personnel service performance is predictive of store financial performance. Schneider et al. (2003) used employee attitude and financial performance data (ROA and EPS) from 35 companies over 8 years. They found significant and stable relationships for 3 out of 7 scales across various time lags. However, overall job satisfaction and satisfaction with security were predicted by past performance more strongly than in the reverse analysis, and satisfaction with pay exhibited a reciprocal relationship with performance measures. Schneider et al. (1998) concluded in a study on relationships between a climate for service and service quality in 134 branches of a bank that there is a reciprocal effect between a climate for service and service quality. Ryan et al. (1996) reported a study that uses data from 142 branches in a car finance company in two consecutive years. They found several significant relations between attitude factors and performance within successive years, however they unexpectedly found that customer satisfaction in year 1 predicted employee satisfaction in year 2, but not vice versa.

According to Zapf, Dormann and Frese (1996) structural equation modeling is superior to bivariate correlations or regression analyses, because structural equation models allow simultaneous estimation of causal relationships between variables. Schneider et al. (2003) only reported bivariate correlations and did not apply structural equation models. Borucki and Burke (1999) applied structural equation modeling, but they only tested two cross-sectional path models. In this research area, only Ryan et al. (1996) and Schneider et al. (1998) applied such cross-lagged analyses using LISREL.

Previous longitudinal studies on temporal order in the relationship between organizational climate and organizational performance produced mixed results. We need at least two waves of data in order to control for stability in organizational climate and performance scores. Subsequently, these data need to be analyzed with structural equation techniques to examine forward and reverse causation sequences simultaneously while controlling time 2 organizational climate and performance measures for time 1 measures. Therefore, the first aim of this study is to apply an appropriate research design in the HRM-climate-performance field. A second contribution of this study concerns the measurement of organizational

climate and performance. We conceptualized our climate construct based on a widely used framework with a high degree of relevance from an HRM point of view, and investigate the effects of climate dimensions separately. Additionally, we make use of an objective performance indicator. Finally, we will test our hypotheses with structural equation modeling. All three hypotheses are summarized in

METHODS

This study used data from a large financial services organization in the Netherlands, operating on the basis of cooperative principles. The largest part of this organization consists of approximately 300 local branches with 35,000 employees. The fact that it is a cooperative means that many personnel related factors are coordinated by the central organization, but at the same time branches have considerable leeway in the way they manage personnel issues.

In 2000 the organization introduced a balanced scorecard type of management system for three major areas: finance, customer and employee (Kaplan & Norton, 1996; Payne, Holt & Frow, 2001), in order to provide branches with suitable management information. In this scorecard finance and control information is derived from objective registrations of financial transactions, customer information is derived from routine market research activities, and employee information is gathered by means of survey research and objective registration on personnel.

SUBJECTS

Survey data from 2000-2005 were used to measure organizational climate. 171 branches participated two times in the employee survey during this period (with a maximum of three years between the employee surveys). The average interval between the employee surveys is 24 months (with a standard deviation of 7.1). At time point 1 (T1) questionnaire data of 14,477 employees were available for the 171 branches in this study (38 percent of the total population, data as of 2001). The average response rate in the separate employee surveys at the branch level was 77.5 percent. The average number of respondents in the branches was 84.7. At time point 2 (T2) questionnaire data of 14,860 employees were available for the 171 branches in this study (43 percent of the total population, data as of 2003). The average response rate in the separate employee surveys at the branch level was 84.7 percent. The average number of respondents in the branches was 86.9.

Although participating in the employee survey system is recommended by the central organization, both branches and individuals are free to participate in the employee survey. To investigate possible selectivity of the sample, we checked representativeness of the sample (T1 data as of 2001, T2 data as of 2003) at the branch and individual level. At the branch level, representativeness of the sample for the total population in the organization was checked in terms of region in the Netherlands and in terms of branch size. At the individual level, representativeness was checked for age class (five levels: 25 years and below, 25-35 years, 35-45 years, 35-45 years, 45-55 years and 55 years and older) number of working hours/week (below 36 hours, 36 hours, above 36 hours) and gender. We found that the sample could be regarded as representative for the total organization at both time points in terms of the variables mentioned. For each category of these variables the difference between our sample and the population was not larger than 5 percent.

MEASURES

Organizational climate. We selected five employee survey scales for the measurement of the five common organizational climate dimensions: goal emphasis, means emphasis, reward orientation, task support, and socio-emotional support (Kopelman et al., 1990).

As a measure for goal and means emphasis we used a quality orientation and goal effectiveness scale. Item content is comparable to the Dutch FOCUS questionnaire (Van Muijen, Koopman, De Witte & Bast, 1996) and the quality scale and the reflexivity scale of the Organizational Climate Inventory (Patterson et al., 2005), based on the competing values approach by Quinn (Quinn & Rohrbaugh, 1983). Employees are asked to evaluate their business unit, in line with prior research by Schneider et al. (1998).

We measured reward orientation with a pay satisfaction scale, as common in comparable research (Gelade & Ivery, 2003). Employees evaluate the extent to which rewards are allocated in relation to their job performance. This scale was constructed by Van Veldhoven and Meijman (1994). Item content goes back to Smith, Kendall and Hulin (1969) and Hackman and Oldman (1975). The respondent is asked to evaluate current pay in several ways, including social comparison.

We selected the work speed and quantity scale to measure the task support dimension. The selection of this scale restricted the content to the quantity and availability of time for work as indicator for the extent to which employees perceive that they are being supplied with the materials, equipment, services and resources necessary to perform their jobs. Ideally, we would have liked to include the availability of all these resources in our study. However, the availability of time is the most

important resource for Dutch employees. Van Veldhoven and Meijman (1994) constructed this scale, based on earlier work by Karasek (1985). Item content is dedicated to psychosocial job demands, but only in a quantitative sense: how much work is there, and in how much time does it have to be done? More research on this scale can be found in studies of De Croon, Sluiter, Blonk, Broersen and Frings-Dresen (2004) and Van Yperen and Janssen (2002).

As a measure for socio-emotional support we used a people-oriented leadership scale. This scale measured the extent to which employees are treated with respect by their supervisors by showing individualized consideration. The scale is constructed by Den Hartog (1997), who adapted it from the MLQ by Bass and Avolio (1989). Employees are asked to comment on the general tendency of their leader to give them personal attention and to stimulate them.

In Table 1, psychometric information on the five survey scales is listed. The Table includes the number of items, the number of response categories, and scale reliability (Cronbach's alpha). Five-point response scales were used to indicate the extent of agreement with a statement (I completely agree, I somewhat agree, Neutral, I somewhat disagree, I completely disagree). Four-point response scales were used for an evaluation in terms of frequency (Always, Often, Sometimes, and Never).

Table 2 contains sample questions for all the five survey scales. To ease interpretation, all survey variables have been scored in such way that high scores indicate a situation that is generally considered favorable to the employee.

ICC1 can be defined as the amount of variance in individual scores attributable to the branch (Klein, Bliese, Kozlowski, Dansereau, Gavin, Griffin et al., 2000). ICC1 values are ranging from .02 to .07, implying that 2-7 percent of the variance in individual scores depends on the branch. For the organizational climate scales the amount of variance in individual scores is largely explained by factors other than the branch. The intraclass correlations are comparable with the lowest intraclass correlations reported in previous studies (Gelade and Ivery, 2003; Schneider et al., 2003).

With the number of individual respondents available from this study it was found that for all organizational climate scores the variance components attributable to the branch variable were statistically significant in a F-test ($p < .001$). We can therefore assume that reliable mean square values for branches are still possible, even if ICC1 values are rather small (Klein et al., 2000). The ICC2 parameter can be interpreted as the reliability of the mean branch scores. This parameter is calculated on the basis of the mean square between branches and the mean square within branches. Values above .70 are considered good; values above .50 are deemed tolerable (Klein et al., 2000). The ICC2 values of the organizational climate scales are above the .50 criterion.

Organizational performance. Productivity was operationalized in this study by a yearly 'branch profit per FTE index'. Profits are operationalized as gross profits minus returns on equity. We chose this parameter because this parameter is not influenced by differences in sales / costs of the branches, and because this parameter only reflects that part of profit that is not related to returns on equity. The number of full-time equivalence (FTE) is established on the average basis of number of FTE for the concerned year. Both parameters are available at the branch level from regular yearly reports within the organization provided by the finance and control / HR department. These reports are based on objective registrations of financial transactions and personnel.

STATISTICAL ANALYSIS

All hypotheses were tested with structural equation modeling using AMOS 6. In consideration of the number of climate dimensions compared to the number of cases, we decided to include the valid and reliable organizational climate scales as manifest variables in our model. We controlled for the length of the time interval between the two employee surveys within a business unit (measured in months). We assume that the length of the time interval will be positively related to organizational climate and performance scores at time point 2, due to the favorable market conditions during the research period. A series of cross-lagged models (Cook & Campbell, 1979) enabled us to examine the temporal order in the relationship between organizational climate dimensions and performance.

First a model with temporal stabilities was specified (M1), which included only effects between variables measured at time point 1 and time point 2. The extent to which variables at time point 1 are predictive of variables at time point 2 is determined. This stability model was compared with three more complex models.

1. A model with effects from organizational climate at time point 1 to organizational performance at time point 2 (M2, reflecting hypotheses 1)

2. A model with effects from organizational performance at time point 1 to organizational climate at time point 2 (M3, reflecting hypotheses 2)

3. A model with both effects simultaneously (M4, reflecting hypotheses 3)

The research approach is presented in Figure 1. Figure 1 is a simplified model. Each endogenous variable has an error term which is not depicted. Secondly, we did not depict covariates between the organizational climate scores and profits/FTE at time point 1 and the error terms allocated with T2 measurement. Finally, we included time interval as a control variable, since we assume that time interval was related to organizational climate and performance scores at time point 2.

Four indicators of fit were used to asses the model tested, including $\chi 2$, root mean square error of approximation (RMSEA), adjusted goodness of fit index (AGFI), and Bentler's comparative fit index (CFI), as described by Byrne (2001). A non-significant $\chi 2$, AGFI and CFI values above .90, and RMSEA values below .05 indicate good fit between model and data. $\chi 2$ goodness-of-fit statistics are used to compare the different competing models. The difference in $\chi 2$-values in combination with the difference in degrees of freedom between the separate models is tested against the critical values of the $\chi 2$ distribution, to determine whether adding or deleting structural paths results in a significant improvement or decline in model fit. The significance of the effects is determined by comparing the probability level (p) from the Critical Ratio (C.R.) – which is calculated by dividing the parameter estimate by its standard error - with a significance level of .05.

RESULTS

DESCRIPTIVES

Table 3 shows the means and standard deviations at both time points of the organizational climate scales and profits/FTE. Table 3 shows that the mean score for the organizational climate dimensions goal and means emphasis, reward orientation, and task support increased across the two time points, while the mean score for the socio- emotional support dimension decreased across the two time points. At time point 1 (average profits/FTE of 23,291 Euros/FTE) the branches performed worse than at time point 2 (average profits/FTE of 33,216 Euros/FTE).

Table 3 shows the intercorrelations between the variables used in this study. The organizational climate dimensions are moderately to highly stable across time (.35 - .62), implying moderate to strong stability in organizational climate. The bivariate correlation between the productivity scores at T1 and T2 is .62, suggesting that the financial position at T1 is indeed predictive of the financial position at T2. The organizational climate dimensions, except socio-emotional support all correlate with productivity at one time point or at both time points. The organizational climate dimensions are moderately (.35) to highly intercorrelated (.63) at both time points. The correlation between the organizational climate dimensions goal and means emphasis and socio-emotional support are remarkably high (.63; .55). This is even more noteworthy considering the correlations between these two dimensions and productivity at time point 2: Socio-emotional support is negatively (non-significant) correlated with productivity, whereas goal and means emphasis is positively correlated with productivity.

We should realize that we examine whether organizational climate at T1 results in a productivity increase. Taking this into account we can consider the effects found as big. The effects are stronger than we expected on the basis of comparable studies. The amount of explained variance is lower than reported in cross-sectional studies in financial services organizations (Gelade & Ivery, 2003; Bartel, 2004). However, compared to Ryan et al.'s (1996) longitudinal study with a similar time interval of two years, in which no significant explained variance in similar performance outcomes was found, our study shows much stronger results.

The organizational climate dimensions goal and means emphasis and reward orientation both had positive effects on organizational performance. According to Kopelman et al. (1990) we interpreted this to mean that the more management points out the type of outcomes and standards employees are expected to accomplish and the more rewards are allocated on the basis of job performance, the higher the productivity.

Contrary to our expectations, we found that the organizational climate dimension socio-emotional support has a negative effect on organizational performance. Paying attention to employees' personal needs is perhaps negatively related with productivity, because this is associated with increased people-oriented investments. Steiner (1972, in Ostroff & Schmitt, 1993) argued that a strong emphasis on socio-emotional support may be at the cost of productivity, because productivity resources are diverted toward people- oriented activities. Also, in this study we noticed that branches which paid more attention to people-oriented leadership made less profit. A people-oriented leadership style is perhaps associated with less focus on performance, and more tolerance of poor performance in comparison to a transactional leadership style (Bass & Avolio, 1989). Another possible explanation is of a more conceptual nature. High perceived socio-emotional support in an organization can be considered to be a characteristic of a human relations climate, which is primarily directed at employee well-being (Patterson et al., 2005). Giving more priority to employee welfare and well-being through socio-emotional support may hamper the pursuit of productivity (Quinn & Rohrbaugh, 1983).

We found no significant relationship between task support

at time point 1 and organizational performance at time point 2. In this study, task support is measured with a quantity of and availability of time for work scale, as most important resource for Dutch employees (Van Den Bossche, Hupkens, De Ree & Smulders, 2006). An explanation is related to the definition of task support. According to Kopelman et al. (1990) task support is defined as the extent to which the organization provides employees with resources that are necessary to perform their jobs. Perhaps this indicates a minimal level of task support (Schneider et al., 2000). Thus, minimum levels of task support are necessary for work accomplishment, but higher levels of task support have no additional performance effects.

LIMITATIONS

The first limitation concerns the way the longitudinal data coupling is done in this study. Data were coupled on a yearly basis. The surveys are scattered over the period of a year. We connected the questionnaire to the same year of financial performance records, irrespective of the month the questionnaire research is done. Furthermore, we used different years for time point 1 (data as of 2000, 2001, 2002) and time point 2 (2002, 2003, 2004). This coupling may have distorted our results. Also, we allowed different time intervals, so we compared different time lags. As a result a noise factor is introduced in the research design. Ideally one should be able to couple data on a monthly basis, with equal time intervals and time points. This requires more frequent branch participation in the questionnaire system and more flexibility in the information systems delivering the data necessary for this type of analysis.

As the performance data were only available at branch level, we had to aggregate the individual survey scores to mean scores at the branch level. Working with aggregated data can be problematic, as a result of the differences in branch size. Variance compression in the branch scores is expected to increase with the size of the branches. The standard errors and confidence intervals for the aggregated survey scores might be distorted (Klein et al., 2000).

IMPLICATIONS

This study contributes to the recognition that the perception of organizational climate shows variance between business units within a large organization, and that these differences might have important financial consequences (Wright & Gardner, 2003). Although the variance in survey scales at the level of branch is rather limited compared to the variance at the individual employee level, we found that these small differences between business units preceded significant differences in business unit performance. At the level of the business unit, the aggregated organizational climate survey scores can be considered as an indicator with much narrower margins than indicators applying to the individual measurement level. Additionally, we found no support that organizational performance preceded climate scores.

Hence, this study confirms the usefulness of including organizational climate data in balanced and or HR scorecards (Paauwe, 2004) as a parameter relevant for achieving future financial performance. Monitoring and managing these differences in organizational climate scores is important for organizations. After all, these factors are performance stimulating factors with high opportunity for control by line- and HR- managers as compared to external factors, like conjuncture or market prices. So, it seems important to take into account organizational climate information in future management decisions and the subsequent shaping of HR-policies and -practices.

Future scientific longitudinal research needs to address theory refinement of the organizational climate - performance relationship. In this study it was found that only the goal and means emphasis and reward orientation positively affected organizational productivity. An explanation might be the focus on business unit productivity as outcome variable in this study. The goal, means and reward dimensions are possibly most closely aligned with this business outcome. When employees know that efficiently delivering high quality to customers is given priority in their business unit and that they are rewarded accordingly, this information will guide their behavior to be in line with this business goal. This reasoning is in line with the recently proposed employee 'line of sight' concept. Line of sight indicates the extent to which an employee understands the organization's objectives and understands how to effectively contribute (Boswell, 2006).

The organizational climate dimension of task support might be conceptually more adequately placed at the individual or job levels, instead of the branch level, and it might be more related to other relevant organizational outcomes than productivity, like turnover and or absenteeism. The climate dimension of socio-emotional support might be more related to well-being outcomes. It might inform employees that their well-being and not financial performance is the most important goal for their business unit, resulting in a negative relationship with financial performance. So, it is important to investigate the intervening processes whereby organizational climate affects organizational performance e.g. the cognitive and affective states and salient organizational behaviors as suggested by Kopelman et al. (1990). Moreover, more research is needed with regard to the impact of specific

organizational climate dimensions on parallel organizational outcomes as recommended by Ostroff et al. (2003).

Finally, more research is needed with regard to time aspects in the relationship between organizational climate and performance. We applied a longitudinal design with repeated measures of both organizational climate and performance and we used structural equation modeling. However, apart from considering forward and inverse causation explanations, we did not address the issue of which time lag is necessary for the proposed link between the organizational climate and performance in much detail. The effect of organizational climate on organizational performance might depend on the length of the time interval. The true effect of substantial organizational climate changes may only be visible over a longer period than the average two years in this study, since the stability of the organizational climate scales and the business unit performance declines over time.

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