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The effect of work stress on mental health - the case of SFBT company

تأثير الإجهاد في العمل على الصحة العقلية – دراسة حالة في مجتمع SFBT

L'effet du stress au travail sur la santé mentale - le cas de l'entreprise SFBT

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ملخص: يعتبر الإجهاد رد فعل يحدث إستجابة للتعرض لعوامل محفزة، إذا كان رد الفعل هذا مناسبا عندما يواجه الشخص خطرا حقيقيا؛ أو إذا كان يسمح له بالتكيف، فإنه ليس كافيا عندما يسعى العمال للتكيف مع ظروف العمل الصعبة أو الرتيبة أو المتطلبة، لذلك تهدف دراستنا للتوصّل والتعرف على مدى وواقعية علاقة الإجهاد بالصحة العقلية لأفراد المؤسسة وكذلك أدائهم، ومعرفة مدى ارتباط الإجهاد بالمشاكل الصحية أو حتى حوادث العمل، ومن هذا المنطلق تطرقنا الى موضوع الضغط والإجهاد في العمل وأهم العوامل والأسباب التي تؤدي لذلك، حيث أنه توصلنا من خلال هذه الدراسة الميدانية أن ضغوط العمل تؤثر بطريقة أو بأخرى على الصحة العقلية للفرد بالمنظمة، ومن خلال هذه الورقة البحثية سنتناول أهم الجوانب التي تثري بحثنا علميا.

الكلمات المفتاحية: كرونباخ ألفا؛ المؤشرات التفاعلية؛ الارتباطات المتبادلة بين العوامل؛ اختبار الإجهاد.

Abstract: Stress is a reaction that occurs in response to exposure to stress factors stress. If this reaction is appropriate when the man is faced with real danger or if it allows adaptation, it is not adequate when workers strive to adapt to difficult, monotonous or demanding working conditions, therefore, our study aims to determine the extent and reality of the relationship between stress and the mental health of members of the organization, as well as their performance, and to determine how stress can lead to mental health problems and even accidents at work. from this point of view, we have addressed the topic of stress at work as well as the most important factors that lead to it, as we have discovered through this field study that stress at work affects in one way or another the mental health of an individual in the organization, and through this research paper we will address the most important aspects that enrich our research scientifically.

Keywords: Cronbach Alpha, reactive indicators, Inter-correlations between factors, stress test.

Résumé : Le stress est une réaction qui se produit en réponse à l'exposition à des facteurs. Si une telle réaction est appropriée lorsqu'une personne est confrontée à un danger; ou si lui permet de s'adapter, cela ne suffit pas lorsque les travailleurs s'adaptent à des conditions de travail difficiles, monotones ou exigeantes, par conséquent, notre étude vise à déterminer l'étendue et la réalité de la relation entre le stress et la santé mentale des membres de l'organisation, ainsi que leurs performance, et à déterminer comment le stress peut entraîner des problèmes de santé mentale et même des accidents du travail, de ce point de vue, nous avons abordé le sujet du stress au travail ainsi que les facteurs les plus importants qui y conduisent, comme nous l'avons découvert à travers cette étude de terrain que le stress au travail affecte d'une manière ou d'une autre la santé mentale d'un individu dans l'organisation, et à travers ce document de recherche, nous aborderons les aspects les plus importants qui enrichissent nos recherches scientifiquement.

Mots clés : Cronbach Alpha; indicateurs réactifs; corrélations entre facteurs; test du stress.

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Introduction

Stress at work has effects on many aspects, the most important of which is mental health, in this article we will see the relationship between stress at work and mental health and how does this affect the performance of employees (a case study of SFBT company) by evaluation stressors and identification of the factors generating this stress and also the main elements causing stress to employees, and also the prevention of stress at work from different complementary points of view.

This article aims to encourage multidisciplinary collaborations between Epidemiologists, Psychologists, Ergonomists, Doctors, within the framework of work stress prevention projects.

Finally, this collective article will be able to contribute to a better knowledge, and to a greater management of the problems of stress at work both in the approaches to designing workstations, organisation, distribution and recognition of tasks in work, and also in social choices concerning the nature, purpose and value of tomorrow's work.

Literature review

The concept of work stress has gained popularity in Anglo-Saxon countries since the 1970s. This concept allowed the development of a large panel tools and other questionnaires sometimes measuring the causes of stress, sometimes the consequences on health or on the performance. recently, in the English-speaking context, while research has focused on certain aspects of stress and that the companies have gradually taken action to deal with it. (Bruchon-Schweitzer, et al., 1997, 1999)

Since the 1980s, international scientific work in response to a growing demand for information on stress have continued to develop in areas as diverse as daily life, work activity, education, health or even sports activity. (Somerfield & McCrae, 2000)

With regard more specifically to stress at work, interest has mainly focused on the possible links between the work environment and the risks of damage to physical and mental health. Thus, in the introduction to their collective work entitled Stress at work and mental health, Neboit and Vézina (2002) consider stress as the evil of the 21st century, given the human, economic and social costs it generates. More recently, in their interministerial report, Nasse and Légeron (2008) emphasize both the importance of stress at work with regard to its impact on the health of workers and the need to reflect on its methods of investigation. (Neboit & Vézina, 2002)

However, tackling the question of stress proves to be of a certain complexity in view of the many theoretical and methodological obstacles that punctuate this notion. This is often ambiguous, encompassing a multitude of other notions (Pagès, 1989; Lancry, 2007) and its association with health is sometimes questioned (Logeay & Gadbois, 1991), even going so far as to mention the possibility of a methodological artefact. (Semmer, Zapf, & Dunkel, 1994)

What is decisive in the evolution of conceptions of stress in the work is the transition from causalist and interactionist conceptions, which imply a fragmentation of the environment, work situations and the individual, with transactional conceptions, even psychodynamics and ergonomics, which consider situations as a whole and give a central place to the activity of individuals and groups. (Vaxevanoglou, Lancry, & Ponnelle, 2002, 2004)

1- Company Presentation SFBT

S.F.B.T: Refrigeration Company and brewery of Tunis: its head office is located in BAB SADOON and it has installed other production and sales sites in various regions.

- S.F.B.T SFAX
- S.F.B.T MAHDIA
- S.F.B.T CHARGUIA

The subsidiary of Sfax, headquarters of our PFE has been established since 1948 and whose activity is the manufacture and sale of soft drinks.

Indeed, the main products manufactured by SFBT Sfax

• Coca Cola
• Fanta (orange, lemon)
• Boga (lemonade, cider)
• Tropical Hawaii

The plant of S.F.B.T Sfax consists of three production groups

- A line for family production (1L) with a capacity of 6000 bottles per hour (H.K)
- A line for standard production with a capacity of around 24,000 bottles per hour (S.I.G)
- A line for the production of plastic with a capacity of 7000 bottles per hour (P.E.T)

2- Work stress test

- Objective

Determine what are the main elements causing stress to your employees.

- Targets

Executives and current employees.

- Strengths of the test

Evaluation of 11 stressors classified according to 3 categories of stress at work.

Precise identification of the factors generating stress at work. Control of social desirability.

- The award time

The test time is estimated at about twenty minutes.

- Structure of the questionnaire

The Stress test is composed of 55 questions (with choice of only one answer among 5 propositions).

2-1. Description of dimensions and factors

2-2. Dimensions measuring work stress

The stress test is divided into three dimensions structured according to eleven factors. Each factor corresponds to a "stressor" that can generate in the individual questioned a potential source of stress at work.

Table **-1-: First dimension: the stress on the content of work**

Workload (1)
This stressor corresponds to strong quantitative requirements. Indeed, the employee considers to have a workload very or even too important, having too much information to treat simultaneously and not having time to take breaks.
Lack of stimulation and activity at work (1)

Faced with this stressor, the employee tends to judge his tasks boring, simple and routine. In addition, he tends to feel useless or even "paid to do nothing".
Lack of clarity of tasks and objectives (1)
This stressful factor originates in inaccuracies as to the tasks entrusted to it. Faced with orders deemed contradictory or vague or non-existent objectives, the individual questions what is expected of him and seeks the optimum means to carry out his missions (How should I go about it? what basis will I be evaluated?).
Responsibilities (1)
This stressor corresponds to strong qualitative requirements. The employee is stressed because of being at the head of a large team, of being constantly put forward, of having to speak on behalf of his team or of being directly confronted with superiors and suffering pressures regarding its responsibilities (constant demand for precision, quality, vigilance, etc.).
Evolution of working methods (2)
This stressor originates from a too rapid evolution of working methods (eg the use of new computer software). Thus, the individual tends to feel overwhelmed or even "has been".

Source: Under dimensions inspired by the OSI-R model developed by Sample (2007)

Table **-2-: Second dimension: stress in the context of work**

Second dimension : stress in the context of work
The working environment (1)
The employee complains of his working environment [physical nuisance (noise, smell, heat, cold, light etc.)] or poor ergonomics of workstations (office too small, poorly arranged premises etc.)].
Job instability (2)
This stressful factor consists of various sources of instability : - Instability regarding employment contracts (precarious contract, subcontracting, threat of job loss, etc.), - - Socio-economic instability (poor economic health of the company or uncertainty about its future).
The ethics of the company (1)
For this factor, the individual is stressed because the values advocated by the company are inadequate with his own. Thus, the latter considers that his organization is unethical and goes against established rules and laws.

Source: Sub dimensions inspired by the INRS survey (2008)

Table **-3-: Third Dimension: Stress on Work Relationships**

Third dimension : Stress in relation to work relationships
Relations with colleagues (3)
The employee complains about the lack of communication and help from his colleagues, which can lead to conflicting relationships or even altercations between the different members of the team.
Relations with superiors (3)
The employee complains about the management that he considers to be not very participatory, authoritarian or deficient. He also feels pressured by his employer and / or to be infantilized by him.
Lack of recognition (4)
This stressor corresponds to the absence or low recognition of the work done. The individual feels that he does not have a feedback on the work he is doing and does not have the opportunity to present the projects allocated to him.

Source: Under dimensions inspired by the model of Hellemans and Karnas (1999)

2-3. Description of the population

The analyzes are based on a sample of 100 Internet users who completed the test in July 2016.

a- Âge

Average age 36.9 years, standard deviation 10.48 years, minimum age = 20 years, maximum age = 64 years.

Table **-4-: Âge**

Less than or equal to 29 years	26,00%
Between 30 and 35 years	24,00%
Between 36 and 43 years	24,00%

b- Indices of central tendency and dispersion

The central tendency and dispersion indices provide an estimate of the candidate's position in the reference population. The central tendency index studied corresponds to the mathematical average of all the scores observed. It tells us which level of the scale most of the scores are. The standard deviation of the scale is the mathematical mean of all standard deviations of individuals. He tells us how scattered the scores are in relation to the average. A high standard deviation indicates too much dispersion, a low standard deviation indicates too little dispersion. For a scale of 10, a standard deviation between 1.5 and 2.0 is considered acceptable. Finally, the standard error of the mean gives us an estimate of the variance error that is likely to be found in the population. The standard error of the mean is between 0 and 1. Thus, the closer this value is to 0, the better the distribution. The results for these indices are presented in the tables below, for dimensions.

c- Cronbach alpha by size

The Cronbach Alpha Indices are calculated for each scale of the questionnaire and allow to estimate the homogeneity, the internal consistency of these. For the stress test, these coefficients vary from 0.72 to 0.80 for the dimensions and between 0.49 and 0.79 for the factors. These results show, given the number of items per factor, a good consistency of each of the 3 dimensions and 11 factors evaluated.

Table **-5-: Cronbach's Alpha by Dimension**

	Cronbach Alpha
Stress to the content of the work	0,8
Stress in the context of work	0,72
Stress in the face of labor relations	0,79

d- Averages, standard deviations, and standard errors by dimension

Table **-6-: Averages, Standard Deviations, and Standard Errors by Dimension**

	Average observed (out of 10)	**Observed Standard Deviation**	**Standard error of the average**
Stress to the content of the work	3,99	2,89	0,20
Stress in the context of work	3,91	2,75	0,21
Stress in the face of labor relations	4,2	2,61	0,23

Standard deviations and standard errors are far from the expected values. Thus, it appears that scales have a bad ranking. Stress related disorders, whether emotional, physiological, behavioral, affect the proper execution of tasks and therefore projects and directly or indirectly sanction productivity. For example the incidence of a behavioral disorder on teamwork. In case of significant stress in a company, employees are not the only ones to suffer. The consequences for the company itself are not negligible in organizational and economic terms. In view of the risks involved, it is essential to turn to preventive measures.

e- Averages, standard deviations, and standard errors by factor

Table **-7-: Averages, Standard Deviations, and Standard Errors by Factor**

	Observed average (out of 10)	**Observed Standard Deviation**	**Standard error of the mean**
Workload	4,75	1,98	0,17
Lack of stimulation	3,89	1,83	0,16
The lack of clarity of tasks	3,89	2,19	0,19
Responsibilities	4,26	2,14	0,18
The evolution of the working methods	3,17	1,58	0,14
The work environment	3,72	1,71	0,15
Job instability	3,53	1,89	0,16
Business ethics	4,48	1,87	0,16
Relationships with colleagues	3,8	1,69	0,14
Relations with superiors	3,88	2,34	0,2
Lack of recognition	4,91	2,01	0,17

Standard deviations and standard errors are close to the expected theoretical values (only the standard deviations of the "Relations with superiors", "Lack of clarity" and "Responsibilities" factors are slightly different from predictions). The scales have a good classifying power.

f- Cronbach Alpha per dimension

The Cronbach Alpha Indices are calculated for each scale of the questionnaire and allow to estimate the homogeneity, the internal consistency of these. For the stress test, these coefficients vary from 0.72 to 0.80 for the dimensions and between 0.49 and 0.79 for the factors. These results show, given the number of items per factor, a good consistency of each of the 3 dimensions and 11 factors evaluated.

The data are presented in the tables below.

g- Cronbach Alpha

Table **-8-: Cronbach's Alpha**

	Cronbach of Alpha
Stress to the content of the work	0,8
Stress in the context of work	0,72

Stress in the face of labor relations	0,79

h- Cronbach's alpha by factor

Table **-9-: Cronbach's alpha by factor**

	Cronbach of Alpha
Workload	0,55
Lack of stimulation	0,49
The lack of clarity of tasks	0,69
Responsibilities	0,79
The evolution of the working methods	0,52
The work environment	0,67
Job instability	0,52
Business ethics	0,63
Relationships with colleagues	0,57
Relations with superiors	0,73
Lack of recognition	0,59

i- Validity

The results are shown in the table below

Table **-10-: Validity**

	Average (out of 10)	**Value t**	**dl**
The workload	4,73	-0,07	133
The lack of stimulation	3,82	-0,34	133
The lack of clarity of tasks	3,8	-0,34	133
Responsibility	**3,36**	**-3,53**	**133**
The evolution of working methods	3,05	-0,63	133
The working environment	3,35	-1,78	133
The instability of employment	**3,05**	**-2,07**	**133**
The ethics of the company	**3,86**	**-2,72**	**133**
Relations with colleagues	3,41	-1,92	133
Relations with superiors	3,7	-0,63	133
The lack of recognition	4,52	-1,61	133

In **bold**, the significant differences at $p < 0.05$

We find that for the factors "Responsibilities", "Evolution of the working methods" and "Ethics of the company", obtain higher scores against these three stressors.

2-4. Inter-correlations between factors

Table **-11-: Inter-correlations between factors**

	Charge	Stim	Clarté	Resp	Evo	Env	Insta	Intég	Coll	Sup	Reco
Charge											
Stim	0,12										
Clarté	0,45	0,27									
Resp	0,42	0,09	0,44								
Evo	0,32	0,06	0,24	0,42							
Env	0,36	0,14	0,33	0,22	0,01						
Insta	0,38	0,20	0,40	0,60	0,39	0,19					
Intég	0,20	0,34	0,42	0,33	0,23	0,26	0,36				
Coll	0,44	0,18	0,40	0,42	0,19	0,34	0,41	0,23			
Sup	0,35	0,42	0,62	0,30	0,20	0,27	0,34	0,48	0,37		
Reco	0,41	0,38	0,45	0,35	0,20	0,31	0,40	0,57	0,31	0,64	

Correlations marked in red are significant at p <0.05.

2-5. Proactive Measures and the Systemic OSH Perspective

In both research and practice, traditional reactive indicators of measures (eg, frequency and severity rates) have been found to be inappropriate, inaccurate or even, in some cases, counterproductive for assessing establishments in occupational health and safety. This paper presents the preliminary results of a tool composed of indices of predictive or prospective measures, to assess the improvement of health and safety conditions in the workplace. These indicators are considered to be followed in the long term by an improvement of the reactive results, which play here a secondary role of confirmation of the existing performance in the establishments.

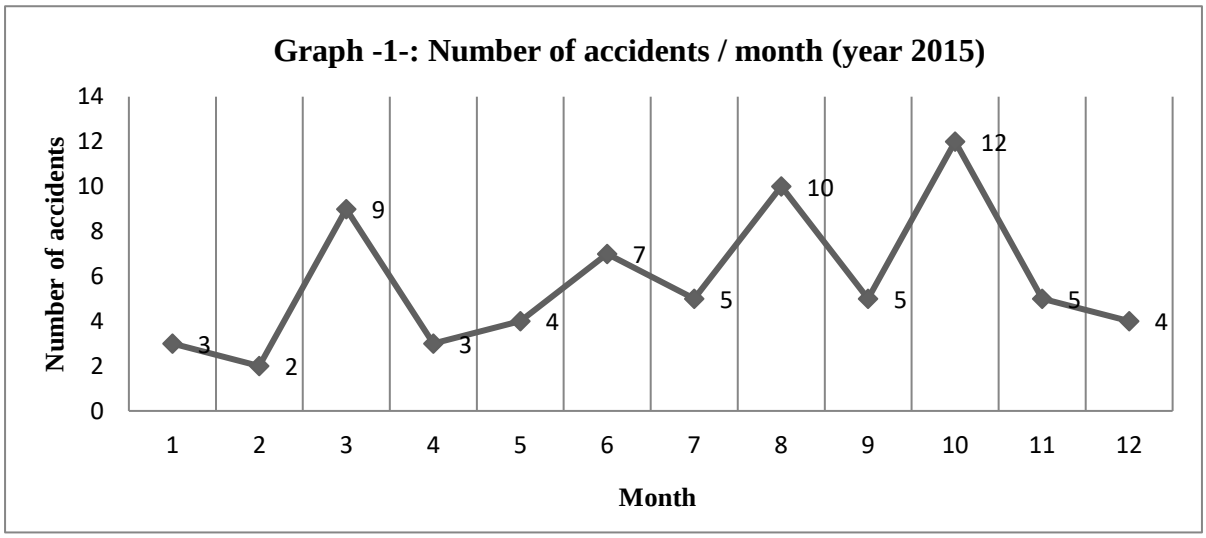
a- Measurement of reactive indicators (Year 2015)

Table **-12-: Measurement of reactive indicators**

Month	Number of accidents	Number of days lost	Number of hours worked	Frequency rate	Frequency incidence rate	Severity rate	Severity Index Rate
January	3	232	33390	89,85	30	6,95	77,33
February	2	66	35930	55,66	2	1,84	33,00
March	9	216	42389	401,98	9	9,65	24,00
April	3	210	44220	67,84	3	4,75	70,00
may	4	64	65666	60,91	4	0,97	16,00
June	7	243	62661	111,71	7	3,88	34,71
July	5	224	61196	81,70	5	3,66	44,80
August	10	281	70600	141,64	10	3,98	28,10
September	5	163	60903	82,10	5	2,68	32,60
October	12	158	58706	204,41	12	2,69	13,17
November	5	136	58706	85,17	5	2,32	27,20
December	4	87	50570	79,10	4	1,72	21,75
total	69	2080	624937	110,41	8	3,33	30,14
Number of workers	100						

Number of hours worked / month	160

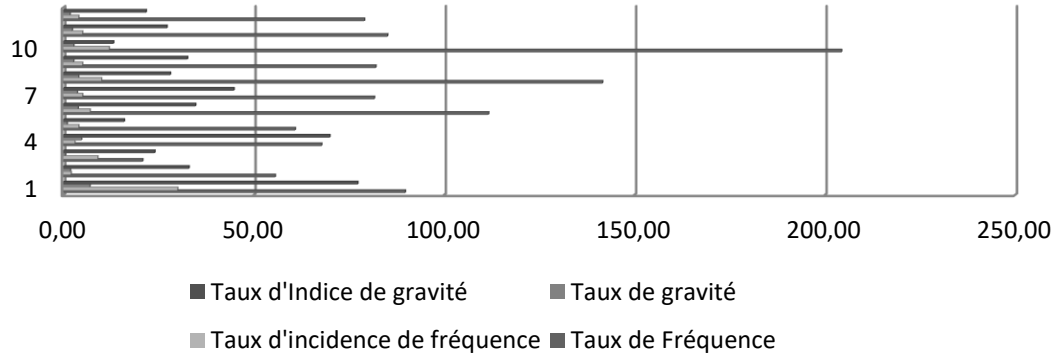
b- Number of accidents / month (year 2015)



During the year 2015 there is a significant variation which presents a surplus of number of accidents / month.

c- Measurement of reactive indicators (year 2015)

Graph -2-: Measurement of reactive indicators (year 2015)



As well as the figure of the histogram presents a surplus of the values of the different rates of the reactive indicators. The first measurement of the reactive indicator shows that this communication presents the preliminary results of a tool composed of indices of predictive or prospective measures, to assess the improvement of health and safety conditions in the workplace. These indicators are considered to be followed in the long term by an improvement of the reactive results, which play here a secondary role of confirmation of the existing performance in the establishments.

2-6. Reducing the causes of stress

One of the most effective measures to combat stress is to identify it and then act directly on the sources. The lack of recognition of the work done, the lack of communication and organizational

problems are among the recurring stressors. Acting on these factors is an excellent means of prevention. There are several measures to address the causes of stress, including

• Raise awareness among managers

• Drive internal communication

• Reorganize the work environment to make it more enjoyable

• Overcoming organizational problems

a- Taking a Collective Approach to Stress Reduction

Individualism and lack of social cohesion are often associated with tensions indicative of increased exposure to stressors. Hence the need for collective measures to combat stress at work. Here are a few examples

• Recognition of work done

• Adopt a collective learning approach

• Foster teamwork to strengthen social cohesion

• **Objective**
Determine the main stressors in your employees.

• **Targets**

Current managers and employees.

• **Strengths of the test**

Assessment of 11 stressors classified according to 3 categories of work stress. Precise identification of stressors at work. Control of social desirability.

• **The time of passing**

The test time is estimated to be about 20 minutes.

• **Structure of the questionnaire**

The Stress Test is composed of 55 questions (with a choice of a single answer from 5 proposals).

b- Description of dimensions and factors Dimensions measuring work stress

The Stress test is divided into three dimensions structured according to eleven factors. Each factor corresponds to a “stressor” that can generate a potential source of work stress for the interviewee.

2-7. First dimension: Stress in the face of work content

Table **-13-: First Dimension: Stress in the Face of Work Content**

First dimension :Stress in the face of work content
The workload
This stress or corresponds to high quantitative requirements. Indeed, the employee Considers that he has a very or too heavy workload, has too much information to process simultaneously and does not have time to take breaks.
Lack of stimulation and activity at work
Faced with this stress or, the employee tends to judge his tasks boring, simple and routine. In addition, it tends to feel useless or even “paid to do nothing”.
Lack of clarity of tasks and objectives
This stressful factor has as its origin the inaccuracies regarding the missions entrusted. Faced with orders deemed contradictory or objectives unclear or non-existent, the Individual questions what is expected of him and seeks the optimal means to carry out his missions (How should I do it? on what basis will I be evaluated?).
The responsibilities
This stress or corresponds to high quality requirements. The employee is stressed by being at the head of a consistent team, being constantly put forward, having to speak on behalf of His team or being directly confronted by superiors and being pressured as to his responsibilities (constant demand for precision, quality, vigilance, etc.).
Changes in working methods
This stress factor is due to too rapid changes in working methods (e.g., the use of new Computer software).Thus, the individual tends to feel overwhelmed or even“ has been”.

2-8. Second dimension: stress in the workplace

Table **-14-: Second dimension: stress in the workplace**

Second dimension: stress in the workplace
The working environment
Employee complains about work environment [physical nuisance (noise, smell, heat, cold, light etc.) or poor ergonomics of work stations (office too small, poorly arranged spaces etc.)].
Employment instability
This stress or is made up of various sources of instability: Instability regarding employment contracts (precarious contract, subcontracting, threat of job loss, etc.), Socio-economic instability (poor economic health of the company or uncertainty about its future).
Business ethics
For this factor, the individual is stressed because the values advocated by the company are Inadequate with his own. Thus, the latter considers that his organization is not ethical and goes against established rules and laws.

2-9. Third dimension: Stress in working relationships

Table **-15-: Third Dimension: Stress in Work Relationships**

Third dimension: Stress in working relationships
Relationships with colleagues
The employee complains about the lack of communication and assistance from his colleagues, Which can lead to conflicting or even altercations between the different team members.
Relations with superiors
The employee complains about the management he considers to below participatory, Authoritarian or deficient. Heal so feels pressured by his employer and/or infantilized by him.
Lack of recognition
This stress or corresponds to the absence or weak recognition of the work done. The individual Feels that he has no feedback on the work he is doing and that he does not have the opportunity to present the projects allocated to him.

• **Population Description**

The analyses are based on a sample of 100 Internet users who performed the test in July 2017.

• **Sensitivity**

Social desirability is one of the main biases of personality questionnaires, especially in a context where the candidate is interviewed internally. Indeed, the latter is often tempted to choose the answer that he considers the most socially favorable. The analysis of the sensitivity of the items thus makes it possible to verify that the level of social desirability is the same for each of the proposals. However, for our stress test, we did not want to balance the various response possibilities. Indeed, knowing that our proposals ranged from 0 (no stress) to 2 (significant stress), we expected that the proportion of stressed candidates would be less than the proportion of stressed candidates. However, we have ensured that the majority of response rates do not exceed the 80-20% range.

• **Central trend and dispersion indices**

The central trend and dispersion indices provide an estimate of the candidate's position in the reference population. The central trend index studied corresponds to the mathematical average of all observed scores. She tells us at what level of the scale most scores are. The standard deviation of the scale is the mathematical mean of all standard deviations of individuals. He tells us the extent to which the scores are dispersed relative to the average. A high standard deviation indicates too high dispersion; a low standard deviation indicates too low dispersion. For every 10 scale, a standard deviation between 1.5 and 2.0 is considered acceptable. Finally, the standard error of the mean gives us an estimate of the variance error that is likely to be found in the population. The standard error of the mean is between 0 and 1. Thus, the closer this value is to 0, the better the distribution. The results for these indices are presented in the tables below for dimensions and factors.

a- Means, standard deviations, and standard errors per dimension

Table **-16-: Means, standard deviations, and standard errors by dimension**

	Average Observed (of 10)	**Standard Deviation Observed**	**Standard error of the average**
Stress on work content	3,99	1,29	0,11
Stress in the work place	3,91	1,31	0,11
Stress on working relationships	4,2	1,61	0,14

Table **-17-: Means, standard deviations, and standard errors by factor**

	Average observed (out of 10)	**Observed Standard Deviation**	**Standard error of the average**
The workload	4,75	1,98	0,17
The lack of stimulation	3,89	1,83	0,16
Lack of clarity of tasks	3,89	2,19	0,19
Responsibilities	4,26	2,14	0,18
The evolution of working methods	3,17	1,58	0,14

The working environment	3,72	1,71	0,15
Employment instability	3,53	1,89	0,16
Business ethics	4,48	1,87	0,16
Relations with colleagues	3,8	1,69	0,14
Relations with superiors	3,88	2,34	0,2
Lack of recognition	4,91	2,01	0,17

Standard deviations and standard errors are close to the expected values. Thus, it appears that the scales have a good classification power.

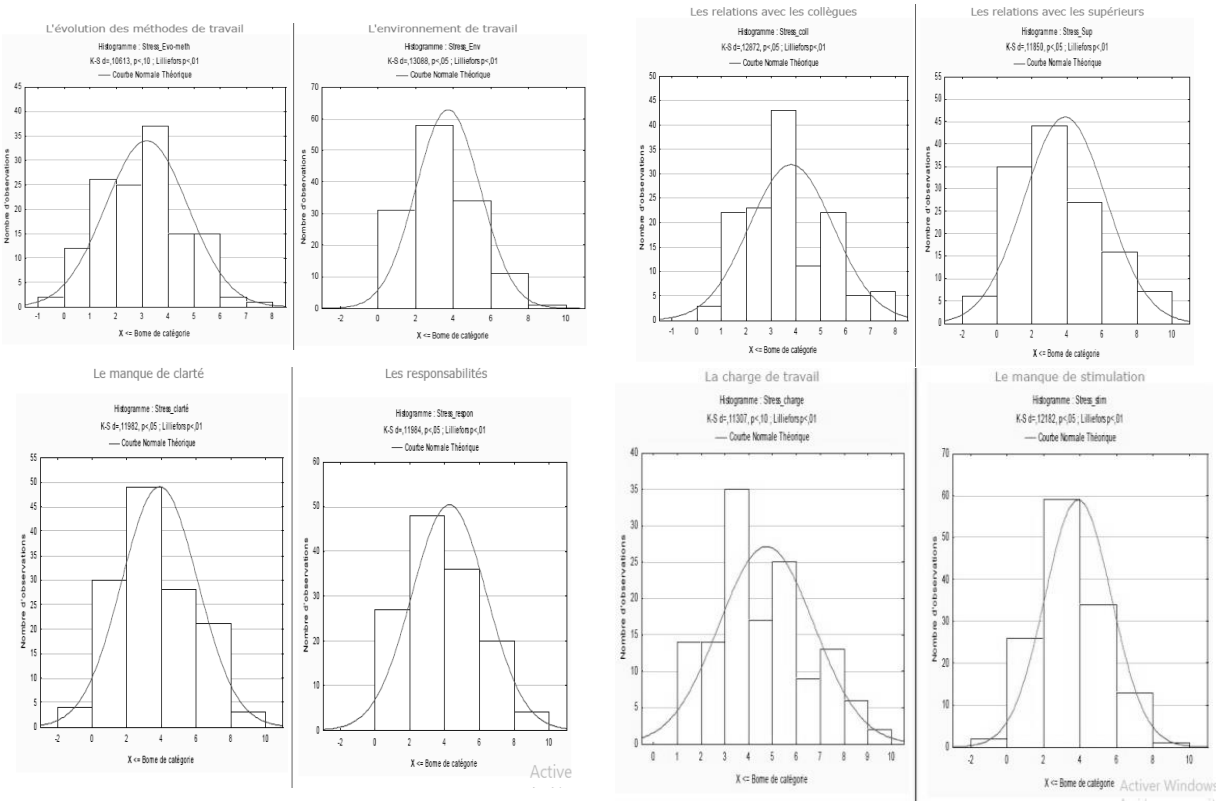
b- Means, standard deviations, and standard errors by factor

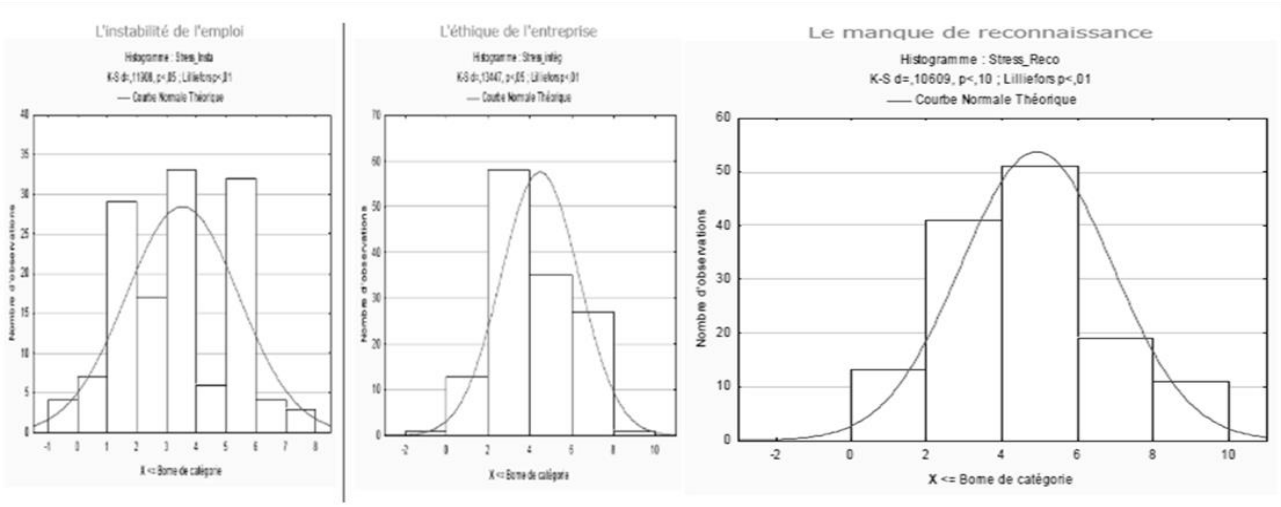
Standard deviations and standard errors are close to expected theoretical values (only "Relationships with Superiors", "Lack of Clarity" and "Responsibilities" are slightly different from predictions). The scales therefore have a good classifying power.

c- Normality of distributions

The graphs below show the distribution of scores for each of the 11 factors.

Graph -3-: Distribution of scores for each of the 11 factors





d- Alpha of Cronbach per dimension

The Alpha indices of Cronbach are calculated for each scale of the questionnaire and make it possible to estimate the homogeneity, consistency interns those. For the test of Stress, these coefficients vary from 0,72 to 0,80 for dimensions and between 0,49 and 0,79 for the factors. These results testify, considering the number of items per factor, of a good consistency of each of 3 dimensions and the 11 evaluated factors. The data are presented in the tables below.

e- Cronbach's Alpha

Table **-18-: Alpha of Cronbach**

	Cronbach Alpha
Stress on work content	0,8
Stress in the workplace	0,72
Stress on working relationships	0,79

f- Alpha of Cronbach per factor

Table **-19-: Alpha of Cronbach per factor**

	Cronbach Alpha
The workload	0,55
The lack of stimulation	0,49
Lack of clarity of tasks	0,69
Responsibilities	0,79
The evolution of working methods	0,52
The working environment	0,67
Employment instability	0,52
Business ethics	0,63
Relations with colleagues	0,57
Relations with superiors	0,73
Lack of recognition	0,59

g- Validity

The results are presented in the table below

Table **-20-: Validity**

	Mean (by 10)	Value t	ddl
The workload	4,73	-0,07	133
The lack of stimulation	3,82	-0,34	133
Lack of clarity of tasks	3,8	-0,34	133
responsibilities	3,36	-3,53	133
The evolution of working methods	3,05	-0,63	133
The working environment	3,35	-1,78	133
Employment instability	3,05	-2,07	133
Business ethics	3,86	-2,72	133
Relations with colleagues	3,41	-1,92	133
Relations with superiors	3,7	-0,63	133
Lack of recognition	4,52	-1,61	133

It is noted that for the factors “Responsibilities”, “Evolution of the working methods” and “Ethics of the company”, obtain higher scores vis-a-vis these three stressing agents.

2-10. Inter correlations between the factors

Table **-21-: Intercorrelations between the factors**

	Charge	Stim	Clarté	Resp	Evo	Env	Insta	Intég	Coll	Sup	Reco
Charge											
Stim	0,12										
Clarté	0,45	0,27									
Resp	0,42	0,09	0,44								
Evo	0,32	0,06	0,24	0,42							
Env	0,36	0,14	0,33	0,22	0,01						
Insta	0,38	0,20	0,40	0,60	0,39	0,19					
Intég	0,20	0,34	0,42	0,33	0,23	0,26	0,36				
Coll	0,44	0,18	0,40	0,42	0,19	0,34	0,41	0,23			
Sup	0,35	0,42	0,62	0,30	0,20	0,27	0,34	0,48	0,37		
Reco	0,41	0,38	0,45	0,35	0,20	0,31	0,40	0,57	0,31	0,64	

The correlations significant in red are significant with $p<0.05$.

Conclusion

Stress is increasingly mentioned in modern societies. He is often considered the evil of the century, and in particular in work. Changes in work situations and a heightened awareness of these transformations, and their negative effects, by social actors, have brought about a certain number of teams, and in particular French-speaking teams, to initiate research on a theme that had remained until now rather the prerogative of teams Nordic or Anglo-Saxon. In this context, taking into account more systematic analysis of the multifactoriality of the determinants of stress at work has led teams from different disciplines (epidemiology, work psychology, physiology of work,

psychodynamics of work, ergonomics) to combine their methods and concepts to approach this problem, with the aim of acquiring useful knowledge for preventive action.

Among the most important results, we obtained that the factors “responsibilities”, “evolution of the working methods” and “ethics of the company”, obtain higher scores among the rest of the results of stressing agents.

Through this research paper, we can make the following recommendations:

- Reducing work pressure by trying to avoid all the causes of stress at work.
- Improving all social relations between members of the organization
- Developing a motivational program that encourages employees to improve its performance.
- Activating the spirit of teamwork to alleviate work pressure, and activating the principle of dialogue in the organization

And this can lead to reducing work stress on mental health and maintaining it.

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