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Horizon 2020 - European research funding

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Summary. — Horizon 2020 is the current European Framework Programme for Research and Innovation. Started on 1 January 2014 as a powerful mean to drive economic growth and jobs creation, Horizon 2020 couples Research and Innovation in its structure. From the perspective of a potential applicant, being informed about all the aspects of Horizon 2020 is relevant for a better chance of success. The Participant Portal of the European Commission is still the main source of information: recently the H2020 Dashboard has been added allowing a deeper knowledge about the Framework Programme. In this paper the H2020 Dashboard is exploited as an instrument to point out some interesting figures starting from a comprehensive Horizon 2020 perspective, then focusing on the Excellent Science Pillar and finally analysing and comparing data from single countries.

1. – The Framework Programme Horizon 2020

Horizon 2020 is the current European Framework Programme for Research and Innovation, established on 11 December 2013, with nearly 80 billion € of funding (current prices)[1]. Horizon 2020 is part of the strategy Europe 2020[2], and in particular it represents the financial instrument implementing the Innovation Union[3], a flagship initiative aimed at securing Europe's global competitiveness.
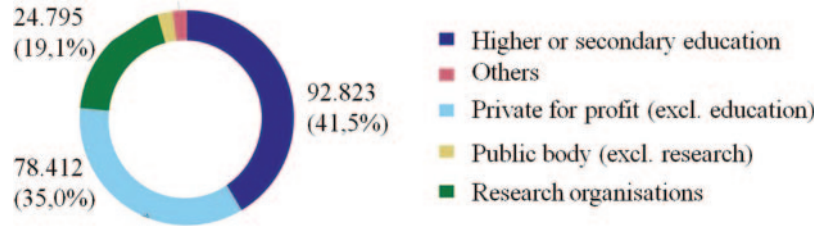

Fig. 1. – Requested EU contribution (M €) and relative percentages divided for type of organisation. Source: H2020 dashboard, April 2018.

Being Horizon 2020 a possible powerful mean to drive economic growth and jobs creation, Research and Innovation are coupled in its structure. Excellent Science, Industrial Leadership and Societal Challenges are indeed the three main Pillars in Horizon 2020.

As Horizon 2020 started on 1 January 2014, in April 2018 some interesting figures can be pointed out by consulting the publicly available "H2020 dashboard"([4]): about a total of 16400 grants have been signed with a mean EU contribution for project of 1.77 M €, out of which about 3800 (23% of the total) have been signed by an Italian beneficiary with a mean EU contribution for project of about 650 k €. A significant percentage —about 54% of the total— corresponding to 8900 signed grants, belongs to the Excellent Science Pillar. Figure 1 shows that while Higher or Secondary Education Institutions still represent the first type of organisation for Requested EU contribution (41.5% of the total), the second (about 35% of the total) corresponds to the private for profit sector (excluding education). Such a share somehow reflects the interrelation between Research and Innovation in this Framework Programme, where different actors are called to give their own contribution in solving grand challenges, often collaborating in a multi-disciplinary and trans-sectoral perspective.

2. – Excellent Science Pillar, a brief focus on the participation

In the Horizon 2020 Pillar dedicated to Excellent Science, four programmes are in place: Infrastructures (including e-Infrastructures), Future and Emerging Technologies (FET), Marie Skłodowska-Curie Actions (MSCA) and European Research Council (ERC).

Data collected in April 2018 from the "H2020 Dashbord" related to the Excellent Science Pillar, allow to analyse how the EU contribution is distributed among the four programmes (fig. 2): the more demanding programmes are the ERC with more than 5000 M €, and MSCA with about 3000 M €, followed by FET and finally Infrastructures. With a deeper analysis (fig. 2) it is possible to understand that about 55.8% of the total EU contribution in this Pillar is assigned through "individual" grants: ERC Starting Grant (16.0%), ERC Consolidator Grant (18.4%), ERC Advanced Grant (15.9%) and MSCA Standard European Fellowships (5.5%). The remaining percentage is distributed among actions that require precise minimum eligibility conditions regarding the number, country or the sector of the participating entities.

([4]) Available at the website https://ec.europa.eu/research/participants/portal/desktop/en/projectresults/index.html (last access April 2018).
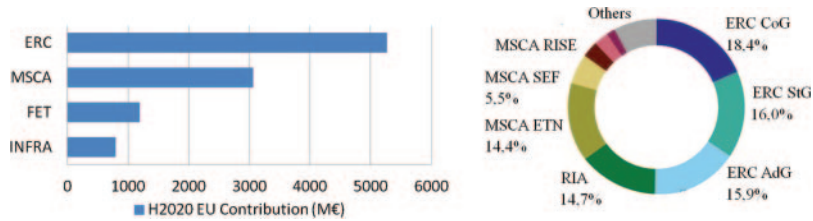
Fig. 2. – EU Contribution (M €) for the four programmes of the Excellent Science Pillar (left); distribution of the EU contribution among the different actions of the four programmes of the Excellent Science Pillar (right). Source: H2020 Dashboard, April 2018.

In order to have a more complete understanding of the Excellent Science Pillar in Horizon 2020, data about the number of both proposals submitted and successful, together with the associated success rates, could be useful for people or institutions interested in a call for proposal of the Framework Programme.

Figure 3 represents the number of proposals retained for funding (light blue), the number of non-successful–eligible proposals (orange) and the success rate (violet dots). In terms of participation, the programme in Excellent Science with the highest number of proposals is MSCA, that foresees opportunities for younger researchers. ERC follows, with about 24000 proposals in Horizon 2020, for a completely bottom-up programme. FET and Infrastructures have a significantly lower participation. Such a difference could be interpreted by considering for example both the financing allocated to these programmes and the prevailing of calls for proposals with top-down topics.

While the success rates of the MSCA and ERC programmes do not differ significantly, the situation is different for the other two programmes in Excellent Science. In particular, FET is the more competitive programme in Excellent Science, while Infrastructures calls have globally the highest success rate. A combination of many different factors could lead to such a picture, however considerations about the specificity of the finality and complexity of the Infrastructure programmes could be a starting point.
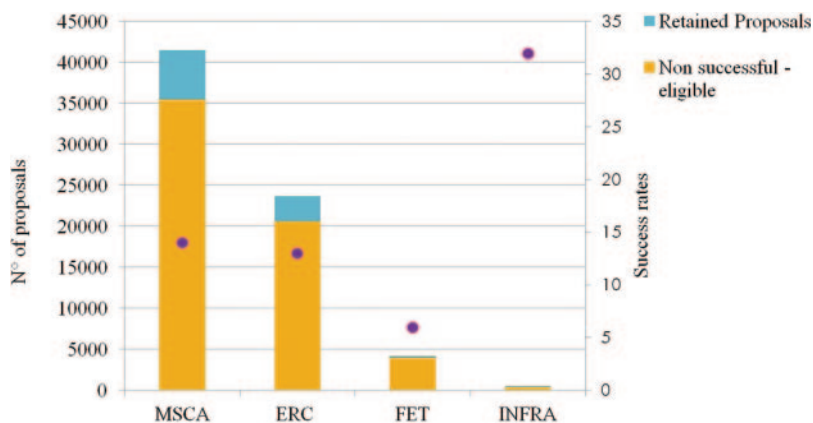

Fig. 3. – The histogram shows for the Excellent Science Pillar programmes the number of proposals retained for funding compared to the number of non-successful, eligible ones. Dots represent the corresponding success rates. Source: H2020 Dashboard, April 2018.
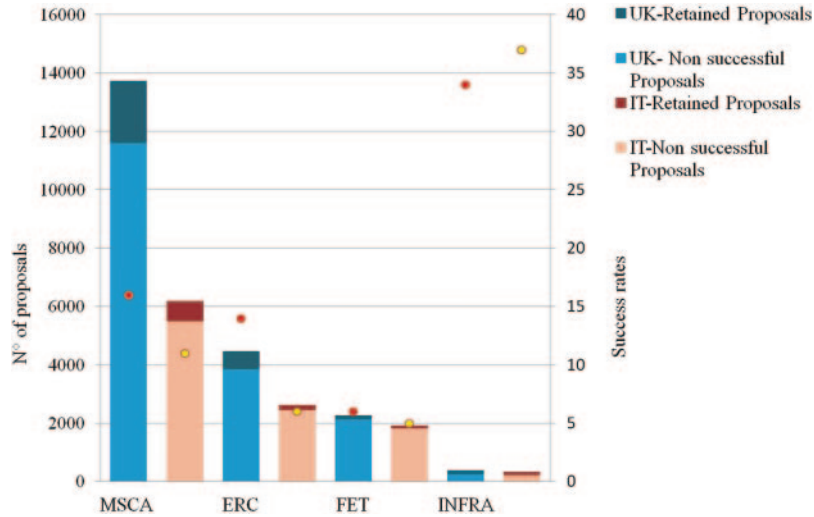
Fig. 4. – The histogram shows for the Excellent Science Pillar programmes the comparison between UK and Italy in terms of number of proposals retained for funding, number of non-successful, eligible proposals and the corresponding success rates. Source: H2020 Dashboard, April 2018.

While fig. 3 represents the overall data about proposals in Horizon 2020, it is possible to extract and compare data related to single countries. Figure 4 shows the comparison between United Kingdom, one of the best performing countries in the Excellent Science Pillar, and Italy. In this comparison what can be directly observed from data is the difference in the number of proposals especially for the MSCA programme, and for the ERC. Not only the total number of proposals, but also the success rates are higher for the United Kingdom. The situation for FET and Infrastructures is different, with a comparable level of performance in FET and a better performance for Italy in the Infrastructures programme. Many different hypotheses could be done to explain the reasons for the differences in the performances of these two countries: however, this is a really complex problem, and the data represented are the result of a mixing of a high number of factors. A comprehensive analysis of this complex scenario could be the object of a dedicated study.

3. – Final remarks

The data showed in the previous sections give a first overview of the high number of proposals interested in receiving funding in the Excellent Science Pillar and of the probabilities to succeed. In such a context, for a potential applicant being prepared in advance is strongly advisable. All the needed information is available months in advance with respect to the deadlines of the calls for proposals. The Participant Portal of the European Commission([5]) contains all the needed information useful for the application: the calls are published on this website, with their budget overviews, the submission rules,

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([5]) `https://ec.europa.eu/research/participants/portal/desktop/en/home.html`.

the eligibility conditions and the evaluation criteria. Moreover, in the mandatory templates, the applicants can find instructions about the expected content in each section of the proposal. From the applicant point of view it is also relevant to know how the three evaluation criteria —namely Excellence, Implementation and Impact— are weighted in the specific call of interest. Recently, the "H2020 Dashboard" has been added to the Participant Portal, and this paper is an example of the complementary sources of information it provides for whom is potentially interested in the Framework Programme Horizon 2020.