

# **STRATEGIC HUMAN RESOURCES DEVELOPMENT AND THEIR RELATIONSHIPS WITH ORGANIZATIONAL PERFORMANCE: AN ANALYSIS OF THE CONTINGENCY FACTORS INFLUENCE**

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## **ABSTRACT**

The Strategic Human Resource Development (SHRD) seeks to align learning in the organizational context with the organization strategic objectives. In consonance with this concept, the study was guided by the performance perspective, according to which, the goal of learning in organizations is to help them achieve their targets. In accordance with the above mentioned, it becomes relevant the assessing the relationship between HRD and Organizational Performance. This brief background brings up the objective of this study that was to analyze the relationship established between the adoption of HRD policies and practices as well as organizational performance, investigating the influence of contingency factors performance in this relationship. To conduct the empirical stage, it was adopted the quantitative approach, using a structured questionnaire directed to the main person in charge of HR of organizations operating in Brazil. The survey sample included 354 valid cases. For the data analysis, it was used the exploratory and confirmatory factor analysis for the establishment of the HRD system and the logistic regression to assess the relationship of this system with the organizations' performance. As main results, it was found that the adoption of HRD policies and practices explains 42.1% of the variation in the predicted values of organizational performance, and that the sector regulation, the size and the horizontal alignment moderate the relationship between HRD and organizational performance .

**Key Words:** Strategic Human Resource Development (SHRD), Human Resource Development (HRD), Organizational Performance, Contingency Factors

## **INTRODUCTION**

The Human Resource Development (HRD), considered by some authors as the largest academic discipline on work development in the 21st century (Garavan, O'Donnell, McGuire, & Watson, 2007), is a field of study that has been growing since the 1970s. Although it cannot be considered a mature field, it is understood that currently its boundaries are already well marked, and its contributions and components are already identified, however, there is much to be done in order to consolidate it (Evarts, 1998). Swanson and Holton (2009) report that, despite being a young discipline, the HRD forms a well-established field of practices and consists of several models based on extensive

practical experience. It is found, however, that these models are not derived from sufficiently tested hypothetical relations.

In countries with systematic studies on HRD, it is possible to find extensive literature with analysis *frameworks* on the system, its policies and practices (Garavan, 2007; Gold, Rodgers, & Smith, 2003; Ruona & Gibson, 2004). In Brazil, the field has not evolved in the same way and presents scarce and outdated literature. However, Brazilian organizations have structured their activities and the literature does not yet include all of the settings and the factors that influence them. While some organizations have widely embraced HRD functions, offering varied and specific services and participating in the strategic decision-making processes, others have adopted minimal arrangements or even have not adopted them (Kuchinke, 2003). These variations, as the author points out, have been identified at the descriptive level and without basic theories to clarify and predict them, that is, they have not been developed theoretically, nor have they been empirically tested.

Most theories and models in HRD are generic and universal, rather than specific and differentiated. In addition, given the huge variation in the practice, organizations seem to constantly adapt, modify and change the HRD, however, field surveys have failed to capture these changes (Kuchinke, 2003). In this regard, the objective of this research is to analyze the influence of contingency factors on the relationship between HRD practices and organizational performance in Brazil. The main contribution of this study takes place through the analysis of contingency factors, reproducing previous empirical studies (Delery & Doty, 1996; Katou, 2009; Kuchinke, 2003; Neirotti, 2013; Stavrou & Brewster, 2005; Youndt & Snell, 2004 ) and through the research with Brazilian organizations, taking a step in the construction of the HRD theory by filling some gaps pointed out as tendencies and/or challenges in the Brazilian scenario.

Among the main trends reported in the literature, the strategic performance points out that organizations that have their HRD practices aligned with the organizational strategy should present higher organizational performance than organizations that do not report such action (McGuire & Cseh, 2006; Short et al. , 2003; Ulrich, 2007). Regarding the challenges to HRD, the one that stands out is the measurement and assessment of its results (McGuire & Cseh, 2006; Ruona et al., 2003, Short et al., 2003; Ulrich, 2007). Demonstrating the impact generated by the HRD in employee productivity and organizational performance can bring the long-awaited organizational recognition.

## REVIEW OF LITERATURE

HRD is a controversial concept, since there are multiple views about it (Korte, 2012; Swanson & Holton, 2009). Thus, the most updated literature has not sought a single definition for the term but has undertaken efforts to categorize the various concepts into typologies (Kuchinke, 2003; Garavan et al., 2015). As from the literature reviews conducted by Swanson and Holton (2009) and by Hamlin and Stewart (2012) and as from the definitions found in the literature review undertaken in this study, it was found that initially the concept was focused on the individual and on the groups, however, as from the end of the 1980s onwards, the organization also comes to be included in the HRD concepts.

For this study, it was opted for the Strategic Human Resource Development (SHRD) definition: "**a set of learning and development activities that are coherent, vertically aligned and horizontally integrated and that contribute to the achievement of the strategic objectives**" (Garavan, 2007, p.25). This definition is more aligned with the contingency and configurational perspectives. Taking as a basis the study of Kuchinke (2003), it was adopted as a premise that the HRD practices are the result of organizational

response to environmental factors and that the variability in HRD follows the contingency pattern.

The perspectives represent the objective pursued by HRD, which guides all policies and practices. Swanson and Holton (2009) consider that there are two main perspectives on HRD. One deals with HRD with a focus on performance (Swanson & Holton, 2009; Torraco, 2005) and the other focuses on learning (Watkins, 1991, quoted by Wang & McLean, 2007, p. 97). The perspective chosen for this study is the performance, since the research is premised on the adoption of the strategic approach of HRD and its relationship with organizational performance, linked to organizational goal.

The HRD configurations are also known as components of HRD processes, as from the systems theory (Jacobs, 2014). Just as there are conflicts on the HRD concept, there are also discrepancies about its components. For Swanson and Holton (2009), HRD is composed of two primary components: training&development and organizational development. However, a vision that predominates over the HRD components is that the field is composed of: training&development, organizational development and career development (Alagaraja, 2012; De Simone, Wener, & Harris, 2002 cited by Fenwick, 2004, p. 193; Pace et al., 1991, quoted in Kumpikaite, 2008, p. 27; McLagan, 1989, Torraco, 2005). This vision crystallized with the work of McLagan (1989), which gave significant form to the field (Torraco, 2005). Thus, in the present study, these three configurations will be considered as the key components of HRD.

Determining HRD settings is an important step in the precise definition of the field composition (McGuire & Cseh, 2006). The configurational research seeks to identify similarities between organizations through important features (Short, Payne, & Ketchen, 2008). The settings are incorporated into the empirical studies when researchers try to identify HR practices that predict superior performance when used in association with each another, or when the strategy is correct, or both. A number of authors have attempted to develop effective HR systems typologies, connecting these systems' performance to the company strategy (Delery & Doty, 1996).

Among the contingent factors that influence HRD, it stands out as paramount the alignment between organizational strategy and HR practices that enables organizations to achieve superior performance (Delery & Doty, 1996). In view of this, it was investigated the influence of higher vertical and horizontal alignment on organizational performance.

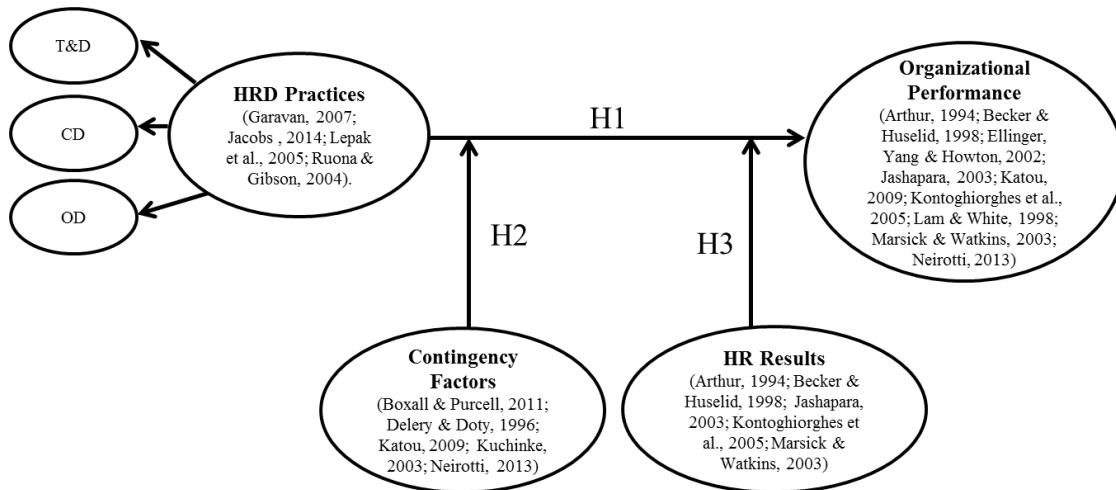
The contingency factors that influence HRD have been established as from two matrices: 1) Human Resource Management (HRM) studies: Delery and Doty (1996) and Boxall and Purcell (2011); 2) specific studies on HRD: Kuchinke (2003), Neirotti (2013) and Katou (2009). Contingency factors can be categorized into three levels of analysis - society, industry and organization - suggested by Boxall and Purcell (2011). These factors were the guiding factors for the choice of variables investigated in this research.

Regarding the means used to measure Organizational Performance (OP), it was used indicators derived from studies on the relationship HRM-OP (Arthur, 1994; Becker & Huselid, 1998) and also six studies specifically investigating the HR-OP, they are: Lam and White (1998), Ellinger, Yang and Howton (2002), Jashapara (2003), Katou (2009), Marsick and Watkins (2003) and Neirotti (2013). The measures can be classified into four dimensions: organizational, financial, human resources and capital markets. The human resources results are apparently not final result measures since, in a study conducted by Oliveira and Oliveira (2011), human resources results were identified as moderating measures of the relationship between the practices of HRD-HRM and the other measures of organizational performance.

## RESEARCH HYPOTESIS

As from the literature review it is inferred the theoretical conceptual model of this research (Figure 1), which was tested by conducting the present study.

**Figure 1 – Conceptual Theoretical Model**



Source: Authors as from the literature review.

The main relationship tested was the HRD practices with Organizational Performance and generated three different hypotheses:

**H1: There is a positive relationship between adoption of HRD practices and OP.**

**H2: Contingency factors are moderating variables of the relationship between adoption of HRD practices and Organizational Performance.**

**H3: Human Resources performance measures act as moderators of the relationship between HRD practices and the financial, organizational and capital market performance of the organizations surveyed.**

## METHOD

The approach of this study is a quantitative one, as well as much of the research in the area that studies the relationship between HR practices and organizational performance (Delery & Doty, 1996; Katou & Budhwar, 2006; Kuchinke, 2003; Neirotti, 2013; Snell & Youndt, 1995; Stavrou & Brewster, 2005). This research was of the descriptive type, since the investigated variables have been previously studied (Cooper & Schindler, 2011). As for the temporal aspect, the present research has a cross-section, which enabled a sample with a higher number of respondents, when compared to longitudinal studies (Short et al, 2008; Hair, Babin, Money & Samouel, 2005). The method used was the survey, through the application of a structured and self-administered questionnaire (Cooper & Schindler, 2011).

**Procedures.** Data collection was performed through the application, in Brazil, of the Cranet network survey questionnaire. The collection was carried out in the period between May and September 2014. The study population comprised all the public, private and non-governmental organizations (NGOs) operating in Brazil and which employ 200 or more individuals, which represented in 2012 about 18,000 organizations, according to data from the Annual Social Information Relation (RAIS) (Fischer, 2015). Only 433 questionnaires were completed. Through the debugging of the respondents and exclusion

of companies with less than 200 employees, a sample of 354 valid answers was obtained. Thus, the sample is not probabilistic (Fischer, 2015).

**Measures.** Multiple variables were investigated in the three main components of the study: HRD practices (comprised of the bundles training and development, career development and organizational development); organizational performance (using subjective variables); and contingency factors (investigated at three levels: society, industry and organization). In order to measure them it was related at least one variable for each practice.

The variables that made up the **HRD PRACTICES** component used mostly the interval scale, however, the nominal and the ratio scales were also used. Each practice with its respective scale is described below. **Practices of T&D:** 1) Assessment System (yes/no), 2) Needs Analysis (yes/no), 3) Management Training (training days), 4) Learning on the job - Training on the job (scale ranging from 0 = not at all, up to 4 = to a large extent), 5) Distance learning (scale ranging from 0 = not at all, up to 4 = to a large extent), 6) Management Development and Leadership subdivided into three variables, namely 6.1 Trainee Program (scale ranging from 0 = not used, up to 3 = used for all professional categories); 6.2 Assessment Centers (scale ranging from 0 = not used, up to 3 = used for all professional categories); and 6.3 Development Centers (scale ranging from 0 = not at all, up to to 4 = to a large extent); and 7) Development of Multiple Skills, Cross-Cultural and Global Training - measured by means of the variable transfer abroad (scale ranging from 0 = not at all, up to 4 = to a large extent). **Career Development Practices:** 1) Coaching (scale ranging from 0 = not at all, to 4 = to a large extent), 2) Job Rotation (scale ranging from 0 = not at all, up to 4 = to a large extent), 3) Models and Systemic Methods of Performance Management - measured through the use of 360-degree assessment to managers (yes/no), 4) Individual Performance Assessment (scale ranging from 0 = not used, up to 3 = used for all professional categories), 5) Development and Management of Careers (scale ranging from 0 = not at all, up to 4 = to a large extent); 6) Talent and Succession Management subdivided into two variables, namely 6.1 Succession Planning; and 6.2 Accelerated Development Schemes, both with scale ranging from 0 = not at all, up to 4 = to a large extent; and 7) Employee Counseling - Mentoring (scale ranging from 0 = not at all, up to 4 = to a large extent). **Organizational Development Practices:** 1) Appointment Program and Design Processes (used/not usually used), 2) Personal Development and Interpersonal Relationships - Work Network (scale ranging from 0 = not at all, up to 4 = to a large extent) and 3) Collaborative Approaches to Work - Project Teams (scale ranging from 0 = not at all, up to 4 = to a large extent). As an example for variables with a scale ranging from 0 = not at all, up to 4 = to a large extent the following question was used "To what extent does your organization use the following methods for career management?"

The variables that made up the **ORGANIZATIONAL PERFORMANCE** component present interval or ratio scales, which were measured subjectively, through the respondent's perception. They are: Productivity, Quality, Innovation, Profitability, Revenue, Costs and Stock Market. These variables, except revenue and costs, were obtained as from the answer to the following question: "Compared to other organizations in your sector, how would you rate your organization's performance with respect to the following items?", which presented a scale ranging from 1 = poor or at the lower end of the sector, up to 5 = superior. Revenue was obtained through the answer to the question "If your organization belongs to the private sector, would you say that the gross revenue over the last three years has been:" with scale ranging from 0 = As low as to produce large losses, up to 5 = well above costs. Finally, costs were measured through the question "What percentage of operating costs do labor costs account for?".

The variables that composed the **CONTINGENCY FACTORS**. They are: **1) Trade Unions** (percentage of unionized employees), **2) Sector** subdivided into 2.1) Specific Sectors (20 sectors), 2.2) Broad Sectors (Private Sector, Public Sector, Non-Profit and Mixed) and 2.3) Sector of Activity (Agriculture, Extractivism, Industry, Commerce, Service and Public Administration), **3) Complexity** measured by the level of business complexity (scale ranging from 0 = not complex, up to 3 = high complexity), **4) Regulation** constituted by identifying the sectors that are controlled by federal regulatory agencies (yes/no), **5) Size** assigned by the number of employees (Micro, Small, Medium and Large companies), **6) Strategy** measured through the utilization level of strategic planning (scale ranging from 0 = there is no strategic planning, up to 3 = high utilization of strategic planning), **7) Vertical Alignment**, **8) Horizontal Alignment** and **9) Centralized Management**. These last three variables were measured as from the organizational features that denote the presence of these aspects, for example, the vertical alignment was obtained by summing up the following variables: person responsible for HR takes place on Board (s1v4), and at this stage of strategy development, responsible for HR is involved (s1v7), definition of the person in charge of the major political decisions on T&D (s1v8c), dissemination of business strategy (s8v13) and assessment of the staff training effectiveness (s3v7a). Regarding the Horizontal alignment it was obtained by identifying the use of performance assessment results in order to support T&D, career mobility, and workforce planning decisions, that is, when the organization reported using performance assessment results in the three components, it was considered that the horizontal alignment is high; when used in two components it was considered medium; when used in only one, it was considered low; and, finally, when it is not used in any component it was understood that there is no horizontal alignment.

Finally, the variables that made up the **HR RESULTS** component used a ratio scale and were measured through Organizational Turnover and Absenteeism. The Turnover was measured by the percentage of annual turnover (s6v10a) and absenteeism by the average number of absences per employee per year (s6v10c).

**Data Analyzes.** The Exploratory Factor Analysis (EFA) and the Factorial Confirmatory Analysis (FCA) were used in the study aiming at determining which indicators could be summarized to represent the constructs training and development (T&D), career development (CD), organizational development (OD), human resources development (HRD) and organizational performance (OP). The EFA was used to measure the components of HRD and OP, and the FCA was used to measure the dimensions of HRD, namely T&D, CD and OD. Multiple regression (MR) was also used as an analysis technique, after observing the predominant use of the technique in studies of the area by renowned HRD and HRM researchers (Abbad & Torres, 2002; Boxall & Purcell, 2011), by type of predominant scale and the need to carry out exploratory data analysis.

To ensure its validity and reliability the instrument was submitted to the *translation-back translation* process and the research preliminary results were presented and discussed with the senior professionals in the country in order to improve the questionnaire interpretation (Brewster et al., 2011), which ensures the content validity. The construct validity was achieved by conducting the tests carried out in the Confirmatory Factor Analysis that assesses the convergent and discriminant validity of the measures used in the research. Reliability can be assessed through measures of coherence or internal consistency, the Cronbach's alpha is one of the coefficients that estimate the reliability (Sampieri, Collado and Lucio, 2013). This coefficient was calculated in this research in the Exploratory and Confirmatory Factor Analysis.

## RESULTS

Regarding the profile of the respondent organizations, 62% are in the southeastern region of Brazil, 89% are large companies, 77% belong to the private sector, 42% are in the services sector, 31% are corporate headquarters of Brazilian organizations and 58% of them are expanding their staff. The sample profile presents limited representativity in relation to the Brazilian distribution.

According to Hair et al. (2009, p.62) "variables or cases with 50% or more of lost data should be eliminated." In T&D, CD and OD, there was no need to discard any variables. In terms of organizational performance, the variables labor costs (s6v3), stock market (s6v5e) and gross income (s6v4) were not part of the analyzes, as each of them resulted in 60%, 69% and 25%, respectively, of missing data. Among the contingency factors, the percentage of unionized employees (s5v1) was not part of the analysis, as it presented 37% of cases with missing data. Finally, in human resources results, absenteeism was not considered, since the percentage of missing data was 49%. The data lost on these variables would compromise the analysis, so it was opted for their discarding.

The Factorial Confirmatory Analysis (FCA) had 22 variables, of which: nine from the T&D component, eight from CD and five from OD. The variables and their respective factor loads are shown in Table 1. The standardized loads of the variables indicate that there is no convergent validity, since seven factors presented values below the minimum acceptable of 0.5. As from these parameters, the variables that exhibited standardized factor loads less than 0.5 were removed from the analysis. In OD, the variables were all above 0.5, and were iteratively withdrawn at each new confirmatory factorial, one after the other. Thus, the adjusted analysis could be presented (Table 1). The standardized loads of the variables indicate that there is convergent validity, since all factors presented values above the minimum acceptable of 0.5. It is noteworthy that the variable formal career planning (s3v8f) was maintained, as its load factor was very close to 0.5. Thus, the adjusted model included 13 variables.

**Table 1 –General model: model variables and their respective factor loads**

Component	HRD Practice	Factor Loads	FL Adjusted
Training and development	Assessment systems (s3v7a)	0,472	-
	Analysis of needs (s3v4)	0,384	-
	Management training (s3v6a)	0,133	-
	Training on the job (s3v8c)	0,695	0,729
	E-learning (s3v8n)	0,735	0,764
	Trainee Program (s8v8)	0,062	-
	Assessment center (s8v9)	0,103	-
	Development centers (s3v8g)	0,703	0,716
	Transfer abroad (s3v8k)	0,575	0,614
Career Development	Coaching (s3v8l)	0,746	0,747
	Job rotation (s3v8i)	0,683	0,687
	360-degree assessment (s9v1)	0,429	-
	Individual performance assessment (S8v6)	-0,038	-
	Formal career planning (s3v8f)	0,493	0,497
	Succession planning (s3v8h)	0,830	0,836
	Talent management (s3v8j)	0,781	0,790
	Mentoring (s3v8m)	0,748	0,748
Organizational development	Organization of work - managers (s5v6cm)	0,511	0,517
	Organization of work - professionals (s5v6cp)	0,663	-
	Organization of work – admin/operational (s5v6cc)	0,561	-

Work network (s3v8e)	0,700	0,791
Project Teams (s3v8d)	0,803	0,872

To validate the model it was investigated, in addition to the standardized loads, the indexes of the Average Variance Extracted (AVE), Composite Reliability and the Cronbach Alpha. The AVEs were lower than 0.5, reinforcing that reliability cannot be credited in this analysis. The Composite Reliability is suitable for the CD and OD components, since they are above 0.70, while T&D is below (0.68), but very close to the minimum parameter. Finally, in the Cronbach's Alpha only T&D presented values lower than 0.6 (Table 2). In conclusion, the Cronbach's Alpha in the three components presented values higher than 0.6; it is worth noting that OD was considered acceptable, since it presented a value very close to 0.6 (Table 2). As from these parameters analysis it was found that the model is consistent.

**Table 2 –Verification indexes of the general model and the adjusted model**

Variables	AVE	AVE Adjusted	Composite Reliability	Composite Reliability Adjusted	Cronbach Alpha	Cronbach Alpha Adjusted
Career Development	0,4138	0,5272	0,8232	0,8674	0,8139	0,7455
Organizational Development	0,4299	0,5513	0,7862	0,7793	0,589	0,6931
T & D	0,2501	0,5012	0,6885	0,7998	0,6649	0,5552

The standardized loads indicate that there is convergent validity, since all factors present values higher than 0.5. As for the discriminant validity, a cross loads analysis (cross-loading) was carried out and the comparison of the square root of the AVE with the correlations between pairs of constructs (Fornell-Lacker criterion). Table 3 shows the square root of the AVE of each construct and its correlation with the possible pairs of latent constructs. It is observed that no correlation presented a value superior to the root of the AVE, except for the correlation between T & D and CD that was 0.7201, while the root of the AVE was 0.7080, however, it is emphasized that the values are very close . An analysis of each variable and its correlation with the corresponding construct is exposed in the sequence.

**Table 3 –Discriminant validity: criterion of Fornell-Larcker**

Variables*	Career Development	Organizational Development	T&D
Career Development	<b>0,7261</b>		
Organizational Development	0,6473	<b>0,7425</b>	
T&D	0,7201	0,5889	<b>0,7080</b>

\* in bold root of the AVE's

In addition, the cross loads were analyzed to credit discriminant validity to the analysis. In this criterion, each variable must present higher correlation with the construct to which it refers than with any other; if this does not occur, the model should be reconsidered. As it can be seen in Table 4, all variables obtained higher correlation with their respective construct than with any other. Thus, discriminant validity is credited to the model.



**Table 4 –Discriminant validity: criterion of Cross Loads**

<b>Variables*</b>	Career Development	Organizational Development	T&D
Formal career planning (s3v8f)	<b>0,4971</b>	0,3578	0,3523
Succession planning (s3v8h)	<b>0,8384</b>	0,5383	0,5802
Job rotation (s3v8i)	<b>0,6867</b>	0,4576	0,4510
Talent management (s3v8j)	<b>0,7899</b>	0,5047	0,5666
Coaching (s3v8l)	<b>0,7474</b>	0,4692	0,6021
Mentoring (s3v8m)	<b>0,7478</b>	0,4748	0,542
Project Teams (s3v8d)	0,5966	<b>0,8725</b>	0,5532
Work network (s3v8e)	0,4941	<b>0,7910</b>	0,4622
Work organization - professionals (s5v6cp)	0,2972	<b>0,5169</b>	0,2244
Training on the job (s3v8c)	0,4922	0,5069	<b>0,7286</b>
Development centers (s3v8g)	0,5539	0,3549	<b>0,7159</b>
Transfer abroad (s3v8k)	0,4538	0,3865	<b>0,6140</b>
E-learning (s3v8n)	0,5369	0,4118	<b>0,7644</b>

\* in bold higher values of loads

In addition to the construction of the T&D, CD and OD factors, EFA was conducted with the objective of creating a unique factor for the HRD system. The results are shown in Table 5.

**Table 5 –Factorial analysis of the HRD component**

	Commonalities	Factorial Loadings
Career Development	0,818	0,904
Training and Development	0,774	0,880
Organizational Development	0,714	0,845

KMO = 0,714 | Explained variance = 0,7686 | BTS = 462,85 (sig < 0,01) | Cronbach's Alpha (of the HRD component) = 0,849

It is observed that all the components – T&D, CD and OD – presented standardized factorial loads above 0.5, showing that the components have correlation with each other. The KMO was above 0.7 and a single factor was formed which explains 76.86% of the data variability. The Bartlett significance test had a significance of 0.01, less than 0.05 indicating that there are significant correlations between some variables. Finally, the Cronbach's Alpha was 0.849, higher than 0.7, indicating, therefore, that there is internal consistency in the HRD system factor. The factor one eigenvalue was 2.306, the factor two was 0.423 and the factor three was 0.271, therefore, the only factor superior to one was the first factor, but it is highlighted that, by the criterion of communality, all factors have high explanation for the factorial solution, since all present values higher than 50%. No turnover was performed in the EFA of the HRD component since only one factor formation was studied.

After creating the HRD factor, an exploratory factorial analysis was conducted along with the organizational performance variables for reduction to a single factor. The results are shown in Table 6.

**Table 6 –Factorial analysis of the organizational performance component (OP)**

	Communalities	Factorial Loads
Productivity (s6v5b)	0,664	0,815
Quality of service (s6v5a)	0,613	0,783
Profitability (s6v5c)	0,601	0,775
Innovation rate (s6v5d)	0,499	0,707

KMO = 0.751 | Explained variance = 0.5944 | BTS = 280.29 (sig <0.01) | Cronbach's Alpha (of the organizational performance component) = 0.769

As from the analysis of the indexes, it is possible to perceive that all the variables of organizational performance – productivity (s6v5b), service quality (s6v5a), profitability (s6v5c) and innovation rate (s6v5d) – presented standardized factorial loads above 0.5, showing that the components are correlated with each other. The KMO was above 0.7, a single factor was formed that explains 59.44% of the data variability and the BTS had a significance below 0.01, being below the value of 0.05 recommended by Hair et al. (2009), which indicates the statistical significance of the factorial analysis performed. Cronbach's Alpha was 0.769, higher than 0.7, indicating, therefore, that there is internal consistency in the Organizational Performance factor. The eigenvalue of the factor one was 2.378; factor two was 0.647; factor three, was 0.577; and factor four was 0.399. The first factor was the only factor superior to one, but it is highlighted that, by the criterion of communality, all factors have high explanation for the factorial solution, since all present values higher than 50%.

As in the EFA of the DRH system, in the EFA of OP it was not necessary to perform the rotation factors, since only one factor, that is, the organizational performance was analyzed. The factors necessary for the continuation of the analyzes were created and their results are demonstrated in this topic. The results of the multiple regression analysis are then presented to investigate the relationship of HRD practices, represented here by the HRD factor (practices\_dhrd\_fat) with the organizational performance, studying the moderating effect of contingency factors in this relationship.

To calculate the MR models, the model validity of assumptions was observed, therefore, tests were conducted to find the occurrence of multicollinearity (Pearson correlations for continuous variables and values of the inflation factor of variance (VIF)), *outliers* (calculation of Mahalanobis Distance ( $D^2$ )), and influential cases (Cook's distance). To conduct the analysis, 25 different models were developed. Model 1 addresses the influence of HRD practices on Organizational Performance, and Model 2 investigates the influence of HRD practices on Organizational Performance, having as moderating variable the turnover. The other models include the contingency factors as moderators of the HRD-OP relationships; from the Model 3 up to Model 14, turnover is also analyzed as a moderating factor and, from Model 15 up to Model 25, as a control variable.

The adjusted  $R^2$  of the regression models was around 0.4, indicating that 40% of the variation in the predicted values of Organizational Performance can be explained by the models. The highest adjusted  $R^2$  values are found in Models 1, 11 and 22; only the Models 11 and 22 presented values higher than Model 1. However, these models added little additional explanation about the variation in OP, between 0.8% and 1, 1%, respectively. It is noteworthy that both, despite the higher increase, did not present statistical significance for the moderation exerted by the level of unionization.

The turnover does not act in any of the models as a moderator variable, whereas, when considered as a control, it remains significant as an explanatory variable of the variance in OP. Among the contingency factors, the only ones that present as moderating

variables of the HRD-OP relationship are the sector regulation, the size and the horizontal alignment, through the turnover performance as a control variable.

**Table 7 –Regression models: turnover as moderator variable**

<b>Variables</b>	<b>Mod. 1</b>	<b>Mod. 2</b>	<b>Mod. 3</b>	<b>Mod. 4</b>	<b>Mod. 5</b>	<b>Mod. 6</b>	<b>Mod. 7</b>	<b>Mod. 8</b>	<b>Mod. 9</b>	<b>Mod. 10</b>	<b>Mod. 11</b>	<b>Mod. 12</b>	<b>Mod. 13</b>	<b>Mod. 14</b>
Intercept	-0,039	0,0832	0,079	-0,011	0,078	0,198	0,051	0,134	0,223	0,296	-0,048	0,316**	0,213	0,020371
HRD Practices	0,271***	0,241***	0,281***	0,389***	0,298***	0,236	0,318**	0,273***	0,356*	0,371**	0,202	0,262*	0,7**	0,331**
Turnover		-0,007**	-0,007**	-0,008**	-0,007**	-0,007**	-0,007**	-0,007**	-0,008**	-0,007**	-0,009*	-0,006*	-0,007**	-0,007**
HRD Practices * Turnover			-0,002	-0,002	-0,002	-0,002	-0,002	-0,002	-0,003	-0,003	0,001	-0,003	-0,001	-0,002
Regulation = 0				0,153										
Regulation = 0 * HRD Practices				-0,141										
Size = 3					0,004									
Size = 3 * HRD Practices					-0,140									
Centralization of management = 0						-0,129								
Centralization of management = 0 * HRD practices						0,049								
Horizontal alignment = 0							0,172							
Horizontal alignment = 1							0,267							
Horizontal alignment = 2							-0,142							
Horizontal alignment = 0 * HRD practices							-0,112							
Horizontal alignment = 1 * HRD practices							-0,128							
Horizontal alignment = 2 * HRD practices							-0,009							
Business complexity														
Business complexity * HRD practices														
Strategy														
Strategy * HRD Practices														
Vertical alignment														
Vertical alignment * HRD practices														
Trade Union														
Trade Union * HRD practices														
Specific sectors (20 sectors)														
Specific sectors * HRD practices (20 sectors)														
Broad sectors = 1														
Broad sectors = 2														
Broad sectors = 3														
Broad sectors = 1 * HRD practices														
Broad sectors = 2 * HRD practices														
Broad sectors = 3 * HRD practices														
Areas of operation = 1														
Areas of operation = 3														
Areas of operation = 4														
Areas of operation = 5														
Areas of operation = 1 * HRD practices														
Areas of operation = 3 * HRD practices														
Areas of operation = 4 * HRD Practices														
Areas of operation = 5 * HRD practices														
<b>R2 adjusted</b>	<b>0,421</b>	<b>0,406</b>	<b>0,405</b>	<b>0,413</b>	<b>0,410</b>	<b>0,405</b>	<b>0,415</b>	<b>0,404</b>	<b>0,401</b>	<b>0,406</b>	<b>0,429</b>	<b>0,417</b>	<b>0,404</b>	<b>0,397</b>

\*\*\*Sig < 0,001. \*\*Sig < 0,05, \*Sig < 0,1.

**Table 8 –Regression models: turnover as control variable**

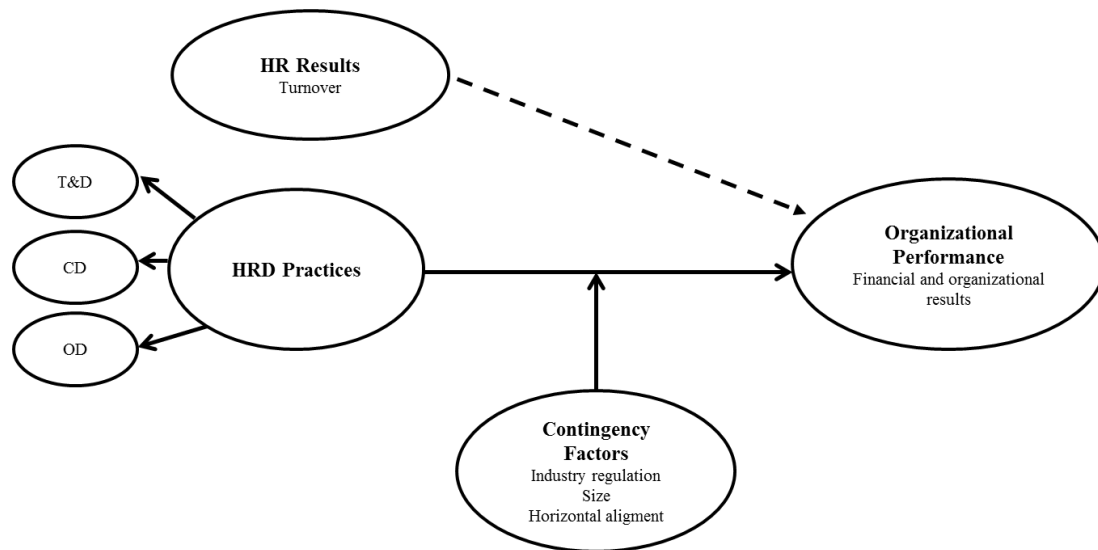
<b>Variables</b>	<b>Mod. 15</b>	<b>Mod. 16</b>	<b>Mod. 17</b>	<b>Mod. 18</b>	<b>Mod. 19</b>	<b>Mod. 20</b>	<b>Mod. 21</b>	<b>Mod. 22</b>	<b>Mod. 23</b>	<b>Mod. 24</b>	<b>Mod. 25</b>
Intercept	-0,058	0,0001	0,07	-0,078	-0,042	0,133	0,127	-0,04	0,202*	0,038	-0,026
HRD Practices	0,969***	0,869***	0,596***	0,960***	0,773***	0,566**	0,591**	0,711***	0,730***	1,125***	1,132***
Turnover	-0,005**	-0,004*	-0,004*	-0,005**	-0,004*	-0,004*	-0,004	-0,006**	-0,003	-0,004	-0,005*
Regulation = 0	0,113										
Regulation = 0 * HRD Practices	-0,231*										
Size = 3		-0,006									
Size = 3 * HRD Practices		-0,415**									
Management centralization = 0			-0,074								
Management centralization = 0 * HRD practices			0,257								
Horizontal alignment = 0				0,232							
Horizontal alignment = 1				0,271*							
Horizontal alignment = 2				-0,005							
Horizontal alignment = 0 * HRD practices				-0,357*							
Horizontal alignment = 1 * HRD practices				-0,326*							
Horizontal alignment = 2 * HRD practices				-0,039							
Business complexity					-0,081						
Business complexity * HRD practices					0,099						
Strategy						-0,041					
Strategy * HRD Practices						0,0801					
Vertical alignment							-0,0171				
Vertical alignment * HRD practices							0,0302				
Trade Union								0,0075			
Trade Union * HRD practices								0,0326			
Specific sectors (20 sectors)									no sig.		
Specific sectors * HRD practices (20 sectors)									no sig.		
Broad sectors = 1										-0,064	
Broad sectors = 2										-0,109	
Broad sectors = 3										0,297	
Broad sectors = 1 * HRD practices										-0,342	
Broad sectors = 2 * HRD practices										0,010	
Broad sectors = 3 * HRD practices										0,202	
Areas of operation = 1											-0,391
Areas of operation = 3											-0,011
Areas of operation = 4											0,003
Areas of operation = 5											0,140
Areas of operation = 1 * HRD practices											0,292
Areas of operation = 3 * HRD practices											-0,215
Areas of operation = 4 * HRD Practices											-0,199
Areas of operation = 5 * HRD practices											-0,286
<b>R2 adjusted</b>	<b>0,415</b>	<b>0,411</b>	<b>0,405</b>	<b>0,417</b>	<b>0,405</b>	<b>0,408</b>	<b>0,407</b>	<b>0,432</b>	<b>0,373</b>	<b>0,406</b>	<b>0,398</b>

\*\*\*Sig < 0,001. \*\*Sig < 0,05, \*Sig < 0,1.

## DISCUSSION

From the analyzes carried out, the Theoretical Conceptual Model underwent modifications and resulted in the Proposed Conceptual Theoretical Model, represented by Figure 2.

**Figure 2 – Proposed Conceptual Theoretical Model**



Source: Authors based on the research findings.

As from the HRD constructs, contingency factors and organizational performance, it was prepared the Proposed Conceptual Theoretical Model (Figure 2), which set as dependent variable the organizational performance, composed by the financial and organizational dimensions; as independent variables, the HRD policies and practices, structured through the dimensions T & D, CD and OD; as moderating variables, the contingency factors, namely regulation of the sector, size and horizontal alignment, presenting also the HR results, obtained by the turnover, as a control variable.

The first hypothesis related to the main objective of the thesis that supposed there was a positive relation between the adoption of HRD and OP practices. This hypothesis was confirmed since, through the study results it was found that 42.1% of the variation in the expected values of organizational performance can be explained by the adoption of HRD practices.

The second hypothesis was that contingency factors are moderating variables of the relationship between adoption of HRD and OP practices. This assumption was partially confirmed, since of the 11 contingency factors investigated, only three moderated the relationship: the sector regulation, the size and the horizontal alignment.

The first factor acts apparently indicating that the HRD practices are less used in unregulated sectors, negatively affecting the organizational performance. This finding corroborates Kuchinke's (2003) study, which found that institutional norms of the organizational environment, such as regulated industries, can predict the investment in training, putting pressure on these organizations to carry out more training than the unregulated ones.

The second factor that moderates the relationship is the size, indicating that the HRD practices adopted by midsize companies have a lower impact on organizational

performance than those adopted by large companies. Katou (2009) also found evidence that organization size is negatively related to the organizational performance and Kuchinke (2003) reports that variations in the structure and support of HRD as well as the supply of its products and services may be affected by the organization size.

Finally, the horizontal alignment factor also moderates the HRD-OP relation, as there is evidence that the HRD practices of organizations with lower levels of alignment are less related to performance than those organizations with high levels of alignment. This finding confirms the study of Becker and Huselid (1998), who found that the benefits derived from improved HPWS were associated to the increased homogeneity between their practices.

The third and final hypothesis was that organizational performance measures related to human resources act as moderators between HRD practices and the organizational performance. As a measurement result, it was used only the turnover, because the variable absenteeism had to be discarded, as it showed 49% of missing data. This hypothesis was not confirmed, since turnover as a moderating variable did not present statistical significance. However, the turnover was analyzed as a variable of control in all the regression models that tested the moderation exerted by the contingency factors and it served as explanatory variable in all 25 models tested, except in three, which had as moderating variable the vertical alignment, specific sectors and broad sectors, in that order.

## IMPLICATIONS FOR HRD THEORY AND PRACTICE

This study provides results that strengthen the importance of HRD for organizations and demonstrates its strong relationship with organizational performance. Organizational recognition, a trend and challenge in the area, can be achieved by measuring the value of HRD in organizations (McGuire & Cseh, 2006; Ruona et al., 2003). Thus, this study provides empirical and valid inputs on the importance of the area, especially regarding its strong association with organizational performance.

The strategic action in HRD is another trend of paramount importance, thus, to guide HRD actions with a focus on long-term return becomes essential (McGuire & Cseh, 2006; D.Chor et al., 2003; Ulrich, 2007). This research has shed light on the policies and practices that positively affect organizational performance by providing clues, including on the practices which, although not differentiate organizations, are indispensable so that their performance is not inferior to that of its competition.

Finally, some contingency factors that may be related to the HRD model were identified and the way this relationship takes place was described. These findings provide important inputs for HRD managers to better base their decisions.

## LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

Among the limitations of this study it is stemmed the decision to use a secondary database, from the Cranet questionnaire, since the database was not created specifically for this research. The use of data from the Cranet questionnaire is justified due to the possibility of expanding the study, by performing comparisons between the results of Brazil with other member countries. The generalization of the research results is another limitation. Analyzes and tests were conducted observing the necessary assumptions in each of the carried out analyzes, however, confirmatory analyzes were not conducted in all constructs.

For future studies, it is proposed to carry out causal studies. It is recommended as the data analysis technique for the confirmatory stage the use of structural equation modeling, which controls the measurement error (in this case it is also suggested the use

of multiple indicators) and is capable of measuring all mediators' effects simultaneously ( Li, 2011). It is recommended, furthermore, the creation and validation of scales for contingency factors, horizontal and vertical alignment, as well as management centralization. It is advisable to use the scale developed by Becker and Huselid (1998) for vertical alignment, which has already been empirically tested. Another recommendation is to expand the scale developed in this study to measure the HRD model, covering the scales here validated through the AFC and inserting those reviewed in this work, but which were not empirically tested or were excluded because they did not represent the measured variable. Thus, it is suggested that the scales validated in the AFC remain and are revalidated, those that have been excluded should be added through the preparation of new items and those ones that were not included should be prepared and included. It is recommended to create measures that use the same scale, preferably intervals, such as the Likert of five points, since it increases the possibility of its use in multivariate analyzes.

## CONCLUSION

It was investigated the relationship between Human Resource Development and Organizational Performance and the influence of contingency factors on this relationship, thus providing additional new indications on the importance of HRD actions in organizations. The main finding of the research is related to the positive relationship found between the adoption of HRD policies and practices and organizational performance, since it was shown that 42.1% of the variation in the expected values of organizational performance can be explained by the adoption of HRD practices. Among the 11 contingency factors investigated, it was found that only three moderated the relation: the sector regulation, the size and the horizontal alignment. The HRD practices are less used in unregulated sectors, negatively affecting the organizational performance. As to the size it was found that the HRD practices adopted by mid-sized companies have less impact on organizational performance compared to the greater impact caused to large companies that adopt the HRD practices. Regarding the horizontal alignment, evidence was found that this factor moderates the HRD/OP relationship, since the HRD practices of organizations with lower levels of alignment are less related to performance than those adopted by organizations with high levels of alignment . Finally, it was not confirmed that the turnover operates as a moderating variable of the HRD/OP relationship, however, it was observed that it served as a control variable in all the regression models that tested the moderation exerted by the contingency factors.

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