



European
Commission

A survey on Monitoring Innovation and Societal Impact of EU-funded Research

Factual Summary Report



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This report has been produced by the JRC to provide a brief factual overview of a survey to monitor innovation and societal impact of EU-funded Research.

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A Survey on Monitoring Innovation and Societal Impact
of EU-funded Research

Factual Summary Report

PART 1.
Introduction

Introduction

The Joint Research Centre (JRC) of the European Commission (EC) in collaboration with the Directorate-General for Research and Innovation initiated an activity to define suitable indicators to retrospectively assess the impact of EC-funded research. To this aim, the JRC conducted a survey addressed to current and former participants of EC-funded research projects in the fields of Alzheimer's disease and other dementias, breast cancer, and prostate cancer.

The aim of this activity is to gain insight and understanding related to the followings:

- ▶▶ How EU-funded projects have contributed to innovation and major scientific breakthroughs;
- ▶▶ How scientific results have translated into positive socioeconomic impacts;
- ▶▶ What ingredients determined the success of research projects;
- ▶▶ What scientific methods and research approaches underpinned the advances made.

The survey was conducted through the European Union's survey platform, EU Survey, and was open from 14/02/2020 to 31/03/2020. The URL to access the survey was disseminated via email, social media platforms, and through the EU Science Hub website¹.

¹ <https://europa.eu/!tc47Rb>

This summary report provides a brief factual overview of the replies received, with information on the respondents as well as the number of responses and range of opinions. The replies gathered through this survey will help the European Commission assess how EU-funded research activities have contributed to innovation and impact. To gain a more in-depth understanding, follow up interviews with a number of survey respondents are planned. A more detailed analysis of the responses to both the survey and interviews will be published in a synopsis report at the end of the process.

This document should be regarded solely as a summary of the contributions made by respondents to the survey on the Monitoring Innovation and Societal Impact of EU-funded Research. It cannot in any circumstances be regarded as the official position of the European Commission or its services.

PART 2.

Who responded to the survey

Who responded to the survey

A total of 202 participants (as of 31 March 2020) replied to this survey, of whom 151 received funding during Framework Programme (FP) H2020, 87 in FP7, 24 in FP6, and 9 in FP5².

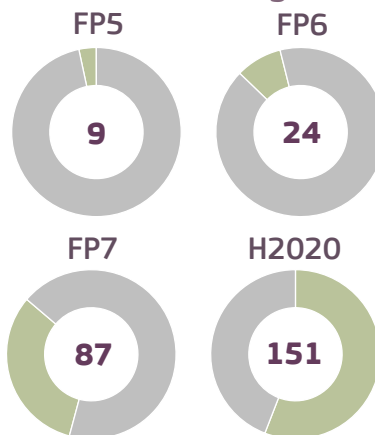
Most of the contributors work in basic/fundamental research (120), followed by translational/applied research (76), clinical research (70), epidemiology (19), and regulatory research (6). An overwhelming majority of contributors work in academia (144), with others in industry or contract research organizations (39), government (22), healthcare (21), and non-governmental organizations (5). Most of the participants conduct(ed) research in the field of Alzheimer's disease or other dementias (81), and breast cancer (72), followed by prostate cancer (33), with 61 respondents selecting other.

² Respondents may have received EU funding for more than one framework programme.

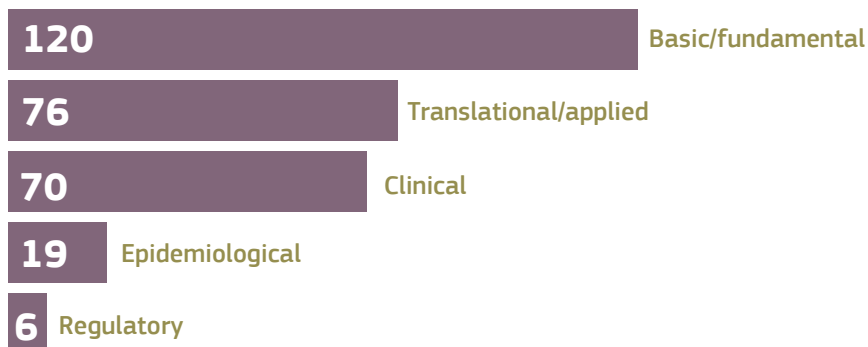
Survey on Innovation and Societal Impact of EU-funded Research



EU Framework Programmes*



Areas of research*



Type of organisation*



*Participants could select more than one answers

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Of those who responded to the survey, 17% conducted their research in the United Kingdom, 10% in Italy and in the Netherlands, 9% in Germany and in Spain, followed by France (7%) (Table 1).

<i>Primary country of the conducted research</i>	<i>Answers</i>
United Kingdom	34
Italy	20
Netherlands	20
Germany	18
Spain	18
France	14
Sweden	11
Belgium	9
Denmark	7
Norway	6
Switzerland	6
Austria	5
Czechia	5
United States of America	5
Other	24

Table 1: Geographical distribution of survey participants (primary country where they conducted their research activities)

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PART 3.

What did the respondents say?

Major Outcomes of Research Activities

Participants were asked about the major outcomes of their research. The most popular outcomes of the research activities include the development of a new methodology or approach (127), new knowledge in basic or applied field of science (91), new disease-related pathway or mechanism (75), new biomarkers (69), new diagnostic tools (65), and new therapeutic targets (60). Other responses include new stratification/classification strategies (43), new prognostic tools (35), new action improving quality of life (34), identification of lifestyle factor contributing to disease risk (27), new genetic/epigenetic factors (24), and identification of environmental chemicals contributing to disease risk (7) (Figure 1).

What were the major outcomes of the research? You may select more than one

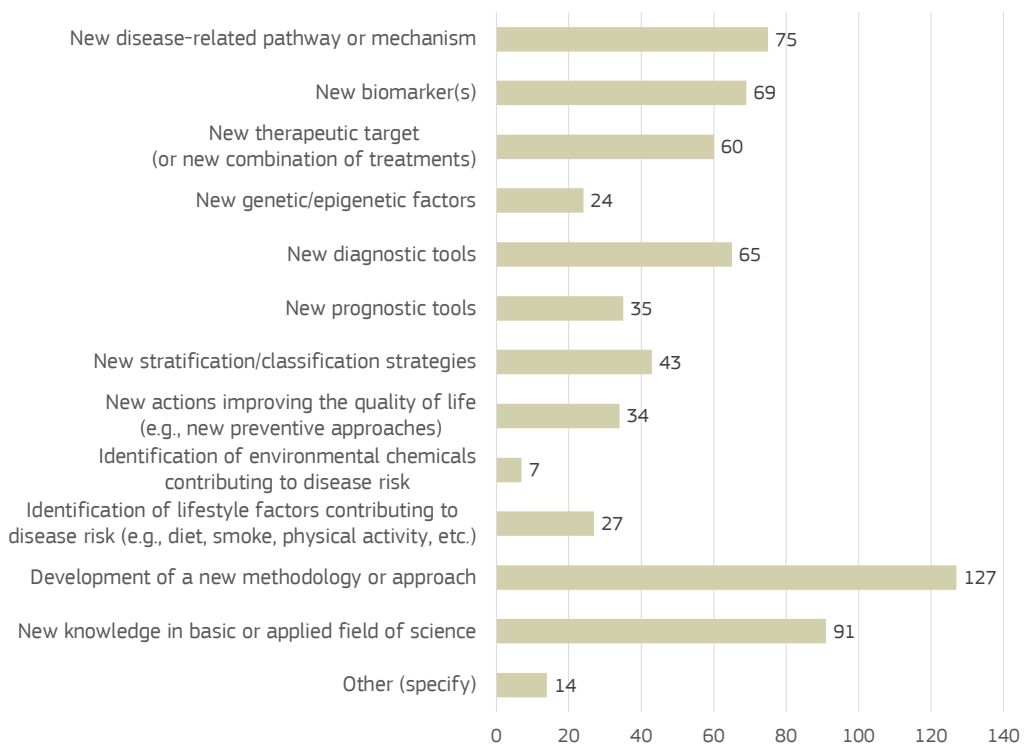


Figure 1: Major outcomes of research activities.

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Forty percent of the respondents indicated that the outcomes of their research had an impact beyond their project; with 53% selecting an impact may be seen in the future. Three percent said their research did not have an impact beyond their project and four percent were not sure.

A large proportion of respondents (46%) implied their research had an impact on diagnostic or prognostic tools (94), followed by treatment or prevention action (57), clinical trials (48), patents (40), public health guidance (22), and regulatory policy actions (11) (Figure 2).

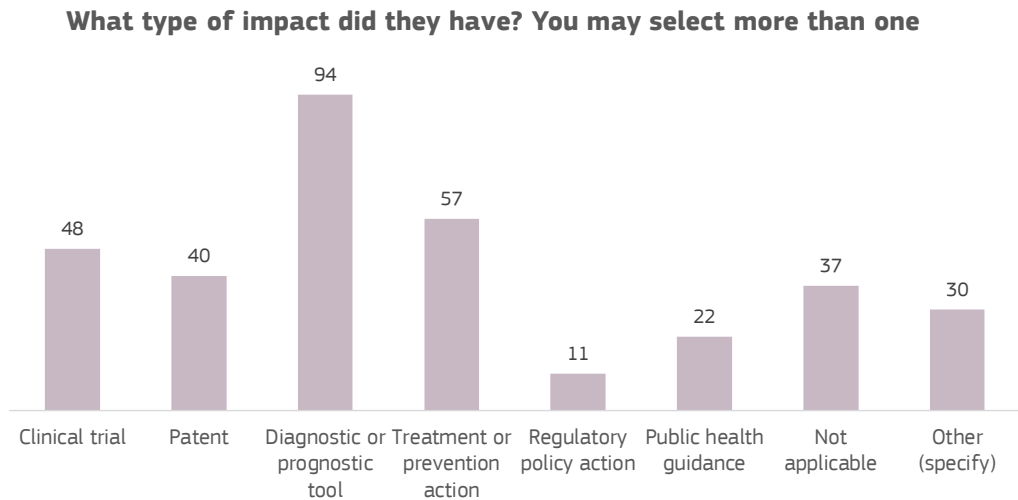


Figure 2: Impact of research activities.

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Participants attributed the success of their research to a number of factors, most notably, collaboration with project partners (65%), multidisciplinary (58%), research strategy (58%), and the international dimension of their project (56%). Other ingredients of success are outlined in Figure 3.

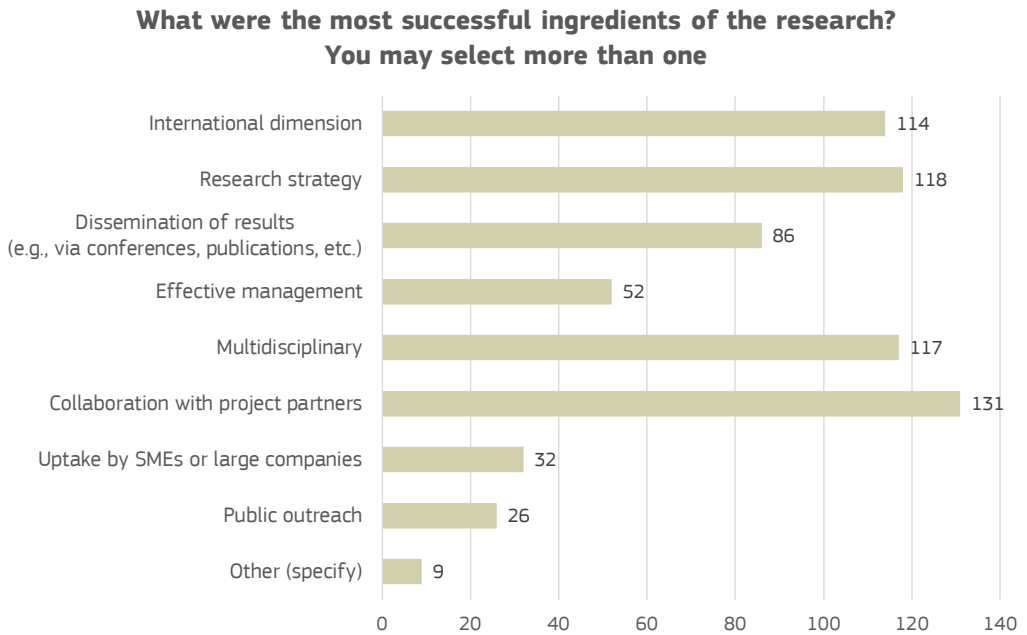


Figure 3: Main ingredients for success of research.

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As for the most significant challenges, 80 participants (40%) indicated they had difficulties in obtaining additional funding to continue research. Other popular responses include difficulties in enrolling participants (38), insufficient allocation of project funding (35), poor time management (22), and poor translation, limited public outreach, and lack of necessary materials all tied with 19 responses (about 10% of respondents). Fifty-nine selected 'other', with common responses including time restraints and regulatory hurdles (Figure 4).

**What were the most significant challenges?
You may select more than one**

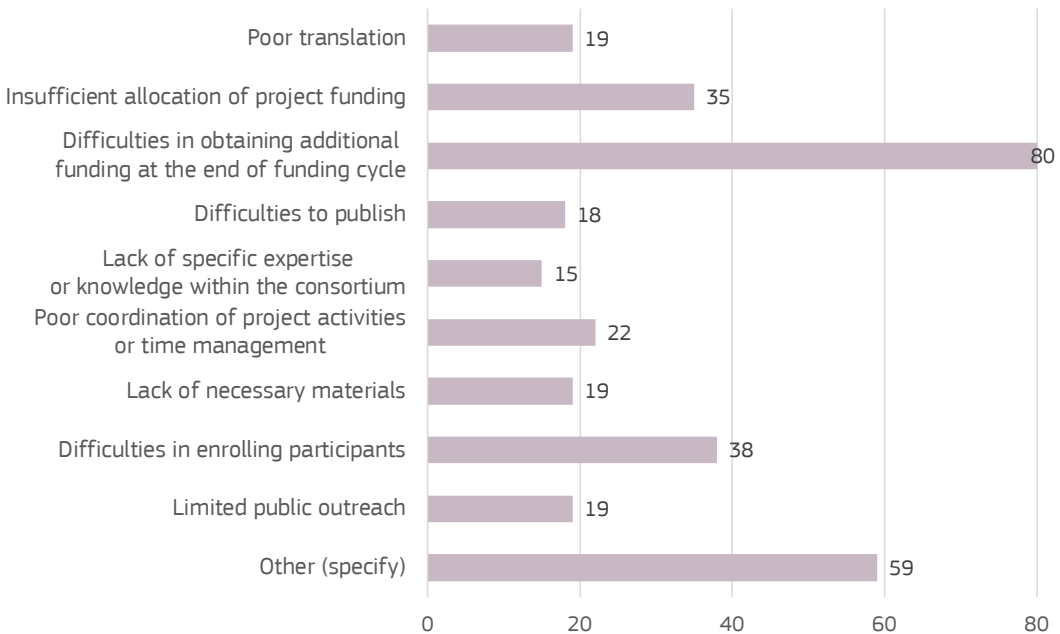


Figure 4: Most significant challenges encountered.

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Dissemination and Follow Up Activities

Survey respondents used a variety of means to disseminate their research outcomes, such as conferences (185), peer-reviewed publications (179), websites (122), lectures (115), social media (98), and patent registration (42). Seven did not or have not yet disseminated their outcomes, and 15 used other channels, such as the news and investors.

Notably, 73% reported that they engaged the general public to disseminate their research results, while 27% did not. Common ways to involve the public are through meetings, seminars, and online videos (Figure 5).

Did you engage the general public (i.e., lay audience) to disseminate these results?

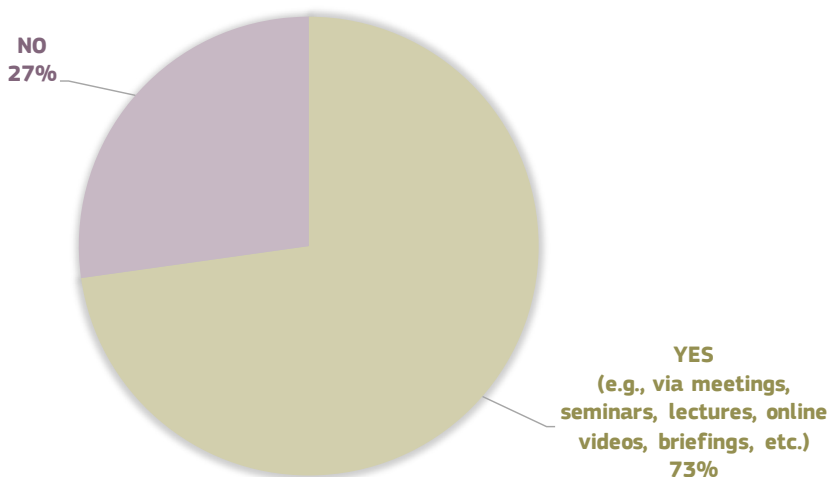


Figure 5: Efforts to engage the general public.

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The three main follow up contributions of the research projects are the development of new skills (131), new learning opportunities (112), and new employment (107).

Within two years after the end of the research project, 15% received additional EC funding to continue the research activity, 32% received additional funding from a non-EC source, 26% did not receive any additional funding, and 41% responded that the question was not applicable to them³.

Moreover, two-thirds of respondents said that they changed their strategy, model or methodological approach in their subsequent research projects. In particular, 95 (47%) declared that, to increase multidisciplinary, they initiated collaborative efforts with different partners, 59 (29%) specified that they used a new methodological approach, and 33 (16%) a different model (Figure 6).

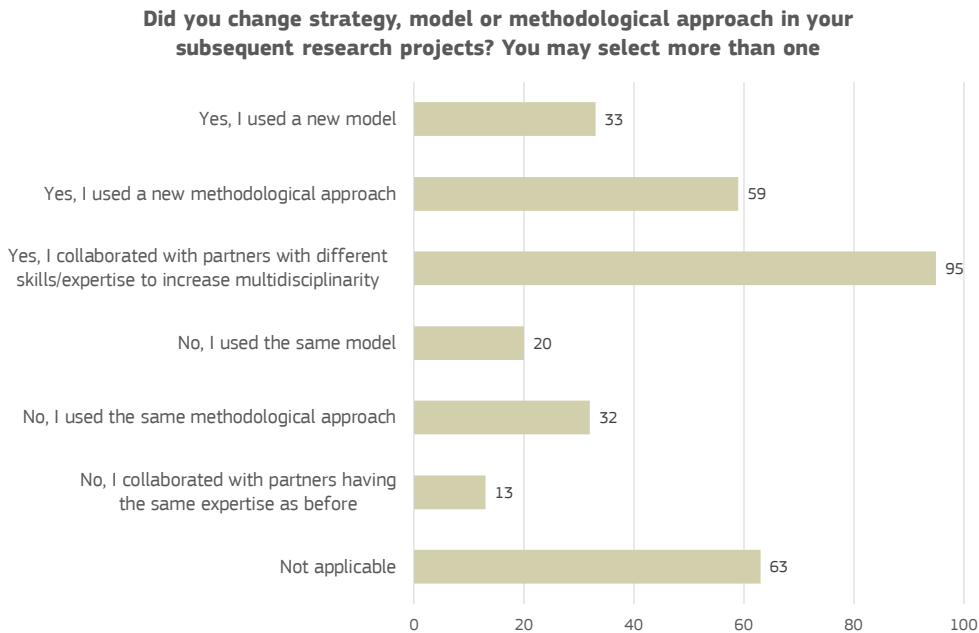


Figure 6: Change of strategy, model or methodological approach in subsequent research projects.

³ Participants could select more than one so total may be greater than 100%.

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Methodological Aspects

As presented in Figure 7, respondents rated the relevance of the models used to their research question. Overall, less than 50% used *in chemico* assays, complex *in vitro* models, animal-derived materials or (non-human) animal models in their research.

Notably, 66% (79 out of 119) of respondents who used human cohorts or population studies, and 70% of respondents who used human-derived material (86 out of 122) considered these models and approaches as highly relevant to their research question(s).

Fifty-eight percent (51 out of 88) of researchers who used animal models and 54% (50 out of 93) who used animal-derived materials, quoted them as highly relevant. Interestingly, only 34% (29 out of 86) who used complex *in vitro* models, and 43% (47 out of 110) of people who used *in silico*/computational approaches considered them as highly relevant.

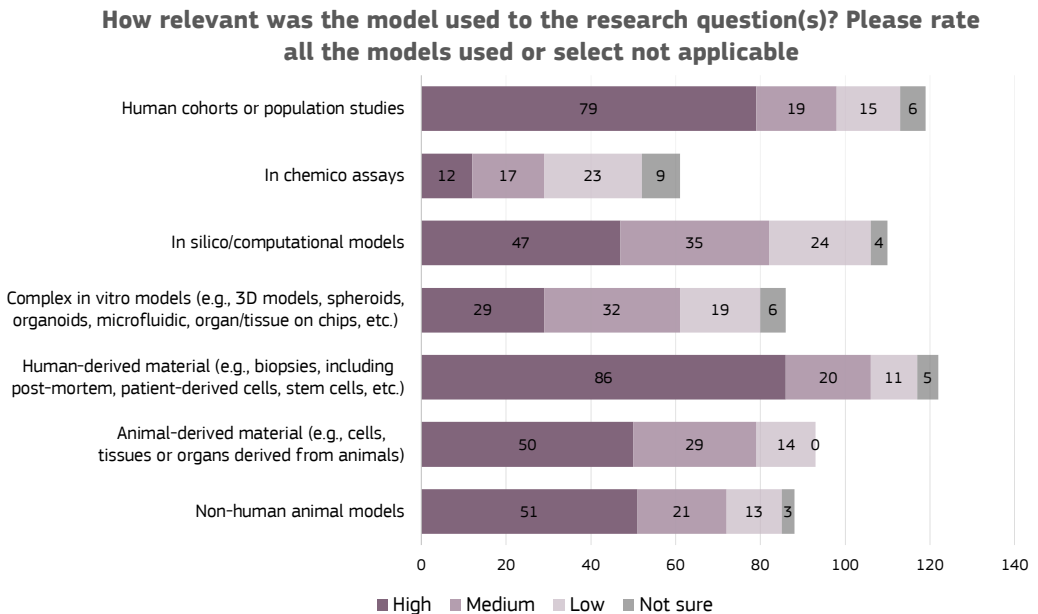


Figure 7: Relevance attributed to the research models.

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Contributors were asked whether their model(s) was (were) essential to the success of their research. Sixty-eight percent (86 out of 126) of respondents who used human cohorts or population studies, and 81% (104 out of 129) of those who made use of human-derived material/samples considered those models/approaches as essential to the success of their research projects.

Seventy-two percent of users of animal models (68 out of 94) and/or animal-derived material (75 out of 104) considered them as essential to the success of their research.

Sixty-three percent of users of *in silico*/computational models (71 out of 112) rated those models as essential for their research success.

Finally, only half of respondents who used complex *in vitro* models (45 out of 89) considered them as essential tools to the success of their research (Figure 8).

Was the use of this model essential to the success of the research?

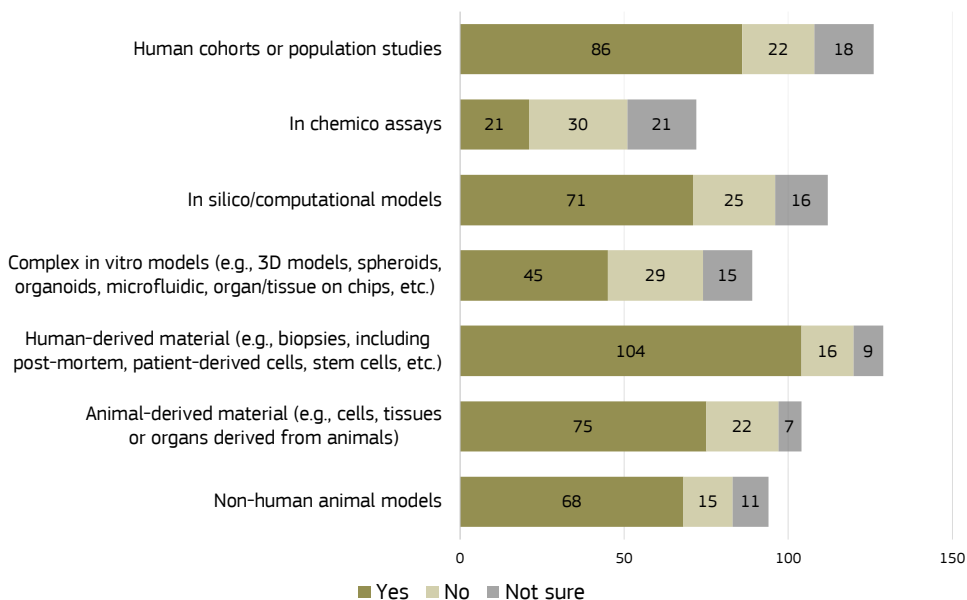


Figure 8: Considerations about the necessity of the model to the success of the research.

Less than half of the survey participants recorded a percentage of their resources (both financial and human) went to studies involving animals (Figure 9). Thirty-six percent of them indicated a very low percentage (0-25%) of their financial resources dedicated to studies involving animals, while 15% used a more conspicuous proportion (76-100%) of their budget on these studies.

With regards to human resources, similar figures could be drawn, with 33% of respondents allocating a very low proportion (0-25%) of their resources to animal studies, and 18% employing a relatively high percentage (76-100%).

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What percentage of resources went to studies involving animals?

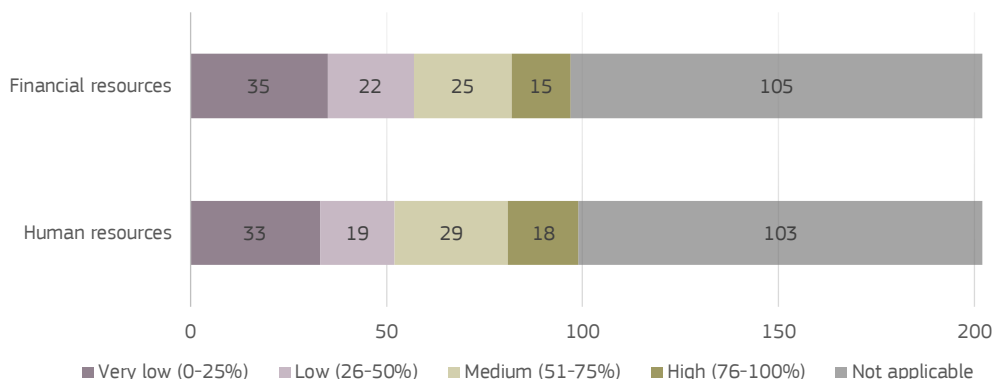


Figure 9: Percentages of financial and human resources allotted to studies involving animals.

Contributors were asked to consider the currently available models/methods and whether or not they would consider changing their research approach (Figure 10).

Of the 202 survey participants, 110 (54%) felt the model they used is still scientifically relevant or needed and therefore they would not consider changing it. Thirty-eight (19%) would not consider changing because their model is still mandatory. Of those who would consider changing to another model/method, 15 respondents (7%) would move from an animal to a non-animal model, 14 (7%) would shift from an animal to a different animal model, 12 (6%) from a non-animal to an animal model, and 6 (less than 3%) would consider changing from a non-animal to a different non-animal model.

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Considering the currently available models/methods, would you consider changing the research approach(es)? You may select more than one

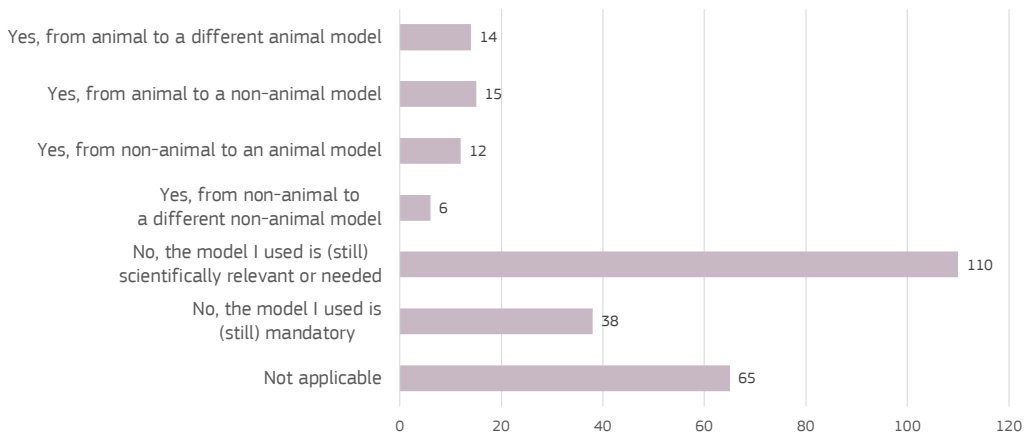


Figure 10: Considerations about the possibility to modify research approaches.

At the end of the survey, respondents were prompted to reflect on their experience with publishing exclusively non-animal (and non-clinical) research data. Nine percent reported they had an easy experience, while 33% reported average, and 15% said they had a hard time publishing non-animal research data.

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Respondents were also asked about their experience with receiving funding for project proposals exclusively based on non-animal (and non-clinical) research. Six percent responded they had an easy experience, while 27% felt their experience was average, and 22% report having a hard time receiving funding for exclusively non-animal and non-clinical research (Figure 11).

How was (or is) your experience with receiving funding for project proposals exclusively based on non-animal (and non-clinical) research?

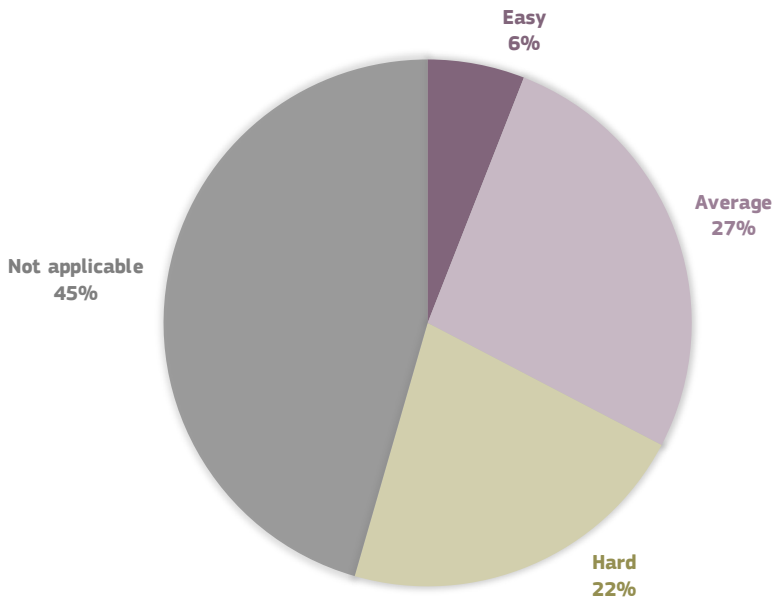


Figure 11: Rating personal experience with obtaining funding for project proposals exclusively based on non-animal (and non-clinical) research.

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