ROLE STRESS IN CALL CENTERS: ITS EFFECTS ON EMPLOYEE PERFORMANCE AND SATISFACTION

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ABSTRACT

Call centers have become an important customer access channel as well as an important source of customer-related information. Frequently, call center employees experience role stress as a result of the conflicting demands of the company, supervisors, and customers. In this article, antecedents and consequences of role stress in a call center setting are examined. Specifically, we investigate which forms of empowerment and leadership styles decrease role stress and how this subsequently effects job satisfaction, organizational commitment, performance, and turnover intentions. It was found that particularly the autonomy dimension of empowerment has a role-stress-reducing effect. Interesting substantive direct positive effects of empowerment competence and leadership consideration on job satisfaction were found. Job

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satisfaction was found to be conducive to job performance. Furthermore, it was found that job satisfaction reduces turnover intentions, directly and indirectly via organizational commitment.

INTRODUCTION

Call centers are emerging as central hubs for customer access for many companies (Anton, 1996) and rapidly becoming a key source of customer-specific knowledge and a source of competitive advantage in an increasingly customer-centric world. A recent *Economist* article (Anonymous, 1997) estimates the annual growth of call centers in the United States at 50% and in Western Europe at 40%.

Significant advantages associated with call centers are defined by an increased opportunity to deliver, maintain, capture and recapture customer satisfaction. But call centers can also be viewed as a nexus of customer information that can be translated into marketing strategy and product/service development. The growth of call centers has been fueled by the affordability of sophisticated communications and computer technology (Holland & Hunt, 1997) coupled with a synergistic increase in a strategic focus on the consumer across a broad spectrum of businesses.

The competitive advantage afforded by solely adopting technological innovations that define a call center may not be sufficient for long-term success, as the technology can be easily matched by competitors. The success of a call center depends largely on the combination of technological sophistication, managerial philosophy and mission, and dedicated and mission oriented employees (Anton, 1996; Cowles & Crosby, 1990; Dabholkar, 1994; Sparrow, 1991; Ubaldi, 1997). The growth of call centers and their increasing importance in the strategic management of business has created the need for specialists/professionals who cannot only manage the day-to-day operation of the call center but who can unleash and manage the strategic potential of the call center.

What is interesting about the management of call centers is the nature and scope of how call center managers have come to be evaluated and the standards upon which call centers have come to be measured. If the strategic advantage that call centers are suppose to afford business revolve around consumer intelligence gathering and customer satisfaction, the most common metrics stress many of the things that are counterproductive to these goals. The most common measurement metrics stress the importance of short response time (answering phone calls quickly), waiting time (do not allow the consumer to wait in the queue too long), and employee productivity (how many calls can a TSR [telephone service representative] close in a given period of time). In general these would appear to conflict with maximizing customizing services to a customer's needs (Kelley, 1989) thereby maximizing customer/caller satisfaction. The conflict between these common metrics and the customer service, satisfaction, and information gathering goals may create conflicting demands of the organization, supervisors and customers which in turn may lead to role stress. In practical terms the conflict of the call center manager and employees can, at their very essence, be stated in this way: Should I make certain that the customer is maximally satisfied or should I try to get as many calls answered as quickly as possible? In fact, it has been argued that the customer service position is one of the ten most stressful jobs in today's economy (Coscia, 1996; D'Ausilo, 1997).

In general, it has been found that role stress has a negative impact on job satisfaction, organizational commitment, and employee performance (Babin & Boles, 1996; Goolsby, 1992; Sager, 1994). Since role stress may severely impede the return on call center technology investments and qualified employee retainment, it seems important to simultaneously examine antecedents of role stress and its effect on call center employee attitudes and performance.

CALL CENTER ROLE STRESS

Role stress occurs in employee jobs that involve direct customer contact whether in the context of a face-to-face or a telephone service encounter (Babin & Boles, 1996; Brown & Peterson,

1993; Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964) has identified role conflict and role ambiguity as the two key components of role stress. Role conflict has been defined as "*the simultaneous occurrence of two (or more) sets of pressures such that compliance with one would make more difficult compliance with the other*" (Kahn et al., 1964, p. 19). For call center personnel, expectations of the organization, the supervisor or team leaders stressing operational efficiency may clash with the demands of customers who want problem resolution or satisfaction. In many instances supervisors focus on technology to speed up the process of customer interaction, not realizing that a critical element of call center employee performance is the level of satisfaction based on meeting customer expectations. Furthermore, call centers are typically a setting in which electronic performance monitoring takes place, and recent empirical work has shown that this is a major factor of job stress (Aiello & Kolb, 1995; Silverman & Smith, 1995). Role ambiguity occurs when a person does not have access to sufficient information to perform his or her role as a service employee adequately (Walker, Churchill, & Ford, 1975). Role ambiguity may result when the call center employee is uncertain about the supervisory expectations or when they do not know how their performance will be evaluated. More specifically, a frequently encountered problem for which no supervisory guidelines exist is how to deal with repeater or prank calls (Ingram, 1994). (It should be pointed out that we could not find any studies of this nature in this growing industry).

Thus changes in role ambiguity and role conflict in call center representatives should be reflected in differences in job satisfaction and organizational commitment such that higher levels of role stress (conflict and ambiguity) should lead to lower job satisfaction and lower commitment. These, in turn, should lead to poorer job performance and increased job turnover.

ANTECEDENTS TO CALL CENTER ROLE STRESS

The antecedents of role stress (role ambiguity and role conflict) are clearly established in the literature. Empowerment, competence, and leadership have been found to directly affect role stress.

Empirical work has established a negative relationship between empowerment and role stress (ambiguity and conflict). The greater the perceived empowerment the less the role stress. Two dimensions of empowerment have been identified: (1) competence and (2) authority (Chiles & Zorn, 1995; Conger & Kanungo, 1988; Spreitzer, 1995). Competence is an employee's belief in the capability to perform job-related activities with skill, whereas authority reflects autonomy in the initiation and continuation of work behavior and processes. Employees that experience a work-specific sense of competence are more likely to assume an active orientation with regard to their work and hence will experience lower levels of role stress (Gist & Mitchell, 1992). Autonomous employees feel that they have the responsibility and the power to make things happen.

Many operational aspects of a call center actually create pressures that reduce the probability of employees to feel empowered. In many call centers there has been a strong emphasis on the role that information technology plays in guiding employees through customer interactions, by selecting the appropriate path for them to follow through so-called "screen pops" containing communication scripts. This closely resembles the production line approach to service delivery that has been effectively used in the fast-food business (Bowen & Lawler, 1995). However, in many telephone service encounters, call center employees have to deal with unusual and unexpected situations in which the strong emphasis on rules and regulations of the scripted approach lacks the required flexibility and discretionary behavior needed to satisfy customers. The rigid focus on technology may lead to role stress (Schaufeli, Keijsers, & Miranda, 1995). Empowered employees are free to fine-tune service regulations contained in scripts in order to meet or exceed customer expectations.

Thus, we expect negative relationships between the empowerment dimensions and role stressors. Thus, we hypothesize that

H₁: *There will be a negative relationship between empowerment autonomy and role stress-role ambiguity and role conflict.*

H₂: *There will be a negative relationship between empowerment competence and role stress-role ambiguity and role conflict.*

The influence of empowerment in terms of reducing role stress may be rendered ineffective if it is not accompanied by supervisory leadership behavior that recognizes and awards employee authority and competence. Therefore, leadership has frequently been identified as a determinant of role stress (Babin & Boles, 1996; Hampton, Dubinsky, & Skinner, 1986; Micheals, Day, & Joachimsthaler, 1987).

Two dimensions of leadership have been identified: leader-initiating structure and leadership consideration. In a call center setting, leader-initiating structure pertains to the way in which a supervisor guides employees, provides explanations, monitors calls, and stimulates employees to perform better. This dimension explicitly focuses on goal/task-specific issues. Leadership consideration is how supports the social and interpersonal relationships of workers (Jackson & Schuler, 1985). Leadership consideration is thus primarily oriented toward creating good relationships with workers. There is substantial empirical evidence on the impact of the leadership dimensions on role stress. A negative relationship between initiating structure and role stress has been reported. Task-specific input from supervisors clarifies roles, goals, and expectations, allowing followers/workers to know exactly what is expected. Lower levels of leadership initiated structure would lead to greater roll stress. Thus, we hypothesize that

H₃: *There will be a negative relationship between initiating structure and role stress- role ambiguity and role conflict.*

In a similar manner to how initiating structure is related to role stress and role ambiguity, leadership consideration reduces role ambiguity. Considerate behavior by supervisors, for instance acknowledging excellence in performance, indirectly clarifies roles by rewarding what is expected (Podsakoff, Todor, Grover, & Huber, 1984). Therefore, we hypothesize that:

H₄: *There will be a negative relationship between leadership consideration and role stress-role ambiguity and role conflict.*

CONSEQUENCES OF CALL CENTER ROLE STRESS

Job satisfaction has often been associated with lower levels of role stress (Babin & Boles, 1996; Bagozzi, 1978; Micheals et al., 1987). Job satisfaction is a person's evaluation of the job and the work environment (Mathieu & Zajac, 1990). Job satisfaction represents the attitude or knowledge structure that encapsulates workers feelings and beliefs about the nature of their job and the organization (George & Jones, 1996). We hypothesize that

H₅: *There will be a negative relationship between role stress (autonomy and competence) and job satisfaction.*

Since the literature is clear that job satisfaction is strongly related to job performance we would expect that there is a negative relationship between role stress and performance.

Role stress has also been found to affect organizational commitment. Organizational commitment is "*the strength of an individual's identification with and involvement in a particular organization*" (Porter, Steers, Mowday, & Boulian, 1974, p. 603). Organizational commitment can be characterized in terms of three components: (1) a strong belief in and acceptance of the organization's goals and values, (2) a willingness to exert considerable effort on behalf of the organization, and (3) a strong desire to maintain membership of the organization (Mowday, Porter, & Steers, 1979). Several meta-analytic studies have consistently found a negative relationship between and role ambiguity and role conflict and organizational commitment (Jackson & Schuler, 1985; Mathieu & Zajac, 1990). Employees that have strong identification and involvement with organizational goals and objectives will understand expectations and take responsibility better than one in
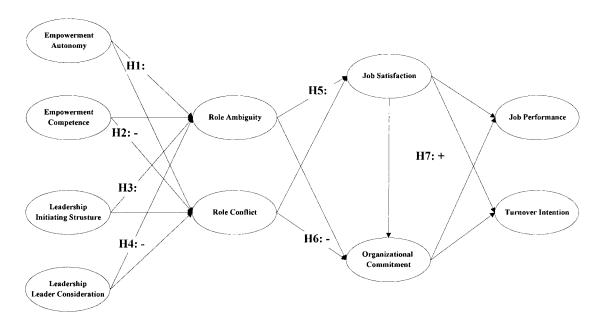
FIGURE 1
Conceptual framework.

which employees lack the motivation or knowledge to act. Therefore, the following hypothesis is proposed:

H₆: *Role stress (empowerment and competence) is negatively related to organizational commitment.*

Finally, employees who are committed to their organizations will perform their jobs with the interest of the organization at heart (Mowday et al., 1979). Several authors found positive correlation between organizational commitment and performance (Boshof & Mels, 1995; Mathieu & Zajac, 1990; Wiener & Vardi, 1980) and job satisfaction (Darden, Hampton, & Howell, 1989; Kirmeyer & Lin, 1987). Even in very boring and plain jobs (e.g., mop making) a committed and dedicated workforce shows greater job satisfaction than non-committed workers in similar jobs (Csikszentmihalyi, 1990). The most obvious manifestation of poor commitment is the intention to leave. Less committed employees have been found to be at high risk of turnover (Bluedorn, 1982). Moreover, intent to leave is correlated with actual turnover (Horn, Caranikas-Walker, Prussia, & Griffeth, 1992). Thus:

H₇: *There will be a positive relationship between organizational commitment, employee performance, and job satisfaction, and turnover intention.*

Although the nature of the relationships can be specified, the direct, indirect, and interactive effects of each of these variables within a call center setting cannot be established. The purpose of this study is to confirm that these variables are indeed those that are integral for defining role stress—job performances measures in the call center and define specifically the nature of these relationships. Figure 1 summarizes aforementioned hypotheses in a conceptual model. In the next section we will discuss an empirical test of our conceptual model and its underlying hypotheses in the call center context.

METHODOLOGY

Research Setting

In order to test these notions our empirical study was conducted among call center employees of a large insurance provider in The Netherlands. The insurance industry was selected as

a research setting because, in this industry, direct customer contact is a crucial factor for firm performance. The firm used in this study employs approximately 1200 employees with annual sales of approximately $ 1.5 billion. The call center studied consisted of 350 (mostly part-time) agents. The call center provides enhanced customer service or is a direct distribution channel supporting both inbound and outbound marketing activities. The call center is used to streamline the process of applying for insurance or to ensure compliance with sales guidelines. In addition, direct customer support activities via help desks are administered through the center.

Data Collection

A questionnaire was designed containing constructs measured with multiple-item measures. A package containing the questionnaire, a prepaid, university-addressed return envelope, and a personalized cover letter signed by the call center manager were handed out at the call center to every call center employee. One hundred and fifty-nine questionnaires were returned (five were not complete enough to be used), resulting in a net response of 154 (44%). Agents who were not willing to participate in the mail survey were asked to answer an abbreviated telephone survey in order to obtain insight into nonresponse bias. No significant differences between respondents and nonrespondents regarding characteristics and attitudes were discovered. A time trend extrapolation test was carried out. The assumption of such a test is that respondents who respond less readily are more like nonrespondents (Armstrong & Overton, 1977). No significant differences between early and late respondents were detected on key variables.

Questionnaire Design

The majority of the items were translated into Dutch via a procedure of double-back translation by a qualified translator (Brislin, 1980). The items were adapted to the specific characteristics of our research setting. The questionnaire was pretested in two stages. First, market-ing research students were asked to fill in the questionnaire and to detect biases. Second, two call center supervisors were asked to do the same. After each stage the questionnaire was modified and refined.

Empowerment was operationalized using the 9-item empowerment instrument developed by Hartline and Ferrell (1993). This empowerment instrument consists of two dimensions: competence (four items) and autonomy (five items). Leadership behavior was conceptualized in two dimensions: (1) initiating structure and (2) leader consideration. Initiating structure was measured using a 7-item scale suggested by House and Dessler (1974) and leader consideration was operationalized by a 10-item scale developed by the same authors. Role conflict and role ambiguity were measured by using the 14-item instrument developed by Rizzo, House, and Lirtzman (1970). In this instrument role ambiguity is represented by six items and role conflict is measured by eight items. Job satisfaction was operationalized on eight items and is an adaptation of a scale originally devised by Churchill, Ford, and Walker (1974). Organizational commitment was operationalized using the 9-item version of the Organizational Commitment Questionnaire (OCQ) proposed by Porter et al. (1974).

It has been pointed out by several authors that the six reverse-scored items do not assess organizational commitment, but rather turnover intention (Mathieu & Zajac, 1990; Tett & Meyer, 1993). Therefore, we reduced the 15-item original OCQ scale to a 9-item version, excluding the items measuring turnover intention. Finally, performance was measured with the 17 items from the scale developed by Behrman and Perreault (1984). All the items on the different scales were measured with a 9-point Likert-type format, ranging from 1 (= completely disagree) to 9 (= completely agree). A number of items were reverse-scored to detect response bias. Apart from these measures, four demographic variables were included in the study: (1) age, (2) education, (3) company experience, and (4) personal experience.

T A B L E I
Correlation Matrix[a]

	COMP	AUT	LDIS	LDLC	RC	RA	OC	JS	TI	PERF
COMP	0.87									
AUT	0.58**	0.80								
LDIS	0.57**	0.47**	0.81							
LDLC	0.45**	0.46**	0.54**	0.77						
RC	−0.20*	−0.41**	−0.13	−0.30**	0.74					
RA	−0.24*	−0.54**	−0.24*	−0.15	0.21*	0.85				
OC	0.53**	0.47**	0.37**	0.46**	−0.48**	−0.30**	0.93			
JS	0.55**	0.61**	0.44**	0.61**	−0.50**	−0.44**	0.70**	0.89		
TI	0.32**	0.35**	0.28**	0.34**	−0.46**	−0.34**	0.63**	0.61**	0.95	
PERF	0.34**	0.20*	0.01	0.15	−0.25	−0.15	0.34**	0.53**	−0.26**	0.93

[a] COMP = Empowerment—Competence; AUT = Empowerment—Autonomy; LDIS = Leadership Behavior—Initiating Structure; LDLC = Leadership Behavior—Initiating Structure; RC = Role Conflict; RA = Role Ambiguity; OC = Organizational Commitment; JS = Job Satisfaction; TI = Turnover Intention; PERF = Performance.
[b] Composite reliabilities on diagonal.
* $\alpha = 0.05$.
** $\alpha = 0.01$.

RESULTS

Construct Validation

After a thorough review of the literature, we found it necessary to include a relatively large number of constructs. Moreover, these constructs were measured by multi-item scales following generally accepted procedures. Consequently, a large number of indicators had to be dealt with. Thus, a latent variable model with multiple indicators might not very helpful, since model complexity in terms of the number of constructs and/or indicators might prevent the researcher of finding a model fitting to the data (Bagozzi & Yi, 1988; Baumgartner & Homburg, 1996).

Therefore, we used a two-stage procedure (Anderson & Gerbing, 1988). In the first stage we used confirmatory factor analysis for construct validation purposes (Steenkamp & van Trijp, 1991). We used three confirmatory factor analysis models with related constructs. After an iterative process of inspecting t values, the patterns of the standardized residuals, and the modification indices we obtained a good fit for all three models (Anderson & Gerbing, 1988; Steenkamp & van Trijp, 1991; Marsh, Balla, & Tai, 1996).

Within-method convergent validity was assessed testing the significance and magnitude of the elements of the matrix Λ^x. We found that all items loaded higher than 0.5 on their respective constructs with a minimum t value of 3.77. Discriminant validity was evaluated by testing whether pairs of constructs were correlated less than unity. We used a ξ^2 with one degree of freedom to test for unity between the constructs. All tests were significant at $\alpha = 0.05$. Moreover, the reliability of the constructs in both models was evaluated using composite reliability and variance extracted measures (Fornell & Larcker, 1981). All constructs exhibited a high degree of reliability in terms of composite reliability, as shown in Table 1.

Testing Substantive Hypotheses

Figure 2 displays the actual model structure corresponding to the hypotheses. The ξ^2 statistic is indicating a good fit between the theoretical model and the data ($\xi^2(29) = 33.62$, $p = 0.25$). Other indices are also indicative of a good fit: GFI = 0.89; AGFI = 0.94; TLI = 0.98; CFI = 0.98; RMSEA = 0.039; (Bagozzi, 1978; Bollen, 1989; Kirmeyer & Lin, 1987).

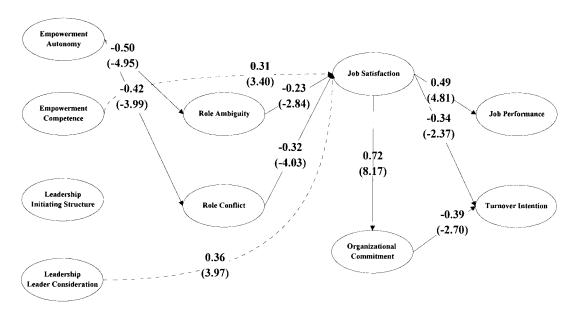Hypothesis 1 predicted a direct relationship

FIGURE 2
Results of structural equation modeling.

between empowerment/autonomy and role stress (role ambiguity and role conflict). Consistent with this, the predicted relationships between empowerment/autonomy and role ambiguity (standardized path coefficient = -0.50, $t = -4.95$) and role conflict (standardized path coefficient = -0.42, $t = -3.99$) were significant and negative. Hypothesis 2 predicted that the relationship between empowerment competence and role stress (ambiguity and conflict) would be direct and negative. Figure 2 shows that both predictions were not confirmed. However, employee competence had an indirect effect on job satisfaction (standardized path coefficient = 0.31, $t = 3.40$) such that the greater the perceived competence the greater the job satisfaction. Empowerment in the form of autonomy, rather than competence, then, is the significant casual agent in the creation of role stress in call center employees.

Hypotheses 3 and 4 predicted negative relationships between leadership and role stress (ambiguity and conflict). Figure 2 shows this not to be the case. While leadership concern for subordinates did influence job satisfaction it did so directly and not through role stress. The greater the concern for workers the greater the job satisfaction (standardized path coefficient = 0.36, $t = 3.97$). Leadership initiation of structure did not influence role stress or job satisfaction.

Hypotheses 4 and 5 predicted that role stress (ambiguity and conflict) would directly influence job satisfaction. And, as predicted, both role stress ambiguity and role stress conflict had a significant and negative relationship with job satisfaction (role ambiguity: standardized path coefficient = -0.23, $t = -2.84$; role conflict: standardized path coefficient = -0.32, $t = -4.03$). In both cases, as role stress increased job satisfaction decreased.

Hypothesis 6 predicted that role stress (ambiguity and conflict) was negatively related to organizational commitment. No such relationship was found. Hypothesis 7 predicted that there would be a positive direct relationship between job satisfaction and organizational commitment and job performance and turnover intention. As predicted, job satisfaction was positively related to job performance (standardized path coefficient = 0.49, $t = 4.81$) and negatively related to turnover intention (standardized path coefficient = -0.34, $t = -2.37$). Call center employees satisfied with their jobs performed better and were more likely to stay. Organizational commitment, however, was not

related to job performance (committed employees were as likely to be satisfied as noncommitted employees) but it was strongly and positively related to turnover intention (standardized path coefficient $= -0.39$, $t = -2.70$). The more committed the employee to the organization the greater the likelihood of staying in the organization.

DISCUSSION

The results of this study help develop a picture of the workings of a call center. In the larger picture the call center is much like any other organization with employment roles that span boundaries. Role stress is an antecedent of job satisfaction that, in turn, is an antecedent of job performance and turnover intention. Yet the antecedents of role stress in the call center are not completely as they have been found to be in the literature. Both empowerment/autonomy and competence have been found to be antecedent conditions for role stress (Jackson & Schuler, 1985). We found that while autonomy leads to role stress that leads to job satisfaction, competence has no direct impact on role stress.

If we go back to the discussion about the nature of the call center we can understand this relationship. The call center is a vibrant environment in which the customer service representative must handle more transactions that have increasing complexity, with higher consumer expectations. In this environment, empowerment/autonomy is clearly seen as influencing role stress. That is, not having the power to achieve solutions, solve problems, and answer questions is clearly stressful as a "role issue." At the same time empowerment competence—having the training and skills to answer the questions, solve the problems, feeling in control of anything that is and can be asked—feeds directly into job satisfaction and does not affect role stress. In a managerial sense this is actually quite opportune. The ability to have well-defined channels to influence both role stress and job satisfaction in direct ways gives the call center manager the ability to construct finely tuned managerial programs and interventions that are in harmony. Thus role stress and job satisfaction

can be monitored and interventions developed simply because the manager will know whether the issue is autonomy or competence.

Surprisingly, leadership had less impact in the model than one would have been led to believe from the literature. First, initiating structure was absent from the model. Although past literature has identified the leader's ability to structure tasks as a crucial element of effectiveness (Jackson & Schuler, 1985), no evidence of that importance was found here. Indeed, the call center may be such a structured environment (particularly with the scripting and menu-driven formulas that most customer access management systems employ) that leaders do not have to initiate structure at all. This is quite fortunate also. If call center managers know that structure is taken care of by the nature of the call center operation, they can concentrate on that part of leadership that really makes a difference—concern for the telephone and customer service representative. Their job, after selecting good employees, is to foster, maintain, and create environments that reflecting concern for the employee. This is also put forward by Cleveland and Mayben (1997), who argue that the primary characteristic of an effective call center is the creation of a supportive culture by management. Leadership consideration directly and significantly affects job satisfaction that affects performance and intent to leave.

Of interest, but not directly related to the point of the study, there was no relationship between job performance and turnover intention. Employee turnover is generally considered to be a costly phenomenon (the cost of training, the cost of recruitment, the cost to other employees' productivity). Like many other generalizations the cost of turnover has important boundaries. Not all turnover is bad (Rummel & Feinberg, 1990). Call this distinction functional versus dysfunctional turnover. In other words, there is a distinction between functional and disfunctional turnover (Mowday, Porter, & Steers, 1979). Functional turnover is turnover of employees you really would like to get rids of. There are a percentage of employees in any organization who because of mediocre but not disastrous performance "hang on" This medio-

cre performance has a high cost to the organization (low individual performance and, perhaps more importantly, negative effects on other and high performance individuals). The indirect evidence from this study is that job performance alone is not related to turnover intention. Poor performers may be just as likely to stay as good performers. Thus call centers may be at a risk for high levels of hidden poor performers who have low commitment but will not leave the organization because of poor performance.

What we are left with, then, is a picture of an organization (call center) that is not so different from other organizations but is different in some ways that makes management of call centers more focused and easy to understand. Customer service representatives who feel they have the autonomy to perform their jobs have lower role stress, which leads to greater job satisfaction higher performance and lower intention to leave the organization. The simplicity of this path and the general correspondence to what has been found in organizations in the past (in general form) replicates what we know. At the same time, the path to job satisfaction is much clearer in the case of call centers—competence and autonomy are independent and influence different aspects of employee function, feeling, and performance. This makes call centers a unique research environment worthy of study and illuminates some very practical ideas on the management of this environment (which will be discussed in the section below). Of course, the findings in this study were in one call center. The uniqueness or similarity between this and other centers must be tested.

THEORETICAL AND MANAGERIAL IMPLICATIONS

Part of the strength of a research project lies in the recognition of its limitations. This may suggest potential issues that merit future research. In the first place, caution should be taken in reference to statements of causality. As both cross-sectional data and a nonexperimental design were used, and despite the fact that ad-

vanced modeling techniques were employed, any causal inferences based on the results of this study are precluded. Furthermore, inferences about generalizability should be treated with equal caution. It is unknown whether our findings are generalizable to call centers in other types of industry. Future research will have to reveal the generalizability potential of our results. A second limitation concerns the fact that all variables (both endogenous and exogenous) were measured from one source, as self-reported data. Despite the advantages in terms of data collection efficiency, the results obtained may be influenced by consistency effects and common method variance. In further research designs it would be advisable to have call center managers or customers evaluate call center agent performance. Third, all concepts were measured at one point in time, thus essentially from a static perspective. It may be worthwhile to study call center role stress over time in order to be able to take into account the dynamics of employee and organizational learning. Finally, we suggest that in future research other types of role stress antecedents could be taken into consideration. For instance, since many call center agents are organized and evaluated in teams it would be both useful and interesting to investigate the impact of team variables, such as group cohesiveness, goal setting, and group norms, on call center role stress.

Our results also suggest a number of managerial implications. First of all, the empowerment autonomy seems to have a relatively strong impact in terms of role stress reduction. One important implication seems to allow employees the freedom to influence pace, working method, and sequence of tasks in dealing with customers. While an increase in autonomy could be implemented at the level of the individual employee, it has been shown that increasing autonomy at work-group level by means of self-management work teams significantly decreases employee role stress (Terra, 1995). Developing empowerment autonomy could be done at three levels: (1) strategic (i.e., general conditions of work, such as working hours, shift systems), (2) process (i.e., change processes such as service quality improvement by reduc-

ing response times), and (3) operational participation (planning, scheduling, determining standards). Second, we found that both competence and leader consideration have a direct impact on job satisfaction. Therefore, it seems necessary to cultivate the skills of call center agents by investing in training and personnel development. This is especially important as many call centers are a high-technology work environment. This should be complemented by creating a supportive atmosphere in which meaning and direction are created through effective formal and affective informal communication by management. Finally, as job satisfaction is a significant determinant of both job performance and (directly and indirectly through organizational commitment) turnover intentions, management of call centers should undertake steps to increase job satisfaction among their employees. In stressful work environments, it has been emphasized that job rotation, whereby employees switch jobs and learn about different duties and responsibilities, and reinforcement of employees' faith in their own competencies and skills are particularly useful in increasing job satisfaction. Employee recognition by management as well as strengthening employees' confidence in their competence through task-related training programs may be the key to keeping high-performance call center employees.

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