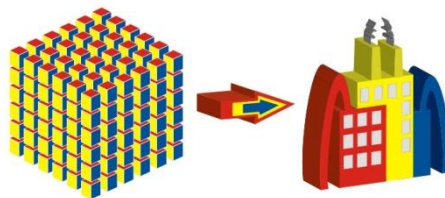


Project title: “Matrix of knowledge for innovation and competitiveness in textile enterprises -
TexMatrix”

Project duration: 2016-2018

Report Benchmarking Questionnaire

Slovenian companies



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1 INTRODUCTION

The TexMatrix project is aimed at developing innovative skills within textile companies.

As a tool for in-depth investigation, a questionnaire was developed to measure the aptitude for the innovation of the participating companies.

This BenchMarking action has also been implemented by the "BenchMarking for Dummies" in the involvement of participating companies, with the aim of defining a guideline for filling the questionnaire. The aim of this guide outlines how to maximize BenchMarking's action from the approach, such as "you do not have to think of being in a prize race, but whose focus is self-consciousness that leads to the emergence of real points on which action needs to be taken to improve.

The questionnaire consists of a first part regarding companies' generality, followed by 4 areas, primary objects of the survey: Conditions, Resources, Activities and Results.

Since innovation is not univocal, but it can have many "different" shapes and aspects, it can also be guided by diverging or seemingly opposing lines and, above all, between different factors can create synergies or mutual levers.

Each area of inquiry is then divided into specific sub-areas, where the issues are analyzed in the related questions. Questions are divided into two types:

- Likert scales, with selectable values from 0 to 5, referring to the overall PDCA model of total quality management.
- Multiple Answering Questions where the interviewee can choose between a rose of alternatives.

The sample analyzed corresponds to the companies that have joined the project at the invitation of the partners.

Most of the questionnaires were compiled directly online on the platform www.advan2tex.eu while some questionnaires were completed on the paper form and subsequently transcribed in the online version.

1.1 GENERAL INFORMATION REGARDING INTERVIEWED COMPANIES

The benchmarking comprised 63 textile and clothing companies of which 14.3% was Italian, 15.9% Slovenian, 19.0% Portuguese and 50.8% Romania, Figure 1.

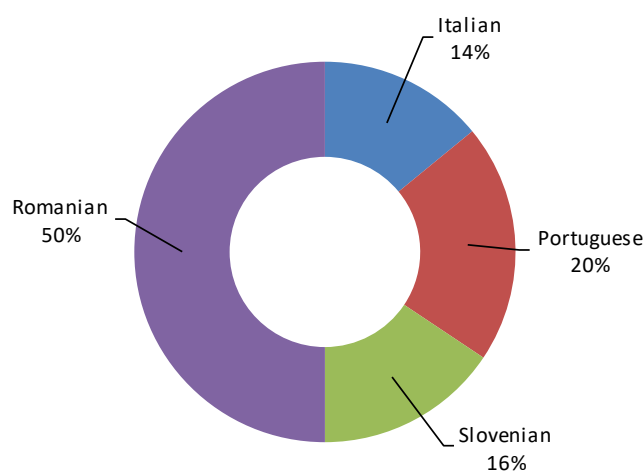


Figure 1: The share of companies involved in the benchmarking

Compared to the overall companies' sample, the sectors of the Slovenian companies are quite similar. There was a smaller share of companies operating in manufacturing of fibers&yarns and textiles&fabrics, Figure 2.

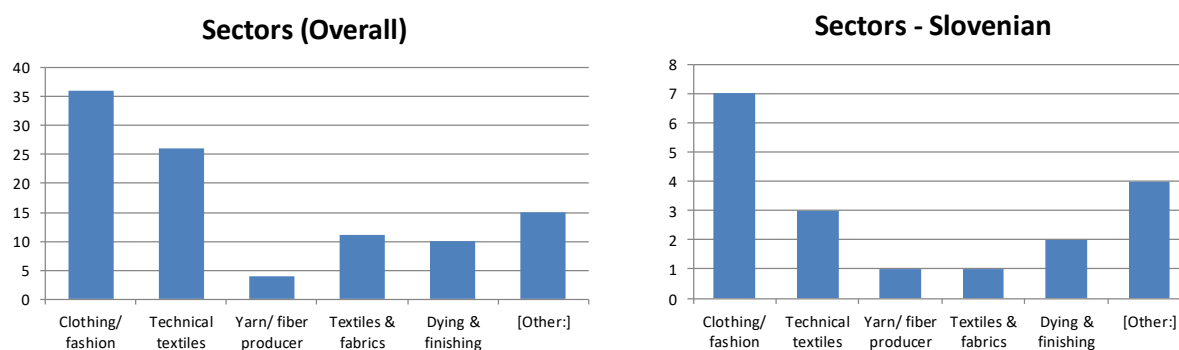


Figure 2: Distribution of companies by sectors

The share of the interviewed Slovenian companies that participated in the survey was 40% for sizes from 1 to 9 employees and 50 to 249 employees, whilst the share of 10% were companies of sizes from 10 to 45 employees and over 250 employees, Figure 3.

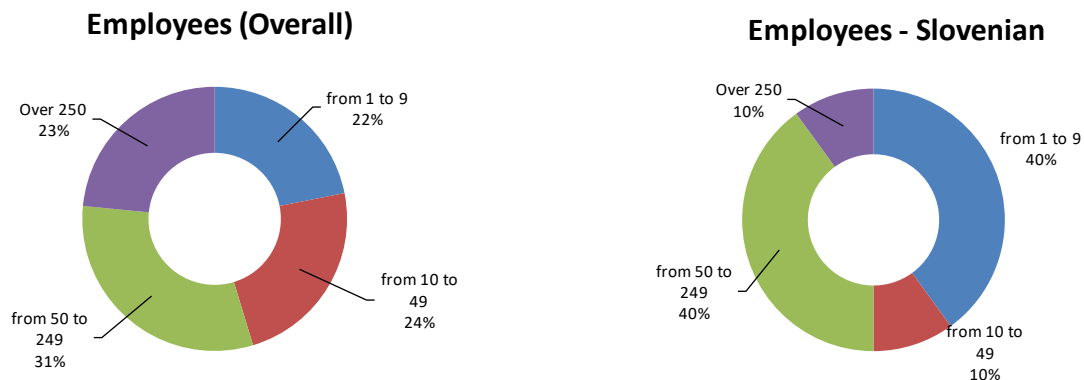


Figure 3: Distribution of companies by size

The turnover of the Slovenian companies lower than 1 Mln Euro had higher share (40%) compared to the overall sample, and the share of the turnover between 10 and 50 Mln Euro was 30%, Figure 4. Any of Slovenian companies had not turnover between 50 and 100 Millions of Euros. The turnover for Slovenian companies from 1 to 10 million was lower (20%) compared to the overall sample (37%), and the turnover over 100 million Euro was a bit higher for Slovenian companies (10%).

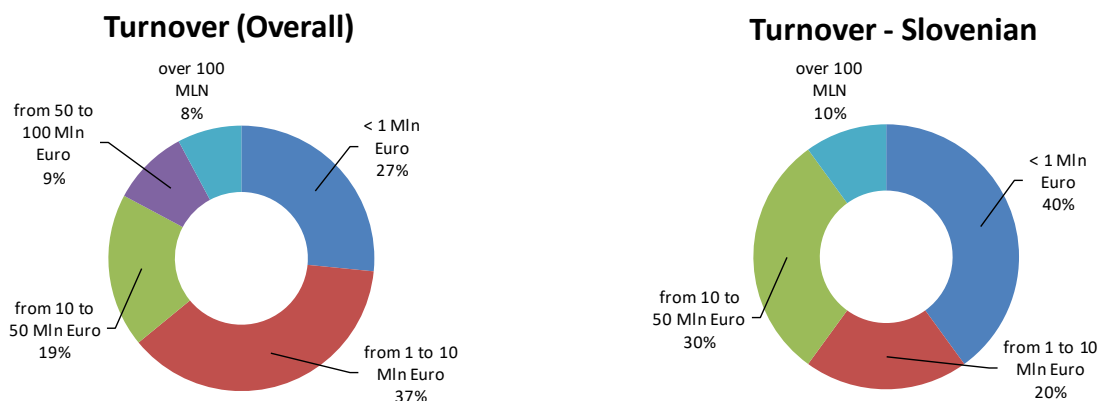


Figure 4: Comparison of the turnover between overall sample and Slovenian companies

The exports of the Slovenian companies have a similar distribution compared to the overall sample, with a contraction in export propensity: 40% of the Slovenian companies observed exports more than half of their turnover, Figure 4.

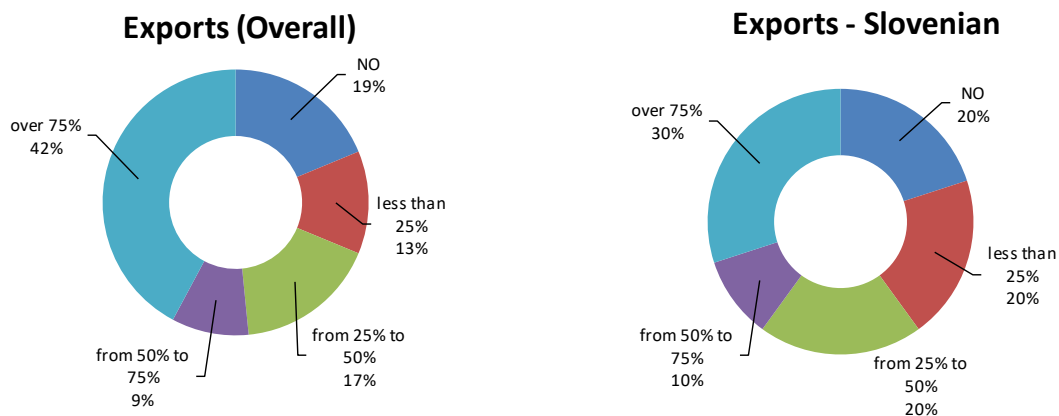


Figure 4: The export of the overall sample and Slovenian companies

The innovation activities of the Slovenian companies regarding the technologies, design, services, IT and sales are higher than overall sample in a range of +0.33 for technologies and +0.78 for sales, whilst the products and research innovation activities are slightly lower than the overall sample, Figure 5. It should be noted that, unlike the overall average, IT (3.40) is higher than research (2.90).

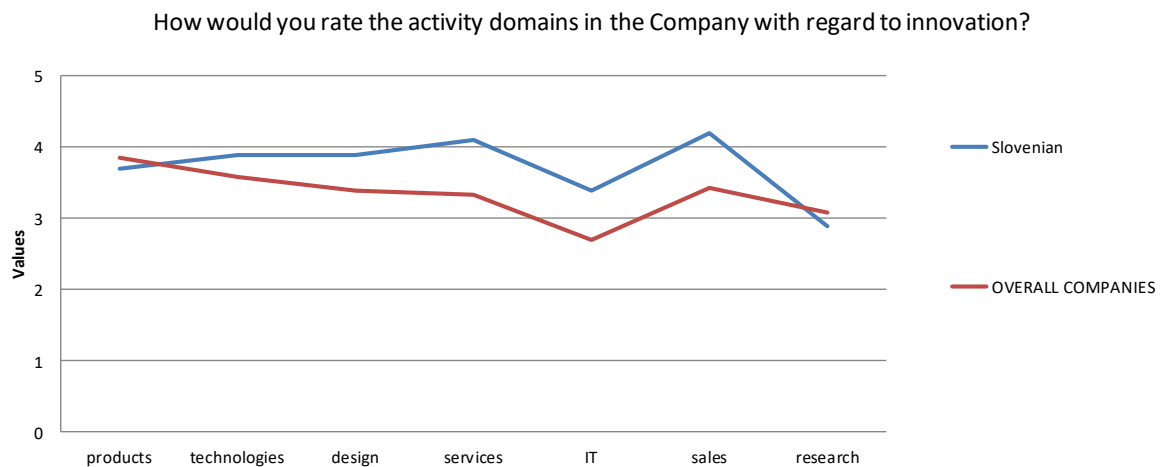


Figure 5: The innovation activities of the overall sample and Slovenian companies

With regard to the expected results of the innovative activities, similar values are recorded for both overall sample and Slovenian companies with the exception of the average interest of the Slovenian companies towards increase of the production capacity (2.70), which is -0.52 lower compared to the overall sample.

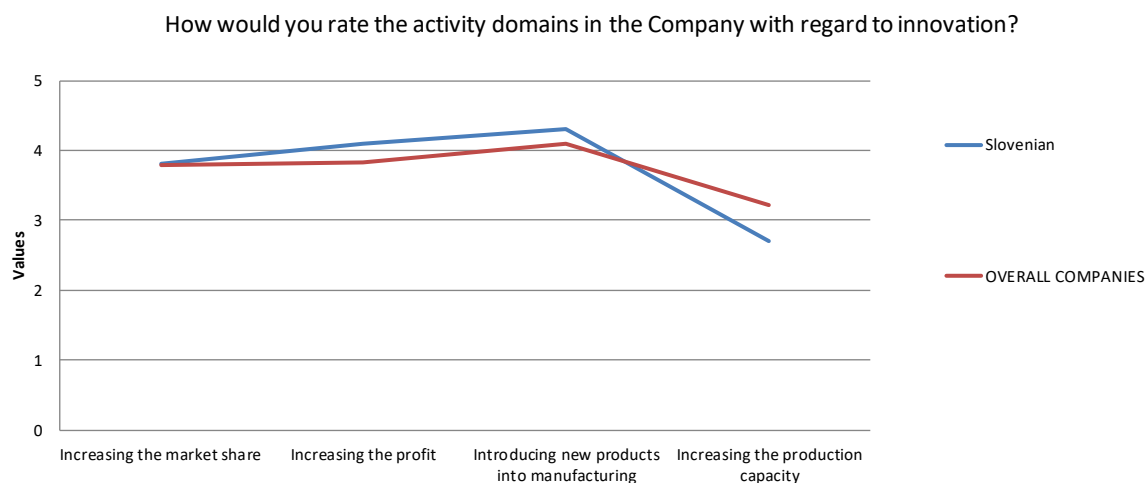


Figure 6: The innovation activities of the overall sample and Slovenian companies

2 CONDITIONS

Within the questionnaire for the benchmarking the Element **CONDITIONS** has three Criteria and the following number of Factors (represented in brackets): Innovation culture (5), Innovation strategy (5), Leadership (4). The Conditions reflex the attitude of the companies regarding the innovation as one of the most important values. The factors reveal the innovation culture, innovation strategy and leadership as mechanisms for technological surveillance of the textile companies taking part in BM.

Innovation culture of the Slovenian companies is similar in comparison with the overall sample, but with higher average values in the questions "innovation is one of the company's values" (4.30) and tendency to continuous change (4.20), while lower are promotion of innovation initiatives (3.50) and technological surveillance (2.60), Figure 7.

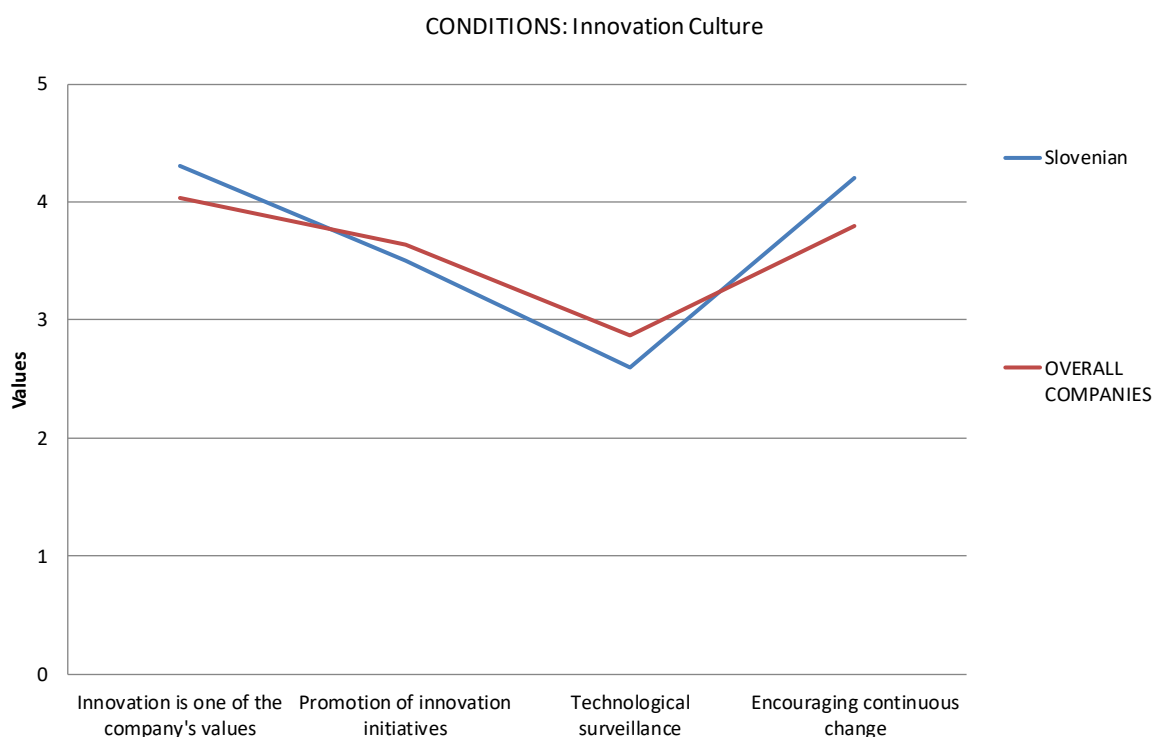


Figure 7: The innovation culture of the overall sample and Slovenian companies

Between **motivation instruments for innovation activities** the career development is priority domain in Slovenian companies (90%), in contrasts with other factors of which average rates are lower than overall sample: from 50% for the confidence in the organizational management to 30% for the financial facilities, Figure 8.

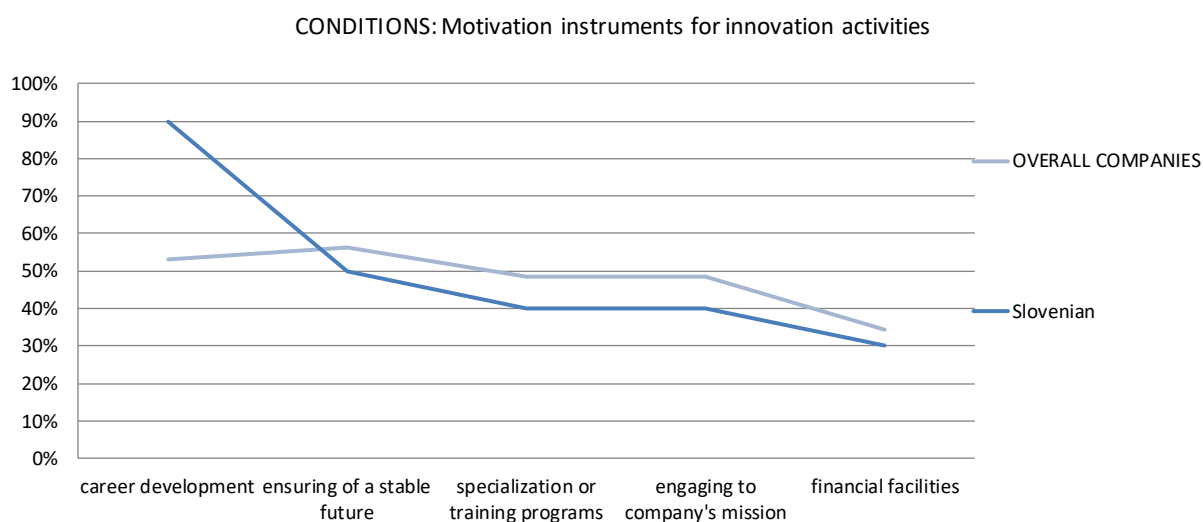


Figure 8: The motivation instruments for innovation activities of the overall sample and Slovenian companies

The first four factors of the **innovation strategy** (medium and long-term innovation, definition of quantitative goals, quantifying of required resources, innovation plan evaluated and disseminated) are higher for Slovenian companies compared to the overall sample and have the same tendency, whilst the element “evaluation of innovation projects/activities” is lower for 0.52 compared to the overall sample, Figure 9.

The **innovation leadership** factors “innovative vision and strategy” and “ emergence of leaders for innovative activities” are almost the same for both Slovenian companies and overall sample, whilst the next two factors regarding the budget line to promote innovation (2.60) and propensity to specific leadership styles (3.00) are higher for Slovenian companies (from 0.19 to 0.48) compared to the overall sample, Figure 10.

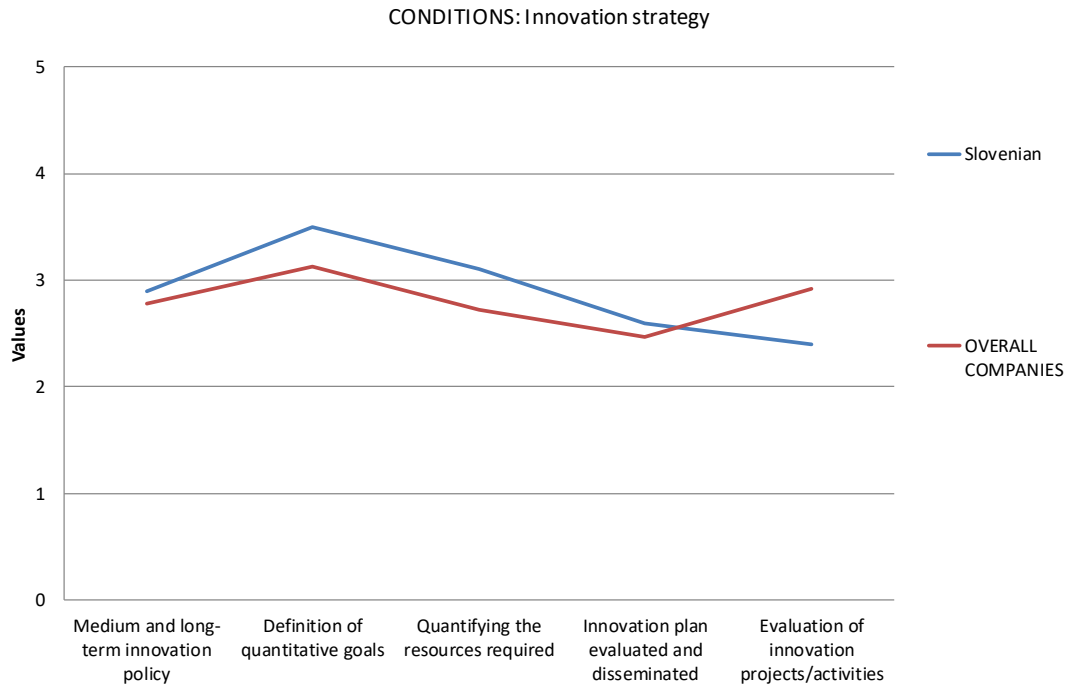


Figure 9: The innovation strategy of the overall sample and Slovenian companies

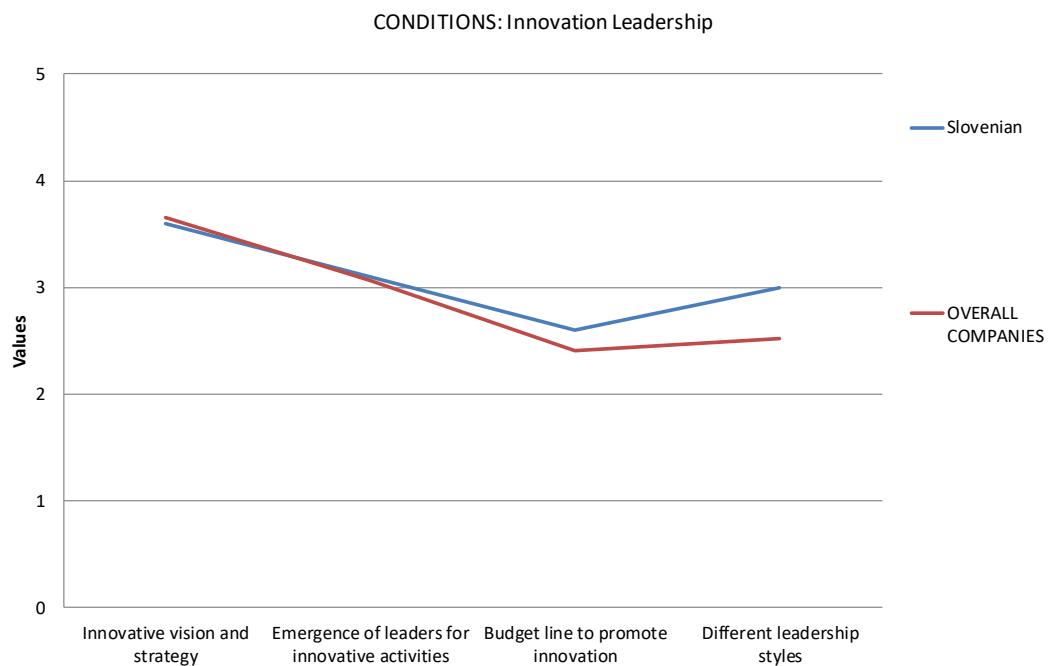


Figure 10: The innovation leadership of the overall sample and Slovenian companies

3 RESOURCES

The Element **RESOURCES** has five Criteria and the following number of Factors (represented in brackets): Human resources (5), Organizational structure (4), Material resources, such as equipment, technologies, materials etc. (3), External relationships (4), Financial sources (1). Resources clarify an important aspect, which can be described as assets, necessary for a proper function of the company. All the Criteria belonging to this Element are distinctively interconnected and co-dependent.

All factors for **human resources** are higher for Slovenian companies from the overall sample. The most significant is a strong engagement of employees as team players (4.60), with a significant increase (+0.91) than overall average, Figure 11.

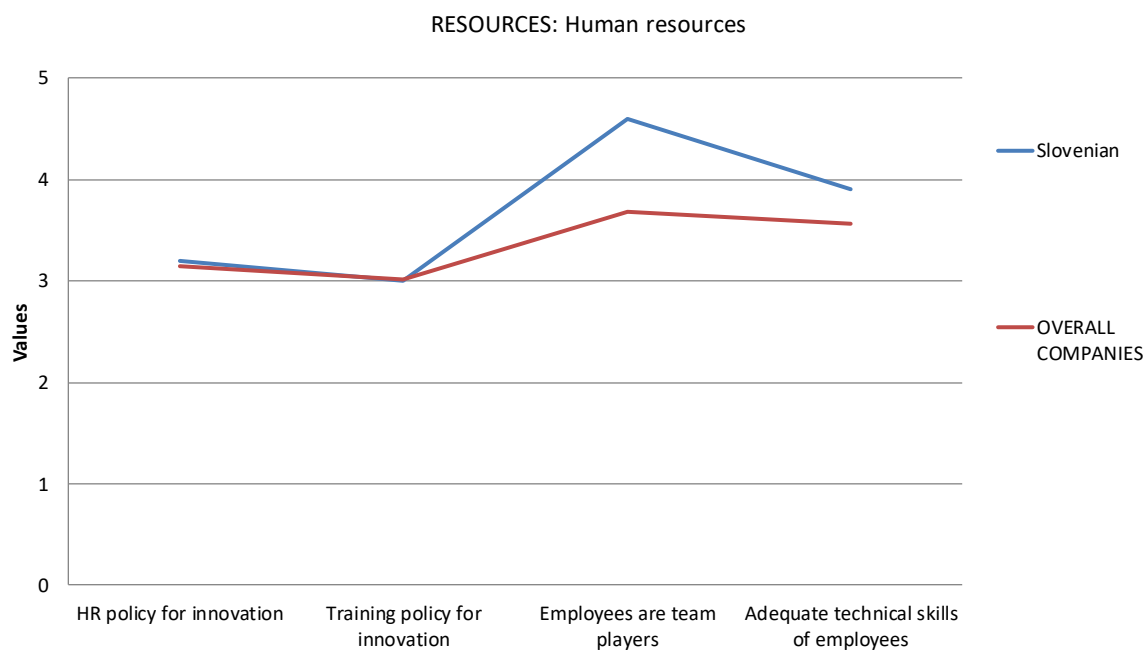


Figure 11: The human resources of the overall sample and Slovenian companies

It is typical for Slovenian companies to place greater emphasis on technical training and trainings provided by authorized organizations (50%) and, above all, on internal training (80%), Figure 12. The other forms of training activities in Slovenian companies (management and traditional training, work-based, job rotation) have less attention (20%).

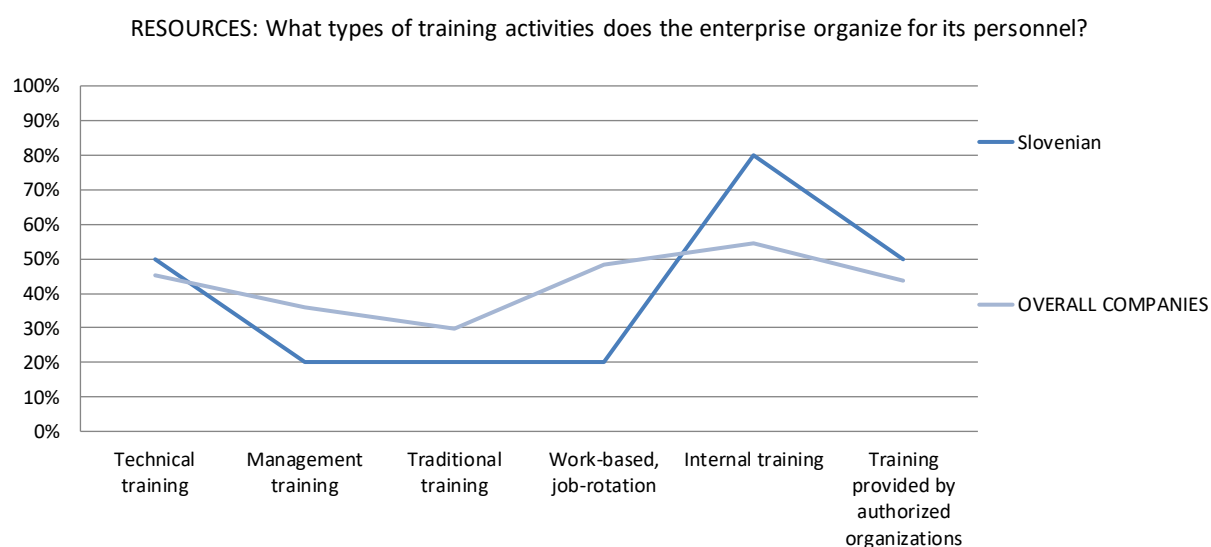


Figure 12: The employees training for the overall sample and Slovenian companies

Within the research on the [organizational structure](#), the Slovenian companies also have the strong propensity to organize multidisciplinary teams (4.30) that which grade on the Likert scale is higher from the overall sample for value 1.02. In addition, Slovenian companies have greater openness to external partnerships (4.20), knowledge management mechanisms (3.30) and mechanisms for stimulate and manage ideas (3.60) when comparing with the overall sample, Figure 13.

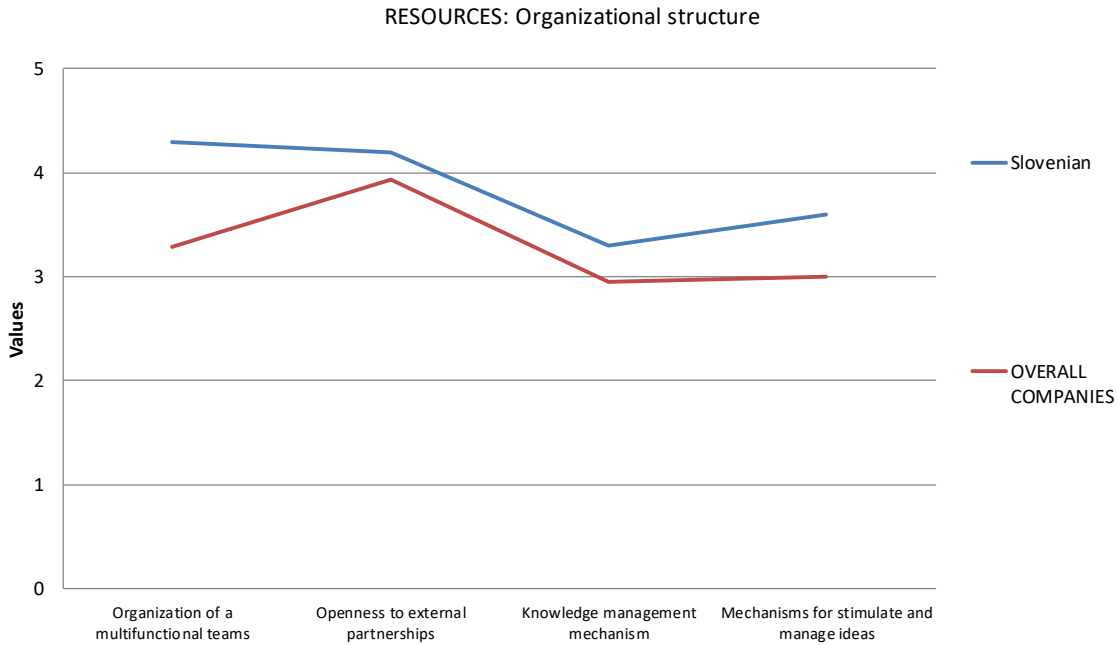


Figure 13: The organizational structure for the overall sample and Slovenian companies

The investigated **material resources** show a similar trend for both Slovenian companies and overall sample. The value regarding the access to specialized resources (3.10) is the same for both. The research shows higher tendency of the Slovenian companies to the technological update plan (4.00) and wish for innovative materials and technologies (4.30), Figure 14.

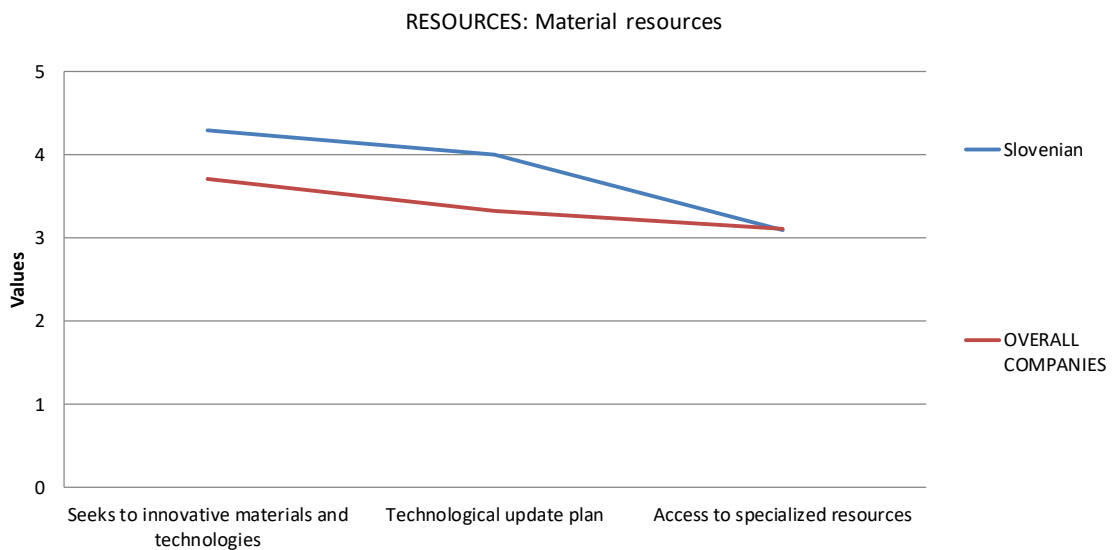


Figure 14: The material resources for the overall sample and Slovenian companies

With regard to the **external relationship**, excluding the involvement of customers and suppliers (3.80; + 0.19), it can be observed the slightly lower interest of Slovenian companies to the partnerships with research centres/universities (2.50; -0.72), fairs and international initiatives (3.50; -0.27), analysis of the market and customer behaviour tendencies (3.60; - 0.31) and seek to external financial resources (2.30; -0.15), Figure 15.

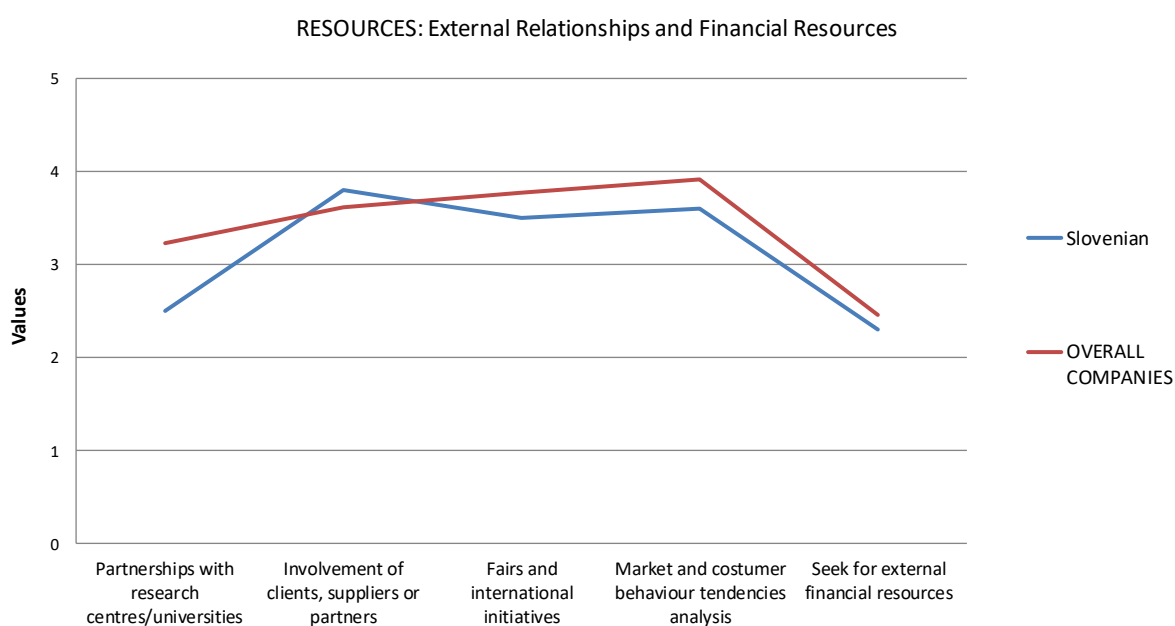


Figure 15: The external relationships and financial resources for the overall sample and Slovenian companies

4 ACTIVITIES

The third Element **ACTIVITIES**, has five Criteria and the following number of Factors (represented in brackets): Management of ideas (2), Management of innovation projects portfolio (2), Surveillance and knowledge management (3), Innovation promotion (2), IPR (3). Using the number of factors, the purpose of this Element is to disclose the company's mechanisms and systems, related to innovation policy and intellectual property rights in general.

The research regarding the **management of ideas** shows the same trend for both Slovenian companies and overall companies in the survey. For the Slovenian companies the share is lower for using the scientific magazines (20%; -17.5%) and marketing department (30%; -10.6%) when comparing with overall sample, whilst higher are innovation ideas from own staff for 5%, business fairs for 12.8% and client&suppliers for 6.9%, Figure 16.

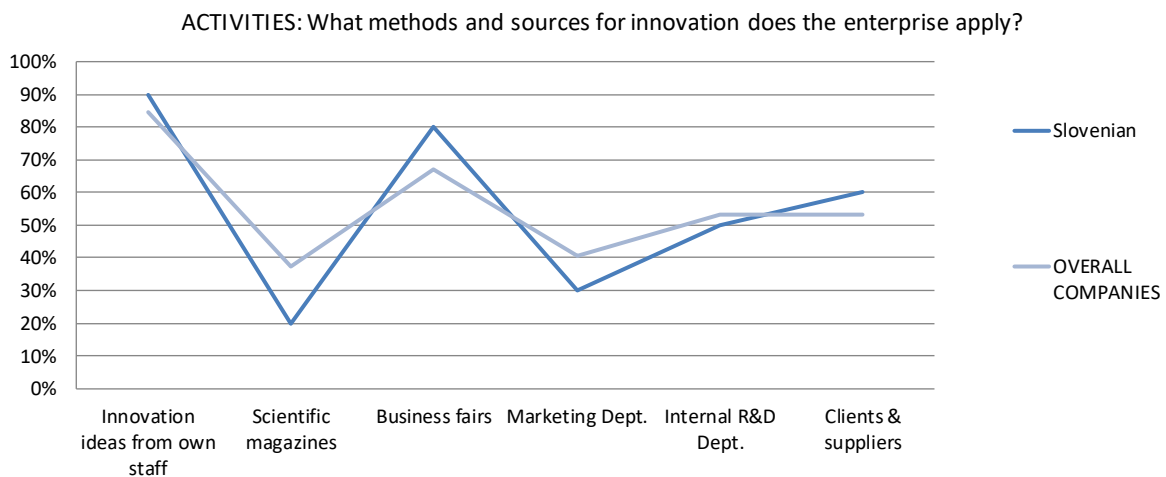


Figure 16: The management of ideas for the overall sample and Slovenian companies

The research regarding the factor **management of innovation projects portfolio** shows the highest use of the instrument to manage the portfolio the internal analysis meetings (80%), following by the technological/production reports (70%), whilst the instruments, such as financial/accounting data and personnel competencies had share only between 20-30%. The environmental analysis share is approx. 20% for both Slovenian and overall companies in the survey, Figure 17.

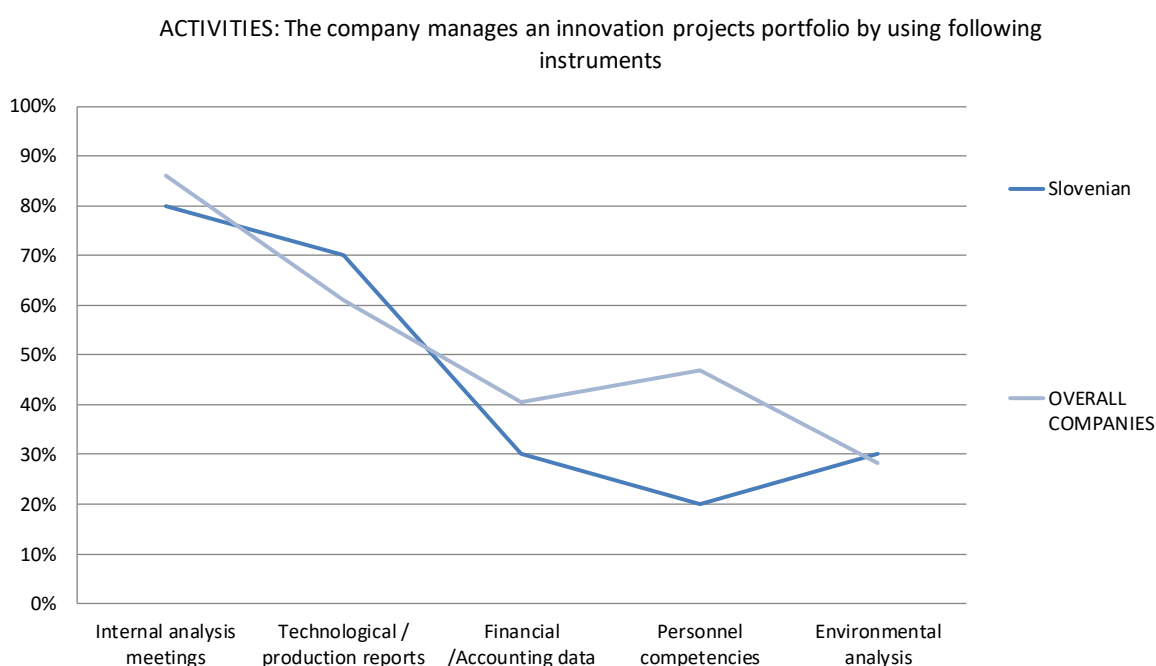


Figure 17: The management of innovation projects portfolio for the overall and Slovenian companies

The activities related to **surveillance and knowledge management** of the Slovenian companies, compared to the overall sample are similar. The maximum deviations from average values for overall companies can be observed for competitors and organizations surveillance and registered patents, whilst a bit higher interest of the Slovenian companies shows activities for systematic understanding the needs, expectations and market opportunities, Figure 18.

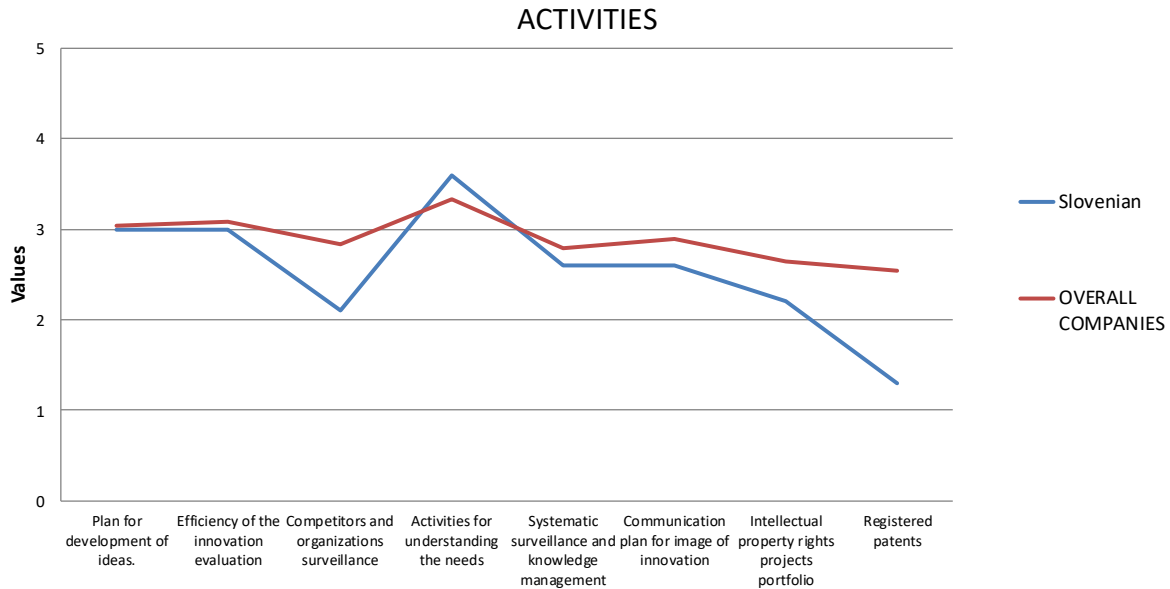


Figure 18: The surveillance and knowledge management for the overall and Slovenian companies

The researched factor for the **innovation promotion** within the element activities shows that most important is the direct communication for both Slovenian and overall companies (75-80%), following by partnership agreements of which the Slovenian companies show 100% and overall companies in the survey 64.1%. In addition, smaller shares of Slovenian companies are present to be a member in professional associations and clusters and partnership in R&D projects, Figure 19.

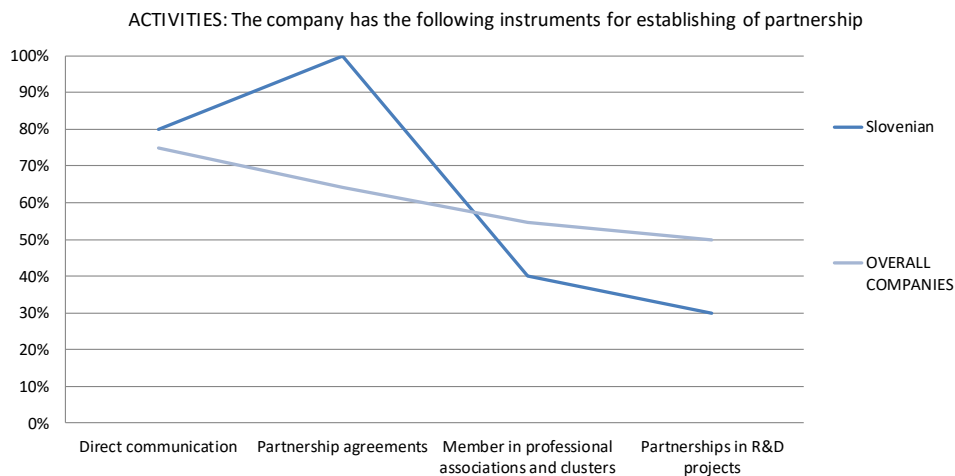


Figure 19: Instruments for establishing of partnership for the overall and Slovenian companies

Regarding the researched I.P.R. the Slovenian companies have similar tendencies with overall companies to the internal patents, acquisition of patents and documentation on patents, and no tendency regarding the acquisition of licences and design and higher tendency to the models and labels (50%) compared to the overall sample (28.10%), Figure 20.

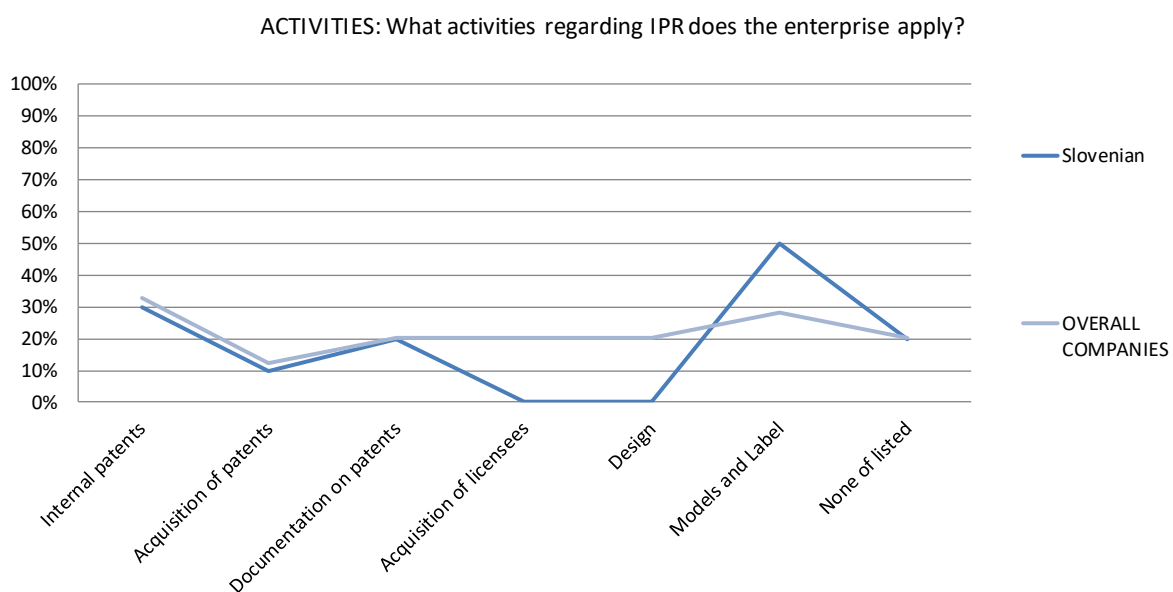


Figure 20: Comparison regarding the IPR between overall and Slovenian companies

5 RESULTS

The Element **RESULTS** has three Criteria and the following number of Factors (represented in brackets): Evaluation and monitoring (5), Image (3), Learning from failures (1). The factors reveal important aspects of the company, also related to cooperation of customers, suppliers and partners in the innovation process and tackling the impact of innovation on competitive advantage, business results and profits. Furthermore, they reflect the impact of innovation process on company/product brands and visibility.

The results for the factor **evaluation and monitoring** are very similar for Slovenian companies to the overall companies, Figure 21. The higher grades for Slovenian companies are for the involvement of customers, suppliers and partners in the innovation process (3.3) and satisfaction level of the customers in the innovation process (3.4), followed by results' evaluation regarding the sustainable technologies resulting from innovation (renewable energies, green technologies, recycled raw materials) (2.7), whilst a bit lower is evaluation of results of the intellectual property protection (2.5).

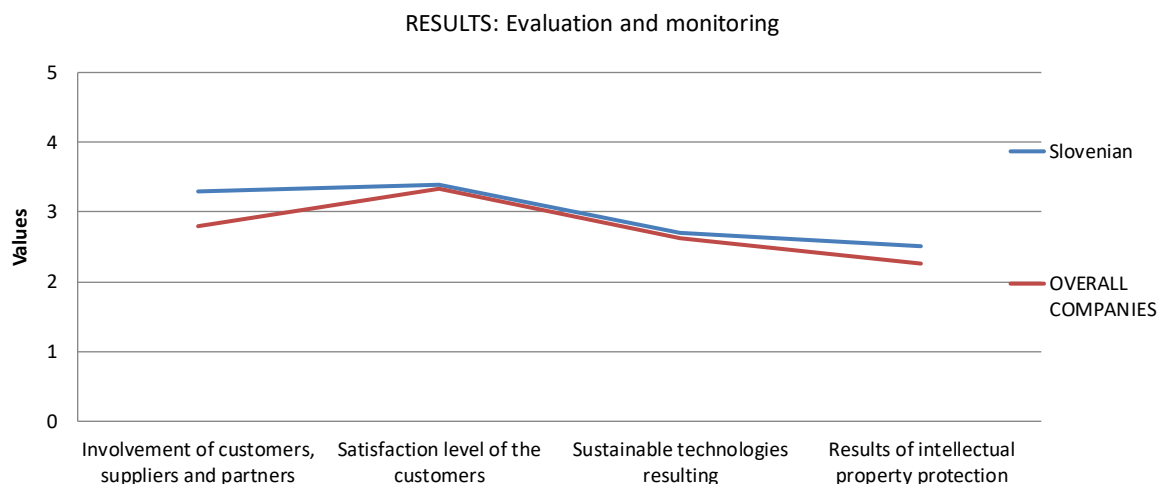


Figure 21: Comparison regarding the factor Evaluation and monitoring between overall and Slovenian companies

The results for the assessment of the impact on innovation actions are shown in Figure 22. They are similar for both Slovenian and overall companies. In this figure it can see a slight

decrease in the acquisition of new equipment and resource consumption for Slovenian companies and higher motivation on interest in developing I.P.R., patents, number of employees, reduced production cycle and increase in portfolio of new products / processes / services.

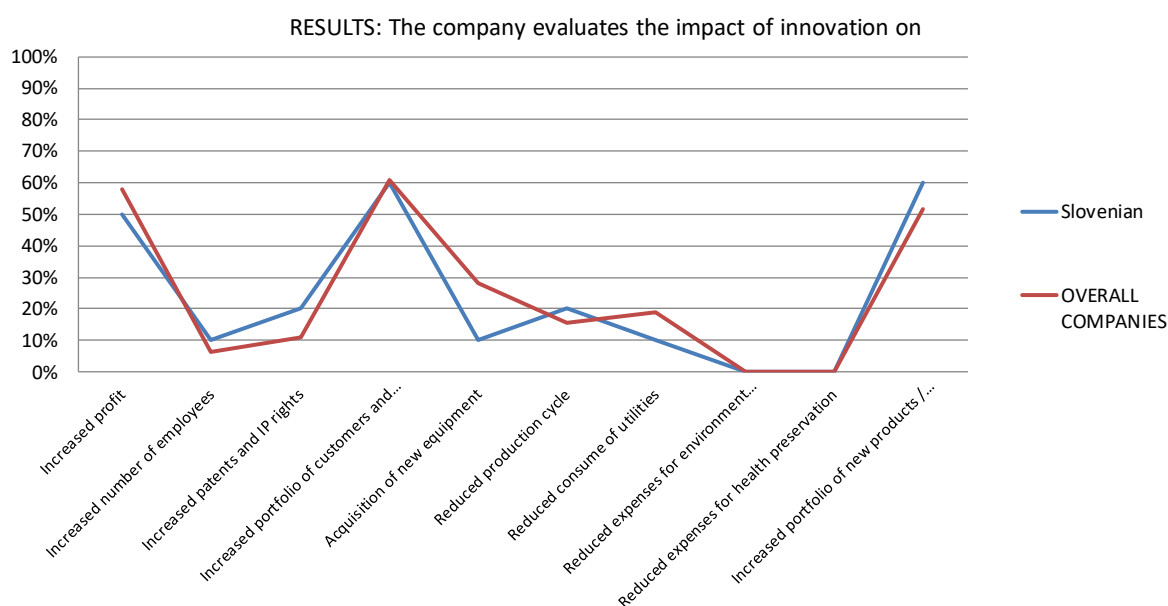


Figure 22: Comparison regarding the companies' evaluation of the impact of innovation between overall and Slovenian companies

In Figure 23 the results of the survey regarding the image and learning from failures show the same grades for learning from failures for both Slovenian (3.4) and overall companies (3.36). In addition, the instruments for companies' image, such as company's evaluation of the implication of innovation results in the product brand, evaluation of the innovation policies impact on the success of the company brand are of higher interest for the Slovenian companies and lower for company's regular assessment of the growth level of the company visibility.

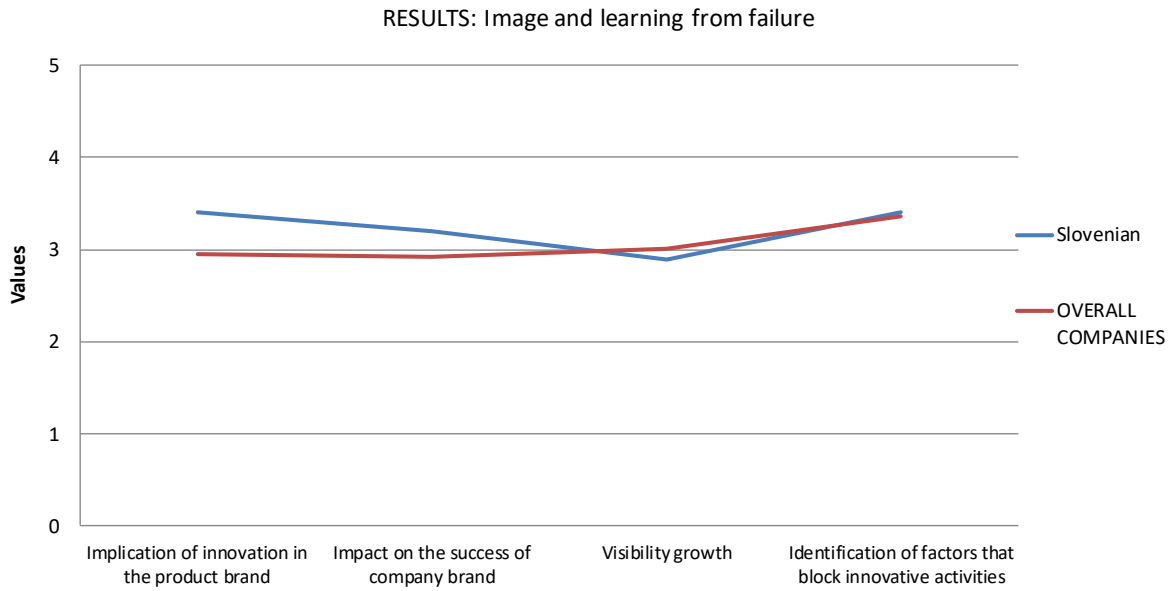


Figure 23: Comparison regarding the companies' image and learning from failures between overall and Slovenian companies

6 CONCLUSIONS

The analysis of companies who participated in the questionnaire reveal common dynamics, there is a general propensity to innovation involved in all of the areas under investigation; particularly it must be noted the highest values are addressed to innovative culture, company leadership, human resources, external partnerships and the management of ideas.

The customer/supplier relationship has been analyzed in different areas of this questionnaire, and it has always shown discrete values of interest from the interviewed people, this is a signal that it is one of the major sources of information for companies. However, it should be noted that there is still a lack in monitoring actions. This scope could potentially lead to increases in innovation capacity, due it can pose the basis for planning definition and specific related procedures.

The ideas from internal equipment developed by the company's staff represent one of the data with the highest registered application share (84.1%). This can also be explained by referring to the aptitude of companies to primarily train staff on both the technical and management side, adding to the relative weight that employees have for management, and it can also be recalled the ongoing motivational impact, which involves the consolidation of roles and the increase in skills and qualifications. In fact, those motivational activities are considered more significant than direct benefits or financial incentive. Another adding-value factor can be attributed to the recognition of innovation-related leadership figures.

Communication skills seem are considered have low relevance: although no particularly weak values have been found, the averages are still lower compared to other areas, such as innovative culture. One would expect a certain correspondence between the two domains, which, on the other hand, does not match the collected data.

The use of patents, both internal both under license, shows a low presence. When a company use patents, they have a significant return, even if there is no strong and structured profile in the management and development of activities aimed at creating, managing or implementing patents. This trend is also confirmed by the poor attitude recorded by the evaluation of the results regarding the protection activities of the I.P.R. It must note companies are more oriented towards developing their own patents rather than acquiring them.

Environmental sustainability issues found low confirmation, both in terms of innovation opportunities and in terms of results. This field, which is marking a general interest that goes beyond the textile sector, could be therefore a potential development area.

In conclusion, an analysis of the BenchMarking survey showed that Slovenian companies have similar trends for most of the all investigated Elements, Criteria and Factors when compared to the overall companies in the survey.