Human Resource Management and Performance in UK Call Centres

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Using data from a sample of 145 U.K. call centres, the authors test the core propositions of the strategic human resource management (SHRM) approach that: (a) there are coherent links through the SHRM chain from strategy, through operational requirements, to work design and human resource management, and (b) the fit between the human resource practices and market factors determines organizational performance. Little support for these hypotheses is found as only (a) a few direct relationships between the elements of the SHRM chain are found, and (b) direct relationships, rather than ones moderated by market factors, are found between human resource practices and performance. But key operational requirements are linked to work design, which is itself related to a limited number of human resource practices. The direct effects of work design on key performance indicators are more pronounced than those of human resource practices.

1. Introduction

Stereotyping call centres as the modern sweatshop has been superseded by an appreciation of their diversity[1]. But as yet the stereotype has not been replaced by a clear picture of the nature of that variety, the association between the elements of call centre management, and their contribution to the performance of call centres. Initial forays into such issues tend to formulate the relationship between the elements in terms of the strategic human resource management (SHRM) 'chain' from strategy, through operational requirements, to work design and human resource management (Batt, 2000; Frenkel *et al.*, 1999; Holman, 2005; Kinnie *et al.*, 2000).

SHRM can and has been used as both a theory of organizational practice and a theory of performance. The former predicts that organizational designs will reflect the organization's strategic context and associated operational requirements. The latter is a theory of performance that states that organizations fitting their designs to the market context will outperform others. As such, the best performing organizations will be those that act as anticipated in the theory of practice. It is this prediction that underlies the commonplace normative argument that managers should match their designs to the market and strategic context.

While the two theories both hinge on the alignment of organizational design with market and strategic context, the theory of performance is at odds with the theory of practice in the sense that it assumes that a significant proportion of organizations will not adequately design their practices in the light of their context. The first theory will be referred to here as SHRM's theory of practice, while the second will be labelled SHRM's theory of performance.

As yet there is limited evidence from call centres to support SHRM's theory of practice, i.e., that call centre managers do design their practices in the light of their strategic and operational requirements. There are few studies (Batt, 2000; Frenkel *et al.*, 1999, Hutchinson *et al.*, 2000) and those that do test the theory are limited in scope; and support for it is partial. Studies of SHRM's theory of performance that test the effects of human resource management practices in call centres are also rare (Batt, 2002) and thus far have not supported its contingency theory of the effects of human resource management on performance.

This article reports research based on a survey of UK call centres that tests SHRM's theory of practice and its theory of performance. More specifically, the first objective is to examine SRHM's theory of practice by testing the chain of hypothesized associations from the market context to human resource practices. The second objective is to examine SRHM's theory of performance, by assessing whether having the right fit between human resource practices and the strategic is the significant factor explaining differences in the performance of call centres, or whether indeed human resource practices are linked to the performance regardless of context.

2. Hypotheses and Theoretical Background

SHRM is concerned with the integration of human resource practices with the strategy of the organization (Schuler and Jackson, 1999). It tends to assume a sequential and goal-directed planning process (Wright and McMahan, 1992: 298) in which strategic decisions influence choices about the design of the human resource practices, which in turn affect employee behaviours and hence organizational productivity and performance. SHRM can therefore be conceptualized as a chain (c.f. Schuler and

Jackson, 1987; Wright and McMahan, 1992) and we have depicted it in Figure 1 as having three main links. The first link in the SHRM chain is between the market strategy and context and operational requirements. The next two links in the SHRM chain are from operational requirements, i.e., customer–worker interaction, to work design, and from work design to human resource practices. The customer–worker interaction is thus pivotal, since it both reflects the strategic and market context of the service organization and, according to Batt (2000: 542), is a 'significant factor in defining the organization of work and human resource practices in services'.

- Insert Figure 1 -

Much of the research has focused on the direct link between market strategy and human resource management or subsumed the operational requirements under the market strategy; it also includes work design under human resource practices. Our characterization of the chain differentiates between operational requirements and market strategy, as well as between work design and human resource practices. It is thus assumed that human resource practices are designed to ensure that behaviour is in keeping with the job requirements and 'consonant with the firm's chosen strategy' (Koch and McGrath, 1996: 335). In summary, in our model strategic and market requirements are translated into the definitions of the operational task, which in turn affect decisions regarding work design and human resource practices.

It is important to test all links in the chain, as we cannot assume managers respond satisfactorily to changing market and technological contexts. Even when they respond by adapting their organizational designs to their changing perceptions of operational and task requirements they may not, so Burns and Stalker (1966) and others implied, have adequately defined these perceptions. It is precisely because of this possibility that the SHRM theory of performance has some bite: it predicts that

those organizations that do respond adequately, by matching their practices to the context, will outperform others.

SHRM's theory of practice

Starting at the top of the chain, SRHM's theory of practice predicts that an organization's operational requirements will reflect the organization's strategic context. We conceptualize the market context as having two dimensions (Batt, 2002). The first is the customer segment that the call centre is targeting, and it is assumed that customers in a mass market have less complex needs than other customers, particularly business customers (Batt, 2000). The second dimension is the strategy that the call centre is adopting towards that segment, e.g., in Porter's terms (1990) whether it is competing on cost and aiming to be a price leader or adopting a high-quality or -innovation strategy. The operational requirement of a call centre is the type of customer–worker interaction that dominates the centre's work. This is viewed as having two major dimensions. The first is the extent to which it involves developing medium- or long-term relationships with customers on behalf of the organization. This can be contrasted with simply having a short, one-off encounter with a customer (Gutek, 1997). The second dimension is the degree to which the interaction involves selling.

We expect, following Batt (2000), that call centres serving customer segments with complex needs (e.g. business customers, specialist customer segments) will have an operational requirement to build a relationship with their customers in order to meet those needs and to develop the trust on which customized service provision depends. We also expect that those following business strategies other than cost-minimization, such as product differentiation and quality enhancement, will also tend

to emphasise building a strong customer relationship. We assume that any relationship between the use of such strategies and complex business needs is not so strong as to imply that the market segment and strategy correspond to each other.

In a similar vein, we assume that in mass markets, where the customer's needs are not complex, or where the call centre management is following a cost minimization strategy, selling will not be a strong feature of the operational requirements. The transaction will be largely administrative, the execution of a service, e.g., as in directory enquiries. In contrast, we assume the converse is the case: that the greater the complexity of customer needs the more likely will an element of selling be part of the operational requirements. Similarly where the market strategy is based on innovation, product differentiation or involves more than cost minimization, selling will be a part of the service provision, even if it only entails marketing the image of the business(es) that the call centre serves. This ~~is consistent~~is consistent with recent discussion in the call centre industry about the need to reorient call centres away from the simple provision of a service. In practice this implies introducing 'sales aims' into operators' jobs, which previously had been 'predominantly service jobs' (Korczynski et al, 2000: 671 see also Regini et al, 2000) In the words of the management of one of the banks studied by Korczynski et al (2000: 681), from this perspective, 'service is sales and sales is service'.

We thus test the impact of our two dimensions of the market on both dimensions of the operational requirements, and hence the following hypotheses:

Hypothesis 1: The market segment in which the call centre operates will determine its operational requirements (the type of interaction and degree of selling).

Hypothesis 2: The market strategy that the call centre adopts will determine its operational requirements (the type of interaction and degree of selling).

Continuing along the SHRM chain, work design in call centres has two dimensions, namely work discretion and performance monitoring. We hypothesize that these are strongly influenced by operational requirements. More specifically, we would expect those call centres that are involved in relationship-building to have jobs with high levels of discretion over both their tasks and how they deal with customers in order to allow the operator to attend to customer needs in a timely and appropriate manner (Hackman and Oldham, 1980; Parker and Wall, 1998). Moreover, if selling is a requirement we would expect this to mean that the operator is given some discretion, particularly in how they respond to customers. Even if scripts are used, we would expect divergences from these and reacting to customers in a spontaneous way to be permitted. We would also expect call centres that are involved in selling to have higher degrees of performance monitoring: a high degree of monitoring being needed to encourage selling and to provide a fair basis for the administration of rewards and incentives.

Hypothesis 3: The extent to which employees are involved in (a) relationship-building and (b) selling will be positively associated with work discretion.

Hypothesis 4: The extent to which employees are involved in selling will be positively associated with performance monitoring.

The first mediation in the SHRM model involves operational requirements that are hypothesized to explain the relationship between market factors and work design. We thus test the hypothesis:

Hypothesis 5: Operational requirements will mediate the relationship between market segment or strategy and work design (work discretion and performance monitoring).

To complete the SHRM chain, human resource practices will reflect the nature of work design. We expect call centres that require operators to exercise discretion to adopt human resource practices that are associated with high-involvement management such as intensive selection, flexible work descriptions, continuous training, idea-capturing schemes and pay incentives (Lawler, 1986; Osterman, 1994; Wood and Albanese, 1995). The next hypothesis we examine is thus:

Hypothesis 6: There will be a positive relationship between the degree of work discretion of operators and the adoption of high-involvement human resource practices.

It might also be expected that call centre managers that use performance monitoring more intensively see this as providing a fair basis on which rewards can be linked to performance, and thus would be more likely to use payment incentives. We test the following:

Hypothesis 7. There will be a positive relationship between the degree of performance monitoring and the adoption of payment incentives.

The second mediation within the SHRM chain involves work design mediating the relationship between operational requirements and human resource practices. The following hypothesis is tested:

Hypothesis 8: Work design (work discretion and performance monitoring) will mediate the relationship between operational requirements and the adoption of human resource practices.

SHRM's theory of performance

We have conceived the core SHRM theory of performance as a contingency hypothesis, namely that the impact of human resource practices on performance varies with the market context. This is sometimes known as the external fit thesis (Baird and Meshoulan, 1988). To test this, we examine the link between performance and human resource practices and market context. We thus test the following hypothesis:

> *Hypothesis 9: The interaction between human resource practices and the market segment or strategy will affect the level of performance.*

We have thus completed our outline of how we will test the SHRM theory of practice and of performance, as shown in Figure 1.

4. Method

Sample

The sample was drawn from members of the UK-based Call Centre Association. A survey was posted to each corporate member with instructions that a senior manager or a senior human resource manager in a call centre should complete it. Because of the confidentiality of the sampling frame we could not be given the names of non-respondents in order for us to contact them directly. The Call Centre Association did, however, send out two reminder e-mails to non-respondents. The focus of the survey was the establishment-level. Gerhart *et al.* (2000) suggest that establishment-level surveys are more reliable than corporate-level surveys, as managers are more familiar with the establishment in which they work, and human resource practices are more homogeneous. Participants who managed several call centres were asked to fill in the survey with regard to the largest call centre for which they had responsibility. Like

Batt (2000; 2002), the survey focused on core employees, defined as the largest group of non-managerial employees, which in this study were customer service and sales representatives (CSRs). To improve the validity and reliability of the questions in the survey, it was piloted on eight call centre managers, some of whom were human resource managers. Small changes in the survey instrument, mainly in the wording of questions, were made as a result.

One hundred and forty five questionnaires were returned. This represented a response rate of 20 per cent. Such a response rate, although fairly low, is not unusual for postal surveys. We have no means of assessing the representativeness of our sample as there is no data on the total population of UK call centres. But the data we have on the sampling frame allowed us to test for any biases in the industry and the size distribution of the sample. No bias was found. We also have no grounds for thinking that the respondents were biased in any other way, e.g. they were prone to opting for assumed socially desirable responses.

The sample represented 2–3 per cent of all call centres in the UK at the time of the survey, and the total number of employees covered was 17,000, about 5 per cent of UK call centre employees (Mitial Research, 2001). The sample covered all the main sectors, with the largest number of responses from financial services (20 per cent), local government (12 per cent), travel (10 per cent), retail (8 per cent), public sector (7 per cent), health (7 per cent), and telecommunications (6 per cent). The average number of CSRs in each establishment was 80. Of our call centres, 30 per cent had 100 or more core employees, though only 5 per cent had more than 500 (median core employees = 40, mean = 117, SD = 241). Sixty-two per cent of the call centres had been established within the last five years (median age = 5.0, mean = 7.8, SD = 8.1).

Fifty-one per cent of respondents were heads of call centres, 26 per cent were senior managers not in human resources or personnel, and 17 per cent were human resource or personnel managers. Though we rely on a single respondent, the single respondent was in all cases a manager within the call centre, who had time to consult files or colleagues in the event of any difficulty answering the question (and we know from some that this was done). The questions on practices and performances were largely of a factual nature, the one question requiring judgement was the measure of customer satisfaction. Moreover, we have no reason to suspect that common method bias has affected the results; if it had done so, we would have expected much stronger associations between the variables than we in fact found.

Measures

To test the hypotheses, the measures covered seven areas: market context, market strategy, the nature of the customer–worker interaction, work design, performance monitoring, human resource practices, and performance outcomes. The details are the measures are presented in Appendix A. In the absence of any independently-sourced measures, all the performance outcomes considered were self-reported. Wall *et al.*, (2004) have nonetheless shown that such data correlates highly with the assumed more "objective" audited accounting data.

Analysis Procedure

To test the hypotheses either normal linear or logistic regression analyses were employed, depending upon the form of the dependent variable. A hierarchical approach was used, with the control variables entered in the first step of all analyses, and the predictor variables measuring the effects of interest then entered in subsequent steps.

5. Results

The correlations between the main study variables are shown in Table 1, together with their means and standard deviations.

- Insert Table 1 -

Testing the SHRM theory of practice

The relationship between market segment and strategy and operational requirements

The test of Hypothesis 1 yielded no significant relationships between the market segment and either (a) relationship-building or (b) involvement in selling.

Analysis of the links between market strategy and operational requirements produced limited support for Hypothesis 2 (see Table 2). Of the 10 dimensions of market strategy measured, only two had a significant positive association with relationship-building, namely 'being adaptive and innovative' and 'providing a variety of services and products' (Wald = 5.34, $p < 0.05$ and Wald = 9.58, $p < 0.05$ respectively). In addition, product differentiation and increasing presence in international markets were both significantly linked to involvement in selling ($F = 4.51$, $p < 0.05$ and $F = 5.86$, $p < 0.05$ respectively).

- Insert Table 2 -

The relationship between operational requirements and work design

The results of our investigation of the association between operational requirements and task discretion and interaction discretion partially supported Hypothesis 3. The importance of relationship-building was positively related to interaction discretion ($F = 4.08$, $p < 0.05$) but it was not related to task discretion. Selling was not related to either type of discretion. Hypothesis 4, that involvement in selling would be positively associated with higher levels of performance monitoring was, however, supported ($F = 6.35$, $p < 0.05$).

The first mediation hypothesis (H5), that operational requirements would mediate the relationship between market context/market strategy and work design (work design and performance monitoring), was not supported. An examination of the relationship between work design and market context or market strategies showed only three significant relationships, namely, between (a) 'product differentiation' and interaction discretion ($F = 7.85$, $p < 0.05$); (b) 'being highly adaptive and innovative' and task discretion ($F = 4.76$, $p < 0.05$); and (c) 'cost reduction' and performance monitoring ($F = 4.97$, $p < 0.05$). Taken in conjunction with the results of the tests for hypotheses 2, 3, and 4, given the requirements for mediation, there is thus no support for hypothesis 5.

The relationship between work design and human resource practices

The test of Hypothesis 6, that work discretion would be positively associated with the use of human resource practices, revealed that the amount of initial training (received in the first year) and of further training (given to experienced employees) were both positively associated with both types of work discretion, when the discretion variables are considered individually. Considered together, however, the effect of task discretion subsumes that of interaction discretion in each case (statistics for task discretion; $\beta = 0.266$, $p < 0.05$ and $\beta = 0.292$, $p < 0.05$ respectively). In addition, the use of improvement teams was positively related to task discretion (Wald = 5.79, $p < 0.05$). No other practice was associated with either discretion variable (Table 3).

-Insert Table 3-

Hypothesis 7 was not supported. The use of performance monitoring was not significantly associated with the adoption of payment incentives.

Hypothesis 8 stated that work design would mediate the relationship between operational requirements and human resource practices. No mediations were found

although relationship-building was found to be related to systematic selection tests (Wald = 6.38, $p < 0.05$), and team working (Wald = 8.66, $p < 0.05$). See Table 4 for full details of this set of analyses.

-Insert Table 4-

Testing SHRM's theory of performance

Contingent performance effects

With regard to Hypothesis 9, there was no evidence that the effects of human resource practices on performance differed according to market segment or market strategy; no significant interaction effects were found for any of the potential predictor variables with either market variable. We also tested to see if market factors moderated any effect that work design might have on performance and, again, no effect was found.

There were, however, a number of direct relationships between the adoption of human resource practices and performance. Firstly, the provision of regular performance appraisal was negatively related to unauthorized absence ($F = 6.38$, $p < 0.05$). Second, the extent of initial training and internal recruitment were both positively associated with the achievement of target times ($F = 6.72$, $p < 0.05$ and $F = 6.72$, $p < 0.05$, respectively) and suggestion-making ($F = 8.39$, $p < 0.05$ and $F = 6.39$, $p < 0.05$). These two predictors of target achievement were largely independent of each other; when entered together the unique effect of initial training was still significant at the $p < 0.05$ level, and while the unique effect of internal recruitment fell just below this level of significance, its reduction was minimal. In the case of suggestion-making, the effects of both human resource practices were independent of each other and remained significant when they were included in the model of performance. See Table 5 for full details of this set of analyses.

-Insert Table 5-

6. Summary and discussion

The data from our sample of UK call centres does not fit the chain of associations that constitutes SHRM's theory of practice, according to which human resource practices are ultimately determined by the market context of the organization. The significant link at the front end of the chain, namely the relationship between the market (measured by either segment or strategy) and operational requirements, is not present in the data. An additional test to see if the market strategy moderated the effect of market segment on these requirements found this not to be the case. The lack of significant relationships at the beginning of the chain means that neither operational requirements nor work design are the mediators or key pivots in a four-part chain as they were hypothesized to be. At the other end of the chain, the link between work design and human resource practices is not strong.

Nonetheless, a number of significant relationships within the chain were discovered. First, relationship-building, an operational requirement, is related to interaction discretion, a work design measure. Second, involvement in selling, an operational requirement, is related to performance monitoring, the other work design measure. Third, task discretion is related to training.

Moreover additional tests of relationships beyond the proximal ones (available from the authors) revealed further associations: between some dimensions of market strategy and work design (i.e. between product differentiation and interaction discretion, being highly adaptive and innovative and task discretion, and cost reduction and performance monitoring), as well as between operational requirements and human resource practices (i.e. between relationship-building and both systematic selection tests and teamworking). These results reinforce the conclusion that, within

U.K. call centres, market factors are not driving an overall chain of associations, and that operational requirements or work design are not generally associated with human resource practices. Nonetheless there are a number of specific links, which suggest that operational requirements are important as they are associated with work design and this in turn is associated with a crucial element of human resource management, namely training.

From an SHRM perspective it might be argued that the lack of a relationship between the firm's market context or business strategy and its operational approach reflects a failure of management to align their human resource practices to their business strategy. But the result of our test of SHRM's theory of performance implies that there would not necessarily be any gains in performance by so doing.

An interpretation of the results that is consistent with the general principles underlying the SHRM model is that managers of call centres are primarily orientated towards fulfilling their operational requirements, which are not closely linked to given generic dimensions of strategy. Key factors, the design of jobs and training, are seemingly being fitted to the operational requirements of the call centre. Given this, it may be that the results do not mean market or strategic factors are unimportant. First, key operational requirements like fostering relationship-building may be conceived as part of the overall market strategy of the centre, much as the goals of lean production are elevated to the corporate strategic level by its proponents (Womack, *et al*, 1990). Second, the strategic intent or at least particular customer orientation of the management may be inculcated into CSRs through their work descriptions and training. In the light of these possibilities, our results may not require a complete abandonment of the strategic approach to human resource management, so much as a

rethink of the model of the strategic and design processes of organizations implied in the SHRM approach that we have tested.

We explored other possible explanations for the divergences from the proposed SHRM model. Firstly, we considered whether managers may be consciously designing jobs with discretion to thwart the potentially damaging effects of routinized and monotonous work, but this was not borne out by the data. While some call centres serving mass customer segments have relatively high-discretion jobs, overall such jobs tended to be found where operational requirements involved relationship-building.

Secondly, we examined the argument that institutional factors may constrain the actions of managers seeking to create an alignment of strategy, operational requirements and organizational practices. For example, the presence of a recognised union may constrain management's ability to introduce new practices, or if the call centre is part of a larger company, its strategy and practices may reflect company-wide policies and this explains the lack of alignment, However, we found that the direct link between strategy and human resource management practices was not weaker in unionised call centres. Nor was the association between market strategy and operational requirements stronger in single-site organizations as one might expect if alignment is less likely in organizations that are part of a wider organization. (The full results of the tests of these potential institutional differences are available from the authors.)

Just as the general SHRM theory of practice is not supported by the data, so its (external fit) theory of performance is not confirmed. The link between human resource practices and performance is not contingent on market factors. We also tested whether the organizational fit between human resource practices and

operational requirements, work design, or performance monitoring affected performance. No significant positive interaction effects were found.

Nonetheless direct relationships between human resource practices and performance were detected. First, formal appraisals was negatively associated with unauthorized absence. Second, both longer initial training and higher levels of internal recruitment were positively associated with achieving target times and suggestion making. These two relationships might simply reflect the fact that initial training enhances the capabilities of CSRs. But it could be that the socialization element is also important or even dominant, a conjecture that would be consistent with the finding that subsequent training does not have the same effect. The availability of internal recruitment would appear to spur performance and innovation.

Additional tests also revealed direct links between work design and certain performance measures (see Table 6). First, task discretion is negatively associated with labour turnover and positively associated with suggestion-making. It is also linked to customer satisfaction but the relationship is moderated by involvement in selling, so that the effect is positive where there is no selling involved and negative where there is selling. The implication is that CSRs involved in selling whose roles are programmed, for example through a heavy reliance on scripts, are more likely to satisfy customers than those given discretion, but that task discretion is associated with customer satisfaction providing the role does not involve selling. Second, performance monitoring is positively related to customer satisfaction and absence. Thus, as with the study of practices, it is the unevenness in the relationships between performance and either human resource practices or work design variables, as well as between performance indicators, that stands out in the findings. The direct effects of

work design on key performance indicators are nonetheless more pronounced than those of human resource practices.

-Insert Table 6 -

It is hard to compare our study with others, as they do not test the full SHRM chain. The most similar study to ours, and the one that most influenced our design, is Batt's study of US call centres in telecommunications (2000, 2002). She concentrated on testing a direct link between customer segment and work design or human resource practices. Moreover she relied on indirect measures of customer-worker interactions i.e., the call length and use of scripts. In contrast, we have used a sample of UK call centres in a wide range of economic sectors, including the public sector, and hence our study is not confined to telecommunications. We have also explored all the links in the SHRM chain from market context using independent measures of market segment, business strategy, operational requirements, work design and human resource practices. We also have differentiated selling as an important dimension of operational requirements and included performance monitoring practices in our study.

Batt's (2000) tests of the direct link between human resource practices and market segment revealed strong relationships for some practices and she concludes that the research broadly supports a market segmentation explanation of human resource management. Nonetheless the evidence was uneven across practices as her work design index was the only element that affected both quit rates and sales growth. Our analysis of our data showed no direct links between market segment or strategy and human resource practices, and thus the results are different from Batt's.

Batt's (2002) tests of the SHRM theory of performance revealed that market context did moderate the link between human resource practices and performance, as she found that the relationship was stronger in mass markets. The direction of the

interactions was thus precisely the opposite of the version of contingency theory that we tested, as we hypothesized that high-involvement practices will have most effect in non-mass markets. Batt argued that her results could be seen to support the resource-based theory of performance. In keeping with her earlier conclusion that high involvement practices were related to non-mass markets, she argued that call centres in mass markets will enhance their competitive advantage by adopting high-involvement management, precisely because they will be bucking the trend. The cost pressures in the mass markets are likely to make their use rare, and difficult to imitate, as the resource based theory assumes (Barney, 1991). In contrast, for call centres serving the large business market, 'high-involvement practices appear to be the price of entry' (Batt, 2002: 595) to this market, and any competitive advantage that they may have yielded has been diminishing. This argument then assumes that high-involvement practices have an effect on performance in all sectors, but their effect is limited in the large business market as their use is almost ubiquitous. Their effect will remain greater in mass markets so long as their use remains rare. In our study, though, we found market factors had no moderating effect, not that the direction of the moderation was opposite to that we hypothesized, a result that would have been consistent with Batt's resource-based theory.

Conclusions

Our results do not support the linear chain model of SHRM practice. The key mediating relationships involving operational requirements and work design were not found. Nor is the contingency theory of performance supported. The relationships between human resource practices and performance measures were not moderated by market context or strategy, nor were the links between human resource practices and performance strong. In this respect the performance results are consistent with other

studies of the human resource–performance relationship that have either found very limited support for it or uneven results across practices and/or performance criteria (e.g. Godard, 2003; Wood and de Menezes, 1998). Nor do we find evidence of institutional influences on the adoption of human resource practices or consistent with the resource-based theory of performance.

However, a number of associations have been found in this research, many of which highlight the centrality of work design in call centres, particularly relative to human resource management practices. For example, there was a significant association between relationship-building and both work discretion and team working, and task discretion is linked to training (initial and further) and improvement teams. On the performance front, we found strong links between task discretion and labour turnover, suggestion-making and customer satisfaction, between interaction control and sickness rates, and between performance monitoring and customer satisfaction.

Overall the study suggests that we should move away from an overconcentration on human resource practices as an assumed collective set and a blanket linking of them to performance. Rather we should focus more on examining the specific relationships amongst both work design characteristics and human resource practices, and between these and particular performance criteria and/or the underlying managerial orientations where the associations between practices implies these exist.

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Notes

1. We define a call centre as a work environment in which the main business is mediated by computer and telephone-based technologies that enable operators to access and input data whilst interacting with a customer and calls to be efficiently distributed to them. Call centres can be within companies dedicated to this activity or parts of organizations whose main business is not providing a call centre service for other organizations.

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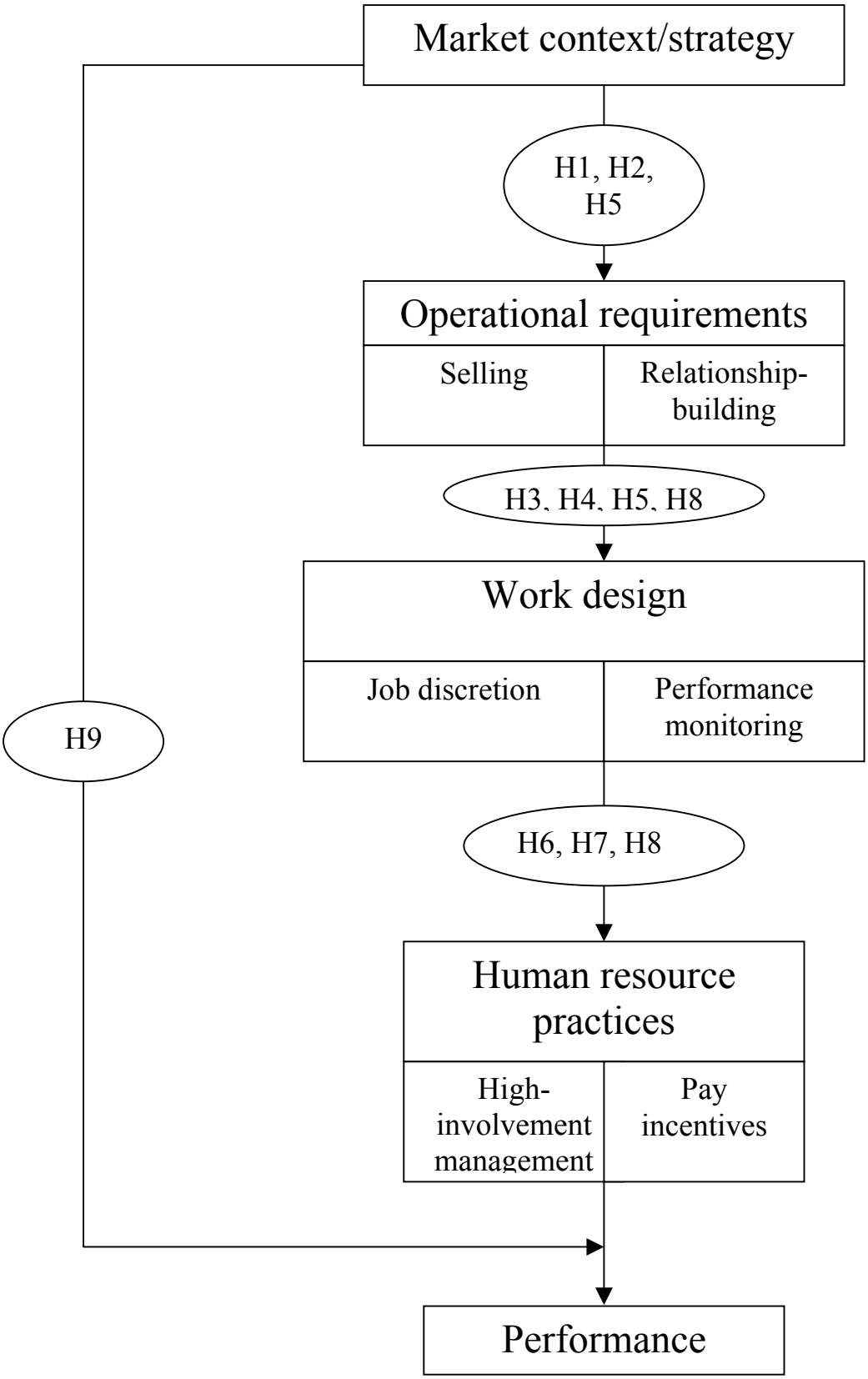
Figure 1: Strategic Human Resource Management chain and moderated relationship between human resource practices and performance



Note: H = Hypothesis

Table 1: Correlations between the principal study variables

		N	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Operational requirements																												
1	Extent of selling	129	1.82	0.94	1.00																							
2	Extent of relationship-building	139	0.57	0.50	0.25	1.00																						
Work design																												
3	Interaction control	144	3.26	0.72	0.00	0.23	1.00																					
4	Task control	144	2.40	0.69	-0.18	0.12	0.39	1.00																				
5	Performance monitoring	133	0.02	0.72	0.31	0.12	-0.18	-0.19	1.00																			
Human resource practices																												
6	Performance appraisal	143	0.88	0.32	0.00	-0.04	-0.06	0.07	0.04	1.00																		
7	Formal written plan	143	0.81	0.39	-0.02	-0.01	0.01	0.04	-0.03	0.76	1.00																	
8	Systematic selection tests	139	0.48	0.50	0.12	0.24	0.12	-0.01	0.10	0.22	0.21	1.00																
9	Ratings against job criteria	139	0.74	0.44	0.16	0.27	0.08	0.02	0.04	0.26	0.12	0.22	1.00															
10	Working in cross-functional teams	130	0.29	0.46	0.07	0.23	0.07	0.13	0.13	-0.10	-0.09	0.02	0.13	1.00														
11	Quality circles/product improvement teams	131	0.13	0.34	-0.06	-0.07	-0.03	0.13	-0.01	0.08	0.08	0.03	-0.04	0.19	1.00													
12	Flexible work descriptions	132	0.19	0.39	0.07	-0.07	-0.06	0.09	0.06	0.01	-0.10	0.00	0.04	0.14	0.15	1.00												
13	Internal Recruitment	133	0.75	0.43	-0.03	-0.15	0.06	-0.02	-0.02	0.12	-0.01	0.01	0.14	-0.05	-0.01	0.07	1.00											
14	Log days induction training	144	2.08	1.00	0.08	0.10	0.14	-0.09	0.10	0.15	0.14	0.12	0.07	0.01	-0.01	-0.19	-0.04	1.00										
15	Log days initial (1st year) training	137	2.41	0.90	0.00	0.03	0.14	0.28	0.09	0.08	0.07	0.09	-0.09	0.10	0.03	0.00	0.12	-0.16	1.00									
16	Log days further training	136	1.86	0.74	0.01	0.19	0.20	0.21	0.09	0.26	0.30	0.17	0.05	0.06	-0.01	0.03	-0.07	0.30	0.51	1.00								
Performance																												
17	Log sickness absence	137	1.76	0.60	0.03	0.00	-0.07	-0.19	0.13	-0.08	-0.02	0.09	0.02	0.01	-0.18	0.02	0.15	0.07	0.01	0.05	1.00							
18	Log unauthorized absence	129	0.49	0.69	0.30	0.05	-0.19	-0.17	0.28	-0.18	-0.13	0.05	-0.03	0.05	-0.11	0.11	0.03	0.07	0.02	-0.03	0.38	1.00						
19	Logit proportion of employees quitting	135	-3.20	2.67	0.24	-0.05	-0.16	-0.37	0.09	-0.06	0.04	0.16	0.07	-0.16	-0.17	-0.20	-0.06	0.12	-0.08	-0.07	0.29	0.18	1.00					
20	Logit proportion of employees making suggestions	131	-0.59	2.77	-0.21	0.06	0.22	0.38	0.00	0.06	0.05	-0.16	-0.12	0.09	0.08	0.07	0.22	0.00	0.26	0.13	-0.06	-0.15	-0.25	1.00				
21	Logit proportion of calls abandoned	128	-3.12	0.91	-0.26	-0.19	-0.08	-0.07	-0.19	-0.12	-0.14	-0.17	-0.10	0.04	-0.15	-0.11	-0.11	-0.10	-0.14	-0.03	0.05	0.13	0.05	-0.07	1.00			
22	Logit proportion of calls answered in time	127	1.83	1.05	0.19	0.14	0.02	0.12	0.18	0.09	0.11	0.25	0.16	0.13	0.04	0.10	0.26	-0.04	0.23	0.12	-0.05	-0.07	0.00	0.08	-0.47	1.00		
23	Customer satisfaction levels	136	0.60	0.49	0.13	0.30	0.19	0.05	0.27	0.03	0.14	0.17	0.16	0.08	0.09	-0.01	0.04	0.13	0.06	0.07	-0.02	-0.11	0.02	0.19	-0.26	0.33	1.00	

Table 2: The effect of market strategy on operational requirements

		Dependent Variables - Operational requirements)			
		Involvement in Selling		Involvement in relationship-building	
Predictors	Control variables and market strategies	ß-Coeff	R^2 change at step	Wald stat	χ^2 change at step ‡
Step 1 (Controls)	Log age of company	0.010		5.032*	
	Log number of core employees	0.280		0.584	
	Education *(dummy for O-Level and equivalent' or less)*	0.058		0.114	
	Education *(dummy variable for A-Level and equivalent')*	0.064		0.582	
	Presence in international market	-0.050	0.087	0.044	7.421 (5 df)
Step 2a	Cost reduction	0.029	0.001	2.709	2.745
Step 2b	Product differentiation	0.199*	0.074*	1.101	1.112
Step 2c	Concentration on particular customer, product or area	-0.096	0.009	0.094	0.093
Step 2d	Continuous improvement	0.008	< 0.001	0.982	0.989
Step 2e	The provision of a variety of services,	-0.016	< 0.001	5.343*	5.546*
Step 2f	Bundling of services,	-0.106	0.011	0.310	0.309
Step 2g	Being highly adaptive and innovative in the creation of new services and products	0.148	0.020	9.583*	10.230*
Step 2h	Increasing presence in international markets	0.222*	0.048*	1.601	1.706
Step 2i	Ensuring a low service response time	0.028	0.001	0.344	0.344
Step 2j	Promoting a brand name	0.240*	0.054*	1.406	1.421

B-Coefficents/Wald stats taken from model at end of step in which respective variable is entered.
Control variables entered as a block at first step of model, strategies each entered individually at second step.
* significant at $p < 0.05$ level
‡ on 1 df unless otherwise stated
$110 < N < 124$

Table 3: The effect of work discretion on the adoption of human resource practices

		Dependent Variables - Human resource practices)																					
		Performance appraisal		Formal written plan		Systematic selection tests		Ratings against job criteria		Working in cross-functional teams		Quality circles or PI teams		Flexible work description		Internal Recruitment		Induction training		Initial training		Further training	
Predictors	Control variables and work discretion	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	ß-coeff	R^2 chnge	ß-coeff	R^2 chnge	ß-coeff	R^2 chnge
Step 1 (Controls)	Log age of company	0.181		0.075		7.515*		3.613		0.344		0.563		1.158		1.504		-0.063		0.005		-0.090	
	Log number of core employees	0.235		0.188		0.195		4.626*		2.993		0.184		0.147		1.507		.0165		-0.045		0.049	
	Education *(dummy for O-Level and equivalent or less)*	0.234		1.443		1.931		0.080		1.282		0.343		1.487		0.127		-0.118		-0.053		-0.210	
	Education *(dummy var for A-Level and equivalent)*	0.001		0.832		0.173		1.321		3.833		0.645		0.027		1.435		-0.050		0.029		-0.043	
	Presence in international market	0.412	7.328 (5 df)	0.001	6.291 (5 df)	0.153	10.975 (5 df)	0.147	10.564 (5 df)	0.010	9.369 (5 df)	3.919*	4.986 (5 df)	0.940	4.987 (5 df)	0.492	7.506 (5 df)	0.017	0.036	0.090	0.016	0.092	0.052
Step 2	Task discretion	2.115		1.549		1.635		1.601		0.804		5.785*		1.814		0.007		-0.031		0.266*		0.292*	
	Interaction discretion	2.206	3.159 (2 df)	1.250	2.003 (2 df)	0.468	3.458 (2 df)	0.071	2.435 (2 df)	0.111	1.518 (2 df)	3.185	7.416* (2 df)	1.263	2.255 (2 df)	0.532	0.786 (2 df)	0.170	0.024	0.059	0.066*	0.050	0.075*

B-Coeffs/Wald stats taken from model at end of step in which respective variable is entered.
Control variables entered as a block at first step of model, work discretion variables entered together at second step.
* significant at $p < 0.05$ level
‡ on 1 df unless otherwise stated
$116 < N < 127$

Table 4: The effect of operational requirements on the adoption of human resource practices

		Dependent Variables - Human resource practices																					
		Performance appraisal		Formal written plan		Systematic selection tests		Ratings against job criteria		Working in cross-funct'l teams		Quality circles or PI teams		Flexible work description		Internal Recruitment		Induction training		Initial training		Further training	
Predictors	Control variables and operational requirements	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	Wald stat	χ^2 chge ‡	ß-coeff	R^2 chnge	ß-coeff	R^2 chnge	ß-coeff	R^2 chnge
Step 1	Log age of company	0.049		0.001		8.230*		3.620		0.094		0.168		0.328		1.660		-0.009		-0.047		-0.097	
(Controls)	Log number of core employees	0.090		0.163		0.300		3.441		1.881		0.618		0.143		0.465		0.145		-0.059		0.061	
	Education *(dummy for O-Level and equivalent or less)*	0.897		3.177		0.147		0.186		1.940		0.114		0.818		0.125		-0.160		0.104		-0.146	
	Education *(dummy var for A-Level and equivalent)*	0.001		1.659		0.001		0.905		0.001		0.001		0.001		0.850		-0.085		0.173		0.018	
	Presence in international market	0.001	7.783 (5 df)	0.001	8.281 (5 df)	0.199	10.063 (5 df)	0.180	9.223 (5 df)	0.047	12.16* (5 df)	4.183*	4.863 (5 df)	0.894	3.008 (5 df)	0.416	5.278 (5 df)	0.023	0.032	0.110	0.031	0.108	0.049
Step 2a	Involvement in selling	0.078	0.077	0.644	0.634	1.047	1.051	1.999	2.151	2.741	2.785	0.058	0.059	1.401	1.417	0.623	0.616	0.071	0.005	0.036	0.001	0.009	0.001
Step 2b	Involvement in relationship-building	0.278	0.274	0.208	0.206	6.377*	6.664*	3.663	3.727	8.633*	9.735*	0.011	0.011	0.011	0.011	3.661	3.919	0.045	0.002	0.086	0.007	0.150	0.021

B-Coeffs/Wald stats taken from model at end of step in which respective variable is entered.
Control variables entered as a block at first step of model, operational requirements variables each entered individually at second step.
* significant at $p < 0.05$ level
‡ on 1 df unless otherwise stated
$105 < N < 123$

Table 5: The effect of human resource practices on performance

		Dependent Variables - Performance measures													
		Log sickness absence		Log unauthorized absence		Logit proportion of employees quitting		Logit proportion of employees making suggestions		Logit proportion of calls abandoned		Logit proportion of calls answered in time		Customer satisfaction levels	
Predictors	Control variables and Human resource practices	ß-coeff	R^2 change	ß-coeff	R^2 change	ß-coeff	R^2 change	ß-coeff	R^2 change	ß-coeff	R^2 change	ß-coeff	R^2 change	Wald stat	χ^2 change ‡
Step 1	Log age of company	0.068		0.236*		0.125		0.081		-0.093		0.105		1.980	
(Controls)	Log number of core employees	0.311*		0.261*		0.359*		-0.509*		0.016		-0.075		0.173	
	Education *(dummy for O-Level and equivalent or less)*	-0.005		-0.003		-0.147		-0.006		-0.088		-0.095		0.294	
	Education *(dummy var for A-Level and equivalent)*	-0.130		-0.039		-0.212		0.100		-0.064		-0.102		2.751	
	Presence in international market	-0.108	0.123*	-0.022	0.139	0.044	0.179*	0.064	0.254*	-0.078	0.022	0.061	0.028	0.157	10.605 (5 df)
Step 2a	Performance appraisal	-0.080	0.006	-0.176	0.030*	-0.060	0.004	0.064	0.004	-0.094	0.008	0.097	0.009	0.001	0.001
Step 2b	Formal written plan	-0.049	0.002	-0.149	0.021	-0.068	0.004	0.109	0.011	-0.109	0.011	0.115	0.013	2.664	2.705
Step 2c	Systematic selection tests	0.013	< 0.001	-0.063	0.004	0.043	0.002	-0.012	< 0.001	-0.174	0.028	0.242	0.024	2.631	2.669
Step 2d	Ratings against job criteria	-0.012	< 0.001	-0.075	0.005	0.030	0.001	-0.079	0.006	-0.082	0.006	0.150	0.021	2.699	2.071
Step 2e	Working in cross-functional teams	0.057	0.003	0.110	0.011	-0.084	0.007	0.059	0.003	0.002	< 0.001	0.159	0.023	2.012	2.066
Step 2f	Quality circles or PI teams	-0.223	0.047*	-0.153	0.022	-0.175	0.029	0.075	0.007	-0.175	0.029	0.104	0.010	.675	0.704
Step 2g	Flexible work description	0.055	0.003	0.147	0.020	-0.148	0.021	0.011	< 0.001	-0.115	0.013	0.116	0.013	.108	0.109
Step 2h	Internal Recruitment	0.127	0.018	-0.032	0.001	-0.102	0.010	0.209	0.042*	-0.071	0.005	0.216	0.044*	.004	0.004
Step 2i	Induction training	0.005	< 0.001	0.046	0.002	0.057	0.003	0.042	0.002	-0.111	0.012	-0.038	0.001	1.831	1.849
Step 2j	Initial training	0.019	< 0.001	0.047	0.002	-0.038	0.001	0.237	0.056*	-0.146	0.018	0.234	0.059*	.236	0.237
Step 2k	Further training	0.030	0.001	-0.019	< 0.001	-0.146	0.020	0.125	0.015	-0.034	0.001	0.120	0.014	0.001	0.001

B-Coeffs/Wald stats taken from model at end of step in which respective variable is entered.
Control variables entered as a block at first step of model, Human resource practice variables each entered individually at second step.
* significant at $p < 0.05$ level
‡ on 1 df unless otherwise stated
$105 < N < 124$

Table 6: The effect of work design on performance

		Dependent Variables- Performance measures													
		Log sickness absence		Log unauthorized absence		Logit proportion of employees quitting		Logit proportion of employees making suggestions		Logit proportion of calls abandoned		Logit proportion of calls answered in time		Customer satisfaction levels	
Predictors	Control variables and Human resource practices	ß-coeff	R^2 change	ß-coeff	R^2 change	ß-coeff	R^2 change	ß-coeff	R^2 change	ß-coeff	R^2 change	ß-coeff	R^2 change	Wald stat	χ^2 change ‡
Step 1 (Controls)	Log age of company	0.065		0.234*		0.122		0.081		-0.100		0.108		1.919	
	Log number of core employees	0.310*		0.257*		0.362*		-0.512*		0.028		-0.071		0.194	
	Education *(dummy for O-Level and equivalent or less)*	-0.024		-0.001		-0.166		0.008		-0.143		-0.091		0.342	
	Education *(dummy var for A-Level and equivalent)*	-0.140		-0.035		-0.225*		0.112		-0.106		-0.104		2.754	
	Presence in international market	-0.105	0.121*	-0.020	0.136*	0.044	0.181*	0.067	0.257*	-0.082	0.032	0.055	0.027	0.186	10.817 (5 df)
Step 2a	Task discretion	0.006		0.030		-0.231*		0.204*		-0.059		0.180		0.006	
	Interaction discretion	-0.045	0.002	-0.142	0.017	-0.114	0.072*	0.126	0.065*	-0.054	0.008	-0.061	0.019	3.481	4.283 (2 df)
Step 2b	Performance monitoring	0.040	0.001	0.235*	0.051*	0.050	0.002	0.088	0.007	-0.181	0.031	0.168	0.027	9.813*	11.943*

B-Coeffs/Wald stats taken from model at end of step in which respective variable is entered.
Control variables entered as a block at first step of model, work discretion variables entered together/performance monitoring entered individually at second step
* significant at $p < 0.05$ level
‡ on 1 df unless otherwise stated
$115 < N < 137$

Appendix A: Variables used in study of SHRM theories of practices and performance

Market Factors

Market Context: Customers were classified as: mass customer only, i.e. the general public; organizations only, i.e. business firms, government or voluntary organizations; mass customers and organizations.

Market Strategy: Ten single item measures of specific strategies, namely (a) cost reduction; (b) product differentiation; (c) concentration on a particular customer, product or area; (d) continuous improvement; (e) provision of a variety of services; (f) bundling of services; (g) being highly adaptive and innovative in the creation of new services and products; (h) increasing presence in international markets; (i) ensuring a low service response time; (j) promoting a brand name. A five-point scale was used ('not at all important' to 'very important'). A single dichotomous variable was created for each variable, taking a value of 1 if the dimension was rated as fairly or very important, and 0 if not.

Operational Requirements: Customer–worker interaction

Involvement in relationship-building: Measured dichotomously (1 = 'quite a lot' or more; 0 = 'a moderate amount' or less), based on an single item asking respondents to rate, on a five-point scale from 'not at all' to 'a great deal', the extent to which a 'typical interaction between the customer and employees' could be characterized as relationship-building.

Involvement in selling: Mean score of two items measuring the extent to which customer–worker interaction could be characterized as (a) a 'soft sell' and (b) a 'hard sell' on a five-point scale from 'not at all' to 'a great deal'.

Work design

Task Discretion: Mean score of six items asking respondents to assess the extent to which core employees typically have discretion over various work tasks. A five-point scale was used (not at all' to 'a great deal'), $\alpha = 0.71$).

Interaction Discretion

Mean score of four items asking the extent to which core employees typically have discretion over interaction with customers. A five-point scale was used (not at all' to 'a great deal'), $\alpha = 0.70$).

Performance monitoring: Mean of four items concerning the extent to which CSRs had their calls monitored, the frequency of feedback, and the purposes of monitoring (i.e., inform disciplinary decisions, improving CSR performance). A five-point scale was used, $\alpha = 0.70$)

Human resource practices

Performance appraisal: Two items: a) the percentage of CSRs 'regularly assessed by a formal performance appraisal'; b) the percentage of CSRs who have 'a formal written performance plan with defined objectives'. Both were converted into dichotomous variables.

Systematic selection: Two items were used: the percentage of employees who had been selected using systematic selection tests (i.e., psychometric tests); the percentage who had been selected against clearly defined job criteria. Both were converted into dichotomous variables.

Internal recruitment: Percentage of team leaders promoted from within, converted to a dichotomous measure.

Flexible work descriptions: Proportion of employees with flexible work descriptions not linked to specific tasks, converted to a dichotomous variable.

Teamworking: Percentage of employees who routinely performed job as part of a cross-functional or project team, converted to a dichotomous variable.

Improvement teams: The percentage of CSR's currently involved in process/product improvement teams, converted to a dichotomous variable.

Training: Three distinct items about the number of days' formal training CSRs receive, a) prior to starting work (induction); b) in the first year of employment (initial training), and; c) per year after they have been employed for more than one year (further training). All three were log-transformed.

Incentives: Two items concerning the percentage of annual pay a CSR derived from individual and from group-based commission.

Performance: Human resource outcomes

Sickness Rate: Average number of days taken as sick leave per CSR, log transformed.

Unauthorized absence: Average numbers of days taken per CSR, log transformed.

Quit rates: The logit of the proportion of CSRs leaving in the previous year (excluding promotions, internal transfers, dismissals and retirements).

Suggestion-making: The logit of the proportion of CSRs making suggestions in the last year.

Performance: Operational outcomes

Meeting target time: The logit-transformed proportion of calls answered within the set target time.

Abandonment rate: The logit-transformed proportion of calls abandoned by the customer before the phone is answered.

Performance: Market outcome
Customer satisfaction: Recorded level of customer satisfaction at their call centre based on the best information available. A seven-point response scale, from 'extremely dissatisfied' to 'extremely satisfied' was used, but transformed into a dichotomous measure where customer satisfaction equalled 1 if it was rated either 'very' or 'extremely satisfied', and 0 for all other responses.

Controls
Age of the call centre
Age in years, log-transformed

Number of employees
Number of core employees, log-transformed

Call centre served an international market
A dichotomous measure, where 1 indicates that over ten per cent of the call centre's market is international.

Education level of the typical core employee
A three-group categorical variable, with employees grouped as 1 = 'O-Level, GCSE, NVQ or less', 2 = 'A-Level, BTec, ONC, SVQ' and 3 = 'Degree, diploma, HNC'.

Notes

1. In the case of both the market strategy items and human resource practices there was little or no pattern of association between the variables and thus no composite variable could be constructed.
2. Single dichotomous variables were constructed for the market strategy items and involvement in relationship-building to both simplify interpretation and reduce the degrees of freedom used by the variables in the analysis, having checked that no significant effects were being disguised by this merging of categories.

3. Task and interaction discretion were found, through factor analysis of the responses to the total set of discretion questions, to be discrete factors.
4. The human resource practice measures that were based on the percentage of CSRs affected by them (performance appraisal, systematic selection, internal recruitment, flexible work descriptions, teamworking and improvement teams) were dichotomized ('< 50%' vs '50%+') because their distributions were dramatically bimodal.
5. The measures of training, sickness absence, unauthorized absence, age of the call centres and number of employees were log-transformed as their distributions were highly positively skewed.
6. The outcome measures collected in the form of a proportion p (e.g. quit rates, suggestion-making, meeting target time, abandonment rate) were logit (i.e. $log(p/1-p)$) transformed; the distributions of their raw forms were logically bounded by 0 and 1 hence their use as dependent variables in normal linear regression would most likely have lead to 'impossible' predicted values.
7. Customer satisfaction was dichotomized as there were very small numbers of responses in all of the bottom four categories and the top 'extremely satisfied' category of this seven-point response scale.