Employee Involvement Climate and Climate Strength:

A study of employee attitudes and organizational effectiveness in UK hospitals

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ABSTRACT

Purpose – Addressing the continuing productivity challenge the purpose of this paper is to analyze data from the National Health Service (NHS) on employee involvement (EI) in order to gain critical insights into how employees' shared perception of employee involvement in organizational decision-making (labelled EI climate) might address two persistent issues: how to enhance positive staff attitudes *and* improve organizational performance. In doing so we respond to recent calls for more multilevel research and extend previous research on EI climate by attending to both EI climate level and EI climate strength.

Design/methodology/approach – Data from 4702 employees nested in 33 UK hospitals was used to test the moderating role of EI climate strength in the (a) cross-level EI climate level-employee attitudes relationship and in the (b) organizational-level EI climate-organizational effectiveness relationship.

Findings – The results of the multilevel analyses showed that EI climate level was positively associated with individual-level employee attitudes (i.e. job satisfaction, affective commitment). Further the results of the hierarchical regression analysis and the ordinal logistic regression analysis showed that EI climate level was also related to organizational effectiveness (i.e. lower outpatient waiting times; higher performance quality). In addition, both analyses demonstrated the moderating role of EI climate strength, in that the positive impact of EI climate level on employee attitudes and organizational effectiveness was more marked in the presence of a strong compared to a weak EI climate.

Practical implications – By creating and maintaining a positive and strong climate for involvement hospital managers can tackle the productivity challenge that UK hospitals and health care institutions more generally are currently facing while improving the attitudes of their employees who are critical in the transformative process and ultimately underpin organizational success.

Originality/value – This is the first study which provides evidence that favorable *and* consistent collective recognition of EI opportunities by staff contributes to enhance both employee attitudes and hospital performance. Results highlight the role of EI climate strength and underscore its importance in future research and practice.

Keywords – EI climate, climate strength, hospital performance, employee attitudes

INTRODUCTION

One of the major challenges facing current managers is to increase organizational productivity (Sparrow and Otaye-Ebede, 2016). This challenge and the search for the true drivers of quality and productivity which has dominated the management agenda in the international health care context for over a decade, is critical for a high-quality, sustainable health and care system and organizational survival (Appleby, Galea and Murray, 2014; West, Lyubovnikova, Eckert, and Denis, 2014). Yet, progress in meeting these challenges has been modest and little in the fundamentals of health care delivery performance has changed. England's National Health Service (NHS) which is the focus of the present study has not been immune to this issue. It faces the triple challenge of (i) increasing quality of care of patients and citizens; (ii) finding billions of pounds of productivity gains; and (iii) making the government's reforms work (Appleby *et al.,* 2014). Hence the productivity crisis in the health care sector remains unresolved or, as in the case of the NHS, has even worsened (Appleby, Ham, Imison, & Jennings, 2010). Moreover, increased workloads, staff shortages, poor systems and organizational changes contribute to reduced morale among health care professionals (e.g., Dixon-Woods et al., 2013); this is problematic because staff morale and wellbeing are deemed critical to the delivery of high-quality, safe healthcare (e.g., Buttigieg, West, and Dawson, 2011). Scholars and managers alike are thus seeking the holy grail in terms of how to engage and succeed in the productivity challenge yet maintain employee motivation and morale.

Employee involvement has been advocated as a key tool to improve staff attitudes and organizational effectiveness (e.g., Huselid, 1995; Lawler, 1996; Richardson and Vandenberg, 2005; West and Dawson, 2012; West *et al*., 2014). We define employee involvement here as employees' opportunities to contribute their

views and actively participate in organizational decision-making. Previous research carried out in health service organizations in the NHS has shown that staff engagement was positively related to care quality and financial performance (based on independent audit body ratings), staff health and well-being, patient satisfaction and negatively related to patient mortality, staff absenteeism and stress (Dixon-Woods et al., 2014; West and Dawson, 2012) with the engagement in decision-making component of EI being the strongest predictor of outcomes. Yet, this research neglects organizational theory according to which climate mediates the relationship between the work environment and work-related attitudes and behaviors (Campbell, Dunnette, Ijwier, and Weick, 1970; Kopelman, Brief, and Guzzo, 1990). Kopelman et al.'s (1990) model proposes a link between climate and organizational productivity, via cognitive and affective states leading to desired organizational behaviors of individuals. Moreover, consistent with Kehoe and Wright (2013; p. 370), higher-level performance outcomes necessitate consistency in employees' perceptions of and reactions to HR practices (e.g. EI practices) at higher level or aggregate performance effects which ultimately contribute to organizational effectiveness would fail to emerge. We thus analyse data from the NHS staff involvement survey carried out in 2002 and 2003 respectively in order to gain critical insights into how employees' shared perception of employee involvement (EI) in organizational decision-making (labelled EI climate) might address two persistent issues: how to increase staff attitudes and improve organizational performance. Specifically, building on principles of need fulfilment (Miller & Monge; Riordan et al., 2005) and social exchange theory (Blau, 1964) we propose and examine that a positive EI climate which helps staff to fulfil their needs (e.g. need for autonomy) and which signals that staff are dealt with equitably contributes to more positive staff attitudes (i.e. job satisfaction, affective

commitment) and greater organizational effectiveness (i.e. performance quality, lower waiting times).

Moreover, our research makes a unique contribution to the literature by attending to both level (defined as the average or most typical way that employees perceive EI climate), *and* strength (defined as the degree of organization-wide agreement regarding EI climate level) of EI climate. This is important because high "average" EI climate levels may hide large within-organization perceptual differences (Bogaert *et al*., 2012) and because climate strength may explain boundary conditions under which climate level-outcome relationship is enhanced (González-Romá *et al*., 2009). Although prior empirical research studied the positive impact of EI climates on employee attitudes and organizational effectiveness (e.g., Tesluk *et al*., 1999; Riordan *et al*., 2005), the study of climate strength in this relationship has been notably absent from the existing literature. Studies on organizational climate in the health care context in particular have neglected this critical distinction and have narrowly focused on climate level only (Veld et al., 2010). The present research addresses this gap and extends previous research on EI in decision-making in the health care context by studying the moderating role of EI climate strength in the EI climate level-outcome relationships (Parkes, et al., 2007; West and Dawson, 2012; West *et al.*, 2005). Specifically, building on the notion of strong *and* intended organizational climates (Bowen & Ostroff, 2004), we propose and examine that the positive impact of EI climate level on staff attitudes and organizational effectiveness is stronger in the presence of high agreement on the average EI climate where employees share a common interpretation of what behaviors are desired and thus show consistent affective and behavioral responses.

Another contribution is that rather than focusing on one level of analysis only, we examine the impact of EI climate variables on outcomes at both individual and organizational levels, thereby enabling us to test both organization-level relationships and cross-level relationships between our focal variables. This approach addresses recent calls by scholars (Renkeema *et al.,* 2016; Takeuchi, Chen, and Lepak, 2009) for the adoption of a multilevel theoretical perspective, which considers aspects of the organization's social system (e.g., HR practices or climate) and their cross-level influences on individual-level employee attitudes and behaviors (Peccei & Van De Voorde, in press; Shin, Jeong, & Bae, in press; Zhong, Wayne, & Linden, 2016) Previous research has examined the role of climate strength as a cross-level moderator (e.g., Bliese and Britt, 2001; Cole and Bedeian, 2007; Van Vianen *et al.,* 2011 for the moderating role of climate strength in individual-level relationships), but to the best of our knowledge our study is the first to examine whether climate strength moderates cross-level relationships (climate level-employee attitudes relationship).

Our final contribution is that we test the relationship between EI climate and subjective and objective outcomes critical to the health care context, using routinely collected outcome data in UK hospitals. Building on Takeuchi *et al*. (2009), our subjective outcomes include attitudinal variables (i.e., job satisfaction, affective commitment), predictive of performance-related behaviors that are critical to organizational effectiveness (Bowen and Ostroff, 2004). Building on West *et al*. (2002)'s identification of hospital performance indicators, our objective outcomes assess clinical and managerial effectiveness in hospitals (i.e., performance quality; outpatient waiting times).

Staff Involvement in the NHS

The NHS is a publicly-funded body comprising semi-autonomous healthcare

providers, including hospitals and community-based providers. When the New Labour Government was elected in 1997, a process of modernisation of the NHS with EI and partnership as central elements began in order to address problems of skills shortages, recruitment and retention difficulties, which seriously affected staff morale and the quality and level of services provided (Department of Health, 2000). In this context, the NHS taskforce defined EI as being "about making sure that staff are involved in all decisions that affect them; from big change programmes, to the day-to-day decisions on how services are delivered…" (Department of Health, 1999: 3).

Although a comprehensive human resource strategy with a focus on this particular approach to EI was launched by the government as part of the NHS reform process (Department of Health, 2002), its actual implementation may differ between NHS hospitals, with top managers' support being critical for optimal implementation (Ostroff and Bowen, 2000) and their attitudes and actions serving as sense-making mechanisms for all staff (Gioia and Chittipeddi, 1991). Khilji and Wang (2006) identified lack of top management commitment as one reason for the gap between intended and implemented HR practices. We therefore focused on differences between NHS hospitals in studying the impact of organization-level EI climate on employee-level attitudes and hospital outcomes. Consistent with Schneider *et al* (2013) we define organizational climate as employees' shared perceptions concerning the practices, procedures, and kinds of behaviors that are supported, expected, and rewarded in a setting and the meaning those imply for its members. Following the current emphasis in the climate literature to focus on facet-specific rather than global climates (Kuenzi and Schminke, 2009), we examine a climate for involvement.

A climate for involvement

Organizational climate refers to "shared perceptions of employees concerning the practices, procedures, and kinds of behaviors that get rewarded and supported in a particular setting" (Schneider, White, and Paul, 1998, p. 151). Not surprisingly then, climate researchers have posited that organizational climate mediates the relationship between the organizational context (e.g., EI practices and programs) and responses to the context such as employee attitudes and behaviors (Schneider and Reichers, 1983). In line with the argument that climate should be regarded as a construct having a particular referent (e.g., climate for service, Schneider, White, and Paul, 1998; safety climate, Zohar, and Luria, 2004), the present study takes a facet-specific approach to conceptualizing and examining climate – a climate for involvement.

The concept of EI subsumes a number of different practices for involving employees in decision-making including for example employee involvement, direct employee participation, high-commitment work practices, and employee empowerment (e.g., Summers and Hyman, 2005; Wilkinson, Gollan, Marchington, and Lewin, 2010; Zhou, 2009). Consequently, research has studied a variety of climates in this area, such as involvement climate (Riordan *et al.*, 2005) empowerment climate (Seibert, Silver and Randolph, 2004), participative climate (Tesluk, Vance and Mathieu, 1999) and voice climate (Morrison, Wheeler-Smith, and Kamdar, 2011). More generally, however, it is important to remember that the notion of EI has been approached from a variety of perspectives and that, as emphasized by Markey and Townsend (2013), there is no generally agreed definition of EI in the literature. In the absence of an agreed definition of EI therefore the present study used a conceptualization and measurement which reflects the core of EI, i.e. the extent to which an organization and its managers "give employees opportunities to become involved in their work and their employing organisation" (p. 4, Marchington,

Goodman, Wilkinson, and Ackers, 1992). by, for example, encouraging them to contribute their views and actively participate in decisions relating to their work and to the organization more generally. On this basis, therefore, we defined EI climate as employees' shared perceptions of the extent to which their employing organization (management) encourages and makes it possible for them to contribute their views and take an active role in decision-making at the workplace. Importantly, therefore, we explicitly conceptualized EI climate as a collective construct. In particular, in contrast to previous research on involvement climates (e.g., Riordan et al., 2005), our conceptualization and measurement was more directly reflective of a collective EI climate by using the referent-shift consensus model of composition (see Chan, 1998) rather than an aggregate of individual-level responses, evident from the language of the items used (reference to 'the trust' rather than 'I').

How do these collective ideas about EI climate develop in organizations? Although individuals may hold different perceptions of participative climate, shared climate perceptions emerge in work or organizational units partly due to: (i) structural characteristics impacting all members of the same unit (e.g., exposure to similar participative practices), (ii) the attraction-selection-attrition process which can produce homogeneity in organizational members' perceptions, and (iii) collective sense-making as a result of social interactions among organizational members (e.g., Bowen & Ostroff, 2004; Ostroff, Kinicki, and Tamkins, 2003; Schneider and Reichers, 1983). Shared higher-level constructs such as EI climate perceptions thus represent consensus among the lower-level units and therefore individual data is aggregated to a unit level (Chan, 1998; Dawson, González-Romá**,** Davis, and West, 2008). The mean climate perceptions which result from the data aggregation are labelled *climate level* reflecting the average or most typical way that individuals

describe climate (e.g., EI climate) (Schneider, Salvaggio, and Subirats, 2002). In recent years, organizational climate researchers have distinguished climate level from another construct, labelled *climate strength;* compared to research on climate level, few studies to date have studied climate strength and none according to our knowledge has examined it as a cross-level mediator in cross-level relationships. This dispersion construct, which is critical to our research as explained further below, represents variability in individual-level perceptions within a unit, or the degree of shared perception (see Chan, 1998) and therefore it is ususally operationalized as the standard deviation of individual perceptions of climate (see Schneider *et al.*, 2002). In our study we will refer to EI climate strength to reflect the degree of organization-wide agreement regarding EI climate level.

Building on Kozlowski and Klein's (2000) multilevel theory the purpose of our study is to investigate these two EI climate constructs and their interaction in terms of their organizational-level influences on organizational effectiveness and cross-level influences on employee attitudes. With regard to the former, Kozlowski and Klein (2000) suggest that employees' shared climate perceptions can emerge from individual climate perceptions via bottom-up processes within organizations and these organizational-level predictors can explain between-organization differences in organizational effectiveness. With regard to the latter, these and other authors (e.g., Takeuchki, *et al.* 2009) suggest that the same organizational-level predictors can explain between-organization differences in average levels of employee attitudes (e.g., job satisfaction) due to top-down processes. Previous cross-level research has demonstrated that attitudes can vary both within and between organizational units, and that differences can be explained by both individual-level and unit-level predictors (e.g., Ostroff, 1992; 1993; Takeuchi *et al.*, 2009). Similarly, the present

study investigates the extent to which individual-level job satisfaction and affective commitment vary due to organizational-level EI climate level, EI climate strength, and the interaction between these climate variables. We now present our specific hypotheses and their theoretical justification.

The present research

Addressing Takeuchi *et al.'s* (2009) recent call for the adoption of a multilevel perspective, we investigate EI climate level and its interaction with EI climate strength regarding their organizational-level influences on organizational effectiveness and cross-level influences on employee attitudes (see Figure 1). Our attitudinal variables include job satisfaction and affective commitment. These variables are also indicative of employee well-being (Peccei, 2004) and are measured at the individual level given that they are an important outcome in their own right (Guest and Woodrow, 2012). Our hospital outcomes include performance quality ratings and outpatient waiting times as indicators of clinical and managerial effectiveness in hospitals (West *et al*., 2002). We now present the specific hypotheses and their theoretical justification.

EI climate level

To articulate the effect of EI climate level on individual-level attitudes we build on two complementary explanations advanced in the literature, i.e. need fulfilment and social exchange. First, the need satisfaction model in the EI literature (Miller and Monge, 1986; Riordan *et al.,* 2005), suggests that an EI climate meaningfully improves the work environment and helps to fulfil important higher-order needs of individuals. This need fulfilment, in turn, positively impacts their attitudes. Specifically, to the extent that the organization is perceived to provide opportunities for EI in decision-making, employees should experience greater scope

for increased autonomy, responsibility, recognition, and social contact though interactions, all welcomed intrinsic rewards that have been found to enhance job satisfaction (Humphrey *et al.,* 2007). Similarly, to the extent that the organization is perceived to care for employees' well-being and to value employee contributions, important socio-emotional needs including esteem, approval, and affiliation, should be fulfilled, which in turn should enhance employee's affective commitment to the organization (Lee and Peccei, 2007). Second, social exchange theory (Blau, 1964) suggests that employees who experience that their organization values and deals equitably with them are likely to reciprocate by investing psychologically in the organization and developing a stronger affective attachment (Lee and Peccei, 2007). We propose that the process of involving employees in their work and wider organization is reflective of the organization's care for employee well-being and trust in employee contributions, which are deemed critical to improve organizational performance. In return, employees respond positively in terms of increased job satisfaction and affective commitment. Similarly, building on the idea of high-trust social exchange relationships, Farndale *et al* (2011) found a positive relationship between perceptions of employee voice and organizational commitment which was mediated by trust in senior management. Additionally, other research supports the relationships of individual-level job satisfaction and commitment with EI climate (Tesluk *et al.,* 1999) and 'concern for employees' climate (Takeuchi *et al*., 2009). Hence we predict:

Hypothesis 1. EI climate level is positively related to employee-level attitudes (i.e. job satisfaction, affective commitment).

To articulate the effect of EI climate level on organizational-level outcomes we build on the key premise that climates shape collective employee behaviors over

time, which eventually influence organizational performance (Ostroff and Bowen, 2000). These collective behaviors are fostered by the aforementioned processes that lead to the emergence of organizational-level phenomena and "combine to emerge into a collective effect that is greater than the simple additive effects across individuals and that is directed toward the organization's goals" (p. 229). Consistent with the idea that facet-specific climates provide important information concerning desired role behavior (e.g., How important is it to participate around here?) (Zohar and Luria, 2004) we argue that the extent to which employees perceive hospital management to involve employees (not only in clinical but also organizational matters), all staff, irrespective of their socialization and membership to professional groups, are more willing *and* able to collectively engage in decision-making and knowledge-sharing, thereby replacing potentially destructive norms of silence (e.g., due to status differences among professional groups) with constructive feedback on how to address performance problems and deviations from desired practices (Ramanujam and Rousseau, 2006). This will likely improve the quality of decisions and identified solutions, thus ultimately increasing performance quality in hospitals and reducing waiting times. Indeed, research on acute-care hospital units shows that involving employees in decision-making facilitates better use of their tacit knowledge and skills, which improves the quality of information they bring to decision-making, thereby reducing incidents of medication errors (Preuss, 2003). Additionally, consistent with social exchange theory (Blau, 1964) and its extension to examine phenomena at the organizational level (Piening *et al.,* 2013) we propose that to the extent that hospitals involve employees in work-related and wider organizational issues, a process of social exchange is initiated and employees should collectively reciprocate management's display of goodwill by exhibiting increased task and

organizational citizenship behaviors (OCB), such as contributing to continuous improvement, job innovation and flexibility at work (Guest and Peccei, 2001). Research on NHS hospitals provides compelling evidence that employees' shared experiences of HR practices (including EI) are linked to hospital performance (financial performance: Piening *et al*., 2013; patient satisfaction: Baluch *et al.*, 2013; Piening *et al*., 2013) and that supra-individual OCB (i.e., employees' civility towards patients). Similarly, Richardson and Vandenberg (2005) found a positive link between a work-unit involvement climate and OCB directed at improving the unit. We therefore expect a positive relationship between EI climate level and performance quality more generally, and outpatient waiting times more specifically. The latter outcome is likely to ensue because of the ability and discretion of consultants, general practitioners, and nurses to jointly identify and implement the best mechanism to deal with no show-rates and reduce waiting times (e.g., via pooling of referrals, reorganization of clinics, introduction of nurse-led clinics). Hence:

Hypothesis 2: EI climate level is positively related to organizational effectiveness (i.e. performance quality, lower patient waiting times)

EI climate strength

In the literature on strategic HRM and organizational climate the concept of climate strength has been introduced as a moderator of the climate level-outcome link only in the past decade. Bowen and Ostroff (2004) assert the existence of an organizational climate reflecting the nature of the HR system (e.g., set of practices with particular strategic focus, e.g., EI) and specifically of behaviors that are supported, expected and rewarded by the organization. They further propose that the emergence of a strong and intended organizational climate from individual climate perceptions is fostered by a strong HRM system (i.e., high in distinctiveness,

consistency and consensus). Such a climate, reflective of high agreement on the average strategic climate, can act as a strong situation (Mischel, 1973) where employees develop shared perceptions about what strategic goals are important and what behaviors are desired. Similarly, other authors proposed and found that strong climates lead to consistent affective and behavioral responses, increasing the predictability of organizational members' average climate responses (e.g., González-Romá *et al*., 2002; Schneider *et al*., 2002). However, the few existing studies on EI climate to date have concentrated exclusively on the climate level-outcomes link (Kuenzi and Schminke, 2009), thus neglecting the relevance of climate strength.

Consistent with these perspectives and our conceptualization of EI climate, we propose that the strength parameter follows the extent to which EI practices reflect distinctiveness, consistency, and consensus. This logic implies that a strong situation is produced when EI practices are salient, visible, and understood by employees, when EI behaviors displayed by staff are consistently linked to desired outcomes and consistent EI messages are perceived by employees, and when the principal decision-makers agree on EI practices and such practices are perceived as fair by employees. These characteristics are likely to promote shared perceptions and lead to the emergence of a strong EI climate. Such a climate will allow everyone to see the situation similarly, induce clear expectations about desired behaviors and rewards for the same, and thus contribute to consistent employee attitudes and behaviors. Specifically, we may conclude that when EI climate is both positive and strong, employees have a shared understanding of the EI practices in their organization, they attend to consistent messages about EI practices and they are subject to similar experiences with EI practices, which in turn fosters the most consistently positive employee attitudes. In contrast, when employees differ in their understanding of EI

climate (low distinctiveness), when ambiguity regarding organizational EI messages is high (low consistency), and when some employees experience more opportunities for EI and equitable treatment than others (low consensus), the consistency of employees' affective responses may suffer, even when the average EI climate is positive. Hence we predict:

> *Hypothesis 3.* EI climate strength moderates the relationship between EI climate level and employee attitudes so that EI climate level is more strongly related to employee attitudes when EI climate strength is high than when it is low.

Additionally, the above proposition that organizational climate strength, by virtue of reflecting a strong situation stemming from procedural coherence will moderate the climate level-outcome relationship also applies to the organizational-level outcomes in the present study. Bowen and Ostroff (2004) assert that in the presence of a strong HR system, shared climate perceptions and collective behaviors of employees emerge from individual-level processes enabling unique interactions and interdependencies to operate among employees to fulfil the organization's goals. Consistent with this logic, we argue that high consensus among hospital staff regarding EI climate level should produce consistent performance-related and citizenship behaviors (e.g. ongoing contributions to service improvement, knowledge-sharing, civility toward patients, enhanced communication and collaboration; NHS Employers, 2010). These consistent *and* cumulative behaviors of employees should enhance the relationship between EI climate level and indicators of clinical and hospital effectiveness. Thus we predict:

> *Hypothesis 4.* EI climate strength moderates the relationship between EI climate level and hospital effectiveness so that EI

climate level is more strongly related to hospital effectiveness when climate strength is high than when it is low

METHOD

Sample and procedure.

The primary data used in this study were collected as part of a research project to examine the effectiveness of management practices that encouraged staff involvement in decision-making in the NHS. This study used survey data from 33 acute trusts (hospitals) in the UK (5 in London) which ranged in size from 514 to 5877 employees. This represented a 66% response rate of the 50 which were originally approached, having been selected as a representative sample of all in England in region, location and size. The survey data were collected over a 4-month period in late 2002 and early 2003. In each trust, paper-based questionnaires were distributed to 500 employees, randomly sampled by the researchers from a list of all employees. The questionnaires were posted to respondents, with a postage paid envelope included for return directly to the research team. This procedure resulted in a sample of 4702 from the 33 hospitals and an overall response rate of 28.5%, with trust response rate varying from 13.4% to 43.6%. To test the possibility that low response rates in some organizations could create sampling bias we correlated the response rate with both climate and climate strength (Dawson *et al*., 2008). No significant correlations emerged, suggesting that there was no systematic response bias.

The sample was 75.8% female, 39.8% were under 40 years, 29.6% between 41-50 years, 23% above 50 years, and 7.6% of unknown age. The proportions for the occupational groups (40.2% nurses, 6.9% medical staff, 19% administrative staff, 3.5% managers, 9.3% allied health professionals, 7.2% scientific/technical staff, 5.9%

ancillary staff, 8.0% staff "other") were similar to those found in British acute trusts generally (Healthcare Commission, 2004).

Measures

EI climate level was assessed with four items which assessed employees' perceptions of opportunities for EI in decision-making in their employing hospitals. These items were developed for the present study and built on our particular conceptualization of EI climate: "The trust sees it is a priority to enable and encourage staff to take an active role in decision-making", "The trust sees it as a priority to provide ways to enable all staff to contribute their views", "The trust provides practical support to enable staff to take an active role in decision-making" and "The trust provides practical support to enable staff to contribute their views". Employees answered all items using a scale ranging from *strongly disagree* (1) to *strongly agree* (5); Cronbach's α =.93.

EI climate strength was operationalized as the within-organization, standard deviation of climate ratings. We multiplied the measure by -1 before it was entered into the analysis, so that a higher score represented a stronger climate (i.e., less deviation) (see Dawson *et al*., 2008).

Job satisfaction was assessed using six items from the Overall Job Satisfaction (OJS) Questionnaire (Warr *et al.,* 1979) which addressed employees' satisfaction with various aspects of their work (e.g., job responsibility, opportunities to apply skills). Employees responded on a scale ranging from *very dissatisfied* (1) to *very satisfied* (5). Cronbach's α =.84.

Affective commitment was assessed using four items from Porter, Steers, Mowday, and Boulian's (1974) organizational commitment measure. Item examples include "I feel myself to be part of this organization" and "I am proud to tell others

who I work for". Employees responded on a scale ranging from *not very likely* (1) to *very likely* (5). Cronbach's α =.93.

Patient waiting times This outcome, gathered from the Department of Health website, measured the proportion of outpatients waiting longer than the national 13-week target for the first consultation, during the NHS year from April 2002 to March 2003 (average 82%, range from 69% to 99%).

Performance quality This outcome is based on trust "star ratings", published in 2003 and indicative of a wide variety of performance indicators relating to the NHS year from April 2002 to March 2003. These ratings took account of (a) a trust's performance with respect to a range of indicators, including deaths after surgery, waiting times, and readmission rates (b) a self-assessment return submitted to the Strategic Health Authority and (c) the results from a Clinical Governance Review. The star ratings were awarded to each trust on an annual basis by the Commission for Health Improvement (CHI) (now the Care Quality Commission) and could range from zero to three stars, with three stars being the highest performance rating.

Measure validation

We carried out confirmatory factor analyses (CFA) to investigate the validity of the self-reported measures. The items for EI climate, job satisfaction and affective commitment were specified to load on three separate latent factors, while the latent factors were allowed to co-vary. The fit indices indicate a fairly strong fit of this model to the data (CFI = .96 TLI = .94, RMSEA = .07, all being acceptable according to Hu and Bentler (1999). Moreover, a significantly worse fit was shown by a single-factor model. We also conducted tests of discriminant validity proposed by Fornell and Larcker (1981). The shared variance between each pair of latent variables were all

smaller than 0.36, while the average variance extracted for each latent variable was at least 0.48, supporting discriminant validity.

Data aggregation

In order to justify the aggregation of individual data to the organizational mean, within-unit agreement as well as sufficient between-unit differences must be shown. First, we assessed within-unit agreement on EI climate using $r_{wg\ (j)}$ which was .79, above the .70 cutoff value (LeBreton and Senter, 2008). Then we assessed the ICC (1) value, indicating the proportion of variance accounted for by organizational membership, and the ICC(2) value, indicating inter-rater reliability: ICC (1) was .04 and ICC(2) was .85 for the EI climate scale, above the .80 cutoff value (LeBreton and Senter, 2008). Together these analyses provide evidence that sufficient agreement exists among members' climate perceptions to support aggregation to the trust level.

ANALYSES AND RESULTS

Multilevel modelling analyses

We employed multilevel analysis to test the impact of EI climate variables on individual-level job satisfaction and affective commitment. The analyses were conducted using the Nonlinear and Linear Mixed Effects (NLME) program for R written by Pinheiro and Bates (2000). The data refer to the trust/organization-level (level 2) and the employee/individual-level (level 1) with employees nested within trusts.

For each of the dependent variables, we carried out four steps. In the first step, we entered level 1 control variables (sex, age, occupational group), which have been found to impact the outcome variables in prior research. In the second step, EI climate level (level 2) was entered. In the third step, EI climate strength (level 2) was included in the analyses and in the fourth step, the interaction term (EI climate level × climate

strength) was entered. In order to avoid the problem of multicollinearity in testing interaction effects (Hox, 2002), we centered the level 2 predictors (climate level, climate strength) around the grand mean.

Table 1 shows means, standard deviations, and correlations between level 1 outcome variables and controls, and level 2 EI climate variables.

[TABLE 1]

Table 2 summarizes the multilevel analyses, which tested the relationship between organization-level EI climate constructs and individual-level job satisfaction and affective commitment.

[TABLE 2]

Consistent with Hypothesis 1, EI climate level was significantly related to job satisfaction and affective commitment such that employees who perceived greater opportunities for EI in their employing hospitals reported higher levels of job satisfaction and commitment. Consistent with Hypothesis 3, EI climate strength moderated the relationship between EI climate level and employee-level attitudes, such that the relationships increased the more employees agreed about EI climate level (see Figure 2).

[FIGURE 2]

Analyses at unit-level

Hierarchical regression analysis and ordinal logistic regression (using a logit link function) were employed to test the impact of EI climate variables on outpatient waiting times and performance quality (at ordinal level). The organizational-level outcomes were tested for differences according to size of organisation, work pressure, region, location (London vs. other), and teaching status (teaching/nonteaching). We did not find any differences except for location and therefore, we included only

location as a control variable in the analyses, thereby preserving the largest number of degrees of freedom possible with a relatively small sample (Dawson *et al*., 2008).

Table 3 shows means, standard deviations, and correlations between unit-level variables.

[TABLE 3]

Table 4 summarizes the results of the hierarchical regression analysis and ordinal logistic regression. Consistent with Hypothesis 2, EI climate level was significantly related to outpatient waiting times such that employees' shared perceptions of greater hospital commitment to EI were associated with a higher percentage of outpatients waiting less than 13 weeks. However, there was no EI climate level × climate strength interaction for outpatient waiting times (see Hypothesis 4). Consistent with Hypothesis 3, EI climate level was positively associated with performance quality such that a one unit increase in EI climate level was associated with a 5.48 increase in the ordered log odds of being in a higher level of performance quality, given that all of the other variables in the model are held constant (see Step 2). The coefficient for EI climate level was still significant when EI climate strength was included in the equation. Consistent with Hypothesis 4, we found a EI climate level × climate strength interaction for performance quality. Figure 3 shows that, for hospitals with low climate strength, as climate level increases, a 0* or 1* performance outcome is more likely, whereas a 2* or 3* outcome is less likely. In contrast, for hospitals with high climate strength, as climate level increases, a 0* or 1* performance outcome is much less likely to occur, a 2* outcome is more likely to occur, and a 3* particularly so when climate levels are already high. In short, with high climate strength, climate level is associated with much better performance outcomes, whereas with low climate strength this is not the case.

[TABLE 4 AND FIGURE 3]

DISCUSSION

The current productivity challenge affects many different areas including the health care context (Appleby et al., 2014; Sparrow and Otaye-Ebede, 2016). England's National Health Service (NHS) is facing a major crisis due to unprecedented financial and operational challenges caused by an increased demand for services and constrained resources (Ham, McKenna and Dunn, 2016). Performance and quality of care are suffering accordingly. Opportunities to address these challenges for example include a focus on the creation of better value. Within NHS hospitals better outcomes can be achieved while costs can be minimized "by engaging clinical teams in reducing variations and changing the way care is delivered" (Ham *et al.,* 2016). Critical for such a transformative endeavour might be staff involvement in organizational decision-making as evident from the NHS Constitution which pledges to 'engage staff in decisions that affect them and the services they provide' (p. 13; The NHS Constitution, 2015). To date however current staff involvement leaves something to be desired and little change in the fundamentals of health care delivery in general has occurred (Dromey, 2014). Moreover, researchers have recently called for further research to better understand the links between staff experience (including involvement) and performance (Dixon-Woods et al., 2014; Powell et al., 2014). The present research therefore analysed NHS trust data from a staff involvement survey collected in 2002 and 2003 in order to explore an important yet neglected construct – i.e. EI climate. Specifically, we aimed to (a) gain critical insights into whether employees' collective perception of EI in organizational decision-making (labelled EI climate level) and the extent to which these perceptions are shared (labelled EI climate strength) might address two persistent issues - how to

increase staff attitudes *and* improve organizational performance – and; (b) inform future challenges.

Consistent with the proposed critical role of shared employee perceptions in translating organizational practices into desired outcomes (Bowen and Ostroff, 2004) we focused on EI climate rather than EI practices in predicting employee attitudes and organizational outcomes and contribute to the literature on involvement climates (Kuenzi and Schminke, 2009). Specifically, we found that EI climate level was positively associated with individual-level job satisfaction and affective commitment. This finding is consistent with previous research which found a positive link between a participative climate and individual-level job satisfaction and commitment (Tesluk *et al.*, 1999) and a positive link between climate for involvement and aggregated staff attitudes (Riordan *et al.*, 2005) respectively. Moreover, EI climate level was positively associated with outpatient waiting times and performance quality, explaining 13 and 23 percent of variance respectively. We argue that such beneficial effects of EI climate may occur because a work environment that is collectively perceived as providing employees with opportunities for organizational decision-making helps fulfil higher-order needs (e.g., need for autonomy) and signals organizations' trust in employee contributions. Consistent with need fulfilment (Miller & Monge; Riordan et al., 2005) and social exchange theory (Blau, 1983), employees respond and reciprocate such treatment favourably with more positive employee attitudes. Building on social exchange theory (Blau, 1983) we further argue that employees collectively show increased performance, which manifests itself in improved organizational effectiveness. These findings also bear important practical implications for hospitals in terms of meeting government policy targets while at the same time maintaining individual employee's well-being.

Additionally, we investigated climate strength as a moderator of the aforementioned organizational-level and cross-level relationships. In doing so, we extended previous research on climates for EI (Kuenzi and Schminke, 2009) and responded to a recent call for more multi-level research in organization studies (Renkeema et al., 2016; Takeuchi *et al*., 2009). Organizational climate researchers have recognized the moderating role of climate strength in climate level-to-outcome relationships (e.g., Schneider *et al*.., 2013), and HRM scholars have emphasized the importance of strong and strategic climates which emerge from shared perceptions and a strong HRM system in influencing HR outcomes and organizational outcomes (Bowen and Ostroff, 2004). However, neither group has tested whether the association between EI climate level and outcomes is contingent on climate strength. We tested and found that climate strength enhanced the positive relationship of EI climate level with employee attitudes and performance quality, explaining an additional 9% of variance in the latter. Building on Bowen and Ostroff (2004), we argue that this enhanced positive relationship of EI climate level with employee attitudes occurs in the presence of a strong situation in which employees have a shared understanding of the EI practices in their organization (high distinctiveness), they attend to consistent messages about EI practices (high consistency) and they are subject to similar experiences with EI practices (high consensus) within their organization. Moreover, in such a situation of a strong EI climate, shared climate perceptions and collective performance-related behaviors emerge from individual-level processes which enhance the relationship between EI climate level and indicators of clinical and hospital effectiveness.

Finally, our study responded to calls for taking into account the context when examining the link between organizational practices, climate, and outcomes (Paauwe,

2004; Peccei *et al.,* 2013). More pointedly, our EI climate reflects the emphasis on EI in the NHS at the time of the data collection, considered critical to the delivery of the NHS reform programme, and to achieving the goals of high-quality, responsive and efficient patient care which are persistent problems in the present time (e.g., Appleby *et al.,* 2014; Dixon-Woods *et al.,* 2013, Ellins, J. & Ham, C., 2009). Thus we contextualized our research model and constructs and our findings on the impact of EI climate constructs on employee attitudes and organizational effectiveness yield important insights for present-day health care managers and hospitals. Additionally, because of the value placed on EI by hospital staff (e.g., Rondeau and Wagner, 2006) and the highly interdependent nature of work in hospitals (e.g., Ramanujam and Rousseau, 2006), the perceived EI climate and its strength can be expected to have a much stronger and wider effect on employee attitudes and organizational performance in the present setting than in other organizational settings. Overall, the use of subjective and objective outcome measures from comparable organizations within a single industry (i.e. NHS hospitals) strengthens the validity of our conclusions (Van de Voorde *et al.*, 2010).

Limitations and Future Research

Although our multilevel-multisource study using comparable organizations from a single context offers a number of important advantages, it is not without its limitations. First, the data from the NHS staff involvement survey was collected more than ten years ago and much has happened in the UK health service since that time. Nevertheless, as previously mentioned, many of the challenges facing NHS hospitals and staff at the time of the data collection still exist or are even more pronounced (Appleby *et al.,* 2010; 2014). Therefore, the data are still relevant and might inform for example the two persistent issues as to how to increase staff attitudes and improve

organizational performance which are the focus of the present study. Second, the data are cross sectional rather than longitudinal in nature so that we cannot say with certainty what the direction of causality is between the factors under investigation. Thus, future advances in climate strength research should carry out longitudinal studies so that reverse causality is ruled out. Third, the hospital context is rather unique in that the tasks involved in healthcare are very specific and the level of interaction between hospital staff and patients is very high (Dawson *et al*., 2008). While similar findings may be found in other service, or non-service, organizations, some of the outcome variables (e.g., outpatient waiting times) are specific to the healthcare context, and may also be affected by other variables that we have not been able to control for. Additionally, the specific professional roles of doctors, nurses and other healthcare staff mean that for many clinically-based decisions, some level of involvement from appropriately qualified staff (who may not be the managers) is essential – a situation that will not generalize to all other sectors. However, scholars have called for research to take the context into account when investigating the relationships between organizational practices, climate, and outcomes rather than assuming a universal performance context (Paauwe, 2004; Peccei *et al.,* 2013) and our study addresses this call. Finally, for future research, we also encourage researchers to consider (objective) measures of actual EI practices in each hospital and other types of climate that might coexist within hospitals. Although our exclusive focus on organizational-level EI climate is justified in light of the aforementioned research context our study needs to be complemented by future research that investigates multiple climate facets simultaneously and at different levels within the organization (Kuenzi and Schminke, 2009) – including, for instance, a climate for safety and a climate for quality (Veld *et al.,* 2011).

Practical Implications

To meet the ongoing productivity challenge and maintain employee morale NHS hospitals have to follow a comprehensive approach which includes for example using constrained budgets more efficiently, implementing 'transformational change' in the way services are delivered and maximizing the contributions of front-line staff in doing so (Appleby et al., 2010; Appleby et al., 2014). Employee involvement processes are fundamental to the achievement of these objectives. The most important practical implication of this study, not only for the NHS but for health care systems in general, is that substantial benefits for both employees and organizations can be achieved from the creation and maintenance of a positive *and* strong EI climate amongst staff.

First, in the present study, a positive climate for involvement was related to better employee attitudes (i.e., job satisfaction, affective commitment) and improved organizational effectiveness (i.e. performance quality, reduced waiting times). In light of these critical outcomes, it seems imperative for hospital managers to create and maintain such a climate. However, for EI efforts to succeed, organizations and managers need to provide employees with appropriate authority and decision-making power central to their jobs (Riordan *et al*., 2005) and encourage them to use it. Bureaucratic organizations such as hospitals (Griffin, 2006) designed to ensure hierarchical control and internal stability might perceive this power-sharing as threats to control and stability and thus might resist EI policies and practices, even if they seem to produce improvements in performance. Indeed, the Commission on Dignity in Care for older People has recently identified the top-down command and control culture in the NHS as a cause for poor care (King's Fund, 2012).

Moreover, our research suggests that managerial efforts to create a positive EI climate run the risk of increasing climate level without cultivating climate strength, which fosters employee agreement regarding desired behaviors critical to achieve organization's strategic goals. As such, we propose that managers interested in obtaining maximum benefits from EI will find it advantageous to establish a strong HRM system (high in distinctiveness, consistency, and consensus) from which a strong strategic climate can emerge (Bowen and Ostroff, 2004). For example, visible top management support of EI, internal alignment among EI practices and policies (e.g., enabling *and* encouraging of EI), and perceptions of procedural fairness contribute to distinctiveness, consistency, and consensus, respectively. Hospitals are therefore strongly advised to incorporate employee climate perceptions (level and strength) into HR scorecards in order to monitor and manage employee attitudes and performance.

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Figure 1 Multilevel Model of EI Climate Constructs (Level and Strength), Organizational-Level Performance, and Individual-Level Attitudes

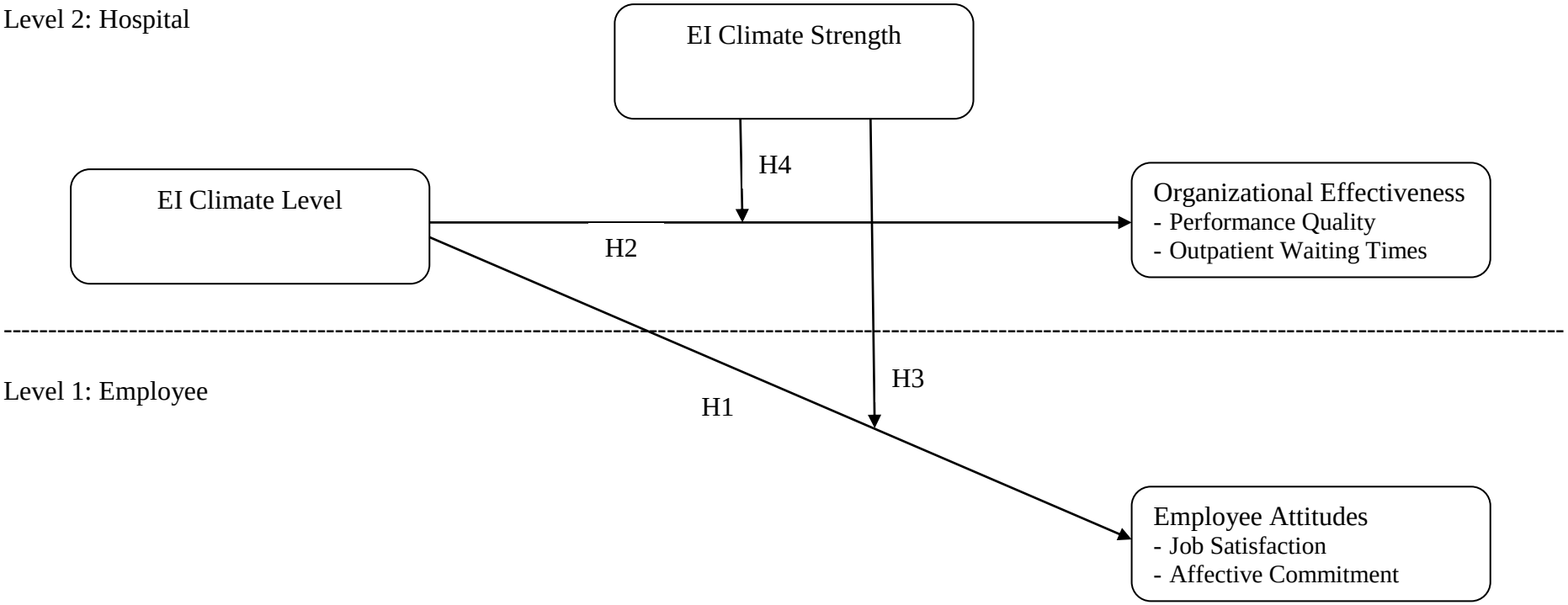


Table 1 Descriptive statistics and intercorrelations of level 1 outcome variables, level 1 controls and level 2 climate variables

Variable	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Job Satisfaction	3.61	.77													
2. Affective Commitment	3.19	1.12	.54**												
3. Sex	.80	.40	.83**	.03											
4. Age	40.97	11.94	.04*	.04**	-.07**										
5. Occupation1	.06	.24	-.08**	-.03	-.20**	.12**									
6. Occupation2	.07	.25	-.01	-.04*	-.29**	.02	-.07**								
7. Occupation3	.40	.49	-.01	-0.4*	.25**	-.08**	-.21**	.22**							
8. Occupation4	.07	.26	-.07**	-.05**	-.12**	-.04**	-.07**	-.08**	-.23**						
9. Occupation5	.03	.18	.09**	.10**	-.10**	.02	-.05**	-.05**	-.16**	-.05**					
10. Occupation6	.09	.29	.05**	-.03	.04*	-.07**	-.08**	-.09**	-.26**	-.09**	-.06**				
11. Occupation7	.19	.39	.01	-.01	.11**	.06**	-.12**	-.13**	-.40**	-.13**	-.09**	-.16**			
12. Occupation8	.04	.19	.02	.04*	-.05**	.06**	-.05**	-.05**	-.16**	-.06**	-.04**	-.06**	-.10**		
13. Climate Level	2.94	.20	.05**	.13**	-.03*	-.04*	.03	.01	-.03*	-.01	.06**	.00	-.02	.03	
14. Climate Strength	-.90	.06	.00	.04**	.01	-.01	.02	.00	.01	.00	.03*	.02	-.04**	-.03*	.24**

Notes. *** $p < .001$, ** $p < .01$, * $p < .05$; Dummy sex (0 = male, 1 = female)

Table 2 Prediction of job satisfaction and affective commitment in multi-level analyses

	Job Satisfaction					Affective Commitment				
	Param	*SE*	*df*	*t test*	*p*	*Param*	*SE*	*df*	*t test*	*p*
Step 2										
(Intercept)	3.332	0.095	3876	35.111	.000	2.888	0.149	3610	16.49	.000
Climate Level	0.179	0.065	30	2.734	.010	0.692	0.093	27	7.460	.000
Step 3										
(Intercept)	3.333	0.095	3876	35.092	.000	2.891	0.148	3610	19.505	.000
Climate Level	0.168	0.071	29	2.373	.025	0.677	0.094	26	7.210	.000
Climate Strength	0.069	0.231	29	0.297	.769	0.263	0.320	26	0.821	.419
Step 4										
(Intercept)	3.330	0.095	3876	35.112	.000	2.889	0.148	3610	19.500	.000
Climate Level	0.157	0.065	28	2.426	.022	0.652	0.094	25	6.922	.000
Climate Strength	0.289	0.238	28	1.216	.234	0.539	0.353	25	1.527	.139
Climate Level x Strength	2.253	0.841	28	2.680	.012	2.135	1.224	25	1.744	.093

Notes. Table 2 does not include a further 10 control variables, including 8 dummy variables for the occupational categories which were included in step 1 and subsequent steps of the analyses. These results are available on request from authors.

Table 3 Descriptive statistics and intercorrelations of unit-level study variables

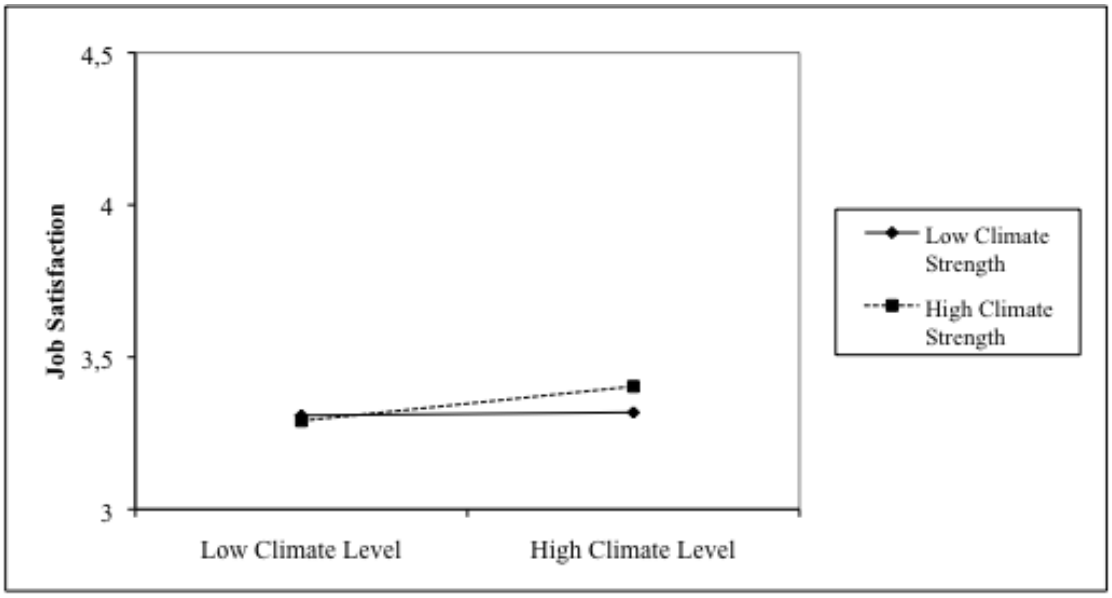
Variables	M	SD	1	2	3	4	5
Outcome Variables							
1. Performance Quality	1.71	.90					
2. Waiting Times	81.64	6.66	.08				
Control Variable							
3. Location	.13	.34	.13	-.18			
Predictor Variables							
4. Climate Level	2.93	.20	.47*	.34	.10		
5. Climate Strength	.91	.06	-.13	.50**	-.14	.23	

Notes. *** $p < .001$, ** $p < .01$, * $p < .05$

Table 4 Results of regression analyses of outpatient waiting times and performance quality on EI climate constructs

	Outpatient Waiting Times	Performance Quality
Step 1		
Location [a]	-.18	.65
R^2	.03	.02
Step 2		
Location [a]	-.22	.61
Climate Level (β)	.36 (*)	5.48*
R^2	.16	.25
Step 3		
Location [a]	-.13	.82
Climate Level (β)	.30 (*)	5.36*
Climate Strength (β)	.45*	5.81
R^2	.35	.27
Step 4		
Location [a]	-.20	1.58
Climate Level (β)	.43*	2.34
Climate Strength (β)	.37 (*)	9.45
Climate Level x Strength (β)	-.23	77.26 (*)
R^2	.38	.36

Notes. [a] 0 = Other, 1 = London *** $p < .001$, ** $p < .01$, * $p < .05$, (*) $p < .10$; Numbers in main section of table are standardized regression coefficients for outpatient waiting times and logistic regression coefficients for performance quality



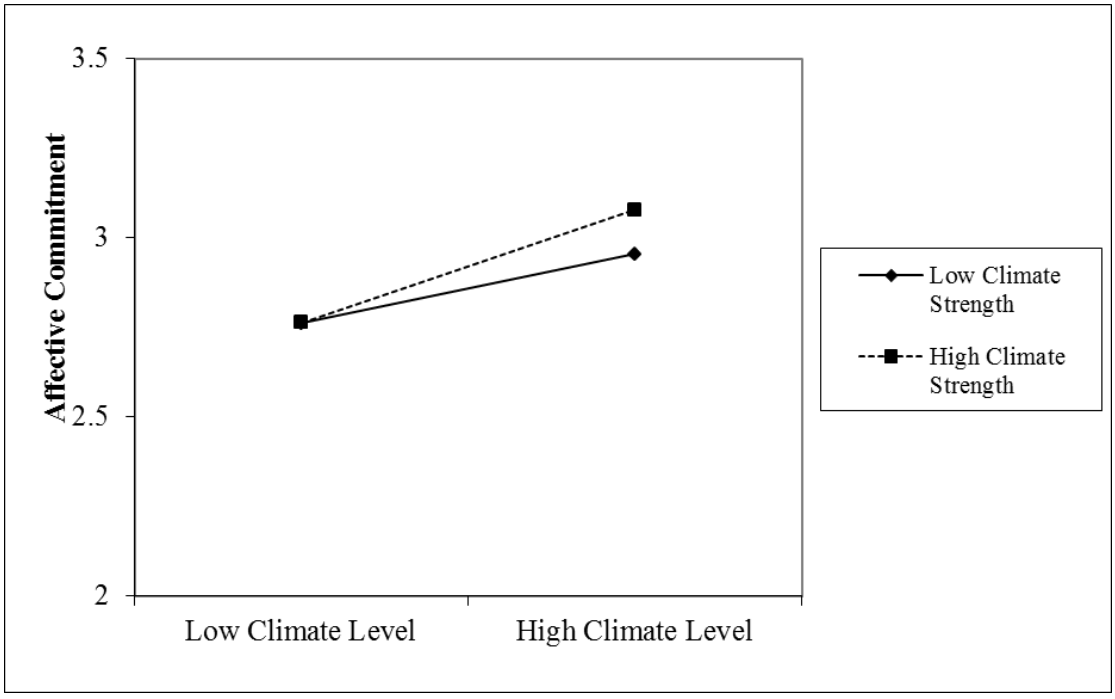
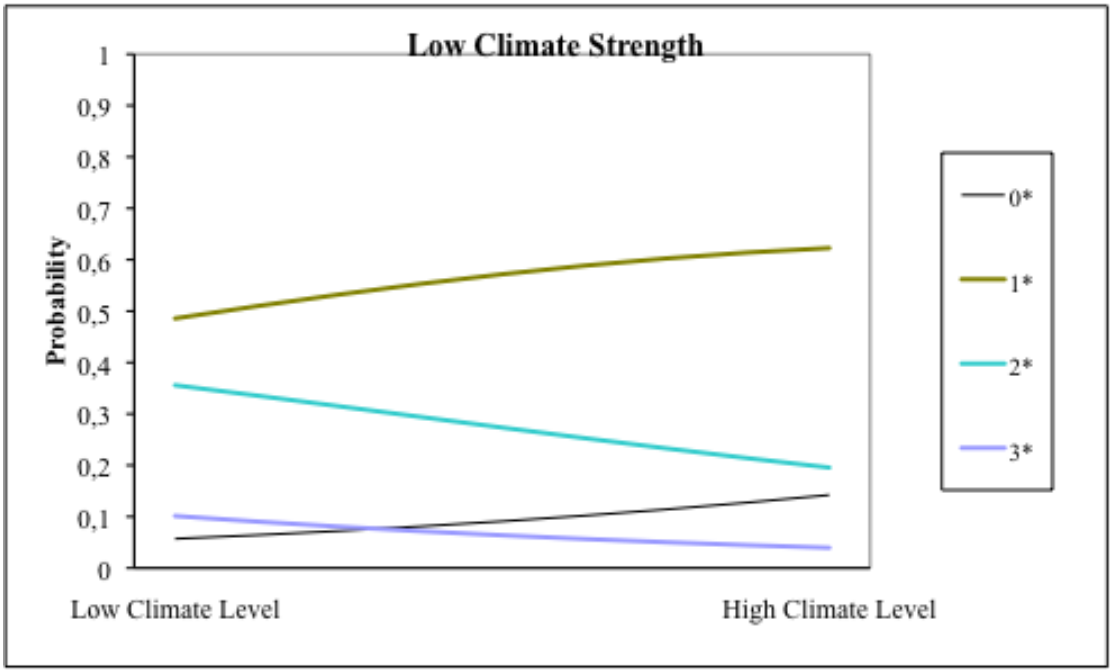


Figure 2 Interaction between EI climate level and climate strength on individual-level job satisfaction and affective commitment)



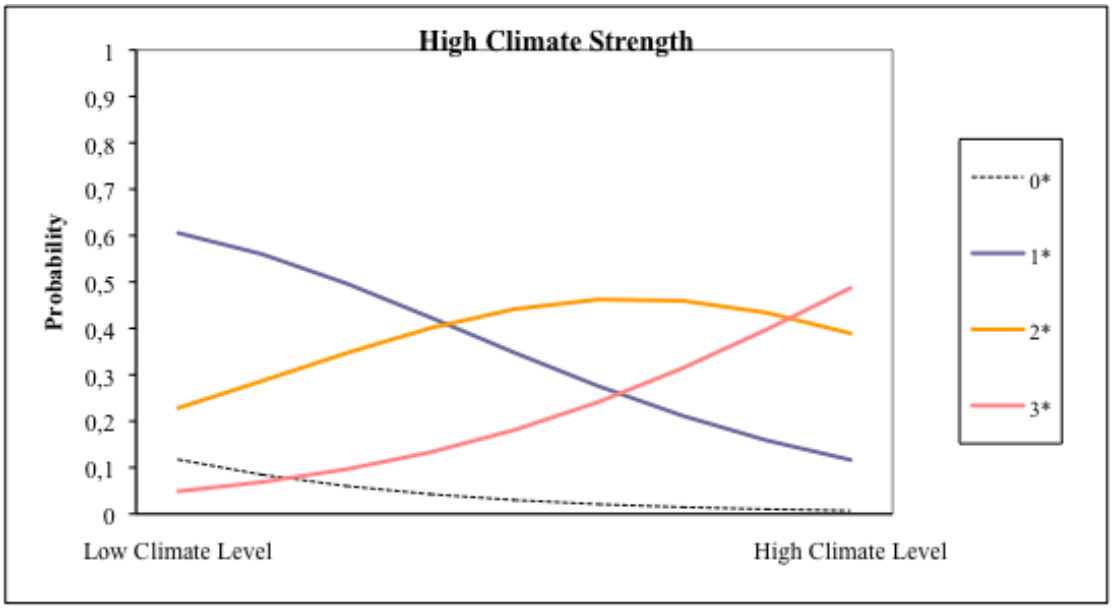


Figure 3 Effects of EI climate level on performance quality (0*, 1*, 2* or 3* trust star ratings) for low versus high climate strength