CONTRIBUTION TO THE ASSESSMENT OF THE PSYCHOLOGICAL RISKS IN ACADEMIA USING KARASEK AND SIEGRIST MODELS - CASE STUDY: CONSTANTINE I UNIVERSITY, ALGERIA

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(Received 09 May 2023; accepted 25 May 2023)

Abstract

This study is devoted to psychosocial risks in the university environment. Exposure to psychosocial risks is detailed using existing job and professional nomenclatures. Prevention approaches are all the more effective if they are adapted to the field in which they are deployed. After reviewing each dimension, an analysis of overall exposure to PSRs is carried out. The objective of our study is to contribute to the evaluation of psychosocial risks of university administration personnel, by proposing solutions and recommendations. As a case study, we have taken the Faculty of Science and Technology of the University of Constantine 1, Algeria. This study is based on the KARASEK model, composed of 26 questions, and then completed with 6 questions of the SIEGRIST model. As a result of the study, most of the employees suffer from work stress and psychological stress. Therefore, the management should implement preventive actions that meet the expectations of the employees to encourage, appreciate and support them at work.

Keywords: KARASEK and SIEGRIST model, psychological risks, job strain, university

1. INTRODUCTION

This Psychosocial workplace factors are “interactions between and among work environment, job content, organizational conditions and workers’ capacities, needs, culture, personal extra job considerations that may, through perceptions and experience, influence health, work performance and job satisfaction (Williams et al., 2018; Vassiley et al., 2023).

Stress is a response to demands placed upon the body independent of the stressors' nature. Various stressor types that are associated with potential threat can induce stress (Selye, 1998; Giannakakis et al.,...
According to this view, two distinct types of stressors are physiological stress and psychosocial stress. Physiological stress is indicated by an unpleasant sensory, emotional and subjective experience that is associated with potential damage of body tissue and bodily threat. Different bodily conditions may fulfill these criteria, e.g. pain, hunger, oxidative stress, etc. (Zhu et al., 2020). Psychosocial stress is induced by situations of social threat including social evaluation, social exclusion and achievement situations claiming goal-directed performance (Chemelo et al., 2020; Fabio et al., 2021). There are many models used to analyze the psychosocial and physical risks and employee health. The first leading model in this study is the job demand-control (JDC) model by Robert KARASEK. Psychological job demands, or workload, are defined by KARASEK as psychological stressors present in the work environment (e.g. high pressure of time, high working pace, difficult and mentally exacting work) (Karasek, 1979; Maamri et al., 2021). Decision latitude has two components; that is, skill discretion and decision authority (Karasek & Theorell, 1990). Psychological strains are a consequence of the interaction effects of the demands of a job and the range of job decision latitude available to the employee. The JDC model predicts that adverse psychological and physiological reactions are affected by the combined impact of two structural conditions of the workplace: high demands (workload pressures) and low control (skill discretion plus decision authority). Social support from supervisors and co-workers may reduce the effects of job strain (Karasek & Theorell, 1990). The second model used in this study is the Effort–Reward Imbalance (ERI). The ERI questionnaire, developed by SIEGRIST, measures effort, reward and over-commitment, to determine whether ERI and over-commitment are present (Gellman & Turner, 2013). The model is based upon the premise that work-related benefits depend upon a reciprocal relationship between efforts and rewards at work. Efforts represent job demands and/or obligations that are imposed on the employee. Occupational rewards distributed by the employer (and by society at large) consist of money, esteem, and job security/career opportunities (Siegrist et al., 1986). More specifically, the ERI Model claims that work characterized by both high efforts and low rewards represents a reciprocity deficit between “costs” and “gains” (Siegrist, 2016). This imbalance may cause sustained strain reactions. So, working hard without receiving appreciation is an example of a stressful imbalance. In addition, it is assumed that this process will be intensified by over commitment (a personality characteristic), such that highly overcommitted employees will respond with more strain reactions to an ERI, in comparison with less overcommitted employees (Van wassenhove, 2014).

This study sought to evaluate and analyze the situation of workers and administrators in a university zone, and find out if they suffer from stress, exhaustion or psychological distress. In addition, proposing appropriate solutions and recommendations.

2. STUDY METHODOLOGY

2.1. Study location and population

Our study took place at the level of the Faculty of Sciences of Technology of the Constantine 1 University, Algeria. The population size 234 permanent employees.
Which 200 employees were chosen by proportional stratified sampling method 115 female and 85 male.

The target groups for this questionnaire are workers and administrators, because they are the categories on which the university relies in the management of its affairs.

2.2. Study tools

In our study, we used two survey questionnaires (APPENDIX):

2.2.1. KARASEK Model

The KARASEK questionnaire is an assessment tool for psychosocial factors at work. It is also concerned with measuring stress at work. It was designed by the American sociologist and psychologist Robert KARASEK in 1979 (Gellman & Turner, 2013). The version of the questionnaire used in this survey consists of 26 questions (Figure 1a). The measurement of tension at work by the KARASEK questionnaire (JCQ) is evaluated according to three dimensions:

- Psychological demands which covers both quantitative and qualitative aspects of the psychological workload. This dimension consists of nine items (09 questions) (Stanhope, 2017).
- Decision latitude has two sub-dimensions:
  - Skill Discretion which is defined by the possibility of using and developing one's skills and qualifications. This sub-dimension consists of six items (06 questions)
  - Decisional autonomy which is defined by the leeway in the way of doing one's job and taking part in the decisions related to it. This sub-dimension consists of three items (03 questions) (Flora, 1990).
- Robert KARASEK has put his Job Demand Control model in a diagram. The horizontal x axis shows the job demands, which can be high or low. The vertical y-axis shows the job decision latitude, which can also be high or low (Karasek, 1979).

2.2.2. SIEGRIST Model

Effort-reward imbalance is a theoretical model to identify a stressful psychosocial work environment and to explain its adverse effects on stress-related health risks (Siegrist, 2017).

Recognition at work: We complete our study with questions on recognition at work, taken from the SIEGRIST questionnaire. We thus obtain by combining these two questionnaires, a collective evaluation of well-being at work (Figure 1b).

![Stress model](#)  
![Effort-reward imbalance](#)

Figure 1. Study tools
2.3. Scores

The formulas that we used to calculate scores for each axis are (Kunz, 2019):

- Psychological demands
  \[Q10 + Q11 + Q12 + (5 − Q13) + Q14 + Q15 + Q16 + Q17 + Q18\]
  The score is calculated on 25, the threshold is 21.
- Decision latitude = Decisional autonomy + Skill Discretion
  \[\text{Decision latitude} = (4 \times [Q4 + (5 − Q6) + Q8]) + (2 \times [Q1 + (5 − Q2) + Q3 + Q5 + Q7 + Q9])\]
  We calculate the score of the decision latitude in adding together the score for autonomy to the score for the use of skills. A total score below 71 defines low decision latitude (Flora, 1990). The score is calculated on 61, the threshold is 71.
- Social Support = Q19 + Q20 + Q21 + Q22 + Q23 + Q24 + Q25 + Q26
  The score is calculated on 22 and the threshold is 8 (Karasek, 1979).
- Recognition at work (Reward) = (5 − Q27) + (5 − Q28) + Q29 + Q30 + Q31 + Q32
  The score is calculated on 15.35, the threshold is 17 (Flora, 1990).

2.4. Analysis grid

Our questionnaire comprises four dimensions: the three dimensions of KARASEK, and we complete this questionnaire with questions on recognition at work, taken from the SEIGRIST questionnaire. For each question, five responses are proposed: Strongly disagree: count 1, disagree: count 2, neutrally: count 3, agree: count 4 and strongly agree: count 5.

3. RESULTS AND DISCUSSION

After sorting the questionnaires, and using SPSS software, we get the following results:

3.1. Age and gender category

Age is a very important factor to know the dominant age category within the Faculty of Science and Technology.

We notice, that most of the employees of the faculty of sciences of technology are young, aged between 36 and 45 years at 45\% (Figure 2a). As for gender, we notice that most of the workers are of married female (34\%). As for gender, it is noted that 27.5\% of the workers are married male (Figure 2b).

![Figure 2. Distribution of workers by age category and gender](image)
3.2. Psychological demands

The percentage of workers is calculated by the following formula (Chemelo et al., 2020):

\[
\text{Percentage} = \frac{\text{Number of workers greater than, equal to, or below the threshold}}{\text{Total number of workers}} \times 100
\]

According to figure 3, we found the sums of the points above the threshold line are 157 points and the points at the same level with the threshold are 12 points at the end, we found 31 points below the threshold. According to formula (1), we get the following percentages 78.5%, 6% and 15.5%. We note that 78.5% of workers are above the threshold of 21. And 21.5% are below or equal to the threshold of 21. We observe that, workers in the faculty of Technology Sciences have a psychological demand, due to social pressures because most of the workers are married.

The model works through showing that when employees have high levels of job demands, this creates stress. However, employees can decrease this stress through gaining greater job control and developing strong relationships with their colleagues and supervisor.

3.3. Decision latitude

3.3.1. Decisional autonomy and Skill discretion

A total score below 71 defines low decision latitude. According to figure 4, we found the majority of workers are below the threshold. This indicates that most workers suffer from decisional autonomy. It is important that you gain autonomy in job. This can involve making decisions on your own without asking for direction. This might require negotiating with your supervisor on gaining decision latitude in your work. You can obtain guidance from your supervisor on decisions yet still gain freedom in making decisions regarding ways in which to work.

Increase your psychological well-being: Employees cope well with job stressors when they have good physical and psychological health. Employees who have high levels of optimism and self-efficacy tend to do well in managing stress because they believe that they have the capability to cope with work stressors.
3.3.2. Association of decisional autonomy and skill discretion

According to Figure 5, we notice that the sum of the points is below the threshold line are 178 points and we found, 22 points below the threshold. According to formula (1), we get the following percentages: 89% of workers are below the threshold of 71 and 22% are above the threshold. According to these percentages, it can be said that most workers suffer from decision latitude.

3.4. Stress model from KARASEK

According to KARASEK, the combination of a strong psychological demand (above 21) and low decision latitude (below 71) constitutes a JOB STRAIN, which represents a health risk situation. Figure 6 shows the four categories of the KARASEK model. All four of these situations indicate different levels of health risks:

- The ACTIVE subject: a strong psychological demand and a great autonomy.
- The PASSIVE subject: low psychological demand and low autonomy.
- The LOW STRAIN subject: low psychological demand and a great autonomy.
- HIGH STRAIN or JOB STRAIN: low latitude, high strain.

We note that most of the workers are concentrated in the category of high stress "JOB STRAIN" by 138 workers at 69%, this

![Figure 4. Distribution of employees according to: a) Autonomy b) Skills discretion](image)

![Figure 5. Distribution of employees according to decision latitude](image)
refers that most of the workers in the faculty of sciences of technology of the Constantine 1 University, Algeria suffer from job stress and psychological stress. We relied on program SPSS to analyzing the questions assigned for the four categories of work strain defined by the KARASEK questionnaire.

**JOB STRAIN:** According to program SPSS, we found 75 workers at 37.5% suffer from the workload, and 87 workers at 43.5% suffer from the daily routine and the repetition of the work done, and 105 workers at 52.5% suffer from not gaining autonomy in their job.

**ACTIVE ET PASSIVE:** According to formula (1), we get the 16 workers at 8% are concentrated in the category of active and 45 workers at 22.5% by passive.

### 3.5. Social Support

#### 3.5.1. Hierarchy Support

According to figure 7, we note that 185 workers at 92.5%, this refers that most of the workers suffer from not getting support from the supervisor.

It is important to gain support from the supervisor because having helpful social interactions can buffer the impact of stress. Job support is defined as the “overall levels of helpful social interaction available on the job from both co-workers and supervisors (Karasek, R, and T, 1990).” When you have helpful social interactions this acts as a coping mechanism, that helps buffer the impact of stress. Supervisor support can influence your attitude towards your job,

![Figure 6. Distribution of employees according to the 4 categories of work strain defined by the KARASEK questionnaire](image)

![Figure 7. Distribution of employees according to the support of the hierarchy](image)
including job satisfaction, and commitment; in addition, if you have the support of your supervisor you are less likely to show intention to leave the organization.

### 3.5.2. Colleagues Support

According to figure 8, we note that 190 workers at 95 %, this refers that most of the workers suffer from not getting support from the colleagues.

Both supervisor and worker support are coping mechanisms to buffer stress. However, they are different because they have different impacts on well-being. Moreover, the relationship we have with coworkers is egalitarian because they are not in a position of power.

It can also be a source for companionship and is particularly important during teamwork.

### 3.5.3. Total social support

According to figure 9, we notice 136 workers at 68%, this refers that most of the workers suffer from social support.

Social support at work from colleagues and supervisors is a key resource for employees and organizations, with beneficial effects on performance, employee well-being and resilience. From such positive working relationships, employees gain emotional support, such as someone to talk to if something goes wrong, instrumental support, such as getting help with a task, informational support, such as getting important work-related information, and appraisal support, such as feedback about one’s performance.

ISO STRAIN: From the data shown in figure 9, we notice the red dots which
represents ISO STRAIN, with 97 workers at 48.5%, this refers that most of the workers suffer from social support. Almost 48.5% employees work in a stressful environment. In addition, they suffer mentally own low autonomy, on another side, the absence of support from the hierarchy (isolation). This leads to that the working conditions are unfavorable.

3.6. Recognition at work

In figure 10, we notice 134 workers at 67%, have a low recognition, unlike to the other remaining 66 workers at 33%. These 67% have:
- Disrespect,
- A salary incompatible with his efforts,
- Job insecurity and promotion,
- Job mismatch.

Table 1 shows (descriptive statistics for work recognition in the Faculty of Sciences of Technology), from which we find that the highest average was awarded to the question 30, with mean 2.69 and deviation 1.289, with "disagree" by percent 60%, followed by question 32, with mean 2.63 and deviation 1.342, with "disagree" by percent 69%, followed by question 27, with mean 2.62 and deviation 1.499, with "agree" by percent 54%, followed by question 28, with mean 2.60 and deviation 1.520, with "agree" by percent 51.5%.

While the lowest average was awarded to the question 31, with mean 2.54 and deviation 1.359, with "strongly disagree" by

![Figure 10. Distribution of employees by recognition at work](image)

Table 1. Answers to questions measuring the recognition at work

<table>
<thead>
<tr>
<th>Questions</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Neutrally</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>Rank</th>
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<tbody>
<tr>
<td>Q27</td>
<td>N° 92</td>
<td>0</td>
<td>0</td>
<td>108</td>
<td>0</td>
<td>2.62</td>
<td>1.499</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>% 46</td>
<td>0</td>
<td>0</td>
<td>54</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q28</td>
<td>N° 94</td>
<td>0</td>
<td>0</td>
<td>103</td>
<td>3</td>
<td>2.60</td>
<td>1.520</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>% 48</td>
<td>0</td>
<td>0</td>
<td>51.5</td>
<td>1.5</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q29</td>
<td>N° 62</td>
<td>72</td>
<td>6</td>
<td>60</td>
<td>0</td>
<td>2.32</td>
<td>1.202</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>% 31</td>
<td>36</td>
<td>3</td>
<td>30</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q30</td>
<td>N° 18</td>
<td>120</td>
<td>0</td>
<td>32</td>
<td>0</td>
<td>2.69</td>
<td>1.289</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>% 9</td>
<td>60</td>
<td>0</td>
<td>15</td>
<td>16</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q31</td>
<td>N° 84</td>
<td>0</td>
<td>41</td>
<td>75</td>
<td>0</td>
<td>2.54</td>
<td>1.359</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>% 42</td>
<td>0</td>
<td>20.5</td>
<td>37.5</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q32</td>
<td>N° 15</td>
<td>138</td>
<td>0</td>
<td>47</td>
<td>0</td>
<td>2.63</td>
<td>1.342</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>% 7.5</td>
<td>69</td>
<td>0</td>
<td>23</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Weighted mean 2.566
Std. deviation 1.568
percent 42%, followed by question 29 with mean 2.32 and deviation 1.202, with "disagree" by percent 36%.

The weighted average of this section (Recognition at work) was 2.566, deviation 1.368 which indicate that the trend of (importance of the recognition at work in the Faculty of Sciences of Technology from the perspective of workers and administrators) is Disagree, as a general trend according to 5-point Likert scale as shown in table 2 since 2.566 lie in the interval (1 - 2, 59) so, the average of the (importance of the recognition at work in the Faculty of Sciences of Technology from the perspective of workers and administrators) is 2.566 which consider a low level, since the intervals of level as follow: low level (1 - 2,59), moderate level (2,6 - 3,39) et high level (3,4 - 5).This results shown clearly in the below figure 11.

According to the model SIEGRIST, effort at work is spent as part of a social contract that reciprocates effort by adequate reward. Rewards are distributed by three transmitter systems: esteem (Q30, Q27), money (Q32), and prospects for promotion (Q31, Q29) including job security (Q28) and this are the suffering of the Faculty of Science of Technology.

3.7. Balance of efforts / rewards from SIEGRIST

In the next step and according to SIEGRIST, we find the concept of effort of the model "imbalance-reward" is akin to the psychological demands of the KARASEK model and the concept of rewards is that of recognition at work of the SIEGRIST model. In our study the proportion of workers with high demand equals 78.5% and the percentage of workers with high recognition

Table 2. 5-point Likert scale

<table>
<thead>
<tr>
<th>Likert scale</th>
<th>Interval</th>
<th>Difference</th>
<th>Descriptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-1.79</td>
<td>0.79</td>
<td>Strongly Disagree</td>
</tr>
<tr>
<td>2</td>
<td>1.8-2.59</td>
<td>0.79</td>
<td>Disagree</td>
</tr>
<tr>
<td>3</td>
<td>2.6-3.39</td>
<td>0.79</td>
<td>Neutrally</td>
</tr>
<tr>
<td>4</td>
<td>3.4-4.19</td>
<td>0.79</td>
<td>Agree</td>
</tr>
<tr>
<td>5</td>
<td>4.2-5</td>
<td>0.80</td>
<td>Strongly agree</td>
</tr>
</tbody>
</table>

Figure 11. The mean responses from the perspective of workers and administrators in the Faculty of Sciences of Technology
is 33% these results are clearly shown in the figure 12.

We observe in the Faculty of Technical Sciences - Constantine 1, the total effort (the psychological requirement of KARSK) is more than the double of the rewards, this creates emotional agitations in the faculty which explains the imbalance of the balance.

3.8. Results mapping and analyse

Our research problem is limited to the evaluation of psychological risks in a university environment, more particularly workers and administrators at the Faculty of Technology, Constantine 1 University, Algeria, using the KARASEK and SIEGRIST models respectively.

Using the first model, it was concluded that 138 of the workers, i.e. 69% of the workforce studied, work in a stressful psychological environment (JOB STRAIN). This refers to the fact that most workers in the Faculty of Science and Technology at Constantine 1 University, Algeria, suffer from work-related stress and psychological stress. Furthermore, according to the SPSS program, we found that more than half of workers (52.5%) suffer from a lack decisional autonomy in their work and 48.5% of workers suffer from a lack of support from hierarchy and colleagues, leading to difficult working conditions.

What's more, the vast majority of workers (78.5%) require psychological support due to social pressures.

However, the second model revealed an imbalance between effort and reward.

Thus, it was recorded that 78.5% of workers with a high demand, and 33% of workers with a high reward.

This calls for an urgent action plan to improve the current situation. Preventive measures are needed to improve quality of life and working conditions. Today, technical progress and intense managerial pressure are driving rapid changes in working conditions, processes, and organizations. Similarly, physical and psychological health problems continue to affect a significant number of employees, and the incidence of recognized occupational illnesses is increasing at an alarming rate. As a result, organizations need to be able to deal with the problems that arise in terms of quality of life and working conditions and to react effectively with dynamic management strategies. The environment is constantly moving and evolving, and the people who are part of it should naturally evolve at their own pace and be in harmony with it! As a result, the continuous, permanent, and sustainable improvement of the quality of life and conditions at work, employee health, and the protection of society and the environment is becoming everyone's business. Employee
safety has become a public health issue since it concerns the health of the current employee, his or her family, the company and retirees, and indeed society as a whole!

3.9. Preventative measures

Our study proposes appropriate solutions to balance this balance of efforts / rewards:
- Salary increase,
- Place employees in suitable workstations,
- Application of the principle of transparency and justice in the application of laws,
- Make psychological training for workers and teach them how to manage,
- Provide work tools (internet, comfort accessories, etc.),
- Improve the relationship between workers and employer,
- Reconsider the entry and exit time of workers taking into account gender.

4. KEY RECOMMENDATIONS

According to the results obtained, we proposed the following recommendations:
Job autonomy:
- Work with your manager to gain more control in decision-making.
- Lean on your supervisor and colleagues for social support to help buffer work stress.
Build a culture of trust:
- Tending to your physical and psychological health.
- Seek opportunities to connect with your colleagues and your manager, for trusting and supportive relationships
Acknowledge good work:
- Success needs acknowledgment. Giving credit for good work reinforces that free thinking is not only allowed but rewarded.
- Financial and verbal incentives increase the employee's psychological comfort, on the other hand we find the employees who receive recognition for their efforts whether by material or moral praise they can make the difference and they appreciate that their methods produce results.

5. CONCLUSION

Valuing employees and improving their working conditions will necessarily lead to an increase in overall performance. So, by assessing work environment, the psychological environment and their impact on psychological well-being with improving the quality of work life, staff performance could increase and burnout could be reduced.

Our research problem mainly questions the impact of working conditions, psychological environment and work environment on the psychological state of individuals and on the performance and quality of the employee's work within university. In this context, we used two survey questionnaires “KARASEK and SIEGRIST model". The SIEGRIST questionnaire, often used as a complement to the KARASEK questionnaire, includes both a questionnaire which evaluates the effort-reward ratio and a questionnaire which evaluates the overinvestment (intrinsic efforts) in the work.

Through this study we found that psychological risks arise from poor work design, organization and management, as well as a poor social context of work, and they may result in negative psychological, physical and social outcomes such as work-related stress, burnout or depression. In addition, our study indicates a significant
level of imbalance between efforts the employees exert of in the Faculty of Science and Technology at Constantine 1 University, Algeria; we found 78.5% workers with high demand and 33% workers with high reward, this call for urgent prevention and control measures for job stress among all employees. In addition, the management should seek for and be aware of excessive efforts and render necessary support at work as balance should be gained between the effort expended and rewards received. Based on the current evidence, it can be recommended to implement effective preventive strategies and interventions for prevention of job stress, especially by establishing health-promotion policies at the workplace.

References


Van Wassenhove W (2014). Model of
Извод

Ова студија је посвећена психосоцијалним ризицима у универзитетском окружењу. Изложеност психосоцијалним ризицима је детаљно описана коришћењем постојећих радних и професионалних номенклатура. Приступи превенцији су утолико ефикаснији ако су прилагођени пољу у којем су распоређени. Након прегледа сваке димензије, врши се анализа укупне изложености PSР-има. Циљ наше студије је да давањем решења и препорукама допринесемо процени психосоцијалних ризика запослених у администрацији универзитета. Као студију случаја узели смо Факултет науке и технологије Универзитета Константин 1, Алжир. Ова студија је заснована на КАРАСЕК моделу, састављена од 26 питања, а затим употпуњена са 6 питања СИЕГРИСТ модела. Као резултат студије, већина запослених пати од стреса на послу и психичког стреса. Стога руководство треба да спроводи превентивне акције које испуњавају очекивања запослених да их подстичу, цене и подржавају у раду.

Кључне речи: КАРАСЕК и СИЕГРИСТ модел, психолошки ризици, напрезање у послу, универзитет

APPENDIX

Employee: 
Position Occupied: 
Status: 
Department: 

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<thead>
<tr>
<th>Genre</th>
<th>Age</th>
<th>Status</th>
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<tbody>
<tr>
<td>Female</td>
<td>Less than 25</td>
<td>Married</td>
</tr>
<tr>
<td>Male</td>
<td>25–35 years</td>
<td>Single</td>
</tr>
<tr>
<td></td>
<td>36–45 years</td>
<td>Other</td>
</tr>
<tr>
<td></td>
<td>46–55 years</td>
<td></td>
</tr>
<tr>
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<td>56–65 years</td>
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Decision latitude

Q1. My job requires me to learn new things
Q2. My work is repetitive
Q3. My work requires creativity
Q4. My job requires a high level of skills
Q5. In my work I have a variety of activities
Q6. In my work I have the opportunity to develop my professional skills
Q7. My job allows me to make decisions independently
Q8. I have the freedom to decide, how I will do my job
Q9. I have an opportunity to influence the progress of my work
Q10. My job requires me to work very quickly

Psychological demands

Q11. My job requires me to work really hard
Q12. My work requires intensive work
Q13. I have been asked an excessive amount of work
Q14. I’m getting conflicting requests from others
Q15. My work requires long periods of intense concentration
Q16. My mission is often interrupted before it’s finished. Which requires it to be resumed at a later time
Q17. My work requires a lot of movement
Q18. I often slow down in my work because I have to wait until the others finish their work

Social support

Q19. My manager cares about the welfare of the workers under his command
Q20. My manager pays attention to what I tell him
Q21. My manager makes my tasks easier
Q22. My manager réussit à coordonner le travail entre collègues
Q23. Colleagues with whom I work they are people with professional competence
Q24. Colleagues with whom I work are showing interest in me
Q25. Colleagues with whom I work are friendly
Q26. Colleagues help me complete tasks

Recognition at work

Q27. They treat me unfairly in my work
Q28. My job security is at risk
Q29. My current job is compatible with my education
Q30. Considering all my efforts, I got the recognition I deserve
Q31. Considering all my efforts, my hopes of promotion have been fulfilled
Q32. Considering all my efforts, I consider my salary to be sufficient