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SmartEIZ – H2020-TWINN-2015

**Strengthening scientific and research capacity of the Institute of Economics, Zagreb
as a cornerstone for Croatian socioeconomic growth through the implementation of
Smart Specialisation Strategy**

Work package:	WP6 Dissemination of results
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Task 6.3:	Dissemination of knowledge
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In order to disseminate knowledge gained and exchanged through twinning tools during the SmartEIZ project, researchers from all partner institutions have prepared nine reports in total. **First six reports contain policy implications, whereas the last three presentations are reports primarily about research results.** These are:

1. Zoran Aralica, Slavo Radošević, Josip Raos, Assessing research and policy support needs for innovation in the South East Europe
2. Rene Wintjes and Zoran Aralica, How to select and develop Key Enabling Technologies and policies to advance manufacturing in Croatia? Localising roles for innovation researchers and policy makers
3. Ivan Damir Anić, Zoran Aralica, Katarina Bačić, Survey on Clusters of Competitiveness in Croatia
4. Dubravka Jurlina Alibegović, Mislav Šagovac, Evaluating Smart City Indicators: A tool for Strategic Decision-making for Croatian Large Cities.
5. Ivana Rašić Bakarić, Survey on Croatian Wood Cluster – Summary of Key Findings
6. Marina Tkalec, Iva Tomić, Ivan Žilić, Demand for high-skilled labour: Lessons from the Online Vacancy Index.
7. Bruno Škrinjarić, Vedran Recher, Productivity of enterprises and the intensity of market forces: How does the market function in Croatia?
8. Roberto Mavilia, International collaboration in various aspects of innovation in the selected South East European countries
9. Roberto Mavilia - International co-authorships and the role of the EU as a funder in the selected South Eastern European Countries

As mentioned within the project proposal, the objective of WP 6 is to disseminate knowledge acquired within the project. Like we stated in D 6.5., all dissemination activities, including report making, are closely related to the overall implementation of the SmartEIZ project, especially the workshops implemented within WP4. Besides that, most of dissemination reports were created with the aim of contributing to the project goals, as well as achieving

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particular expected impacts within SmartEIZ. Majority of these reports are related to the implementation of the Smart Specialisation Strategy in Croatia. Namely, their topics include assessment of research and policy needs and international collaboration in SEE countries, development of KET, smart city indicators and clusters in Croatia, demand for high-skilled labour and productivity of firms in Croatia.

The remainder of this report gives a short overview of main messages disseminated through these reports. Full reports are available on the SmartEIZ web portal <http://www.smarteliz.eu/publications/>. Moreover, we have been informing about the dissemination report via SmartEIZ Newsletter.

After the overview, we will interpret on which way the reports contribute to the SmartEIZ implementation.

Zoran Aralica, Slavo Radošević, Josip Raos, Assessing research and policy support needs for innovation in the South East Europe:

The authors have conducted an online survey about research and policy support needs for innovation in South-East Europe. The questionnaire entitled “Assessing research and policy support needs for innovation in the South East Europe” was distributed among 360 participants in Croatia as well as the rest of six selected South East European countries (SEE): Albania, Bosnia and Herzegovina, Kosovo, Montenegro and Serbia. 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.

Rene Wintjes and Zoran Aralica, How to select and develop Key Enabling Technologies and policies to advance manufacturing in Croatia? Localising roles for innovation researchers and policy makers

This is a policy brief on how to select and develop Key Enabling Technologies and policies to advance manufacturing in Croatia. The main messages include the following: technologies and policies which are ‘key’ and ‘enabling’ at EU level may not be ‘key’ and ‘enabling’ for the actors, sectors and regions in Croatia. Also, KETs research and policy practices developed at EU level might however be adapted for innovation research and policy making in Croatia.

Ivan Damir Anić, Zoran Aralica, Katarina Bačić, Survey on Clusters of Competitiveness in Croatia

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The report summarises main findings of the survey that is useful for policy makers for improving the existing framework and support mechanisms related to Croatian clusters of competitiveness (CCC). The survey findings reveal, among other things, that Croatian CCCs are limited in their actions and resources in accomplishing their mission.

Dubravka Jurlina Alibegović, Mislav Šagovac, Evaluating Smart City Indicators: A tool for Strategic Decision-making for Croatian Large Cities.

The expected outcome of this report is a new methodology that will allow for the implementation of Smart City methodology and the development of Smart City indicators for Croatian large cities, as well as emphasizing the role of several cities in Croatia in Smart Specialisation of the whole country. Possible outcomes of the research are recommendations to local political leaders for smart, locally led development in Croatia

Ivana Rašić Bakarić, Survey on Croatian Wood Cluster – Summary of Key Findings

Results of the online survey conducted among the members of the Croatian Wood Cluster (CWC) were presented to the interested stakeholders and published in scientific publications. This report is a summary of the main findings of the survey. Among other things, it presents perceptions and attitudes of cluster members on main objectives, most important activities, most common barriers, as well as sources of finances.

Marina Tkalec, Iva Tomić, Ivan Žilić, Demand for high-skilled labour: Lessons from the Online Vacancy Index.

The researchers at the Institute of Economics, Zagreb developed a “smart” index that ensures “smart” labour market diagnostics on the needs for “smart” skills. According to their findings, after 2012, the demand for high-skilled labour in Croatia started to increase considerably, as did the demand for unskilled and skilled work, indicating significant and rising polarisation. Economic recovery did bring an increasing demand for labour, but it changed the structure of offered contracts, from full-time contracts to temporary and training contracts without commencing employment.

Bruno Škrinjarić, Vedran Recher, Productivity of enterprises and the intensity of market forces: How does the market function in Croatia?

The authors emphasize the fact that the Croatian corporate sector is characterized by negative trends that are primarily a consequence of the non-implementation of structural

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reforms. They also conclude that insufficient labour productivity and Total Factor Productivity growth dampen the innovativeness of the economy and also decrease the attractiveness of the economy for foreign direct investments and participation in global value chains.

Roberto Mavilia, International collaboration in various aspects of innovation in the selected South East European countries

In this report, the author analysed the statistical regions within SEE countries and found that they differ from the developed EU countries in terms of international collaboration in various aspects of innovation. The institutions/organisations in the statistical regions in the developed EU countries use more R&D collaboration, EPO patents, and are more included in global production in comparison with their counterparts in SEE countries. Furthermore, the analysed Croatia's statistical regions are better in terms of international scientific co-publication when compared to their counterparts in Bulgaria and Romania. These results can be explained by higher R&D expenditure in public sector in Croatia's statistical regions.

Roberto Mavilia - International co-authorships and the role of the EU as a funder in the selected South Eastern European Countries

The report investigates internationally co-authored publications between European countries in the period between 1995 and 2015. The paper tests if the European Union funding agency (as defined by the InCites Web of Knowledge) has favoured Eastern European countries (East-E), comparing all publications against the EU funded ones. The report identifies three sub-regions a priori: members of the European Union (East-EU); being an affiliated country to EU research schemes (East-AC); or neither (East-Ext). This is tested at three levels: number of publications (articles co-authored with at least one East-E presence); centrality of a given country in the global network of collaborations; and influence of research (average of categorical normalized citations index – CNCI). The findings show that the EU as a funder does play a positive role, although national differences within these three types of affiliation are more relevant than those between the three sub-regions.

When it comes to the contribution of each report towards the SmartEIZ project implementation we inform the following:

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Regarding **the first report**, the questionnaire results used in the report were used in the implementation of WP 2 - Development of Twinning Strategy for EIZ, as well as WP 5 - Fostering Regional Network Capacity in the field of EMIT. Later, this report was enhanced in a draft of the paper named “Orientation of Research & Innovation Policy in EU ‘Super-Periphery’: Stakeholders’ Perspective” and presented last month at the SINCERE conference (more information about this was provided in the Deliverable 6.5). It is important to mention that the report was written in co-authorship between researchers from partner institutions on this project. In that way, this dissemination report contributes to the Expected Impact 3 (EI 3) - *Increased scientific excellence, research and training capacity in the field of EMIT. Increase of more than two times of researchers in the field of EMIT in EIZ.*

The **second report** was written with the aim to support the fifth SmartEIZ objective related to identifying public policies for maximizing impact of specific Key Enabling Technologies on the existing Local and Sectoral System of Production (L/SSP). The importance of this topic lies in the fact that KET is one of two (other being ICT) horizontal areas which are part of the Smart Specialisation Strategy in Croatia. This means that the projects financed within S3 programme, besides the fact that they have to follow the main topics and subtopics, must have the elements of the development of either KET technologies or ICT. The report was made as a result of UNU-MERIT's Rene Winjes' presentation at the second Training Workshop on Technology Growth and Productivity, including KET, and the received comments on the presentation. Rene Wintjes gave a presentation on: *Strategies for advanced manufacturing Renewed interest in manufacturing; Producing and/or using KETs (Key Enabling Technologies: photonics, industrial biotechnology, advanced materials, advanced manufacturing techniques, micro- and nanoelectronics and nanotechnology); KETs based STI strategies and Innovation policy for manufacturing at firm, cluster, and national level.* Like the previous report, considering the fact that it was made in co-authorship between researchers from other leading institutions, this report contributes to achieving the EI3.

The **third report** brought upon a new methodology which is primarily important for the development of the smart specialization strategy for big cities in Croatia, but also for the development of other similar programs such as the Urban Agenda for the EU at the level of the cities. This research draft was presented at the workshop dedicated to Assessing Innovation Policy. Regarding this report's contribution to the expected impacts, this report is

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in alignment with the EI.1 - *Improvement in the overall scientific and research capacity in the field of EMIT of the applicant through the implementation of the project that fits EIZ needs.* Since the report proposes a set of indicators, it is in alignment with the EI.2, related to *EIZ's improvement in scientific methodological skills needed to support RDI and Public Policy Design and Evaluation (PPD&E).* Moreover, the report is in alignment with the EI.10 - *Identification of a suitable set of S&T indicators for Croatia to address the needs of the policy-makers* due to the fact it deals with various set of indicators.

The **fourth report** brings the overview of the results of the research on clusters organized within the Smart Specialisation Strategy in Croatia. It is one of the most important instruments in the framework of S3 in Croatia within which, among others, analyses are being made on the current activities in those clusters. The paper is in alignment with the third goal of SmartEIZ project - *Enhance EIZ capacity to design and implement public policies.* Moreover, the paper is focused towards the strengthening of the fourth goal - *Improve capacity of EIZ to study University/Industry models of collaboration, including Science Parks and Technological Clusters.* Parts of descriptive results from this report were presented at the Training Workshop on Cluster Evolution - TW 4. The importance of this dissemination report lies in the fact that the activities are in this way directly oriented towards policy bodies, but also the private sector and important stakeholders of this project. The results from this dissemination report were presented two times to the Ministry of Economy, namely Mr. Mario Antičić, the State Secretary, who is also a member of the Advisory Board of SmartEIZ project. Parallel with this dissemination report, the research titled "The development of clusters of competitiveness in Croatia: A survey-based analysis" was implemented and it was presented at scientific conferences in Florence and Copenhagen, which we mentioned within the Deliverable 6.5. Those dissemination activities are stated as additional activities at the end of the text, but they were not separately listed. Since the report has suggestions for policy implementation, it is in alignment with the EI.2 - *EIZ's improvement in scientific methodological skills needed to support RDI and Public Policy Design and Evaluation (PPD&E).* Finally, the report contributes to the EI 5, as it is expected that there will be a *positive impact on research contribution in cluster development across Croatian regions, by improving EIZ's quality of research activities in the field of EMIT and turning it into a key promoter of cluster development in response to the socio-economic needs of Croatia.*

The **fifth report** deals with business clusters within wood industry in Croatia. It is related to the research whose drafts were presented at the TW4. Besides that, Ivana Rašić Bakarić

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spent a month at Bocconi University and within her scientific mission she was improving the methodology of the analysis of business clusters in Croatia. The report is specific since it deals with business clusters and it is focused on the business sector as one of important groups of the stakeholders in SmartEIZ. Ivana Rašić Bakarić presented parts of this report at a non-scientific conference organized by the Croatian Economic Association, which was reported within the D6.5. Same as the previous report, this report is also in alignment with the abovementioned third and fourth goals of the SmartEIZ project. Moreover, the report contributes to the EI 5 as well.

Regarding the **sixth report**, it was created because of the need for the development of a new EIZ index that ensures smart labour market diagnostics on the needs for smart skills. The development of this index contributes to the Expected Impact 10 (**EI.10**) *Identification of a suitable set of S&T indicators for Croatia to address the needs of the policy-makers. Fulfilling this result will require the identification of the indicators used by policy makers in countries similar to Croatia in terms of size, GDP and industrial structure. EIZ will identify a set of indicators in the following areas: S&T systems, firms, government, and environment.* Smart Skills represent one of the areas financed through the Smart Specialization in Croatia. The development of this indicator significantly contributes to empowering the analytical work of EIZ's researchers, which is a basis for the future policy-design in S3 in Croatia. In this way, the results of the report are in alignment with SmartEIZ's third objective - *Enhance EIZ capacity to design and implement public policies.* A draft of this dissemination report was presented at the TW 5.

The **seventh report** is dedicated to research topic which is in line with the SmartEIZ strategy. Unlike previous reports, which contained strong policy implications, this report deals with research subject. Moreover, SmartEIZ TW2 named 'Training Workshop on Technology Growth and Productivity, including KET' analysed the same topic

The **eighth report** covers a topic which was initiated by Roberto Mavilia's participation at the first workshop, as well as by the need to compare the RIS practices of West European countries and developing countries. Like previous research, this report is more scientific in nature, and doesn't emphasize the policy implications. This topic is in alignment with the SmartEIZ TW 1 *Assessing Innovation Policy, Overview of Theoretical, Design and Implementation issues.*

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Regarding the **ninth report**, it is also more research-oriented, but it can also have policy implications. Its author is Roberto Mavilia, a researcher from the partner institution, University Bocconi. Although it is more research-related, the report contains some policy implications. The form and intensity of co-authorships in publications at the EU level can provide a signal for policy bodies for the development of adequate policy instruments dedicated to the promotion of more intensive publications. From the project's aspect, this report is important because it shows the relative position of Croatian scientists in comparison with other neighbouring countries. This is in alignment with the first SmartEIZ objective *Strengthen the cooperation between EIZ and leading international partner institutions in EU in the fields of EMIT. Create synergies and fostering capacity to develop international research projects in order to integrate EIZ into international research networks and establish and support EIZ as a research hub (centre of excellence) in Croatia and South–East Europe*. Even more, this report is in alignment with following Visiting Training Sessions (VTS), VTS 3 'Bibliometric and Patent Analysis' and VTS 'Big Data and Network Analysis: Focus on Bibliometric and Patent Analysis of Croatian Data'