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## WORKING PAPER

# Performance Implications of In-role and Extra-role Behavior of Frontline Service Employees

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**PERFORMANCE IMPLICATIONS OF IN-ROLE AND EXTRA-ROLE BEHAVIOR  
OF FRONTLINE SERVICE EMPLOYEES**

**ABSTRACT**

Despite the growing body of literature on different employee behaviors such as organizational citizenship behavior or boundary spanning behavior, few research studies have investigated the impact of both in-role and extra-role behavior on performance outcomes, especially in business services settings. In this study we investigate how in-role behavior, extra-role behavior, and their interrelation influences employee performed productivity and quality in business security services. Data from 1,174 frontline service employees is analyzed using structural equation modeling. The results indicate that performance quality is directly influenced by in-role employee behavior oriented towards customers, while performance productivity is influenced by both in-role and extra-role employee behavior oriented towards employees and customers. Opportunities for future research and managerial implications of the results are discussed.

## INTRODUCTION

Because of customer-employee interaction in services settings, both academia and managers agree that there exists a “linkage” between the behavior of frontline service employees and customers’ evaluation of the service delivered (Schneider et al. 2005). Despite the growing body of literature on different employee behaviors such as organizational citizenship behavior (Bateman and Organ 1983; Organ 1988) or boundary spanning behavior (Bettencourt and Brown 2003), few research studies have investigated the impact of both in-role and extra-role behavior on performance, especially in business services settings.

The antecedents of employee behavior have been well explored (Bettencourt, Gwinner, and Meuter 2001; Tepper, Lockhart, and Hoobler 2001). Some antecedents frequently mentioned in literature are mood (George 1991; Kelley and Hoffman 1997), fairness (Bettencourt and Brown 1997; George 1991), role stressors (Bettencourt and Brown 2003; MacKenzie, Podsakoff, and Ahearne 1998), organizational commitment (Baruch et al. 2004) and job satisfaction (Bettencourt and Brown 1997; Netemeyer et al. 1997). However, research studies on the impact of employee behavior on performance outcomes have been less frequently reported and are mainly focused on the impact of organizational citizenship behavior (Podsakoff et al. 2000), considered as principally extra-role (Bell and Menguc 2002; Piercy et al. 2006). Most studies explore antecedents of employee behavior (e.g. Netemeyer et al. 1997) or its impact on performance outcomes (e.g. MacKenzie, Podsakoff, and Fetter 1993), without incorporating in-role behavior. However, to fully capture the impact of employee behavior on performance outcomes, both extra-role and role-prescribed behaviors and their interrelationship should be incorporated (Piercy et al. 2006).

As the service employee often is the sole contact between company and customer, employee behavior is especially important in services settings (Bettencourt, Brown, and MacKenzie 2005; Netemeyer, Maxham III, and Pullig 2005). Despite the growing importance of business services, a recent literature review of Johnston (2005) revealed that most papers in leading publications for service research are concerned with business-to-consumer services. As for research on employee behavior, most studies are set in consumer settings such as retail banking (Bettencourt and Brown 1997; Kelley and Hoffman 1997) or sales (George 1991). Research on employee behavior in business services settings is rare and mainly focuses on selling organizations (Piercy et al. 2006). Nonetheless, more research in other business services settings is needed as those organizations also have to deal with frontline employees spanning the boundary between buyer and supplier organizations, such as for the delivery of financial services (Bettencourt and Brown 2003) or other.

The objective of this study is to address the concerns stated above by developing a model focused on the impact of both in-role and extra-role behavior displayed by frontline employees on the performance productivity and quality in a business services setting. More specifically, we want to empirically investigate the interrelationships between different types of boundary-spanning behavior displayed by the frontline employees (classified as in-role or extra-role behavior) and their impact on the performed productivity and quality of these employees. We believe that researchers and managers are interested in the impact of different types of employee behavior on performance. However, to the best of our knowledge, no study has yet empirically investigated the interrelationships between different types of boundary-spanning behavior and their impact on individual performance outcomes including both productivity and quality. From a theoretical viewpoint, this study contributes to past research by extending the research on frontline employee behavior: the focus is on the impact of

different types of frontline employee behavior, including both in-role and extra-role behavior, on individual performance outcomes. Moreover, research is shifted from antecedents of frontline employee behavior towards their consequences including both productivity and quality. From a managerial viewpoint, the results highlight those types of frontline employee behavior (in-role versus extra-role) that do influence performance outcomes in a business services setting. As such, insight is gained into the management of frontline service employees and their behavior.

First, the concept of frontline employee behavior and its different types are discussed. The concept of individual employee performance and its productivity and quality dimension are also briefly considered. We then develop our theoretical model and introduce hypotheses. The empirical study with a sample of 1174 frontline service employees is presented next. Based on the analyses, the proposed model and hypotheses are tested. Finally, the implications of our results are discussed.

## **CONCEPTUAL BACKGROUND**

### **Frontline employee behavior**

Frontline employee behavior can be looked at from distinct angles, each with its own definition and related theory. Behavior of employees has been referred to as prosocial organizational behavior (Brief and Motowidlo 1986), organizational citizenship behavior (Bateman and Organ 1983; Organ 1988), or boundary-spanning behavior (Aldrich and Herker 1977; Bettencourt and Brown 2003). Each of these concepts has some overlap with the other concepts (Baruch et al. 2004).

Prosocial organizational behavior is defined by Brief and Motowidlo (1986) as behavior which is (a) performed by a member of an organization, (b) directed towards an individual, group or organization with whom he or she interacts during work, and (c) performed with the intention of benefiting the one towards which the behavior is directed. This rather broad definition encompasses different kinds of behavior. A first distinction is the target at whom the behavior is directed (Brief and Motowidlo 1986): customer-oriented or employee-oriented behavior (Kelley and Hoffman 1997). Second, several researchers distinguish between extra-role behavior and in-role or role-prescribed behavior (Brief and Motowidlo 1986; George 1991; O'Reilly III and Chatman 1986; Werner 1994). The latter specifies the formal part of the employee's job in the organization, while the former extends beyond formal role requirements (Van Dyne and LePine 1998). Third, employee behavior can be either organizationally functional or dysfunctional (Brief and Motowidlo 1986): behavior does or does not contribute to the achievement of organizational objectives. Behavior with negative organizational implications is also referred to as noncompliant behavior (Puffer 1987).

Boundary-spanning behavior relates to the behavior of customer-contact employees of service firms that derives from their unique position as boundary spanners of the firm (Bettencourt, Gwinner, and Meuter 2001). Employees at the boundaries of the organization, in close contact with outsiders, have a strategic function: they are being placed between the external environment, including organization's customers, and the internal organization (Aldrich and Herker 1977). Based on the services marketing and management literature, three types of boundary-spanning behavior are identified by Bettencourt and Brown (2003). External representation behavior represents the extent to which the frontline employee is a vocal advocate of the organization, its image and its assets to outsiders of that organization

(Bettencourt and Brown 2003). This type of boundary-spanning behavior can be considered partly customer-oriented and is more likely to be considered relatively more extra-role (Bettencourt, Brown, and MacKenzie 2005). The second type of boundary-spanning behavior, internal influence behavior, reflects the individual initiative taken to communicate to the firm and co-workers in order to improve the service delivered (Bettencourt and Brown 2003). Internal influence behavior is clearly employee-oriented and is also more likely to be considered relatively more extra-role (Bettencourt, Brown, and MacKenzie 2005). Service delivery behavior refers to the behaviors that directly impact customers: serving customers in a conscientious, responsive, attentive and courteous manner (Bettencourt and Brown 2003). This third type of boundary-spanning behavior is clearly customer-oriented and is more likely to be considered relatively more in-role (Bettencourt, Brown, and MacKenzie 2005). As such, the three dimensions of boundary-spanning behavior are each belonging to a specific category of prosocial organizational behavior.

In this research study, we focus on the concept of boundary-spanning behavior because both in-role versus extra-role behavior (Piercy et al. 2006) and customer-oriented versus employee-oriented behavior (Kelley and Hoffman 1997) are incorporated. Moreover, the boundary-spanning construct is best tailored to the unique settings of service organizations (Bettencourt, Gwinner, and Meuter 2001). Though this construct has been validated and its antecedents explored (Bettencourt and Brown 2003; Bettencourt, Brown, and MacKenzie 2005), further research is still required to investigate its impact on performance outcomes.

### **Performance outcomes**

Researchers generally agree that the performance of frontline employees, especially in service firms, has a great significance for the organization's effectiveness (Hartline and

Ferrell 1996; Singh 2000). As the delivery of the service occurs in the service encounter, during the interaction between frontline employee and customer, performance of the frontline employee is critical to customer satisfaction (Crosby, Evans, and Cowles 1990; van Dolen, de Ruyter, and Lemmink 2004). High levels of employee performance are assumed to enhance customer satisfaction and loyalty and to decrease employee's turnover intentions (Singh 2000).

In services marketing literature, quality and productivity are considered as two related but distinct aspect of performance (de Jong, de Ruyter, and Lemmink 2005; Singh 2000). As indicated by Chase and Haynes (2000), quality and productivity should not be managed as separate processes. Without the inclusion of productivity parameters, little control over quality exists (Heskett, Sasser, and Schlesinger 1997). On the other hand, productivity can not be understood without considering quality (Grönroos and Ojasalo 2004). Performance productivity is often related to quantifiable output which can be verified objectively (de Jong, de Ruyter, and Lemmink 2005): meeting quantifiable and measurable performance output indicators (Singh 2000). The two important determinants of performance productivity for frontline service employees are customer contact (e.g. response time) and backroom functions (e.g. demonstration of knowledge about company procedures and practices) (de Jong, de Ruyter, and Lemmink 2005; Singh 2000). Performance quality relates to how the service is delivered (Singh 2000) and often concerns subjective measures on process-oriented aspects (de Jong, de Ruyter, and Lemmink 2005). A unique aspect of performance quality in services settings is the emotional labor demanded from frontline employees in their interaction with customers (i.e. employees are required to display appropriate emotions) (Singh 2000). Performance quality for frontline employees is associated with the interactional performance



in frontline employee-customer exchanges. The important determinants of performance quality are trust, promptness, reliability and individualized attention (Singh 2000).

### **HYPOTHESES**

In general, prosocial behavior is assumed to have a positive impact on performance outcomes. The research of Puffer (1987) suggests that prosocial behavior indeed provides benefits to the organization and the study of Baruch and his colleagues (2004) empirically confirmed the positive association between prosocial behavior and job performance. In this research study, we also assume that the three dimensions of boundary-spanning behavior – belonging each to a specific category of prosocial behavior – will be positively related to performance productivity and quality. However, because of internal differences between the boundary-spanning behavior dimensions, the link with performance outcomes will not be identical across the dimensions.

The first type of boundary-spanning behavior, service delivery behavior, is considered as role-prescribed or in-role behavior (Bettencourt, Brown, and MacKenzie 2005). Role-prescribed behavior is assumed to have a positive impact on both the productivity and quality dimensions of performance as role prescriptions relate to the performance guidelines for a particular service role. A dependable role performance indicates the achievement of some minimal level of quantity and quality of performance (Katz 1964). The research of Piercy and colleagues (2006) is among the first studies to empirically confirm the positive impact of in-role behavior on performance outcomes. Next to being role-prescribed, service delivery behavior is also considered customer-oriented (Bettencourt and Brown 2003). When employee behavior aims at helping the customer during the service delivery, employees are more likely to feel better about the outcome (Kelley and Hoffman 1997). Previous research

has indicated the positive impact of customer-oriented behavior on customer satisfaction (Bettencourt and Brown 1997) and on service quality (Kelley and Hoffman 1997). The writing on the importance of customer service in popular and academic press also implicitly assumes the positive impact of role-prescribed behavior directed at customers on performance (George 1991). Therefore, we hypothesize:

*H1: Service delivery behavior will have a positive impact on (a) performance productivity and (b) performance quality.*

The other two types of boundary-spanning behavior, internal influence behavior and external representation behavior, are likely to be considered more extra-role (Bettencourt, Brown, and MacKenzie 2005). Though these types of behavior are not incorporated in the formal job prescription, these may provide benefits to the organization (Puffer 1987). Internal influence behavior relates to extra-role behavior directed at co-workers (Bettencourt and Brown 2003). While previous research has not found a significant relationship between employee-oriented behavior and performance outcomes such as customer satisfaction (Bettencourt and Brown 1997), we believe this is in part because it has not taken into account the potential mediating role of customer-oriented employee behavior. We assume that the impact of internal influence behavior on performance outcomes will be indirect through its influence on service delivery behavior. Internal influence behavior indicates that individual initiative is taken in communications to the firm and coworkers (Bettencourt and Brown 2003). These communications can deal with perceived environmental changes, newly developed or unfulfilled customer needs, and opportunities to improve service delivery (Aldrich and Herker 1977). This type of behavior increases the ability to perform the role-prescribed service delivery behavior: best practices are spread throughout the firm, insight into potential efficiency increases are gained, and potential problems are detected earlier or

even avoided. Consequently, the required service will be delivered in a more conscientious, dependable and responsive manner, enhancing the performed service delivery behavior (Bettencourt and Brown 2003). Moreover, based on socialization research, employees who perform one type of helping behavior (e.g. employee-oriented) are more likely to perform other types of helping behavior (e.g. customer-oriented) (Kelley and Hoffman 1997). Empirical research has confirmed this positive relationship between employee-oriented and customer-oriented prosocial behavior (Kelley and Hoffman 1997). Furthermore, the research of Piercy and colleagues (2006) states that the impact of extra-role behavior on performance outcomes is mediated by role-prescribed behavior. We propose that the positive impact of internal influence behavior on performance outcomes of frontline service employees will be indirect and mediated by service delivery behavior.

*H2: Internal influence behavior will (a) have a positive impact on service delivery behavior, (b) not have a direct impact on performance productivity, and (c) not have a direct impact on performance quality.*

External representation behavior relates to behavior directed at outsiders of the organization (Bettencourt and Brown 2003), including customers, potential customers, and potential employees. External representation behavior supports the organizational image, enhances its social legitimacy, and makes the organization more visible (Aldrich and Herker 1977). As such, the organization's ability to attract and retain the best workforces increases, resulting in a more effective organizational functioning (Katz 1964). Better skilled workforce – with enhanced technical and social skills – will be better able to deliver the service in a conscientious, dependable and responsive manner (Westbrook and Peterson 1998), thus increasing service delivery behavior. So the impact of external representation behavior on performance productivity and quality will be mediated by service delivery behavior. As the

research of (Piercy et al. 2006) empirically confirmed, the impact of extra-role behavior on performance outcomes is indirect, through the influence on in-role behavior. In addition, we also assume a direct effect of external representation behavior on performance. Next to the influence on (potential) employees, external representation behavior relates to other outsiders of the organization as well, such as customers and potential customers (Bettencourt and Brown 2003). Previous research has suggested that customer-oriented prosocial behavior has a direct positive influence on performance outcomes as outcomes resulting from behaviors with positive associations tend to be evaluated more favorably (Kelley and Hoffman 1997). When frontline service employees are vocal advocates of an organization and its services to outsiders of that organization, they will be more motivated to deliver high performance outcomes – both on productivity and quality – to keep up with the service level they are proclaiming. Previous research has empirically confirmed the direct impact of extra-role customer-oriented behavior on performance outcomes such as customer satisfaction (Bettencourt and Brown 1997). Therefore, in addition to the indirect effect of external representation behavior on performance outcomes through service delivery behavior, we also assume a direct influence of external representation behavior on performance productivity and quality. Thus, service delivery behavior will only partially mediate the influence of external representation behavior on performance productivity and quality.

*H3: External representation behavior will (a) have a positive impact on service delivery behavior, (b) have a positive direct impact on performance productivity, and (c) have a positive direct impact on performance quality.*

The above hypotheses and the resulting model on the impact of the types of boundary-spanning behavior on frontline service employees' performance productivity and quality are illustrated in Figure 1.

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## **RESEARCH METHOD**

### **Sample and Procedure**

The research study was set up in cooperation with a major security services company. Security services belong to facility services, an important part of the business services sector (Lehtonen and Salonen 2005). The frontline employees incorporated in the study are the security agents performing the security services on the customer's premises. As such, the security agents are the main interface between the supplying and buying organization and thus represent an important asset of the security services provider. The security services performed relate to the supervision and protection of (im)mobile goods belonging to the customer. Some typical examples of the security services delivered are reception services and access control.

Before the questionnaires were sent to the security agents, about 10 employees were interviewed to investigate the relevance of our research question and the constructs incorporated. The interviewees were selected based on their experience with security services in general and with the employer organization in particular. The several types of security services like reception services and access control were covered across the interviews. Next, a first draft of the questionnaire was developed and pre-tested within another group of security agents. About 30 agents filled in the questionnaire in the presence of a research assistant. As such, uncertainties or remarks could be communicated immediately and detailed information was gathered. Based on the analyses of the pre-test results, the questionnaire was adjusted when necessary. Finally, the questionnaire was sent to two groups of security agents, each

employed in another region within the same country. The package sent included an introductory letter assuring confidentiality and a postage-paid return envelope. In total, 3,666 surveys were sent. Completed surveys were received from 1,174 security agents for a response rate of 32.02%. Table 2 gives an overview of the respondent profile. Approximately 88% of the respondents were male. The median age was between 40 and 49 years. The median length of job experience was between 5 to 10 years.

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Insert Table 1 about here

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## Measures

**Boundary-spanning behavior.** The operationalization of boundary-spanning behavior is based on prior research developing and validating measures for the three types of behavior (Bettencourt and Brown 2003; Bettencourt, Brown, and MacKenzie 2005). Three items are used to measure service delivery behavior (e.g. I follow up on customer requests and problems in a timely manner), internal influence behavior (e.g. I make constructive suggestions for service improvements), and external representation behavior (e.g. I tell outsiders this is a great place to work). Based on the interviews and pre-test, the wording of some items is adjusted to specific requirements for the security sector. The respondents are asked to indicate their level of agreements with the statements on a seven-point rating scale. As did Podsakoff, Ahearne and MacKenzie (1997), the measures of behavior were acquired from the employees themselves rather than from their supervisors. Due to the nature of boundary-spanning behaviors, using only management ratings of boundary-spanning behavior is not advised (Bettencourt, Brown, and MacKenzie 2005). The results of management ratings might be more biased as management is limited in its knowledge of the degree to which an

employee engages in these behaviors. Though the use of multiple informants, i.e. including both the ratings of employees and supervisors, is preferred (Bettencourt and Brown 2003), the research setting made this impossible. In the security services company involved in the study, one supervisor can be responsible for over a hundred agents, making it an impossible task for the supervisor to distinctly rate each agent's behavior.

**Performance productivity and quality.** Performance productivity and quality are measured by the Singh (2000) scale developed to provide self-ratings of performance. Performance productivity consists of 8 items representing contact output (e.g. meeting your quotas and targets) and backroom work (e.g. providing accurate and complete paperwork). For the latter, one item was added compared to Singh's (2000) operationalization. During the interviews with the security agents, accurate and timely communication between colleagues appears as an important aspect of performance in the back-office. Performance quality consists of 17 items referring to the 4 dimensions as defined by Singh (2000): trust (e.g. taking the initiative to help your customers – within what is allowed – even when it is not part of your responsibility), promptness (e.g. immediately answering a call – by phone or otherwise), reliability (e.g. providing accurate and correct information to the customer) and individualized attention (e.g. listening attentively to understand the concerns of the customer). The respondents are asked to rate their performance level of each item, compared with an average security agent in their company, on a seven-point rating scale. Previous researchers have suggested that employee self-reports of performance are significantly correlated with judgments made by third parties like customers (Schneider et al. 1996). Moreover, self-ratings have been found to correlate highly with manager ratings of employee performance (Churchill et al. 1985) and to be less biased than management's ratings (Scullen, Mount, and Goff 2000). However, common method variance attributable to sources can bias results when only self-

ratings are used (Podsakoff et al. 2003). Therefore, common method bias needs to be controlled for as this can provide a potential rival explanation for the observed pattern of correlations among constructs (Podsakoff et al. 2003).

**Control variables.** Next to the respondents' sex, age and job experience, another construct, that is role ambiguity, was included in the questionnaire to enable us to control for common method bias. Role ambiguity, referring to lack of information needed for an employee to effectively enact his or her role (Bettencourt and Brown 2003; Rizzo, House, and Lirtzman 1970), was measured based on the scale developed by Rizzo and colleagues (Rizzo, House, and Lirtzman 1970). The respondents are asked to indicate their level of agreements with three statements (e.g. I know exactly what is expected of me in the job (reversed scaled)) on a seven-point rating scale.

## ANALYSES AND RESULTS

The analytical approach consists of two steps. First, the validity of the behavior and performance constructs is assessed using a combination of exploratory and confirmatory factor analyses. One of the two sample groups is used for exploratory factor analysis (n=487; response rate of 29.66%), the other sample group (employed in another region within the same country) for confirmatory factor analyses (n=687; response rate of 33.94%). Second, the hypotheses are tested using the second sample group.

### Validation of constructs

To assess the dimensionality of the customer-oriented boundary-spanning behavior and the performance constructs, exploratory factor analyses are performed using the first sample group. We opt for principal axis factoring as extraction method (Conway and Huffcutt



2003) and an oblique rotation because the determinants are not supposed to be independent (Heck 1998). The exploratory factor analysis on the statements of boundary-spanning behavior results in three factors based on the eigenvalue criterion (54.84% variance explained and eigenvalues of 3.60, 1.41, and 1.26). These factors correspond with the boundary-spanning behaviors as defined by Bettencourt and Brown (2003): service delivery, internal influence, and external representation behavior. To assess the dimensionality of the performance construct, performance productivity and performance quality are assessed separately. The exploratory factor analysis conducted for the performance productivity construct results in two dimensions (54.30% variance extracted and eigenvalues of 4.03 and 1.12). The two factors correspond with the two dimensions as indicated by Singh (2000): contact output and backroom work. For performance quality, the exploratory factor analysis also results in two dimensions (52.44% variance extracted and eigenvalues of 8.07 and 1.16). The first dimension corresponds with the trust dimension and the second dimension encompasses the promptness, reliability, and individualized attention dimension of performance quality as defined by Singh (2000).

To assess the reliability and validity of boundary-spanning behavior, performance productivity, and performance quality, a confirmatory factor analysis is conducted using the second sample group. After the deletion of two items with low reliability (Squared Multiple Correlation < 0.40) the seven-factor model provides an acceptable fit. Though the chi-square statistic is significant with chi-square value of 645.88 and 278 degrees of freedom, the other fit indices are acceptable: NFI is 0.97, CFI is 0.99, RMSEA is 0.03, SRMR is 0.04, and GFI is 0.89. Based on the large and significant loadings of the items, the high Composite Reliability (CR > 0.70) (see Table 2), and acceptable Average Variance Extracted (AVE  $\geq$  0.50), the reliability and convergent validity of the seven factors are acceptable. Discriminant validity is

assessed by comparing the extracted variance of the construct with the shared variance between constructs: a construct should share more variance with its measures than it shares with other constructs. The square root of AVE should be higher than the correlation between the related constructs. In Table 2, the square root of AVE is indicated on the diagonal and the correlations are indicated below the diagonal. Table 2 indicates that the three types of boundary-spanning behavior, the two dimensions of performance productivity, and the two dimensions of performance quality are meaningfully distinct and thus have discriminant validity.

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Insert Table 2 about here  
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To assess the dimensionality of performance, a second confirmatory factor analysis is performed based on the indicators and resulting factors of performance productivity and performance quality. The model with two higher-order dimensions, i.e. productivity and quality, provides a feasible fit despite the significant chi-square statistic (chi-square value of 318.04 and 114 degrees of freedom): NFI is 0.98, CFI is 0.99, RMSEA is 0.03, SRMR is 0.04, and GFI is 0.92. The factors of both productivity and quality have a high and significant loading on the higher-order dimensions of productivity and quality respectively. The higher-order dimensions have an acceptable reliability and convergent validity ( $CR > 0.70$ ;  $AVE > 0.50$ ). Performance productivity and performance quality also have discriminant validity as the extracted variance of both constructs is higher than the shared variance between the two constructs (see Table 2). Another indicator of discriminant validity between productivity and quality is the chi-square difference test between the unrestricted model and the restricted

model in which the intercorrelation between productivity and quality is set to one (chi-square difference: 159.65;  $df(1)$ ;  $p < 0.01$ ).

### **Model estimation and hypotheses testing**

To test the hypotheses, a structural model, as illustrated in Figure 1, is estimated. Because all of the data are obtained from one data source, i.e. rating of frontline employees, common method variance needs to be controlled for to exclude potential rival explanations for observed patterns of correlations (Podsakoff et al. 2003). Therefore, the partial correlation procedure as described by Podsakoff and colleagues (2003) is used. Though this methodology does not control for all possible causes of common method biases, it does account for its potential effects on the assessed relationships (Podsakoff et al. 2003). In the partial correlation procedure, a variable that on theoretical grounds should not be related to at least one other variable included in the study is used as marker variable. Any observed relationship between that variable and any of the variables in the study can then be assumed to be due to common method variance (Podsakoff et al. 2003). In this study, role ambiguity is used as a marker variable to partial out common method variance. Role ambiguity is not directly related to any of the three boundary-spanning behavior dimensions as job satisfaction and organizational commitment fully mediate this effect (Bettencourt and Brown 2003). In previous research the impact of common method variance in organizational behavior research has been assumed limited or even non-existing (Bettencourt, Gwinner, and Meuter 2001; MacKenzie, Podsakoff, and Fetter 1991; MacKenzie, Podsakoff, and Fetter 1993; Podsakoff and MacKenzie 1994), and was thus not considered when discussing the empirical results. However, as common method variance can be in part responsible for the observed effects in a model without marker variable, we report the results of the structural model with marker variable to sort out possible effects of common method variance on the assessed relationships.

The effect of different types of boundary-spanning behavior on performance productivity and performance quality is estimated in a structural model as illustrated in Figure 1. Despite the significant chi-square statistic, the model provides a feasible fit with an acceptable level for the reported fit indices (see Table 3).

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Insert Table 3 about here  
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The first hypothesis (H1) assumes a positive impact of service delivery behavior on (a) performance productivity and (b) performance quality. The results provide support for both H1a ( $t = 5.29$ ;  $p < 0.001$ ) and H1b ( $t = 5.05$ ;  $p < 0.001$ ). The second hypothesis (H2) assumes that the positive impact of internal influence behavior on performance productivity and performance quality is fully mediated by service delivery behavior. As such, internal influence behavior should have a positive impact on service delivery behavior (H2a) and not have a direct impact on performance productivity (H2b) and performance quality (H2c). The results provide support for H2a ( $t = 4.26$ ;  $p < 0.001$ ) and H2c ( $t = 0.40$ ;  $p > 0.05$ ). However, the results indicate a positive relationship between internal influence behavior and performance productivity ( $t = 2.65$ ;  $p < 0.01$ ), not supporting H2b. The third hypothesis (H3) assumes that the positive impact of external representation behavior on performance productivity and performance quality is partially mediated by service delivery behavior. As such, external representation behavior should have a positive impact on service delivery behavior (H3a), on performance productivity (H3b), and on performance quality (H3c). The results provide support for H3a ( $t = 3.62$ ;  $p < 0.001$ ) and H3b ( $t = 1.98$ ;  $p < 0.05$ ). However, the results do not indicate a significant relationship between external representation behavior and performance

quality ( $t = 1.75$ ;  $p > 0.05$ ), not supporting H3c. In the model as illustrated in Figure 1, 36% of the variance in service delivery behavior, 50% of the variance in performance productivity, and 41% of the variance in performance quality are explained.

## DISCUSSION

The results of this research study support our assumption that the behavior of frontline service employees is of importance for business organizations outside the selling context and that the impact on performance outcomes differs across the different types of boundary-spanning behavior. In-role and extra-role behavior do not influence performance outcomes in the same way: in-role behavior has a more significant impact on employee performance outcomes than extra-role behavior. According to general consensus, in-role behavior directly influences both performance productivity and performance quality. The results also indicate that extra-role behavior is an antecedent of in-role behavior, consistent with the research of Piercy and colleagues (2006). However, in contrast with the results of the latter, in-role behavior is not a full mediator for the impact of extra-role behavior on performance outcomes in our study. On the one hand, in-role behavior does fully mediate the impact of extra-role behavior on performance quality. Being a vocal advocate of an organization (external representation behavior) and communicating internally (internal influence behavior) will enhance performance quality only through delivering the service in a more conscientious, responsive and courteous manner (service delivery behavior). On the other hand, in-role behavior is only a partial mediator for the impact of extra-role behavior on performance productivity in this study. Both internal influence behavior and external representation behavior have a direct influence on performance productivity.

Contrary to previous research in consumer settings (Bettencourt and Brown 1997), external representation behavior, supposed to be partly customer-oriented, does not have a direct impact on performance quality. However, in our study, services are delivered towards business organizations, and not consumers, making it implausible for frontline employees to have contact with those business customers outside their job environment. As such, external representation behavior of frontline employees in business services settings is more employee-oriented than customer-oriented. Previous studies have suggested that employee-oriented behavior does not have an impact on service quality (Kelley and Hoffman 1997) or customer satisfaction (Bettencourt and Brown 1997). The results of our study on performance quality are thus consistent with previous research and further broaden the findings by indicating an indirect relationship between employee-oriented behavior and performance quality because of the moderating effect of customer-oriented behavior. Moreover, not only employee-oriented behavior displayed during the job (internal influence behavior) should be considered; behavior directed at employees off duty (external representation behavior) can also affect performance outcomes.

While previous research has focused on qualitative aspects of performance, the impact of employee behavior on performance productivity has been rarely investigated. In this research study, we find that the impact of extra-role employee behavior on performance differs across performance outcomes. Contrary to the indirect impact on performance quality, extra-role behavior, i.e. internal influence behavior and external representation behavior, has a direct impact on performance productivity. As external representation behavior will be mainly employee-oriented in business services settings, the organization is able to attract and retain the best workforces, thus increasing its opportunity to deliver enhanced performance productivity. Moreover, performance productivity is more quantifiable, measurable, and

visible to employees than performance quality (Singh 2000). Thus, individual initiative taken by the frontline employee to communicate to the firm and coworkers (internal influence behavior) will plausibly be more focused on aspects related to performed productivity.

In this study on business services, performance quality is directly influenced by in-role employee behavior oriented towards customers, while performance productivity is influenced by both in-role and extra-role employee behavior oriented towards employees and customers.

### **Limitations and directions for future research**

As indicated by this study, employee behavior plays a role in business organizations outside the selling context. However, in these settings, sales performance is not a feasible indicator to measure performance outcomes. As illustrated in this study, indicators related only to quality do not offer a full overview of the relevant performance outcomes. Based on the research of Singh (2000), we included individual performed productivity and quality of the frontline service employee. Though employee performance is assumed to positively influence customer satisfaction (van Dolen, de Ruyter, and Lemmink 2004) and organizational effectiveness (Hartline and Ferrell 1996), we did not investigate these relationships in our study. Future research could incorporate other indicators of performance outcomes such as organizational effectiveness or customer purchase intent (Netemeyer, Maxham III, and Pullig 2005).

The results of this research study also indicate the need for further research on the interrelations between different types of boundary-spanning behavior and their impact on performance outcomes, especially performance productivity. The impact of these interrelations on antecedent factors such as mood, justice, and job satisfaction and their

occurrence in other business or consumer sectors should be further investigated. In this research study, we focused on one specific business and one specific company to exclude the impact of differences in company policy or other. However, the research setting made it impossible to incorporate both employee and manager's ratings. While the partial correlation procedure accounts for common method variance in the assessed relationships, this methodology could not control for all possible sources of common method variance. Therefore, the validity of our model should be further investigated in other circumstances. Furthermore, the association between boundary-spanning behavior and noncompliant behavior and its impact on performance outcomes (Puffer 1987) is another research area awaiting to be further explored.

### **Managerial implications**

Based on the linkage research (e.g. Schneider et al. 2005), management of service organizations should pay more attention to the internal organizational practices and employee perceptions that have an impact on performance outcomes (Pugh et al. 2002). The results of this study confirm this belief and indicate some managerial actions which can positively influence the linkage effect: managers in services businesses should not simply try to increase employee satisfaction to enhance performance outcomes (Pugh et al. 2002), the behavior of the employees should play a more fundamental role. Though in-role behavior appears to be the most important type of employee behavior, management in business services settings should try to encourage both in-role and extra-role behavior of frontline employees to achieve enhanced performance productivity and quality.

In-role and extra-role behavior of frontline service employees can be improved in a number of ways. Managerial actions to improve in-role behavior (service delivery behavior)



are well known: employee behavior linked to performance outcomes should be included in the selection, induction and training of the frontline employees (Baruch et al. 2004). As the benefits of extra-role behavior might not be as visible as the ones of in-role behavior (Puffer 1987), enhancing extra-role behavior is less understood and thus more difficult. However, the development of a service climate reflecting the importance of a service delivery with high productivity and quality might be essential to achieve the desired employee outcomes. In the linkage research, a number of internal management practices that drive the development of such a service climate are described (Pugh et al. 2002). For example, external representation behavior can be encouraged by appropriate rewarding and recognition for the service delivered; internal influence behavior can be supported by facilitating the communication between employees and by implementing communication support systems. In business services settings, managers should take into account that extra-role behaviors are mainly dealing with communications towards employees (internal influence behavior) and potential employees (external representation behavior). As frontline service employees in business settings are spending more time on the premises of the customer firm than within the own organization, adjusted communication systems and facilitated information flows should be established. New technologies such as internet-based communication provide opportunities to realize this aim. Interestingly, other drivers of such a service climate, such as hiring and training, will also enhance in-role behavior.

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**TABLE 1**  
**Respondent Profile**

<u>Sex</u>		<u>Age</u>		<u>Job Experience</u>	
Male	88.4%	<20 years	0.5%	< 2 years	15.1%
Female	11.6%	21-29 years	17.1%	2 to 5 years	21.5%
		30-39 years	26.8%	5 to 10 years	22.9%
		40-49 years	32.0%	10 to 15 years	16.8%
		50-59 years	21.0%	> 15 years	23.7%
		60 or older	2.6%		



**TABLE 2**  
**Correlations between Constructs**<sup>3 4</sup>

<b>Construct</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>
1. Service Delivery Behaviour	0.70								
2. Internal Influence Behaviour	0.37	0.80							
3. External Representation Behaviour	0.37	0.35	0.86						
4. Productivity Dimension 1	0.41	0.38	0.36	0.82					
5. Productivity Dimension 2	0.49	0.38	0.37	0.61	0.73				
6. Quality Dimension 1	0.34	0.26	0.26	0.39	0.36	0.82			
7. Quality Dimension 2	0.47	0.34	0.35	0.56	0.61	0.59	0.87		
8. Productivity	0.48	0.42	0.40	0.91	0.88	0.42	0.65	0.85	
9. Quality	0.45	0.33	0.34	0.52	0.53	0.91	0.88	0.59	0.82
Mean	6.47	5.76	5.39	5.70	5.99	5.75	6.13	5.84	5.93
s.d.	0.64	1.20	1.41	1.00	0.86	1.22	1.05	0.84	1.02
Composite Reliability	0.75	0.84	0.89	0.86	0.77	0.80	0.96	0.83	0.80

<sup>3</sup> All correlations are significant ( $p < 0.01$ )

<sup>4</sup> Square Root of AVE is mentioned on diagonal

**TABLE 3**  
**Model Estimation**<sup>5</sup>

		<b>Service Delivery Behavior</b>	<b>Performance Productivity</b>	<b>Performance Quality</b>
Service Delivery Behavior	Beta	---	<b>0.53</b> <sup>***</sup>	<b>0.56</b> <sup>***</sup>
	T-value		5.29	5.05
Internal Influence Behavior	Beta	<b>0.34</b> <sup>***</sup>	<b>0.16</b> <sup>**</sup>	<b>0.02</b>
	T-value	4.26	2.65	0.40
External Representation Behavior	Beta	<b>0.25</b> <sup>***</sup>	<b>0.19</b> <sup>*</sup>	<b>0.14</b>
	T-value	3.62	1.98	1.75
R <sup>2</sup>		0.36	0.50	0.41
<b>Model Fit</b>				
Chi-square		853.08		
df		357		
RMSEA		0.04		
NFI		0.97		
CFI		0.98		
SRMR		0.06		
GFI		0.88		

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<sup>5</sup> \* p < 0.05  
 \*\* p < 0.01  
 \*\*\* p < 0.001

**FIGURE 1**

**Impact of Boundary-Spanning Behavior on Performance**

