

WORKING PAPER No.202

**Effect of Service Climate on Service Quality:
Test of a Model Using Hierarchical Linear Modeling**

by
Amit Gupta
&
Martin J. Gannon

November 2002

Please address all correspondence to:

Amit Gupta, Ph.D.
Indian Institute of Management Bangalore
Bannerghatta Road
Bangalore – 560076, India
E-mail: amitg@iimb.ernet.in
Phone : 080 – 6993322
Fax : 080 - 6584050

Martin J. Gannon, Ph.D.
Smith School of Management
University of Maryland
College Park
Maryland 20742, USA
Phone : 301 – 405 – 2234
E-mail : mgannon@rhsmith.umd.edu

Abstract

This study builds on the research evidence of the positive influence of employees' perceptions of service climate and service quality on customer satisfaction with service (Parkington & Schneider, 1979; Schneider, Parkington, & Buxton, 1980).

The study tests a model of the relationship between service climate and customer satisfaction using the themes identified by Schneider, Wheeler & Cox (1992). It was hypothesized that human resource practices, interpersonal relationships, coordination, and service emphasis will have a positive relationship with customer service quality. Similarly employee service behaviors, employee service capability and employee service quality will have a positive relationship with customer service quality. Data was collected from employees and customers of a State Government agency. The proposed model was tested using hierarchical linear modeling (HLM).

The correlation matrix indicated that there were significant relationships between the variables in the model. Results of model fitting using HLM indicated that human resource practices, service emphasis, employee service behavior and service capability had a positive impact on customer satisfaction, whereas interpersonal relationships had a negative impact on customer satisfaction. No relationships were found between coordination practices and employee service quality with customer service quality. There was significant moderation effect for the office at which the service was delivered.

Introduction

Certain characteristics have been attributed as being unique to service organizations. These characteristics form a continuum and include intangibility of services, simultaneous production and consumption of services, customer involvement, and heterogeneity (Zeithaml, Parsuraman, & Berry, 1985; Bateson, 1977; Bowen & Schneider, 1988).

These attributes of services have important implications for the management of service organizations. The evaluation of the quality of services is based on customer perceptions. Lehtinen & Lehtinen (1982) have proposed “physical quality” (facilities, furniture, odors, wall colors, convenience of location), “corporate quality” (organizations image, reputation), and “interactive quality” (interaction between employees and customers, and customers and customers, in the service delivery process) as three important dimensions in the evaluation of service quality. Finally, comparison between prior expectations of customers and the ability of the organization to meet or exceed these expectations is an important determinant of customer perceptions of quality of service (Churchill & Suprenaut, 1982; Gronroos, 1982; Parsuraman, Zeithaml, & Berry, 1985).

The managerial problem becomes one of managing the physical, corporate, and interactive quality of services and customer expectations of these quality dimensions. Schneider and his colleagues have proposed the concept of “service climate” in the organization as a way of providing a superior quality service (Schneider 1972, 1973, 1990, 1991; Schneider & Bowen, 1985, 1995; Schneider et al. 1980). The focus of this paper is to propose and test a model of factors that influence service climate and the effect they have on customers’ perceptions of service quality.

Service Climate – An Introduction

Service climate is defined as members' perceptions of the organizational events, policies, practices and procedures that promote, support, and facilitate a climate where service is expected and rewarded in the organization (Schneider 1990b). Managerial procedures, practices, and policies influence the perceptions of employees about the expectations and goals of the management. These might relate to different aspects of organizational functioning that support service like human resources, rewards and recognition systems, interpersonal relations, coordination and planning of services, and so on. To the extent that organizational practices are conducive to offering a high quality service, employees will behave accordingly and provide a high quality service, which will be reflected in customer satisfaction with the services provided by the organization (Schneider et al. 1980; Schneider & Bowen, 1985). These perceptions in turn affect employee behavior (Denison, 1996; Schneider, 1983, 1990b). The way employees behave with customers, in turn, affects customers’ perceptions of the quality of service.

The following section will review the literature on the employees’ perceptions of the service climate in the organization based on managerial practices, procedures and policies and its impact on customers’ evaluation of service quality.

Employees’ Perceptions of Service Climate

Researchers have investigated a number of variables related to employees’ perceptions of service climate, employee behavior, and employees’ perceptions of service quality, and their influence on customers’ perceptions of service quality. Some of the main conclusions of this research pertinent to this study have been as follows:

1. There is a consistent relationship between employees’ and customers’ perceptions of service quality. Human resource practices, interpersonal relations, coordination, and emphasis on service have been found to be associated with positive employee and customer service perceptions (Schneider, 1973; Schneider et al. 1980; Schneider & Bowen, 1985; Tornow & Wiley, 1991; Ulrich, Halbrook, Meder, Stucklik, & Thorpe, 1991).
2. Employees perceive top leadership as positively influencing performance and efficiency of operations whereas middle management is seen as having a negative influence on performance and efficiency (Paradise-Tornow, 1991).

3. Tenure has a positive relationship with service quality (Schlesinger & Zornitsky, 1991). There is evidence that with increasing tenure, employees' perception of their service capability increases, possibly due to experience and greater knowledge of customer requirements.

4. There was some evidence that full time employees had greater attachment to the organization, provided better service and had higher ratings of customer satisfaction than part time employees (Ulrich et al. 1991).

Schneider (1973) used an open systems framework of organizations to explain service climate. As per the open systems perspective, organizations affect and are affected by the environment in which they operate (Katz & Kahn, 1968). Schneider (1973) proposed that "the way employees behave towards customers is thought to be the result of the work climate that the bank creates for them; employees, in turn, create the climate that the customers perceive" (p. 248). He found that interpersonal relationships between employees and customers, interpersonal relationships among employees, and waiting time were found to have the strongest correlations with the intention to switch. Summary perceptions of climate as exemplified by the "warm and friendly atmosphere in the bank" and the helpfulness of the employees, as a set had a stronger relationship with switch intentions. The second set of items, consisting of specific perceptions related to the quality of employees, interpersonal relationships among employees, employee satisfaction, and employee treatment of customers was found to have significant but weaker correlations with switching intention and a stronger correlation with the cluster of summary perceptions.

Parkington & Schneider (1979) reason that since employees are in contact with customers on an everyday basis, they are psychologically closer to them. They found that customers' perceptions of service quality were highly correlated with employees' satisfaction with the organization and the quality of service they provide. This study clearly showed a strong relationship between employees' and customers' perceptions of service quality.

Schneider et al. (1980) found that customers' perceptions of service quality were related to employees' perception of service provided to customers. Customer and employee perceptions of many specific dimensions of service issues were also related. Employees tended to view the management as more bureaucratic in orientation and to view themselves as more enthusiastic in orientation towards service. The enthusiastic orientation of the employees had an impact on customer perceptions of employee attitudes and behaviors and branch administration. The researchers also found that employees were able to meaningfully distinguish between descriptions of branch practices and procedures and their feelings of satisfaction, thus addressing the criticism of redundancy of the climate and job satisfaction constructs.

Schneider (1980), in a review of prior research, proposed that management could promote positive employee behavior by instituting policies and procedures that emphasize service to customers. Prior results showed that employees had a very strong desire to provide good service to customers but felt that they were prevented from doing this because of obstacles placed by the system. Employees saw themselves as being more enthusiastic and less bureaucratic in providing service than management. The discrepancy between employees' perceptions and management's perceptions were found to be related to negative psychological consequences for employees (role conflict and ambiguity, dissatisfaction, frustration, and turnover intentions). There was also a relationship between employees' and customers' perceptions of service. Customer satisfaction with service was related to employee reports of an enthusiastic emphasis on service, stress on service by the branch manager, active account retention, training, and adequate equipment and supplies. Employee perception of service emphasis in the bank branch was associated with customer perception of higher quality service, teller courtesy, competence, and positive work attitude, adequate staffing and low turnover, and better branch administration. Thus, a customer service orientation was found to have a positive affect on both employees and customers.

Schneider & Bowen (1985) found that the human resource practices followed in the organization were related to customers' description of employee morale, branch administration, and overall perceptions of service quality. Work facilitation was most consistently related to the customers' perception of the quality of service. Customer turnover intentions were strongly related to customer attitudes regarding service quality. An interesting finding was that the relationship between employee turnover intention and customer attitudes was stronger than the relationship between customer

switching intention and employee attitudes. Schneider & Bowen (1985) conjectured that customers might make their opinions regarding the quality of service known more readily whereas employee attitudes might be restrained due to organizational requirements.

A number of authors have proposed linking internal operational measures to measures of customer satisfaction (Bolton & Drew, 1994; Kordupleski, Rust, & Zahorik, 1993). Bolton & Drew (1994) propose that linking external customer satisfaction measures to internal operational measures will help to "(a) predict how service changes will affect customer satisfaction and (ultimately) revenues or profits (b) diagnose low customer ratings, or (c) use customer ratings to evaluate the effectiveness of personnel and organizational units" (p. 174). Tornow (1991) in editing a special issue of Human Resource Planning emphasized the necessity of examining the interrelationship between employees and customers, and in establishing human resource practices which are conducive to promoting a service culture and contributing both to employee and customer satisfaction.

Ulrich et al. (1991) in an empirical study of a manufacturing firm (NCR), reported that "The highest quality plants have employees who have much higher ratings of job security, management, NCR performance, cooperation, goals and objectives, and other measures of employee attitudes" (Ulrich et al. 1991, p. 93). Using this methodology the management was able to identify the characteristics of high and low quality plants, the specific management practices conducive to high quality products, and the various stages of quality process (exhibit 3, p. 95). In another study of a transport service organization (Ryder), the researchers found strong and significant correlations between human resource practices and employee satisfaction; employee satisfaction and voluntary turnover rates; and employee satisfaction and worker compensation rates. The studies indicate that human resource practices conducive to creating a service climate increase the satisfaction and attachment of employees and have an affect on customer service and satisfaction.

Tornow & Wiley (1991) in a study at the district level of analysis found that employees' perception of climate within the organization (in terms of management practices, culture for success, work group climate, job satisfaction, degree of personal responsibility, reward for performance, overall satisfaction with company, and a composite of the employee attitude survey) showed the highest correlation with customers' satisfaction with training. Data indicated that employee attitudes and perceptions had a stronger relationship with customer satisfaction with training, the quality of the products, and customer service, than with satisfaction with the organization's product per se. Employees' perceptions of reward for performance were significantly related to customers' satisfaction with training, product quality and overall customer satisfaction.

Examining organizational performance, employee attitudes, and customer satisfaction together, the researchers demonstrated that the strongest relationship was between employee attitudes and customer satisfaction; there were moderate relationships between customer satisfaction and organizational performance; and the weakest relationship occurred between employee satisfaction and organizational performance. All three variables were strongly and positively related to each other. Employee perceptions of culture for success were highly correlated with management practices. Employees' perceptions of organizational climate, as exhibited by management practices and culture for success, were highly correlated with customer satisfaction with training. Both customer and employee satisfaction were related to the organizational performance measure of customer retention. The authors concluded that besides customer satisfaction, employee attitudes about management and human resource practices within the organization are important and reflect on the performance of the organization and its ability to retain customers and provide them with high quality service.

Schneider, Wheeler, & Cox (1992) identified service themes using 97 focus groups in panel discussion and profiled themes that were important in creating a service climate within the organization. They identified 33 themes as being important to creating a service climate conducive to delivering a high quality service. These themes were grouped into 6 metathemes of environment, coordination, interpersonal relationships, service, human resources, and other resources (Schneider et al. 1992, p. 708). Data was collected on how frequently the theme was mentioned, the affective response to the theme (favorability rating), and a passion for each theme (arrived at by combining the frequency and favorability rating).

The most “frequently mentioned themes concerned coordination issues (rules, guidelines, and procedures and task related interactions between functional units or levels of management) and service issues (service process and emphasis on service at location)” (p. 709). The most favorable themes were task-related interactions within the work group, co-worker relationships, and products offered. Service themes with the highest correlation to service passion were soliciting and responding to customer opinions, establishing processes for delivering services, and the emphasis placed on service by the larger organization. Non-service themes with the highest correlation with service passion were primarily related to human resources issues (hiring procedures, performance feedback, internal equity of compensation, and training) and the theme of task related interactions between functional units or levels of management. Moderate correlations were observed with the metathemes of environmental issues (organizational characteristics), coordination (planning), human resources (job attitudes, staff quality, and performance appraisal), and other resources (office condition and facilities). In conclusion, creating a climate for service was found to be strongly related to developing human resource practices of selection, training, performance appraisal, and equity of pay. In addition, offering products, designing service processes, and soliciting and responding to customer opinion was seen as essential to having a passion for service. The authors conclude, “because service quality itself is a multifaceted construct, promoting service requires supporting a multifaceted climate in which delivering service quality can occur” (p. 713). Moreover, rather than addressing a particular problem, management has to pay attention to multiple dimensions to address service quality related issues within the organization.

Schneider (1994) proposed that HRM practices have to be focused on providing services to customers. He defined customer focused HRM as “HRM that is targeted on meeting the expectations of customers in specific market segments” (Schneider, 1994, p.64). However, rather than focusing exclusively on HRM practices and falling into a “human resources trap” (Schneider & Bowen, 1995), organizations need to take a holistic view of providing service and act in a fashion such that “all elements of the service system act in coordinated ways to produce service excellence” (Schneider, 1994, p.64). Schneider (1994) concluded that the major contributions of the research on the relationship between employee and customer satisfaction have been (a) to use customer satisfaction as a criterion for evaluating HRM practices; (b) to establish a link between employees’ perceptions of service delivery and customer’s satisfaction with service; and (c) to use employee data aggregated at the organizational level (branches or departments or units which provide service) in order to examine its relationships with the customer’s perception of service.

Schneider & Bowen (1995) reviewed research on management of service organizations and presented an integrated approach to the management of service climate. They propose that management needs to pay attention to the “Boundary Tier” and the “Coordination Tier”. The boundary tier is where the customers come in contact with the organization. One important component of the boundary tier is the employees of the organization. The coordination tier is the systems that management creates to provide service to customers. The boundary and the coordination tiers need to be integrated to provide a seamless service to the customer. They define seamless as “the service in all its dimensions and characteristics is delivered without a hitch. It is simultaneously reliable, responsive, competent, courteous, and so forth, and the facilities and tools necessary for it are all put into play smoothly and without glitches, interruptions, or delay” (Schneider & Bowen 1995, p. 8).

Schneider & Bowen (1995) recommend that systems in organizations need to be integrated to provide an experience of seamlessness of services. Management needs to pay attention to multiple facets of service climate rather than relying on single interventions. Since people do things that are more likely to be rewarded, reward systems can be configured to motivate employees to provide quality service. Management needs to emphasize a service orientation as against a production orientation and needs to direct its attention to service oriented behaviors.

The above review of the service climate literature provides substantial evidence to show that managerial practices related to human resources, interpersonal relations, coordination, and an emphasis on service have a positive relationship with employees’ behavior and their perceptions of the quality of service they provide. This in turn has a positive influence on customers’ perceptions of service quality. Based on the above review and the variables identified by Schneider et al. (1992, p. 708), this study will focus on employees’ perceptions of service climate based on human resources practices, interpersonal relationships, coordination, service emphasis, employee service behaviors

and employee perceptions of service quality. These in turn should positively affect customers' perceptions of service quality.

Employee Service Capability

Shea & Guzzo (1987a) and Guzzo, Yost, Campbell, & Shea (1993) have proposed group potency as an important and distinct variable in the study of work group effectiveness. Guzzo et al. (1993) define potency as "the collective belief in a group that it can be effective" (p. 87). It is the collective belief of the group that they have the potential to bring about change in their work place. The sense of potency arises from the group's evaluation of the resources present in the group and the organizational conditions under which the group operates. Guzzo et al. (1993) present reasons for considering group potency as a distinct concept from other existing concepts like self, collective, and political efficacy. They presented empirical evidence to show that potency could be reliably measured and groups varied in terms of their potency scores. Shea & Guzzo (1987b) found a significant relationship between potency and customer service effectiveness. Guzzo et al. (1993) proposed that external factors (like the resources provided by the organization in terms of training, materials, information, budget, etc.) and internal factors (experience, knowledge, staffing, etc.) influence group potency.

Employee service capability is analogous to the concept of group potency proposed by Shea & Guzzo (1987a) and Guzzo et al. (1993). It is seen as the collective belief of the employees in their ability to provide service to the customers in an effective manner. Like group potency, employee service capability is seen to arise from the employees' perceptions of service climate based on managerial practices and support. It is hypothesized that the collective belief of the employees in their ability to provide service will positively influence both employees' and customers' perceptions of service quality.

Proposed Hypotheses

Based on the above review, the following hypotheses will be tested in this study.

Hypothesis 1: Employees' perceptions of human resource practices, interpersonal relationships, coordination, and service emphasis will be positively related to customer service quality.

Hypothesis 2: Employee service behavior, employee service capability and employee service quality will be positively related to customer service quality.

Hypothesis 3: The relationship between the employee variables and customer service quality will be moderated by the office where the service is received.

Methodology

This section provides a discussion of the methodology used to test the model. It will cover the research site, the sample and sample size, development of employee and customer questionnaires, pre-testing of the questionnaire, survey administration, response rate, the sample, factors and scales used to measure the factors.

Research Site

The study was undertaken in the Unemployment Insurance (UI) and Job Services (JS) departments of the Employment and Training Division (E&T) of the Department of Labor, Licensing and Regulation (DLLR) of the State of Maryland. The E&T Division has 26 field offices at various locations in the State of Maryland through which services are offered to the people of Maryland. Each field office has a physically separated UI and a JS department. In the present study, data was collected from the employees and customers of UI and JS departments at the branch level.

Sample

The study was carried out in the 26 branches of the organization, which provide direct service to the customers and are in direct contact with the customers. The unit of analysis was the

department (UI and JS department) within each branch and data was aggregated to this level. We choose to consider UI and JS as two separate and distinct entities that represent two data points for several reasons. The functions of these departments are different. The funding sources and performance requirements are different for the UI and JS departments of the branch. For example, employees in the UI department had specified time limits within which they are supposed to process each customer (or 'case' as it is referred to in the organizational jargon). The personnel in the two departments are different. Customers who become unemployed go to UI if they want to get unemployment benefits. Once they register for unemployment benefits, they are required to register with the JS department. However, UI is only one source of customers for the job service department. Anyone looking for a job can go to the job services department and register to get help in finding a job.

Employee surveys were administered to all employees of the UI and JS department in the 26 branches. Employees were asked to identify branch and the department where they worked and data was aggregated to the level of the department. This resulted in the final sample size of 52 at the group or department level.

The customer database of UI was used to identify customers who have used the services of the E&T Division during the last year. This database has a record of all customers who have used UI services. Since all customers who use UI are mandated to JS, the same list of customers was used to collect information on JS as well. A common questionnaire containing a UI and a JS section was sent to the customers. They were requested to give their opinions of both departments. Customers were selected depending on (a) geographic location (rural versus urban), (b) type of work (blue collar versus white collar), (c) nature of unemployment (seasonal versus non-seasonal), and (d) services used. Based on these criteria, the agency provided the mailing labels for the customers selected for the study.

Development of Questionnaires

A separate questionnaire was developed for the employees and customers of the organization. The employee questionnaire measured employees' perceptions of service climate related to human resource practices, interpersonal relationships, coordination, service emphasis, service behavior, service capability and service quality. The customer questionnaire measured customers' perceptions of service quality.

Development of Employee Questionnaire

Personal interviews and employee focus groups were conducted with employee and manager groups to identify the salient service climate themes in the organization. Personal interviews were conducted with the heads of the department of Unemployment Insurance and Job Service. The emphasis in the focus groups and interviews was on identifying employee perceptions of the factors that customers thought were important for good service and the factors in the organization that contributed to customer service. Employees were selected based on the location of the field office (urban versus rural areas; white-collar versus blue-collar areas; and seasonal unemployment areas). We tried to obtain a representative sample of employees from both Unemployment Insurance and Job Services. The final questionnaire was designed based on the transcripts of the interviews and prior scales.

Development of Customer Questionnaire

The customer questionnaire was developed based on the variables identified by the customers as important to service quality. Six customer focus groups, semi-structured in format, were conducted. Given the differences in demographics that the organization deals with, focus groups were conducted with white-collar workers (high skill, professional, and technical occupations), blue-collar workers (manufacturing, semi skilled, and unskilled occupations), and workers from rural areas (small business, agricultural, seasonal and/or cyclical occupations). The final questionnaire was designed based on this content analysis of the transcripts, and on the sequence in which the customers receive service. The final questionnaire had two main sections, one related to UI and the other related to JS.

Pre-testing the Questionnaires

The employee questionnaire was pre-tested using a sample of four field office managers, four field office staff, and one head office staff member. Some unclear items were modified and items related to pay and benefits were deleted at the request of the managers.

The customer questionnaire was first pre-tested first with employees and managers within the organization to remove any ambiguities in the items. The questionnaire was then field tested on seven customers picked from two different field offices. The researcher sat down with the customers; the customers were requested to fill out the questionnaire and to ask questions whenever they were not clear about instructions, items or terms used in the questionnaire. Based on this feedback, the questionnaire was further modified. The final employee and customer questionnaires were approved by the organization before their distribution.

Survey Administration

For the employee surveys, a cover letter was obtained from the head of the agency explaining the reason for the survey and assuring the subjects of confidentiality. To ensure quick distribution of the surveys, the internal mail distribution system of the agency was used. Prepaid reply envelopes were enclosed with the surveys. The surveys went out in the first week of December 1996. A reminder was sent three weeks and eight weeks after the distribution of the original survey.

For the customer survey, the project leader enclosed a cover letter with the survey explaining the reason for the survey and ensuring confidentiality to the customers. An 800 number was given in the cover letter to answer any questions the customers might have regarding the survey. Prepaid reply envelopes were enclosed with the surveys. The customers were requested to respond within two weeks of receiving the survey. We could not send a reminder due to the costs involved in sending another mailing. The surveys were returned directly to the researchers.

Response Rate

A total of 680 employee surveys were mailed out. 290 surveys were returned. Seven respondents did not indicate the office they were responding from and thus their responses could not be included. Complete useable responses were available for 275 employees, thus giving a response rate of 40%, which compares very favorably with other recent studies using a mail survey methodology (for example, Huselid (1995) - 28%; Delery & Doty (1996) - 21%; Snell & Dean (1994) - 31%). To be included in the study, there had to be at least two respondents at the UI and JUS office level. One office had to be dropped due to a single respondent thus bringing the sample size at the group level to 51.

A total of 10,000 customer surveys were mailed out. Responses were obtained from 2,029 customers. Some respondents did not indicate the office they had obtained services from and thus their responses could not be included. This reduced the useable responses to 1755, giving a response rate of 17.55%.

We were not able to compare respondents to non-respondents because we did not have any information about the non-respondents. Since confidentiality was a very big issue with both the employees and customers, we were not able to get any information that would have helped us identify them and obtain data from the organizational database about them. The employee sample can be considered as a representative sample since almost 41% of the employees responded. However, the response rate for customers was only about 17% and very limited demographic information was available from the customers.

Factors and Measures

The factors used in this study are employees' perceptions of service climate related to human resource practices, interpersonal relationships, coordination, service emphasis, employee service behavior, employee service capability, employee service quality and customer service quality. The data gathered from the employees and customers was aggregated to the department level to test the proposed model. Schneider (1990a) recommended that the items used in the survey should be

congruent with the level to which the data will be aggregated so as not to elicit global descriptions from an overall organizational perspective. In keeping with that recommendation, the items were worded to make the respondents think about the “department level” while responding. The specific items used to measure the factors in the present study were based on prior scales and the transcripts of the employee and customer focus groups and reflected the departmental level of analysis. For employee service capability, items were based on the items presented by Guzzo et al. (1993). Since the items have been modified, the scale reliabilities from other studies were not generalizable to this study. All items were measured on a five point, 1 to 5 scale where “1” = Very Inaccurate, “2” = Inaccurate, “3” = Neither Inaccurate Nor Accurate, “4” = Accurate, “5” = Very Accurate. The following section presents the scales used in the questionnaire.

The exploratory factor analysis was conducted using principal components analysis with varimax rotation with the individual level data. This step is consistent with the structural equation modeling literature (Byrne, 1994). Since we were interested in the highest common variance with the latent variable, only the first factor in the factor analysis was selected for all further analysis. In order to select items that were the strongest indicators of the factor, a cutoff for item factor loading of 0.60 was used.

Human Resource Practices

This scale measures the employee’s perceptions of the human resource practices followed by the management in terms of recognition, performance appraisal and feedback, job satisfaction and job stress, job assignment, training and employee development, and compensation. This was a complex, multidimensional scale. It was designed to capture employees’ perceptions of a number of human resource practices. Some of the items from this scale are “Managers in our office recognize employees for providing good service to customers”; “Employees in our office are satisfied with their jobs”; Performance appraisal includes how well the employees interact with the customers”. The significant items for this factor represented distinct concepts of employee recognition, job stress, job satisfaction, performance appraisal, and employee assignment. These represent separate concepts in the human resource management literature. Bollen (1989) defines latent variables as “unidimensional concepts in their purest form” (p. 11). Clearly the human resource practices latent variable was a multidimensional as it was measured in the present study. This study was conceptualized based on the earlier work by Schneider et al. (1992). In their study, the authors had identified “themes” and then grouped these themes under “metathemes”. Themes represented a lower level of grouping and metathemes represented a higher (or a meta) level of classification of themes. The latent variable Human Resource Practices was conceptualized to be a higher level grouping which would constitute these different specific human resource practice themes. If interpreted in this sense, the different concepts that have coalesced under one factor make sense and can be accepted to represent the latent variable of Human Resource Practices. Three factors were extracted. A total of seven items loaded on the first factor (eigenvalue = 5.028 with 38.67% of the variance explained). The alpha reliability for this factor was 0.8568.

Interpersonal Relations

The Interpersonal Relations scale was designed to measure the treatment of employees by the managers and supervisors (respect, trust) and the relationship between employees (Kozlowski & Doherty, 1989). Most of the items used in this scale were modified from Kozlowski & Doherty (1989). Some of the items from this scale are “Co-workers in our office work as a team”; “The co-workers in our office discuss how we can jointly improve customer service”. Only one factor was extracted (eigenvalue 4.410 with 55.13% of the variance explained). Six items loaded on the factor with an alpha reliability of 0.8802. The items in the factor represented interpersonal relationships among the employees and between the employees and management in the office.

Coordination

The Coordination scale was designed to measure the extent of planning of work activities and communication and coordination of activities within the branch and between different work groups in the organization to facilitate optimal performance (Sells & James, 1988). Some of the sources for the items include Payne & Pheysey (1971), and Schneider & Hall (1972). Some of the items from this scale are “Work in our office is well planned and organized”; People from the various Programs in

E&T work together to provide good service to customers". Three factors were extracted. Five items loaded on the first factor (eigenvalue = 4.302 with 35.846% of the variance explained). The alpha reliability for this factor was 0.8524. The items in the factor represented coordination and planning of the work done in the office.

Service Emphasis

The Service Emphasis scale measures the extent to which employees perceive an emphasis on service as demonstrated by the behavior of management in making available enough resources for providing service to customers, stressing providing service to customers, and seeking employee ideas for improving service. Some of the sources for the items include Moeller & Schneider (1986), and Parkington & Schneider (1979). Some of the items from this scale are "Management in our office places a great deal of emphasis on providing high quality customer service"; "Management in our office commits the necessary resources for providing quality service to customers". Two factors were extracted. Six items loaded on the first factor (eigenvalue = 5.404 with 49.127% of the variance explained). The alpha reliability for this factor was 0.8954. The items in the factor represented the emphasis placed on service by the management in the office.

Employee Service Behaviors

The Employee Service behaviors scale measures the behavior of the employees towards their customer in the process of providing services to the customers (Schneider, 1973). Some of the items in this scale came from employee focus groups and some were modified from Schneider (1973). Some of the items from this scale are "Employees are courteous to customers"; "Employees show concern for the customers situation". Two factors were extracted. Fourteen items loaded on the first factor (eigenvalue = 11.460 with 60.314% of the variance explained). The alpha reliability for this factor was 0.9678. The items in the factor represented employee perceptions of the service they provide to the customers who visit the office.

Employee Service Capability

The Employee Service Capability is the collective belief of the employees in their ability to provide service to the customers in an effective manner. Some of the items from this scale are "The support provided by the management in our office increases our capability to provide good service"; "The coordination between various Programs in E&T increases our capability to provide good service to customers". Only one factor was extracted (eigenvalue 1.973 with 39.456% of the variance explained). Four items loaded on the factor with an alpha reliability of 0.6454. The items in the factor represented employee perceptions of how management practices increase their capability to provide service to the customers who visit the offices.

Employee Service Quality

The Employee Service Quality scale was designed to measure employees' evaluation of the quality of service they provide to their customers. Some of the items from this scale are "In comparison to other offices, our office provides superior customer service"; "Our Program provides excellent customer service". Only one factor was extracted (eigenvalue 2.555 with 63.869% of the variance explained). Four items loaded on the factor with an alpha reliability of 0.8781. The items in the factor represented employee perceptions of the quality of service they provide to their customers.

Customer Service Quality

The Customer Service Quality scale was designed to measure the customers' evaluation of the quality of service they receive from the organization. Some of the items from this scale are "Overall rating of UI staff"; "Overall performance of JS staff". Only one factor was extracted (eigenvalue 2.793 with 69.820% of the variance explained). Four items loaded on the factor with an alpha reliability of 0.8092.

Brief Review of Hierarchical Linear Modeling

Hierarchical linear modeling (HLM) is a methodology that has been developed for examining hierarchically nested data (Bryk & Raudenbush, 1992; Bryk, Raudenbush & Congdon, 1994).

In most organizational research data are collected at the individual level. In data analysis, it is assumed that the response of each individual is independent of other individuals in the environment. This assumption is usually not valid. In research on organizational climate, a number of studies had found differences in climate perceptions based on: level of hierarchy (Friedlander & Greenberg, 1971; Payne & Mansfield, 1973; Pheysey, Payne, & Pugh, 1971; Schneider, 1972; Schneider & Bartlett, 1970); type of job, whether line or staff (Gavin, 1975); unit of organization, whether department or subunit (Litwin & Stringer, 1968; Pheysey et al., 1971; Pritchard & Karasick, 1973); biographical influences (Gavin, 1975); personality characteristics interacting with structural perceptions (George & Bishop, 1971); personality characteristics of activity/passivity, task orientation (Johnston, 1974); and length of service, whether first generation or second generation employees (Johnston, 1976).

Powell & Butterfield (1978) argued that climate could exist independently at the organizational and at the subsystem levels. They attributed this duality to the mechanism that affects perceptual responses and argued that individuals are most strongly affected by the stimuli and events in their immediate environment such as departments, workgroups, level in hierarchy and frame of reference. Moreover, individuals, because they work in a subsystem of an organization, do not have access to the entire organization, and thus it would be difficult for them to form global organizational perceptions. Individuals who have been with the organization longer or who are at a higher level in the hierarchy get a chance to interact with and observe various departments in the organization, or are in roles which gives them a chance to interact with diverse departments within the organization, and are thus more likely to have global perceptions and recognize organizational climate. The possibility of multiple climates is further supported by the notion of the social construction of reality proposed by Berger & Luckmann (1967) and by the notion of individual enactment of environments proposed by Weick (1979).

HLM can be used for examining such nested data. Hierarchical nesting can be at 2 levels (individuals nested within offices) or 3 levels (individuals nested within offices that are nested within organizations) (for e.g., Lee & Smith, 1993, 1995, 1996).

Another type of problem is encountered when data at one level is aggregated and is used to model outcomes at another level. Different levels of data have different effects. When data is aggregated, it results in aggregation bias. The variability at the individual level is reduced. Due to this reduced variance, the group level effects are underestimated.

HLM allows for using all the data at the individual level during modeling. So, for example, employee data on management practices in departments (individual level data) can be modeled with customer satisfaction data for the department (group level data). All the individual employee responses in a particular department can be used to examine their affect on customer satisfaction. In this study, the sample size at the individual level is the 275 individual employee responses from various geographic dispersed offices of the organization. The sample size at the group level is customers' responses grouped into 52 offices of the organization. This helps us to capitalize on the variance of the employee data at the individual level while studying its affect on the organizational level outcome (customer satisfaction in this case.)

As with other statistical techniques, sample size is an important issue. There should be enough responses from each office (within cell) and there should be sufficient number of offices (number of cells). Also, the proportion of variance between offices should be sufficiently large (15% to 40%) to be able to find differences between offices. The interclass correlation estimated by the program is used to estimate the within and between group variance and to check if there is sufficient variance between groups to model differences between offices. As with other statistical techniques it is recommended that there should be at least 10 cases at the group level for every variable that is modeled at the individual level (Bryk & Raudenbush, 1992.)

In this study 2-level HLM modeling (individuals nested within offices) was used to study the effects of employee variables (individual level) on customer satisfaction (office or group level). This helped us address the problems related to nested data and problems related to data aggregation.

HLM models are expressed in terms of regression equations. But unlike regression, in HLM the intercepts and slopes of the equations are modeled. The intercepts and slopes at the group level are modeled on variables at the individual level to see the affect of individual level variables on the group level variables. When multilevel models are thus specified, the error terms obtained are complex and hence Ordinary Least Square (OLS) procedures cannot be used to estimate parameters, instead Maximum Likelihood (ML) procedures are used for parameter estimation.

Consider the following set of equations based on the model for the present study:

Level-1 Model

$$Y = B_0 + R$$

Level-2 Model

$$B_0 = G_{00} + G_{01}*(HR) + G_{02}*(IPR) + G_{03}*(COOR) + G_{04}*(SEM) + U_0$$

Combining the two equations we get the following:

$$Y = G_{00} + [G_{01}*(HR) + G_{02}*(IPR) + G_{03}*(COOR) + G_{04}*(SEM)] + [R + U_0]$$

For the level-1 model:

Y= customer satisfaction, the outcome variable;

B₀ = intercept at level 1;

R = error associated with customer satisfaction at level 1.

The intercept B₀ at level-1 is modeled as a function of individual employee level variables at level-2.

For the level-2 model:

G₀₀ = mean customer satisfaction across all offices;

G₀₁ = change in customer satisfaction due to HR;

G₀₂ = change in customer satisfaction due to IPR;

G₀₃ = change in customer satisfaction due to COOR;

G₀₄ = change in customer satisfaction due to SEM;

U₀ = error associated with the prediction of intercept at level 2.

This is not a standard OLS because the error terms are not independent, not normally distributed and not constant either within or between offices. It's a complex error term and hence maximum likelihood iterative estimation procedures are used in the estimation of the model and not OLS.

Bryk & Raudenbush (1992) have described six types of models for which HLM modeling can be applied. All modeling starts with a "one way ANOVA model" (it is also called the unconditional model). This gives preliminary information about how much of the variance lies within and between groups for each one of the variables. These are nothing but ICC values for each of the variables. The second step in modeling is running the appropriate model from among the other 5 models described by the authors. The model used in this study comes under the category of "means as outcomes regression." In this model the outcome variable at level 1 (customer satisfaction) is modeled on the level 2 variables (employee level variables) to see the affect of level 2 variables on the level 1 variable.

Calculations of ICC

As a first step in testing the model, a one-way ANOVA was run for all the variables to get the ICC values for all the variables (Bryk & Raudenbush, 1992). The ICC values for the variables used in the analysis are given in Table 1.

All the employee variables except employee service capability had acceptable ICC's. Customer service quality was found to have only about 4% variance between groups. This shows that there is a wide variation in the ratings of the customers receiving services from different offices. Given the small value of the ICC and the small sample size at the group level, it was difficult to model all the employee level variables simultaneously. Hence it was decided to model them in two sets to test the hypotheses proposed above. Since employee perceptions of service climate based on human resources, interpersonal relations, coordination, and service emphasis management practices were highly correlated, it was decided to include them in one model with customer satisfaction as the group level variable. Similarly, employee service behaviors, employee service capability and employee service quality variables were included in the second model with customer satisfaction as the group level variable

Table 1: ICC calculations for all variables in the model

	ICC	Cron alpha
CSQA	0.0405	0.8781
EHPR	0.1955	0.8573
EIPR	0.2578	0.88
ECOR	0.2001	0.8519
ESEM	0.2382	0.8952
ESB	0.1899	0.9674
ESCA	0.0917	0.6225
ESQA	0.1618	0.8058

Testing the Proposed HLM Models

To test hypothesis 1, the following model was run.

Level-1 Model

$$Y = B0 + R$$

Level-2 Model

$$B0 = G00 + G01*(HR) + G02*(IPR) + G03*(COOR) + G04*(SEM) + U0$$

Combined model

$$Y = G00 + G01*(HR) + G02*(IPR) + G03*(COOR) + G04*(SEM) + R + U0$$

The outcome variable is CSQA.

The results for this model are given in Table 2. There are two parts to the table. The first part of the table gives the coefficients and the significance tests for the fixed effects, which in this case would be employee perceptions of human resource practices, interpersonal relationships, coordination, and service emphasis. As in regression analysis, the estimation of the coefficient of each variable is given while controlling for other variables. The second part of the table gives the estimation for the variance of the intercept for level 1 and 2. This tells us if there are differences in customer satisfaction between offices for the variables considered in the model, i.e., employee perceptions of human resource practices, interpersonal relationships, coordination, and service emphasis.

By comparing the variance explained between offices by this model to the total variance available between offices, we can estimate the proportion of variance explained between offices by this set of variables.

Variance explained between offices by this model = 2.684 (variance component for intercept1, U0).

Original between group variance in customer satisfaction = 4.04 (from Table 1, ICC value for CSQA).

Proportion of variance between offices explained in CSQA = $(4.04-2.684) / 4.04 = 0.3356$.

Thus 33.56% of the variance in customer satisfaction between offices is explained by employee perceptions of human resource practices, interpersonal relationships, and service emphasis.

Table 2: Management Practices variables

Final estimation of fixed components:

Fixed Effect	Coefficients	Standard Error	T-ratio	P-value
For Intercept1, B0				
Intercept2, G00	-0.908904	0.292151	-3.111	0.004
EHR, G01	0.097043	0.040497	2.396	0.021
EIPR, G02	-0.061795	0.022021	-2.806	0.008
ECOR, G03	0.150958	0.114437	1.319	0.194
ESEM, G04	0.044483	0.025386	1.752	0.086

Final estimation of variance components:

Random Effect	Standard Deviation	Variance Component	df	Chi-square	P-value
Intercept1, U0	0.16383	0.02684	46	92.98179	0.000
Level-1, R	0.97468	0.95000			

To test hypothesis 2, the following model was run.

Level-1 Model

$$Y = B0 + R$$

Level-2 Model

$$B0 = G00 + G01*(ESCB) + G02*(ESCA) + G03*(ESQA) + U0$$

Combined model

$$Y = G00 + G01*(ESCB) + G02*(ESCA) + G03*(ESQA) + R + U0$$

The outcome variable is CSQA

The results for this model are given in Table 3. Again, the first part of the table gives the coefficients and the significance tests for the fixed effects, which in this case would be employee service behavior, employees' perceptions of service capability and of service quality. The second part of the table gives the estimation for the variance of the intercept for level 1 and 2. This tells us if there are differences in customer satisfaction between offices for the employee variables considered in the model, i.e., employee service behavior, employee service capability and employee service quality.

By comparing the variance explained between offices by this model to the total variance available between offices, we can estimate the proportion of variance explained between offices by this set of variables.

Variance explained between offices by this model = 2.616 (variance component for intercept1, U0).

Original between group variance in customer satisfaction = 4.04 (from Table 1 ICC value for CSQA).

Proportion of variance between offices explained in CSQA = $(4.04 - 2.616) / 4.04 = 0.3525$.

Thus 35.25% of the true variance in customer satisfaction between offices is explained by employee service behavior and employees' perceptions of service capability.

Table 3: Employee Service Level Variables

Final estimation of fixed components:

Fixed Effect	Coefficients	Standard Error	T-ratio	P-value
For Intercept1, B0				
Intercept2, G00	-0.732096	0.226140	-3.237	0.003
ESCB, G01	0.051056	0.021350	2.391	0.021
ESCA, G02	0.090847	0.038524	2.358	0.023
ESQA, G03	-0.058999	0.044112	-1.337	0.188

Final estimation of variance components:

Random Effect	Standard Deviation	Variance Component	Df	Chi-square	P-value
Intercept1, U0	0.16173	0.02616	47	94.90476	0.000
Level-1, R	0.97483	0.95029			

Results of Data Analysis

The first hypothesis proposed that employees' perception of human resource practices, interpersonal relationships, coordination, and service emphasis would be positively related to customer service quality. The results show that employee perceptions of human resource practices and service emphasis were positively related to customer service quality ($p < 0.05$ and $p < 0.10$ respectively), whereas interpersonal relations were negatively related to customer service quality ($p < 0.01$). The results also indicate that there were differences in customer satisfaction between offices with respect to human resource practices, interpersonal relationships, and service emphasis. This model explained 33.56% of the variance in customer service quality between offices. The coefficient for human resource practices was the highest followed by the coefficient for interpersonal relations and service emphasis. Thus hypothesis 1 was partially supported.

The second hypothesis proposed that employee service behavior, employee service capability and employee service quality would be positively related to customer service quality. The results show that both employee service behavior and employee service capability were positively related to customer service quality ($p < 0.05$ for both). No relationship was found between employee service quality and customer service quality. The results also indicate that there were differences in customer satisfaction between offices due to employee service behavior and employee service capability. This model explained 35.25% of the variance in customer service quality between offices. The coefficient for service capability was slightly higher than the coefficient for service behavior. The second hypothesis was partially supported.

Significant differences were found in customer satisfaction between offices due to human resource practices, interpersonal relationships, service emphasis, employee service behavior and employee service capability. Hypothesis 3 was supported.

In summary, employees' perceptions of human resource practices, service emphasis, service capability, and employee service behavior were positively related and employee's perception of interpersonal relations was negatively related to customer service quality. Coordination and employee service quality did not have an impact on customer service quality.

Discussion of Findings

The results of model testing are presented in Figures 1 and 2. Employees' perceptions of human resource practices, service emphasis, service capability, and employee service behaviors were positively related to customers' perceptions of service quality. Employee's perception of interpersonal relations was negatively related to customers' perceptions of service quality. There were significant differences between offices in the customers' perceptions of service quality on these variables.

Based on the absolute size of the coefficients, human resource practices and service emphasis had the strongest relationship followed by interpersonal relations and employee service

behaviors. Coordination and employee service quality did not have an impact on customer service quality. There is ample evidence to support the positive findings as was discussed in the literature review.

The negative influence of interpersonal relations on customer service quality is more interesting. It can be argued that both positive and negative interpersonal relations can hamper delivery of services and could have a negative impact on customer satisfaction. The items used to measure interpersonal relations relate primarily to employee treatment, employee communication and teamwork. A negative relationship with customer satisfaction indicates that interpersonal relations in the office were hampering service delivery and having a negative impact on customer satisfaction. There is anecdotal evidence to support this finding. When asked about the relationship between employees, the employees mentioned issues related to employee treatment, a lack of teamwork, a lack of relevant information about other departments, and problems of communication within the department.

Limitations of the Study

This study has a number of limitations. The measurement of some of the variables needs to be improved. The measurement of customer service quality was problematic. There was a lot of missing data for the customer responses for the quality of services of JS department.

The conceptualization and measurement of employees' perceptions of service capability need to be improved and further developed. Given the results of this study, this is a promising variable which had relationships with other variables examined in this study.

Human resource practices was a multidimensional variable in this study. A lot has been written about the criticality of human resource practices. The different dimensions of this variable need to be examined further to determine how the relationships between various human resource practices contribute to service climate.

Also, the data from employees and customers were largely self-report data. All variables have problems of social desirability bias and single method bias. However, some of the employee variables (service behaviors, service capability and service quality) were modeled as being related to customer variables. Hence these employee variables were validated and supported by the customer data.

Contributions and Future Research

Employees' perception of service capabilities is a promising new variable which has not been examined in prior research. This variable exhibited meaningful relationships with other variables in the model. The conceptualization and measurement of employees' perceptions of service capability need to be improved and further developed. The role of employee service capability needs to be examined further.

Hierarchical linear modeling offers a very exciting new technique to examine the relationship between multi-levels in the organization. This technique is ideally suited to service climate research due to the nested nature of the data and the data aggregation problems related to the study of service climates at the group level.

Human resource practices was a multidimensional variable in this study. The different dimensions of this variable need to be examined further to determine the contributions of various human resource practices to customer satisfaction.

This study needs to be replicated with a larger sample size and in domains like the private sector, non-profit sector, and other sectors that provide services to customers.

It would be valuable for branches to rate individual employees on how they provide service to customers, which was not possible in this design. One potential future research would be for customers to rate individual employees on multiple dimensions. Such data can be used to develop employees and help individuals change their behaviors to provide a better service to customers.

References

- Bateson, J. E. G. 1977. Do we need service marketing? In Marketing Consumer Services: New insights: 1-30. Cambridge MA: Marketing Science Institute, (Report No. 77-115).
- Berger, P. L., & Luckmann, T. 1967. The Social Construction of Reality: A Treatise in the Sociology of Knowledge. Anchor.
- Bolton, R. N., & Drew, J. H. 1994. Linking customer satisfaction to service operations and outcomes. In R. T. Rust & R. L. Oliver (Eds.), Service quality: New directions in theory and practice: 173-200. Thousand Oaks, CA: Sage Publications.
- Bowen, D. E., & Schneider, B. 1988. Services marketing and management: Implications for organizational behavior. Research in Organizational Behavior, 10, 43-80.
- Bryk, A. S., & Raudenbush, S. W. 1992. Hierarchical linear models: Application and data analysis methods. Newbury Park, CA: Sage
- Bryk, A. S., Raudenbush, S. W. & Congdon, R. T. 1994. Hierarchical linear modeling with HLM/2L and HLM/3L programs. Chicago, IL: Scientific Software International (SSI).
- Churchill, G. A., Jr., & Suprenaut, C. 1982. An investigation into the determinants of customer satisfaction. Journal of Marketing Research, 19, November, 491-504.
- Delery, J. E., & Doty, D. H. 1996. Human resource management, manufacturing strategy and firm performance. Academy of Management Journal, 39, 802-835.
- Denison, D. R. 1996. What is the difference between organizational culture and organizational climate? A native's point of view on a decade of paradigm wars. Academy of Management Review, 21 (3), 619-54.
- Friedlander, F., & Greenberg, S. 1971. Effect of job attitudes, training, and organizational climate of the hard-core unemployed. Journal of Applied Psychology, 55, 4, 287-295.
- Gavin, J. F. 1975. Organizational climate as a function of personal and organizational variables. Journal of Applied Psychology, 60, 135-139.
- George, J. R., & Bishop, L. K. 1971. Relationship of organizational structure and teacher personality characteristics to organizational climate. Administrative Science Quarterly, 16, 467-475.
- Guzzo, R. A., Yost, P. R., Campbell, R. J., & Shea, G. P. 1993. Potency in groups: Articulating a construct. British Journal of Social Psychology, 32, 87-106.
- Huselid, M. A. 1995. The impact of human resource management practices on turnover, productivity, and the corporate financial performance. Academy of Management Journal, 38, 635-672.
- Johnston, H. R., Jr. 1974. Some personality correlates of the relationships between individuals and organizations. Journal of Applied Psychology, 59, 623-632.
- Johnston, H. R., Jr. 1976. A new conceptualization of source of organizational climate. Administrative Science Quarterly, 21, 95-103.
- Katz, D., & Kahn, R. L. 1968. The social psychology of organizations. (2nd ed.). New York: Wiley.
- Kordupleski, R. E., Rust, R. T., & Zahorik, A. J. 1993. Why improving quality doesn't improve quality (or whatever happened to marketing). California Management Review, Spring, 82-95.
- Kozlowski, S. W. J., & Doherty, M. L. 1989. Integration of climate and leadership: Examination of a neglected issue. Journal of Applied Psychology, 74, 4, 546-553.

- Lee, V. E., & Smith, J. B. 1993. Effects of school restructuring on the achievement and engagement of middle-grade students. Sociology of Education, 66, 3, 164-87.
- Lee, V. E., & Smith, J. B. 1995. Effects of school restructuring and size on gains in achievement and engagement for early secondary school student. Sociology of Education, 68, 4, 241-70.
- Lee, V. E., & Smith, J. B. 1996. Collective responsibility for learning and its effects on gains in achievement for early secondary school students. American Journal of Education, 104, 1, 103-47.
- Lehtinen, U., & Lehtinen, J. R. 1982. Service quality: A study of quality dimensions. Unpublished working paper. Service Management Institute, Helsinki, Finland.
- Litwin, G., & Stringer, R. 1968. Motivation and organizational climate. Cambridge, MA: Harvard University Press.
- Moeller, A., & Schneider, B. 1986. Climate for service and the bottom line. In M. Venkatesh, D. M. Schmalensee, & C. Marshall (Eds.), Creativity in service marketing: 68-72. Chicago: American Marketing Association.
- Paradise-Tornow C. A. 1991. Management effectiveness, service quality, and organizational performance in banks. Human Resource Planning, 14 (2), 129 - 139.
- Parkington, J. J., & Schneider, B. 1979. Some correlates of experiences job stress: A boundary role study. Academy of Management Journal, 22, 2, 270-281.
- Parsuraman, A., Zeithaml, V. A., & Berry, L. L. 1985. A conceptual model of service quality and its implications for future research. Journal of Marketing, 49, Fall, 41 - 50.
- Payne, R. L., & Mansfield, R. M. 1973. Relationships of perceptions of organizational climate to organizational structure, context, and hierarchical position. Administrative Science Quarterly, 18, 515-526.
- Payne, R. L., & Pheysey, G. 1971. G. G. Stern's organizational climate index: A reconceptualization and application to business organizations. Organizational Behavior and Human Performance, 6, 77-98.
- Pheysey, G., Payne, R. L., & Pugh, D. S. 1971. Influence of structure at organizational and group levels. Administrative Science Quarterly, 16, 61-73.
- Powell, G. H., & Butterfield, D. A. 1978. The case for subsystem climates in organizations. Academy of Management Review, 3, 151-157.
- Pritchard R. D., & Karasick, B. W. 1973. The effects of organizational climate on managerial job performance and job satisfaction. Organizational Behavior and Human Performance, 9, 126 - 146.
- Schlesinger, L. A., & Zornitsky, J. 1991. Job satisfaction, service capability, and customer satisfaction: An examination of linkages and management implications. Human Resource Planning, 14, 2, 141 - 149.
- Schneider, B. 1972. Organizational climate: Individual preferences and organizational realities. Journal of Applied Psychology, 56, 211-217.
- Schneider, B. 1973. The perception of organizational climate: The customer view. Journal of Applied Psychology, 57, 3, 248 - 256.
- Schneider, B. 1980. The service organization: Climate is crucial. Organization Dynamics, Autumn, 52 - 65.
- Schneider, B. 1983. Work climates: An interactionist perspective. In N. W. Feimer & E. S. Geller (Eds.), Environmental psychology: Directions and perspectives: 106-128. New York: Praeger.

- Schneider, B. 1990a. The climate for service: Application of the climate construct. In Schneider, B. (Ed.), Organizational climate and culture: 383-412. San Francisco: Jossey Bass.
- Schneider, B. 1990b. Organizational climate and culture. San Francisco: Jossey Bass.
- Schneider, B. 1994. HRM - A service perspective: Towards a customer-focused HRM. International Journal of Service Industry Management, 5, 1, 64 - 76.
- Schneider, B., & Bartlett, C. J. 1970. Individual differences and organizational climate 2: Measurement of organizational climate through multi-trait, multi-rater matrix. Personnel Psychology, 23, 493-512.
- Schneider, B., & Bowen, D. E. 1985. Employee and customer perception of service in banks: Replication and extension. Journal of Applied Psychology, 70 (3), 423 - 433.
- Schneider, B., & Bowen, D. E. 1995. Winning the service game. Harvard Business School Press, Boston, MA.
- Schneider, B., & Hall, D. T. 1972. Toward specifying the concept of work climate: A study of Roman Catholic diocesan priests. Journal of Applied Psychology, 56, 447-455.
- Schneider, B., Parkington, J. J., & Buxton, V. M. 1980. Employee and customer perception of service in banks. Administrative Science Quarterly, 25, 252-267.
- Schneider, B., Wheeler, J. K., & Cox, J. F. 1992. A passion for service: Using content analysis to explicate service climate themes. Journal of Applied Psychology, 77, 5, 705 - 716.
- Shea, G. P., & Guzzo, R. A. 1987a. Groups as human resources. In K. M. Rowland & G. R. Ferris (Eds.), Research in personnel and human resources management: 323-56. Greenwich CT: JAI Press.
- Shea, G. P., & Guzzo, R. A. 1987b. Group effectiveness: What really matters? Sloan Management Review, 28, 25-31.
- Snell, S. A., & Dean, J. W., Jr. 1994. Strategic compensation for integrated manufacturing: The moderating effects of jobs and organizational inertia. Academy of Management Journal, 37, 1109-1140.
- Tornow W. W. 1991. Service quality and organizational effectiveness. Human Resource Planning, 14, 2, 86-88.
- Tornow, W. W., & Wiley, J. W. 1991. Service quality and management practices: A look at employee attitudes, customer satisfaction, and bottom line consequences. Human Resource Planning, 14, 2, 105 - 115.
- Ulrich, D., Halbrook, R., Meder, D., Stuchlik, M., & Thorpe, S. 1991. Employee and customer attachment: Synergies for competitive advantage. Human Resource Planning, 14, 2, 89 - 103.
- Weick, K. 1979. The social psychology of organizing. McGraw-Hill.
- Zeithaml, V. A. 1981. How consumer evaluation processes differ between goods and services. In J. H. Donnelly & W. R. George, (Eds.), Marketing for services: 186-190. Chicago: American Marketing Association.
- Zeithaml, V. A., Parsuraman, A., & Berry, L. L. 1985. Problems and strategies in service marketing. Journal of Marketing, 49, Spring, 33-46.
- Zeithaml, V. A., Parsuraman, A., & Berry, L. L. 1990. Delivering quality service. The Free Press, NY.

Figure 1: HLM Model 1 – Employee Perceptions of Management Practices – Customer Service Quality

Employee Service Climate Perceptions
based on Management Practices

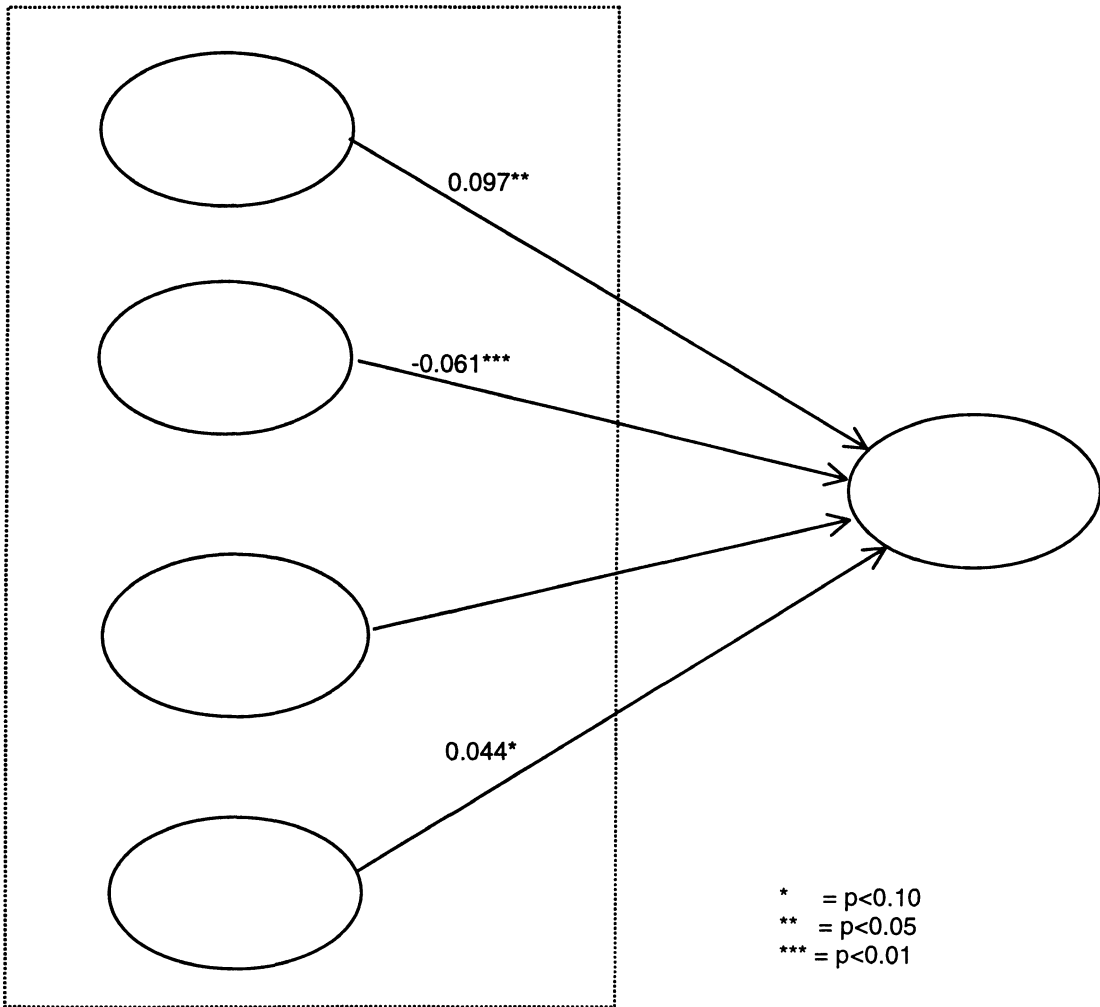


Figure 2: HLM Model 2 – Employee Service Climate – Customer Service Quality

Employee Perceptions of Service

