

## Assessing research and policy support needs for innovation in the South East Europe

### Key findings based on SmartEIZ Questionnaire report

[www.smartreiz.hr](http://www.smartreiz.hr)

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The report presents the results of the online survey about research and policy support needs for innovation in the South-East Europe. The questionnaire was distributed to 360 participants in Croatia as well as the other six selected South East European countries (SEE): Albania, Bosnia and Herzegovina, Croatia, Kosovo, Montenegro and Serbia. 127 participants completed the questionnaires.

Among respondents, 20% come from private sector (10% private profit organizations, and 10% private non-profit organizations). 29% of the participants come from the public sector (19% government ministries, 10% public agencies), 29% of the representatives are university staff, and finally, 22% belong to the research institutes. In this brief report, we present the most interesting results, including similarities and differences among the countries, as well as among the sectors: public sector, science or university sector, as well as private sector. A half of the respondents were responsible for the implementation of the programmes related to the development of innovation policy and R&D policy, and these **results reflect the knowledge and views of the ‘insiders’ of R&D and innovation policy.**

The objective of the survey was two-fold: to get the views of the stakeholders on current R&D and innovation policies, and to understand research and policy support needs of innovation stakeholders.

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**Summarising the key messages**

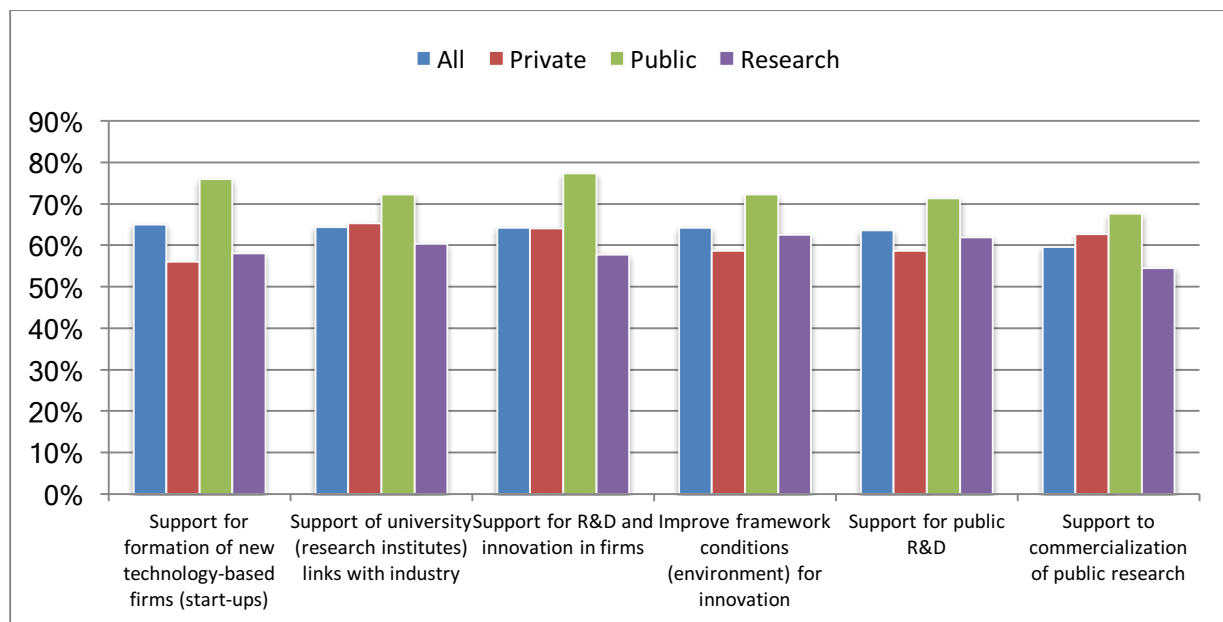
- *Differences in views and perceptions are more important among RDI sectors than among SEE countries*
- *Differences in perceptions of the impact of innovation policy instruments reflect differences in the development of R&I policies in SEE countries*
- *Current measures and forms of support in R&I reflect the needs of neither business nor scientific sector*
- *In R&D priorities ICT sector dominates*
- *Research and innovation policies are in need of support through research and training*
- *Among areas in need of better understanding and training are Science – industry links*
- *More than half of respondents are familiar with Smart Specialization but need to learn more, and these requirements differ across sectors*

**Support of university (research institutes) links with industry was the most important policy objective for respondents**

The participants from the public sector, research sector, as well as private sector in the selected countries were asked to evaluate the relative importance of the several policy objectives in their countries, from 1 (*not relevant*) to 7 (*very relevant*). The results in Chart 1 show that *Support of university (research institutes) links with industry* was the most important objective for respondents, followed by *Support for the formation of new technology-based firms*, as well as *Improve framework conditions (environment) for innovation*. Responses among countries show that differences in answers are not statistically significant.

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Chart 1 - Differences in perception of importance of policy objectives in the selected countries, weighted score (n=127)



*Question* = Evaluate the relative importance of the following policy objectives in your country by giving them weights from 1 (*not relevant*) to 7 (*very relevant*)

*Source: Authors, 2017*

## **R&D and innovation policies reflect the needs of neither business nor scientific sector**

Respondents agree that measures and forms of support reflect the needs of neither business nor scientific sector. These measures suffer from lack of transparency, lack of evaluation procedures, and are not given the appropriate financial and political constraints. Mean ratings for all statements are below 4 (neutral), meaning that, on average, participants do not agree with these declarations.

Table 1 – Agreement with statements about the appropriateness of R&D and Innovation policy by country, mean rating

<b>Statement</b>	<b>All</b>	<b>Croatia</b>	<b>Albania</b>	<b>Serbia</b>	<b>FYRM</b>	<b>Kosovo</b>	<b>B&amp;H</b>	<b>Montenegro</b>	<b>Average</b>
A	2.86	2.73	3.44	2.50	3.81	2.50	3.00	2.81	2.97
B	2.97	2.79	3.40	3.00	3.81	2.50	2.66	3.27	3.06
C	3.05	2.94	3.40	2.50	3.20	2.38	3.33	4.18	3.13
D	3.01	2.90	3.10	2.91	3.36	2.50	3.00	3.66	3.06
E	3.04	2.97	3.33	3.16	3.18	2.50	3.11	3.36	3.09
F	3.22	3.22	3.10	2.58	3.63	2.87	2.88	4.08	3.19
G	3.38	3.09	3.30	3.66	3.27	2.75	3.77	4.92	3.54
Average	3.08	2.95	3.30	2.90	3.47	2.57	3.11	3.75	3.15

*A - Measures and forms of support reflect well needs of business sector*

*B - Governance structures for R&I policy are developed and appropriate*

*C - Substantial evaluations do exist, and their results are transparent and publicly available*

*D - Overall set of support measures is given the appropriate financial and political constraints*

*E - Measures and forms of support reflect well needs of scientific sector*

*F - Identification of R&I priorities is well organized public consultation process involving a range of stakeholders*

*G - Formal evaluations procedures do exist, and they are useful*

*Question = Assess the impact of R&D & Innovation policy by giving weight to each of the following statements ranging from 1-not the case to 7-very true*

*Source: Authors, 2017*

Representatives from Montenegro, Albania and Macedonia assess better various categories compared to their counterparts from Kosovo and Serbia. It is interesting that for Croatia, the results are not statistically different from the average of other SEE countries, except regarding formal evaluations procedures.

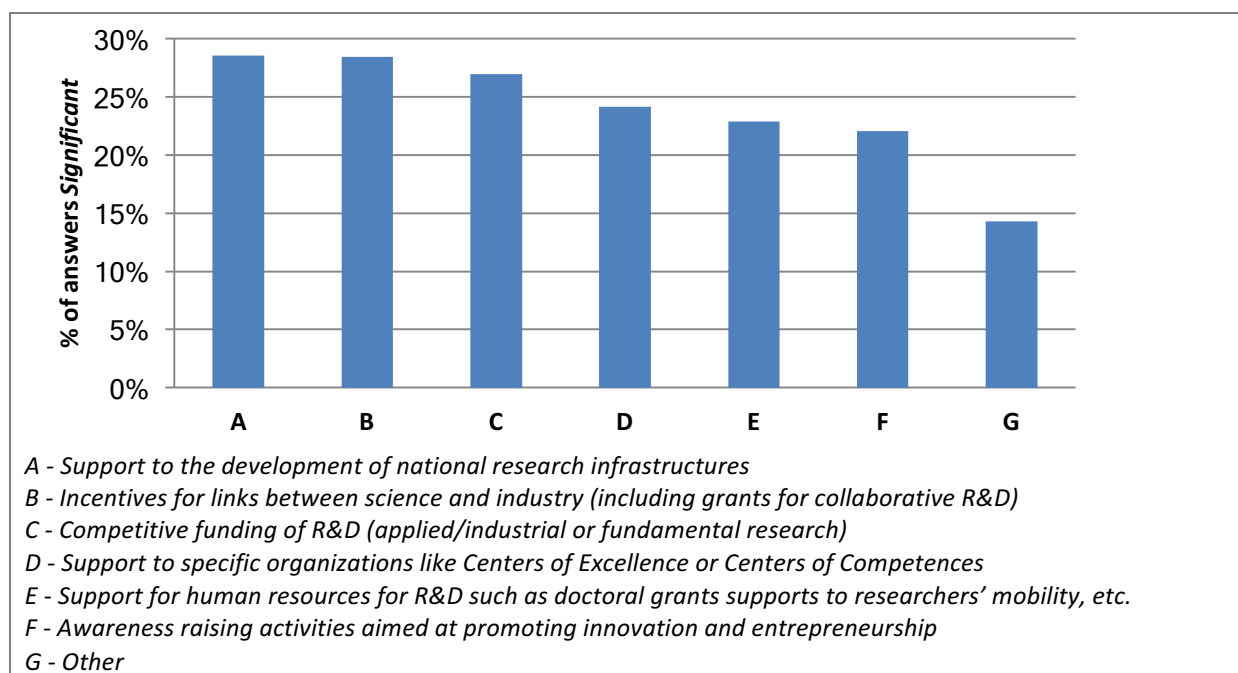
On average, Croatian respondents rated formal evaluations procedures and their usefulness 0.6 points lower than representatives from the other countries. We think that this reflects a somewhat higher awareness of quality and usefulness of evaluations compared to the other SEE countries.

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**Policy instruments with the highest impact are: support to research infrastructure, incentives for science – industry links, including grants for collaborative R&D and competitive funding of R&D**

The respondents stated that following policy instruments had *significant* influence (Chart 3): *Support for the development of national research infrastructure* (28.6%), *Incentives for links between science and industry, including grants for collaborative R&D* (28.5%) as well as *Competitive funding of R&D (applied/industrial or fundamental research)* (26.9%).

Chart 3 – Assessment of the existing R&D policies, % of ratings as *significant*, excluding *policy not available* answers.



Question = Indicate whether the existing policy instruments have *significant*, *some* or *negligible* impact on R&D and innovation activities

Source: Authors, 2017

**The main weaknesses of R&D policy instruments are limited funding, lack of feedback, poor management (implementation), poor design of instruments, and poor local relevance of instruments**

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The respondents were asked to identify main weaknesses of R&D policy instruments. Limited funding is considered as the main argument, followed by lack of feedback, poor management (implementation), poor design of instruments, and relevance of instruments to the local environment (Table 3).

Table 3 – perceived weaknesses of R&D policy instruments, percent of the answers and mean score

<b>Weakness</b>	<b>5 or higher</b>	<b>Very Important (7)</b>	<b>Mean</b>
Limited funding	72.6	42.7	5.4
A lacking evaluation and feedback	66.2	30.6	5.2
Poor management (implementation)	61.8	25.2	4.9
Poorly designed incentives (instruments)	52.0	20.3	4.6
Instruments are not relevant to the local environment	44.1	18.4	4.3

*Question = Please, evaluate the major weaknesses of R&D and innovation policy instruments in your country by giving weight to each of the following aspects (1-not weakness; 7-very important weakness)*

*Source: Authors, 2017*

**The most important priority areas for R&D and innovation spending are ICT, energy, digital services, healthcare, food, environment and biosciences and biotechnology**

We asked representatives to indicate priority areas for R&D and innovation spending in their countries. They indicate *ICT, energy, digital services, healthcare, food, environment and biosciences and biotechnology* as priority areas. These areas were rated by over 50% of respondents with a rating of 5 or higher. More than two out of five (41.5%) respondents answer that ICT is the most important area regarding innovation and R&D spending in the national economy (Table 4).

Table 4 - The importance of priority areas for R&D and innovation spending in participants' country, percent of the answers *Very Important (7)* and mean rating

<b>Area</b>	<b>% Very Important (7)</b>	<b>Mean Rating</b>
ICT	43.2	5.7
Energy	30.4	5.4
Healthcare	27.9	5.0
Food	27.2	5.1
Environment	23.2	5.0
Biosciences and Biotechnology	18.7	4.8
Digital services	13.4	5.0
Electronics, sensors, and photonics	9.9	4.3
Advanced manufacturing	9.0	4.2

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Advanced materials	8.4	4.2
Defense	8.2	3.4
Financial services	7.4	3.8
Space	2.5	2.4

*Question* = Please, list the importance of the following priority areas for R&D and innovation spending in your country by giving them the weight (1-not important; 7-very important)

*Source: Authors, 2017*

The comparison of the priority areas among the countries confirms the dominance of ICT (Table 5). In Croatia, there is more emphasis on *Healthcare* and *Bioscience and Biotechnology*, whereas in the case of Serbia *Food* and *Environment* are more emphasised. Similarly, there is a strong emphasis on non-manufacturing areas. This reflects severe deindustrialization that took place in SEE as well as by a growing importance of service economy in last twenty years especially of ICT.

Table 5 – Ratings of each R&D priority area per country, mean rating

Area	Croatia	Albania	Serbia	FYRM	Kosovo	B&H	Montenegro	Weighted Average
ICT	5.63	5.70	5.08	5.80	6.13	6.44	5.92	5.81
Energy	5.25	4.70	4.92	5.70	5.13	6.67	5.75	5.45
Healthcare	5.22	4.50	4.27	4.50	5.43	5.33	5.33	4.94
Biosciences and Biotechnology	5.05	3.40	4.58	4.00	4.38	5.33	5.75	4.64
Environment	5.00	4.60	4.75	4.10	4.75	6.11	6.00	5.04
Food	5.00	4.70	5.25	4.70	5.38	6.00	5.58	5.23
Digital services	4.97	4.70	4.33	5.40	5.13	5.11	5.25	4.98
Electronics, sensors, and photonics	4.70	2.60	4.25	3.80	4.38	3.78	4.18	3.96
Advanced materials	4.49	3.22	4.08	3.20	4.00	4.00	4.45	3.92
Advanced manufacturing	4.44	2.90	3.92	3.90	4.00	3.78	4.64	3.94
Financial services	3.88	3.30	3.91	3.50	4.00	3.44	4.09	3.73
Defence	3.83	2.00	3.92	2.00	2.88	2.44	3.64	2.96
Space	2.78	2.00	2.08	1.55	1.38	2.44	2.00	2.03

*Question* = Please, list the importance of the following priority areas for R&D and innovation spending in your country by giving them the weight (1-not important; 7-very important)

*Source: Authors, 2017*

### Research & Innovation policy in SEE needs support in the science – industry links

More than nine out of ten respondents in the survey (96.2%) think that Research & Innovation policies in their countries need support. An overwhelming majority, 81.5% of the respondents, stated that support is necessary for the *science – industry links* (Table 6). Other

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areas where answers are more evenly distributed are *Evaluation of R&D programs* and *International (global/regional) value chains*, getting more than 30% of votes.

Table 6 – Most important policy support areas, percent of the answers

<b>Area</b>	<b>All</b>	<b>Private only</b>	<b>Research only</b>	<b>Public only</b>
Science – industry links	81.51	76.0	84.74	79.41
Evaluation of R&D programs	31.93	28.0	30.5	35.29
International (global/regional) value chains	30.25	24.0	38.98	20.59
Tax incentives for R&D	26.04	36.0	22.02	26.46
Skills and technical change: policy issues (SMART skills)	26.04	24.0	22.03	35.3
Evaluation of R&D organisations (e.g. Centres of Excellence)	22.69	16.0	28.81	14.7
Assessing innovation policy	19.32	4.0	18.64	32.35
S&T foresight	18.48	28.0	11.85	23.52
Clusters	15.12	20.0	11.85	17.64
Social innovations (for example, innovative community projects)	15.12	20.0	16.94	8.82
Creative and cultural industries – contribution to economic transformation	13.44	24.0	13.55	5.88

*Question* = Please indicate three most important policy support areas from the list above

*Source: Authors, 2017*

There are no significant differences regarding the importance of specific policy support areas among countries. However, the differences among the sectors are more significant than among the countries.

### **Administrators and policy makers do not have knowledge required for implementation of R&I policy**

Over 85% respondents think that administrators and policy makers have at least some of the knowledge needed for the implementation of R&I policy. However, 13% of the interviewees believe that administrators and decision makers involved in design and implementation of research and innovation policy measures and mechanisms do not have required knowledge and capacity for such jobs, 56.5% that they partially have such knowledge, and 30.5% that they have the necessary knowledge. This ratio is statistically similar in all examined countries, and across the private, public and academic sector.

### **The most important research issues for improving the performance of the R&I policy are: Firms, innovation, and productivity, Technology, growth, and productivity, Technology, employment, and skills, and Science system and science collaboration**



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Survey explored which research issues that underpin R&I policies are in need of improving. The research areas regarded as the most important for improving the performance of the R&I policy (Table 7): *Firms, innovation, and productivity* (52.3%), *Technology, growth, and productivity* (52.2%), *Technology, employment, and skills* (44.2%), *Science system and science collaboration* (35.2%).

Table 7 – Most important research areas for improving R&I policy, answers by sector, percentage of the answers

<b>Area</b>	<b>All</b>	<b>Public</b>	<b>Private</b>	<b>Research</b>
Firms, innovation, and productivity	52.29	41.66	53.56	58.62
Technology, growth, and productivity	52.19	38.89	48.62	62.07
Technology, employment, and skills	44.18	36.11	49.4	46.55
Science system and science collaboration	35.18	33.33	9.1	46.56
National innovation system	27.79	41.67	31.63	15.52
Entrepreneurship: macro and micro aspects (Small and medium enterprises)	24.56	25	35.77	18.96
Innovation systems and ecosystems of innovation: sectoral (industry) studies/industrial dynamics and innovation	22.92	36.11	27.08	13.78
Innovation systems and ecosystems of innovation: regional level	17.19	22.22	17.99	15.52
Political and economic interests and their impact on innovation activities of firms ('political economy of technology accumulation')	15.52	19.44	17.99	12.07
FDI, trade, and technology	8.19	5.56	8.9	10.34

*Question* = Please indicate three most important research areas regarding their importance for improving R&I policy from the list above

*Source: Authors, 2017*

**Priority areas for training in RDI policy area: evaluation of science and innovation policies, S&T Indicators and Analysis of innovation systems: national, sectoral and regional.**

In addition to research areas, survey has also asked respondents for areas in which training would benefit administrators and policy makers. Training areas for administrators and decision makers which respondents consider as a priority are (Table 8): *evaluation of science and innovation policies* (56.7% of participants rated this area as maximum priority of 7, and 88.4% with priority of 4 or more), followed by *S&T indicators and analyzing innovation systems: national, sectoral and regional*. The results are similar across all examined countries, but are again, different across sectors. Public sector puts higher priority for training in all areas. There is an inclination for self-improvement in public sector.

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Table 8 – Priority training areas for administrators and policy makers, mean score

<b>Area</b>	<b>All</b>	<b>Public</b>	<b>Private</b>	<b>Research</b>
Evaluation of science and innovation policies	6.05	6.56	5.69	5.87
Analysing innovation systems: national, sectoral and regional	5.90	6.44	5.75	5.64
Analysis of economic growth, R&D and innovation	5.69	6.12	5.38	5.53
Methods for analysing value chains and innovation	5.64	5.72	5.38	5.70
S&T indicators	5.63	5.96	5.38	5.57
S&T foresight methodology	5.57	5.72	5.44	5.55
Clusters, networks and linkages in innovation system	5.37	5.76	5.13	5.23

*Question = please indicate the importance of following training areas which you consider as priority (1-not important; 7-very important)*

*Source: Authors, 2017*

**More than half of respondents are familiar with smart specialization .....**

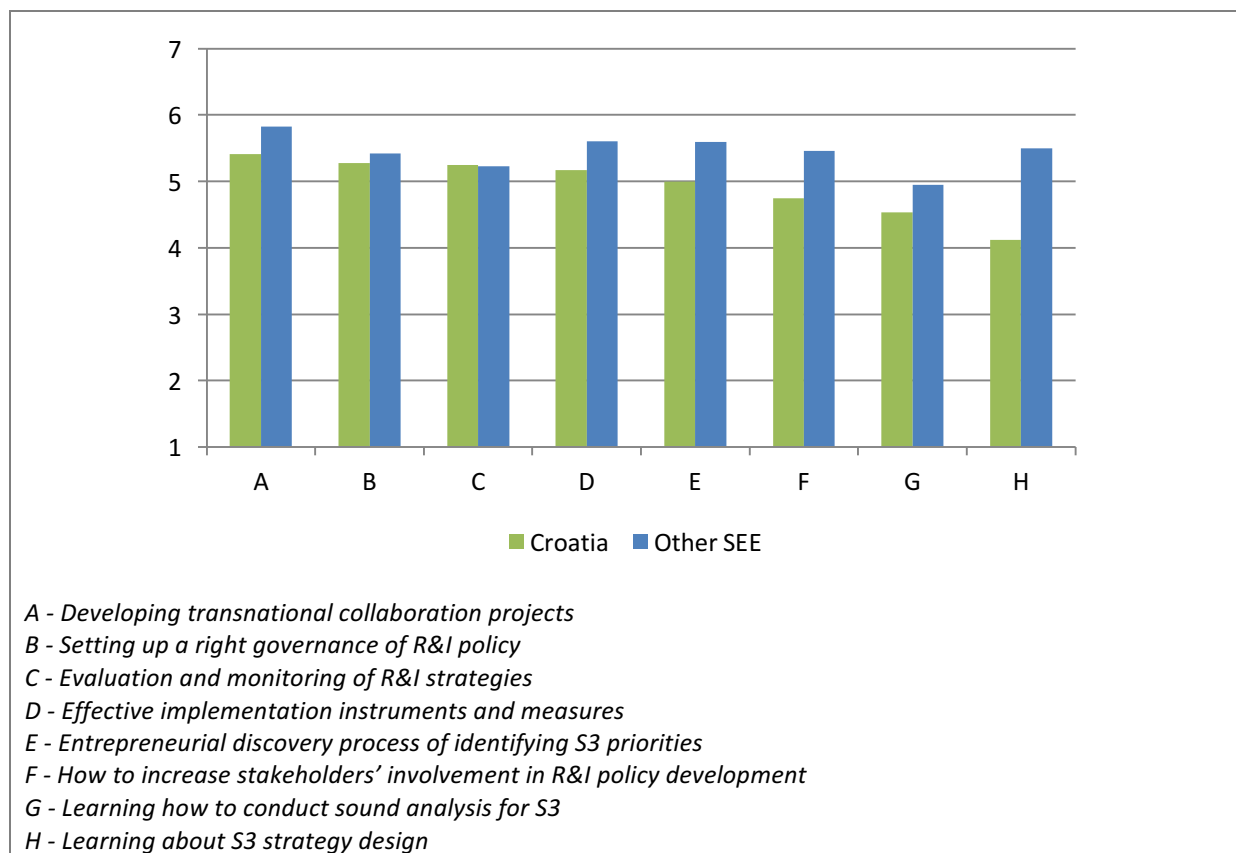
More than half representatives (52.7%) in the selected SEE countries are familiar with smart specialization (S3) approach to research and innovation strategies (RIS). In Croatia, these results are better, more than two out of three (71.9%) of representatives are familiar with the S3 approach for RIS, 23.4% are partially familiar, and only 4.7% are not familiar.

**.. but feel the need to learn more ...**

Survey asked representatives for S3 topic about which they would like to learn more. In Croatia, participants are more interested in learning about evaluation, monitoring and governance of R&I policies, while in other SEE countries, they are more interested in learning about policy design process. This is probably because the Smart Specialization policy process has already started in Croatia. The same argument can explain why respondents from the other SEE countries favour different S3 topics compared to their counterparts in Croatia.

Chart 4 – S3 topics on which participants would like to learn more, breakdown by country, mean score on 1-7 scale

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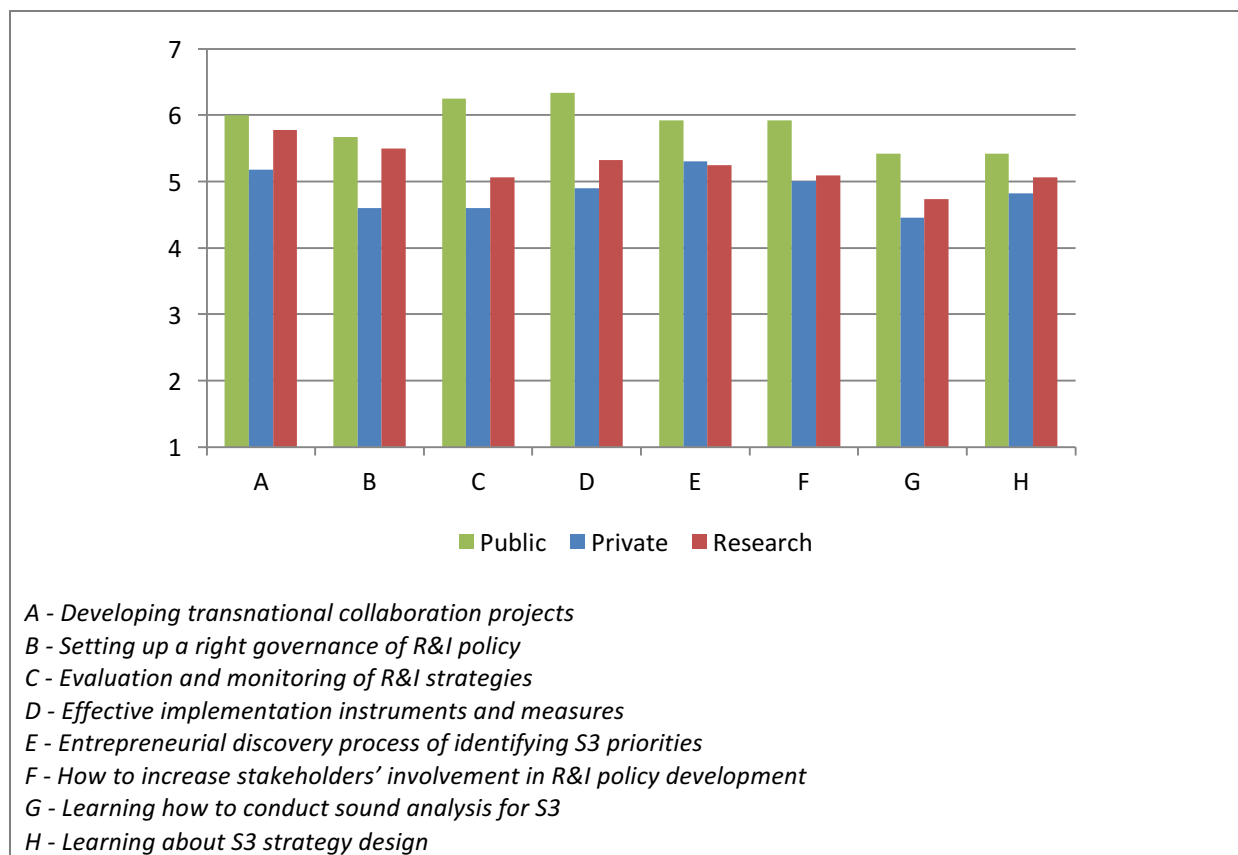
Source: SmartEIZ

**... moreover, these needs differ across sectors**

The results differ across sectors (Chart 5). The public sector is most interested in learning about S3 topics, followed by the research sector. The private sector is less interested in S3 topics. However, respondents from the private sector are interested in areas where they can actively participate: *Entrepreneurial discovery process of identifying S3 priorities* as well as *Developing transnational collaboration projects*.

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Chart 5 – S3 topics on which participants would like to learn more, breakdown by sector, mean score on 1-7 scale



Source: SmartEIZ

Respondents from research and private sector ranked *Developing transnational collaboration projects* among two most important topics. These results imply that one of priorities related to the S3 activities in the SEE should be put on internationalization of S3 activities.

If you would like to receive full report based on which these results are generated, or information from project SmarEIZ please email: [info@smarteiz.eu](mailto:info@smarteiz.eu)