HRM strength, situation strength and improvisation behavior

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Abstract

Purpose – The purpose of this paper is to explore the connections between human resource (HR), situation strength and improvisation behavior. A high degree of "fit" among HR practices and between such practices and organizational strategy, is said to have an impact on organizational outcomes. How these fits are achieved is not fully understood in the literature. It has been proposed that horizontal fit is achieved when messages regarding HR matters are communicated to employees in a distinct, consensual, and consistent way. This will create a strong situation, which in turn will affect outcomes such as improvisation behavior. Situation strength is captured by the concepts of climate strength, and culture strength.

Design/methodology/approach – The research was conducted at a call center of a company belonging to a Portuguese Telecommunications Group. In total, 91 questionnaires were collected. Scales in the questionnaire are based on existing indicators, but a new measure of HR strength (HRS) was also used. The data were analyzed with structural equation modeling.

Findings – Results show that HRS has a direct effect on improvisation behavior. Furthermore, culture is a mediator between HRS and climate. There was also a strong indication that culture may be a mediator between HRS and improvisation behavior.

Research limitations/implications – Limitations concern the sample size and the fact that research was conducted in a call center. Implications for research include the need to introduce leadership into this type of studies, as well as model and scales validation.

Originality/value – The current research advances knowledge in the area in three ways. First, it presents a new instrument to measure HRS. Second, it introduces improvisation as an outcome of HR. And third, it tests a full model that links HR to social common structures (climate and culture) and performance outcomes (improvisation behavior in this work).

Keywords Human resource management, Portugal, Call centres, HR strength, Improvisation, Climate strength, Culture strength, Strategic HRM

Paper type Research paper

Resumen

El Propósito – El propósito de este estudio es explorar las conexiones entre recursos humanos, la fuerza de la situación y el comportamiento de la improvisación. Un alto nivel de "ajuste" entre las prácticas de recursos humanos, y entre esas prácticas y las estrategias de organización, se dice que tiene un impacto en los resultados de la organización. Cómo se consiguen estos ajustes no es comprendido en la literatura. Se ha propuesto que el ajuste horizontal se logra cuando los mensajes en

materia de los recursos humanos se comunican a los empleados de una manera distinta, consensuada y coherente. Esto creará una situación fuerte, que a la vez influirá en los resultados tales como el comportamiento de la improvisación. La fuerza de la situación es capturado por los conceptos de la fuerza del clima, y la fuerza de la cultura.

La Metodología – La investigación se llevó a cabo en una atención al cliente de una empresa que pertenece a un grupo de telecomunicaciones portugués. En total, 91 cuestionarios fueron recogidos. Escalas en el cuestionario se basan en los indicadores existentes, también, se utilizó una nueva medida de fuerza de recursos humanos. Los datos fueron analizados con el modelo de ecuaciones estructurales.

Los Resultados – Los resultados muestran que la fuerza de recursos humanos tiene un efecto directo sobre el comportamiento de improvisación. Por otra parte, la cultura es un mediador entre la fuerza de recursos humanos y el clima. También hubo un fuerte indicio de que la cultura puede ser un mediador entre la fuerza de recursos humanos y el comportamiento de improvisación.

Las Limitaciones/Implicaciones de la investigación – Las limitaciones se prenden con el tamaño de la muestra y el hecho de que la investigación se llevó a cabo en una atención al cliente. Implicaciones para la investigación incluyen la necesidad de introducir el liderazgo en este tipo de estudios, así como la validación del modelo y de las escalas.

La Originalidad/El valor – La investigación actual desarrolla el conocimiento en el área de tres maneras. En primer lugar, presenta un nuevo instrumento para medir la fuerza de recursos humanos. En segundo lugar, introduce la improvisación como un resultado de los recursos humanos. Y en tercer lugar, pone a prueba un modelo completo que relaciona los recursos humanos con las estructuras sociales comunes (clima y la cultura) y los resultados de rendimiento (el comportamiento de la improvisación en este trabajo).

Palabras clave La gestión de los recursos humanos, Fuerza de los recursos humanos, La improvisación, La fuerza de clima, Fuerza de la cultura, Recursos humanos, Portugal, Atención al cliente, Estratégica de los recursos humanos

Tipo de artículo Artículo de investigación

Resumo

Propósto/Objectivo – O objetivo deste artigo é explorar as ligações entre RH, a força da situação e comportamento de improvisação. Considera-se que um elevado grau de "ajustamento" entre as práticas de RH e entre essas práticas e a estratégia organizacional, tem um impacto nos resultados organizacionais. A forma como esses ajustamentos são alcançados não é, porém, totalmente compreendida na literatura. Foi proposto que o ajustamento horizontal é alcançado quando as mensagens sobre as questões de RH são comunicadas aos empregados de uma forma distintiva, consensual e consistente. Isso criará uma situação forte, que por sua vez, afeta os resultados, tais como o comportamento de improvisação. A força da situação é capturada pelos conceitos de força do clima, e força da cultura.

Metodologia – O estudo foi conduzido num call center de uma empresa pertencente a um Grupo Português de Telecomunicações. No total, 91 questionários foram recolhidos. As escalas do questionário são baseadas em indicadores já existentes, mas uma nova medida de força de RH foi também utilizada. Os dados foram analisados com modelos de equações estruturais.

Resultados – Os resultados mostram que a força da gestão de RH tem um efeito directo sobre o comportamento de improvisação. Além disso, a cultura é um mediador entre Força de RH e clima. Houve também um forte indício de que a cultura pode ser um mediador entre Força de RH e comportamento de improvisação.

Limitações/Implicações da investigação – As limitações dizem respeito à dimensão da amostra e ao facto de que a pesquisa ter sido realizada num call center. Implicações para a investigação incluem a necessidade de introduzir a liderança neste tipo de estudos, bem como a validação de escalas e do modelo.

Originalidade/Valor – Este estudo desenvolve o conhecimento na área de três maneiras. Em primeiro lugar, apresenta um novo instrumento para medir a força de RH. Em segundo lugar, introduz a improvisação como um resultado de RH. E em terceiro lugar, testa um modelo completo que

1. Introduction

Human resource management (HRM) has gone through a major change over the past decades. Driven by a large number of major internal and external environment forces, HRM has expanded its activities from functional and administrative tasks, such as selection and compensation, to become a strategic partner in the organization, aligning its functions and activities with the strategic goals of the organization (Ferris *et al.*, 1999; Becker and Gerhart, 1996).

Being a strategic partner means that the HR function is (should be) capable of causing a positive impact on organization's performance. This stream of thought is known as the HR strategic perspective, and has been very productive in the last three decades. How the HR function affects organization performance has been, however, a difficult subject to tackle. Delery and Doty (1996) offer one of the first contributions to this problem, by summarizing the main theories fuelling the HR strategic perspective. In a similar and more recent exercise, Martín-Alcázar *et al.* (2005) expand Delery and Doty's summary, further assessing the various and multiple ways in which the HR function can impact performance.

And yet, despite the differences in specific content, these theories share the idea that the HR function should be organized in particular ways in order to deliver results. The discussion focuses on how to organize the HR function. The current research departs from this view. It follows a recent and distinct perspective, initially proposed by Bowen and Ostroff (2004): the way the HR function communicates with employees influences how they perceive various organizational issues, which in its turn influence results. Therefore, this perspective is based on the assumption that the HR function influences performance through employees' perceptions and interpretations of their organization (Galang and Ferris, 2003). These communicational properties of the HR function were labeled HR strength (HRS) by Bowen and Ostroff (2004).

The central goal of the current paper is to investigate the impact of HRS on employee's improvisation behavior through situation strength (another central concept in Bowen and Ostroff's model). Improvisation behavior was chosen as the dependent variable because it may have a significant impact on employees' final outcomes in modern organizations.

2. A process view of HRM

2.1 HRS: the antecedent variable

As a strategic partner, HRM is expected to exert impact in two ways: on the one hand, HR practices shape the skills, attitudes and behaviors of an organization's workforce, which in turn influence performance; on the other hand, HR practices can have a direct impact on performance by creating structural and operational efficiencies (Ostroff and Bowen, 2000), helping organizations to implement a strategy that is consistent with their goals (Ulrich, 1997).

In a strategic HR approach, it is assumed that a high degree of "fit" between internal consistency among HRM practices (internal fit), and between such practices and organizational strategy (external fit), has an impact on individual and organizational outcomes (Becker and Gerhart, 1996; Ferris *et al.*, 1999; Becker and Huselid, 1998, 2006). Performance is promoted when there is an alignment between HRM and organizational strategy (Michie and Sheehan, 2005; Miles and Snow, 1984).

In view of this, Becker and Gerhart (1996) and Ferris *et al.* (1999) appealed to scholars and managers to devote time and effort to understanding the connections between HRM, strategy and performance.

Following this plea, Bowen and Ostroff's (2004) developed a framework to understand how HR practices contribute to performance by motivating employees to adopt desired attitudes and behaviors that, as a whole, help achieve the organization's strategic goals. With this aim, they put forward the concept of HR system strength (HRS). HRS refers to the way messages regarding HRM content are communicated to employees. It is focused on how the HR function communicates with employees, not with what it communicates. Sanders *et al.* (2007) called this a process view of HRM, since it emphasizes the communication attributes of the HR function.

Bowen and Ostroff's (2004) proposal is based on the idea that messages sent by the HR function should be consensual and unambiguous. This results in a shared construction of the meaning of the situation because employees must have adequate and unambiguous information in order to make accurate attributions about a situation.

A more obscure matter in their model is the content communicated by the HR function. However, in a strategic HR perspective, one can hypothesize that this content refers to the strategic focus of the organization. Therefore, if the communication properties of the HR function are to affect individuals' perceptions, it needs to refer to how the organization wants to pursue its objectives, i.e. to its strategy.

With regards to the HR process attributes, Bowen and Ostroff (2004) suggest that HRS is captured by three dimensions:

(1) distinctiveness (ability to capture attention and arouse interest);

(2) consistency (degree to which the HR message is encoded and interpreted uniformly among employees); and

(3) consensus (degree of agreement among employees as to the event-effect relationship).

Furthermore, they propose nine meta-attributes that characterize and define HRS. Each attribute is related to one of the three dimensions:

(1) Distinctiveness:
- visibility (degree to which HR is salient and observable);
- understandability (degree of ambiguity and of comprehension of HR practice content);
- legitimacy of authority (degree to which the HR function is perceived in terms of status, credibility and activity); and
- relevance (degree to which employees perceive the situation as relevant to an important goal).

(2) Consistency:

- instrumentality (degree to which employees perceive a cause-effect relationship);
- validity (degree to which message recipients perceive the message as valid); and
- consistent HR messages (degree of compatibility and stability in the signals associated with the HR practices);

(3) Consensus:

- agreement among principal HR decision makers (degree of agreement among HR message senders); and
- fairness (degree to which employees perceive justice in the HR practices).

The authors argued that in the presence of these characteristics, HR promotes shared perceptions and therefore a strong situation will be created.

2.2 Situation strength: the mediator variable
The concept of situation strength was introduced by Mischel (1973). He argued that in a strong situation individuals share a common interpretation of what is important and what behaviors are expected and rewarded. In contrast, in a weak situation, individuals do not perceive events in the same way, and expectations about appropriate behavior are inconsistent or even nonexistent. In these cases, in an ambiguous environment, individual differences will prevail, and therefore they will determine final behaviors. Following Mischel's reasoning, Bowen and Ostroff (2004) propose that strong HR systems are those in which the HR function is capable of creating a social structure with little ambiguity concerning what the organization is like in terms of routines, organizational goals and in terms of the exchange between employee and employer; in contrast, weak HR systems are characterized by leading to ambiguous, ill-structured, and disparate perspectives over organizational issues.

The idea captured by the "strength" concept is not new, however. In the organizational literature, Schneider *et al.* (2002) write about climate strength, whereas Schein (1981) had already proposed the notion of culture strength. Both address a common phenomenon: the creation and influence of social contexts in organizations (Denison, 1996). Perceptions of climate and culture lead people to perceive events in similar ways: perceptions of what the organization is like, in terms of its policies, routines, practices, procedures and goals; and perceptions about what behaviors are expected and rewarded in the organization, in order to achieve its strategy (Schneider, 1990; Schneider *et al.*, 2002; Schein, 1981, 1990, 1996).

The more HRM practices send strong signals about what strategic goals are important and what employee behaviors are expected and rewarded, the more likely it is that they will be achieved (Bowen and Ostroff, 2004). As a result, one can hypothesize that HR systems influence employees' attitudes and behaviors, as well as outcomes through employees' interpretation of work climate (Ferris *et al.*, 1999) and work culture (Schein, 1996). These two ideas are fully developed into research hypotheses in the next section.

2.3 Performance (improvisational behavior): the outcome
One central tenet of Bowen and Ostroff's (2004) model is the link between the HR function and performance. They follow many other previous authors' quest for explaining how HRM influences performance. How performance should be measured is, however, a problem not addressed by the authors.

Becker and Gerhart (1996) suggest that performance can be measured at different levels of analysis, and that the appropriate metrics should be meaningful for a particular context. In an effort to clarify this difficult issue, some authors have tried to synthesize performance metrics (Garbi, 2002), whereas others have proposed that the HR function influences multiple performance measures (Becker *et al.*, 2001). Other authors have taken further steps in this respect, by suggesting that different HR practices affect different performance variables through distinct mechanisms. For example, Evans and Davis (2005), in a similar set of propositions to Bowen and Ostroff (2004), theorize that particular high-performance work systems affect financial or sustainable performance through different social structures.

The thought of Evans and Davis (2005) is particularly interesting, since it tries to tackle the specific links between the HR function and organizational performance. The generic literature on organizational performance had already recognized the complexity of the concept (Kaplan and Norton, 1992), which is due to the simple fact that firms are faced with multiple competitive pressures to which they must respond.

These pressures change rapidly, thus requiring constant adaptation if a firm is to remain viable (Ferris *et al.*, 1999). In this line, many researchers have pointed out the dysfunctional character of external fit (between HR practices and strategy). A consensual path to facilitate that kind of fit is through flexibility (Michie and Sheehan, 2005; Becker and Huselid, 1998; Wright and Snell, 1998; Becker and Gerhart, 1996). In that way, both fit and flexibility are necessary for organizational effectiveness.

In view of that, Becker and Gerhart (1996) and Ferris *et al.* (1999) invited authors in strategic HRM to examine HR practices, systems and context features, such as structure, strategy or culture, which promote flexibility and provide the organization with the capabilities to adapt to changing environmental demands swiftly and easily.

On this point, our contention is that organizations should be able to promote improvisation both as a business strategy and as an employee output. Improvisation has been seen as a new paradigm for strategic choice (Eisenhardt, 1997), an important construct for a firm's strategic performance (Moorman and Miner, 1998), a strategy of emergent learning (Mintzberg, 1994), and a key part of organizational learning and strategic renewal (Crossan and Sorrenti, 1997). In very competitive, high-velocity markets, and in the face of enormous uncertainty, descriptive strategies have a risk of failure. Moreover, when the environment in which an organization operates, experiences a great deal of change, the strategy implementation can be "made up as firms go along" (Weick, 1993, p. 2), finding an improvisational competency to prosper (Brown and Eisenhardt, 1995; Eisenhardt and Tabrizi, 1995).

The theorization on improvisation has progressed with the help of the jazz metaphor (Crossan, 1998; Cunha *et al.*, 1999; Miner *et al.*, 2001). Jazz musicians create the music as they go along, without the benefit of prior elaborate planning. According to Hatch (1999), structure in jazz supports, but does not specify. Some works by Cunha *et al.* (1999, 2006) and by Crossan and colleagues (Crossan, 1998; Crossan *et al.*, 2005; Vera and Crossan, 2005) have focused on improvisation behavior rather than

improvisation strategy. They have defined improvisation as a process that is simultaneously extemporaneous and creative; it is a common response when individuals and groups find themselves in situations in which they need to act, but lack the time to plan and understand the environment.

In improvisation environments, minimal structures are a key feature (Eisenberg, 1990). Minimal structures are small structures that lead to large outcomes and effective action, or as defended by Kamoche and Cunha (2001), they are structures in which there is a merging between composition and performance. Another similar concept is semi-structure (Brown and Eisenhardt, 1997), which combines limited structure with freedom to improvise, or as Hatch (1999) defended, the existence of empty spaces in the structure that consent to use structure in creative ways.

Meanwhile, as Eisenhardt (1997) noted, true improvisation behavior needs two crucial characteristics. First, intense communication among the musicians in real time, which means constantly paying attention to whatever the musicians who are playing at the time are doing. Second, improvisation involves performers relying on a few, very specific rules, meaning that there are not many rules, but the rules that do exist are religiously followed. Without such structure, the author defends that there are too many degrees of freedom. Yet, at the same time, there is not so much structure as to restrict the adaptability and innovativeness of the performance. Eisenberg (1990) has also observed that improvisational freedom is only possible against a simple and well-defined backdrop of rules and roles.

2.4 Research hypotheses

We believe that the above two characteristics (Eisenhardt, 1997) are possible to undertake via HRS. On the one hand, HRS is based on a communication process, by which messages are sent to employees in a consistent and coherent way. On the other hand, this communication process will create a strong situation when employees share a common interpretation of what is important and what behaviors are expected and rewarded. These characteristics allow the existence of minimal structures (Eisenberg, 1990), and of empty spaces in the structures (Hatch, 1999) without people lose the shared meaning of what is important in the organization's life, or what behaviors are expected and rewarded. Thus, by inviting employees to act, think, experiment, learn, imagine, create and reinvent the structures, the ambiguity present in the empty spaces is the source for flexibility and organizational capabilities to adapt easily to changing environmental demands (Eisenberg, 1984; Eisenhardt and Tabrizi, 1995). The HR function is in a central position to influence employee's perceptions and interpretations (Galang and Ferris, 2003).

In sum, in strong HR systems, communication about the HR practices' content is likely to be transparent and unambiguous, and consequently employees are able to interpret messages in a uniform and similar way. It is expected that the HR function is able to transmit the urgency of adopting improvisational behaviours, i.e. behaviours which are flexible, innovative and of continuous learning and adaptability. Hence we propose:

H1. HRS has a direct effect on improvisational behavior.

A jazz performance is conceptualized largely in terms of behavioral norms and communication codes (Bastien and Hostager, 1988) and around the basic guideline that helps to determine a standard performance (Kamoche and Cunha, 2001).

Another important factor in a jazz performance is a high degree of commitment among musicians as members of a highly autonomous, independent and mutually enriching unit. Like jazz, in an organization, the strength of the relationships established and the mutual commitment arising from sharing a strong climate and organizational goals are essential in achieving a good performance (Kamoche and Cunha, 2001).

For improvisation, attitude is also necessary, in particular risk taking and a predilection to experiment. As defended by Barrett (1998), improvisation involves exploring, continual experimentation, thinking about possibilities without knowing where one's queries will lead or how action will unfold. But for this to happen, it is essential that the organization, through culture, promotes and rewards this kind of behavior, because the experimental nature of improvisation implies a high potential for error and misjudgment (Kamoche and Cunha, 2001).

Following this, many authors of improvisation theory have noted the importance of having a supportive culture of improvisation, or an experimental culture, in order to facilitate continuous learning, encourage "rule-breaking" (Brown and Eisenhardt, 1997) and develop risk-taking attitudes.

Ostroff and Bowen (2000) defend that a flexible and adaptive workforce that can respond quickly to changing technologies, customer demands, or other organizational needs, can be enhanced by some HR practices, such as formal and informal training and development, use of teams, skill based and job enrichment, which encourage employees to possess a broader range of skills, opinions and ideas. Such practices can make organizational structures more efficient through flexibility and adaptability. In view of this, the HR function can exert an indirect effect on employee's behaviors and individual performance, through climate and culture. As a result, the following two hypotheses are put forward:

H2. Culture is a mediator between HRS and improvisational behavior.

H3. Climate is a mediator between HRS and improvisational behavior.

H2 and *H3* are also supported by the theoretical models of Bowen and Ostroff's (2004) and Evans and Davis (2005).

Our final assertion tackles the relationship between culture and climate. As Payne (2000) and Denison (1996) explain, culture and climate are constructs with several contact points, but culture is concerned with values and assumptions, whereas climate is concerned with consensus of perceptions. The relationship between the two concepts is not a central concern in the current work, however, the above distinction suggests that culture may precede climate in shaping people's final behaviors. Hence, our final hypothesis can be stated as:

H4. Culture is a mediator between HRS and climate.

The following section details the research carried out to study the above stated research hypotheses.

3. Method
3.1 Sample
The research was conducted at a call center of a company belonging to a Portuguese Telecommunications Group. We used data from 91 employees. Of the respondents,

41.8 percent were male and 51.6 percent female. About 85.7 percent were operators and 14.3 percent were support staff, such as those involved in supervision, training or quality control. The majority of the respondents (47.2 percent) had worked in the company for less than a year. All the data were collected through questionnaires.

3.2 Measurement scales

Organizational climate was measured using a scale from Brown and Leigh (1996). The scale consists of 21 items divided into six factors: supportive management, role clarity, self-expression, contribution, recognition and challenge. In this study, we are interested in the overall concept of organizational climate; therefore all items were combined into a single variable: climate.

Organizational culture was measured using a scale from Deshpandé et al. (1993). The scale consists of 16 items divided into four groups related to different kinds of culture: market, ad hocracy, clan and hierarchy. All items were combined into a single variable (culture) because the objective was more to measure the intensity of the culture than describe the type of organizational culture.

HRM strength was measured through a new scale, designed to capture Bowen and Ostroff's (2004) nine attributes (see Section 2.1). The development of the scale began with brainstorming among specialists in organizational behavior. After systematization, the scale was presented to a group of four experts for content validation. A pre-test was applied in order to understand the accuracy of the questions. Initially, 54 items were built, six for each of the nine attributes. Through confirmatory factor analysis (CFA), three items were chosen to measure each factor. Finally, the factors were aggregated into a single composite variable (HRS).

Improvisation behavior was measured through the development of a new scale based on the literature on improvisation. Improvisation behavior was defined as a timely (Crossan and Sorrenti, 1997; Weick, 1993) and conscious action that responds to an event (Moorman and Minner, 1998); such action is also unpredictable and spontaneous (Cunha et al., 1999). Like HRS, this scale was produced during a group discussion and the application of a pre-test. The final scale consists of 17 items divided into four dimensions related to different features of improvisation: the perceived relationship between the company and its market (M), the perceived relationship between the company and its employees (E), the employee as a potential agent of improvisation (A) and the representations concerning improvisation (R).

The first two dimensions target employees' perception regarding the degree to which they think that their organization is flexible and adapts quickly to the market (M), and the degree to which they think that their organization promotes teamwork and experimentation (E). The third dimension (A) assesses the degree to which the employee assesses him or herself as an improvisation agent. Finally, the fourth dimension (R) assessed the perceived impact of unplanned actions on several outcomes such as competitiveness, efficacy and corporate image.

Through CFA, three items were chosen to represent each dimension. All items were combined into a single variable to increase the reliability of the measurement.

All scales were anchored on seven points, from 1 – totally disagree, to 7 – totally agree. A sample of items from the new scales is shown in the Appendix.

3.3 Data analysis
Structural equation modeling was used to assess the four hypotheses, which was carried out using PASW Statistics 18 and Amos 18.0.0 (Arbuckle, 2006). The maximum-likelihood method was used for estimation because it is a very robust estimation method (Anderson and Garbing, 1988; Bentler and Chou, 1987). As recommended by Anderson and Garbing (1988), we followed a two-step approach for assessing structural equations models: analysis of the measurement model as a prior step before evaluating the structural model, followed by analysis of the full model, which combines both the measurement and the structural parts.

The structural part specifies the relationship between the latent exogenous and endogenous variables and among the latent endogenous variables. Analysis of the measurement model involves the evaluation of convergent and discriminant validities of the latent-variables model (Medsker *et al.*, 1994).

The measurement model was assessed by examining composite latent-variable reliability, indicator loads and factor correlations for each latent variable. Different indices were considered, following Anderson and Garbing (1988) and Bagozzi and Yi (1988), to examine the global fit for all models under several perspectives: absolute fit (χ^2 likelihood ratio statistic or minimum discrepancy – CMIN, the normed χ^2 – CMINDF (Bollen, 1989) and GFI (Jöreskog and Sörbom, 1984), incremental fit (the normed fit index (NFI) of Bentler and Bonett, 1980) and the comparative fit index (CFI) of Bentler, 1990) and parsimony-adjusted measure (the root mean square error of approximation (RMSEA) of Steiger and Lind, 1980). Large CMIN values correspond to bad fit and small values to good fit. However, as the value of the χ^2 likelihood ratio statistic is directly dependent on sample size, significant values can be obtained even though there are only trivial discrepancies between a model and data. Values of CMINDF in the range of 2-1 or 3-1 are indicate of an acceptable fit between the hypothetical model and the sample data (Carmines and McIver, 1981, p. 80 in Arbuckle, 2006). GFI is bounded below b0 and above by 1. GFI = 1 indicates a perfect fit. A NFI or a CFI higher than 0.90 is generally accepted as indicating good model fit (Bollen, 1989). Values of RMSEA equal to or lower than 0.05 indicate a close fit to the population values lower than 0.08 indicate a good fit and models with values higher than 0.10 have to be rejected (Browne and Cudek, 1989). LO90 and HI90 are the lower and upper boundaries of a two-sided 90 percent interval for the population RMSEA (Arbuckle, 2006). For model comparison, we use the Browne-Cudeck (1989) Criterion (BCC). BCC is a measure of badness of fit. The smaller BCC is, the better the model is. Bootstrapping was also used for several estimation and comparison proposals.

We dropped three outliers that present a $p1 < 0.001$ on the Mahalanobis D-squared statistic (Tabachnick and Fidell, 2001). Consequently, the final sample had 88 observations.

4. Results
Table I presents means, standard deviations, Pearson's intercorrelations and construct reliabilities for the different scales. Intercorrelation coefficients provide a glimpse into the results of statistical tests to be carried out to test the hypotheses. The size of these intercorrelation coefficients gave initial support to the hypothesized model.

The parameters of the saturated model M1 (Figure 1) were estimated. This model shows that the regression weights from HRS to climate and from culture and climate to improvisation are not significant. This supports the idea that HRS has a direct effect

on improvisation. Culture mediates the relationship between HRS and climate. Table II shows the regression weights (estimate), their standard errors (SE), critical ratios (CR) and p-value (p).

Searching for a better fit, we then compared a series of nested models using BCC: M2 (M1 with climate $\leftarrow$ HRS constrained), M3 (with improvisation $\leftarrow$ climate constrained) and, M4 (M3 with improvisation $\leftarrow$ culture) leading us to retain M3 (Table III) as the best fit model providing an explanation of construct covariance. The measures for evaluation for this model are good: CMIN = 0.464, CMINDF = 0.232, GFI = 0.997, CFI = 1.00, RMSEA = 0.000, LO90 = 0.000 and HI90 = 0.135. All factor loadings in the structural model M3 are significant, except for the path "improvisation $\leftarrow$ culture" (p = 0.098). However, this is a promising result considering

	M	SD	1	2	3	4
1. HRS	4.53	0.99	(0.98)			
2. Culture	4.50	0.85	0.81	(0.86)		
3. Climate	4.53	0.76	0.58	0.71	(0.87)	
4. Improvisation	4.97	0.93	0.74	0.67	0.48	(0.90)

Notes: Values on the diagonal are Cronbach's α; all p-values < 0.01

Table I.
Means, standard deviations correlations (Pearson) and construct reliabilities
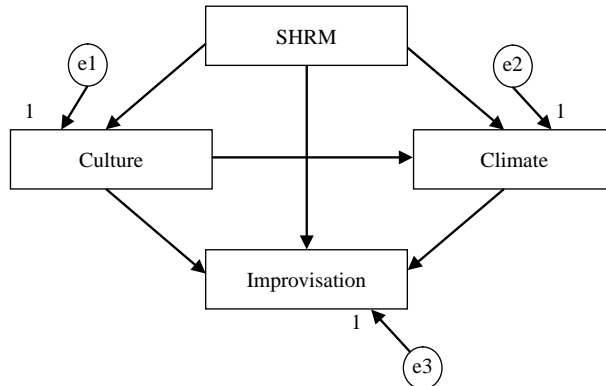
Figure 1.
Initial hypothetical model (M1)

Note: Assessment of the hypothesized model and re-specification

Paths	Estimate	SE	CR	p
Culture ← HRS	0.814	0.062	13.060	*
Climate ← Culture	0.674	0.130	5.188	*
Climate ← HRS	0.043	0.130	0.332	0.740
Improvisation ← Culture	0.160	0.138	1.158	0.247
Improvisation ← HRS	0.579	0.121	4.783	*
Improvisation ← Climate	0.059	0.100	0.595	0.552

Note: $^{*}p$ < 0.001
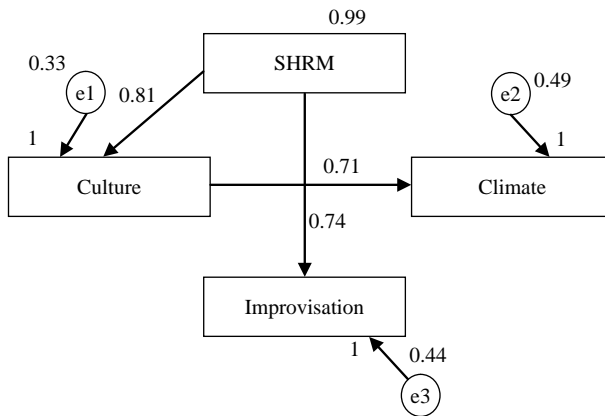
Table II.
Regression weights for M1

the sample dimension. Figure 2 shows model 3 with the standardized regression weights of each path and Table IV shows the magnitude of the standardized effects of HRS and culture upon the other constructs.

In conclusion, *H1* "HRS has a direct effect on improvisational behavior" and *H4* "culture is a mediator between HRS and climate" are supported by the data. There are also signals that *H2* "culture is a mediator between HRS and improvisational behavior" may be confirmed in future studies with a larger sample. It was not possible to confirm *H3*, "climate is a mediator between HRS and improvisational behavior".

Table V shows the correlations between HRS and culture, on one hand, and the different dimensions of improvisation, on the other hand. Both HRS and culture have the greatest correlations with dimension "employees" (0.68 and 0.67, respectively).

Indicators	M1	M2	M3	M4
BCC	21.220	19.208	17.439	18.006

Table III.
Indices of model comparisons

Figure 2.
Standardized regression weights for M3

	HRS	Culture
Culture		
Direct	0.814	
Indirect		
Total	0.814	
Improvisation		
Direct	0.582	0.200
Indirect	0.163	
Total	0.745	0.200
Climate		
Direct		0.709
Indirect	0.577	
Total	0.577	0.709

Table IV.
Standardized effects

5. Discussion

Our research was designed to evaluate the relationship between HRS, climate, culture and improvisation behavior. Following this, we tested the proposition that HRS influences improvisation, with climate and culture as mediators. Our hypotheses were partially supported. We found that HRS could be seen as an antecedent of culture, but not of climate. Culture assumes a central role, connecting HRS to climate. These results are in accordance with Neves (2001), who states that culture acts in establishing the bases of climate perceptions. Therefore, as defended by Bowen and Ostroff (2004) through HRS, messages regarding the content of HRM practices are communicated in an unambiguous way, which results in a strong situation, interpreted, in our case, as organizational culture. This shared social construction (Evans and Davis, 2005) has a mediator effect between HRS and climate.

HRS has a direct effect on improvisational behavior. This is a significant result, since it confirms the main propositions of the strategic HRM literature. This literature (Becker and Huselid's, 1998) has struggled to establish a relationship between the HR function and performance. Our results show that the HR function is capable of influencing a particular behavior, i.e. improvisation. In highly structured and described environments such as call centers, one would at first think that employees do not have much space for unplanned and spontaneous actions. As recent works show (Chambel and Castanheira, 2010), this is true to a certain extent, since employees in call centers are obliged to comply with strict rules and procedures. However, they also have to act creatively and in unplanned manners to deal with the variety of potential issues and problems that arise. Employees in call centers may indeed represent the need to balance rigidity with flexibility, i.e. the need to operate in minimal structures (Michie and Sheehan, 2005; Becker and Huselid, 1998; Wright and Snell, 1998; Eisenberg, 1990).

Organizational culture also has a significant impact on improvisation behavior. We can therefore say that HRS and culture induce uniform expectations about the most appropriate behavior, and instill the necessary skills to perform that behavior. Thus, they link shared perceptions to a particular strategic goal. In this way, culture might be seen as a mediator between HRS and improvisational behavior, amplifying the HRS impact. The leaders of the organization could opt for a culture management (O'Reilly, 1991) and make use of HR practices to act across employees' behavior (Bowen and Ostroff, 2004) through culture pattern manipulations, which support new and desirable behaviors with the purpose of achieving the strategic goals and firm performance.

Organizational climate did not have a significant impact on improvisation behavior. This may be explained by the different conceptualization between climate and culture (Payne, 2000). Indeed, according to some climate literature, it is employees' perceptions and valuations of the environment rather than the environment itself that mediate attitudinal and behavioral response (Brown and Leigh, 1996). In contrast, culture contains not only invisible elements, such as values or assumptions, but also visible

	Representations	Employees	Market	Agent
HRS	0.465	0.684	0.641	0.351
Culture	0.443	0.666	0.472	0.327

Note: All p-values < 0.01

Table V.
Correlations between HRS and culture with improvisation factors

elements, such as rituals, rules, symbols, histories, office space and organizational language. The visible elements have a function to legitimate and reinforce the practices, the procedures and the culture itself. Therefore, culture has a more direct and more immediate impact on employees than climate.

The findings from this study confirm the idea that HRS has a direct and indirect effect (through culture) on employees' improvisation behavior. This is an important overall result, since it reinforces the role of the HR function in supporting the organization's strategy and goals. This research shows that the HR function is capable of promoting continuous learning, autonomy and creativity among employees, facilitating experimentation and a constant re-interpretation of the current action (Hatch, 1999). It also gives a limited support to a process view of HR, since it highlights some HR communication features which affect employees' behavior.

This study has some limitations. An important one is the small sample size. Future works should confirm our results with larger samples. Another limitation is the context where we carried out the research. Call centers may have a limited value as far as external validity is concerned; however, our findings are interesting enough to stimulate further studies.

With regard to this, we address three additional proposals for future research:

(1) the first one is concerned with the need to introduce leadership into the investigation model because it plays an important role in influencing organizational processes and employees' sensemaking;

(2) the second one is related to the need for model validation, by measuring individual and organizational performance; and

(3) the third one is related to the need to conduct studies to validate our new scales.

Bowen and Ostroff's (2004) and Evans and Davies's (2005) models are appealing and they bring an important shift in thinking about HR issues. These models add to existing knowledge by highlighting the communication and influencing power of the HR function. However, these models need to be tested and confirmed with empirical data, so that they can be improved and developed. Our study has contributed to this aim by showing that employees' perceptions can be partly shaped by the HR communication skills and characteristics. And on its turn, such perceptions are shaping people's final actions.

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Appendix

Sample items measuring the concept of HRs strength:

- *Visibility*. "All employees know and are aware of the existing HR practices in this company".
- *Understandibility*. "I understand what are the criteria used in the existing HR practices in this company".
- *Legitimacy of authority*. "My company's board considers HR practices to be important".
- *Relevance*. "HR practices in my company help employees to achieve their personal goals".
- *Instrumentality*. "Pay rises depend on the results of the performance appraisal".
- *Validity*. "I feel that there is a connection between what is assessed in the performance appraisal and what is done on a day-to-day basis".
- *Consistent HR messages*. "The goals of the performance appraisal, training and other HR practices are all consistent".
- *Agreement among principal HR decision makers*. "All the departments in my company follow HR department guidelines".
- *Fairness*. "When deciding upon matters that concern me, my superiors seek my opinion".

Sample items measuring the concept of improvisation:

- *Relationship between company and market*. "My company is capable of taking urgent decisions on something which was not planned or expected".
- *Relationship between company and employees*. "In my company we are expected to quickly find solutions to problems and challenges that may rise".
- *Employee as a potential agent of improvisation*. "In my company I often need to take decisions on issues which were unforeseen".
- *Representations concerning improvisation*. "To be able to execute urgent, important, and unplanned actions, can help [. . .] increase the company's competitiveness".

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