Evaluation of job satisfaction: a psychological approach

ACE Cluster webinar, 14/11/2018

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Objectives and general approach

- Definition of a theoretical framework for promoting workers’ satisfaction and organisational performance, on the basis of existing approaches in ergonomics
  - Description of current approaches to job satisfaction evaluation
  - Establishment of concrete measures of this satisfaction and performance
  - Application of these measures in MANUWORK use cases
Evaluating Worker Satisfaction

**Approach**

- Analysis of theoretical frameworks and approaches (SOA)
  - Definitions of workers’ / employees’ / job satisfaction
  - Psychological or psychosocial theories behind the definitions
  - Factors covered by a given approach
Evaluating Worker Satisfaction

Definitions of job / workers’ satisfaction

- One of the most researched variables in workplace psychology (Lu et al., 2012)

- Numerous definitions covering:
  - the affective feeling an employee has towards their job or specific aspects of it (e.g. colleagues, pay or working conditions)
  - the extent to which work outcomes meet or exceed expectations

- More recently: a multidimensional psychological concept with cognitive (evaluative), affective (or emotional), and behavioral components (Hulin & Judge, 2003).

Theories behind the concept of job / workers’ satisfaction

**Range of Affect Theory** (Locke, 1976): the most famous one

- Satisfaction is determined by a discrepancy between what one wants in a job and what one has in a job.

**Dispositional approach** (Staw, 2005)

- Individuals vary in their tendency to be satisfied with their jobs, i.e. job satisfaction is to some extent an individual trait

Evaluating Worker Satisfaction

 böl Theories behind the concept of job / workers’ satisfaction

 böl Job Characteristics Model (Hackman & Oldham, 1975)

 böl Main premise:

 böl Job satisfaction occurs when the work environment encourages intrinsically motivating characteristics.

 böl Five key job characteristics (skill variety, task identity, task significance, autonomy and feedback) influence three psychological states

Psychosocial characteristics & job satisfaction

Analysis based on 13 psychometric and socio-organizational factors, which are important for workers’ satisfaction and productivity (D3.3, submitted in M24)

- Psychological support
- Organizational culture oriented to trust and honesty
- Clear leadership and expectations
- Civility and respect
- Psychological competencies and requirements
- Growth and development
- Recognition and reward
- Involvement and influence
- Workload management
- Balance
- Psychological protection
- Protection of physical safety
Methodology: one visit to Lantegi, a number of discussions with Lantegi ergonomists and a theoretical analysis of the Profiling method

Major results:

- Very structured, exemplary approach to all psychosocial factors and job satisfaction evaluation

- The results on workers’ satisfaction and performance are remarkable.

- Employees are generally satisfied with their work conditions, feel engaged with the organizational goals and motivated to achieve them
Methodology: several visits to Safran, a number of discussions with the MANUWORK project manager there and 13 semi-directed interviews with operators and line managers

Major results:

- In Safran, there is a less structured approach to work organization and job satisfaction evaluation than in Lantegi.

- However, the operators express general satisfaction with their working conditions as their work asks for particular competences, for which they are recognized and estimated + working for a world leader

- More efforts could be done to improve the communication with higher hierarchical levels
Methodology: several visits to Volvo done by the University of Skövde. Interviews with operators and supervisors were done during these visits.

Major results:

- A focus on work-related factors affecting job satisfaction.
- A lot of effort is put in introducing automation, which limits or almost eliminates the lifting of heavy loads.
- Work-life balance is taken into account and no particular complaints are expressed about this.
- In general, the interviewees were highly satisfied with their jobs and with the idea of working in a highly technological company.
- A possible point of improvement was the management of the uncertainty as far as the operation of the automation is concerned.
Measurement of satisfaction

The most common and cost-effective way of measurement (chosen also for MANUWORK)

- Use of rating scales where employees report their reactions to their jobs
- Questions relate to rate of pay, work responsibilities, variety of tasks, promotional opportunities the work itself and co-workers
- Examples:
  - yes/no questions
  - Rank satisfaction on 1-5 scale (where 1 represents “not at all satisfied” and 5 represents “extremely satisfied”)
## Validity of the instruments

<table>
<thead>
<tr>
<th>Name</th>
<th>Items</th>
<th>Answer scale</th>
<th>Factors assessed</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Job in General Scale</strong></td>
<td>18 items</td>
<td>Three answer categories (yes, ?, no)</td>
<td>General job satisfaction</td>
</tr>
<tr>
<td><strong>Andrew and Withney Job Satisfaction</strong></td>
<td>Five items</td>
<td>Seven-point Likert scale (from 1 - delighted to 7 - not at all satisfied)</td>
<td>General job satisfaction</td>
</tr>
<tr>
<td><strong>Questionnaire</strong></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td><strong>Job Satisfaction Survey</strong></td>
<td>Multidimensional instrument (nine subheadings, unknown number of items)</td>
<td>Six-point Likert scale (from 1 - disagree to 6 - agree very much)</td>
<td>Salary, promotion, supervision, fringe benefits, contingent rewards, operating procedures, co-workers, work and communication</td>
</tr>
<tr>
<td><strong>Emergency Physician Job Satisfaction</strong></td>
<td>79 item multidimensional instrument</td>
<td>Seven-point Likert scale (from -3 - strongly disagree to 3 - strongly agree)</td>
<td>General job satisfaction and administrative autonomy, clinical autonomy, resources, social relationships, lifestyle and challenges</td>
</tr>
<tr>
<td><strong>Scale</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>McClosky/Mueller Satisfaction Scale</strong></td>
<td>31 item multidimensional instrument</td>
<td>Five-point Likert scale (from 1 - very dissatisfied to 5 - very satisfied)</td>
<td>Extrinsic rewards, scheduling satisfaction, work-life balance, co-workers, interaction, professional opportunities, praise/recognition and control/responsibility</td>
</tr>
<tr>
<td><strong>Measure of Job Satisfaction</strong></td>
<td>38 item multidimensional instrument</td>
<td>Five-point Likert scale (from 1 - very dissatisfied to 5 - very satisfied)</td>
<td>Personnel satisfaction, workload, professional support, salary, and prospects and training</td>
</tr>
<tr>
<td><strong>Nurse Satisfaction Scale</strong></td>
<td>24 item multidimensional scale</td>
<td>Seven-point Likert scale (from 1 - strongly agree to 7 - strongly disagree)</td>
<td>Administration, co-workers, career, patient care, relations with supervisor, nursing education and communication</td>
</tr>
</tbody>
</table>

Measurement of satisfaction in MANUWORK: expert evaluation of instruments

- Review of valid and reliable instruments
- Choice of instruments which have proven their validity in a variety of work contexts (rather than in specific ones)
  - Job in General scale (long and short versions)
  - Andrews and Withey Job Satisfaction Questionnaire
  - A single item questionnaire
- Instruments sent to Safran and Volvo with an expert evaluation scale
- Discussed in a number of telcos and brainstormings with Lantegi
Expert evaluation of instruments: major results

- The Abridged Job in General Scale judged adapted for an application in Safran
- No further modifications were proposed for this instrument
- Currently, its possible application during the pilot are discussed (before, during and after the introduction of MANUWORK technologies)
- If applied, the approach will focus on job satisfaction in relation with MANUWORK technologies and not necessarily to orient operators to aspects which cannot be modified during the project or by the project team.
The Andrews and Withey Job Satisfaction Questionnaire was judged:

- With items and scales suitable for the Volvo work context
- Small modifications suggestions
- With clear benefits for management, workers and unions, as the answers may be used to continuously improve the workplace.
- Long term trends can also be used to see if changes in the workplace affect the workers.
- Not particularly time consuming to administer
- => Modified instrument + attitudes to robots

Possible applications of the questionnaire + questionnaire on attitudes to robots (to still be adapted) is currently discussed

Focus on MANUWORK technologies + Ergonomics
Expert evaluation of instruments: major results

- The items of the existing instruments were judged, in general, suitable. However,
  - for the Job in General Scale (both versions): salary not suitable
  - For all the standardized instruments, aspects related to stress, aging and isolation were lacking.
  - All the standardized instruments were judged too complex to be applied directly. A simplification of the language and the response options seemed necessary.
  - The 7-likert scale was judged too long. A 3 to 5-point Likert scale was proposed.
  - For the attitudes to robots questionnaire, a scenario-based presentation of MANUWORK technologies seemed necessary.
  - => New instrument, 14 questions
  - A test of the instrument with operators + attitudes to robots is currently discussed
Expert evaluation of instruments: major results

1. Do you like your job?

2. How do you feel about your colleagues?

3. How do you find your work conditions, namely the light at your workplace?

4. How do you find your work conditions, namely the temperature?

5. How do you find your work conditions, namely the noise?

6. How do you find the hours of work?

7. How do you feel about the amount of work you are asked to do?

8. Do you find your work stressful?

9. Do you need help for doing your work?

10. Do you sometimes feel isolated at work?
<table>
<thead>
<tr>
<th>Opinion</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Clear and understandable interaction</td>
<td>My interaction with a robot would be clear and understandable (1 – 7)</td>
</tr>
<tr>
<td>2. Usefulness</td>
<td>I would find a robot useful in the workplace</td>
</tr>
<tr>
<td>3. Effectiveness</td>
<td>Using a robot would enhance my effectiveness in the workplace</td>
</tr>
<tr>
<td>4. Productivity</td>
<td>Using a robot in the workplace would increase my productivity</td>
</tr>
<tr>
<td>5. Job ease</td>
<td>Using a robot would make my job easier</td>
</tr>
<tr>
<td>6. Workplace improvement</td>
<td>Using a robot would improve the workplace</td>
</tr>
<tr>
<td>7. Task accomplishment</td>
<td>Using a robot in the workplace would enable me to accomplish tasks more quickly</td>
</tr>
<tr>
<td>8. User ease</td>
<td>I would find a robot easy to use</td>
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<tr>
<td>9. Flexibility</td>
<td>I would find a robot to be flexible for me to interact with</td>
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</tbody>
</table>

+ 4 more questions
Data collection and analysis in all use cases

- Data collection through ISN
- Data analysis in Data Analytics module
- Data use by SKIMATIC

SAFRAN  lantegiBatuak  VOLVO
Thank you!

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