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# Study of business participation and entrepreneurship in Marie Skłodowska-Curie actions (FP7 and Horizon2020)

*Executive summary*

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## About the study

Europe 2020 called for closer inter-sectoral cooperation in research and innovation, as well as identified entrepreneurship as one of the key preconditions for success. The Marie Skłodowska-Curie actions (MSCA) under Horizon 2020 brought a number of novelties, which included an increased emphasis on innovation, and further strengthened involvement of the private sector in EU research and innovation policy.

To assess the participation of businesses in the MSCA and the contribution of this programme to entrepreneurship, the Directorate-General for Education and Culture of the European Commission launched this study. The **“Study of business participation and entrepreneurship in Marie Skłodowska-Curie actions (FP7 and Horizon2020)”** was undertaken in the wider framework of an ex-post evaluation of the FP7 MCA and an interim evaluation of the MSCA part of Horizon 2020.

The study had two objectives:

- to analyse business participation patterns and the underlying motivations/barriers for companies to participate in the MSCA projects, differentiating between large companies and SMEs as well as between different types of the MSCA;
- to explore quantitatively and qualitatively the impact of the MSCA on innovation, entrepreneurship, job creation and inter-sectoral collaboration.

The study was carried out by PPMI – Public Policy and Management Institute (Lithuania) together with AIT – Austrian Institute of Technology (Austria) and the Optimity Advisors (the UK).

The study relied on the evidence gathered and analysed using qualitative and quantitative methods, including desk research, statistical analysis of the monitoring data, a large-scale case study programme (50 case studies of the MSCA projects involving businesses and cross-case analysis), 304 interviews with various types of interviewees (EU and national-level stakeholders, business participants in the MSCA and representatives of unsuccessful business applicants), as well as surveys of the MSCA fellows and participating organisations.

The study was organised according to six sets of questions on the following issues:

1. assessment of business participation patterns in the MSCA (FP7 and Horizon 2020);
2. assessment of business participation impact on job creation and career development (FP7);
3. assessment of business participation impact on innovation (FP7);
4. assessment of inter-sectoral collaboration impact on businesses (FP7);
5. assessment of how the development of entrepreneurship is addressed in the context of MSCA training (FP7 and Horizon 2020);
6. assessment of the impact of MSCA on entrepreneurship and intrapreneurship (FP7 and Horizon 2020).

Policy recommendations stemming from the study will provide guidance for the European Commission on how to widen business participation and best support entrepreneurship and intrapreneurship in the MSCA, as well as how to increase the quality and effectiveness of business participation with a view to boosting the impact on jobs and growth.

## Main study findings and conclusions

### Business participation in the MSCA

In the time period from 2007 to September 2016 (FP7 and the beginning of Horizon 2020), **businesses accounted for 12.2 % of participants** in the MSCA, compared to higher education institutions (61 %) and research organisations (20 %). Businesses mostly took part in the Innovative Training Networks (ITN, FP7 & H2020), Industry Academia Partnerships and Pathways (IAPP, FP7) and Research and Innovation Staff Exchanges (RISE, H2020).

The study revealed that business participants provided a lower share of project coordinators than other types of organisations, while individual businesses received a lower volume of project budgets than either higher education or research institutions in the MSCA. The overall share of the MSCA funding for business enterprises represented 10.1 % of all MSCA financial contributions.

**The number of businesses interested in participating in the programme has increased over time.** More businesses have applied to participate in the MSCA under H2020 until now than during the entire FP7 programming period. Also, **47 % of H2020 business participants have not been previously involved in FP7.** On the other hand, the increased level of interest from businesses meant that H2020 has become more competitive, and the chance of an application from a business enterprise receiving funding has decreased from 13.9 % in FP7 to about 7.4 % in Horizon 2020. It is notable that high-growth enterprises<sup>1</sup> have achieved much higher success rates both in FP7 (41 %) and Horizon 2020 (19 %) than all other types of enterprises.

The study suggested that **the monitoring of the programme aspects relating to business participation should be improved.** Currently, a wealth of administrative and monitoring data are collected by the SESAM and CORDA databases. Some aspects of the data collected, however, are not sufficiently accurate to allow for rigorous analysis. These issues could be addressed by taking further steps to improve the precision and reliability of data, as well as to ensure adequate response rates.

### Key factors affecting business participation: motivations and barriers

The table below contains a list of the most important factors facilitating business participation in the MSCA or hindering it.

#### Key factors affecting business participation in the MSCA

Main motivating factors	Barriers for business participation
<ul style="list-style-type: none"><li>▪ To expand the collaborative network;</li><li>▪ To establish cooperation with academic institutions;</li><li>▪ To gain access to highly-skilled potential employees;</li><li>▪ To gain familiarity with academic research agendas;</li><li>▪ To boost the company's R&amp;D capacity;</li><li>▪ To increase visibility in the market;</li><li>▪ To finance fundamental research projects;</li><li>▪ To showcase the company's research</li></ul>	<ul style="list-style-type: none"><li>▪ Reluctance to dedicate resources to write a proposal with a small chance of success;</li><li>▪ Lack of information about various possibilities offered by the MSCA;</li><li>▪ Reluctance to send own staff away on secondments;</li><li>▪ Fear that academic institutions have little to offer in terms of applied research (different research cultures);</li><li>▪ Fear of losing intellectual property;</li><li>▪ Fear of administrative overhead associated</li></ul>

<sup>1</sup> According to the OECD classification, those enterprises, which have maintained 20 % annual growth rates in terms of turnover or the number employees over three-year period, are considered high-growth.

excellence.	with participation; ▪ Difficulties to find suitable and eligible ESRs; ▪ Long time-to-grant.
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**The main motivations to apply for MSCA funding differed according to business size.** Larger companies were motivated by their goal to expand their professional networks and to cooperate with highly-skilled researchers from academia. In contrast, SMEs were more interested in advancing their product development and boosting the capacities of their research units.

### **Impact of business participation in the MSCA on job creation and career development**

The study confirmed that **the MSCA had significant impacts on beneficiary businesses in terms of the internationalisation and expansion of their research units, as well as the development of cooperation ties with both other businesses and academia.** For instance, the overwhelming majority (92 %) of the beneficiary organisations surveyed indicated that participation in the programme significantly strengthened the existing international collaborations.

The study findings on **the influence of participation in the programme on the human resource policy of business organisations were mixed.** While the results of the online survey confirmed that participation in the programme had/will have substantial impacts on the human resource policies and practices of the beneficiary business organisations, almost all of the interviewed representatives of beneficiary businesses indicated that their involvement in the programme affected neither their internal recruitment and career development practices nor gender balance or other working conditions in their companies. This may indicate that the expected impact on human resource policies is often not realised at organisation level (including in participating businesses) during the implementation of the MSCA projects or after their completion.

**Participation in the MSCA projects with business involvement significantly contributed to the acquisition and development of industry-relevant skills and competences among the beneficiary fellows.** Quantitative survey data confirmed that the impact on professional and horizontal skills was somewhat greater among the fellows hosted by business organisations, compared to those hosted in other types of organisations. To a somewhat smaller extent, interviews and survey evidence also suggested that exposure to the business environment provided beneficiary fellows with better infrastructure, equipment and higher-quality supervision.

The study also indicated that **participating in the MSCA with business involvement had a considerable job-creation effect on beneficiary research fellows, mainly among early-stage researchers and other young researchers (post-docs)** hosted in industry through the ITN and IAPP actions. According to the survey results, around 47 % of all business beneficiaries indicated that as a result of their project at least one job (FTE equivalent) was/will be created in their organisation, with around 14 % of respondents suggesting that more than one job was/will be newly created. Overall, this survey showed that 218.5 jobs (FTE equivalents) were/will be created in beneficiary business organisations as a consequence of their participation in the programme, the majority of which in SMEs. The previous studies found that the rate of staff retention (i.e. the share of researchers hired for a specific FP project, who remain employed after its end) was higher among private industry organisations and SMEs compared to other

organisations participating in FPs, pointing to the **durable nature of employment effects in the private sector.**

### **Impact of business participation on innovation**

A total of 26 539 publications and 602 patent applications were developed as a result of the MSCA throughout the whole duration of the FP7 and the beginning of H2020. We found that **business participation increased the chance of a patent application being registered** as a result of the MSCA project. Around 2 000 projects with business participation managed to register the same number of patent applications as around 12 000 projects with only academic participants. In the majority of the case studies that analysed the MSCA projects leading to innovations, the interviewed beneficiaries agreed that the project focus would have been completely different and the final results would have been significantly less commercially oriented without the active involvement of the business partners in the design and implementation of research.

Our findings on the number of publications resulting from the MSCA projects were completely opposite: **business involvement tended to halve the number of publications being produced** as a result of the MSCA project.

The majority of innovations produced under the MSCA projects fell into the category of innovations with a lower level of technology readiness (TRL 1-4), ranging from the "basic research" (TRL 1) to "small scale prototypes" (TRL 4). Therefore, innovations produced under the MSCA usually directed the teams working on them to undertake further research instead of allowing them to focus on marketing opportunities.

The number of patent applications registered per project in the overall MCA (0.05) was much lower than the average of the whole FP7 (0.24). In terms of patent applications, only IAPP projects were more innovative than the average FP7 project, while the numbers of patent applications registered per project in ITN and IRSES were lower than the FP7 average.

Similar trends occurred regarding the number of publications developed per project in the MSCA. **The average MSCA project produced fewer publications (~3 per project) than a typical FP7 project (7.32).** Only projects funded under IRSES produced quite significantly more publications per project (9.42) than the FP7 average, while the IAPP and ITN actions tended to produce a much lower number of publications compared not only to the FP7 and MSCA averages but also to individual fellowships.

Our analysis also revealed that **the programme stakeholders did not view the MSCA as a programme whose key objective was to develop innovations.** The MSCA was understood as an instrument aimed primarily at developing skills of the involved researchers and thus strengthening the prospects of their careers both in academia and industry. Many interviewees claimed that the European Commission should consider encouraging innovations under the MSCA, but this should be done only in addition to, and not as a replacement of the programme's main objective "to ensure optimal development and dynamic use of Europe's intellectual capital."

### **Impact of the MSCA on inter-sectoral collaboration**

The study found that there was a large number of stable consortia regularly participating in the MSCA. In many cases, the previous experience in proposal writing significantly contributed to the chance of being selected again, while organisations without previous involvement lacked information on the exact requirements for a successful proposal.

However, the majority of project consortia included at least one new partner. As a result of the MSCA projects, **businesses expanded their networks more than other participating organisations**. A combination of network expansion and the involvement of new business participants without previous involvement in FP7 **allowed business organisations (especially SMEs) to start new collaborative activities with other participating organisations**. According to the survey data, the vast majority (89 %) of businesses started collaborating with at least one new organisation as a result of the MSCA project.

The programme was also found to have a **good potential to foster business-to-business collaborations**. Companies that participated in the MSCA projects together reported about plans to cooperate with each other in the future in order to strengthen their R&D capacities.

**Beneficiary organisations tended to maintain their collaborations after the completion of the MSCA projects**. There is some evidence that inter-sectoral collaborations were also maintained through the mobility of researchers between academia and industry after the project completion.

The case study programme revealed that **businesses were much more willing to host the MSCA fellows than to encourage their own employees to apply for the MSCA fellowships**. Businesses (especially SMEs) were usually afraid of losing their researchers or had limited capacities to replace them with other researchers.

## **Entrepreneurship training in the MSCA**

The study found that **entrepreneurship training was rarely an integral part of the training programmes within the MSCA projects**. About 30 % of MSCA projects analysed provided some formal or informal entrepreneurship training during the project implementation. Another 20 % provided some complementary skills training, which could exhibit a positive impact on entrepreneurial behaviour among the MSCA fellows. However, in the majority of the projects studied, entrepreneurship was not a relevant issue at all. The limited emphasis on entrepreneurship training was highlighted by the fact that only a very limited number of projects delivered formal entrepreneurship training and only a few projects even provided ECTS points.

The study further showed that there was a strong belief among fellows and project coordinators that entrepreneurship training was only about the technical and legal skills needed for starting a business. Many interviewees were not aware of the relevance and scope of entrepreneurial activities going beyond technical and legal competences. In many cases, training on entrepreneurship and complementary skills was rather an add-on element to scientific training rather than an integral part of the scientific training programme.

The study also found **that network-oriented projects clearly provided more systematic entrepreneurship training than individual fellowship projects**, in which entrepreneurship training was dependent solely on the in-house capacity and willingness of a single partner and the participating fellow.

The study further revealed that **the dominant mode of entrepreneurship training was implicit teaching through the participation of businesses** and associated learning on the job. In those cases, where business partners were involved, it was mainly the task of business partners to raise awareness on the relevance of the problem-solving

orientation of research and innovation activities and innovation processes in firms. In-house capacities for R&I and training, full integration of business partners in the project and openness towards engaging fellows in real-life business were found to be prerequisites for effective training through business participation but also to assure “entrepreneurial training on the job.”

Therefore, **institutional setting was very important** for the provision of entrepreneurship training: the existence of a project network, business participation, a focus on interdisciplinary research and application orientation, as well as entrepreneurial activities of trainers/coordinators enhanced chances for entrepreneurial awareness and teaching within MSCA projects.

For the provision of entrepreneurship training, secondments and dedicated workshops in project network meetings have been used most frequently. In the case of individual fellowships, some organisations (in particular, large companies) offered specific courses of their in-house training programmes for MSCA fellows. Therefore, entrepreneurship education in the MSCA consisted of a mix of short lectures and courses on the one hand, while relying upon on the job-training and some in-house training for fellows on the other hand. The scope of classical in-class training was limited. It was appreciated by the fellows who, nevertheless, expressed the view that they were more satisfied with the training received in a more interactive manner, such as workshops, summer schools or learning on the job.

The study also showed that **cooperation with innovation management departments of the hosting university was limited**. Similarly, only a limited number of projects drew upon the knowledge provided by university-based transfer units and experiences made by young entrepreneurs or university start-ups. Virtually no evidence was found that other types of initiatives, such as innovation labs, were used to contribute to entrepreneurship training in the course of the programme.

The study showed that for the vast majority of fellows, **entrepreneurship training was not perceived as a priority of their training**, while the idea of equipping students with the skills to start a company was treated sceptically. This was due to the fact that many fellows were at an early stage of their career and only a few of them had previous experience of R&I work in the private sector.

The knowledge gained under the MSCA was perceived to be beneficial for their future career in both business and research environments, but neither project coordinators nor fellows had a coherent view on which type of entrepreneurial skills should be strengthened through the MSCA projects. Among the most relevant skills mentioned were 1) the development of management and leadership skills; 2) understanding how scientific research can be applied in practice and 3) communication and team-work skills in different organisational settings.

The opportunity to work inside companies and receive mentoring from their staff was perceived highly valuable for the progress of fellows’ careers. Fellows solely based in private companies expressed that the very fact that they were hosted by business organisations and were engaged in their daily activities provided them with a better understanding of business processes.

## Recommendations

Below we present the recommendations on how the quality and impact of business participation and entrepreneurship training could be improved in the MSCA. The

recommendations focus on the specific issues related to the whole programme rather than its individual actions.

## **Recommendations on how to improve the extent, quality and impact of business participation**

The recommendations on business participation should be read together as a coherent plan to:

- create a more favourable environment for business participation;
- improve the visibility of business-relevant actions towards the business community;
- increase the positive impact of business participation on the researchers' careers and innovation;
- better understand business participation patterns and impact.

### **Recommendation 1**

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**What is the issue?** The evidence from the case studies and interviews revealed that one of the factors hindering business participation in the RISE action is that it does not allow the recruitment of experienced researchers from outside of the partnership. The current situation results in several barriers indicated by business participants during the study:

- without the possibility to recruit new experienced researchers, businesses (but also other organisations) are not always able to find researchers with suitable skills in partner organisations;
- early stage researchers often do not have sufficient skills necessary to make a significant contribution to innovative top-notch research;
- businesses are reluctant to send their experienced researchers and other staff on secondments.

#### **Recommendation 1: Provide a possibility to recruit experienced researchers from outside of the partnership in the RISE action.**

To ensure the transnational character of the programme, the Commission should establish the rule that the recruited experienced researchers must undertake transnational mobility (i.e. he or she cannot be recruited in the same country). In addition, the study team would advise that a mix of seconded and recruited researchers working on the project should be ensured, i.e. newly recruited experienced researchers should not represent more than 50 % of all researchers-months used in the MSCA project. The case study evidence revealed that the possibility to both second and recruit researchers provides a good deal of flexibility for the project beneficiaries in order to ensure that the most suitable researchers are working on different tasks of a project.

The Commission might also consider devoting a small share of researcher-months (e.g. no more than 20 %) for recruiting experienced researchers in ITNs. The network of researchers being trained in ITNs might benefit professionally from the involvement of more senior colleagues, who could potentially act as scientific supervisors.

The Commission should make sure that activities under RISE are complementary, but not overlapping with the objectives of the SME Innovation Associate scheme launched in 2016. The latter action should mainly focus on improving the competitiveness and innovation capacity of the supported SMEs, while RISE and ITN should keep their focus on improving the career prospects and employability of participating researchers. Therefore, when applying to the MSCA funding, organisations should clearly indicate how

they are going to ensure that participation in the MSCA project will have a clear impact on the career of a specific researcher.

**This recommendation is addressed to the Commission and the REA.**

## Recommendation 2

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**What is the issue?** The evidence gathered from the case studies and interviews with business representatives suggested that the possibility of covering the salaries (monthly living allowance) of seconded staff and especially the salaries of top-class researchers newly recruited from a wide pool of talents made the predecessor FP7 IAPP action particularly attractive for businesses and resulted in a significant job creation effect after the project completion. In some cases, the beneficiary businesses involved in this action received several hundred job applications from all over the world in the framework of the MSCA project (e.g. see the ALGAECOM project). As a consequence, businesses could recruit and later retain top-class researchers possessing the mix of knowledge and skills most suitable for their needs.

In addition, the possibility to fund the monthly living allowances of the seconded staff allowed the beneficiary organisations to use the freed-up financial resources to hire other full-time or temporary researchers, who could cover for their seconded employees (which increased the job-creation effect even further). The possibility to fund salaries for both seconded and newly recruited researchers addressed at least two barriers for business participation indicated during this study:

- reluctance of businesses (and especially SMEs) to send their employees away;
- difficulties to find suitable and eligible researchers.

The discontinuation of the possibility to fund the salaries of researchers (including the newly recruited researchers) in the new generation programme decreased the attractiveness of the Horizon 2020 RISE action for businesses and also reduced its potential for direct job creation.

**Recommendation 2: To sustain and further increase the job-creation effect of the programme, the RISE action (and its successor in FP9) should provide a possibility to fund the salaries (monthly living allowance) of researchers, including both those of seconded staff and experienced researchers newly recruited by beneficiary organisations.**

It has to be taken into account that providing a possibility to fund the monthly living allowances of researchers in RISE would require more financial resources and therefore would imply a reduced budget for other parts of the programme as well as a smaller number of researchers supported.

To rectify this situation, the first option would be to restructure the current funding scheme of the RISE action. Currently, EUR 2 000 per month is used as a staff member unit cost, which is "managed centrally to pay for the costs linked to the individual staff member on secondment." The remaining EUR 2 500 per month is currently devoted for (1) research, training and networking costs; and (2) management and indirect costs. In our view, the current funding scheme could be restructured so that:

- around EUR 2 500 per month would directly support a researcher and would fund her/his monthly living allowance and accommodation costs;
- the remaining EUR 2 000 per month would be used to cover institutional costs, e.g. research/training costs, administration, logistics, but also travel (mobility) costs.

Another option would be to allow for a flexibility in terms of who funds the salaries of seconded and newly recruited researchers, e.g. by allowing the beneficiaries to select an option of co-funding the project. During the validation seminar, a number of representatives from large businesses suggested that they might consider co-financing projects funded under the MSCA. When exploring this possibility, the Commission should be sensitive to the fact that in most cases this would not be an option for SMEs. However, by co-funding some projects, large enterprises might effectively free-up a share of the MSCA financial resources that can be then used for funding the monthly living allowances of researchers in other projects, especially those placed in SMEs.

**This recommendation is addressed to the European Commission and the REA.**

## Recommendation 3

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**What is the issue?** Evidence from the case studies, interviews and the validation seminar revealed that the MSCA beneficiaries could benefit from making the existing secondment procedures even more flexible. For example, the requirement in RISE that a researcher must be actively engaged or linked for at least 6 months (FTE) at the sending institution before the first period of secondment was identified as too strict by a number of business organisations. Some of the MSCA participants also lacked the possibility of company-to-company secondments, which would allow beneficiary businesses to exchange knowledge and skills with other business organisations involved in the relevant fields of research. Finally, a number of SMEs were reluctant to send their employees to another country for a secondment of several months, especially during their production periods.

**Recommendation 3: Consider making the existing secondment procedures in the RISE action and future host-driven actions of the MSCA even more flexible in order to increase their impact on the skills and employability of researchers. In particular, allow business-to-business secondments in Europe.**

The Commission is already considering to make more flexible the current requirement that a researcher has to be employed at least for six months before he/she can be enrolled in a secondment. According to the plan, this period will be shortened to one month. The study team supports this decision and thinks that it will help to increase attractiveness of the RISE action for businesses.

Business-to-business secondments could be allowed throughout the programme and not only in the international dimension of RISE. However, while same-sector secondments could be allowed within RISE projects, there should not be any RISE projects supporting *only* same-sector secondments, i.e. each RISE project (also those involving partners from third countries) should focus in particular on inter-sectoral collaboration.

The results of the validation seminar revealed that the quest for more flexibility in the secondment procedures comes mainly from businesses and is addressed towards higher education institutions. Businesses feel the need for more support and input from academia for supporting fellows. They are also generally interested in sending their staff for training, but **academia is invited to offer more focused, short-term condensed courses rather than lengthy modules.** Academia also need to address issues related to rather rigid academic calendar that is an impediment for business to profit more extensively from knowledge updates that can be offered by academia. Fellows also asked for flexibility for better time management, so that they can combine excellent “hands on” research and training.

Participants of the validation seminar were of the opinion that secondments are only effective if:

- they are meaningfully integrated in the academic portfolio of higher education institutions;
- non-academic hosts are fully engaged in the offering and involved with the academic partner, including with the management bodies in academia;
- they are well-integrated in the career development plan of a fellow;
- they are meaningfully integrated to contribute to the overall objectives of the MSCA project ("each secondment should be seen as a micro-project").

It should be noted that the European Commission has recently made the secondment procedures more flexible in response to some previous recommendations, by making it possible, for instance, to split secondments over several shorter periods.

**This recommendation is addressed mainly to the European Commission and the REA, but it should also be communicated to project beneficiaries.**

## Recommendation 4

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**What is the issue?** Last year the European Commission implemented a communication campaign addressed specifically to business enterprises. A significant increase in the number of applications from businesses in H2020 is potentially one of the signs that the campaign was successful. However, interviews with participants from businesses indicated that a number of **enterprises still lack information about certain specific aspects of the MSCA:**

- Many businesses are not aware of the possibility to participate as partner organisations.
- Many businesses are not aware of changes in the programme design, including the following:
  - that RISE is the successor of IAPP with very similar objectives;
  - that RISE does not cover the salary of researchers;
  - that RISE can support secondments between organisations in the same sector (in its international dimension).
- The current name of the RISE action does not effectively communicate its overarching objective to support inter-sectoral research partnerships.
- National-level stakeholders reported that there are many businesses at the national level that are not aware of the support provided by the MSCA.
- At present, no mechanism exists for informing newly established companies with a clear research and innovation focus about the benefits of MSCA funding. Many start-ups tend to have limited capacities for hosting fellows because of their small size, tight budget constraints and focus is on survival and growth. However, our analysis clearly showed that high-growth start-ups can rather quickly consolidate their HR and financial situation, which allows them to effectively train both young and experienced researchers. A number of companies (e.g. Cherry Biotech) have already demonstrated that by participating in the SME Innovation Associate.
- Many participants and researchers of the MSCA are not aware of the EURAXESS platform.

**Recommendation 4: To ensure that the potential MSCA applicants are aware of the programme and its specific aspects:**

- **Clearly communicate business-relevant changes in the programme design (especially those listed above) through the existing communication tools**

- (e.g. the ec.europa.eu website, National Contact Points, short leaflets designed specifically for this purpose).
- **Change the name of the RISE action in order to clearly communicate its objective to support inter-sectoral partnerships.**
  - **Utilise the existing network of National Contact Points to:**
    - **Inform newly established research-intensive companies about the MSCA and its specific actions designed to support business-academia collaboration;**
    - **Be more proactive in reaching as many as possible research-intensive businesses operating at the national level in different countries.**
  - **Involve the National Contact Points of other EU programmes (outside the MSCA family) in communicating about the MSCA, e.g. NCPs for SMEs.**
  - **Promote the EURAXESS platform among the MSCA beneficiaries and researchers.**

Instead of running another fully-fledged communication campaign, we suggest integrating the above-mentioned actions within the existing MSCA and non-MSCA communication instruments.

To improve the communication of the inter-sectoral nature of the RISE action, the study team would also advise changing its name so that it better reflects the objectives of the action. The case study and interview evidence revealed that businesses do not see the RISE action as a specific tool to foster business involvement in the MSCA. The simple fact that the name of the action does not include the words “business,” “industry” or “inter-sectoral” and does not refer specifically to support for inter-sectoral collaboration is a factor constraining business participation, particularly for enterprises without previous experience in the MSCA. The Commission should consider changing the name of the action in the future programmes so that it better reflects its aim to foster inter-sectoral collaborations. **One of the propose names could be “Inter-sectoral Partnerships for Research and Innovation.”**

**This recommendation is addressed to the Commission and the REA.**

## Recommendation 5

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**What is the issue?** Some aspects of the data collected by the SESAM and CORDA databases are insufficiently accurate to allow for rigid analysis. Therefore, further steps must be taken to improve the precision and reliability of data, as well as to ensure adequate response rates.

**Recommendation 5: To better understand the patterns of business participation, improve the monitoring system.**

First, the monitoring system should ensure that more precise and reliable data are collected on business participation in the MSCA. Such data are needed at least on: (1) the type of participating organisations; (2) the size of participating enterprises (micro/small/medium/large); and (3) the area of economic activity (NACE code).

The European Commission should take steps to reduce non-responses. Monitoring systems, in particular SESAM, should rely on open-questions as little as possible. A large share of respondents tends to leave open-question fields empty, which reduces response rates and diminishes the overall quality of data. Instead, SESAM surveys should rely on

multiple-tick boxes or other closed-question strategies, which would ensure higher response rates.

The monitoring system should also provide clear and unambiguous definitions for the commonly-used terms (e.g. entrepreneurship). One source of confusion, which diminishes the quality of monitoring data, is the ambiguity of the terminology used. This leads to such cases where private research institutions or universities indicate that they are private for profit companies. In SESAM surveys, many participants struggled to determine whether they received/provided training in entrepreneurship because they were unsure of what this concept entailed.

**This recommendation is addressed to the Commission and the REA.**

## **Recommendations on entrepreneurship education in the MSCA**

### **Recommendation 6**

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**What is the issue?** At present, there is no evidence of a coherent approach to entrepreneurship education across MSCA actions. Therefore, the intended purposes of entrepreneurship education and respective learning outcomes in the MSCA programme need to be better defined.

**Recommendation 6: Define the overarching purposes, content and the most desired providers of entrepreneurship education in the MSCA.**

The study evidence indicates that entrepreneurship training is largely understood as providing fellows with the technical and legal skills for starting a business rather than a transversal behavioural competence. In MSCA a broad understanding of entrepreneurship should be applied, which goes beyond the business environment (e.g. including social entrepreneurship) and beyond monetary value creation by creation of start-ups and spin-offs. It should not just be restricted to natural sciences, engineering and ICT, but also social sciences and humanities should be taken into account. MSCA fellows should be equipped with the skills necessary to turn ideas into actions, according to the characteristics of their field of research, in various societal settings. Entrepreneurship education should become a key competence for the MSCA fellows, helping them to be more creative and self-confident in academic, business and societal environments.

For doing so, the Entrepreneurship Competence Framework (EC 2016) offers a definition of entrepreneurship as a competence, with the aim to raise consensus among all stakeholders and to establish a bridge between the worlds of education and work. It consists of three interrelated and interconnected competence areas: (1) ideas and opportunities, (2) resources and (3) action.

In a joint process with the MSCA community, involving research institutions and business partners, the European Commission should define, which type of competences the MSCA should bring about in these three areas and which level of proficiency should be achieved through MSCA-supported training in order to provide a clear definition of entrepreneurship and enable a better evaluation on the overall impact of MSCA training to entrepreneurial behaviour.

**This recommendation is addressed to the European Commission and the REA.**

### **Recommendation 7**

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**What is the issue?** The findings of the study and the validation seminar highlighted that MSCA currently has a multitude of objectives concerning complementary skills training, which should all be taken into account by projects. This incorporates the risk of losing the balance between training in research and complementary skills on the one hand, while within the complementary training only superficial coverage can be given to the topics.

**Recommendation 7: Revise the conceptualisation and proposal evaluation of complementary skills training in the MSCA.**

Coherence of educational objectives within the MSCA training and balancing between research training and complementary skills training needs to be ensured. Therefore, with the experiences of the validation seminar, we recommend following the good practice of ITN projects that apply a stage-based approach towards complementary skills training, in which (1) a basic training in complementary skills training is provided for all fellows, and (2) a second level training plan is provided, which is specifically tailored towards the individual development plans of the fellows, according to their preferences. Projects therefore could provide training frameworks, in which fellows can choose different tracks that include general complementary skills training on the one hand, and a limited number of specific training tracks (e.g. on entrepreneurship training) on the other hand.

In this regard, it is also necessary to have a close look at the current evaluation approach for MSCA proposals. The coverage of all possible training modules should not be key to success, but a flexible coherent training plan that provides focused training options on specific complementary skills that fit the needs of the project and the fellows for pursuing their careers should be provided. Project coordinators should be advised to indicate clearly, why specific proposed core training modules are of particular relevance for the project and fellows.

**This recommendation is addressed to the European Commission and the REA.**

## Recommendation 8

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**What is the issue?** Entrepreneurship training is not an integral part of the requirements of MSCA training and it comes as no surprise that there are conceptual misunderstandings concerning the scope of entrepreneurship training. In the portfolio of MSCA projects there is at present a wide variation in the scope and quality of entrepreneurship training, which depends to a strong extent on the institutional setting (network, partners, own capacities).

**Recommendation 8: To raise the scope and quality of entrepreneurship education in MSCA, initiate sharing of good practices on entrepreneurial education among the network of MSCA projects. Fora could be created, in which learning among MSCA projects and trainings for coordinators could take place.**

Learning by doing and reliance upon business participation is the most frequent mode of entrepreneurship training provided. This is an important factor for fostering entrepreneurial behaviour, but it may only be implemented effectively if training is based upon a well-integrated educational concept. Except for some examples, entrepreneurship education in the MSCA did not make systematic use of the existing support facilities, expertise and experiences of researchers and existing start-ups.

As entrepreneurship training within MSCA is largely performed as “training on the job” and short workshops, the development of a knowledge sharing approach to be initiated

by the European Commission could focus on the provision of good practices (e.g. during the coordinators' days) and learning concerning: (1) provision of informal spaces and innovative formats for entrepreneurship training that go beyond class-room teaching and include active involvement in entrepreneurial activities and inclusion of start-ups/spin-offs, (2) balancing between structured training and training on the job, (3) effective engagement of entrepreneurial eco-systems in entrepreneurship training.

**This recommendation is addressed to the European Commission, the REA and the MSCA project community.**



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