

## Stress Prevalence and associated Factors among Bank Employees in Niamey, Niger

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### ABSTRACT

**Introduction:** The difficulties associated with the financial crisis have led to deep restructuring in the banking sector. The consequences are the emergence of stress among employees. The objective of this study was to assess job stress and related factors among bank workers in Niamey.

**Methods:** This was a descriptive and analytical cross-sectional study conducted from 24 February to 23 August 2020 among bank workers in Niamey, Niger. A random draw of one agency per bank from four banks of the city, followed by thorough recruitment of employees from the four selected agencies, was carried out. Stress was measured using the Karasek and Siegrist models. The data had been analyzed with the Epi info7.2 software. A multivariate analysis had been carried out; all the tests had been interpreted with a significance threshold of 5%.

**Results:** A total of 275 employees had been included. The average age was  $38.09 \pm 7.1$  years. They were 152 men (55.27%), a sex ratio of 1.23. Half (50.55%) were executing agents; 30.91% worked more than 5 days a week. The prevalence of stress was 21.90% and 28%, respectively, according to the Siegrist and Karasek models. Work more than 5 days per week ( $p=0.0254$ ; OR=2.75), feeling job insecurity ( $p=0.0047$ ; OR=6.99) with the desire to change jobs ( $p<0.0041$ ; OR=2.90) were associated with stress. On the other hand, males ( $p=0.0084$ ; OR=0.42) and feeling satisfied with work ( $p=0.000$ ; OR=0.10) were protective.

**Conclusion:** The prevalence of stress in the banking sector in Niger is high. Measures to reduce the number of working days; ensure job stability; reward employees and support women's work are necessary to reduce stress.

**Key words:** bank, job stress, Niamey, prevalence.

### INTRODUCTION

Occupational stress, which is currently classified by the International Labor Organization (ILO) as an emerging occupational hazard faced by enterprises, involves physiological, emotional, cognitive and

behavioral responses to particularly distressing aspects of the content, organization and working environment.<sup>1</sup> People who suffer are often tense, anxious, and feel unable to meet their obligations. Today, stress has become a major occupational health concern.<sup>2</sup> In the European Union, 22% of employees report stress according to the results of the fourth survey on working conditions in 2005.<sup>3</sup> In Switzerland, in 2017, 21% of working people very often felt stress in their work, compared to 18% in 2012.<sup>4</sup> The consequences are enormous for the economies of the countries. According to the International Labor Organization (ILO), in the United States, the cost of stress in American companies exceeds 300 billion dollars per year.<sup>5,6</sup> Some sectors seem to be particularly affected by this phenomenon; in particular the banking sector. Indeed,

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the latter has undergone major organizational changes linked to the restructuring processes resulting from the global economic crisis.<sup>7</sup> Other specific aspects that could be considered as potential sources of stress for employees include possible violence, risk of theft, as well as conflicting tasks, pressure to achieve business objectives, and geographic transfer/mobility as well.<sup>8</sup> While many studies have looked at stress in the banking sector in international literature, in Africa there has been little literature on the subject.<sup>7-10</sup> This study would like to remedy this insufficiency and encourage others in this field. The purpose of this paper was to study stress among bank workers in Niamey, Niger.

## METHODS

This was a cross-sectional, descriptive, and analytical study over 6 months from February 24 to August 23, 2020.

The study population consisted of employees of the various banks present in the city of Niamey, without distinction of sex or socio-professional category. The sample size calculated based on Daniel Schwartz's formula ( $n = \epsilon \alpha^2 \cdot p \cdot q / i^2$ ) was 272.

$n$  = size of the study population.

$\epsilon \alpha^2 = 1.96^2$ ; is error risk.

$p = 22.76\%$  (0.23) is the prevalence of stress among bank workers in Ouagadougou, Burkina-Faso according to Ouedraogo's study<sup>11</sup>

$q = 1 - 0.23 = 0.77$

$i = 0.05$  is the precision.

$n = 1.96^2 \times 0.23 \times 0.77 / (0.05)^2 = 272$ .

This was a two-stage sampling:

First, we conducted a probability sampling with the random drawing technique for the selection of 4 banks out of the 11 in the city of Niamey.

Secondly, we carried out a convenience sampling for the choice of employees of the 4 banks drawn initially. We submitted a questionnaire, the 427 workers that total the four banks that meet our inclusion criteria: having agreed to participate, having completed and completed the questionnaire in time. Within the proposed deadline, 316 questionnaires were returned. After counting and eliminating poorly completed or incomplete questionnaires, we counted 275 actionable questionnaires. Before data collection, we obtained

an agreement from the general management of each bank as well as the written consent of the selected branch managers and all the employees questioned.

The data were collected using a questionnaire from a combination of the Karasek and Siegrist questionnaires. We held explanatory sessions on the content of the questionnaire to agents before distributing it to them for filling out.

The variables studied were related to socio-demographic data (identity, sex, age, marital status and number of children) and occupational data (level of education, socio-occupational category, type of contract, work experience, number of hours of work per day, and per week, working environment characteristics such as job satisfaction, physical and verbal abuse, job security, intent to change jobs).

According to Siegrist, the scale of extrinsic stresses (the constraints and demands of work both psychologically and physically) is explored by questions 1 to 6 of the Siegrist questionnaire.<sup>12</sup> The sum of the scores obtained in questions 1 to 6 gives the score of the extrinsic efforts. This score varies from 6 to 30. The reward scale: these are the benefits of working both financially and psychologically. This scale is explored in questions 7 to 17. By adding the scores obtained in questions 7 to 17, the score of the awards is obtained. This score varies from 11 to 55 (11 corresponds to very high rewards, 55 corresponds to very low rewards). The scale of overinvestment corresponds to attitudes and behaviors associated with excessive work engagement. The validated short-scale consists of 6 items. The overinvestment score varies from 6 to 24, summing the answers to questions 18 to 23, using this formula:  $Q18 + Q19 + (5 - Q20) + Q21 + Q22 + Q23$ .

The calculation of the effort/reward (R) ratio:  $R = 11/6 \times (\text{Extrinsic effort score} / 66 - \text{Rewards score})$ . A ratio of 1 means a balance between effort and reward. On the other hand, a ratio greater than 1 indicates an imbalance between high extrinsic efforts and low rewards, since the weight of the efforts provided is higher than that of the rewards received.

The data collected was captured and analyzed with Epi Info 7.2. A bivariate analysis had looked for possible associations between the dependent variable (occupational stress) and the independent variables using statistical tests for unpaired series. The significance threshold was set at 0.05. Then in multivariate analysis, all the statistically related factors.

The job stress that corresponds to the job strain in the Karasek model and the Siegrist model to an imbalance in the effort/reward ratio» at work.

According to Karasek's questionnaire, the decision latitude score is given by the formula:<sup>13</sup>

$4xQ1+4x(5-Q2)+4x(Q3)+2x(Q4)+2x(5-Q5)+2x(Q6)+2x(Q7)+2x(Q8)+2x(Q9)$ . A decision latitude score less than or equal to 70 is considered low and a score greater than 70 is considered high. The psychological request score is given by the formula:  $Q10+Q11+Q12+(5-Q13)+Q14+Q15+Q16+Q17+Q18$ . A psychological request score of 20 or less is considered low and a score of more than 20 is considered high. The social support score is given by the formula:  $Q19+Q20+Q21+Q22+Q23+Q24+Q25+Q26$ . A social support score of 24 or less is considered low and high when it is above 24. The combination of job strain and low social support (below the median score) defines iso strain.

## RESULTS

A total of 316 questionnaires were completed, of which 275 were actionable, i.e. a participation rate of 87.025%. Poorly completed or incompletely completed questionnaires have been eliminated.

The average age of bank employees was  $38.09 \pm 7.1$  years with extremes of 24 and 60 years. They were 152 men (55.27%) and 123 women (44.73%), a sex ratio of 1.23. Almost all (96%) had a higher level of education. The average seniority at the workstation was  $3.39 \pm 2.72$  years with extremes of 10 days and 23 years. About 48.73% had been victims of verbal abuse at work; more than one in three workers (36.73%)

intended to change jobs, but  $\frac{3}{4}$  (75.27%) felt satisfied with the work (Table I).

According to the Karasek model, 77 employees out of the 275 (28%) were in job strain (high psychological demand and low decision latitude) and 49 (17.8%) in isostrain (job strain + low decision latitude).

According to the Siegrist model, 58 workers (21.09%), had an imbalance in the effort/reward ratio and therefore in situations of occupational stress and 86 (31.27%) had a high level of overinvestment.

Prevalence of occupational stress was 21.09% and 28%, respectively, according to Siegrist and Karasek models.

After multivariate analysis, being an enforcement officer, job insecurity and the desire to change jobs were the factors associated with work stress ( $p=0.0047$  and  $0.0041$ ); men were protected against stress compared to women ( $p=0.0084$ ) (Table 2).

Factors associated with occupational stress according to Siegrist model

After logistic regression, working more than five days a week was associated with the occurrence of work stress ( $p=0.0254$ ), male sex ( $p=0.0038$ ) and job satisfaction were protective factors ( $p=0.0000$ ). (Table 3).

In total, the factors associated with job stress among bankers in both models were: being an enforcement officer, job insecurity with intent to change jobs and working more than 5 days a week. Male gender and job satisfaction were protective factors.

**Table 1:** Socio-professional characteristics of bank employees in Niger in 2020

	Employees (n)	Percentage (%)
<b>Age (years)</b>		
<30	19	6.90
30-39	150	54.54
40-49	87	31.63
≥50	19	06.93
<b>Gender</b>		
Man	152	55.27
Woman	123	44.73
<b>Level of education</b>		
Primary	3	1.09
Secondary	8	2.91
Superior	264	96.00
<b>Seniority in position (years)</b>		

≤5	202	73.45
>5	73	26.55
<b>Number of working days/week</b>		
≤ 5	189	68.73
> 5	85	30.91
Not specified	1	0.36
<b>Occupation</b>		
Executives	99	36
Controllers	37	13.45
Implementing agencies	183	50.55
<b>Contract Type</b>		
Fixed Term	18	6.55
Permanent	257	93.55
<b>Verbal assault</b>		
Yes	134	48.73
No	141	51.27
<b>Job Satisfaction</b>		
No	68	24.73
Yes	207	75.27
<b>Job insecurity</b>		
Yes	19	6.91
No	256	93.09
<b>Intention to change positions</b>		
Yes	101	36.73
No	174	63.27
<b>Total</b>	<b>275</b>	<b>100.00</b>

**Table 2:** Risk factors for occupational stress according to the Karasek model among bank employees in Niamey in 2020

	Total (n)	Job strain		Bivariate Analysis		Multivariate analysis	
		Yes (%)	No (%)	OR (CI at 95%)	p	Adjusted OR(CIat95%)	p
<b>Gender</b>					<0.001		0.0084
Woman	123	51 (18.5)	72 (26.2)	1		1	
Man	152	26 (9.5)	126 (45.8)	0.29 (0.17-0.51)		0.42(0.22-0.81)	
<b>Age (years)</b>					0.286	-	-
<30	19	2 (0.7)	17 (6.2)	0.27 (0.06-1.24)		-	
30-39	150	45 (16.4)	105(38.2)	1		-	
40-49	87	26 (9.5)	61 (22.2)	0.99 (0.56-1.77)		-	
≥50	19	4 (1.5)	15 (5.4)	0.62 (0.20-1.98)		-	
<b>Seniority in position</b>					0.022		0.6766
<5years	202	49 (17.8)	153 (55.6)	1		1	
≥5years	73	28 (10.2)	45 (16.4)	1.94 (1.09-3.44)		0.87 (0.40-1.87)	
<b>Occupation</b>					<0.001		0.0043
Frame	99	16(5.8)	83(30.2)	1		1	
Controlling and similar agent	37	9(3.3)	28(10.2)	1.67 (0.66-4.19)		1.82 (0.62-5.38)	
Executing agent	139	52(18.9)	87(31.6)	3.1 (1.64-5.85)		3.04 (1.41- 6.55)	
<b>Contract Type</b>					0.028		0.0521
Permanent	257	76(27.6)	181(65.8)	1		1	
Fixed Term	18	1(0.4)	17(6.2)	0.1 (0.01-0.78)		0.12 (0.01-1.01)	

<b>Verbal assault</b>					<0.001		0.6783
No	141	25(9.1)	116(42.2)	1		1	
Yes	134	52(18.9)	82(29.8)	1.36 (0.76-2.45)		1.17 (0.56-2.41)	
<b>Job Satisfaction</b>					<0.001		0.6777
Yes	68	32(11,6)	36(13.1)	1		1	
No	207	45(16.4)	162(58.9)	0.31 (0.17-0.56)		0.81 (0.37-1.78)	
<b>Job insecurity</b>					<0.001		0.0047
No	256	62(22,5)	194(70,5)	1		1	
Yes	19	15(5.5)	4(1.5)	11.73 (3.75-36.66)		6.99 (1.79- 27.37)	
<b>Intention to change positions</b>					<0.001		0.0041
No	174	26 (9.5)	148 (53.8)	1		1	
Yes	101	51(18.5)	50 (18.2)	5.80 (3.28-10.28)		2.90 (1.36-6.19)	

**Table 3:** Factors associated with job stress among bank employees in Niamey in 2020 according to Siegrist model

	Total (n)	Job strain		Bivariate Analysis		Multivariate analysis	
		Yes (%)	No (5%)	OR brut (IC à 95%)	p	Adjusted OR	p
<b>Gender</b>					<0.001		0.0038
woman	178	42 (15.3)	136(49.5)	1		1	
man	97	16 (5.8)	81 (29.4)	0.23 (0.12-0.42)		0.42 (0.18-0.96)	
<b>Age (years)</b>					0,107	-	-
<30	19	0 (0.0)	19 (6.9)	1		-	
30-39	150	34 (12.36)	116(42.2)	71(0.00-1.00)		-	
40-49	87	21 (7.6)	66 (24.0)	77(0.00-1.00)		-	
≥50	19	3(1.1)	16 (5.8)	46(0.00-1.00)		-	
<b>Seniority in position</b>					<0.001		0.1435
≤5years	202	49 (17.8)	153 (55.6)	1		1	
>5years	73	28 (10.2)	45 (16.4)	1.94(1.09-3.44)		0.87 (0.40-1.87)	
<b>Occupation</b>					0.372		-
Frame	99	18(6.5)	81(29.4)	0.69 (0.36-1.30)			
Controlling and similar agent	37	6(2.2)	31(11.3)	0.59 (0.22-1.55)			
Executing agent	139	34(12.4)	105(38.2)	1			
<b>Number of working days/week</b>					<0.001		0.0254
≤5days	189	28(10.2)	161(58.8)	1		1	
>5days	85	30(10.9)	55(20.1)	3.14 (1.72-5.71)		2.75 (1.13-6.69)	
<b>Verbal assault</b>					<0.001		0.1296
no	141	10(3.6)	131(47.6)	1		1	
yes	134	48(17.5)	86(31.3)	7.31 (3.51-15.23)		2.09 (0.81-5.43)	
<b>Job satisfaction</b>					<0.001		0.0000
yes	68	36 (13.1)	29(13.1)	1		1	
no	207	19(6.9)	188(68.4)	0.08 (0.04-0.15)		0.10 (0.04-0.25)	
<b>Job insecurity</b>					<0.001		0.4984
no	256	62(22.5)	194(70.5)	1		1	
yes	19	15(5.5)	4(1.5)	10.16 (3.66-28.16)		1.59 (0.41- 6.09)	
<b>Intention to change positions</b>					<0.001		0.0529
no	174	26 (9.5)	148 (53.8)	1		1	
yes	101	51(18.5)	50 (18.2)	9.94 (4.99-19.77)		2.40 (0.95-6.06)	

## DISCUSSION

The purpose of this study was to assess job stress and related factors among bank workers in Niamey. The random selection of one agency per bank in the city, the use of two validated tools to determine the prevalence of stress and the appreciable rate of participation are all strengths for this study. The subjectivity of the questionnaire responses and the cross-sectional nature of the study does not allow formal causal links between the different variables and constitute possible limits. However, the use of a logistic regression model eliminated confusion bias. Prevalence of occupational stress was 21.09% and 28%, respectively, according to Siegrist and Karasek models. These findings are comparable to the 27.3% 22.76%, 24.7% and 25% obtained respectively among employees of an insurance company in Benin and of a bank in Burkina Faso, Nigeria.<sup>13,14,15</sup> They are higher than the 8% and 12% reported respectively by Magroun et al. and Salim et al. in the private banking sectors in Tunisia and Egypt<sup>16,17</sup>; but lower than the 29.3% in Italy, still among bank employees.<sup>9</sup> Higher prevalence of occupational stress have been reported in some studies; it was 41.5% in Morocco, 58.2% in Ethiopia and 66.4% in Tunisia.<sup>18,19,20</sup> However, it should be noted that these results have been achieved in other sectors such as education and health care. These sectors include support or personal services trades where human relationships are predominant and involve significant emotional constraints.

In our study, the male gender was a protective factor against stress. Men would have more social support at work than women. The literature on this subject is mixed, several studies have shown a positive association between stress and the female sex<sup>21-23</sup>; in addition to work, family responsibilities (household tasks, child-rearing) would be additional sources of stress for women. In other studies, however, there was no difference between men and women in terms of work stress.<sup>15,16</sup> The factors associated with stress were related to job characteristics and work environment. As a result, enforcement officers felt more stress than managers. The present study corroborates that of Magroun et al.<sup>16</sup>; this would be justified by the fact that the level of decision-making discretion is lower among executing agents than among managers and

supervisors; in addition, the enforcement officers were subject to constraints from their supervisors, the clients.

In addition, working more than 5 days a week was a risk factor associated significantly with occupational stress ( $p$  value=0.0254; aOR=2.75). This finding is consistent with those of Laraqui et al. in Morocco<sup>18</sup> and Morke et al.<sup>24</sup> in Ethiopia who had noticed that overtime was a stressor, but differs from those of Ouedraogo et al.<sup>11</sup> who had shown no relationship between overtime and stress.

Job insecurity to change jobs were stressors, but job satisfaction was a protective factor. The results are similar to those of most studies.<sup>14-22</sup> Indeed, in a difficult socio-economic context characterized by unemployment and job insecurity, the fear of losing one's job is a source of stress. On the other hand, a good working environment and the guarantee of a stable job are sources of motivation for employees.

Finally, this study has the merit of having evaluated occupational stress by two validated questionnaires: Karasek's and Siegrist's. The similarities in prevalence between the two methods are explained by the fact that both tools take into account all aspects of the work situation in the assessment. The difference observed could be explained by the fact that the Siegrist model takes into account the recognition dimension at work, since the higher the recognition at work, the lower the level of occupational stress. This study made it possible to assess the extent of stress in the banking sector in Africa and to determine the profile of affected employees. This is a real step forward that will open up avenues for improving the working conditions of employees in the sector.

## CONCLUSION

The prevalence of stress in the banking sector in Niamey is high and the sources of stress are multiple: related to socio-demographic and occupational characteristics on the one hand and the working environment. Reforms to improve the organization of work and to ensure the stability of work and employment are necessary in order to reduce employee stress. In addition, strategies to support and recognize women's efforts must be put in place to reduce psychosocial constraints and ensure their continued employment.

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