

Defusing Psychosocial Risks: Development of a Detection System

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Introduction

In Europe, psychosocial risks (PSR) at work have been the subject of several important policy initiatives in recent years. These risks are significant for the service company as they directly impact employees with consequences in terms of demotivation, poor performance or turnover, for example, and ultimately increase customer dissatisfaction and thus affect service quality. Numerous research studies have proposed different scales to measure different manifestations of PSR, such as stress or job dissatisfaction. Taking all these measures into account is an insurmountable task for a company. In order to manage these risks with a simplified process, we identified and listed the items of the main questionnaires for the assessment of stress, burnout, turnover, job satisfaction and commitment. We first eliminated redundant items, and then identified and validated the dimensions to be retained. We propose here a four-dimensional model obtained through statistical modelling on a sample of 831 people.

Purpose of Research

According to Enterprise Risk Management (ERM), risk is that which prevents the achievement of an economic objective. In business, people-related risk should be considered as a risk related to the management of organizations and not only as a medical problem related to the individual. Stress, presenteeism, burnout, conflict and turnover are examples of risks affecting organizations and individuals. They are often referred as psychosocial risks (PSR), defined as "risks to mental, physical and social health, generated by employment conditions, organizational and relational factors likely to interact with the mental functioning of individuals" (Goljac & Bodier, 2011).

In other words, working in a stressful environment increases the risk of suffering of physical illness and/or psychological distress (Clarke; Cooper, 2004). In practice, psychosocial risks are described by terms such as: burnout, poor performance, deterioration in the quality of work, negative stress, illness, staff turnover, etc. (INRS, 2006; Brun, 2007; Charini, 2012). In Europe, at the political level, a more restrictive legal framework is invoked to ensure a quality environment for workers. In this extend, the best-known ERM standards are COSO ERM and ISO 31000 and include all kinds of risk categories. However, no category specifically focuses on human-related risk as a business risk. At the same level, companies are not able to effectively fight a toxic environment and its adverse effects if they do not have the right tools. Indeed, strategic decisions are the responsibility of top management (Elbanna, 2006), and human resources must be considered strategic (Noe et al. 2017). In a research conducted in Switzerland (Jenny et al., 2011) involving over 5,000 employees, a human risk management process improved performance, maintained or improved health of workers, reduced absenteeism, and improved economic gains for companies.

The objective of this research is to create a systematic, efficient and ergonomic data collection system to identify the employment conditions and factors, which may interact negatively with the individual, with the aim of preventing and/or mitigating them.

Review of the literature

The workplace has undergone a multitude of changes in recent years, bringing new health risks (European Agency for Safety and Health at Work, 2007). Technology and social developments have influenced the relationship between people and their work, in order that managing psychosocial risks in the workplace has become an increasing challenge (Jain, Leka & Zwetsloot, 2011). Among the numerous researches in the field,

we will mention three reference models: the Job Demand Control (JDC) model (Karasek, 1979), the Effort-Reward Imbalance (Siegrist, Siegrist & Weber, 1986) and Maslach's Burnout Inventory (Maslach & Jackson, 1981). All of these models are the basis for questionnaires that are often used to conduct field studies related to work experience.

In Karasek's (1979) model, also known as the demand-autonomy model, it is assumed that a work context characterized by a combination of low decision-making autonomy and high psychological demand increases the risk of developing a physical or mental health problem. More specifically, psychological demand is the amount of work to be done, the time constraints associated with this work and the mental demands. Decision autonomy refers to the ability of the worker to have control over the tasks the employee has to perform but also the possibility to develop his/her skills. Further research added social support as a third component of the model by creating the Job Demands-Control-Support Model (JD-CS) (Johnson & Hall, 1988; Karasek & Theorell, 1990). In general, it reflects the interactions experienced at work, with colleagues and hierarchy. Social support thus acts, when present, as a modulator of tension at work. In other words, in case of difficulty, social support can help the person by giving him/her the feeling of being supported, or on the contrary, it can aggravate the situation with a feeling of abandonment from colleagues/leaders.

Siegrist's model (Siegrist, Siegrist, & Weber, 1986), also known as the effort-reward imbalance model, is based on the assumption that a combination of high effort and low reward could lead to the development of pathological reactions, both physiologically and emotionally. The high effort variable can come from two sources: external and internal. The external source includes high demands at work, such as having a lot of responsibility or being interrupted frequently. Alternatively, it may be intrinsic effort that reflects attitudes in motivation for excessive commitment to work. With regard to the latter, one can explain the sense of duty, the need to excel or the self-rewarding experience of meeting challenges or mastering a situation. If low rewards such as unsatisfactory pay, lack of esteem and respect at work and low job security are present in conjunction with high effort, then the person may be facing a risky situation.

Burnout in the Maslach Burnout Inventory (MBI) model (Maslach & Jackson, 1981) is defined as a psychological syndrome of exhaustion, cynicism, and ineffectiveness, experienced in response to chronic stressors. Of the three components of burnout, exhaustion represents the individual and personal experience. It refers to a personal sense of being overwhelmed and exhausted in both emotional and physical resources. The cynicism component represents the interpersonal context of burnout. Refers to responses to various work situations that are insensitive or excessively detached. According to this theory, cynicism develops in response to burnout overload, and is a way of protecting oneself by using an emotional "buffer. The risk of this detachment results in the loss of idealism and dehumanization of others and is in part an immediate reaction to exhaustion. The third component, ineffectiveness, represents the self-evaluation dimension of burnout. It refers to feelings of incompetence and lack of achievement and productivity at work. The MBI attempts to account for the criteria for burnout, but does not allow for the assessment of the multiple work stressors that contribute to burnout. For this reason, Leiter & Maslach (2003) have extended the theory by formulating a model that focuses on the degree of balance between an individual and six domains of their work environment. These six domains are: workload, control, reward, community, fairness and value.

Methodology

Identification of relevant dimensions

On the basis of the three reference questionnaires (see literature review) complemented by other highly cited works (e.g. Morgeson & Humphrey, 2006; Cohen et al. 1983; Diener et al. 1985, Schaufeli, Bakker & Salanova. 2006) we identified and retained 195 relevant items. These items were then synthesized using a Delphi procedure with eight experts. The result consists of sixteen dimensions grouping these items: (1) Organization of work, (2) Decision-making or initiative, (3) Variety of tasks, (4) Material resources, (5) Workload, (6) Matching tasks and skills, (7) Meaning of work, (8) Recognition, (9) Fair treatment, (10) Job security, (11) Separation of private and professional life, (12) Team atmosphere, (13) Support from the hierarchy, (14) External relations, (15) Attention to the employee's well-being from the hierarchy, (16) Cooperation with team members.

We combined these dimensions into a new short questionnaire to ask people about their job satisfaction incorporating these sixteen components.

Construction of the questionnaire

The questionnaire was made of 32 questions which evaluated job conditions, organizational and relational factors at the workplace. We measured employees' general attitude toward their work environment and their overall satisfaction with their job. The core of the questionnaire assessed the sixteen items listed above (i.e. "Currently, in your job, how satisfied are you with the workload?"). Each question was measured by means of a 5-point Likert scale statement ranging from "Strongly disagree" to "Strongly agree".

Participants

The sample consisted of 1129 service employees in the Fribourg region of Switzerland. We retained and processed the responses of 813 people (see 4.1), of whom 417 were women (51.3%) and 396 men (48.7%). The sample is composed of 595 employees (74.4%), 148 managers (18.5%) and 57 senior managers (7.1%).

Results

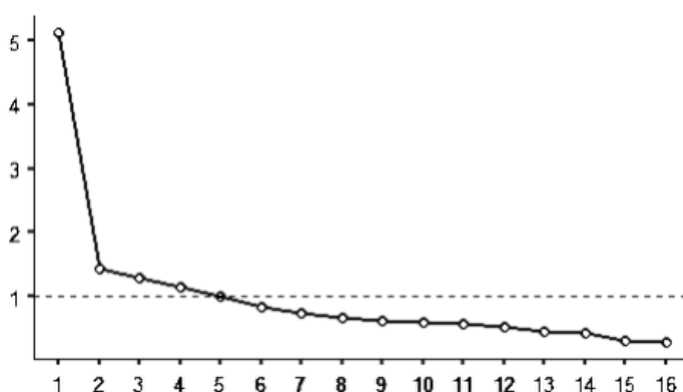
Preliminary analysis

In order to control the quality of our database, it was tested and analyzed in order to delete questionable or incomplete observations. Specifically, we excluded incomplete questionnaires (less than 70% completed), questionnaires completed too quickly (less than 90 seconds) or too slowly (ten hours). Finally, the statistical calculation of the Mahalanobis distance was used to highlight the extreme values and therefore exclude them from the database (Tabachnick & Fidell, 2001).

Principal component analysis (PCA)

PCA is a technique that summarizes the information contained in a database into a number of synthetic variables, also known as principal components. Using Kaiser's rule, we retained four principal components explaining 56.6% of the total inertia.

Figure 1. Eigenvalues



Interpretation of the axes

In order to obtain a simpler factorial representation, we proceeded with a Varimax rotation and retained only the variables that saturated adequately (factorial weight greater than .600) and only on one factor.

Table 1. Component matrix after rotation

	Components			
	1	2	3	4
Organisation of work				
Decision-making or initiative				
Variety of tasks		0.803		
Material resources				
Workload			0.683	
Matching tasks and skills		0.670		
Meaning of work		0.716		
Recognition	0.640			
Fairness of treatment	0.714			
Job security				
Separation of private/professional life			0.790	
Team atmosphere				0.877
Support from the hierarchy	0.815			
External relations				
Hierarchy attentive to well-being	0.798			
Cooperation between team members				0.868

The first factor associates elements related to the relationship between the organization at all levels and the employee and is composed of recognition, fair treatment, support from the hierarchy and the interest of the hierarchy in the well-being of the employees.

The second factor relates aspects of the self to the work and is composed of the variety of tasks, the adequacy between the tasks allocated and the skills of the person and the meaning of the work. The third factor relates to work-specific constraints and includes workload and the separation between private and professional life.

Finally, the fourth factor is related to relational aspects with co-workers and includes the variables of team atmosphere and cooperation between team members.

Creation of reduced scales

On the basis of the PCA we selected all items that were well represented on the 4 factors. Then we combined these items into 4 different scales by checking the internal consistency through Cronbach's alpha. This index expresses a degree of homogeneity (internal consistency) that is all the higher the closer its value is to 1.

Table 2. Composition of the scales and internal consistency

Scale	Item	Alpha (α)
Coherence between employee and the work	The meaning you find in your activities	0.7
	Variety of tasks	
	Adequacy between the tasks allocated and your skills	
Interpersonal relationships	Atmosphere in the team	0.81
	Cooperation with team members	
Relationship between employee and organization	Support from the hierarchy	0.82
	Attention of the hierarchy to the well-being of the employees	
	Fairness of treatment	
Job strain	Recognition of your work	0.53
	Workload	
	Separation between work and private life	

To evaluate the internal consistency, we use the proposal of George and Mallery (2003): if α is equal or higher than 0.9 the consistency is excellent, good if higher than 0.8, acceptable if higher than 0.7, debatable if higher than 0.6, poor if higher than 0.5, and unacceptable if lower than 0.5. We observe that only the scale related to work constraints is poor ($\alpha = .53$). The scale related to the coherence between the employee and his/her work is acceptable ($\alpha = .70$) and the scales reporting on interpersonal relations and the relationship between the employee and the organization are good (respectively $\alpha = .81$; $\alpha = .82$).

Linear regression

Linear regression aims to model a dependent (explained) variable through several independent (explanatory) variables. In this research, the variables to be explained are the level of general satisfaction (Table 3), while the explanatory variables, which model the variation of the explained variables, are the satisfaction scales created. One of the advantages of using a linear regression is to increase the understanding of the phenomenon studied by avoiding collinearity between the explanatory variables, i.e. a multiple linear regression allows the effects of the independent variables on the dependent variable to be considered at the same time and in a single analysis allowing the respective weights of the predictors to be measured.

Table 3. Linear regression between job satisfaction and scales assessing job conditions, and organizational and relational factors

R	R ²	F	df1	df2	p
0.675	0.456	169	4	808	<.001

Predictor variables	B	SD	t	p
Constant	0.209	0.169	1.235	0.217
Coherence between employee and the work	0.409	0.035	11.813	<.001
Relationship between employee and organization	0.313	0.029	10.814	<.001
Job strain	0.134	0.028	4.764	<.001
Interpersonal relationships	0.098	0.032	3.116	0.002

Our model indicates that 46% of the variance in job satisfaction is explained by these four elements. All factors contribute to the explanation of job satisfaction. The most important factors (see Table 3) are the coherence between the employee and the work ($B = 0.409$; $p < 0.001$) and the relationship between the employee and the organization at all levels ($B = 0.313$; $p < 0.001$). Job strain ($B = 0.134$; $p < 0.001$) and interpersonal relationships ($B = 0.098$; $p = 0.002$) were less important in explaining satisfaction.

Based on the results of the PCA, we constructed scales that summarize the job conditions and the organizational and relational factors. The internal consistency of these scales is high, except for the work stress scale ($\alpha = .53$). Further studies could complete this scale, modifying or adding relevant items to increase its internal consistency. All the scales constructed are important in explaining job satisfaction and account for 46% ($R^2 = 0.46$) of the variation in job satisfaction. It seems that a good fit between the characteristics of the individual

and the components of the job and its organization (support from the hierarchy, fair treatment) are important characteristics leading to better employee satisfaction.

Conclusion

Final discussion

Based on these results, we will be able to create a very short questionnaire used for a psychosocial risk data collection system. Indeed, we believe that we have isolated the main elements necessary to evaluate what Gollac & Bodier (2011) call "the organizational and relational factors likely to interact with the mental functioning of individuals". In the process, we have simplified the information to be collected while maintaining a good quality of risk analysis.

Our PSR management system will use the scales identified in this research through items drawn from the existing literature and adapted to reflect the one of the four dimensions. This new system will serve as the basis for the design of a digital tool for collecting data on organizational and individual factors. Its aim is to detect a toxic environment at an early stage and thus prevent its harmful effects before they can become manifest in the workplace with their devastating power.

Future studies

Our study has many limitations, which raises the possibilities of further studies. The first thing to improve is the internal consistency of the scales composing our model. Secondly, the validity of our model should be tested with other more specific statistical methods and on other samples. Our model should also be tested in different working environments. Finally, comparison with existing tests will allow us to test concurrent validity.

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