

# Constructing and validating a scale of employee satisfaction with HRM practices in the healthcare context

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## Abstract

The concept of HRM perceptions is a growing interest in the literature, as one of the antecedents of HRM outcomes. Regardless, not only the cognitive aspect of perception is interesting in this field (what you think) but also the affective perspective is of interest (how you feel about it). In this study we propose a scale for assessing satisfaction with the perceptions of the HRM practices. A 24 item Likert-type scale was developed considering literature review, to assess subjects' satisfaction with Human Resources Practices in a healthcare setting. Talked reflections were held and a survey encompassing all workers from a Hospital was conducted later, with a sample of 922 subjects. Exploratory and Confirmatory Factor Analysis were performed; reliability was tested using Cronbach's alpha. The scale presents good psychometric properties with alpha values that range from .71 to .91. Exploratory and Confirmatory Factor Analysis demonstrated that the scale presents a very good fit with CFI= 0.94, AGFI= 0.88, and RMSEA= 0.07. The present study represents a first approach in the usage of this scale and despite having a large sample, respondents originate from a single institution. This study presents a pertinent scale towards measuring a seldom explored construct of the worker-organization relationship. The scale is parsimonious and results are promising. There seems to be very little research on how subjects feel about the HRM practices. This construct, very much in line with more recent studies concerning worker perceptions can be especially interesting in the context of the worker-organization relationship.

## Method

**Data was collected** in January of 2012 in a large Hospital in the north of Portugal that employs circa 2000 workers, using both paper and electronic format. Paper format was distributed among workers that preferred this method or that did not have access to the intranet of the institution with envelopes so that responses could be sealed and anonymity ensured. Electronic questionnaires were divulged in the Hospital's intranet.

**Sample** is composed of a total of 942 subjects, with ages of respondents between 20 and 66 years old (mode=28 years and M= 38.5 years; standard deviation= 9.6); most respondents are female (80.3%; 16.9% male respondents; 2.2% missing). In terms of the job, the distribution of staff per job group is shown in Figure 1.

In terms of seniority, values range between less than a year to up to 39 years (mode=3 years and mean= 12.38 years, standard deviation= 8.46), where a significant amount of workers (71%) have an effective contract (hired with no predetermined ending date of the bond with the organization). When it comes to schooling, 17% of subjects have a school level inferior to the mandatory Portuguese level (9th year), 28.8% attended or graduated from middle school, 42.8% attended or graduated from College and 19.7% have post-graduate schooling (Specializations, Masters Degree, etc.).

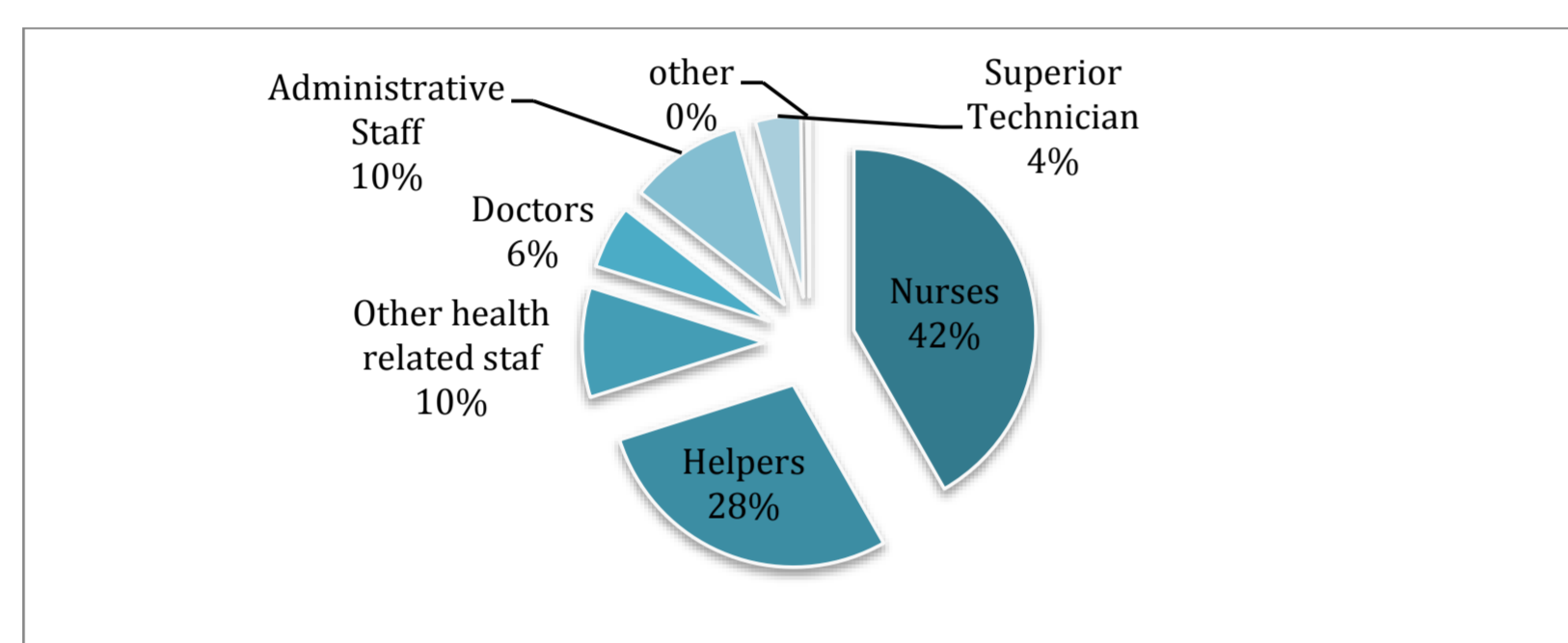


Figure 1 - Percentages of staff in different job functions.

## Introduction

Satisfaction with Human Resources Issues Management Questionnaire was created for a study in a Hospital setting, where this type of satisfaction was being tested and related with performance related self-efficacy.

This scale was based on West et al's (2006) and Buchan's (2004) work on the impact of good HRM practices in healthcare organizations, namely hospitals. The authors explore these dimensions of impactful HRM practices following Pfeffer's (1998) work on 'high commitment' or 'high performance' HRM practices:

- Performance appraisal/management
- Training
- Decentralization
- Participatory mechanisms
- Team-based structures
- Employment security
- Staffing (recruitment/selection)
- Compensation

To develop our questionnaire we started out by considering these dimensions, and then tried to adapt them to the Portuguese Hospital context, as well as including some characteristics mentioned in the literature (e.g. Paawe, 2009; West et al, 2006, Buchan, 2004) as relevant to hospital workers, namely issues with cooperation among teams and information sharing. Thus, it was decided to encompass the following conceptual dimensions:

- Recruitment and Selection (Staffing)
- Training
- Performance appraisal/management
- Information/Communication
- Team-based structures
- Interdepartmental communication/information sharing
- Team-based cooperation
- Compensation

The result was a 24 item long, five-point (from "very dissatisfied" (1) to "very satisfied" (5)) Likert-type original scale.

## Analysis

Instrument-related procedures aim at ensuring the quality of the measurement of latent variables in the study and are an essential part of the best effort to ensure that right constructs are being focused. Instrument-related procedures in this study include construct validity and reliability testing. Construct validity estimates the ability of an instrument to measure the underlying construct of interest (Ellenbecker & Byleckie, 2005). Exploratory factor analysis (EFA) has traditionally been employed by researchers as a tool to determine the number of underlying dimensions in a data set (Hinkin, 1995, cit in Brklich, Jeffs & Carless, 2002) by grouping together variables that are correlated (Tabachnik & Fidell, 2007).

Factor analysis is a multivariate analysis procedure that attempts to identify any underlying "factors" that are responsible for the covariation among a group independent variables. The goals of a factor analysis are typically to reduce the number of variables used to explain a relationship or to determine which variables show a relationship. Like a regression model, a factor is a linear combination of a group of variables (items) combined to represent a scale measure of a concept. To successfully use a factor analysis, though, the variables must represent indicators of some common underlying dimension or concept such that they can be grouped together theoretically as well as mathematically.

Latent constructs, unlike observed variables (e.g. height, weight, speed, etc.), are inaccessible to direct measurement and therefore require the use of psychometric instruments. These instruments – usually scales or questionnaires – are comprised of different items that contribute to our understanding of the subject's level and perception of said construct. Psychometric instruments can be self or other-reporting, but the vast majority of them are self-reporting scales.

## Results

### Exploratory Factor Analysis

Concerning the SHRIMQ, the hypothesized dimensions were almost integrally proven to be valid in the present sample: of the eight originally constructed dimensions 6 were verified as designed and 2 dimensions (team-based structure and team-based cooperation) fused into a single one (teamwork). Thus, seven components were extracted using principal components analysis with varimax rotation, accounting for 77.4% of the variance. Communalities values tended to be high, well above the cut off point of 0.32 (Tabachnik & Fidell, 2007) for inclusion of a variable in interpretation of a factor. Two items were removed from the analysis since they either loaded very closely in more than one factor (with a difference lesser than .01). Loadings of variables on factors and communalities are shown in Table 1, as well as the explained variance of each subscales. Variables are ordered and grouped by size of loading to facilitate interpretation.

Subscales were named according to what had been designed originally, since very few changes resulted from the analysis (none in most cases) and apart from the two aforementioned dimensions that fused, no items shifted subscales. Thus, scales were named Information (referring to the satisfaction with the way information that does not concern patients is conveyed in the organization), performance appraisal (regarding satisfaction with the process and results of performance appraisal in the organization), compensation (considering satisfaction with compensation and benefits the organization offers), Interdepartmental cooperation (regarding satisfaction with the way different departments cooperate and share information that is general or concerns patients), Staffing (satisfaction with recruitment and selection practices), Teamwork (satisfaction with the way respondents teams work) and Training (satisfaction with the contents and quantity of training offered by the Hospital).

### Confirmatory Factor Analysis

We then proceeded to the confirmatory procedures that yielded the goodness of fit indices values obtained for this model structure indicating satisfactory values for all the estimated indices (Table 2).

Table 2 - Goodness of fit indices obtained in the confirmatory factor analysis of the SHRIMQ

	c <sup>2</sup>	df.	c <sup>2</sup> /df	GFI	CFI	RMSEA	Confidence interval (95%)
Structure derived from the exploratory analysis (22 items)	930.005**	188	4.95	.917	.942	.065	.061-.06

\*\* p < .01

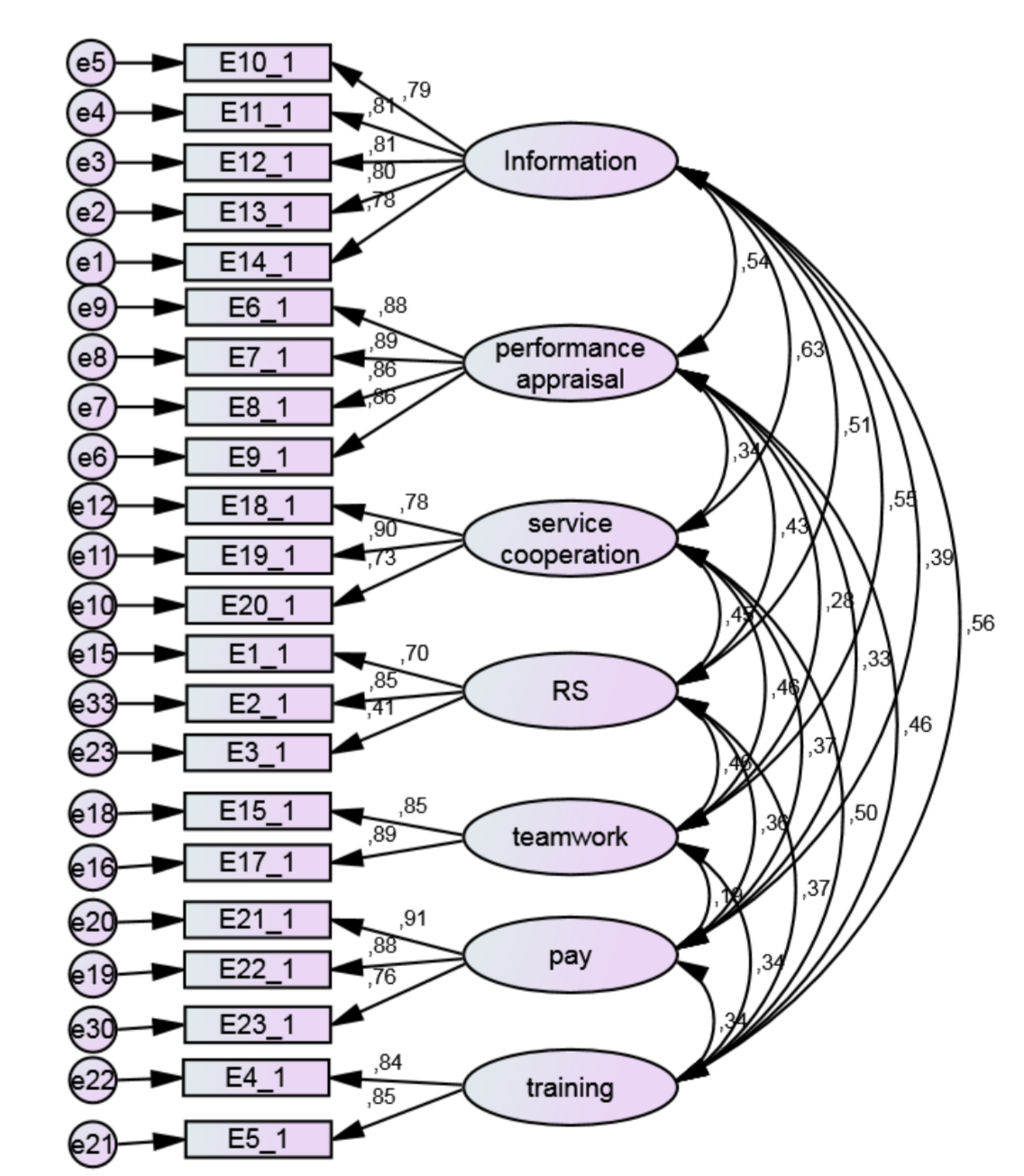


Figure 2 - Confirmatory Factor Analysis of the SHRIMQ model obtained with the exploratory factor analysis procedures.

	1	2	3	4	5	6	7	h <sup>2</sup>
12. A forma como a informação relativa ao Hospital circula entre colegas.	<b>0.82</b>	0.13	0.12	0.17	0.13	0.07	0.15	0.71
13. A forma como a informação relativa ao Serviço circula entre colegas.	<b>0.79</b>	0.10	0.09	0.15	0.08	0.27	0.14	0.76
14. A forma como a informação que me afeta diretamente circula entre colegas no Hospital na minha categoria profissional	<b>0.75</b>	0.14	0.11	0.24	0.12	0.14	0.09	0.47
11. A forma como a informação que me afeta profissionalmente/diretamente me é transmitida pelas chefias.	<b>0.72</b>	0.30	0.16	0.16	0.17	0.14	0.09	0.86
10. A forma como a informação genérica relativa ao Hospital é transmitida aos colaboradores pelas chefias.	<b>0.69</b>	0.33	0.10	0.17	0.16	0.11	0.15	0.86
8. Os resultados do meu processo de avaliação de desempenho (SIADAP ou outro).	0.16	<b>0.88</b>	0.06	0.05	0.11	0.06	0.08	0.82
9. Os resultados do processo de avaliação de desempenho em geral (SIADAP ou outro).	0.15	<b>0.86</b>	0.13	0.11	0.13	0.06	0.07	0.82
6. A forma como decorre o meu processo da avaliação de desempenho (SIADAP ou outro).	0.21	<b>0.86</b>	0.10	0.07	0.09	0.04	0.14	0.83
7. A forma como em geral decorre o processo da avaliação de desempenho (SIADAP ou outro).	0.21	<b>0.84</b>	0.13	0.10	0.14	0.07	0.15	0.82
22. O conjunto de remuneração, compensações e benefícios que este Hospital em geral oferece.	0.10	0.11	<b>0.89</b>	0.11	0.08	0.05	0.05	0.69
21. O conjunto de remuneração, compensações e benefícios que me é atribuído.	0.14	0.13	<b>0.88</b>	0.14	0.10	0.06	0.07	0.71
23. O regime de compensações e benefícios (GAR ou CFI) em que me encontro inserido/a.	0.15	0.12	<b>0.83</b>	0.08	0.02	-0.01	0.12	0.77
19. A forma como a informação em geral é partilhada entre os diferentes Serviços.	0.32	0.10	0.12	<b>0.81</b>	0.13	0.11	0.12	0.76
18. A forma como os diferentes Serviços colaboram uns com os outros.	0.17	0.10	0.13	<b>0.81</b>	0.09	0.22	0.08	0.70
20. A forma como a informação sobre os pacientes é partilhada entre os diferentes Serviços.	0.21	0.09	0.11	<b>0.76</b>	0.17	0.05	0.18	0.87
2. A forma como as pessoas são escolhidas para trabalhar neste Serviço.	0.15	0.15	0.20	0.11	<b>0.78</b>	0.24	0.02	0.86
1. A forma como as pessoas são escolhidas para trabalhar no Hospital.	0.16	0.18	0.18	0.16	<b>0.77</b>	-0.06	0.06	0.77
3. A forma como eu fui escolhido/a para trabalhar neste Hospital.	0.12	0.08	-0.12	0.08	<b>0.63</b>	0.13	0.12	0.82
15. A forma como a minha equipa funciona.	0.24	0.07	0.05	0.17	0.11	<b>0.87</b>	0.05	0.71
17. A forma como funcionam os (os) equipa(s) que eu integro.	0.24	0.11	0.03	0.15	0.17	<b>0.85</b>	0.10	0.85
4. A qualidade e temáticas das formações que o Hospital me proporciona.	0.21	0.19	0.12	0.15	0.16	0.09	<b>0.84</b>	0.84
5. A qualidade das formações que o Hospital me proporciona.	0.23	0.19	0.13	0.20	0.05	0.07	<b>0.84</b>	0.74
% of Variance accounted for	15.9%	15.6%	11.5%	10.3%	8.5%	8.1%	7.5%	

### Reliability

The scale and its dimensions presented high levels of reliability, with  $\alpha$  values of  $\alpha=0.92$  for the SHRIMQ (subscales: information (5 items)  $\alpha=0.90$ , performance appraisal (4 items)  $\alpha=0.93$ , service cooperation (3 items)  $\alpha=0.84$ , recruitment and selection (3 items)  $\alpha=0.68$ , teamwork (2 items)  $\alpha=0.86$ , pay (3 items)  $\alpha=0.89$ , training (2 items)  $\alpha=0.84$ ).

## Discussion :: Conclusions :: Limitations & Future Research

Results show that the scale is reliable and appropriate for the measurement of satisfaction with human resources management related issues; the exploratory factor analysis shows that there is a high level of explained variance and a clear distinction of factors, whereas the confirmatory factor analysis shows a good fit of the model with the present sample. The scale seems to be solid and results confirm the scale's design for the most part, allowing researchers to assess workers levels of satisfaction in the global scale as well as different sets of subscales.

However, this is merely the seminal study of this scale, this study uses one single organization as a sample and this instrument needs to be used in other contexts/samples in order to produce external validity results and properly confirm its structure and reliability.

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