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Climate Strength: A New Direction for Climate Research

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Climate strength was conceptualized within D. Chan's (1998) discussion of compositional models and the concept of culture strength from the organizational culture literature. Climate strength was operationalized in terms of within-group variability in climate perceptions—the less within-group variability, the stronger the climate. The authors studied climate strength in the context of research linking employee service climate perceptions to customer satisfaction. The hypothesis was tested that climate strength moderates the relationship between employee perceptions of service climate and customer satisfaction experiences. Partial support for the hypothesis was reported in both a concurrent and predictive (3-year) test across 118 branches of a bank. In the predictive study only the interaction of climate and climate strength predicted customer satisfaction. Implications for future research on climate and climate strength are discussed.

We hypothesized that climate strength moderates the relationship between climate perceptions and organizational outcomes—in the present case, that service climate strength moderates the relationship between employees' service climate perceptions and customer experiences. Thus, within the domain of what has come to be called "linkage research" (Wiley, 1996), we developed the idea that within-unit variability in employee perceptions of service climate, what we call climate strength, will moderate the relationship between employee perceptions and customer experiences. The context, then, for testing the proposed hypothesis is the 20-year history of research on service climate. This literature has demonstrated that employee perceptions of service climate are significantly related to customer satisfaction and customer reports on the service quality they experience (Schneider, Bowen, Ehrhart, & Holcombe, 2000; Wiley & Brooks, 2000).

In this article, we first provide an introduction to the climate strength construct. This introduction shows that climate strength is one of a class of variance constructs, many of which have received little empirical exploration and much less validation. We also propose that not all levels of climate perceptions are created equal. That is, we propose the idea that the average aggregate scores typically used to index climate perceptions will not have the same effects—that effects vary as a function of the variability of those averages. We then review the context for the exploration of our conceptualization of climate strength, the now extensive research linking employee perceptions to customer satisfaction. In that research literature, the issue of the variability in climate perceptions has not, to our knowledge, been studied.

Climate Strength

Two different literatures in the organizational sciences world were useful as a basis for the development of our concept of climate strength. First, we patterned the present concept on the research that has been accomplished on compositional models in psychology (Chan, 1998). Second, we mapped the construct onto a similar concept in writings on organizational culture, namely, culture strength. This topic has been conceptualized in various ways, for example, consensus versus dissensus (Trice & Beyer, 1993) or consensus versus deviance (Martin, 1992). The work on both compositional models and culture strength addresses the larger issue of how variance or dispersion itself can be a conceptual focus in organizational research. We turn first to the issue of compositional models.

Compositional Models

According to James (1982), a composition model is "the specification of how a construct operationalized at one level of analysis is related to another form of that construct at a different level of analysis" (p. 220). In other words, composition models explain how the "same" construct should be represented at different levels of analysis. Chan (1998) recently organized the different kinds of composition models into a typology. Chan (1998, p. 236), building on previous research (cf. Brown, Kozlowski, & Hattrup, 1996; Rousseau, 1985), grouped compositional models into five types: (a) *additive models*, in which group constructs are a summation of lower level variables; (b) *direct consensus models*, in which the meaning of the group-level construct is the consensus among the lower level variables; (c) *referent shift models*, in which lower level variables formed by consensus are conceptually distinct from the original lower level variables; (d) *dispersion models*, in which

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the meaning of the group-level construct is the variance of the lower level variables; and (e) *process models*, in which group-level process parameters are analogous to the lower level process parameters. The direct consensus and dispersion models are most relevant to our discussion of climate and climate strength, and we focus on these two models.

The direct consensus model is the one most frequently discussed in research on organizational climate because shared perceptual agreement at the individual level of analysis has been seen as functionally isomorphic to the construct at the organizational level of analysis (Chan, 1998, p. 237). Organizational climate, then, is the average or most typical way that people in the organization describe it, and within-group agreement in this model serves as a prerequisite for the group-level variable (Chan, 1998). The absence of shared perception, or high within-group variability, implies that a group-level construct does not exist; in other words, the group has no shared meaning (Klein, Conn, Smith, & Sorra, 2001).

In research on climate, the tradition has been to calculate one or more of several different indicators of within-group agreement. When it is demonstrated that the average within-group agreement across units (James, Demaree, & Wolf, 1984) is sufficient or that there exists a significant main effect across units (Dansereau & Alutto, 1990), it is concluded that direct consensus (agreement) exists, legitimating aggregation and the study of climate at the unit level.

In contrast to the direct consensus models, dispersion models treat within-group variability, or the degree of shared perception, as a focal construct (Chan, 1998). Although not as common as the consensus model, examples of the dispersion model appear in organizational research. In research on organizational demography, for example, the degree to which a person differs demographically from his or her work group is used as a direct correlate of his or her behavior or attitudes (Chatman, Polzer, Barsade, & Neale, 1998). Person–organization fit theories often use profile similarity indices to index the degree of congruence or fit (the flip side of difference or variance) between an individual's values and an organization's values (O'Reilly, Chatman, & Caldwell, 1991). Finally, the notion of functional diversity, or variability in group composition, has been shown to be related to team productivity (Guzzo & Shea, 1992).

Lindell and Brandt (2000) recently discussed a concept like climate strength; they called it "consensus," and we also use that term occasionally in the present article. We note here that Lindell and Brandt's conceptualization of variability in climate perceptions was not based on a consideration of Chan's (1998) work, nor the concept of culture strength to be reviewed next.

Culture Strength

The organizational culture concept analogous to climate strength is culture strength. Variability in culture is called the deviance model of culture by some (Martin, 1992) and the dissensus model of culture by others (Trice & Beyer, 1993). There is considerable debate in the culture literature about whether an organization in which there is deviance or dissensus has a culture, represents a fragmented culture, or has no culture (Martin, 1992), but where one draws the line on whether a culture exists is, at best, a paradox (Trice & Beyer, 1993, pp. 13–15). This is true partially because culture researchers have not been as concerned as climate researchers with quantitatively indexing agreement, nor have they found a convenient way to index culture strength. There is also debate over the importance that should be accorded culture strength (Wilderom, Glunk, & Maslowski, 2000) because it has not been consistently shown to be a correlate of organizational performance (Kotter & Heskett, 1992). Regardless of these details, the concept of culture strength has considerable conceptual appeal because essentially all definitions of organizational culture include the idea that values (beliefs) are shared, with this sharedness being the defining basis for a culture (or, for some, a subculture) to exist (see Trice and Beyer, 1993). Obviously, it was our opinion that this rich idea of culture strength could be usefully transported into research on climate and, further, that perhaps organizational culture scholars might be inclined to borrow the idea of operationalizing strength in their own research (Schneider, 2000).

On Situational Strength and Climate Strength

Our development of the climate strength construct is related to *situational strength*, a concept developed by Mischel (1976). Strong situations are created when aspects of the situation lead people to perceive events the same way, induce uniform expectations about the most appropriate behavior, and instill necessary skills to perform that behavior (Mischel, 1976). By contrast, people in weak situations do not perceive events the same way, and expectations about appropriate behavior are inconsistent or even nonexistent. Mischel has argued convincingly that individual differences will determine behavior most clearly in ambiguous, weak situations. He wrote that in weak situations, people will expect that virtually any response is likely to be equally appropriate. From Mischel's perspective, an organization with a strong climate (i.e., a place where events are perceived the same way and where expectations are clear) should produce uniform behavior from the people in that setting.

It follows from this additional vantage point on climate strength that when climate is both positive and strong, one would expect the most consistently positive behavior from employees; further, when climate is both negative and strong, one would expect the most consistently negative behaviors. However, when climate is positive and weak, the consistency of the resultant behavior may suffer; this is similar for the condition when climate is negative but weak. In other words, in weak climate conditions, regardless of the level of the climate perceptions, predictions of behavior would be less reliable than when the climate is strong.

We tested this idea in a service setting using employee perceptions of service climate as the climate of interest and customer satisfaction as the criterion. We next turn to a discussion of service quality and service climate to provide the ground against which the figure of climate strength was tested.

Service Quality and Service Climate

In today's increasingly service-oriented economy, many businesses are focusing on improving and maintaining excellent customer service (Berry, 1995; Zeithaml & Bitner, 2000). Research on service quality has been accomplished primarily by researchers and practitioners in marketing (e.g., Zeithaml & Bitner, 2000), but there has also been some work on the issue by scholars in operations management (e.g., Chase & Stewart, 1994) and in the orga-

nizational sciences (e.g., Bowen & Schneider, 1988; Mills, 1986). Much of the most recent research does, in fact, simultaneously conceptualize and study both organizational and customer issues (Berry, 1999; Heskett, Sasser, & Schlesinger, 1997; Schneider & Bowen, 1995).

The fundamental logic of the latter approaches has been the idea that what happens internally in an organization with regard to the service quality experiences created for employees influences their behavior toward customers, which ultimately yields the service quality that customers experience. Other things being equal (e.g., discounting such issues as market dominance; Narver, Jacobson, & Slater, 1999), positive customer experiences eventually yield improved profitability (Christopher, Payne, & Ballantyne, 1991).

One way to conceptualize these employee experiences is around the concept of organizational climate—more specifically, the climate for service (Schneider et al., 2000). We define *climate for service* as employees' shared perceptions of the policies, practices, and procedures that are rewarded, supported, and expected concerning customer service (Schneider, Gunnarson, & Niles-Jolly, 1994).

Much of Schneider and his colleagues' research in this area has been to identify antecedents within the organization that promote a positive service climate for employees that would yield service-oriented behaviors by employees toward customers who would then report positively on their service quality experiences (e.g., Schneider, White, & Paul, 1998). Given the consistency of positive findings for this relationship, by what logic does climate strength enter as a potentially useful construct in such studies?

In the typical consumer service setting (banks, retail stores, restaurants), different customers interact with the settings at different times and on different occasions and, for those different customers on those different occasions, with different service providers. Given this state of affairs, the less consistency there is within a setting in terms of the service climate that exists for service providers, the more diverse will be the experiences that customers have. In contrast, when the service climate is strong (i.e., there is agreement within the setting), one would expect that for different customers, and for the same customers on different occasions, consistency will characterize the service they experience. In other words, how positive or negative the average climate aggregate of a setting is constitutes only one indicator of the climate; another indicator of the climate is its strength.

On the basis of this logic, we hypothesized that climate strength moderates the relationship between service climate and customer perceptions of service quality. More specifically, climate for service perceptions of employees will be more strongly related to customer experiences of service climate when climate strength is strong. Further, it follows from the argument presented earlier that the variability in customer experiences would vary as a function of climate strength, too. That is, given that climate strength is related hypothetically to employee variability in behavior, we proposed that climate strength will be reflected in the variability of customer experiences.

We tested these preliminary ideas about climate strength through a reanalysis of data previously collected by Schneider et al. (1998). These authors measured service climate with a multifaceted employee survey administered over a period of several years. They also collected customer perceptions of service quality over the same time period. Our reanalysis of these data compared employee climate data from 1990 with customer service perceptions from both 1990 (a concurrent study) and 1993 (a predictive study).

Method

Sample

The data used in this study were collected by Schneider et al. (1998). The sample consisted of employee and customer survey data from 134 bank branches. Data were collected in 1990 and 1992 from employees (although the 1992 employee survey was somewhat different from the 1990 survey) and in 1990 and 1993 from bank customers. Because customer data were not collected in 1992 and employee data were not collected in 1993, the employee data analyzed in the present study were from 1990, and the customer data were from 1990 and 1993 (Schneider et al. [1998] reported results only for the predictive study).

The sample that we used included responses from 2,134 employees in 1990, from 3,100 customers in 1990, and from 1,900 customers in 1993. The customer surveys on both occasions were actually administered over the telephone. All individual responses were aggregated to the branch level of analysis for both employees and customers.

Measures

Climate for service. The climate survey used is described fully in Schneider et al. (1998) and only briefly summarized herein. The 22-item climate survey studied herein was part of a larger survey administered at the same time and was scored on four different dimensions of climate: (a) Customer Orientation—the organization's efforts to meet customer needs and expectations, (b) Managerial Practices—the branch manager's behaviors that support and reward the delivery of service, (c) Customer Feedback—the degree to which the branch seeks and uses customer feedback about service quality, and (d) Global Service Climate—a summary measure (not a composite but a set of summary items) of service climate. Descriptive statistics for these scales and sample questions appear in Table 1.

Customer perceptions of service quality. Customers' perceptions of service quality were assessed with a 30-item measure administered over the telephone by trained interviewers. This measure assessed five facets of customer experiences: (a) Efficiency—the bank's promptness at handling

Table 1
Climate for Service Scales

Scale	α (1990)	Items	Sample item
Global Service Climate	.91	7	"How would you rate the job knowledge and skills of employees in your business to deliver quality work and service?"
Customer Orientation	.90	8	"My business does a good job keeping customers informed of changes which affect them."
Managerial Practices	.91	4	"My manager recognizes and appreciates high quality work and service."
Customer Feedback	.90	3	"My business asks our external customers to evaluate the quality of work and service."

Note. "Items" refers to the total number of items.

customer needs, (b) Security—the degree to which transactions are carried out reliably and without error, (c) Competency—the knowledge and competency of the bank staff, (d) Relationships—the relationship between the bank and customers, and (e) Overall Perceptions—a summary measure of customer perceptions (not a composite of the other scales). Descriptive statistics for this measure and sample questions appear in Table 2.

Data Aggregation

Schneider et al. (1998) conceptualized the constructs in this study at the bank branch level of analysis; therefore, they calculated the intraclass correlation coefficients (ICCs), ICC(1) and ICC(2), as well as the $r_{wg(j)}$ statistic to justify aggregation. The average ICC(1) across all variables was .09; the average ICC(2) across all variables was .47. The authors indicated in the article that these values are slightly below some published acceptable cutoff levels for aggregation but that they are moderate values for the statistics and are not so low as to make aggregation inappropriate (Schneider et al., 1998, p. 155). They also calculated the $r_{wg(j)}$ for each scale in each bank branch. The average $r_{wg(j)}$ across the employee climate scales was .75 in 1990, and the average $r_{wg(j)}$ across the customer scales of service perceptions was .82 in 1990 and .87 in 1993; all of these values are greater than the minimal acceptable values suggested by James (1982).

Analyses

In this study, we operationalized climate strength as the standard deviation of employee perceptions of service climate. We chose the standard deviation on the basis of arguments made by Schmidt and Hunter (1989), discounting counterarguments by Kozlowski and Hattrup (1992). The latter authors had critiqued the use of standard deviation because, they claimed, it is not a measure of agreement. We agree with Lindell and Brandt (2000) that this is not important because standard deviation is a measure of disagreement—indexing dissensus, the obverse of consensus—with such a difference being unimportant for our purposes. In addition, $r_{wg(j)}$ can exceed 1.00 on occasion, not a useful property for our purposes. Finally, because most people think about variability in terms of the standard deviation, it seemed useful to index climate strength in those terms rather than the potentially more ambiguous use of the variance—which, of course, is perfectly correlated with the standard deviation.

The average number of employees who completed the climate survey from each bank branch was 10.41; the largest sample size for a branch was 103. Because of the wide variability in the number of employee respondents from each branch, we randomly selected five employee observations from each branch and used that sample of observations in subsequent analyses. This procedure has been used previously by Schneider, Hanges, Smith, and Salvaggio (2000) to equalize the standard errors for unit-level means, and it prevents results being driven by data from the branches with the largest sample sizes.

Table 2
Customer Perceptions of Service Quality

Scale	α (1993)	Items	Sample item
Overall Customer Perceptions	.79	3	"How would you rate the overall quality of service provided by the bank?"
Efficiency	.81	5	"How long do you wait in teller lines?"
Security	.64	4	"The ATM machines are up and working properly."
Competency	.87	5	"Bank personnel's ability to handle special requests or problems."
Relationship	.94	13	"Rate nonteller staff on their friendly, helpful attitude."

Note. "Items" refers to the total number of items.

Bliese and Halverson (1998) cautioned that the magnitude of a group's rating of a construct (i.e., the mean value) will be mathematically related to the variability surrounding that rating. In fact, the mean climate rating and the standard deviation of that mean (i.e., the climate strength) were positively correlated ($r = .27$, $p < .05$). The next question asked was whether the relationship between these variables was linear or nonlinear, which we answered by regressing the climate mean onto the standard deviation and hierarchically adding a quadratic term to the regression equation. The quadratic term did not explain significantly more variance than the linear term (incremental $F = 0.69$, *ns*), thus leading us to conclude that the mean and the standard deviation were linearly related.

We assessed the amount of variance that the interaction term accounted for in customer perceptions above and beyond the variance accounted for by mean climate ratings and climate strength. To do this, we tested the main hypothesis by using moderated multiple regression. Each predictor (mean climate rating, climate strength, and the interaction term) was entered into the regression equation hierarchically to assess whether adding the predictor resulted in a significant increase in R^2. Note that this hierarchical procedure effectively controlled for the correlation between the mean and climate strength. The analyses were done for each climate scale and each customer facet because Schneider et al. (1998) had shown that the climate scales were relatively independent of each other as were the customer facets. Because of missing customer data, the final number of branches used in this analysis was 118.

Results

Prior to presenting the details of the analyses, it is useful to know the following (based on Schneider et al., 1998, Table 4, p. 156): (a) the Managerial Practices Scale does not correlate significantly with customer experiences for the predictive data set (Schneider et al. [1998] presented only the predictive main effects), and (b) the Customer Feedback, Interdepartment Service, and Global Service Climate Scales correlate significantly with customer experiences in the predictive data set, as they do in the concurrent data set. In the present analyses, with the exception of the Managerial Practices Climate Scale, adding the interaction terms did not significantly improve the prediction of customer perceptions over and above the main effects: average incremental $F(1, 114) = 1.71$, *ns*.

Table 3 presents the results from the set of moderated multiple regression analyses involving the Managerial Practices Scale for the concurrent data set (employee data and customer data for 1990). As Table 3 demonstrates, for the concurrent data there is both a significant main effect for the Managerial Practices Scale and a significant interaction effect for the Mean × Standard Deviation interaction term on each of the customer experiences scales (see the columns labeled "ΔR^2" and "Incremental F"). Note in Table 3 that there is no main effect for climate strength (standard deviation) on customer experiences of quality.

Table 4 (the predictive relationships) reveals that climate strength moderated the relationship between Managerial Practices and four of the five service quality scales as experienced by customers (see the rows labeled "Interaction" for each customer scale and the columns labeled "ΔR^2" and "Incremental F"). Table 4 reveals no main effect for Managerial Practices—as pointed out earlier—and no main effect for climate strength (standard deviation) either.

Table 3
Hierarchical Regression of 1990 Customer Perceptions on 1990 Managerial Practices

Dependent variable (1990)	Independent variable	ΔR^2	Incremental *F*	*p*
Overall quality	*M*	.06	8.34[a]	<.01
	SD	.07	0.01[b]	*ns*
	Interaction	.13	8.36[c]	<.01
Efficiency	*M*	.13	17.65[a]	<.01
	SD	.13	0.63[b]	*ns*
	Interaction	.24	16.61[c]	<.01
Security	*M*	.06	7.72[a]	<.01
	SD	.09	3.41[b]	*ns*
	Interaction	.13	6.26[c]	<.01
Competency	*M*	.07	9.46[a]	<.01
	SD	.08	0.92[b]	*ns*
	Interaction	.16	11.36[c]	<.01
Relationships	*M*	.10	12.85[a]	<.01
	SD	.09	1.58[b]	*ns*
	Interaction	.19	14.79[c]	<.01

[a] $df = 1, 121$. [b] $df = 1, 120$. [c] $df = 1, 119$.

The nature of the significant interaction effects is best shown in plots of them, and we present the significant interaction effects for the predictive data set (Table 4). Figure 1 depicts the significant interaction of the Managerial Practices Scale and climate strength on the Security scale of customer perceptions. As Figure 1 shows, climate predicted customer perceptions of service quality when climate strength was strong, as predicted (solid line). When climate strength was weak, there was almost no relationship between climate and customer perceptions (dotted line). Figures 2, 3, and 4 show a similar pattern for the interactions involving Managerial Practices and climate strength with the Overall Perceptions, Relationships, and Competency facets of customer perceptions. In all cases, the interaction was as hypothesized: When climate strength was stronger, the relationship was enhanced. As would be predicted, the plots for the concurrent interaction effects (not presented herein) were even more stark in the differences they revealed in climate–customer relationships as a function of climate strength.

Note also in the figures the following: When climate strength was weak and Managerial Practices were negative, customer satisfaction was superior to when climate strength was strong and Managerial Practices were negative. Conversely, when climate strength was strong and Managerial Practices were positive, customer satisfaction was superior to when climate strength was weak and Managerial Practices were positive. Of course, this is precisely why a significant interaction was found. But this means that if you are a manager and you behave negatively with regard to service quality, it is better to do this variably—not to have everyone in agreement about your negative behavior; if everyone sees you negatively, then customer satisfaction will be poor. Conversely, if you are a positive manager with regard to service quality, it is far better to be consistent with regard to eventual customer satisfaction.

Table 5 summarizes the effects of climate strength and climate level with regard to the hypothesis that climate strength also has an effect on the variability of customer satisfaction experiences. Recall that we proposed that the variability in climate would hypothetically yield variability in employee behavior, producing variability in customer experiences, too. Table 5 reveals that for every customer satisfaction scale, the average standard deviation of customer satisfaction under weak climate strength conditions was higher than (or in one case—Competency—the same as) the corresponding standard deviation when climate strength was high. This was true regardless of whether the climate was positive or negative. So not only did climate strength have an interactive effect on customer satisfaction, but the variability experienced by employees was shared by the variability in customer satisfaction reports.

Discussion

The purpose of this article was to introduce the concept of climate strength and present a preliminary analysis of its potential usefulness. The hypothesis that we developed predicted that climate strength, conceptualized as the degree of within-group consensus about service climate, moderated the relationship between employee ratings of service climate and customer perceptions of service quality. Although our hypothesis was not supported for three of four Service Climate scales, climate strength for the Managerial Practices Scale moderated the relationship as hypothesized for all customer scales in the concurrent analyses and four of five customer scales in the predictive analyses. Specifically, the interaction between climate strength and Managerial Practices accounted for unique variance in service quality after controlling for main effects, even when there were significant main effects (as in the concurrent analyses). Note that in the predictive analyses (a) there was no main effect for climate and (b) the relationship between climate and customer perceptions of service quality existed over time only when climate strength was strong.

Why the Managerial Practices Scale is the only one that "works" is an issue that we consider later, but it is important to note that the interaction term is what permits the relationship between Managerial Practices and customer experiences to persist over the 3 years. This finding suggests that the commonly held assumption

Table 4
Hierarchical Regression of 1993 Customer Perceptions on 1990 Managerial Practices

Dependent variable (1993)	Independent variable	ΔR^2	Incremental *F*	*p*
Overall quality	*M*	.02	2.60[a]	*ns*
	SD	.03	1.15[b]	*ns*
	Interaction	.08	6.41[c]	<.05
Efficiency	*M*	.02	2.57[a]	*ns*
	SD	.04	1.90[b]	*ns*
	Interaction	.06	3.17[c]	*ns*
Security	*M*	.01	0.88[a]	*ns*
	SD	.02	1.25[b]	*ns*
	Interaction	.06	5.49[c]	<.05
Competency	*M*	.02	2.46[a]	*ns*
	SD	.04	1.94[b]	*ns*
	Interaction	.09	7.00[c]	<.01
Relationships	*M*	.03	4.04[a]	*ns*
	SD	.01	1.03[b]	*ns*
	Interaction	.04	5.28[c]	<.01

[a] $df = 1, 116$. [b] $df = 1, 115$. [c] $df = 1, 114$.

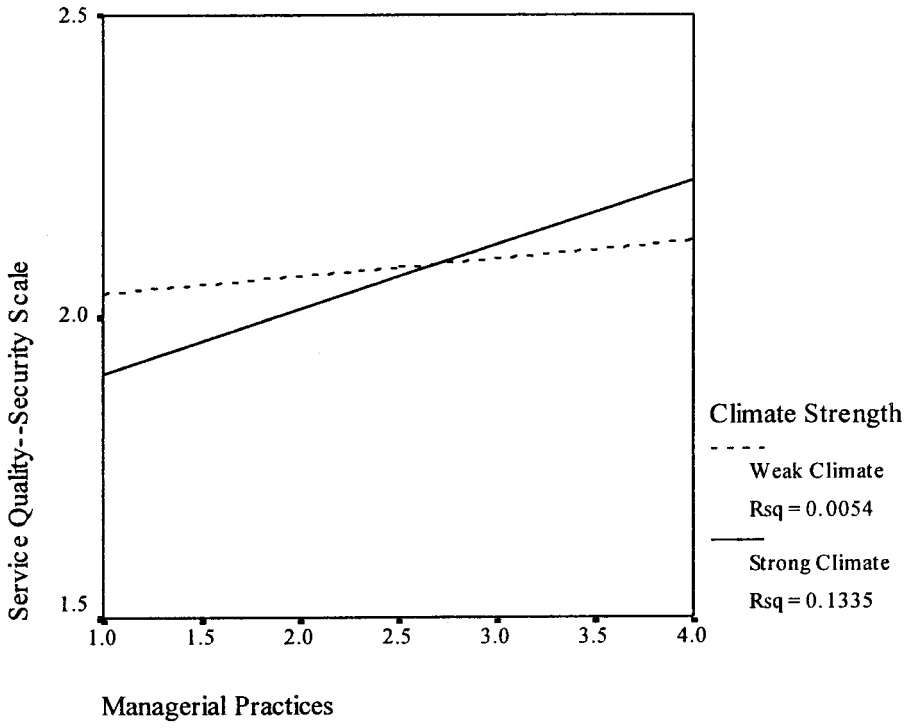

Figure 1. Interaction between climate strength, service climate, and service quality security scale for the 1990–1993 predictive study. Rsq = R^2.

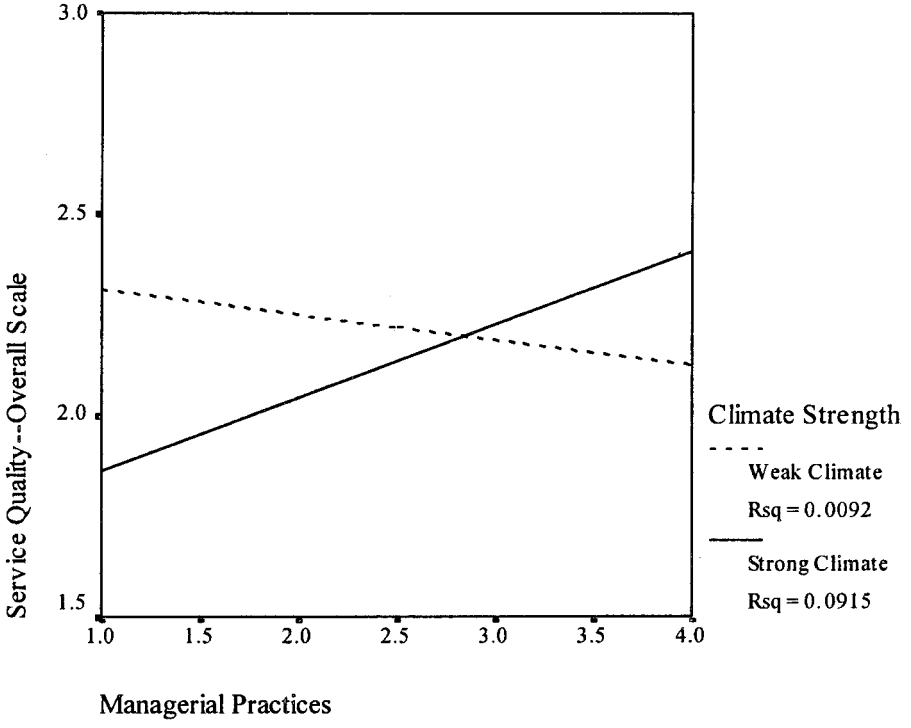

Figure 2. Interaction between climate strength, service climate, and service quality overall scale for the 1990–1993 predictive study. Rsq = R^2.

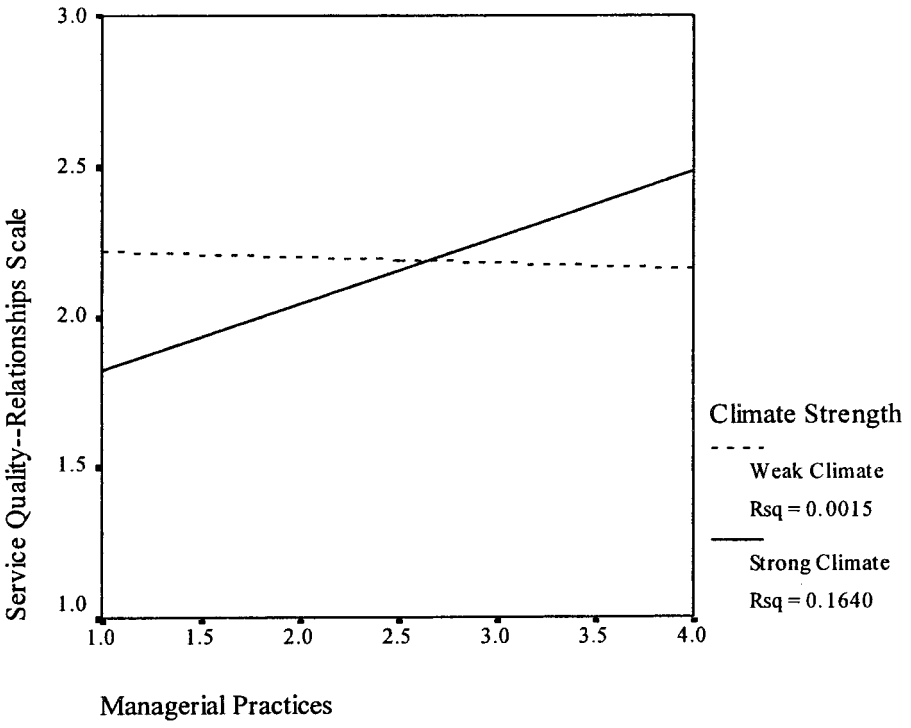

Figure 3. Interaction between climate strength, service climate, and service quality relationships scale for the 1990–1993 predictive study. Rsq = R^2.

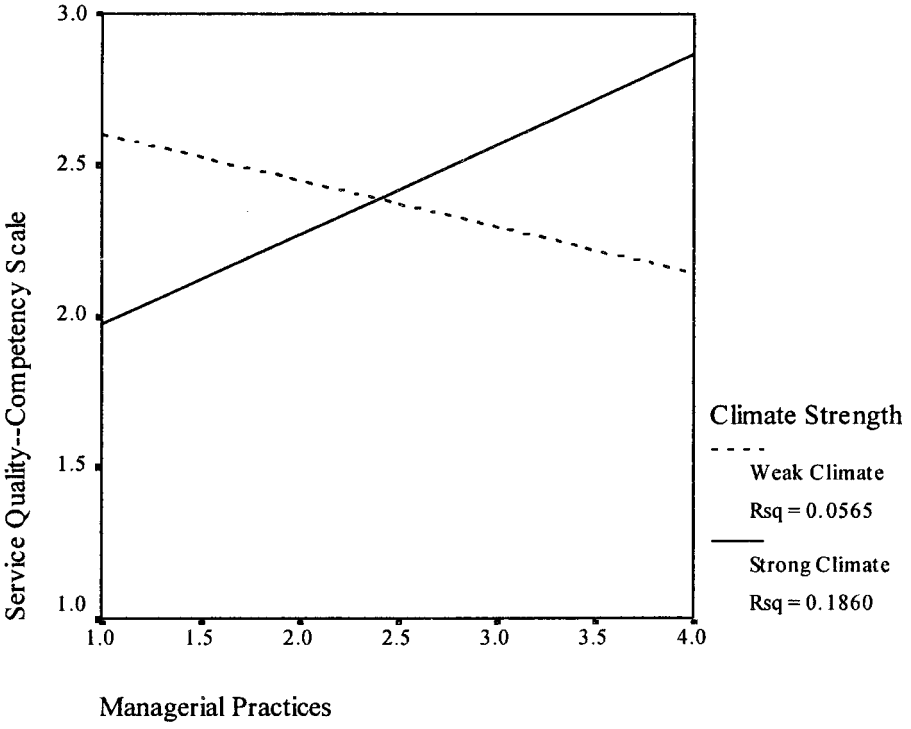

Figure 4. Interaction between climate strength, service climate, and service quality competency scale for the 1990–1993 predictive study. Rsq = R^2.

Table 5
Standard Deviations of Customer Perceptions by Climate Strength and Mean Climate Ratings

Perception	Negative climate	Positive climate
Overall quality		
WC	.31	.38
SC	.21	.24
Efficiency		
WC	.51	.53
SC	.42	.31
Security		
WC	.45	.40
SC	.43	.30
Competency		
WC	.31	.32
SC	.31	.26
Relationship		
WC	.31	.31
SC	.23	.22

Note. WC = weak climate; SC = strong climate.

that climates (and cultures) persist over time (e.g., Schein, 1992) must be modified to say strong climates (and cultures) persist over time. Culture scholars have written more about the issue of continuity over time than have climate scholars (e.g., Trice & Beyer, 1993, chap. 4). On the basis of the present results, we suggest that the continuity over time of a climate or a culture will be a function of the strength of climate or culture.

We suspect that the significant and consistent findings for the interaction with regard to Managerial Practices are a function of the proximal impact of Managerial Practices on employee behavior, which is the behavior experienced by customers. In other words, our thought is that managers have a more direct and more immediate impact on employees than do the other climate constructs. Indeed, the other facets of climate might be seen as outcomes of manager behavior (Customer Orientation, Customer Feedback), so it is the variability in how the manager behaves that is a key to the behavior customers experience.[1]

Variability in perceptions of Managerial Practices may be a function of a number of different issues, none of which, unfortunately, were assessed here. For example, some managers may be less able to effectively communicate their expectations (positive or negative) regarding service, leading to an imperfect understanding of the importance of service quality among employees; some employees may be able to distill the message and others may not. Alternatively, the manager's expectations may not be clearly communicated to all employees, leading to what Mischel (1976) would call a weak situation. Another possibility concerns the research on leader–member exchange and vertical dyadic linkage theory. According to these theories, managers fail to treat their employees the same way (e.g., Graen & Scandura, 1987). Such differential treatment of employees could lead to the formation of "subclimates" of service climate within bank branches. We tested to see whether there were bimodal distributions of Managerial Practices scores within each branch (assuming that a bimodal distribution would indicate the presence of subclimates), but we did not find them. Nevertheless, the significance of the interaction effects for the Managerial Practices Scale in this study may be another way of documenting the centrality of leadership in the creation of a service climate and the subsequent delivery of quality service to customers.

Some evidence in support of this latter interpretation is the finding that climate strength is related to variability in customer satisfaction, as shown in Table 5. This means that what employees experience in the way of consensus is mirrored in the variability in behavior directed toward customers—and customers then report more variable satisfaction experiences. The caution in overinterpreting this conclusion is the interesting observation we made of the figures that revealed the interactions. There we showed that weak negative climates produced higher customer satisfaction experiences than did strong negative climates. The conclusion is that it pays to be positive if you are going to be strong!

It may be obvious, but it is worth noting that the present findings point out an ambiguity in the climate literature. For example, "strong service climate" (as used, e.g., in Schneider et al., 1998) is, we suspect, typically interpreted as positive service climate. Our conceptualization, operationalization, and results with regard to climate strength indicate that such confusion is no longer warranted.

In addition to these practical implications, climate strength may have important implications for multilevel research in general. Traditionally, research on climate (and other organizational level variables) proceeds in two steps (Bliese & Halverson, 1998). First, as Bliese and Halverson noted, researchers determine whether there is appropriate within-group agreement in their measures by using statistics such as the intraclass correlation coefficient; then they aggregate their measures to the appropriate level of analysis. The importance of establishing within-group agreement is stressed by many multilevel researchers, including James (1982) and Klein, Dansereau, and Hall (1994).

We argue (along with Bliese & Halverson, 1998; Chan, 1998; and Lindell & Brandt, 2000) that justification for aggregation does not imply a total lack of within-group variance. If these statistics reach a threshold that indicates aggregation is appropriate, this does not mean the absence of variability. In fact, such variation may be theoretically interesting, as it was in the current study, and not just (as Chan, 1998, says) a "statistical hurdle." The degree of within-group variability may have very different effects, depending on context. For example, according to Schneider's (1987) attraction–selection–attrition model, a high degree of within-group agreement (in employee personality) may lead to organizational stagnation and decline. In contrast, lack of agreement about organizational goals, purpose, and direction ("why we are in business") could also lead to chaos and confusion. More conceptual work and more systematic research is clearly needed regarding the role that within-group variability plays in organizational theories. Researchers (including us) have typically ignored such variability as if it were theoretically uninteresting; but in doing so, we may have overlooked potentially important insights into when and under what circumstances such variability plays an important role in our understanding of climate effects in organizations.

[1] We appreciate an anonymous reviewer's suggestion regarding this potentially important explanation for these results.

Limitations

We have so far written with some certainty about the findings revealed herein and potential implications of the findings for thinking about the relationship between climate and outcomes in organizations. Yet these conclusions must be tempered by a set of limitations we have identified. First, the present effort was an analysis of previously collected data, making the results presented of unknown replicability. Although it is true that we were able to run both a concurrent and a predictive study based on this data set, the fact is that the 1990 employee data are a constant in both efforts.

It is very important to note that a data set constructed to specifically test the idea that climate strength serves to moderate climate–outcome relationships would require the design of a measure of climate that maximizes the potential for within-group variability. This, of course, is the antithesis of what climate researchers have tried to do in the recent past. However, only when there are extremes of variability in the climate measure will the interaction terms have a chance to be significant. In fact, we were somewhat fortunate that the ICC(1) results were somewhat lower than desired in Schneider et al. (1998), because this fact apparently provided us with the within-group variability we required for the present analyses to reveal the significant interaction effect.

A second limitation concerns the fact that we failed to hypothesize specifically which of the four climate scales would serve as the moderator variable. Lindell and Brandt (2000) found essentially no results for their use of variability as a moderator, and we found only one of four scales that behaved as hypothesized. In future work it would be useful to specifically hypothesize which climate variables will serve as moderators, then design measures of those specific facets that will yield high within-group variability (if it exists). Under this combination of circumstances, one would put more faith in the generalizability of the effect.

Finally, we have not addressed in any detail the way climate strength may play out in other contexts and against other organizational outcomes. For example, suppose an organization was interested in product quality or sales as a criterion. Is it reasonable to predict that sales units and production teams with high climate strength will have greater productivity? No, it is not, because that would be treating climate strength as a main effect. In the culture literature, culture strength has not been found to be a main effect against organizational performance (Wilderom et al., 2000), and there is no reason to suspect this conclusion would be any different for climate. However, we do think it is reasonable to hypothesize that sales unit and production team outcomes will be more predictable when they have high climate strength. Further research is needed to explore whether climate strength has a relationship with other organizational criteria.

Conclusion

This article introduced a new way to think about climate data and the relationship of those data to outcomes of interest. In this preliminary test of the idea, some support was found for the hypothesis that climate strength moderates the relationship between climate and organizational outcomes—specifically, climate strength moderated the relationship between Managerial Practices regarding service climate and customer experiences. The present results, revealing both predictive and concurrent relationships for the moderator construct, suggest that additional research on this construct might prove useful.

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