IT Service Climate—An Essential Managerial Tool to Improve Client Satisfaction With IT Service Quality

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Although client satisfaction surveys can assess client satisfaction with IT service quality, they cannot easily be used to pinpoint how internal IT behaviors influence client satisfaction and prescribe solutions. This research fills the gap by introducing a concept—IT Service Climate—and a validated ten-item instrument that significantly explained client ratings of IT service quality. We recommend this measure as an effective diagnostic tool for managers aiming to improve quality and client satisfaction.

Keywords climate; service climate; IT service climate; service quality; SERVQUAL; user satisfaction

INTRODUCTION

IT departments have long been viewed as service providers to business clients, and improving service quality and client satisfaction is a concern of many IT managers (Kettinger & Lee, 1994; Rands, 1992; Rau, 2004; Winniford, Conger, & Erickson-Harris, 2009). Since programs that teach computing science are mainly focused on quality as it relates to the software engineering process and the end product, IT employees trained in this discipline are often not exposed to perceptual goals such as satisfaction or approval. Due to this and the many other potential inhibitors, it is often an uphill battle for IT managers to develop service or customer-oriented teams.

Surveys of business clients to assess their level of satisfaction with IT service quality (e.g., Kettinger & Lee, 1994; Pitt, Watson, & Kavan, 1995) are useful indicators, but cannot be easily used to prescribe solutions because managers need to know how internal functioning affects client evaluation and satisfaction. Though there may be consulting-driven assessment tools in use, there is currently an absence of research-based instruments that can be used within the IT department to explain business client ratings of IT service quality. This research aims to fill the gap between client perceptions of service and IT managerial actions. We introduce a concept—IT Service Climate—and a survey instrument that can be used to assess it.

WHAT IS IT SERVICE CLIMATE?

IT service climate is defined as IT employees’ shared perceptions of the practices and behaviors in their workplace that support the provision of IT service to business customers (Jia & Reich, 2008). This concept may be new to IT, but it builds on decades of climate research in the organizational psychology literature. Before we explore the meaning and usefulness of this concept, we briefly introduce the background research literature and explain what organizational climate is.

Employees form their perceptions by observing how the daily operations of the organization are conducted and what goals the organization appears to be pursuing (Kopelman, Brief, & Guzzo, 1990). The organization transmits this information to employees through its various policies and practices, which collectively send messages about what is important—what behaviors the organization rewards, supports, and expects. Climate can be simply defined as shared employee perceptions of “the ways things are around here” (Reichers & Schneider, 1990).

Organizational climate and organizational culture are two related, but distinct, concepts. Culture is a deeper phenomenon based on core values and fundamental assumptions (Schein, 1985, 1992). Climate is about perceptions of what happens and is a manifestation of culture. The term culture is often used...
when climate is the more appropriate term (Schein, 2000). We refer interested readers to our earlier work for more discussion on this topic (Jia & Reich, 2008).

Climate perceptions serve as a guide to employee behavior in the workplace (Litwin & Stringer, 1968). For example, cumulative research on service climate found that bank branches whose employees gave more favorable ratings of their branch’s service climate were found to be the same branches whose service quality was positively described by customers (Schneider & Bowen, 1985; Schneider et al., 1980, 1996, 1998).

Are these findings applicable in the IT context? If service climate perceptions of bank branch employees can predict the quality ratings by bank customers, can the service climate concept be similarly effective in the IT environment, given that IT service often involves complex knowledge work and differs significantly in nature from retail banking?

Our interview and survey studies (described in more detail in the Appendix) found the notion of service climate to be readily applicable in the IT context and highly influential on client evaluations of service quality, even more so than factors such as technical competency of the IT workforce. The next sections discuss the three key components of IT Service Climate.

THE INNER DIMENSIONS OF IT SERVICE CLIMATE

Our research found that there are three inner dimensions of the IT service climate concept: Service Leadership, Service Vision, and Service Evaluation. Because of the difference between IT and retail banking services, these dimensions differ from those identified in the banking studies such as, managerial practices, customer orientation, and customer feedback (Schneider et al., 1998). The IT climate dimensions identified in our research emphasize a higher order goal (i.e., service vision) as a motivating force (West, 1990) and alignment of personnel assessment with service performance (i.e., service evaluation) while similarly highlighting the importance of leadership (i.e., service leadership). Quotes from our interviews with IT managers and executives are used throughout to illustrate each of the climate dimensions. These managers understood the notion of a service climate and found it to be useful and applicable in their IT environments. (These and additional quotes can also be found in Jia & Reich, 2008.)

Service Leadership

The IT organization has overarching financial, customer and operational objectives. Our managers are very involved in helping their teams and individual members achieve their objectives . . .

Service Leadership is based on motivation and leadership theories; it refers to the extent to which IT managers take actions to guide the delivery of service, such as goal setting and work planning and coordination. If IT managers set clear goals for employees regarding providing quality service to clients and effectively plan and coordinate their work and service, it is much more likely that a positive service climate will emerge in the IT organization, where employees devote more time and effort to service (Jia & Reich, 2008).

I sit down with each of my eight systems managers to discuss work objectives. My managers do the same with their direct reports, so we stay on top of all projects, coordinate activities as necessary, and make sure that people have what they need . . .

Service Vision

What makes this IT group different from the other ones I worked with before is that they have a sense of the whole company and the business . . . they care about the organization, how well it performs. They are business persons in their approach.

Service Vision refers to the extent to which IT professionals view themselves as fundamentally having a service-oriented role and emphasize meeting client needs, demonstrating flexibility, and establishing communication. The notion of service vision has a broader scope than customer orientation as it allows a more proactive role for the IT professionals, i.e., going beyond meeting customers’ current needs to become strategic partners and providers of value-added service. To the extent that an IT department sees its mission as serving business needs, it will align its objectives and priorities with those of the clients. IT departments with other visions of their role (e.g., introducing new technologies or developing high quality software) may not deliver quality IT service (Jia & Reich, 2008).

Service Evaluation

Each employee will have a set of objectives each year plus project goals on an ongoing basis . . . At the end of the day, every one is evaluated against their objectives . . . as well as their “customer focus.” All these factors impact our incentive pay.

Service Evaluation refers to the extent to which the evaluation of IT professionals is linked with service performance. If there is an emphasis on providing quality service to business clients, then the evaluation and reward system must reflect such emphasis. Many IT managers see the need to establish a positive customer orientation and provide quality service. However, if their personnel evaluation criteria rewards only technical excellence, this sends conflicting cues to employees regarding what is truly important (Jia & Reich, 2008).

Business didn’t [used to] have influence over IT personnel evaluation. But since we started linking it to their input, we have seen happier customer groups . . . our user satisfaction rating increase and evaluations of our project work increase . . .

The above climate dimensions represent the three components of the internal service climate in the IT organization.

RESEARCH RESULTS—IT SERVICE CLIMATE MATTERS!

Four organizations participated in our survey studies. IT employees from systems development units completed the
TABLE 1
The IT service climate instrument

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Definition</th>
<th>Items **</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Leadership</td>
<td>The extent to which IT managers take actions to guide the delivery of service.</td>
<td>1. My unit manager regularly discusses work performance goals with us.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2. My unit manager frequently talks to us about how our service contributes to better performance of our clients.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3. My unit manager regularly discusses with us the best approaches to serve our clients.</td>
</tr>
<tr>
<td>Service Vision</td>
<td>The extent to which meeting client needs, demonstrating flexibility, and establishing communication are emphasized.</td>
<td>4. In my unit’s daily work, there is an emphasis on providing excellent service to our business clients.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. There has been true effort in our unit to establish ourselves as a respected partner of our clients.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. People in my unit are flexible when dealing with clients’ perspectives.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7. My unit frequently shares information with clients.</td>
</tr>
<tr>
<td>Service Evaluation</td>
<td>The extent to which the evaluation of IT professionals is linked with service performance.</td>
<td>8. We receive recognition and reward for providing excellent service to our clients.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>9. In my most recent performance review, I was evaluated on how well I served the clients.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>10. Customer service is an important criterion of our formal performance evaluation.</td>
</tr>
</tbody>
</table>

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**All items rated on scales of 1–7 (Strongly Disagree—Strongly Agree).

service climate survey, and members from their partnered business client units filled out the IT-SERVQUAL instrument (Kettinger & Lee, 1994; Pitt et al., 1995). Survey results validated that IT service climate consisted of three distinct dimensions—Service Leadership, Service Vision, and Service Evaluation—and could be measured by asking ten questions. The IT Service Climate Instrument, shown in Table 1, demonstrated satisfactory reliability and validity. (See the Appendix for details.).

Linking the IT and client responses in our regression analysis, we found that the IT Service Climate concept was influential in explaining client evaluations of IT service in the participating organizations. While technical competency of IT employees accounted for 15% of the variance in clients’ ratings of IT service quality, IT service climate explained an additional 27% of the variance, thus demonstrating excellent explanatory power beyond technical competency. Amongst the three climate dimensions, Service Leadership has the strongest influence on client ratings, further illustrating the pivotal role of IT managers in forming a favorable internal service climate and improving service quality to clients.

These are strong results. While they confirm the importance of a technically competent IT workforce, they underscore the critical need to build a favorable service climate to improve service quality and client satisfaction. As one of our senior IT managers suggested:

I would rather hire someone who may not be as technically strong but can work and communicate with our clients effectively . . . The project may take longer, but the outcome is going to be much better.

IMPLICATIONS FOR IT MANAGERS
The IT service climate concept and the ten-item questionnaire developed and validated in our research can be an important diagnostic tool for IT managers. The strong relationship between internal IT climate and client’s service quality perceptions suggests that managers who work to improve their service climate can expect a significant positive impact on client evaluations of their service quality. Understanding the inner dimensions of their service climate will enable managers to develop appropriate organizational interventions to enhance customer service and achieve stronger business-IT alignment (Brown & Magill, 1994; Reich & Benbasat, 2000).

In the research literature, managers have been called “climate engineers” (Kozlowski & Doherty, 1989) since they shape the meaning employees attribute to the daily activities in the organization. The survey finding that Service Leadership is most influential on client ratings amongst the three climate
dimensions further supports this point. As a managerial tool, the climate concept unmistakably places IT managers in the driver’s seat in building and maintaining a favorable service climate when they demonstrate leadership in guiding daily work, instill a client-oriented vision for the IT organization, and align employee evaluation with an emphasis on service (Jia & Reich, 2008).

Many of our interviewees found the notion of “climate engineers” empowering because the key to building and maintaining a favorable service climate was in their hands. As one IT executive commented:

I am very interested in the climate approach and believe that the right IT climate . . . can highly influence the group’s overall behavior and performance.

This sense of empowerment echoes a belief by organizational theorists that the concept of climate, as contrasted with culture, provides more actionable tools for managers (Schein, 1985, 1992) because climate is less resistant to change and managerial intervention (Denison, 1996).

The multidimensionality of the climate concept (i.e., Service Leadership, Service Vision, and Service Evaluation) highlights the scope and complexity of creating and sustaining a favorable service climate in the IT organization. The delivery of quality service requires appropriate actions at strategic, tactical and operational levels (Watson, Pitt, & Kavan 1998). Change programs are likely to result in failure and employee cynicism without in-depth knowledge of all climate dimensions and a systemic approach (Jia & Reich, 2008).

A Process to Improve Service Perceptions of Users

To fully utilize this new tool in the IT workplace, we suggest the following actions:

1. IT managers incorporate these ten IT Service Climate questions into their internal surveys of employee satisfaction and engagement. These will give concrete assessments of how their employees view service expectations in their organization.
2. Each dimension of the IT Service Climate survey findings should be examined carefully to understand how existing people, policies and procedures in the workplace impact the results. This examination can lead to targeted changes designed to improve service climate and therefore, clients’ satisfaction with the IT department.
3. The climate survey can be deployed on a regular basis to track progress in achieving service climate improvement.
4. A client survey should be undertaken periodically to ensure that these results are tracking positively.

In addition to its significant impact on service quality, managers may find other implications that IT service climate has for IT effectiveness and business value. For example, the internal climate may also be predictive of project performance and users’ willingness to develop partnership with IT (Bassellier & Benbasat, 2004).

There are a number of best-practice frameworks (e.g., ITIL), many of which are oriented toward IT operations and have ties with other process improvement-related methodologies (e.g., TQM, Six Sigma). The IT service climate approach complements and goes beyond comprehensive checklists and standard operating procedures by emphasizing the human side of IT service. The service climate approach emphasizes the need to hear from the people who provide services (i.e., the IT employees) in addition to those they serve (Jia & Reich, 2008). Equipped with this new tool, managers can take targeted, research-based actions to improve their clients’ satisfaction with services that the IT department provides.

The study reported here is part of our broader stream of research on how the internal climate of the IT function influences its effectiveness and its interactions with business clients. Interested readers are referred to our other work for further details (Jia & Reich, 2008, 2010).

AUTHOR BIOS

Ronnie Jia is an Assistant Professor of Information Systems Technologies at Southern Illinois University. His research interests include IT service management, business-IT relationships, and psychological dependency on technology. He has published in Journal of Association for Information Systems, Computers in Human Behavior, Proceedings of International Conference on Information Systems and other conferences and attended the ICIS Doctoral Consortium.

Blaize Horner Reich is RBC Professor of Technology and Innovation at the Beedie School of Business, Simon Fraser University, Vancouver, Canada. Before pursuing her PhD, Dr. Reich worked for 15 years in the IT industry as a practitioner and consultant, focusing on the financial services and utilities sectors. She is currently an editorial board member for several academic journals and industry associations, and is a corporate director. In addition to Information Systems Management, Dr. Reich’s research has been published in a wide range of journals, including MIS Quarterly, Information Systems Research, Journal for Management Information Systems and the Project Management Journal. Dr. Reich’s current research focuses on a knowledge based view of IT Projects and IT governance, including service quality, alignment, and risk management.

REFERENCES


APPENDIX: DETAILS ABOUT THE RESEARCH STUDY

The theoretical development of the IT service climate construct and its dimensionality has been reported elsewhere (Jia & Reich, 2008, 2010). To develop the measurement instrument, an initial pool of survey items was first generated based on a literature review (e.g., Schneider & Bowen, 1985; Schneider et al., 1980, 1996, 1998) and in-depth interviews with IT analysts, managers and executives from telecommunication, insurance, banking and media industries. After multiple rounds of item sorting and a pilot test, the resulting three-dimension instrument was validated with survey data from 230 IT employees from systems development units at four participating organizations in North America (Table 2). The instrument demonstrated satisfactory psychometric properties, such as internal consistency reliability, convergent validity/unidimensionality, and discriminant validity, in confirmatory factor analysis and other tests.

In these participating organizations, 122 users from the corresponding client units rated their partner IT unit’s service quality using the IT-SERVQUAL instrument (Pitt et al., 1995), which consists of four dimensions: reliability, responsiveness, assurance and empathy. Despite the debate over its dimensionality and measurement approaches (e.g., Carman, 1990), it has been widely used to measure the quality of IT service provided to business customers in various organizations (e.g., Gorla, Somers, & Wong, 2010; Jiang et al., 2002; Kettinger & Lee 1994, 2005; Watson et al., 1998).

Linking these two sets of responses, 39 matched pairs of IT-client units were identified, representing 195 IT responses and 121 client responses. These IT units are responsible for the application development, enhancement and maintenance for their partnered client units from various functional areas, such as finance and human resources.

Hierarchical regression was used to examine the extent to which IT service climate can explain client evaluations of IT service quality. Before this unit-level relationship was assessed, the multi-item within-group agreement statistic, $r_{WGJ}$, was first calculated to justify aggregation of individual-level IT and client data to the unit level. In the regression analysis shown in Table 3, after controlling for the systematic differences across the participating organizations (step 1), technical competency of the IT employees in these systems units accounted for 15% of the variance in clients’ service quality ratings (step 2). Aggregated IT service climate scores explained an additional 27% of the variance, thus demonstrating significant incremental explanatory power and satisfactory criterion validity (step 3).
TABLE 2
Participating organizations in the final data collection

<table>
<thead>
<tr>
<th>Company</th>
<th>IT systems employees</th>
<th>IT survey responses</th>
<th>Client survey responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Government agency</td>
<td>130</td>
<td>51</td>
<td>22</td>
</tr>
<tr>
<td>Insurance company A</td>
<td>200</td>
<td>91</td>
<td>41</td>
</tr>
<tr>
<td>Insurance company B</td>
<td>140</td>
<td>77</td>
<td>59</td>
</tr>
<tr>
<td>Manufacturer*</td>
<td>56</td>
<td>11</td>
<td>–</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>230</td>
<td>122</td>
<td></td>
</tr>
</tbody>
</table>

*Due to unanticipated availability issues at the time of survey administration, the manufacturing company did not participate in the client survey, and its employees from only one systems unit took part in the IT survey.

TABLE 3
IT service climate and IT service quality

<table>
<thead>
<tr>
<th>Variables added</th>
<th>β</th>
<th>t</th>
<th>Sig.</th>
<th>ΔR²</th>
<th>Total R²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Step 1</td>
<td>Org dummy 1</td>
<td>−.542</td>
<td>−2.689</td>
<td>.011</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Org dummy 2</td>
<td>.024</td>
<td>.121</td>
<td>.904</td>
<td>.314</td>
</tr>
<tr>
<td>Step 2</td>
<td>Tech competency</td>
<td>.387</td>
<td>3.125</td>
<td>.004</td>
<td>.150</td>
</tr>
<tr>
<td>Step 3</td>
<td>IT service climate</td>
<td>.587</td>
<td>5.891</td>
<td>.000</td>
<td>.271</td>
</tr>
</tbody>
</table>

When repeating the above regression analysis for each individual climate dimension in separate equations to examine their relative strengths of impact on client ratings, we found that Service Leadership has a stronger influence ($β = .559$, $t = 5.710$, $ΔR^2 = 26\%$) than Service Vision ($β = .469$, $t = 3.478$, $ΔR^2 = 14\%$) and Service Evaluation ($β = .513$, $t = 4.687$, $ΔR^2 = 21\%$).

It is important to note that results from this study need to be further examined for their applicability in other settings, such as different IT services and other national cultures.