



# Linking Survey Results to Customer Satisfaction and Business Performance

By Jack W. Wiley, Ph.D., Kenexa® Research Institute

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Of all the recent developments surrounding the use of employee surveys, perhaps none is more exciting than the advent of linkage research. Linkage research involves integrating and correlating data collected from employees with data in other key organizational databases. The purpose of linkage research is to identify those elements of the work environment—as described by employees—that correlate, or link, to critically important organizational outcomes such as customer satisfaction and business performance. Obviously, the stronger the linkage between employee survey results and other key measures of organizational effectiveness, the greater the value of employee survey efforts. (Note that I refer in this article to employee surveys specifically to distinguish them from other types of organizational surveys, such as surveys of customer satisfaction.)

I have several purposes in this article. The first is to review the literature that examines the linkage between employee satisfaction, customer satisfaction and business performance. (Note that, in this context, I use the phrase “employee satisfaction” as a generic label for the types of measures typically included in an employee opinion survey.) Second, I introduce the Linkage Research Model. This model is the first to summarize linkages previously reported and to begin to identify variables that moderate or mediate the interrelationships between employee and customer satisfaction and business performance.

Third, I more fully explain and validate the Linkage Research Model through the use of an illustrative study. Fourth, I highlight ways that an awareness of linkage research findings can strengthen the practice of survey research in organizational settings. And, finally, I discuss methodological considerations in conducting linkage research.

## Review of Past Research

This section reviews qualitative and quantitative research into the relationship between employee satisfaction on the one hand and customer satisfaction and business performance on the other.

### *Qualitative Research*

Many practitioners, relying primarily upon their own observations, have written about the connection between satisfied employees and satisfied customers. For example, reviewing the in-depth profiles of 101 service companies, Zemke (1989) concludes that, in many organizations known for exemplary customer service, employees are indeed more satisfied, because they are treated with the same respect with which they are expected to treat their customers. Tompkins (1992) reviews Xerox’s efforts to pursue the Malcolm Baldrige National Quality Award, and outlines that company’s quest to improve customer satisfaction, a quest directly linked to internal efforts aimed at measuring and improving employee satisfaction. Describing and evaluating key human resource practices of a major hotel chain, Weaver (1994) concludes that “what we’ve learned is that the only way to put the customer first is by putting the employee first” (p. 112). Weaver notes that the results of employee empowerment, training, and input programs are higher employee retention, higher productivity, and lower hiring costs.

One of the most thoroughly detailed descriptions of case studies supporting the connection between employee satisfaction, customer satisfaction and business performance is that provided by Heskett, Jones, Loveman, Sasser and Schlesinger (1994). Analyzing data from a variety of different service industries, these authors examined such variables as internal management

practices, employee satisfaction and loyalty, productivity, value, customer satisfaction and loyalty, growth, and profit. This analysis resulted in a finding they refer to as the “service-profit chain,” made up of these sequential links: internal service quality practices lead to employee satisfaction, which leads to employee loyalty and productivity, which leads to externally perceived service value, which leads to customer satisfaction and loyalty and ultimately to sales growth and profit. The authors describe an audit process an organization can undertake to enhance its effectiveness, and techniques for measuring and correlating employee and customer satisfaction and business performance are key to this process.

### *Quantitative Research*

While the articles referenced above address a belief that many intuitively hold—that customer satisfaction and business performance are positively linked to employee satisfaction—large-scale quantitative research supporting this belief was nonexistent until the work published by Benjamin Schneider and his colleagues (some of which is described later). In part, this might be a result of the practical difficulties associated with implementing the required research design.

Most linkage research studies employ a similar research design. Typically, employee and customer survey data are gathered as part of strategic human resource and marketing research efforts, and business performance measures are obtained from existing archival databases. In order to correlate these databases—a requirement for conducting linkage research—organizations must be able to aggregate these measures to an appropriate and common business unit level. For example, survey data gathered from individual employees (or customers) might be aggregated at the retail store level.

In practice, the exact level of aggregation might vary depending on the nature of other measures obtained. If customer satisfaction results exist only at the district level (and not the individual retail store level), to link that data statistically to business performance data, it becomes necessary to also aggregate the business performance data to the district level. Sample size will thus equal the number of organizational units for which common data are available. The studies summarized below have implemented this type of design.

Conducting research in a branch bank setting, Schneider, Parkington and Buxton (1980) reported a positive and statistically significant relationship between how favorably customers viewed interactions with bank employees and how favorably bank employees described certain aspects of their work setting. More specifically, when employees felt that a

strong customer service imperative existed, customers were more likely to see employees as courteous and friendly. Schneider and Bowen (1985) replicated and extended these findings, showing that when employees describe certain human resource practices (for example, work and career facilitation) in more positive terms, customers report higher service quality. Schneider and Bowen also reported a relationship between turnover intention and customer service, that is, employees were less inclined to leave when customers reported high service quality.

Approximately 10 years after the original research by Schneider and his colleagues, Walt Tornow and I were able to replicate their findings by demonstrating that employee and customer satisfaction linkages existed in two additional work settings: district offices of a business services company and a chain of retail stores (Tornow & Wiley, 1991; Wiley, 1991). We also extended the research design to incorporate another set of outcome measures: unit business performance.

The research conducted in the business services district office setting (Tornow & Wiley, 1991) indicated a positive relationship existed not only between employee and customer satisfaction measures but also between these measures and key measures of district office business performance (for example, contract retention). In other words, those district offices achieving better business performance also had more highly satisfied customers and employees. However, the retail store chain research (Wiley, 1991) indicated that while employee and customer satisfaction were positively correlated, unit business performance, measured by net income, was not related to employee satisfaction and, in fact, was negatively correlated with many measures of customer satisfaction. The conclusion was that, for this particular work setting, those store managers who emphasized achieving the highest levels of store business performance apparently did so at the expense of higher customer satisfaction ratings.

Other researchers also have examined the interrelationships between employee and customer satisfaction and performance. Three such studies focused specifically on the employee-customer link and, in all three cases, produced findings corroborating the previous research. Working in the branch system of a major banking organization, Jones (1991) replicated the previous work of Schneider and his colleagues by finding positive and significant relationships between branch employees’ descriptions of their working environment and the satisfaction levels of branch customers. Upon reviewing some of the more detailed findings of his study, Jones concluded, as Schneider had previously, that “good management and sound human resource practices are associated with both satisfied employees and satisfied customers” (p. 41).

Ashworth, Higgs, Schneider, Shepherd and Carr (1995) conducted their research in the field setting of a large insurance company. Aggregating data at a regional level, they found significant and positive correlations between an employee-based customer satisfaction index (that is, a measure of employees' opinions of the emphasis placed on customer service and key human resource practices), overall customer satisfaction ratings, and customers' intention to renew their insurance policies. Particularly intriguing about this research was the fact that data were collected in each of four successive quarters. This allowed for a time-lagged correlational analysis, which suggested that changes in managerial practices and the work environment preceded changes in customer perceptions and intentions.

Finally, in another study conducted in a branch bank setting, Johnson (1995) also reported significant and positive relationships between employee perceptions of service practices and customer perceptions of quality practices. More specifically, this research established a positive link between employee service orientation, certain management practices (for example, training employees in delivering quality service), and customer ratings of both overall satisfaction and satisfaction with specific facets of service delivery (for example, problem solving).

Additional linkage research studies also have incorporated measures of performance. Working in a school setting, Ostroff (1992) reported many positive relationships between employee (teacher) satisfaction, performance (student achievement test scores) and customer (student) satisfaction. Her work also includes a very impressive discussion of the distinction between the individual versus the organizational level of analysis in examining the satisfaction/performance relationship. In the large branch system of an automotive credit company, Johnson, Ryan and Schmit (1994) found a variety of employee survey measures (for example, workload and stress, and training and development) to be positively and significantly associated with customer satisfaction and negatively and significantly correlated with employee turnover. In addition, their research also showed certain employee survey measures (for example, job and company satisfaction, work group and teamwork) to be significantly and positively associated with such key business performance measures as lower loan delinquency, higher market share and higher business volume. Angle and Perry (1981), focusing on organizations offering bus services, found employees' stated commitment to the organization to be associated with organizational adaptability and lower employee turnover and tardiness rates, but not with measures of organizational efficiency (such as operating costs).

### Linkage Research Model

In reviewing the general business literature, the various studies my colleagues and I have performed and, particularly, the research that has examined the components of employee satisfaction associated with customer satisfaction and ultimately business performance, I have drawn the following conclusions:

- Employee and customer satisfaction are strongly and positively linked.
- A leadership value system, easily observed by employees and emphasizing customer service and product quality, is fundamental to this linkage.
- Specific practices an organization and its managers derive from this value system include providing employees with the support, resources and training required to perform their jobs effectively, involving them in decisions that affect their work, and empowering them to do what is necessary to meet customer objectives and expectations.
- Employee retention is positively related to customers' satisfaction with the quality of service they receive.
- Quality and customer satisfaction have long-term positive relationships with customer retention, market share and profitability.
- Certain practices that increase short-term sales and profits might do so at the expense of employee and customer satisfaction.
- Investing in practices that support quality and employee and customer satisfaction is a long-term business strategy, not a quick-fix solution.
- As the leadership value system, over time, continues to be regarded as the foundation for achieving higher customer satisfaction and stronger business performance, it becomes self-reinforcing.

The linkages just described are summarized in Figure 1, which shows the Linkage Research Model. The model is derived from past research that has established the existence of various linkages between employee and customer satisfaction and business performance. The model ties the research findings together in a way intended to be more comprehensive than the results of any single study. This new model suggests that the more often specific leadership values and practices occur in a given work environment, the more energized and productive the workforce. In turn, the more energized and productive the workforce, the greater the satisfaction of customers and the stronger the long-term business performance of the organization.

Special note should be given to the moderating affect of work characteristics and the mediating influence of time. Our research, as well as the research of others, shows that the relationship between employee and customer satisfaction and business

Figure 1: Linkage Research Model



performance can be moderated by certain characteristics of the work setting. Such characteristics include closeness of customer contact (Brown & Mitchell, 1993), job volume or work with a transaction orientation (Lundby, Dobbins & Kidder, 1995), and size of the organization (Paradise-Tornow, 1991). Research also suggests that managers emphasizing customer results can negatively impact business performance, particularly short-term profitability. Conversely, managerial emphasis can be placed on short-term profitability (for example, via cost cutting) in a way that detracts from achieving more satisfied customers. Thus, as noted by Heskett, Jones, Loveman, Sasser and Schlesinger (1994), it is over a longer period of time that a focus on customer results is beneficial to business performance.

What follows is a description of an illustrative study in which my colleagues and I were involved. It examines employee satisfaction, customer satisfaction and business performance linkages, and it supports the Linkage Research Model. After presenting and discussing this study, I will highlight the implications of the model for conducting employee surveys.

### **An Illustrative Study: Retail Branch Banking**

The study setting is a large Midwestern retail branch banking system. The bank's leadership was interested in conducting a census (that is, a 100 percent sample) survey of employees in all of its 133 branches. The objectives of the survey were to (1) provide management with a greater understanding of employee opinions, values, expectations and needs; (2) use survey results to influence management decision making and planning and to identify priorities for change; (3) compare bank employees opinions to financial services industry norms; and (4) provide a baseline measurement against which the company could track progress in organizational development activities.

The leadership team knew a branch-level customer satisfaction survey also would be completed at about the same time (fourth quarter of the calendar year) and were extremely interested in integrating the two databases. The leadership team also made available certain key measures of branch business performance for this linkage research.

### **Method**

We collected data through two surveys and added existing business performance information.

#### *Employee Survey*

The design of the employee survey was guided by the Linkage Research Model and by other informational needs of the bank's management team. Thus, the content of the resulting survey included most of the variables contained in the Linkage Research Model, but did not achieve total overlap. In its final form, the survey contained 79 scaled items. Based on factor analysis and internal consistency analysis, the items reliably measured opinion on the following 15 topics or dimensions: leadership, customer orientation, quality emphasis, employee training, involvement/empowerment, communication, confidence (in the bank), recognition, immediate manager, work/family (balance between these interests), diversity, pay and benefits, career development, job satisfaction, and company satisfaction. Across the system of 133 branches, 2,422 employees completed the survey, for a response rate of 80 percent. For the most part, employees completed the survey on company time and in group settings.

#### *Customer Survey*

The customer survey contained 70 scaled items. Based on factor analysis and internal consistency analysis, these items reliably measured opinion on the following eight dimensions: bank statements, problem resolution, automated teller machine (ATM), teller, personal banker, physical branch, perceived value and overall satisfaction. The paper-and-pencil survey was mailed to customers' homes, and 15,455 customers replied, for a response rate of 34 percent, higher than the industry average of approximately 30 percent for surveys distributed through the mail (Bursek & Remenschneider, 1995).

#### *Business Performance*

After considerable discussion with bank executives and internal subject matter experts, we decided to focus on two key measures of business or operational performance: (1) teller transactions/full-time equivalent—a measure of the volume of transactions handled by tellers in relation to the number of full-time equivalent teller staff; and (2) productivity ratio, computed as the amount of branch bank revenue generated for every dollar of personnel expense. The business performance measures used

were based on year-end data. We believed this approach would provide the most reliable assessment of business performance.

## Results

The results show some powerful linkages between employee satisfaction and customer satisfaction as well as employee satisfaction and business performance, but they also contain some surprises.

### *Employee Satisfaction Linkages: Dimension-Level*

The means and standard deviations of the employee survey dimensions, the customer survey dimensions, and the two business performance measures are presented in Figure 2.

Correlations between the employee and customer survey dimensions show a generally strong positive relationship exists between employee and customer satisfaction. Of the 120 possible correlations, 61 are positive and statistically significant. The pattern of positive correlations to customer satisfaction is strongest for the employee survey dimensions of customer orientation, communication and confidence. Employee survey dimensions that achieve more moderately positive correlations are employee training, job satisfaction and company satisfaction. Notably absent as predictors of customer satisfaction are the dimensions of recognition, immediate manager, pay and benefits, and career development.

Figure 2: Linking Employee Satisfaction to Customer Satisfaction and Business Performance

Employee Survey (M/SD)	Customer Survey (M/SD)								Business Performance (M/SD)	
	Statements (4.12/.30)	Problem Resolution (3.14/.36)	ATM (3.87/.22)	Teller (4.09/.27)	Personal Banker (3.93/.30)	Physical Branch (4.04/.27)	Perceived Value (3.40/.23)	Overall Satisfaction (3.92/.30)	Teller Transactions (4001.93/632.12)	Productivity Ratio (291.95/50.86)
Leadership (3.11/.30)	.25	.17	.21				.16	.16		
Customer Orientation (2.80/.36)	.44	.35	.47	.24	.26	.24	.24	.35		.19
Quality Emphasis (3.52/.29)	.17								.17	
Employee Training (3.36/.23)	.25	.18	.25	.17	.19	.23	.19	.25	.22	
Involvement/ Empowerment (3.60/.27)		.15							.28	
Communication (3.28/.27)	.42	.37	.40	.23	.26	.27	.28	.33		.19
Confidence (3.65/.34)	.55	.45	.53	.35	.35	.31	.39	.45		.21
Recognition (3.12/.38)									.16	
Immediate Manager (3.65/.36)									.16	
Work/Family (3.22/.29)	.21	.17	.27			.18	.15	.17		
Diversity (3.72/.26)	-.22	-.16	-.19	-.24	-.28	-.22	-.21	-.24	.25	
Pay & Benefits (3.18/.26)										
Career Development (2.02/.05)										
Job Satisfaction (3.83/.25)	.22	.16	.16	.18	.19	.15	.28	.20	.15	
Company Satisfaction (3.33/.34)	.39	.32	.37	.19	.18	.16	.25	.28	.19	.17

Note: The customer survey and employee survey databases were constructed so that the highest score (5) applied to the most favorable results. Means were computed on the basis of branch averages. Correlation coefficients are presented only when they achieve statistical significance. Correlations  $\geq .14$  are significant at  $p \leq .05$ ; correlations  $\geq .19$  are significant at  $p \leq .01$ .

Finally, a surprising and bothersome pattern of negative correlations with customer satisfaction resulted for the employee survey dimension of diversity (see the discussion below).

Correlations between the employee survey dimensions and business performance measures are positive, though on average, more moderate in strength than the employee survey, customer survey link. In addition, the pattern of correlations differs notably for the two business performance measures. On the one hand, the productivity ratio—a broad-based measure of total branch productivity—is most strongly correlated to those same employee survey dimensions most strongly correlated to customer satisfaction. On the other hand, the measure of teller transactions is most strongly correlated to the employee survey dimensions of involvement/empowerment, diversity and employee training, as well as immediate manager and recognition. The fact that significant correlations would exist between teller transactions and such dimensions is quite understandable. First of all, tellers represent a large percentage of the employee population of any particular branch. Secondly, it stands to reason that as a group they would be more productive in circumstances where they felt better trained, more involved in decision making and more properly recognized for their efforts, and where they enjoyed more positive relations with their immediate manager.

As mentioned above, a surprising finding was the pattern of negative correlations between the employee survey dimension of diversity and the customer survey dimensions. Bank executives and human resource professionals were particularly concerned about this, given the organization's emphasis on supporting and reinforcing practices associated with recruiting and retaining a more diverse workforce. This concern led to important secondary analyses, the results of which are presented in Figure 3.

Figure 3: Linking Diversity and Customer Satisfaction

Customer Survey	Nondiverse Branches (n=31) <sup>a</sup>	Diverse Branches (n=30) <sup>b</sup>
Statements	-.62	.20
Problem Resolutions	-.42	.04
ATM	-.53	.15
Teller	-.57	.12
Personal Banker	-.66	.16
Branch	-.49	.12
Value	-.59	.22
Overall Satisfaction	-.63	.15

<sup>a</sup>All correlation coefficients are significant at  $p \leq .01$

<sup>b</sup>No correlation coefficients are significant at  $p \leq .05$

The employee survey dimension of diversity is not, of course, a measure of employees' actual racial or ethnic diversity. Rather, it is a measure of the extent to which employees perceive the organization and its managers as accepting, supporting and developing employees of diverse backgrounds. We asked the bank for the number and percentage of minority employees at each branch. Using this data, we created two roughly equal-sized subgroups: (1) nondiverse branches—those with a minority population of 6.5 percent or less ( $n = 31$  branches), and (2) diverse branches—those with a minority population of 22 percent or more ( $n = 30$  branches).

The results (Figure 3) clearly indicate that in nondiverse branches, the employee survey dimension of diversity is significantly and negatively correlated to all customer survey dimensions. However, in the diverse branches, the dimension of diversity is positively, though not significantly, related to all customer survey dimensions. From these results it would appear that the original pattern of negative correlations is, in fact, artificial. The negative relationship between diversity and the customer survey dimensions is influenced by the fact that a majority of the diverse branches are concentrated in one specific geographical region where customer satisfaction in general is lower. Also, employees in nondiverse branches are not likely to report high organizational acceptance and support for employees of diverse backgrounds, which might in part be due to the relative absence of diverse employees at those branches.

Interestingly, in the nondiverse branches, other patterns of negative correlations were found between employee and customer survey dimensions. More specifically, the nondiverse branches achieving higher customer satisfaction ratings were generally also ones where employees had greater dissatisfaction with pay and benefits, recognition and their immediate manager. This could result from employees' expecting greater reward and recognition for their exceptional performance (that is, for achieving higher customer satisfaction ratings) and holding their immediate manager responsible when such recognition was not forthcoming. The same pattern of correlations did not hold true for employees in diverse branches.

#### *Employee Satisfaction Linkages: Item-Level*

In general, while dimension-level correlations can be very revealing, in-depth analysis at the individual survey item level can add pertinent details that further illustrate dimension-level dynamics. Figure 4 displays the employee survey items most highly correlated to the customer survey dimension of overall

Figure 4: Employee Survey Correlates of Customer Satisfaction and Business Performance

Employee Survey		Customer Survey	Business Performance	
Dimension	Item	Overall Satisfaction	Teller Transactions	Productivity Ratio
Customer Orientation	Overall, how satisfied are customers with the quality of service they receive?	.47		.19
	The bank is doing a good job of providing services to its customers.	.37		.19
Employee Training	I have the training I need to perform my current job effectively.	.22		.23
	The bank has the right training programs to help me improve the skills I need for my job.	.15		.26
Involvement/ Empowerment	Employees are encouraged to participate in making decisions which affect their work.		.32	
	I have the authority I need to do what is necessary to serve my customers.		.25	
Communication	Senior management gives employees a clear picture of the direction in which the company is heading.	.40		.20
	How satisfied are you with the information you receive about what's going on in the company?	.30		.18
	Other departments in the bank keep us informed about things that affect us.		.31	
Confidence	I have confidence in the bank's ability to reach our goal of being a top-performance organization.	.45		.19
	I have confidence in the future of the bank.	.36		.18
	I'm proud to tell people I work for the bank.	.34		.24
	Senior management has the ability to deal with the challenges we face.	.50		.18

satisfaction and to the two business performance measures. This more detailed analysis shows that the higher rated branches are those where employees:

- Have greater confidence in the ability of senior management and greater confidence that the bank will reach its goals
- Have a clearer understanding of bank goals and objectives and have the necessary training and information to perform their jobs well
- See the branch as more focused on and successful in delivering high-quality service to its customers
- Experience a greater sense of involvement in decision making and more authority to do what is necessary in serving the customer
- Have a greater sense of pride in the bank and its products and services

#### *Customer Satisfaction, Business Performance Linkage*

The correlations for the final linkage—customer satisfaction and business performance—are presented in Figure 5. Considering the results for all branches (n = 133), the conclusion seems simple: customer satisfaction and business performance are, for the most part, negatively and significantly related.

The idea that branches with higher customer satisfaction also tended to be the branches achieving poorer business performance was quite problematic for bank executives, especially those

responsible for branch operations. The question they posed was whether or not this pattern of findings would describe both metro branches (those located in greater metropolitan areas, n = 87) and nonmetropolitan branches (those located in smaller towns and rural settings, n = 46). The analysis produced in answer to that question, shown in columns two and three of Figure 5, reveals that the overall negative pattern of correlations between customer satisfaction and business performance holds only for nonmetro branches and only for the business performance measure of teller transactions. In metro branches, business performance is significantly and positively related to customer satisfaction with ATMs (both performance measures) and problem resolution (the productivity ratio only).

Previous analyses had determined that customer satisfaction was higher in the smaller, nonmetro branches. Discussions with internal subject matter experts suggested it was likely that, relatively speaking, those branches were less busy and less pressured and therefore could more readily provide a higher level of personalized service. These same conditions, however, would naturally result in less production per unit of time. This hypothesis is supported by a comparison of the means of the business performance measures for the two types of branches. Especially relevant is the comparison for teller transactions, showing tellers in metro branches (M= 4221.74) to be notably busier than their counterparts in nonmetro branches (M=3586.22).

Figure 5: Linking Customer Satisfaction and Business Performance

	All Branches (n=133)		Metro Branches (n=87)		Nonmetro Branches (n=46)	
Customer Survey	Teller Transactions M=4001.93 SD=632.12	Productivity Ratio M=291.95 SD=50.86	Teller Transactions M=4221.74 SD=511.78	Productivity Ratio M=299.95 SD=49.76	Teller Transactions M=3586.22 SD=633.62	Productivity Ratio M=276.83 SD=49.97
Personal Banker	-.40	-.18			-.37	
Teller	-.37	-.22			-.40	
ATM	-.16		.25	.25	-.38	
Statements	-.24				-.25	
Problem Resolution	-.23			.20	-.32	
Physical Branch	-.34	-.20			-.38	
Perceived Value	-.38	-.15			-.35	
Overall Satisfaction	-.31				-.39	

While branch location clearly moderates the customer satisfaction, business performance link, it does not consistently moderate the linkages between employee satisfaction and customer satisfaction or employee satisfaction and business performance. There are, however, a few exceptions. In nonmetro branches, for example, the employee survey dimension of career development is negatively and significantly related to all customer survey dimensions. In metro branches, almost the opposite holds true: career development is positively and significantly related to five of eight customer survey dimensions. A probable explanation is that employees in nonmetro branches, who are further removed from bank headquarters, view their career development opportunities as more limited than those of their metropolitan counterparts. Frustration with career development opportunities appears heightened for employees in those nonmetro branches that achieve higher customer satisfaction ratings.

Similarly, in metro branches, both measures of business performance are consistently linked—in a significant and positive way—to various employee survey dimensions. The same pattern does not hold true in nonmetro branches, where significant relationships are largely absent. As mentioned previously, the business performance measures are notably higher for metro branches. It would appear that as work volume increases, the impact and/or the effectiveness of managerial and human resource practices plays an increasingly important role in achieving stronger business performance.

### **Overall Study Conclusions**

In simple terms, this illustrative study shows that those branches where employees hold more favorable opinions of the bank and key aspects of their work environment are generally branches with higher customer satisfaction and productivity. Among

smaller, nonmetro branches, however, customer satisfaction is lower in branches where tellers are busier and thus provide less personalized service to customers. Bank human resource professionals and line managers used the linkage research results to help them focus their survey follow-up and action planning efforts on those survey results shown to be the best predictors of branch customer satisfaction and business performance.

### **Support for the Model**

This study also offers support for the Linkage Research Model. Clearly, the more leadership practices of customer orientation, quality emphasis, employee training and involvement/empowerment (see Figure 1) are present, the more satisfied bank employees are. The average correlations of the employee survey results for these leadership practices with the results for the dimensions of job satisfaction (average correlation = .51) and company satisfaction (average correlation = .59) support this conclusion. Further, the leadership practices are strongly related to customer results. In fact, the dimensions of customer orientation, quality emphasis, employee training (all of which are leadership practices) and communication (largely a measure of senior management communication practices), along with the dimensions of job satisfaction and company satisfaction, produce strong (indeed, the highest) correlations with the customer survey overall satisfaction dimension.

Study findings likewise indicate leadership practices to be significantly related to business performance measures. Again, the dimensions of customer orientation, quality emphasis, employee training, involvement/empowerment and communication—along with job satisfaction and company satisfaction—account for the majority of the significant correlations to teller transactions and productivity ratio. The link in the model for which this study provides the least

support is the customer results, business performance link. In actuality, though, the special secondary analyses, showing how this relationship differs for metro versus nonmetro branches, exemplifies the model’s allowance of the moderating influence of work characteristics on key linkages.

### Using the Linkage Research Model

The Linkage Research Model carries at least two strong implications for conducting employee surveys in general. One addresses survey content; the other how to best use survey results.

#### Choosing Survey Content

Dimensions or topics included in an employee survey have a direct bearing on the probability that survey results will predict outcome measures such as customer satisfaction and business performance. Survey dimensions that have regularly shown a relationship to these outcome measures include the four dimensions that measure leadership practice: customer orientation, quality emphasis, employee training and involvement/empowerment. Figure 6 illustrates the types of questions subsumed under these leadership practices dimensions.

Based on the research to date, I suggest that the more an employee survey contains internal practice measures of organizational effectiveness such as those shown in Figure 6, the more likely it is that survey results will be linked to key outcomes. Noticeably absent from this list of more consistent predictors are such traditional “employee relations” topics as compensation and benefits. I am certainly not arguing that measuring such topics is a mistake. Clearly, the content of an employee survey should be designed to achieve the overall objectives of the survey program. The implication is simply this: To the extent that being able to predict organizational outcomes is a driving objective of the survey program, loading the survey content with the dimensions contained in the Linkage Research Model is highly recommended.

#### Establishing Survey-Based Priorities for Action Planning

It is a reasonable assumption that most organizations engaging in employee opinion surveys have a commitment to take action on at least a few of the critical priority areas that might be suggested by the survey results. However, identifying the critical priority areas can often be a troublesome task for management teams, and it is not unusual for them simply to focus their action planning efforts on the survey dimensions with the lowest ratings. For example, if a survey measured 12 dimensions, then the team might be tempted—in a mechanical and arithmetic-driven way—to focus action planning on the two or three lowest-rated dimensions.

Figure 6: Predictor Survey Dimensions and Illustrative Survey Items

Customer Orientation	Quality Emphasis
Where I work, customer concerns get resolved quickly.	We are continually improving the quality of our services.
Policies and procedures are designed to be user-friendly to customers.	Providing quality service gets higher priority than keeping costs down.
Where I work, there is a strong emphasis on customer service.	Where I work, day-to-day decisions demonstrate that quality is a top priority.
Where I work, we deliver service to customers in a timely fashion.	Where I work, we set clear performance standards for service quality.
Overall, our customers are satisfied with our products and services.	How do you rate the overall quality of work done in your work group?
Employee Training	Involvement/Empowerment
New employees are given the training necessary to perform their jobs effectively.	I have the authority to do what’s necessary to effectively serve my customer.
I receive enough training to help me continually improve my job performance.	Employees are encouraged to participate in making decisions that affect their work.
I receive adequate training on my company’s products and services.	Sufficient effort is made to gather the opinions and thinking of people who work here.
I am given a real opportunity to improve my skills.	When employees have good ideas, management makes use of them.
I am satisfied with the opportunities for training and development that are provided.	I am encouraged to take initiative and calculated risks.

However, linkage research suggests that such a strategy probably will not produce the best return on management’s investment of action planning and organizational development resources. Once employee survey predictors of outcome measures have been identified, it makes sense to focus action planning efforts on strengthening aspects of the working environment represented by those predictors. This strategy is prudent even when the predictor dimensions receive, relatively speaking, favorable ratings.

Following this strategy allows an organization to develop further in ways already demonstrated to have an impact on effectiveness. To be sure, in any given organization, there might be extremely important reasons to focus action planning efforts also on survey dimensions not linked to outcome measures. Nevertheless, once employee survey linkages to outcomes have been established, knowledge of them can help organizations focus on those follow-up activities in the work environment that will most directly influence customer satisfaction and overall business performance.

### **Special Considerations in Linkage Research**

Clearly, linkage research is a strategic exercise that produces many insights and can greatly benefit organizations that properly utilize linkage research findings. Even so, there are a number of special considerations in conducting this type of research.

#### ***Data Aggregation***

In linkage research, the unit of analysis is not the individual, but the organizational unit. While special care always should be exercised in aggregating individual respondent data, for this application it is a necessary and appropriate practice (Schneider, 1990) because customer satisfaction and business performance are typically measured only at the organizational unit level and the resulting action plans are developed primarily for the group level.

In addition, Ostroff (1993) theorizes that individual perceptions might be influenced by group-level variables, such as climate, which can result in uniformity of individual responses within a single group. This view also supports data aggregation. However, one note of caution is sounded by James (1982), who recommends assessing this uniformity by testing within-group versus between-group variance before aggregating.

Finally, if the research so requires, business units may even be combined into larger macro units (see, for example, Ashworth, Higgs, Schneider, Shepherd and Carr, 1995). Although increased aggregation results in reduced sample size and therefore a loss of statistical power and a loss of specificity in reporting for lower-level units, these disadvantages are offset by the ability to discuss and use linkage research results in the broader organizational context.

#### ***Moderator Variables***

As in other types of research, the relationships between the variables in linkage research are often influenced by situational characteristics. For example, Lundby, Dobbins and Kidder (1995) found that the relationship between the climate for service and the climate for productivity differed, depending on whether the employee position was high or low volume (that is, whether it was, respectively, a bank teller position or loan officer position). Job volume is not the only work characteristic to moderate such relationships. Brown and Mitchell (1993) report that degree of client contact influenced the relationship between the perception of organizational obstacles and the perception of customer satisfaction. Indeed, the branch banking case study presented earlier illustrates that branch location (metro versus nonmetro) moderates the customer satisfaction, business performance relationship.

The moderating influence of work characteristics is an important element of the Linkage Research Model. Its inclusion strengthens the predictive power of the model and allows a more accurate description of organizational realities. As Schneider (1991) points out, relationships between variables in linkage research are probably not simple. In my consulting experience, discussions with internal subject matter experts are often the richest source of hypotheses to explain these complex relationships. Understanding the influence of moderators might even offer new insights into such apparently counterintuitive findings as employee or customer attitudes that are negatively related to business performance measures (see, for example, Wiley, 1991; Paradise-Tornow, 1991).

#### ***Time-Lagged Correlational Analysis***

Surveys, of course, are typically the source of measures of leadership and managerial practices and employee and customer satisfaction. In linkage research, such data are most frequently analyzed using correlational techniques. These techniques have many strengths, but they also possess limitations—they demonstrate neither causality nor directionality. These limitations are often disregarded in the literature.

One means of expanding the functionality of correlational analysis is to assess time lag. An excellent example is the work by Ashworth, Higgs, Schneider, Shepherd and Carr (1995), who collected employee and customer satisfaction data across four successive quarters. Correlations between employee satisfaction and customer satisfaction were found to be higher in successive quarters than in concurrent quarters, indicating the directionality of the relationship. As previously noted, Ashworth, Higgs, Schneider, Shepherd and Carr's analysis suggested that changes in managerial practices and the work environment preceded changes in customer perceptions and intentions. More such research will help us better establish cause and effect. It also will enable us better to detect short-term versus long-term impacts of various changes in organizational practices.

#### ***Family Error Rates***

Another issue in linkage research, also emerging from its reliance on data collected through surveys, is that of family error rates. Customer survey instruments and especially employee survey instruments often contain many individual survey items. Applying correlational techniques to the resulting databases naturally produces large interrelation matrices. An attendant problem is that when such large numbers of correlations are generated and examined, some of the significant relationships

found will be due merely to chance. The danger is that these results will be incorrectly interpreted and perhaps even inappropriately used as the basis for action planning.

Several solutions to this potential problem exist. One solution for managing large numbers of correlations is to adopt a more strict probability level. Another solution is to build dimensions (more technically referred to as scales) and to correlate dimension scores rather than individual item scores. This approach has the related advantages of increased validity and reliability, which are inherent in the use of dimensions (versus single items) as measures of the constructs under consideration. A third solution, which will become more practical as linkage research and practice develops further, is to use planned comparisons. That is, as the nature of the relationships among the variables in the Linkage Research Model becomes better understood, this knowledge can be used to drive theoretical and strategic analysis of linkage research data.

#### ***Range Restriction***

For measures to be significantly correlated, they must truly vary. This basic statistical tenet can have unintended consequences for linkage research studies that are repeated over time within a single organization. For example, if an employee survey result indicates employee perceptions of customer service are significantly and positively related to customer satisfaction, management might conclude that the organization should increase the emphasis placed on providing the best possible customer service. As this tactic is progressively implemented within the organization (perhaps through new or additional selection, training and reward programs), the amount of variability in employee perceptions regarding customer service should decline. As perceptions of customer service become more uniform throughout the organization, the employee-based measure of customer service eventually no longer will correlate significantly with customer satisfaction. The absence of a significant correlation might thus lead management to the wrong conclusion regarding the value of the increased emphasis on customer service. As opportunities for replicating linkage research studies within a single organization increase, this type of “error in logic” could occur unless researchers are alert to the issue of range restriction.

#### **The Satisfaction-Performance Paradox**

Researchers long have sought to establish empirically the intuited relationship between employee satisfaction and performance. Generally, these investigations have led to mixed, conflicting or disappointing results (Iaffaldano & Muchinsky, 1985; Petty, McGhee & Cavender, 1984). The conviction surrounding the

existence of this relationship has not, however, disappeared. A wealth of popular business books and case studies continue to assert that happier employees make for more productive employees.

Linkage research, by addressing this presumed relationship at the organizational rather than the individual level, has created a body of research that shows consistent support for the existence of a satisfaction/performance relationship. It thus seems paradoxical that such a stable relationship is found at the aggregated business unit level when only mixed findings emerge at the individual level.

There are, however, several possible explanations that in combination could help explain this seeming paradox. First, unit-level performance criteria generally are defined very well and reliably measured and are not subject to the rating biases typically associated with individual-level performance measures. Second, individual-level attitudes have been shown to be related to “citizenship behaviors” that can be considered to contribute to unit-level performance (Schneider, Gunnarson & Niles-Jolly, 1994). Third, many of the studies referenced in this chapter were conducted in banking or other retail organizations. In such organizations, service behaviors of employees (for example, courtesy) might be more closely related to attitudes than are performance behaviors in other less service-oriented industries. In essence, the dynamics driving relationships at the business unit or organizational level can be markedly different from the dynamics at the individual level.

Even if identification of consistent satisfaction/performance relationships at the individual level continues to elude researchers, the robustness of findings at the aggregated level undoubtedly will persist. From an organizational development perspective, research at the aggregated level addresses the questions of satisfaction and performance at the level best matched to the group-level interventions practitioners typically employ as remedies. Linkage research thus can be thought of as validating the diagnostic value of employee surveys. It recognizes that high-performance organizations require employees to be actively involved in providing quality and value to customers. As a result, linkage research speaks more to organizational climate and quality processes than it does to the older motivation flavored attitude research.

#### **Conclusion**

Survey practitioners are indebted to Benjamin Schneider and his colleagues for being the first to establish the statistical linkages between employee and customer satisfaction survey results.

Even though this groundbreaking research was published approximately 15 years ago and since has been extended to include key measures of business performance, linkage research is still an emerging research and practice area.

More research is needed to further establish and build upon the Linkage Research Model presented here, which identifies the organizational practices—as described by employees—that predict higher levels of organizational performance. This is an extremely important strategic area of focus for organization-based practitioners, as well as for consultants and academics. The knowledge derived from such research can significantly advance our field's understanding of certain prerequisites of organizational effectiveness.

Properly conceived and conducted, organizational survey programs clearly represent a healthy exercise for many organizations. Benefits accrue to those who know how to properly follow up and take action based on survey results. Linkage research holds great promise for enriching the use of surveys: first, by suggesting appropriate topics to include in organizational surveys and, second, by guiding managers in their action planning efforts toward those areas that represent the greatest potential for developing high-performance organizations. ■

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#### **Media Contact**

Jennifer Meyer, Kenexa  
1.800.391.9557  
jennifer.meyer@kenexa.com

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