RailActivation

ACTIVATING INCLUSIVE GROWTH IN RAILWAY SMES
BY WORKPLACE INNOVATION

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Abstract: In this deliverable the results of the survey conducted to analyse SMEs best practices with regards Workplace Innovation are presented.

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3 Executive summary

This is the first deliverable of the series of RailActivation technical work package and of the WP2. This report presents and analyses the results of the information gathered from the European Railway sector workers. This report is obtained by means of a questionnaire, and it includes information which summarises statistics of the gathered answers.

It is the first step to achieve one of the objectives of RailActivation, creating the basis the innovation support to SMEs. In this document gathered information about the existing tools for WI is described and analysed, what will allow to identify, suggest and exchange best practices.

The survey report was developed as a result of sequence of actions, which include: survey development, sample selection and survey administration, and data analysis.

This report covers a wide range of public opinions on EU railway sector WI.

The detailed findings are followed by a full methodology and an appendix containing the survey questionnaire with response totals. Tables included in the text of this report highlight selected relevant survey findings and are expressed in percentages. The base for each table is all respondents (n=203) unless otherwise noted. All figures have been rounded, so all tables may not add to 100%. This is due to weighting, rounding, omission of “don’t know,” or “refused,” and other responses, or, in the case of multiple response questions, percentages add to more than 100%.

3.1 Disclaimer

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### 3.2 Acknowledgement

This document is a deliverable of RailActivation project. This project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement Nº 861887.
4 Introduction

4.1. Objectives

The purpose of this report is to identify and evaluate Workplace Innovation mechanism, tools and schemes. As part of the mapping phase, the report includes the benchmarking and the assessment of the survey developed and distributed; in which EU Railway sector workers were asked about their experience and point of view on workplace innovation.

The benchmark aims to summarize results of existing researches and industrial approaches in order to understand and evaluate the current position of workplace innovation (WI) in European railway sector in relation to best practice and to identify areas and means of performance improvement.

Among the objectives of this document are gathering information and description of the existing WI mechanisms and tools applicable to the railway SMEs, and establishing a foundation to identify, suggest and exchange best practices.

4.2. Contributions to other WPs and deliverables

As WP2 starts with the Task 2.1, it is the basis for definition of RailActivation operational tools dedicated to innovating and revitalize SMEs (test objectives). Later on, these results are fed to WP3 implementation of RailActivation Scheme, creating the environment for all the assessment activities. The technical activities are composed of WP2, 3, 4 and cover the development of the capabilities and piloting in real conditions.

This deliverable has relations to other deliverables and WPs. On the one hand, some deliverables have been used as dissemination sources and tools to attract responders. The following deliverables have contributed in this aspect:

- D5.1 Communication and dissemination Plan – defined dissemination tools and channels were actively used to promote the research and to gather feedback from the target audience.
- D5.2 Website – The survey was published on the project’s website.

On the other hand, there will be tasks and WPs that will collect results of this Deliverable. In particular:

- Task 2.2 will select the best practices basing on the elaborated results of D2.1,
- in Task 2.3 a new pilot scheme will be defined basing on the on the knowledge obtained,
- WP3 will test pilot scheme in railway SMEs, and test results will be compared with data generated by this survey,
- WP4 will create interregional network, taking into account the elaborated results of D2.1.
- Public will be informed about the results generated by D2.1 according to the activities specified in WP5.
5 Benchmarking

5.1 Concept of Workplace Innovation

5.1.1 Existing approaches and definitions

Workplace Innovation (in short WI) is a developed and implemented practice or combination of practices that either structurally (through division of labour) or culturally (in terms of empowerment of staff) enable employees to participate in organisational change and renewal and hence improve the quality of working life and organisational performance (Oeij, P., Žiaubertytė-Jakštienė, R., Dhondt, S., Corral, A., Totterdill, P., & Preenen, P., 2015).

The process of WI is to engage and involve employees when the organisation develops or implements renewal and change. WPI lies at the intersection of skills, technology and human resources (HR) management (Beblavý, M., Maselli, I., & Martellucci, E., 2012). At the same site, WPI consists not only in the process of innovation and but in the subject of innovation as well (Oeij, P. R. A., Dhondt, S., Pot, F., & Totterdill, P., 2018).

![Figure 1 Workplace innovation as a process](image)

Although WI can take many forms, including employee engagement with supportive organisational culture, and employee involvement with decision latitude for employees. (Oeij, P. R. A., Dhondt, S., Pot, F., & Totterdill, P., 2018)
5.1.2 Reasons for WI implementation

Two main groups of reasons are defined as drivers for WI implementation (Oeij P. R.A., Dhondt S., Žiauberytė-Jakštiene R., Corral A., Totterdill P, 2016): from one side it is improvement of the organisation economic goals and performance quality (e.g. increase of productivity, manufacturing quality, customer service, financial performance and profitability etc.), and from another side there is the quality of working life and employee engagement (e.g. creases employee motivation and well-being, playing a particularly important role in reducing stress, enhancing job satisfaction and mental health, and improving retention etc.). In a lot of cases, combination of both reasons can take place at the same time.

Every group of reasons leads to implementation of different methodological approaches for WI implementation and development, which include WPI-structure elements, WI-culture elements or are a mixture of structure and culture practices.

The most common reasons of WI in the railway sector, and the strength of their influence, has not been defined before.

5.2 Defined ways of WI implementation and development

Implementation In 2000s various researches (Zoghi, Cindy, Robert D. Mohr, and Peter B. Meyer., 2010), (Totterdill, P., Exton, O., Exton, R., & Sherrin, J., 2009), (Schmidt, Tobias, and Christian Rammer., 2007), had been conducted and as a result a number of factors which facilitate implementation and development of WI have been defined, among them are: absence of hierarchy, higher independence of single workers and teams, task rotation, flexi-time and employee empowerment are the main features of workplace innovation practices etc.

According to series of later studies on the European level, combination of the four main factors make the basis for the most effective workplace innovation environment (Pot, F. D., Totterdill, P., & Dhondt, S, 2016), (Totterdill, P., Dhondt, S., & Boermans, S., 2016):

- Empowering jobs and self-managed teams.
- Flexible organisational structures, people-centred management practices and streamlined systems and procedures based on trust.
- Systematic opportunities for employee-driven improvement and innovation.
Co-created and distributed leadership combined with ‘employee voice’ in strategic decision-making.

It is also clear, that other critical factors can appear depending on the enterprising behaviour, the culture of innovation, the high levels of employee engagement, and the organisational and individual resilience which flourish only when the other four combines to shape experience and practice across the whole organisation, as well as with the influence of national and sectoral particularities.

From the point of view of WI introduction on enterprises, they can be divided into 4 main groups of methods:

- Top-guided WI – This approach is implemented by companies, where WPI initiative comes from top management.
- Autonomy-driven WI - This path concerns companies where there is some autonomy for employees and space to participate, and where organisational autonomy is used to develop WPI practices in order to survive or restructure so they can secure their future.
- Integral WI - This approach is implemented by companies, where WPI practices are initiated bottom-up with the help of employees, providing employees with possibilities for innovative behaviour. The company has decision latitude to make its own choices and a preference for limiting the division of labour. It integrates structural and behavioural elements.
- Employee-driven WI - In this path, WI is initiated from the bottom up and implemented in a participatory manner. While the organisation has decision latitude to make its own choices, it also gives employees room to participate in developing the organisation’s model.
- Innovative behavioural driven WI - Companies choosing this path mostly limit the division of labour and for enabling employees to perform innovative behaviour. However, employees do not play a role in developing the organisation’s model.

As companies adopt and implement WI in their own specific way, some patterns have been found depending on the country (Oeij, P., Žiaubberytė-Jakštiénė, R., Dhondt, S., Corral, A., Totterdill, P., & Preenen, P., 2015). At the same time, the average level of Workplace Innovation maturity across organisations in Europe varies a lot as well (Dhondt, 2014).

![Figure 3 Ranking of EU27 countries by WI diffusion](image)
Particularities of WI implementation for sector also have huge importance. Particularities of WI by sector had been studied before, but researches were focused on the difference between public/private sector, or transport sector as a whole. Some conclusions done during these researches have high value and must be taken into account.

For example, application of different elements used for definition of WI have specific importance in transport and communication sector comparing with the average values for 14 sectors (Beblavý, M., Maselli, I., & Martellucci, E., 2012):

![Figure 4 Workplace innovation sectoral particularities, EU27](source: Beblavý et al., 2012)

From another site, role of workplace innovation organisational and individual factors, as well as elements of perception of innovation, play a role in innovation adoption process at the level of individual workers can be different for local transport and logistics enterprises (Putnik, K., Oeij, P., Dhondt, S., van der Torre, W., de Vroome, E., & Preenen, P., 2019).

Based on the findings of this research 4 key elements are defined as basis for the successful innovation adoption: 1. team voice and 2. engagement of employees, 3. ease of use and 4. subjective norm.

As EU railway sector has a set of particularities it requires specific approach to maximise effectiveness of WI implementation. There are several open questions. Among them:

- How important is the influence of every factor in the railway sector?
- Which is the most suitable methodology of WI implementation and development for the railway sector?

### 5.3 Existing restrictions and obstacles for WI widespread

Despite Workplace innovation is gaining profile as an emerging European policy (Pot, F. D., Totterdill, P., & Dhondt, S, 2016), and EU employment policy priorities the innovation development, along with the boost employment levels, prolong working life, increase the participation of women, develop productivity and adapt to the digital challenge, still only 5 to
10% of European companies have reached a high WI-maturity level (Oej, P. R. A., Dhondt, S., Pot, F., & Totterdill, P., 2018).

Existing barriers that prevent workplace innovation from spreading further can be divided into two main categories: microeconomic considerations such as risk aversion, lack of trust between social partners and costs related to the transition towards a new work environment, and macro explanations related to the national context in which institutions operate (Beblavý, M., Maselli, I., & Martellucci, E., 2012).

The benefits of workplace innovation are only fully realised when workplace innovation practices run throughout the entire organisation. One of the most significant obstacles to achieving high performance is partial change – a failure to recognise that organisations consist of interdependent parts that either nurture or obliterate innovative ways of working (Totterdill, P., Dhondt, S., & Boermans, S., 2016).

Depending on the country context, competition policy together with market openness and regulatory reforms, exert pressures that can act as drivers or barriers for specific organisational changes.

Particular WI restrictions and obstacles for railway sector are to be defined. Only knowing them the best results can be achieved.
6 Structure of the survey

The survey was drawn out basing on the results of the benchmark (see Chapter 5) and common European workplace innovation concept and indicators (Workplace innovation: Concepts and indicators, 2014). In order to analyse the key elements (1) Jobs and Teams; (2) Structures, Management and Procedures; (3) Employee-Driven Innovation and Improvement; (4) Co-Created Leadership and Employee Voice) the survey contains four sections (see table1) and consists of 34 questions.

This structure tends to cover all the layers of the workplace innovation and to answer the main guiding questions (Workplace innovation: Concepts and indicators, 2014):

<table>
<thead>
<tr>
<th>Section No</th>
<th>Section title</th>
<th>Main research questions to be answered</th>
<th>Amount of survey questions</th>
</tr>
</thead>
</table>
| 1:         | Individual Level    | • Do employees and their managers have the capability and willingness to engage in workplace innovation?  
             |                      | • Does the structure of the individual work task (work task, work time, work environment) allow employees  
             |                      | and managers to engage in workplace innovation?                                                       | 7                         |
| 2          | Organizational level| • Which cultural and structural aspects does the organisation provide to help employees and managers to  
             |                      | engage in workplace innovation?                                                                       | 15                        |
|            |                     | • How does workplace innovation reflect, and respond to external economic, social or environmental challenges? |                           |
| 3          | Process             | How do employees and managers engage in fundamental and continuous processes enabling workplace innovation? | 6                         |
| 4          | Results             | What are the results/outputs of workplace innovation?                                                   | 6                         |

*Table 1 Survey structure*

The survey contains question types including open-ended (comments to essays) questions, and closed-ended (yes/no, multiple choice, rating scale, etc) questions. Question types were chosen depending on the information which had to be collected.

In talking about monitored variables, two types of variables were tracked in the survey: categorical (or nominal), and ordinal. As in most of the cases exact values were not needed for the research numerical variables are not included into the survey. In the table below there are examples of the monitored variables:

<table>
<thead>
<tr>
<th>Type of variable</th>
<th>Example</th>
</tr>
</thead>
</table>
| Categorical      | Gender; Location of entity; Type of innovation; Department in charge of  
                   | the innovation; Methods to stimulate new ideas or creativity etc.       |
| Ordinal          | Age range; Economic status; Education status etc.                       |

*Table 2 Types of monitored variables*
The survey design aims to stimulate respondents’ feedback and to motivate him/her to reply. Besides that, the survey flows in an orderly fashion. The particular sequence of questions was chosen to create a certain flow to the survey.

7 Research questions and hypotheses

The main research question of this study is: Which individual and organisational factors are related to the perception of innovation of employees in railway sector, and how does this relate to the actual use of innovation by employees in organisations?

For this end, 25 relations between factors are to be checked using statistical data from the survey. All of them are aimed at check influence from independent factors on dependent factors:

<table>
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<tr>
<th>Dependent factors</th>
<th>Independent factors</th>
</tr>
</thead>
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<tr>
<td></td>
<td>Group 1</td>
</tr>
<tr>
<td></td>
<td>Gender</td>
</tr>
<tr>
<td>Type of innovation</td>
<td></td>
</tr>
<tr>
<td>Product Innovation</td>
<td>●</td>
</tr>
<tr>
<td>Process Innovation</td>
<td>●</td>
</tr>
<tr>
<td>Management Innovation</td>
<td>●</td>
</tr>
<tr>
<td>Organizacional Innovation</td>
<td>●</td>
</tr>
<tr>
<td></td>
<td>Group 2</td>
</tr>
<tr>
<td></td>
<td>Use of information sources that provided information for new innovation projects (8 types of sources)</td>
</tr>
<tr>
<td>A new marketing innovation or organisational innovation introduced</td>
<td>●</td>
</tr>
<tr>
<td>A new product or a new process introduced to one of the markets in the last 3 years</td>
<td>●</td>
</tr>
</tbody>
</table>

Table 3 Matrix of hypotheses dependency relations between factors

Based on reviewing the literature we shall make the following assumptions **Hypotheses**:

**H1**: There are differences between involvement of all groups of employees into the development of all kind of innovations

**H2**: During the development of new product/process or a new process higher amount of sources of new ideas were used (in comparison with the development of new marketing innovation or new product innovation).

**H3**: During the development of new product/process or a new process higher amount of methods of stimulation of new ideas were used (in comparison with the development of new marketing innovation or new product innovation).
8 Methodology of gathering data

8.1 Data source

The data used for this research were collected in a survey designed by RailActivation consortium and administered online to workers of the EU railway sector. The online survey link was distributed to a wide range of groups and organisations, including the RailActivation website, twitter and LinkedIn accounts, and also by sending emails to Mafex and ERCI members, among others. It was widely distributed through social media feeds (Twitter and LinkedIn accounts). The online survey was also promoted via a number of personalised emails and via word-of-mouth.

Figure 5 Online distribution of survey link (RailActivation website);

Figure 6 Online distribution of survey link (LinkedIn);

Figure 7 Online distribution of survey link (Twitter)
Data was collected over a 54-day period (between 02/12/2019 and 24/01/2020) and the final sample included 203 respondents from 16 European countries. Full version of the survey is available in the Appendix to this report.

8.2 Data Assembly

This paper undertakes three different kinds of analyses:

The first analysis is the descriptive examination of the factors related with the workplace innovation at the European level, which uses the survey responses of all individuals who responded to the question seeking information on these factors. The sample size for this analysis is 203 and includes all responders.

The second analysis is the statistical analysis of the obtained results, including checking influences between factors (see Table 3 Matrix of hypotheses dependency relations between factors), on the European level. The sample size for these analyses depends on every particular case, and the amount of valid answers which had been gathered.

The data assembly for the first analysis is straightforward. For the second analysis, the responses to the Independent factors-based questions are stacked vertically. Thus, each row in this dataset corresponds to an individual-combination. The data assembly was conducted using the Google questioner. The final data sample was imported into Excel for statistical analysis and estimation.

8.3 Sample Description

Calculation of the appropriate number of responses is based on the desired confidence level, margin of error and the number of people that make up the total population size. The following survey sample size formulas were used:
where,

\[ n = \frac{Z^2 \cdot p \cdot (1-p)}{e^2} \times \frac{1}{N - 1 + \frac{Z^2 \cdot p \cdot (1-p)}{e^2}} \]

N - Population size,

Z - Critical value of the normal distribution at the required confidence level,

p - Sample proportion,

e - Margin of error.

Taking into account that the European rail industry employs nearly 400,000 people (Berger, 2018) sample size for different combinations of confidence level and margin of error were calculated:

<table>
<thead>
<tr>
<th>Confidence level</th>
<th>Margin of error</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>80</td>
<td>15</td>
<td>19</td>
</tr>
<tr>
<td>90</td>
<td>15</td>
<td>31</td>
</tr>
<tr>
<td>95</td>
<td>15</td>
<td>43</td>
</tr>
<tr>
<td>80</td>
<td>10</td>
<td>41</td>
</tr>
<tr>
<td>90</td>
<td>10</td>
<td>69</td>
</tr>
<tr>
<td>95</td>
<td>10</td>
<td>97</td>
</tr>
<tr>
<td>80</td>
<td>5</td>
<td>164</td>
</tr>
<tr>
<td>90</td>
<td>5</td>
<td>273</td>
</tr>
<tr>
<td>95</td>
<td>5</td>
<td>384</td>
</tr>
</tbody>
</table>

Table 4 Required sample size in dependence on the confidence level and margin of error

Required sample size was defined in order to get reliable results of the statistical analysis (confidence level 95%, and margin of error 7%). sample size must be more than 200 responders (Ernest L.Cowles, 2019)

The final sample used in the estimation of European railway sector has the following characteristics:

- Respondents from 16 countries (Spain, Italy, Poland, Latvia, France, Bulgaria, Sweden, Turkey, Netherlands, Checz Republic, UK, Switzerland, Lithuania, Germany, Bosnia and Herzogovina, Estonia) have send their answers. Even though from some countries not significant amount of answers have been received but the total amount allows to make generalized conclusions. Three respondents have not indicated their location.
- About 25% of respondents are female (almost 87.5% male). One respondent preferred not to indicate his/her gender. This confirms that railways are male-dominated industry. From one site, the average share of women in the railway companies is about 20% (CER – ETF – EIM, 2016), and from another site women in the railway industry tend to work in administration, sales, catering and cleaning (Federation, 2019).

- The age distribution is normal and centred (as expected) on the population, with the majority (almost 65%) of respondents in the 36-55 years age group.
- 197 respondents answered the question about the personal income. The distribution of personal income (in Euro) is as follows: less than 20,000 € (about 7%), 20,000-40,000 € (almost 30%), 40,000-60,000 € (almost 38%), and greater than 60,000 € (almost 26%). The distribution of sample incomes is higher than European railway sector incomes, but this probably biases the sample only marginally, and big number of high executives who participated in the survey.

High salary rate can be explained with the high profile of the survey respondents. 159 people have indicated their job position. As it was an open answer, we have grouped the answers into 4 following groups:
- 196 respondents answered the question about the level of education. The level of education has the following distribution: bachelor (almost 5%); graduate (about 32%); post graduate (about 47%); PhD (almost 11%); and others (about 5%).
9 Implemented methodology of data analysis

In order to perform comprehensive survey research its analysis plan was developed during the survey development stage. To achieve a wider and more complete understanding of the influence of workplace innovation in railway SMEs and to increase the validity of the data and findings it was decided to use of multiple methods of data analysis.

9.1 Descriptive statistics

To present quantitative descriptions of the obtained survey results in a manageable form descriptive statistic are used. As lots of measures have been gathered, descriptive statistics help us to simplify large amounts of data in a sensible way.

In general, descriptive statistics is used for two purposes:

1) to provide basic information about variables in a dataset;
2) to highlight potential relationships between variables

In order to display the obtained results graphically or pictorially the following methods will be implemented:

<table>
<thead>
<tr>
<th>Method of descriptive statistics</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Histograms</td>
<td>Visually represent the frequencies with which values of variables occur. Each value of a variable is displayed along the bottom of a histogram, and a bar is drawn for each value. The height of the bar corresponds to the frequency with which that value occurs.</td>
</tr>
<tr>
<td>Frequency Tables</td>
<td>Show the number of pieces of data that falls within the given interval. Implemented for organizing raw data in a compact form by displaying a series of scores in ascending or descending order, together with their frequencies—the number of times each score occurs in the respective data set.</td>
</tr>
<tr>
<td>Circle Graphs (pie charts)</td>
<td>Show the relationships of the parts of the whole. The circle is considered with 100% and the categories occupied is represented with that specific percentage.</td>
</tr>
</tbody>
</table>

Table 5 Description of the implemented methods of descriptive statistics

9.2 Cross-tabulated contingency tables

Cross-tabulated contingency tables will be used to summarize the frequency of response of each category of variable. The frequency distribution provides the response frequencies for some question in the survey. But as far as there is an interest in influence one variable may have on another, the use of contingency tables is appropriate (explanatory dimensions are added to the frequency distribution).

Contingency tables include “total” column in addition to the “total” row. The “total” column depicts the sum of all categories of the column variable for each category of the row variable. As far as the stated purpose of the contingency table is to determine the relationship between two variables, the inclusion of a “total” column is a critical and necessary component.
Percentages are calculated for the independent (column) variable only. In accordance to this principle, the percentage is calculated vertically, summing to 100 percent at the bottom of each column. The variables can be compared by holding a category of the dependent variable (row) constant and comparing the percentages across the row.
10 Obtained results

10.1 Definition of the general trends of WI in the European Railway sector

10.1.1 Current approach to innovations and development

The overview of the obtained of the survey is done following the existing approaches and definitions (see Chapter 5.1.1) of WI.

Most of the respondents (79.5%)\(^1\) have indicated that during the last three years their enterprises have introduced new product or new process to the market. At the same time, 60.2%\(^2\) of the respondents have confirmed that marketing innovation or organizational innovation were introduced in their companies.

![Figure 15 Innovations introduces during the last three years in EU railway enterprises (% of positive answers from the survey)](image1)

Vast majority of the product and process innovations were developed by the enterprises where they had been introduced. Very often these innovations were the result of collaborative work with other enterprises or institutions. But in very few cases European railway enterprises were adopting or modifying goods or services originally developed by other enterprises or institutions.

![Figure 16 Innovations developed in EU railway enterprises (% of answers from the survey)](image2)

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\(^1\) From 200 answers.
\(^2\) From 201 answers
\(^3\) From 201 answers

This Project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 861887
Every company has its own approach to organize innovations development. Basing on the results of the survey, the biggest share of the enterprises develop innovation in different departments within the company. At the same time, approach when engineering department is on charge of the development of the innovations is the most popular.

Figure 17 Departments in charge of the product and process innovations development (% of answers from the survey)⁴

Even if all the participants of the survey work in the railway sector, the products and processes developed by the enterprises are very different. Their categorization is out of the scope of the project, but particularities of product/process innovation development had been investigated (see Chapter 10.2).

Among those organisational innovations, the most frequent (62.3%) were the new business practices for organising procedures (i.e. supply chain management, business re-engineering, knowledge management, lean production, quality management, etc.). More than a half of the respondents have confirmed implementation of new methods of organising work responsibilities and decision making in their enterprises making (i.e. first use of a new system of employee responsibilities, team work, decentralisation, integration or de-integration of departments, education/training systems, etc.), and only 40.7% have told that new methods of organising external relations with other firms or public institutions (i.e. first use of alliances, partnerships, outsourcing or subcontracting, etc.) have been introduced.

⁴ From 89 answers

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Taking into account that objectives which are followed by an enterprise are the main driver of reorganizing employees’ workplaces and introducing innovations, their types and significance have been defined with the survey.

Among objectives for enterprises’ organisational innovations introduced during the last three years the higher importance belong to: the improvement of goods or services quality (60%), reduction of time to respond to customer or supplier needs (57.5%) and improvement of the ability to develop new products or processes (47%). All other types of objectives have minor significance.

Companies which work in European railway sector are prompt to introduce changes in their internal processes. In particular huge amount of changes in the use of technology in the ways to coordinate and allocate the work to employees, in the remuneration system, in recruitment policies and in the working time arrangements had been confirmed.

---

5 From 200 answers

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A lot of changes in external processes had been introduced also, but their amount is by far smaller than for the internal ones. More than a half of the respondents have confirmed that their entities have implemented new methods of organizing work responsibilities and decision making (i.e. first use of a new system of employee responsibilities, team work, decentralisation, integration or de-integration of departments, education/training systems, etc.) and new business practices for organizing procedures (i.e. supply chain management, business reengineering, knowledge management, lean production, quality management, etc.) during the last three years. Other types of changes are less frequent.

---

\[ S\text{From 184 answers} \]

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Huge number of respondents (34%) do not have information about the amount of the non-R&D innovation expenditures (% of turnover) in their enterprises. At the same time, those ones who could give a numerical answer have indicated 0-20% as the most frequent model of financing.

![Pie chart showing non-R&D innovation expenditures in European railway enterprises (% of turnover) (% of answers from the survey)](image)

10.1.2 Organization of work

10.1.2.1 Company level

As it was mentioned in Chapter 5, WI is a complex process which depends on various organizational and management factors. At the companies’ level supportive organizational culture and decision latitude for employees usually have the highest positive impact on the WI. With the survey, the state of art of the organization of work in the European railway companies is defined.

Basing on the received answers, importance of various types of information sources that were used for new innovation projects or contributed to the completion of existing projects during the last three years is defined. Two types of information sources are chosen as the most frequent: internal sources (within an enterprise or enterprise group) and clients or customers from the private sector. Both of them are used in more than a half of cases. Market sources (e.g. suppliers of equipment, materials, components, or software) and opinion of clients or customers from the public sector are very frequent also (both of them have more than 40% of positive answers). From another site, information provided by consultants and commercial labs was considered as the least relevant source of the information used for innovation projects.
Among other things in the survey we have examined the question about the spread of various methods of staff stimulation in order to develop new ideas or creativity. According to the achieved results brainstorming sessions are the most common tool (61.9% of the respondents have declared their usage). Multidisciplinary or cross functional work teams are the second most popular tool (56.7%). All the other methods for the stimulation of new ideas or creativity are much less common. The least used are job rotation of staff to different departments or other parts of your enterprise group, financial and non-financial incentives for employees, including free time, public recognition, more interesting work, etc.
Various methods of involving employees into enterprises’ innovation activities are confirmed to be used, but the most widespread approach is to have regular meetings between employees and immediate manager (73%). Meetings of a temporary group or committee or adhoc group and dissemination of information through newsletters, website, notice boards, email etc. are not so common. And such practices as regular staff meetings open to all employees at the establishment, suggestion schemes (the collection of ideas and suggestions from the employees, voluntary and at any time, traditionally by means of a ‘suggestion box’) and employee surveys among employees are used only in some enterprises. Discussions with employees through social media or in online discussion boards is the less common approach to the involving employees.

![Figure 25 Methods of involving employees into enterprises’ innovation activities](image)

Existing approaches to the organisations’ knowledge and information management (KIM) were also evaluated using a chain of questions related with the establishment documents and keeping records of the good work practices or lessons learned, with the purpose to share these with other employees had been gathered. It should help to estimate how organisations define and communicate of the value of their information with

In most of the cases (66.8%) there is an established procedure for documenting and keeping records of the good practices or lessons learned, but from another site it indicated that still a huge number of workers do not apply KIM system. At the same time among those ones, who uses these documenting procedures for monitoring external ideas or technological developments for new or changed products, processes or services and keeping records, 56.7% are doing it as a part of the responsibilities of general staff and 28.4% are using staff assigned specifically to this task.
With regard to the employees doing teamwork, do most of them work in more than one team at the same time, but the difference with those ones who work in a single team is not very big (17%)\textsuperscript{7}.

In the majority of cases (69.9\%)\textsuperscript{8} the external cooperation monitors external ideas or technological developments for new or changed products, processes or services. More common is the approach when these is done as part of the responsibilities of the general staff. At the same time, among the methods and instruments used for these issues the most common are: Internet (58.6\%), seminars and trade fairs (57.1\%) and personnel training (49\%). Visits to other workplaces, reading publications in both professionals’ journals and research and scientific magazines were chosen among the least used.\textsuperscript{9}

\textbf{Figure 26 Particularities of KIM in EU railway enterprises (Organization of work of employees who document and keep records of their good work practices)}

\textbf{Figure 27 Methods and instruments used for monitoring of external ideas or technological developments for new or changed products, processes or services}

\textsuperscript{7} From 192 answers
\textsuperscript{8} From 199 answers
\textsuperscript{9} From 198 answers

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Even if the railway sector is highly regulated and technological not even a half\textsuperscript{10} of the survey respondents have confirmed that in their enterprises employees have an individual training and development plan.

To have complete picture about the existing approaches to the decision making, daily work tasks and results follow up were divided into two questions. And, some differences between these two groups of decisions have been found. So, almost a half of respondents have indicated that in their company’s decisions about everyday work are taken in collaboration between employees and managers. Employees are not involved in less than a quarter of the daily work decisions. On the other side, much less employees are involved in following up results, and almost always it is done together with their managers.

As team work is an essential part of the workplace innovation, perception of some characteristics have been evaluated. Any of the characteristics had got an average mark higher that “to some degree”. The difference between the highest and the lowest average marks is 25%. Possibilities to choose team members and team-leaders have received the lowest punctuation.

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure28.png}
\caption{Percentage of employees in the respondents’ entities which have an individual training and development plan}
\end{figure}

\begin{figure}[h]
\centering
\includegraphics[width=\textwidth]{figure29.png}
\caption{Difference between decision taking for a) DAILY WORK TASKS and b) FOLLOW UP RESULTS}
\end{figure}

\textsuperscript{10} From 202 answers

This Project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 861887
Figure 30 Evaluation of different characteristics applicable for those workplaces which have teams (average marks)

Figure 31 Evaluation of different characteristics applicable for those workplaces which have teams (distribution of marks)
10.1.2.2 Individual level

Three series of questions related with the personal perception of work were asked.

The first group of questions aims to reflect a general assumption of being satisfied (“happy”) on work, and includes relations with colleagues and manager, perception of the work organization and in certain sense personal feelings. Evaluating these results, it is important to pay attention not only to the percentage of positive answers, but on the amount of negative answers as well.

So, even if about 60% of respondents feel support of their colleagues, at the same time almost 40% are not sure about it, or do not have it in their workplaces. Not much more than a half of workers have the possibilities to apply their ideas in their work and are involved in improving the work organisation or work processes of your department or organisation.

A half of respondents have the feeling of doing useful work. Less than a half of respondents consider that their managers help and support them.

It is defined that there is no common practice to consult with EU railway workers about building a team (about 34% have agreed with this statement) before setting their targets (about 30% have agreed with this statement).

As interaction with the direct manager is an inescapable part of the favourable environment for WI, some questions related with this issue were included into the survey also. The received answers should be evaluated from both sides also.

![Figure 32 Individual perception of personal teamwork (percentage of positive answers)](image)

As interaction with the direct manager is an inescapable part of the favourable environment for WI, some questions related with this issue were included into the survey also. The received answers should be evaluated from both sides also.

\[\text{From 199 answers}\]
The only positive description of the managers which had been voted by the majority of the respondents is respect from the manager (60.7% agreed with this statement). It is interesting to mention that more respondents feel respect from their colleagues than from their managers, even if the difference is not big.

Almost a half of the participants (46.9%) get feedback from their managers. At the same it means that about half of workers do not have such a feedback.

More than 60% see some in abilities of planning and organizing of work, and of resolving conflicts. Unfortunately, almost 16% of respondents consider that their managers do not have any of the offered positive features.

From another side, 80.9%\textsuperscript{12} of respondents have indicated that at their workplace management holds meetings in which they can express your views about what is happening in the organisation.

Self-evaluation has shown that vast majority (76.6%) of respondents consider that their present skills correspond well with their duties or even they already have the skills to cope with more demanding duties. Only about 23% consider that they need further training to cope well with their duties.

\textsuperscript{12} From 199 answers

\textsuperscript{13} From 196 answers

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45% of respondents\textsuperscript{15} have declared that their job involves rotating tasks between themselves and their colleagues, and 86.5\%\textsuperscript{16} consider that their tasks require different skills.

\section*{10.2 Personal involvement into the development of innovations}

The aim of this chapter is to define the level of involvement of different profiles of workers into development of different types of innovations.

The main research question answered in this chapter is: What is the involvement of employees of different gender/age/education/position into the development of different kinds of innovations in the European railway sector?

Every respondent had to indicate his/her personal involvement into development of different types of innovations. Innovations were categorized into 4 main groups following the recommendations of the “Oslo Manual” for measuring innovation (OECD and Eurostat, 2005), which defines four types of innovation: product innovation, process innovation, marketing innovation and organisational innovation.

Different types of the developed is considered being dependent variable in all the cases. Gender/age/education/position are considered independent variables.

Those answers which did not provide information about one of required variables were excluded from the evaluation.

\subsection*{10.2.1 Influence of the gender on the Involvement of employees´ into development of different types of innovations}

The drawn up cross tabulation allows us to see that both women and men are participating in the development of all four types of innovation. But among man the proportion of the positive answers is much higher.

\textsuperscript{14} From 201 answers
\textsuperscript{15} From 202 answers
\textsuperscript{16} From 200 answers

\textit{This Project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 861887}
For both women and men, the highest level of involvement in the innovation development is to the product innovation, but among men the proportion of the positive answers is about 14% higher.

At the same time, for both women and men, the lowest level of involvement in the innovation development is to the organizational innovation, among men the proportion of the positive answers is 11.5% higher.

The only type of innovation where the probability of involvement of women is higher than of men is in management innovation (about 19% difference).

![Graph showing gender perspective on involvement of employees into development of different types of innovations](image-url)

**Figure 35 Gender perspective on involvement of employees’ into development of different types of innovations (in frequency of participation)**

This Project has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 861887
10.2.2 Influence of the age on the Involvement of employees’ into development of different types of innovations

The drawn up cross tabulation allows us to see that all age groups are participating in the development of all four types of innovation.

Even though the middle-aged employees (36-55 years old — y.o.—) have the highest frequency of participation in innovation development, but if we pay attention to the average probability of participation in the innovation development for different age groups, we will see that the highest probability (50%) of involvement in innovation development have 56-65 y.o. people, the second highest involvement in innovation development is among young employees (41,25%), and the lowest (37,63%) is among middle-aged employees (36-55 y. o.).

Table 7 Type of developed innovation / Age crosstabulation

![Figure 36 Age perspective on Involvement of employees into development of different types of innovations (in frequency of participation)](image-url)
10.2.3 Influence of the educational level on the involvement of employees’ into development of different types of innovations

The drawn up cross tabulation allows us to see that not all employees of different educational levels are participating in the development of all four types of innovation.

From the point of view of an average participation of workers with different level of education in the development of all types of innovations (process innovation, product innovation, marketing innovation and organizational innovation), we can draw a conclusion that two mostly involved groups are Post Graduates (52,5%) and PhDs (50%). Those workers who have indicated their level of education as Bachelor have 39% probability to participate in innovation development, and Graduates 43.3%. The less involved into the innovation development are those ones who belong to “other” education (28,13%).

So, in the development of management Innovations participate only those employees who have Graduate, PhD or Post Graduate level, and only Graduates participate in the development of this type of innovation in more than a half of the cases (almost 54%).

In the development of product innovations participate more than a half of employees with all types of education, but probability of participation of PhDs is very high (almost 90%).

In the development of process innovations are involved also workers with all levels of education, but in this case the most frequent is participation among Post Graduates (about 62%).

Being the less common type of innovations, organizational innovations involve less than a half of workers from all educational levels.

![Table 8 Type of developed innovation / Education crosstabulation](image)
10.2.4 Influence of the position on the Involvement of employees’ into development of different types of innovations

When asked about the position, a large number of respondents refused to answer (only 142 answers were received). This should be taken into account when evaluating the reliability of the results.

Employees of all job levels are involved in the development of all types of innovation.

For all job levels, the highest average probability to be involved into the development is for process innovation (58.45%), the second highest probability (57.67%) stands for product innovation. And the lowest average probability (36.62%) belongs to organizational innovation.

Those employees who hold directive positions participate in the development of all kind of innovations with the probability higher than 50%, with the exception for marketing innovations where they participate with the frequency of 42.5%.

Even is managers participate in the highest total number of innovations, but if we speak about the frequency, it is not very different between managers and assistants (about 48% in both cases).
### Table 9 Type of developed innovation / Role in entity income crosstabulation

<table>
<thead>
<tr>
<th>DEVELOPED INNOVATION</th>
<th>assistant</th>
<th>director</th>
<th>manager</th>
<th>Total (row)</th>
</tr>
</thead>
<tbody>
<tr>
<td>no</td>
<td>13</td>
<td>13</td>
<td>30</td>
<td>56</td>
</tr>
<tr>
<td>yes</td>
<td>10</td>
<td>27</td>
<td>49</td>
<td>86</td>
</tr>
<tr>
<td>total</td>
<td>23</td>
<td>40</td>
<td>79</td>
<td>142</td>
</tr>
</tbody>
</table>

#### Product Innovation
- no: 34.8%, 57.5%, 58.2%, 77%
- yes: 65.2%, 42.5%, 41.8%, 65%

#### Process Innovation
- no: 73.9%, 50.0%, 67.1%, 90%
- yes: 26.1%, 50.0%, 32.9%, 52%

#### Marketing Innovation
- no: 17, 15, 33, 79
- yes: 6, 20, 26, 52

#### Organizational Innovation
- no: 10, 14, 15, 26
- yes: 27, 25, 17, 20

---

### Figure 38 Position perspective on involvement of employees into development of different types of innovations (in frequency of participation)
10.3 Development of new methods/practices as a result of implementation of different WI instruments

10.3.1 Influence of methods to stimulate new ideas or creativity among your staff

As a result of the analysis of the use of various methods of generating ideas and their influence on the development of various types of innovations, we can draw a number of following conclusions.

During the last three years, majority of enterprises which have introduced both new product/new process or new marketing innovation/organisational innovation a new process to one of the markets were using methods to stimulate new ideas or creativity among their employees. At the same time, any enterprise was using all the methods at the same time. The most frequent was the combination of brainstorming sessions, work in multidisciplinary or cross functional work teams.

Among the proposed methods to stimulate new ideas or creativity the most used were brainstorming sessions (for both types of innovations).

Among those enterprises which have introduced new marketing innovation or organisational innovations proportion of usage of methods to stimulate new ideas or creativity among their employee was lower, and the popularity of these methods was distributed in a different way.

The most frequent was usage of methods of generating ideas in those enterprises which have introduced new products or a new process to one of their markets.

![Figure 39: Usage of different methods of generating ideas during the development of innovations among those enterprises which have introduced new products/processes or marketing/organizational innovations (% frequency)](image-url)
### Table 10 Type of developed innovation / methods of generating ideas crosstabulation

<table>
<thead>
<tr>
<th>Innovation Type</th>
<th>Brainstorming sessions</th>
<th>Multidisciplinary or cross-functional work teams</th>
<th>Job rotation</th>
<th>Financial incentives</th>
<th>Non-financial incentives</th>
<th>Training employees</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A new product or a new process introduced to one of the markets in the last 3 years</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>no</td>
<td>f=19</td>
<td>15,6%</td>
<td>f=16</td>
<td>15,5%</td>
<td>f=1</td>
<td>4,2%</td>
<td>f=2</td>
</tr>
<tr>
<td>yes</td>
<td>f=103</td>
<td>84,4%</td>
<td>f=87</td>
<td>84,5%</td>
<td>f=23</td>
<td>95,8%</td>
<td>f=23</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>f=122</td>
<td>100%</td>
<td>f=103</td>
<td>100%</td>
<td>f=24</td>
<td>100%</td>
<td>f=25</td>
</tr>
</tbody>
</table>

| **A new marketing innovation or organisational innovation introduced to one of the markets in the last 3 years** | | | | | | | |
| no              | f=30                   | 24,6%                                         | f=43         | 41,3%                | f=8                   | 33,3%             | f=7    | 28,0% | f=12  | 40,0% | f=24  | 33,8% | f=18  | 54,5% |
| yes             | f=92                   | 75,4%                                         | f=61         | 58,7%                | f=16                  | 66,7%             | f=18   | 72,0% | f=18  | 60,0% | f=47  | 66,2% | f=15  | 45,5% |
| **Total**       | f=122                  | 100,0%                                        | f=104        | 100,0%               | f=24                  | 100,0%            | f=25   | 100,0%| f=30  | 100,0%| f=71  | 100,0%| f=33  | 100,0%|
10.3.2 Influence of sources of new ideas

As a result of the analysis of the use of various sources of generating ideas and their influence on the development of various types of innovations, we can draw a number of following conclusions.

During the last three years, majority of enterprises which have introduced both new product/new process or new marketing innovation/organisational innovation a new process to one of the markets were using various sources of new ideas. At the same time only two enterprise was using all the sources at same time during the development of all kind of innovations (the same two enterprises for all innovations).

Among the proposed sources of new ideas, the most used was Personnel training (for new product or process development) and management training for new marketing innovation or organizational innovation.

Among those enterprises which have introduced new marketing innovation or organisational innovations proportion of usage of most of the sources of new ideas was lower (except Visits to other workplaces), and the popularity of these methods was distributed in a different way.

The most frequent was usage of Internet as the source of ideas in those enterprises which have introduced new products or new processes.
Figure 40 Usage of different sources of ideas during the development of innovations among those enterprises which have introduced new products/processes or marketing/organizational innovations (% frequency)
**Project:** RailActivation - Activating inclusive growth in railway SMEs by workplace innovation

**Title:** SMEs best practices Survey report  
**Diss.Level:** PU  
**Del. code:** D2.1  
**Date:** 30.01.2020

<table>
<thead>
<tr>
<th>Management training</th>
<th>Personnel training</th>
<th>Internet</th>
<th>Professionals journals</th>
<th>Seminars and trade fairs</th>
<th>Visits to other workplaces</th>
<th>Research and scientific publications</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
<td>f</td>
<td>%</td>
</tr>
</tbody>
</table>

A new product or a new process introduced to one of the markets in the last 3 years

| | No | 12,5% | 13,3% | 14,4% | 21,0% | 22,9% | 14,3% | 11,1% | 27,3% |
| | Yes | 87,5% | 86,7% | 85,6% | 79,0% | 77,1% | 85,7% | 88,9% | 72,7% |
| Total | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% | 100,0% |

A new marketing innovation or organisational innovation introduced to one of the markets in the last 3 years

| | No | 20,00% | 25,51% | 31,63% | 43,75% | 29,36% | 24,56% | 32,81% | 90,91% |
| | Yes | 80,00% | 74,49% | 68,37% | 56,25% | 70,64% | 75,44% | 67,19% | 9,09% |
| Total | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% |

Table 11. Type of developed innovation / sources of ideas crosstabulation
11 Conclusions

In recent years, companies have developed a greater understanding of the value that people centred design brings. In fact, many managers could define multiple cases in which the design has effectively solved the problems with customers for example. Furthermore, people centred design has contributed decisively in the development of competitive advantages in many organizations.

Due to the conducted survey analysis, a set of particularities of the EU railway sector WI have been defined. The open questions had been answered:

- Certain differences between involvement of various groups of employees into the development of all kind of innovation were proved.
- During the development of new product/process or a new process are really used more frequently all types of sources of new ideas (in comparison with the development of new marketing innovation or new product innovation How important is the influence of every factor in the railway sector?
- During the development of new product/process or a new process are really used more frequently methods of stimulation of new ideas (in comparison with the development of new marketing innovation or new product innovation How important is the influence of every factor in the railway sector?

Innovation does not fail because of a technological failure or because the idea is bad. It fails because people make it difficult or avoid it, since they feel threatened by it or do not have an innovative mindset.

A new product may fail in the market because it does not create real value. Therefore, cannot find customers. Or a new product may fail internally because development, implementation and marketing do not work perfectly. The idea may be good and perfect, but if the Innovation Process does not work, it will die. However, the idea could not be very good, but if it is implemented and marketed with the utmost commitment and passion, it can become a great innovation.

The lack of a corporate and innovation strategy as a basis for decision making is one of the most important barriers in Workplace Innovation. This is usually accompanied by the fact that the information is insufficient or insufficient as the basis for the decision. Another barriers for Workplace Innovation is that the Innovation Tasks does not always appear in job descriptions, therefore, they are perceived as additional work for some employees. Unrealized commitment and lack of support for innovation are undoubtedly one of the main reasons for the failure of innovations.

Inadequate investment in people could be the biggest risk in workplace innovation. When employers perceive that the company is not giving them the compensation, career development, and other benefit, they are less committed to the innovation culture.
The empirical facts to date about Workplace Innovation reveal a high potential to both making organisations more innovative and productive, and at the same time crafting jobs where people can become participative in innovation at the organisational level.

From the research, a number of general conclusions emerges follows.

- The initiative to start WI practices comes from the management or ownership of the company. In only a minority of the companies studied does this first step originate from the employee side.
- These managers or owners understand that the role and participation of the employees and their representatives is crucial for the success of WPI and for the company’s performance and sustainability.
- Management decides to implement WPI practices mainly for reasons of efficiency, competitiveness and enhancing innovation.
- In a number of cases, the management decision to implement WPI has been triggered by such factors as:
  - a situation of crisis or difficulty in the company’s performance that requires significant changes if the company is to survive and remain competitive in a changing and globalised market;
  - a takeover by (or merger with) another (multinational) company, which brings in new forms of work organisation and new work practices or systems that involve WPI, resulting in a kind of ‘WPI know-how transfer’.
  - In several of the central and eastern European case studies, the privatisation of public enterprises and the associated reorganisation processes have served as a background to the implementation of WPI, with companies seeking greater efficiency and employee involvement than before.
  - Factors related to job quality and good working conditions do not appear as primary reasons or motivation for introducing WPI, but more as pre-conditions for, or results of, its implementation.

In order to verify defined conclusions made from the survey a set of statistical experiments and analysis are to be conducted (including regression analysis, chi-test etc.). Their results will be published in scientific journals.
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**List of Abbreviations**

ERCI - European Rail Cluster Initiative

EU – European union

KIM - Knowledge and Information Management

SMEs – small and medium enterprises

WI – workplace innovation

y.o- Years old
Bibliography


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Appendix

11.1 Survey questionnaire

Section 1: Individual Level

Q1.1: Role in your entity [Open answer]

Q1.2: Gender

☐ Female
☐ Male
☐ Prefer not to say

Q1.3: Age range

☐ 18-35
☐ 35-55
☐ 55-65
☐ Other

Q1.4: Education

☐ Bachelor
☐ Graduate
☐ Port Graduate
☐ PhD
☐ Other

Q1.5: Income per year

☐ Less than 20.000 €
☐ 20.000€-40.000 €
☐ 40.000€-60.000 €
☐ More than 60.000
☐ N/A

Q1.6: Year of foundation the entity [Open answer]
Q1.7: Location [Open answer]

Section 2: Organizational level

Q2.1: Have you developed any kind of these innovations in the last three years?

☐ Product innovation
☐ Process innovation
☐ Marketing innovation
☐ Organisational innovation
☐ None

Q2.2: How important were each of the following objectives for your enterprise’s organisational innovations introduced during the last three years

☐ Reduce time to respond to customer or supplier needs
☐ Improve ability to develop new products or processes
☐ Improve quality of your goods or services
☐ Reduce costs per unit output
☐ Improve communication or information sharing within your enterprise or with other enterprises or institutions.
☐ Others

Q2.3: Who developed product/process innovations?

☐ Your enterprise by itself
☐ Your enterprise together with other enterprises or institutions
☐ Your enterprise by adapting or modifying goods or services originally developed by other enterprises or institutions
☐ Other enterprises or institutions

Q2.4: Which department is in charge of this innovation? [Open answer]

Q2.5: Which of the following practices are used to involve employees in how work is organised?

☐ Regular meetings between employees and immediate manager
☐ Regular staff meetings open to all employees at the establishment
☐ Meetings of a temporary group or committee or adhoc group
Dissemination of information through newsletters, website, notice boards, email etc.

Discussions with employees through social media or in online discussion boards

Suggestion schemes (the collection of ideas and suggestions from the employees, voluntary and at any time, traditionally by means of a ‘suggestion box’)

Employee surveys among employees

Other

Q2.6: During the last three years, how important to your enterprise’s innovation activities were each of the following information sources? Include information sources that provided information for new innovation projects or contributed to the completion of existing projects.

- Internal: Within your enterprise or enterprise group
- Market sources: Suppliers of equipment, materials, components, or software
- Clients or customers from the private sector
- Clients or customers from the public sector
- Competitors or other enterprises in your industry
- Consultants and commercial labs
- Education & research institutes: Universities or other higher education institutions
- Government, public or private research institutes
- Other sources: Conferences, trade fairs, exhibitions Scientific journals and trade/technical publications Professional and industry associations

Q2.7: During the last three years, did your enterprise use any of the following methods to stimulate new ideas or creativity among your staff? If yes, was the method successful in producing new ideas or increasing creativity?

- Brainstorming sessions
- Multidisciplinary or cross functional work teams
- Job rotation of staff to different departments or other parts of your enterprise group
- Financial incentives for employees to develop new ideas
- Non-financial incentives for employees to develop new ideas, such as free time, public recognition, more interesting work, etc
- Training employees on how to develop new ideas or creativity
- Others
Q2.8: For each of the following statements, please select the response which best describes your work situation.

☐ Your colleagues help and support you
☐ Your manager helps and supports you
☐ You are consulted before targets for your work are set
☐ You are involved in improving the work organisation or work processes of your department or organisation
☐ You have a say in the choice of your working partners
☐ You are able to apply your own ideas in your work
☐ You have the feeling of doing useful work

Q2.9: In general, your immediate manager / supervisor ....

☐ Provides you with feedback on your work
☐ Respects you as a person
☐ Is good at resolving conflicts
☐ Is good at planning and organising the work
☐ Encourages you to participate in important decisions

Q2.10: Which of the following alternatives would best describe your skills in your own work?

☐ I need further training to cope well with my duties
☐ My present skills correspond well with my duties
☐ I have the skills to cope with more demanding duties
☐ no opinion (spontaneous)
☐ Refusal (spontaneous)

Q2.11: Does your job involve rotating tasks between yourself and colleagues?

Yes/No

Q2.12: Do the tasks require different skills?

Yes/No
Q2.13: At your workplace, does management hold meetings in which you can express your views about what is happening in the organisation?

1 - Yes 2 – No

Q2.14: Do employees in this establishment document and keep records of their good work practices or lessons learned, with the purpose to share these with other employees?

Yes/no

Q2.15: Does this establishment monitor external ideas or technological developments for new or changed products, processes or services?

☐ Yes, using staff assigned specifically to this task
☐ Yes, as part of the responsibilities of general staff
☐ No

Section 3: Process

Q3.1: With regard to the employees doing teamwork, do most of them work in a single team or do most of them work in more than one team at the same time?

☐ Most of them work in a single team
☐ Most of them work in more than one team

Q3.2: Does the external cooperation monitor external ideas or technological developments for new or changed products, processes or services?

☐ Yes, using staff assigned specifically to this task
☐ Yes, as part of the responsibilities of the general staff
☐ NO

Q3.3: Decision Making structure:

Who usually makes a decision of the following matters:

a) Daily work tasks:

☐ The employee undertaking the tasks
☐ Managers or work supervisors
☐ Both employees and managers or supervisors
☐ Other
B) Follow up results:

☐ The employee undertaking the tasks
☐ Managers or work supervisors
☐ Both employees and managers or supervisors
☐ Other

Q3.4: Characteristics of Work Teams applicable for those workplace that have teams: how well the following features correspond with the features of the teams: [1= not at all, 2= not very well, 3= to some degree and 4= well]

<table>
<thead>
<tr>
<th>Correspond with the features of one’s own workplace</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
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</thead>
<tbody>
<tr>
<td>Decide on their day-to-day and weekly tasks themselves</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Are responsible for the quality of their work themselves</td>
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<tr>
<td>Members perform several different tasks in the team</td>
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<tr>
<td>Choose their own members</td>
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<tr>
<td>Choose their own leaders</td>
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<tr>
<td>Have direct contacts with parties outside the workplace</td>
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<tr>
<td>Develop their operations continuously</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Develop products and services</td>
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</tbody>
</table>

Q3.5: What is the proportion of employees in the workplace who have an individual training and development plan?

☐ All
☐ more than a half
☐ No more than a half
☐ None

Q3.6: Where and how actively and regularly workplaces seek new ideas for developing the operations

☐ Management training
☐ Personnel training
☐ Internet
☐ Professionals journals
☐ Seminars and trade fairs
☐ Visits to other workplaces
☐ Research and scientific publications
Section 4: Results

Q4.1: During the last three years, has there been any organisational change?

☐ New business practices for organizing procedures, new methods of organizing work responsibilities and decision making

☐ New methods of organizing external relations with other firms or public institutions

☐ Other

☐ None

Q4.2: During the last three years, has there been any of the following changes? (multiple choice)

☐ Changes in the remuneration system

☐ Changes in the use of Technology

☐ Changes in ways to coordinate and allocate the work to employees

☐ Changes in recruitment policies

☐ Changes in the working time arrangements

Q4.3: During the last three years, did your enterprise introduce: (Multiple choice)

☐ New methods of organizing work responsibilities and decision making (i.e. first use of a new system of employee responsibilities, team work, decentralisation, integration or de-integration of departments, education/training systems, etc.)

☐ New business practices for organizing procedures (i.e. supply chain management, business reengineering, knowledge management, lean production, quality management, etc.)

☐ New or significantly improved methods of manufacturing or producing goods or services

☐ New or significantly improved logistics, delivery or distribution methods for your inputs, goods or services

☐ New or significantly improved supporting activities for your processes, such as maintenance systems or operations for purchasing, accounting, or computing

Q4.4: Non-R&D innovation expenditures (% of turnover)

[...]

Q4.5: Does your entity introduced a new product or a new process to one of their markets in the last three years?

Yes/No
Q4.6: does your entity introduced a new marketing innovation or organisational innovation to one of their markets

Yes/No
11.2 Response totals