# A2.3, O2: Results of institutional consultation and agreed research metrics for the ECIU University

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# Abstract

This document is one of the deliverables deriving from the activities for Work Package 2 (Challenged Based Research). It presents the results of a consultation conducted among the ECIU research community on the topic of research metrics, alongside incentives and supports. The recommended measures are organised in five focus areas, reflecting the objectives of ECIU University research: collaboration between researchers across ECIU member institutions, relevance to societal challenges, co-creation with external stakeholders, open science, and inclusivity. Research metrics are designed to assess research activities at ECIU University level, while incentives and supports aim to target individual researchers, unless specified. The document will be used by ECIU WP2 in the development of Activity 2.3, O3 (Piloting of agreed research metrics), and by the Swafs SMART-ER project team (WP1) as a foundation from which to develop KPIs for the Virtual Research Institute.

# Table of Contents


Abbreviations and acronyms 5

List of figures 6

Introduction 8

General recommendations 9

Recommended metrics, incentives and supports for ECIU University research 10

Next steps and Implementability 13

Conclusion 14

**Appendix I: DCU Case Study on implementability of proposed metrics** 15

**Appendix II: Methodology of the consultation and profile of the participants** 18

Stakeholders 18

Consultation process: 19

Survey questionnaires 19

**Appendix III: Results of the survey questionnaire per focus area** **21**

Focus 1: ECIU University Research should be relevant to challenges encountered by society 21

Focus 2: ECIU University Research should be accessible and transparent 23

Focus 3: ECIU University Research should be communicated to all relevant stakeholders, within and outside of academia 26

Focus 4: ECIU University Research should be co-created with relevant non-academic stakeholders 29

Focus 5: ECIU University should be a fair, equal, and attractive workplace for excellent researchers of all backgrounds 32

Focus 6: Researchers from all ECIU member institutions should actively participate in ECIU University research 36

**Appendix IV Results of the initial consultation per stakeholder** **40**

Results of the consultation for the VPR Expert Group 40

Focus 1: ECIU University Research should be relevant to challenges encountered by society 40

Focus 2: ECIU University Research should be accessible and transparent 41

Focus 3: Research produced within the ECIU University should be communicated to all relevant stakeholders, within and outside of academia 43

Focus 4: ECIU University Research should be co-created with relevant non-academic stakeholders 45

Focus 5: ECIU University should be a fair, equal, and attractive workplace for excellent researchers of all backgrounds 46

Focus 6: ECIU Member institutions should actively participate in ECIU University research 48

**Results of the consultation for the ECIU R&I Group** 49

Focus 1: ECIU University Research should be relevant to challenges encountered by society 49

Focus 2: ECIU University Research should be accessible and transparent 50
Focus 3: Research produced within the ECIU University should be communicated to all relevant stakeholders, within and outside of academia 52
Focus 4: ECIU University Research should be co-created with relevant non-academic stakeholders 54
Focus 5: ECIU University should be a fair, equal, and attractive workplace for excellent researchers of all backgrounds 55
Focus 6: ECIU Member institutions should actively participate in ECIU University research 57
**Results of the consultation for researchers from ECIU member institutions working on UN SDG11 58**
Focus 1: ECIU University Research should be relevant to challenges encountered by society 58
Focus 2: ECIU University Research should be accessible and transparent 59
Focus 3: ECIU University Research should be communicated to all relevant stakeholders, within and outside of academia 61
Focus 4: ECIU University Research should be co-created with relevant non-academic stakeholders 63
Focus 5: ECIU University should be a fair, equal, and attractive workplace for excellent researchers of all backgrounds 64
Focus 6: Researchers from all ECIU member institutions should actively participate in ECIU University research 66
**Appendix V Results of the final survey sent to the Vice-Rectors for Research Expert Group 68**
Focus 1: ECIU University research should be based on collaboration across ECIU member institutions 69
Focus 2: ECIU University research should be relevant to societal challenges 71
Focus 3: ECIU University research should be open 72
Focus 4: ECIU University research should be co-created with non-academic stakeholders 74
Focus 5: Building a better ECIU University 75

# Abbreviations and acronyms

| | |
|---|---|
| AAU | Aalborg Universitet, Denmark |
| ALLEA | All European Academies |
| CRIS | Current Research Information System |
| CV | Curriculum Vitae |
| DCU | Dublin City University, Ireland |
| DMP | Data Management Plan |
| DOI | Digital Object Identifier |
| DORA | Declaration on Research Assessment |
| ECR | Early Career Researcher |
| EEA | European Education Area |
| ERA | European Research Area |
| ECIU | European Consortium of Innovative Universities |
| EU | European Union |
| HRS4R | Human Resources Strategy for Researchers |
| INSA | Institut National des Sciences Appliquées, France |
| KPI | Key Performance Indicator |
| KTU | Kauno Technologijos Universitetas, Lithuania |
| LiU | Linköpings Universitet, Sweden |
| NORF | National Open Research Forum (Ireland) |
| NWO | Nederlandse Organisatie voor Wetenschappelijk Onderzoek |
| OA | Open Access |
| ORCID | Open Researcher and Contributor Identity |
| PI | Principal investigator |
| R&I | Research & Innovation |
| SDG | Sustainable Development Goal |
| SMART-ER | ECIU University Research Institute for Smart European Regions |
| TAU | Tampereen Yliopisto, Finland |
| TecM | Tecnológico de Monterrey |
| TORA | DCU Research Costing Management Tool |
| TUHH | Technische Universität Hamburg, Germany |
| UA | Universidade de Aveiro, Portugal |
| UAB | Universitat Autònoma de Barcelona, Spain |
| UiS | Universitetet i Stavanger, Norway |

| | |
|---|---|
| UNITN | Università di Trento, Italy |
| UN SDG | United Nations Sustainable Development Goal |
| UT | Universiteit Twente, Netherlands |
| VPR | Vice-Presidents for Research |
| VRI | Virtual Research Institute |
| WOS | Web of Science |

# List of figures


Figure 1 Proportion of researchers nominated per institution 18
Figure 2 Proportion of researchers surveyed per institution 20
Figure 3 Approval rates for Focus 1 metrics for each stakeholder group (%) 21
Figure 4 Approval rates for Focus 1 incentives and supports for Focus 1 for each stakeholder group (%) 22
Figure 5 Rejection rates for Focus 1 metrics for each stakeholder group (%) 22
Figure 6 Rejection rates for Focus 1 incentives and supports for each stakeholder group (%) 23
Figure 7 Approval rates for Focus 2 metrics for each stakeholder group (%) 23
Figure 8 Approval rates for Focus 2 incentives and supports for each stakeholder group (%) 24
Figure 9 Rejection rates for Focus 2 metrics for each stakeholder group (%) 24
Figure 10 Rejection rates for Focus 2 incentives and supports for each stakeholder group (%) 25
Figure 11 Approval rates for Focus 3 metrics for each stakeholder group (%) 26
Figure 12 Approval rates for Focus 3 incentives and supports for each stakeholder group (%) 27
Figure 13 Rejection rate for the Focus 3 metrics for each stakeholder group (%) 28
Figure 14 Rejection rates for Focus 3 incentives and supports for each stakeholder group (%) 28
Figure 15 Approval rates for Focus 4 metrics for each stakeholder group (%) 29
Figure 16 Approval rates for Focus 4 incentives and supports for each stakeholder group (%) 30
Figure 17 Rejection rates for Focus 4 metrics for each stakeholder group (%) 31
Figure 18 Rejection rates for Focus 4 incentives and supports for each stakeholder group (%) 32
Figure 19 Approval rates for Focus 5 incentives and supports for each stakeholder group (%) 34
Figure 20 Rejection rates for Focus 5 incentives and supports for each stakeholder group (%) 35
Figure 21 Approval rates for Focus 6 metrics for each stakeholder group (%) 36
Figure 22 Rejection rates to Focus 6 metrics for each stakeholder group (%) 37
Figure 23 Selection of the proposed metrics by the VPR Expert Group for Focus 1 40
Figure 24 Selection of the proposed incentives and supports by the VPR Expert Group for Focus 1 41
Figure 25 Selection of the proposed metrics by the VPR Expert Group for Focus 2 41
Figure 26 Selection of the proposed incentives and supports by the VPR Expert Group for Focus 1 42
Figure 27 Selection of the proposed metrics by the VPR Expert Group for Focus 3 43
Figure 28 Selection of the proposed incentives and supports by the VPR Expert Group for Focus 3 44
Figure 29 Selection of the proposed metrics by the VPR Expert Group for Focus 4 45
Figure 30 Selection of the proposed incentives and supports by the VPR Expert Group for Focus 4 46
Figure 31 Selection of the proposed incentives and supports by the VPR Expert Group for Focus 5 47

Figure 32 Selection of the proposed metrics by the VPR Expert Group for Focus 6 48
Figure 33 Selection of the proposed metrics by the ECIU R&I Group for Focus 1 49
Figure 34 Selection of the proposed incentives and supports by the ECIU R&I Group for Focus 1 50
Figure 35 Selection of the proposed metrics by the ECIU R&I Group for Focus 2 50
Figure 36 Selection of the proposed incentives and supports by the ECIU R&I Group for Focus 2 51
Figure 37 Selection of the proposed metrics by the ECIU R&I Group for Focus 3 52
Figure 38 Selection of the proposed incentives and supports by the ECIU R&I Group for Focus 3 53
Figure 39 Selection of the proposed metrics by the ECIU R&I Group for Focus 4 54
Figure 40 Selection of the proposed incentives and supports by the ECIU R&I Group for Focus 4 55
Figure 41 Selection of the proposed incentives and supports by the ECIU R&I Group for Focus 5 56
Figure 42 Selection of the proposed metrics by the ECIU R&I Group for Focus 6 57
Figure 43 Selection of the proposed metrics by researchers for Focus 1 58
Figure 44 Selection of the proposed incentives and supports by researchers for Focus 1 59
Figure 45 Selection of the proposed metrics by researchers for Focus 2 59
Figure 46 Selection of the proposed incentives and supports by researchers for Focus 2 60
Figure 47 Selection of the proposed metrics by researchers for Focus 3 61
Figure 48 Selection of the proposed incentives and supports by researchers for Focus 3 62
Figure 49 Selection of the proposed metrics by researchers for Focus 4 63
Figure 50 Selection of the proposed incentives and supports by researchers for Focus 4 64
Figure 51 Selection of the proposed incentives and supports by researchers for Focus 5 65
Figure 52 Selection of the proposed metrics by researchers for Focus 6 66
Figure 53 Selection of the proposed incentives and supports by researchers for Focus 6 67
Figure 54 Final recommendations for Focus 1 metrics 69
Figure 55 Final recommendations for Focus 1 incentives and supports 70
Figure 56 Final recommendations for Focus 2 metrics 71
Figure 57 Final recommendations for Focus 2 incentives and supports 71
Figure 58 Final recommendations for Focus 3 metrics 72
Figure 59 Final recommendations for Focus 3 incentives and supports 73
Figure 60 Final recommendations for Focus 4 metrics 74
Figure 61 Final recommendations for Focus 4 incentives and supports 75
Figure 62 Final recommendation for Focus 5 metrics 75
Figure 63 Final recommendations for Focus 5 incentives and supports 76

# Introduction

This report provides **a series of recommended metrics, alongside corresponding incentives and supports, for ECIU University research activity**. The recommended metrics reflect **broader trends within ECIU University as well as the European Union to re-imagine the ways in which research and researchers are assessed, towards a system that values open and impactful research, as well as scientific excellence.** In the conclusions of the Council of the European Union on the European Universities initiative, *"Bridging higher education, research, innovation and society: Paving the way for a new dimension in European higher education"*, (17th May 2021), the Council stresses the role that European Universities can play in developing challenge-based and interdisciplinary research, in working towards **Open Science**, and in strengthening the attractiveness of research careers. It notes in particular that:

> *'European Universities' are developing challenge-based approaches for shared education, research, and innovation to enhance interdisciplinary critical mass; they are sharing capacity and pooling resources, strengthening the attractiveness of academic and research careers, supporting institutional change, for example, through inclusive gender equality plans, and reinforcing co-operation with surrounding ecosystem actors; they are working towards open science and open education, engaging with citizens for solving societal challenges and reinforcing excellence in education and research for global competitiveness.[1] (Point 24)*

The Council also acknowledges that:

> *In line with the vision for an EEA and its achievement by 2025, the ERA, and taking into consideration the Rome ministerial communiqué, the 'European Universities' should - with full respect for Member States' competences and with regard to the principle of subsidiarity, institutional autonomy, academic freedom and in accordance with national and regional circumstances, closely cooperating with the higher education authorities of Member States - be guided to: (…) Foster 'European Universities' as "testbeds" for innovative teaching and for research, including academic career assessment and rewarding systems that take into account inter alia open science practices, quality of teaching, transfer of knowledge and outreach; improved tenure track systems and strengthened career management and diversification; and adoption of open science principles and practices, including the European Open Science Cloud and the open access publishing infrastructures, knowledge and data sharing, as well as open collaboration.[2] (Point 31)*

These objectives are in turn echoed in the ECIU University 2030 Vision, according to which:

> *In ECIU University, researchers conduct open research and innovation and develop a career by moving between the ECIU University stakeholder organisations in an intersectoral way. A*

[1] General Secretariat of the Council of the European Union, "Council conclusions on the European Universities initiative – Bridging higher education, research, innovation and society: Paving the way for a new dimension in European higher education", Point 24, 17 May 2021, p.8.

[2] General Secretariat of the Council of the European Union, "Council conclusions on the European Universities initiative – Bridging higher education, research, innovation and society: Paving the way for a new dimension in European higher education", Point 31, 17 May 2021, p.10.

*comprehensive framework of innovative metrics will be used to assess the impact of research and innovation activities to support research careers.*[3]

In light of those objectives, this report presents the recommendations of the ECIU Vice-Rectors for Research Expert Group on research metrics for the ECIU University, following a broad consultation with the ECIU research community, including the Vice-Rectors for Research Expert Group, the ECIU R&I Group and individual researchers from all ECIU member institutions, which took place in the first half of 2021. It also follows from Activity 2.3, O1, entitled *'Review of current State of the Art across the ECIU University in Alternative Metrics'*, which highlighted the existence of significant disparities between ECIU member institutions, with over half of them constrained in the assessment of their research and researchers by regional and/or national legislation. Reflecting those constraints, **this report recommends that research metrics should be designed to measure the success of research at ECIU University level for this pilot project**, while the recommended associated incentives and supports target individual researchers.

The metrics are organised around **5 focus areas**, which constitute a draft definition of ECIU University research, aligned with ECIU University 2030 Vision:

- Focus 1: ECIU University research should be based on collaboration across ECIU member institutions
- Focus 2: ECIU University research should be relevant to societal challenges
- Focus 3: ECIU University research should be open
- Focus 4: ECIU University research should be co-created with non-academic stakeholders
- Focus 5: Building a better ECIU University

Further details on the methodology used for the consultation process and on the stakeholders with whom this activity has engaged are available in Appendix II, with Appendices III to V providing full analysis of the different stages of the consultation process.

# General recommendations

The following recommendations are based on two "brainstorming sessions" held in March 2021 with the ECIU Vice-Rector for Research Expert Group on the topic of research metrics for the ECIU University. Each session, held online for 60 minutes, gathered 6 members of the Expert Group (or their representatives), and was moderated by Prof Greg Hughes (DCU), with support from Dr Rachel Barrett (DCU) and Dr Florence Impens (DCU).

The first session brought together Dr Antonio Pita (TecM ), Dr Armand Sanchez Bonastre (UAB), Prof Artur Silva (UA), Dr Gio Fornell (LiU), Dr Leonas Balasevicius (KTU), and Vanessa Ravagni (representing UNITN). The second session gathered Prof Mogens Rysholt Poulsen (AAU), Prof Maarten van Steen (representing UT), Prof Marie-Christine Baietto (INSA), Prof Merete Madland (UiS), Prof Alexander Penn (representing TUUH), and Dr Juha Teperi (TAU).

General recommendations and observations are as follows:

[3] ECIU University, "ECIU University 2030 – Connects U for Life" (2021), p.10.

- **Metrics** should be used as **indicators of success** rather than as targets driving behavioural changes in the researchers' population. The main aim of the ECIU University research metrics is to make the added value of ECIU University to research visible to a range of stakeholders, including governments, funders, industrial partners, and wider society.
- The discussions confirmed the extent of the constraints brought by national and regional legislations outlined in the mapping exercise conducted as part of Activity 2.3, O1. At this stage, as part of the ECIU University pilot project, it would be nigh impossible to design and implement metrics assessing individual researchers for career progression that would meet the requirements of the legal frameworks regulating all partners.
    - It was therefore recommended that **for this pilot, research metrics should be measured at institutional level, i.e. at ECIU University level,** and not at the level of the individual researcher. There should also be metrics for each ECIU member institution measuring its degree of participation in ECIU University research activities. These metrics should ideally be embedded in institutional strategies, and aligned with institutional mission and values. On the other hand, **incentives and supports** related to each metric should **target individuals.**
    - It was however noted that national and regional frameworks for the assessment of researchers seem to be moving in the overall same direction as ECIU objectives (e.g. signing of DORA, Leiden Manifesto, etc), both becoming increasingly aligned with EU priorities such as Open Science and Impact. This seems to suggest that it might become possible in the future of the ECIU University to align individual researcher metrics.
- ECIU University metrics should be **quantitative as well as qualitative**, with for instance impact case studies. More work will be needed on developing guidelines for the latter, but it was suggested at this stage that while the format should be clearly defined (e.g. timeline), guidelines about the content should be flexible to account for the variety of possible impacts deriving from research projects.
- ECIU metrics should **complement the wider discussion at EU level around research assessment.**
- **Time and resources** needed to implement the recommended metrics and incentives and supports should be taken into consideration.

# Recommended metrics, incentives and supports for ECIU University research

These recommendations are based on the results of a final survey sent to the ECIU Vice-Rectors for Research Expert Group in late May 2021. The measures put forward as recommendations, both metrics and incentives/supports, have been approved by at least 65% of this Expert Group. They were also subsequently presented to the Expert Group at a meeting on 29th June 2021.

Metrics will be measured at institutional level (ECIU University level, and when specified at the level of the member institutions), while incentives and supports will target the individual researchers in all member institutions.

For more details, please see Appendix V, which contains the full results of the survey, including measures that did not meet the 65% threshold. (For each recommendation, the percentage agreement from the Expert Group is included in the following data.

**Focus 1: ECIU University research should be based on collaboration across ECIU member institutions**

Recommended metrics:

- Number of awarded ECIU University research projects across the Alliance: 85%
- % of awarded ECIU University research projects in each institution (as compared to overall number of externally funded research projects): 77%
- Number of ECIU University research projects submitted for external funding which receive a score above threshold: 69%

Recommended incentives and Supports:

- ECIU Researcher Mobility Fund supporting short visits to other ECIU member institutions: 92%
- Seed funding for the joint development of research proposals: 85%
- ECIU joint communications on relevant calls: 77%
- Joint training for researchers on how to apply to Horizon Europe funding: 77%
- Dedicated research development supports for funding applications with several ECIU partners, including support with matchmaking: 69%
- Information sessions on ECIU University for researchers: 69%

**Focus 2: ECIU University research should be relevant to societal challenges**

Recommended metrics:

- % of outputs related to UN SDGs deriving from ECIU University research projects (as opposed to non-SDG focus): 69%
- % of awarded ECIU University funding applications focusing on UN SDGs: 69%
- Impact case studies for ECIU University research projects related to relevant UN SDGs: 69%

Recommended incentives and supports:

- Training on impact for researchers: 92%
- Follow-up funding for research projects with strong impact potential: 77%
- Development of a shared research strategy focused on UN SDGs and challenge-based research: *This measure was approved by 62% of the VPR Expert Group but is aligned with the ECIU 2030 Vision, and will require further discussion to ensure it meets the 65% approval rate threshold before implementation.*

**Focus 3: ECIU University research should be open**

Recommended metrics:

- % of Open Access publications derived from ECIU University projects relative to overall number of publications, including Diamond, Gold, and Green Access routes: 92%
- % of ECIU University research projects with openly available data sets (as compared to overall number of ECIU University research projects): 92%
- Number of webinars and public lectures discussing ECIU University research projects: 69%
- Impact case studies measuring the degree and impact of researchers' engagement with non-academic stakeholders (e.g. students, citizens, local communities, industrial partners) via dissemination: 69%

Recommended incentives and supports:

- Joint training on Open Access for researchers, including list of recommended OA journals, existing international, institutional and national OA platforms for publication: 85%
- ECIU members to share best practices related to policy engagement at EU level: 85%
- Training on data management for researchers: 77%
- Training for researchers on communicating research outside academia, including in the media: 77%
- Dedicated contact points for researchers to support data management in funding applications: 69%
- Promote public engagement stories on the ECIU website and relevant channels of communication: 69%

**Focus 4: ECIU University research should be co-created with non-academic stakeholders**

Recommended metrics:

- Number of industry partners involved in ECIU University research projects: 77%
- Number of challenge-based events organised by researchers (education, research, innovation): 69%
- % of awarded ECIU University research funding applications involving citizen science: *The wording of this measure was proposed by a member of the Vice-Rector Research Expert Group, and approved by the latter during the meeting on 29th June 2021.*

Recommended incentives and supports:

- Training for researchers on citizen science methodologies: 92%
- Training for researchers on technology transfer: 85%
- Working groups on citizen science, technology transfer, and consultancy collaborating to share best practices and align services: 69%
- Development of an ECIU Citizen Science Hub, with local supports based in each institution: *This measure was approved by only 62% of the Expert Group but is aligned with SMARTER, and will require further discussion to ensure it meets the 65% approval rate threshold before implementation*

**Focus 5: Building a better ECIU University**

Recommended metrics:

- ECIU University to send an annual survey to researchers involved in ECIU University research projects (with questions related to age group, gender, career stage, type of contracts): 92%

Recommended incentives and supports:

- Member institutions required to sign the European Charter and Code of Researchers: 85%
- ECIU University to consider signing the DORA declaration (https://sfdora.org/) on behalf of the member institutions: 85%
- Creation and signature of a shared statement on the Responsible use of Research Metrics: 69%

# Next steps and Implementability

In the next (pilot) phase of this activity, Activity 2.3.3, some of the recommended metrics and incentives will be trialled for the first time. This report will also feed into the work of SMART-ER task 1.6 as the measurement of performance through applicable ECIU metrics will in turn feed into progress monitoring in corresponding SMART-ER key performance indicators (currently under development at the time of this report).

The ECIU University Activity 2.3, O3 pilot phase should begin with two distinct and crucial tasks:

- A careful consideration of the **exact wording of the measures and related definitions (e.g. ECIU research project)**, to eliminate any ambiguity in terms of what is meant for each of the terms used, so that all parties would be collecting data on the same elements;
- A careful **examination of the issue of implementability** across all ECIU member institutions. It is expected that this step might further narrow down the chosen metrics and incentives that ECIU University will put in place to assess and support research. The pilot phase should begin either with a consultation of all relevant Research Information Officers in the ECIU member institutions, or possibly with the creation of an ECIU working group on this very issue.

### Implementability:

It is expected that **the recommended metrics as they currently stand may require investment in system infrastructures for some member institutions** to facilitate ease of reporting, and that they will also have **resource implications in terms of data collection and review**. Each member institution will have its own processes for data collection and reporting in place, and it is crucial for the success of the pilot that we gain a clear picture of what can be realistically achieved within the term of the pilot project, as well as in the medium to longer term.

Initial buy-in can be encouraged by the selection of metrics that are commonly implementable across the institutions current reporting systems for the pilot period. Establishing a working group of research support officers (or equivalent) across the network will be needed to carry out the process and work towards sustainable change.

In order to gain a broad understanding of the implement ability of the recommended metrics, and of the type of changes that may be required, we engaged with DCU's Research Information and Analytics Officer for feedback on the implications that the proposed metrics would have. Her recommendations for what we are trying to achieve are documented in **Appendix I.**

# Conclusion

- Research **metrics** should be assessing research activities **at ECIU University level** rather than assessing the performance of individual researchers. As for **incentives and supports**, they are designed to target **individual** researchers, unless specified.

- Research metrics for the ECIU University, along with their accompanying supports and incentives, are organised around **5 focus areas that reflect the objectives of ECIU University research**: collaboration between researchers across ECIU member institutions, relevance to societal challenges, co-creation with external stakeholders, open science, and inclusivity.

- The recommended metrics will need to be adjusted in future if necessary to reflect any change in the definition and objectives of ECIU University research.

- The issue of **implementation** has been taken into account in the survey questions sent to relevant stakeholders, including the ECIU R&I Group and the VPR Expert Group. It has also informed a case study on implementability of the proposed research metrics at DCU (Appendix I). It will need to be thoroughly explored as part of the pilot phase of the metrics within ECIU University (Activity 2.3, O2) and of SMART-ER task 1.6 on the design of KPIs for the Virtual Research Institute. We recommend that both these tasks begin by addressing the implementability of the proposed metrics as a priority, as this will define what is possible within the lifetime of the current funding periods.

# Appendix I: DCU Case Study on implementability of proposed metrics

**Funding metrics**

The source for data in relation to research funding activity would be TORA (the internal DCU grant management system).

1. **Capturing ECIU activity**

**How data is currently gathered:** Currently the definition of an ECIU University project is one which has an ECIU partner involved. Any reporting on ECIU activity to date has involved a manual exercise reviewing 'awards' that have an ECIU partner on the TORA award record. DCU's reporting capability on collaborations with ECIU partners is fairly rudimentary at this stage, requiring manual tidy up however it is possible to do.

The DCU TORA grant management system does not capture partners at application stage so it is not possible at this stage to easily report on ECIU University application activity.

**What can be done**: If application activity is required a potential off-system solution is to ask Research Officers to keep a manual record of applications involving ECIU partners. This however is burdensome on an already stretched team but may be workable in the short term. A potential in-system solution would be to add an ECIU University 'tag' to relevant applications during workflow stage. This would be a manual tag applied by the Research Office during workflow review.

**Implications:** Any update to the TORA system requires hiring a consultant, with DCU's master report also requiring an update to allow for reporting. There will be cost implications to this system intervention, however this would need to be balanced with the likelihood of this being a longer term reporting requirement. Quotations can be gathered if required.

2. **Capturing SDG activity**

A number of the proposed metrics indicate a requirement for SDG alignment to be specified (SDG activity is also becoming more of a focus in terms of impact rankings, etc).

**How data is currently gathered:** Currently DCU can only report on funding activity in particular SDG areas using a crude amalgamation of data gathering methods (typically involving a review of key words within project titles, reviewing the projects of researchers who are expected to be involved in a particular research area, and/or limiting the data to funders/schemes usually involved in funding particular SDG-linked areas).

**What can be done:** The addition of the SDGs to the TORA application form could be considered. Researchers would then self-align their application to a particular SDG area if appropriate. This would flow through to an award record if the application is successful.

**Implications:** Consultant involvement would be required to modify the application form in TORA and to tailor DCU's Reports to facilitate reporting. An update like this would reflect a strategic commitment to the SDG-space as DCU does not tag other priority areas for reporting purposes.

**Output metrics**

The term 'outputs' will need to be agreed with regards to the metrics captured across the ECIU institutions. It would also be useful to agree the data source (or sources) for these metrics as common limitations would then apply equally to all. The preferred source may for some institutions be their Current Research Information System (CRIS) or for others publication databases such as Scopus (https://www.scopus.com/) .

### 1. Capturing output activity stemming from ECIU University activity

In relation to the metrics as currently articulated, DCU currently has no easy way to attribute outputs to specific ECIU University projects (or any other award for that matter).

In DCU's CRIS system called Research Engine, it is incumbent on academics to update their profiles with their outputs (although DCU tries to streamline this as much as possible with integrations with ORCID and WOS/Scopus). Although a key benefit in this system is the breadth of outputs captured, the link to funding is currently tenuous and not reliable. DCU does have the option for academics to link their outputs to a funder but this is rarely done.

There is the option to make this 'Funder' field mandatory within the Research Engine system, however as this would impact all users it would need to be considered in the context of potential other use cases.

The other option is to use Scopus as the data source (with the caveat that this data would reflect more limited output types and coverage in particular disciplines). Funder 'acknowledgment' searches could be utilised to create a subset of outputs for analysis but this would also not be 100% fool proof and would require review and refinement to ensure the outputs are ECIU university project-linked outputs.

The most accurate way to capture ECIU University outputs might be to create and analyse publication-sets in Scopus/SciVal (https://www.scival.com/) for researchers who are linked to ECIU University activity. This would be manual and would involve knowing who is involved but would give a more accurate view of activity.

### 2. Capturing SDG-affiliated outputs

Discussion on the reporting capacity related to SDG-affiliated activity is timely as this also has significance to a wider audience. Any analysis performed to date has been undertaken utilising the pre-defined SDG areas within SciVal or via specific key words searches (If a more nuanced approach is required) on publication sets. Once again an agreed data source would be useful here.

If DCU is to use its existing CRIS Research Engine for this function, we would need to consider how an SDG affiliation is applied to an output. The affiliation of an output to a particular SDG area would require manual input by academics and therefore would be reliant on their buy-in to be accurate. It would also require a system update to facilitate the capture of this information and any subsequent reporting.

Alternatively, (or potentially in addition), DCU can utilise the pre-defined SDG searches in SciVal – these are based on search terms that Elsevier have developed. DCU would need to search for DCU activity in each area and then refine the list to reflect those researchers that are involved in ECIU University projects.

## 3. Capturing Open Access outputs and Open Data Sets

Once the ECIU University 'outputs' are determined, the openness of these outputs can be analysed via the tool Unpaywall (https://unpaywall.org/ ), although only if DOIs for the outputs are available. If publication sets within Scopus or SciVal are being used, open access metrics will be available within these tools.

The availability of open data sets is not as easy to capture. Feedback from the Irish National Open Research Forum (NORF - https://norf.ie/ ) is being sought with regards to best practice tools. SciVal have created a new predefined research area that details articles with linked OA datasets (those available within certain repositories). DCU could, for now, utilise this dataset, limit it to DCU outputs and then review for any researchers linked to ECIU University projects.

**Other metrics**

Other metrics mentioned in the report include methodology-based analysis (e.g projects involving citizen science) or information on dissemination activities etc. DCU does not capture this data in-system so monitoring may require engagement with the researchers themselves and an element of self-reporting.

Case studies have been mentioned for multiple metrics. Whilst this may be useful to pursue, a framework would need to be agreed and resources allocated to gathering the case study data.

# Appendix II: Methodology of the consultation and profile of the participants

## Stakeholders

The stakeholders represent the **research community across the ECIU Network**:

- Vice-Rectors for Research Expert Group (main target group)
- ECIU R&I Group
- Researchers working on UN SDG11 from across the ECIU Network.

The **researchers** who were contacted as part of this activity were identified as follows: each of the 13 member institutions was asked to provide the names and contact details of at least 10 researchers working on UN SDG11. The institutions were also asked to bear in mind gender and career-stage criteria whenever possible in the nomination process, in order to ensure a diverse and representative sample. The 13 ECIU member institutions nominated 160 researchers in total, with (variable) representation from each university (Fig.1). The most represented institution is KTU (26 nominations), followed by INSA (16 nominations). By comparison, AAU only submitted 8 nominations, the lowest number amongst all partners.

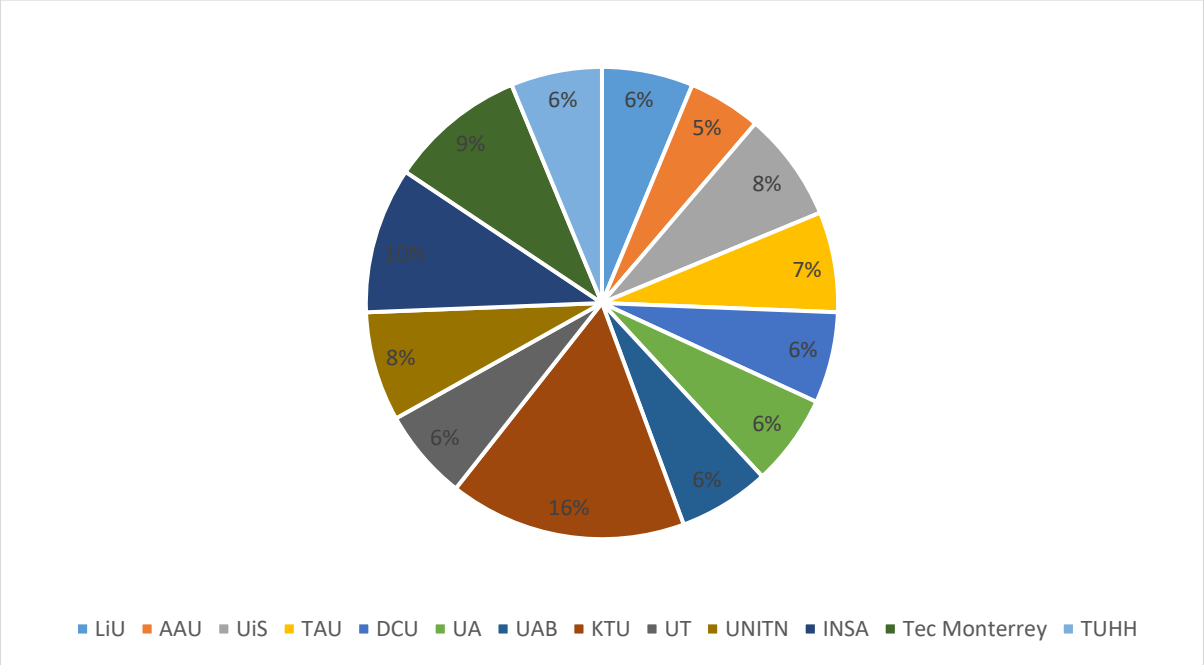


*Figure 1 Proportion of researchers nominated per institution*

**Gender** balance was not fully achieved in the nomination list, with 54% of nominated researchers identified by their institution as male, and 46% as female. Nonetheless, these figures suggest that genuine efforts were made by the universities to bear the gender criterion in mind, as many of the disciplines represented under UN SDG11 are still male-dominated.

On the other hand, there was a significant imbalance in terms of **career-stage**. 73% of researchers nominated by their institutions were identified as mid-to-senior-career (defined in this study as 7 or more years post-PhD), with only 27% of the nominated researchers identified as early-career (PhD student or less than 7 years post-PhD). This severe imbalance might be at least partly explained by two factors. First of all, for those institutions that nominated their researchers without an open call for interest in participating in this project, contact points and their colleagues are more likely to know senior researchers who may have been based in their institution for several years. Second of all, for those institutions who nominated researchers who had expressed an interest in participating in this activity, the imbalance may reflect a stronger interest in research metrics and/or ECIU University among senior researchers. The institutions were left free to adopt their own internal method for the nomination process, and as such it is impossible to identify the root(s) of this imbalance. This suggests however that further work might be needed to engage with the ECR community, for instance as part of SMART-ER.

# Consultation process:

The consultation process consisted in three main phases.

1. Two brainstorming sessions with the VPR Expert Group (or their nominees) in March 2021, both chaired by Prof. Greg Hughes (DCU). During those sessions, group members discussed the broader European context for research metrics and research career progression, national differences and legal frameworks, and longer-term aspirations.
2. Survey questionnaire sent to the three stakeholder groups outlined in the previous section in April and May.
3. A proposal based on the results of the survey was sent to the VPR Expert Group in June for their final recommendations. The recommended metrics, incentives and supports in this report are the measures that have been approved by at least 65% of the Group.

# Survey questionnaires

The survey questionnaire proposed a series of possible metrics, as well as incentives and supports, and was designed by the WP2 team, with feedback from relevant SMART-ER work package leaders. It was sent to the VPR Expert Group, the ECIU R&I group, and to the 160 researchers working on UN SDG11 nominated by their institutions. While all the members of the VPR Expert Group and all the members of the ECIU R&I Group except for AAU and UAB answered the questionnaire, the response rate was lower for the researchers' group, with 67 responses in total. Nonetheless, researchers from each of the 13 ECIU member institutions replied to the questionnaire, with some disparity between universities (Fig.2).

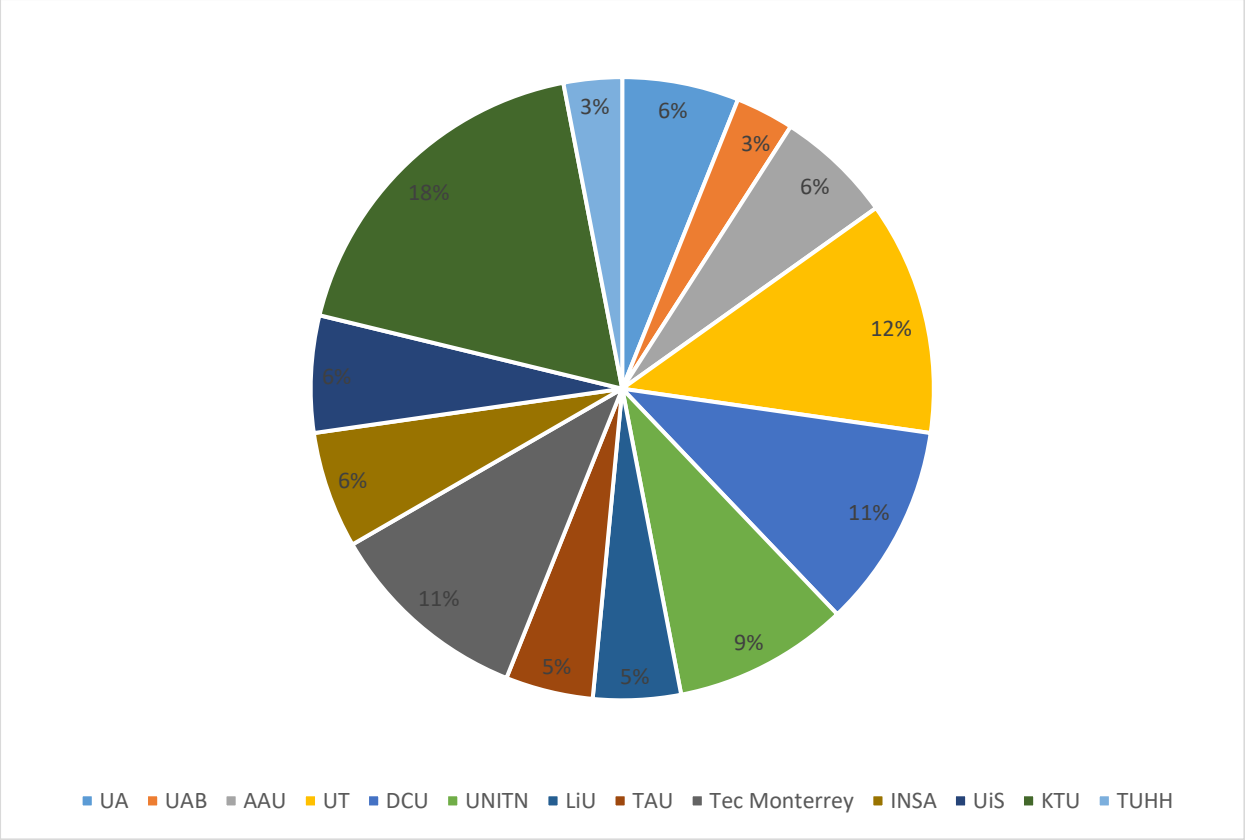


*Figure 2 Proportion of researchers surveyed per institution*

The response rate to the survey among the researchers in terms of gender and career stage broadly reflects the profile of the nominated researchers overall. 58% of the researchers who answered the survey identified as male, 41% as female, with 2% choosing not to disclose their gender. 77% of them were mid to senior researchers, 17% early career researchers, and 6% PhD students.

# Appendix III: Results of the survey questionnaire per focus area

Full anonymised data in Excel spreadsheets can be provided upon request during the project for further analysis by other project members. The respondents had a choice of three answers: yes, no, and no opinion. The figures below illustrate the response rate for yes and no only.

## Focus 1: ECIU University Research should be relevant to challenges encountered by society

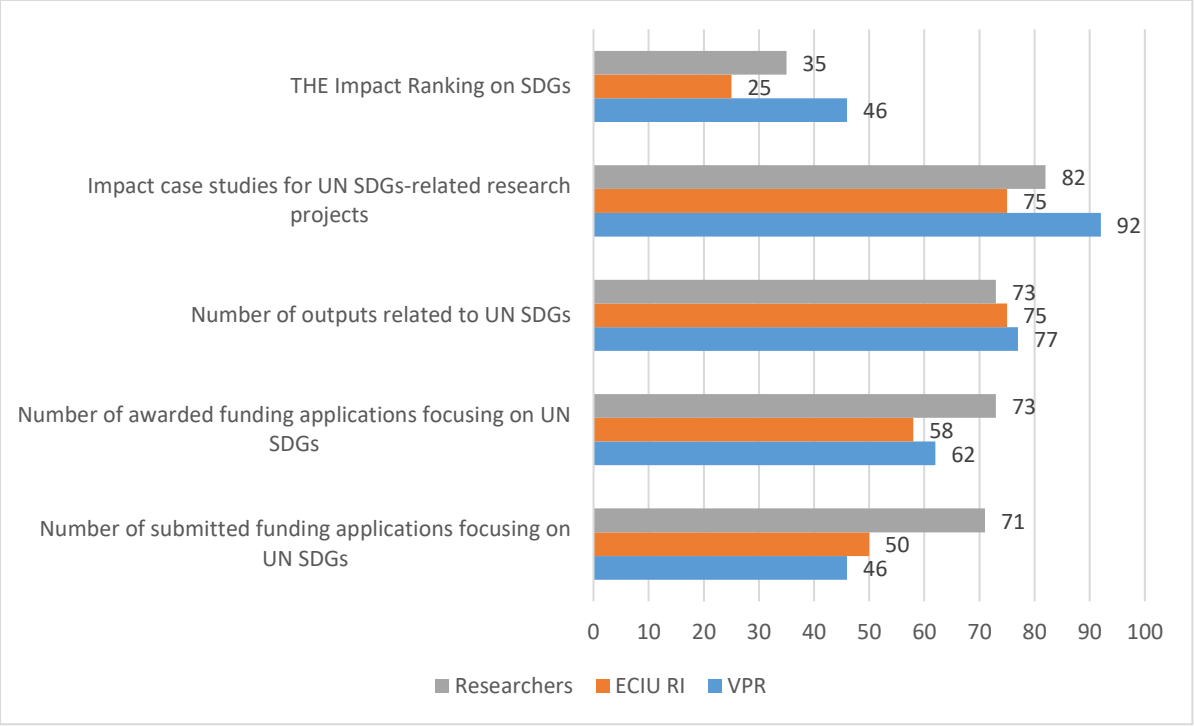


*Figure 3 Approval rates for Focus 1 metrics for each stakeholder group (%)*

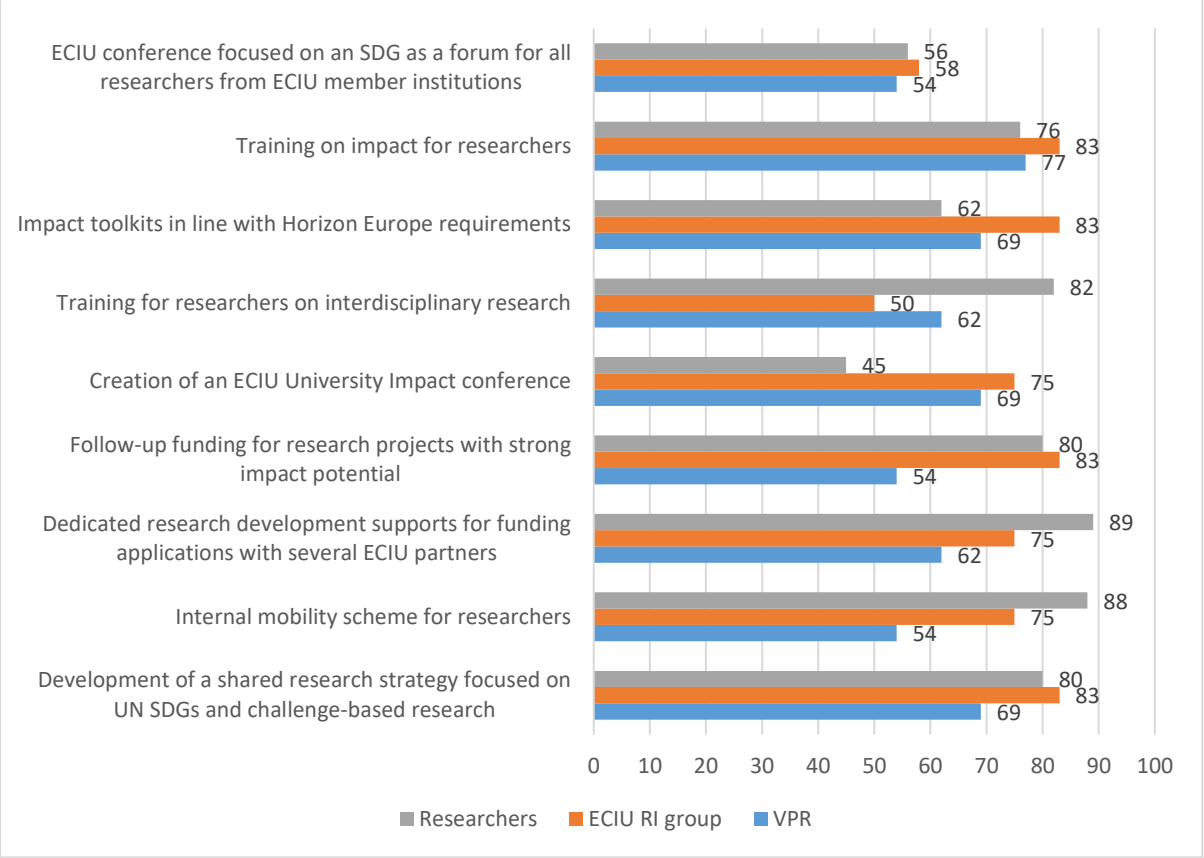


*Figure 4 Approval rates for Focus 1  incentives and supports for Focus 1 for each stakeholder group (%)*

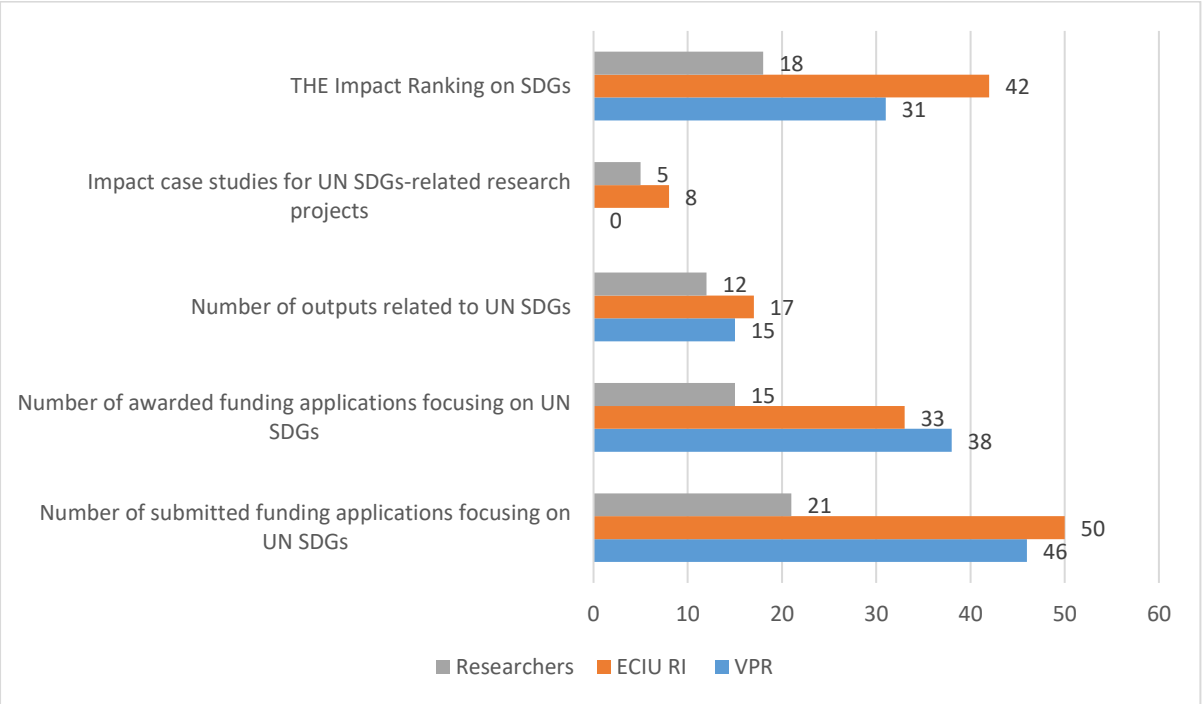


*Figure 5 Rejection rates for Focus 1  metrics for each stakeholder group (%)*

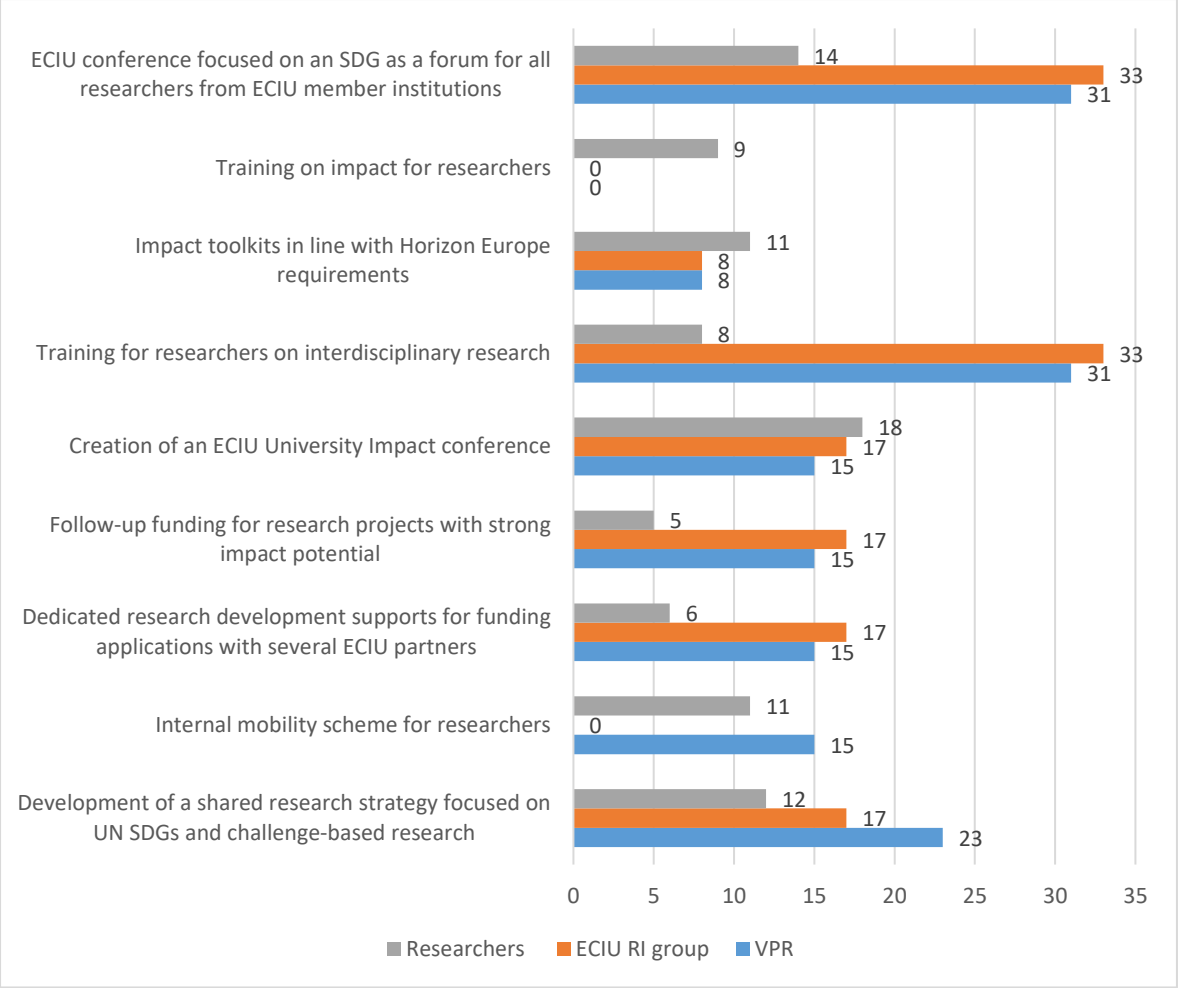


*Figure 6 Rejection rates for Focus 1 incentives and supports for each stakeholder group (%)*

# Focus 2: ECIU University Research should be accessible and transparent

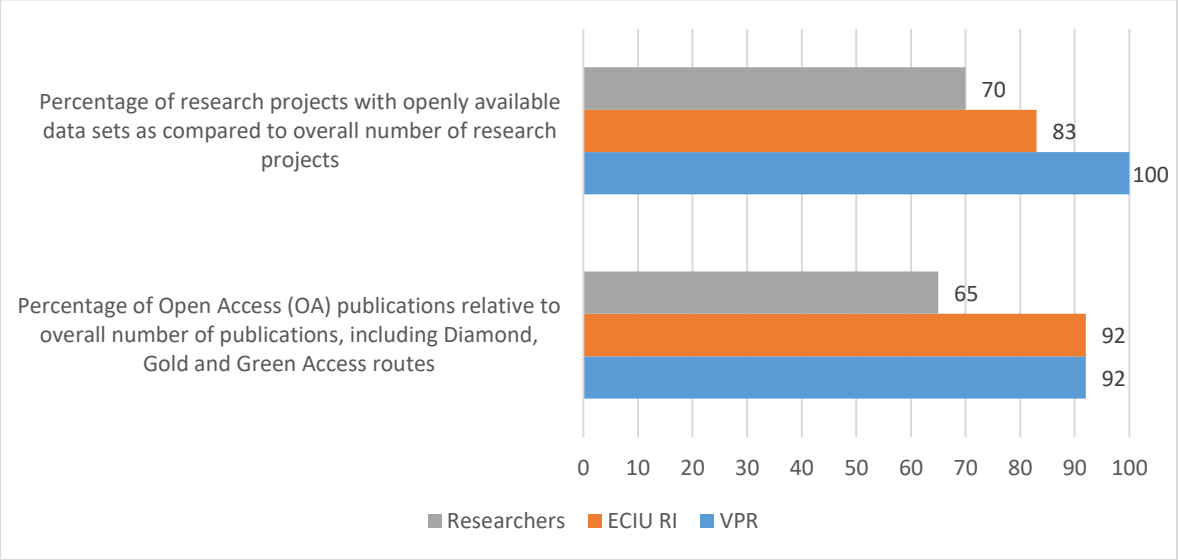


*Figure 7 Approval rates for Focus 2 metrics for each stakeholder group (%)*

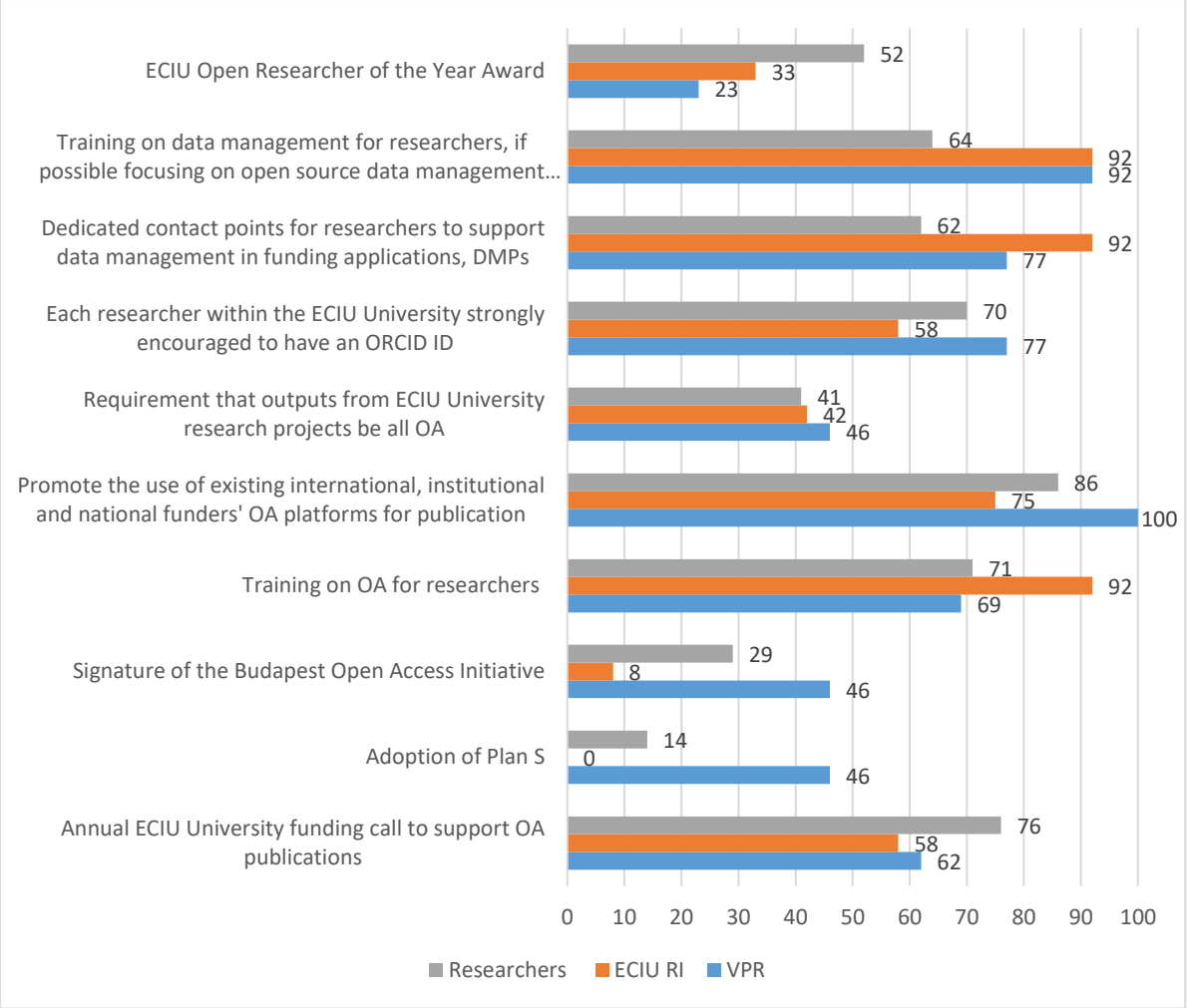


*Figure 8 Approval rates for Focus 2 incentives and supports for each stakeholder group (%)*

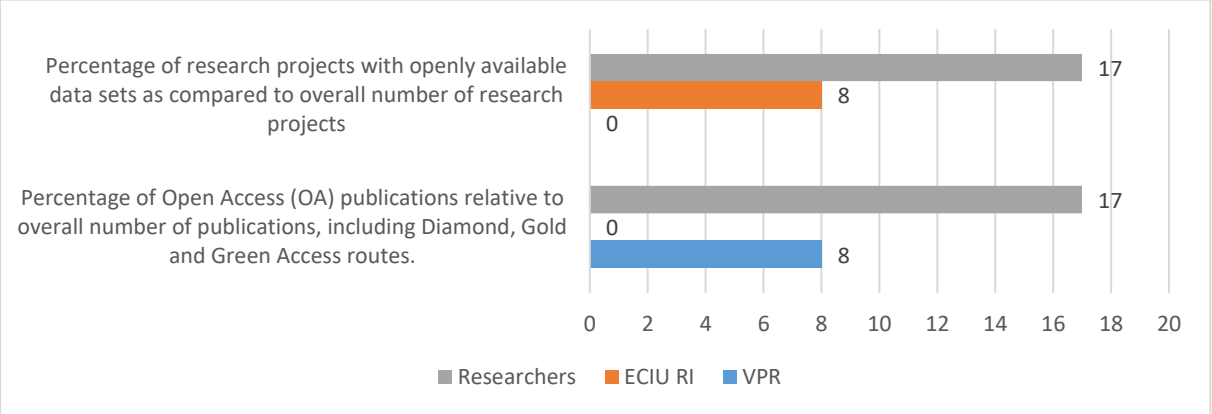


*Figure 9 Rejection rates for Focus 2 metrics for each stakeholder group (%)*

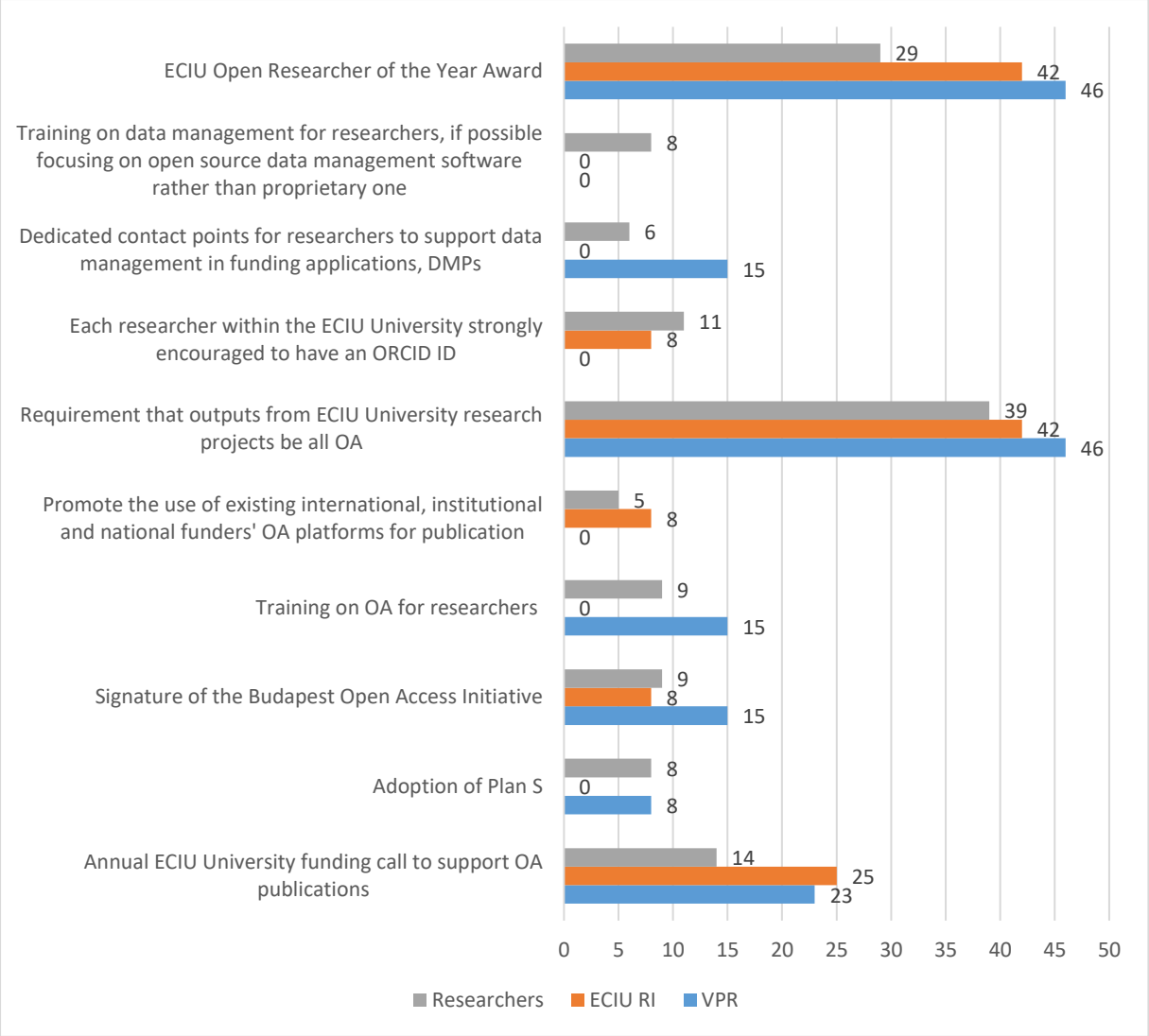


*Figure 10 Rejection rates for Focus 2 incentives and supports for each stakeholder group (%)*

# Focus 3: ECIU University Research should be communicated to all relevant stakeholders, within and outside of academia

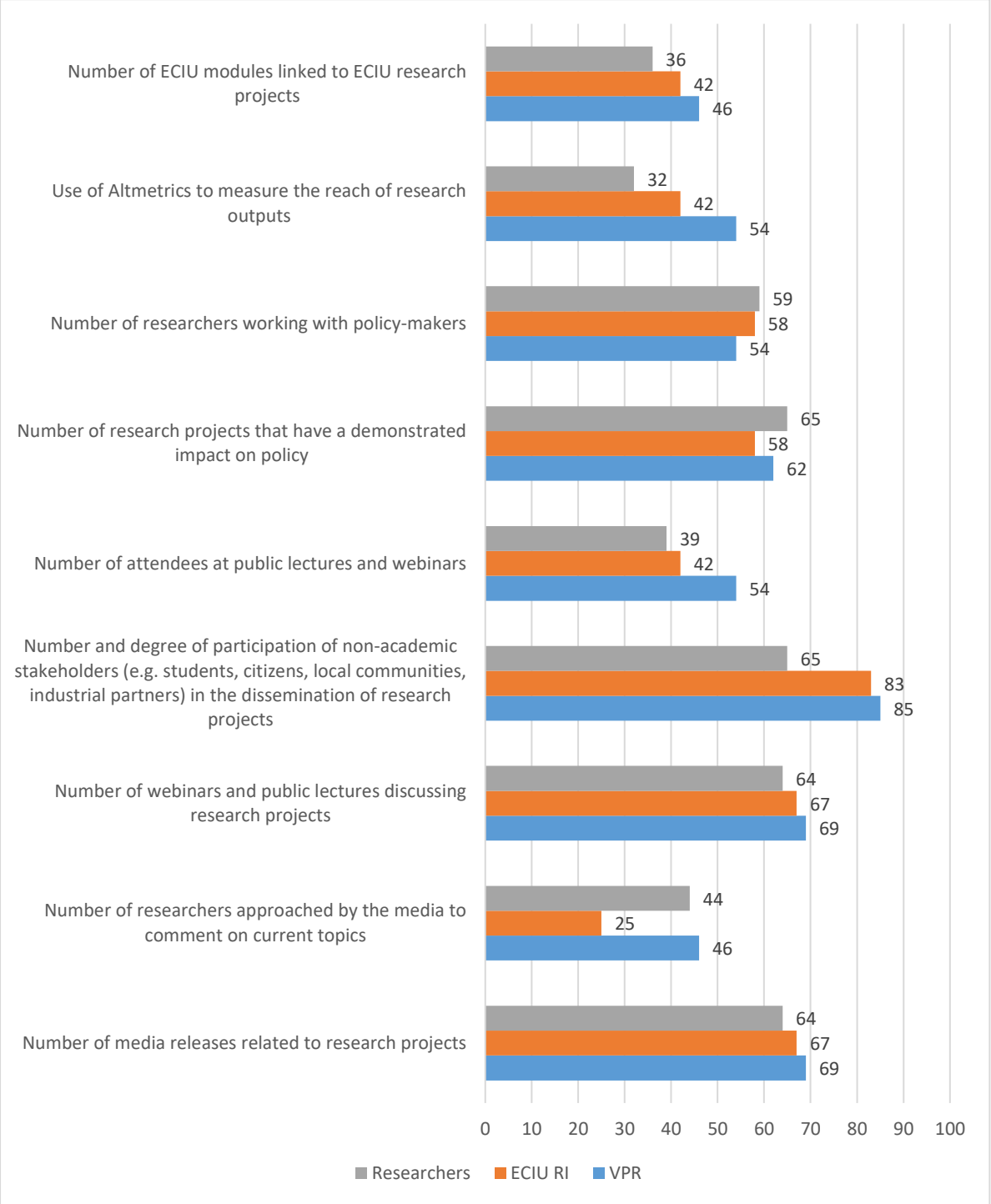


*Figure 11 Approval rates for Focus 3 metrics for each stakeholder group (%)*

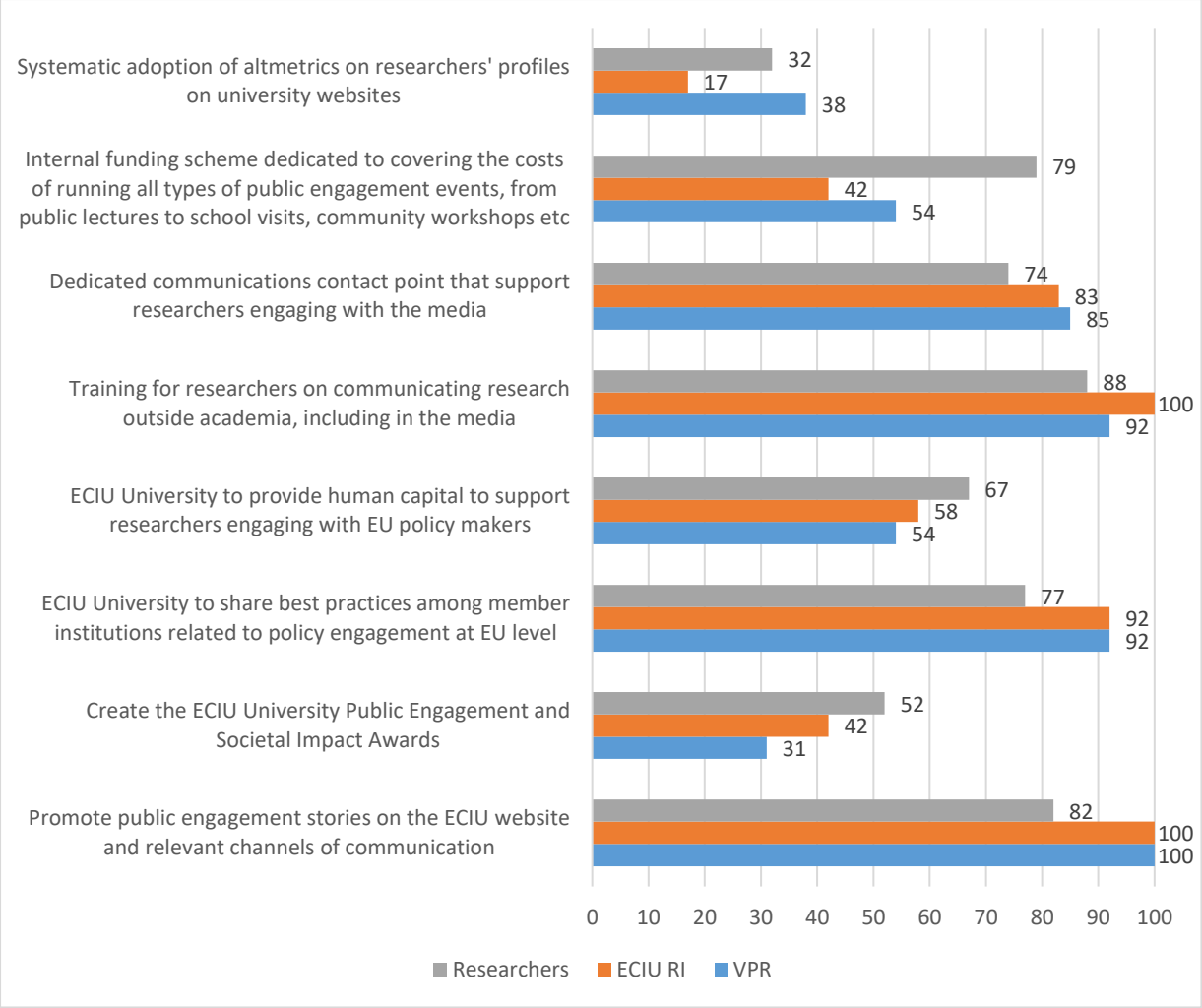


*Figure 12 Approval rates for Focus 3 incentives and supports for each stakeholder group (%)*

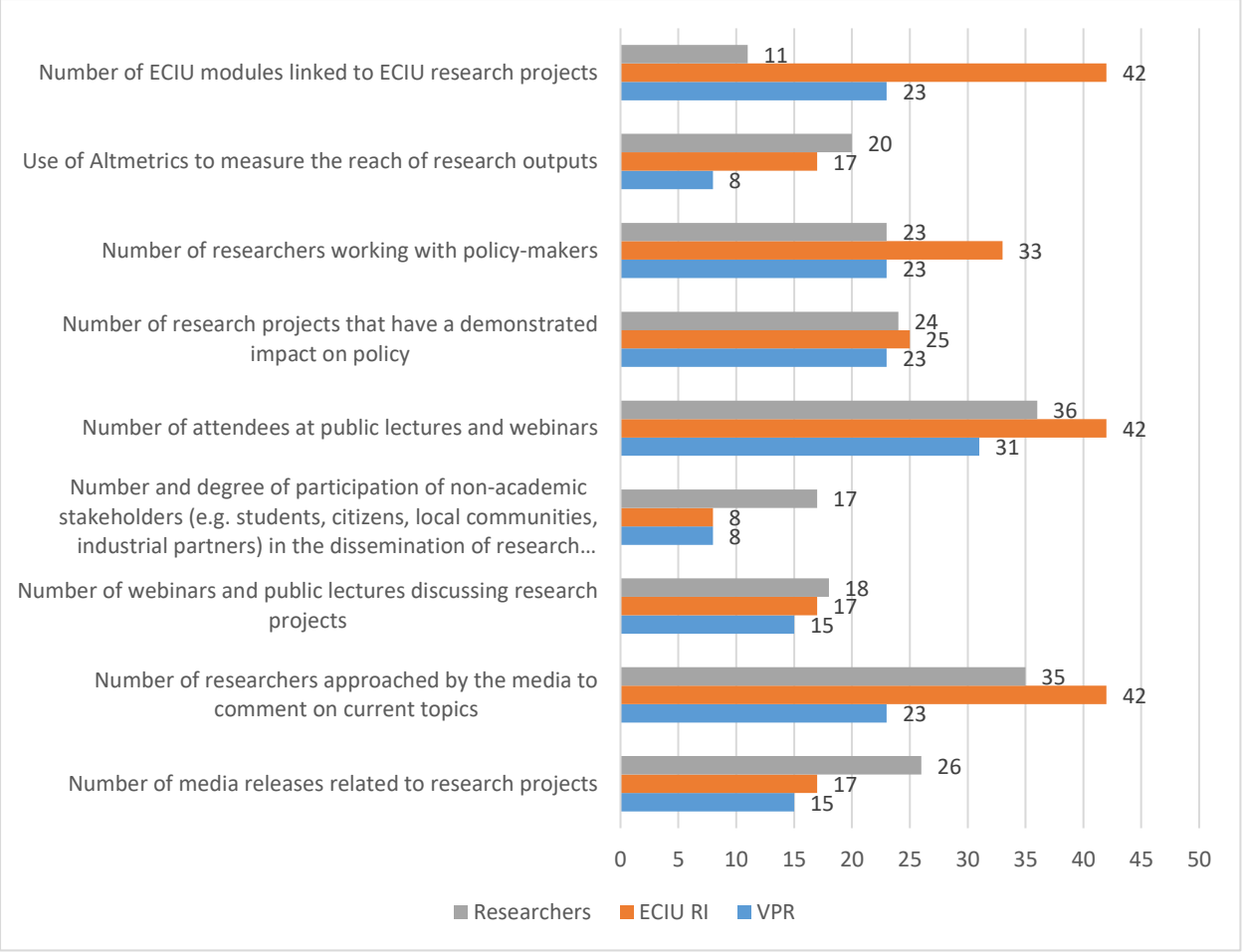


*Figure 13 Rejection rate for the Focus 3 metrics for each stakeholder group (%)*

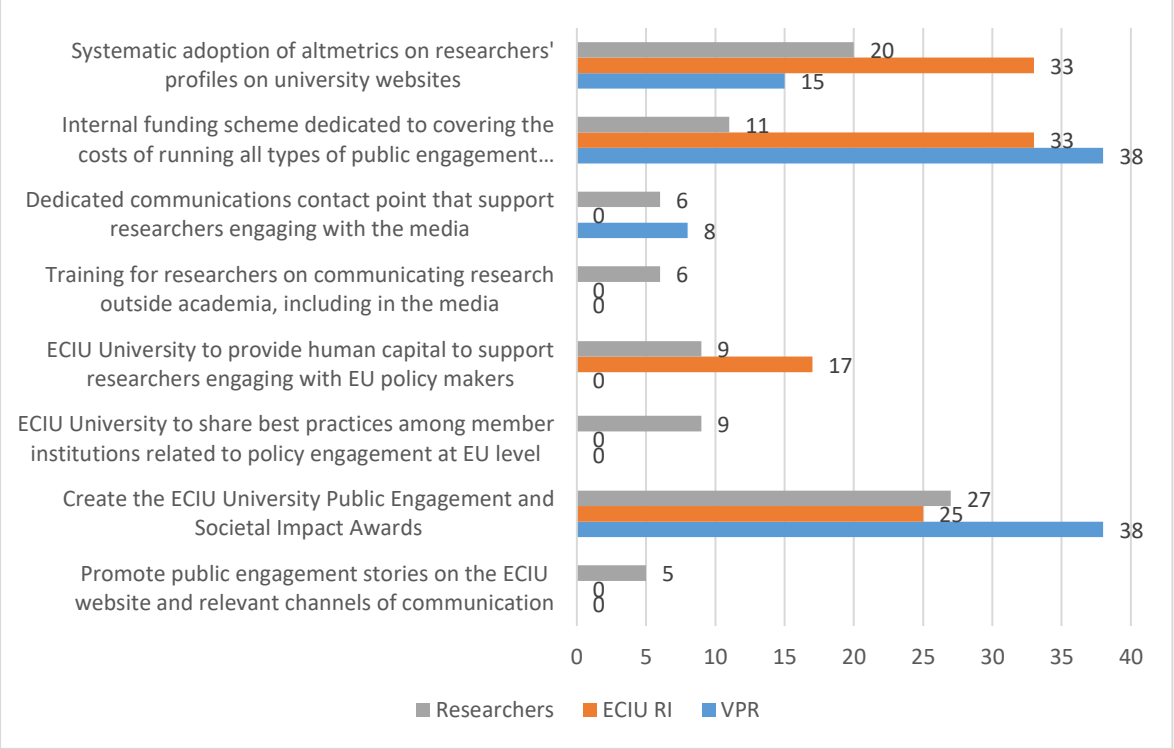


*Figure 14 Rejection rates for Focus 3 incentives and supports for each stakeholder group (%)*

# Focus 4: ECIU University Research should be co-created with relevant non-academic stakeholders

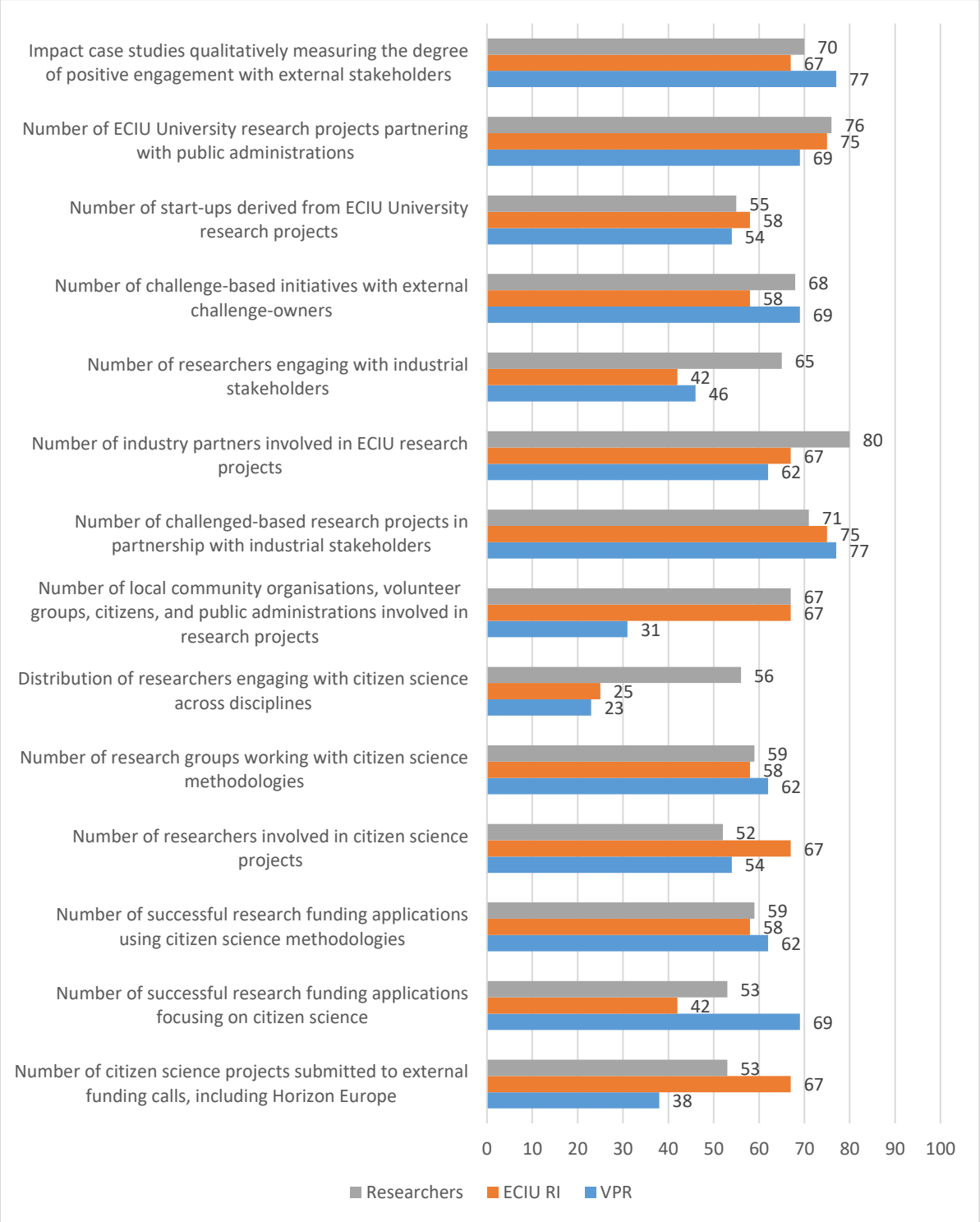


*Figure 15 Approval rates for Focus 4 metrics for each stakeholder group (%)*

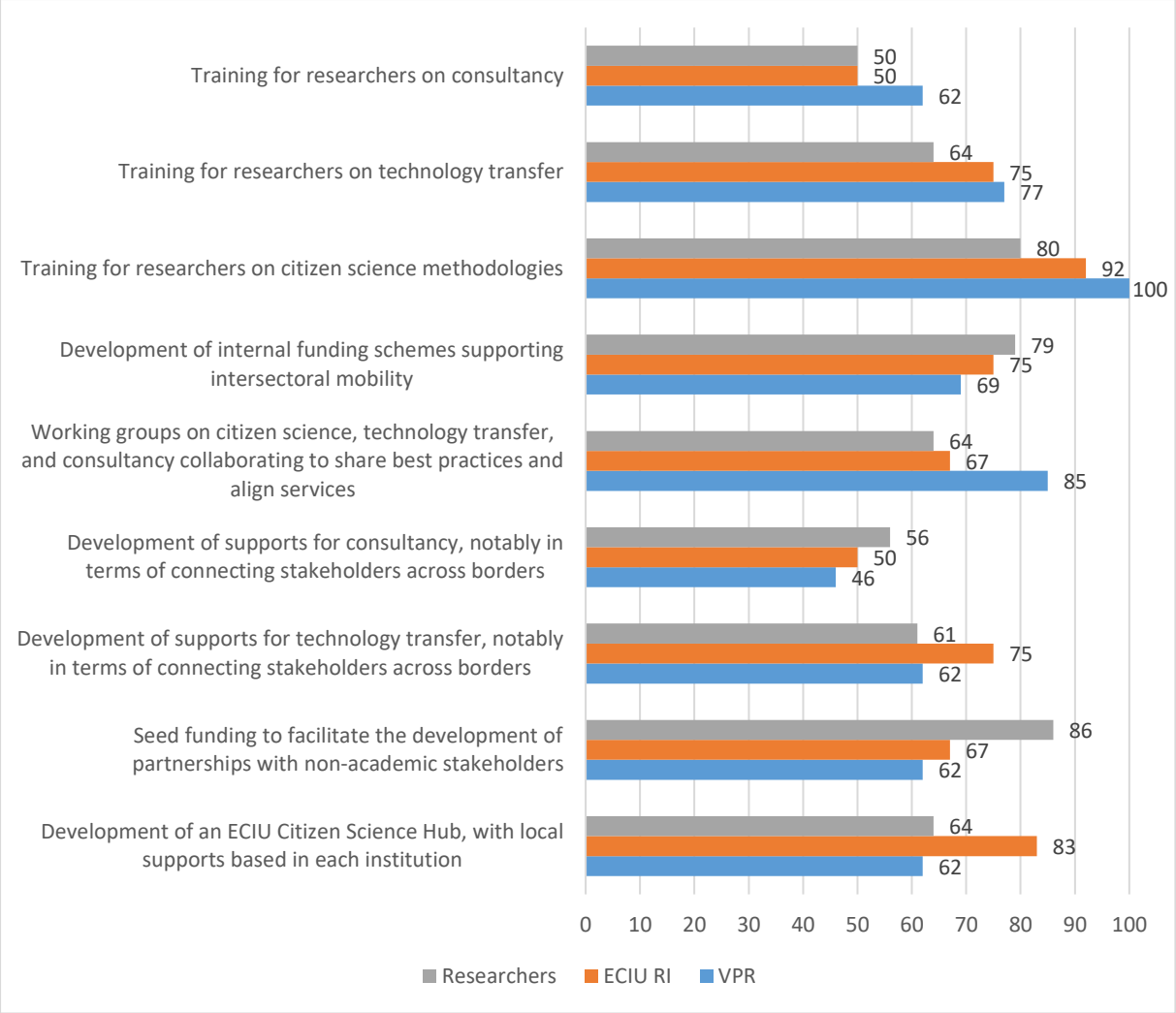


*Figure 16 Approval rates for Focus 4 incentives and supports for each stakeholder group (%)*

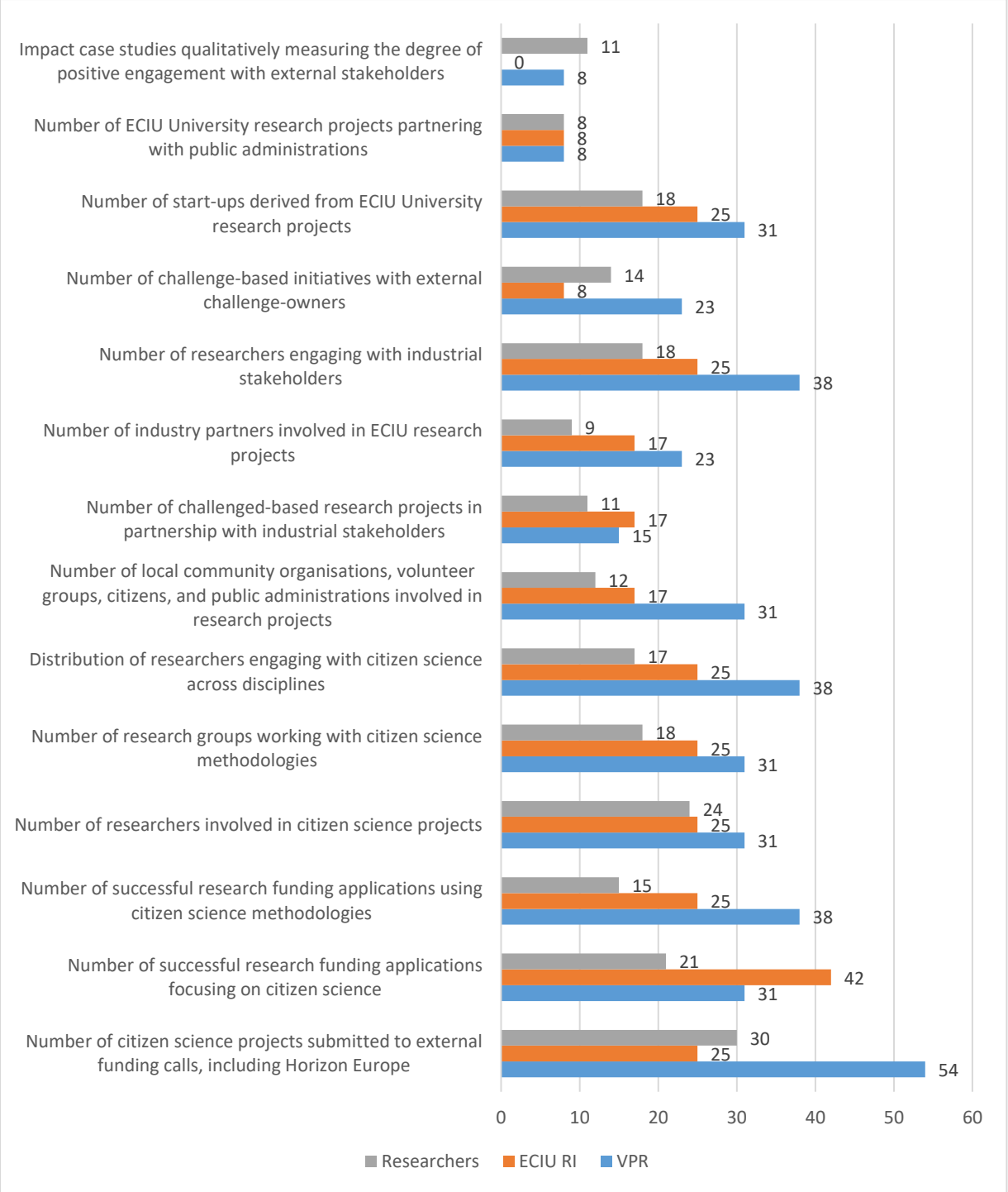


*Figure 17 Rejection rates for Focus 4 metrics for each stakeholder group (%)*

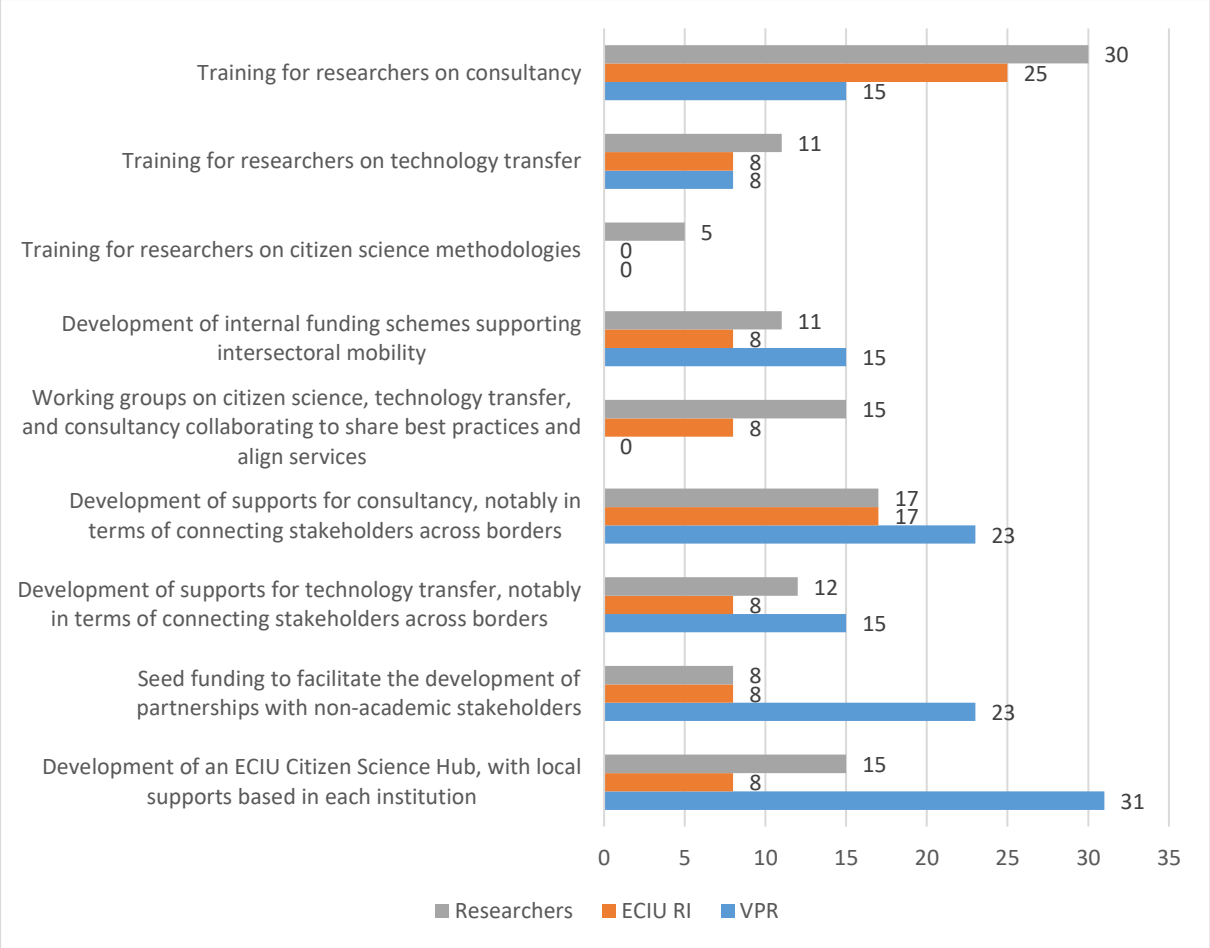


*Figure 18 Rejection rates for Focus 4 incentives and supports for each stakeholder group (%)*

# Focus 5: ECIU University should be a fair, equal, and attractive workplace for excellent researchers of all backgrounds

Should focus 5 be linked with specific metrics for ECIU University? If so, please specify how you would recommend we measure the success of focus 5.

| VPR Expert Group | ECIU RI Group | Researchers |
|---|---|---|
| Maybe | Yes. Implementation of HRS4R in all ECIU partners. | Track diversity metrics |
| Number of hired researchers, teachers and technicians by ECIU Universities from other Universities and from other Countries. | No opinion. | Yes, this is important |

| | | |
|---|---|---|
| Perhaps the only way to do this is ask researchers about the attractiveness of working within ECIU. With a baseline, one should be able to measure differences over the years. | Annual census of women in senior university positions across ECIU, same with other socio-economic categories of interest. | Gender, race, age, working experience outside academia |
| Number of institutions with Diversity and Inclusion implementation plans. | I agree Focus 5 should be linked with specific metrics for ECIU University, and a specific evaluation approach on workplace and working conditions should be studied, for example by mean of simple questionnaires where an adequate number of ECIU network researchers shall participate, in order to have a sound statistical outcome. Even better if this approach could then spread also outside the ECIU community, so to be able to compare data with non-EICU researchers and research communities (for example by lobbying towards EU as in point 4 below). | Metrics are important in terms of measuring this, but so is engagement with the workforce to understand whether the appropriate culture is in place. |
| Yes. Since sensitive data are involved, a thorough consideration of justifiable methods is needed. | Number of external researchers recruited by ECIU institutions and affiliated to VRI. | Very important but not easy to measure. Would it possible to measure this through employee satisfaction that are being done anyway? |
| Enquête with questionnaire to all participating researchers. This does unfortunately enough not address the issue of researcher which for some reason are excluded. | In ECIU University streamline and renew current recruitment and selection procedures taking into consideration latest advancements and pilots (see e.g. Dutch NWO and narrative CV without traditional metrics) to increase equality. | Number of researchers from abroad. |
| Degree of internationality in recruited new positions. | Sign a specific policy document that supports Focus 5. | No |
| The increase of OA papers, with integral text. | Number of institutions signing ALLEA code and HRS4R. | Yes; from annual surveys to researchers on these issues so |

| | | |
|---|---|---|
| | | they can express their opinions on such subjective matters. |
| No | Number of recruited women, disabled persons, international researchers, etc... + take into account recruited researchers' h-index? | Prestige and to host the best faculty. |
| No | Multidisciplinary and multi-institutional collaboration between different researchers or different institutions. | Overall engagement for each researcher. |
| Sign a specific policy document that supports Focus 5. | Define what to monitor e.g. recruitment, employment status and tenure, promotion, development, participation in relevant training, etc. and include all backgrounds such as gender, etc. Define focus group. Set goals. Review regularly and take actions when needed. | We should have a balance of at least gender-related positions, including students involved in the projects. Besides gender, I would suggest to try to develop groups with international character. |
| Number of institutions signing ALLEA code and HRS4R. | One can't argue with the aspiration. The question is how to assess. | We need more quantitative indicators able to assess the quality of the impacts and outputs. |
| N/A | N/A | Open to all kind of efforts and disciplines. |

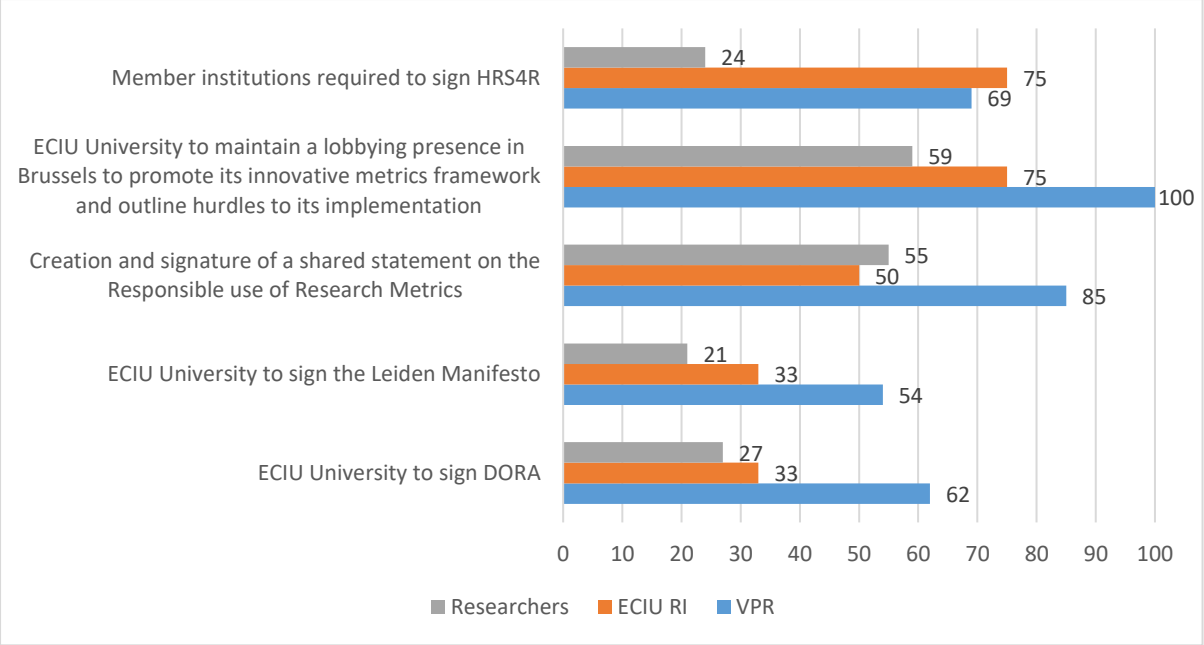


*Figure 19 Approval rates for Focus 5 incentives and supports for each stakeholder group (%)*

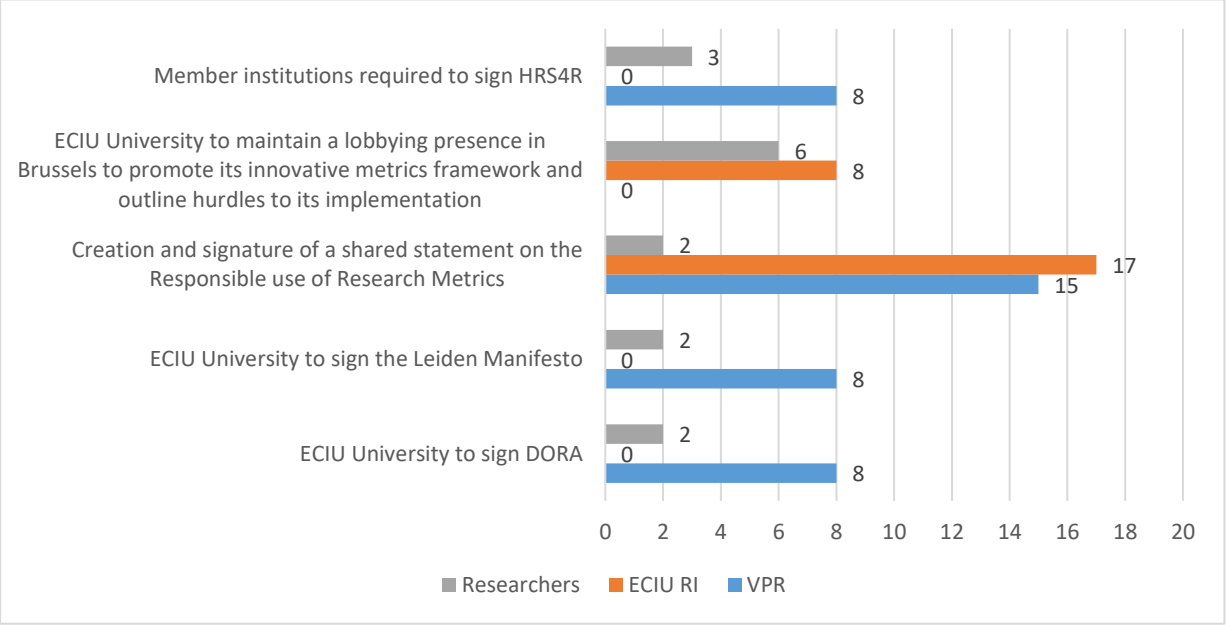


*Figure 20 Rejection rates for Focus 5 incentives and supports for each stakeholder group (%)*

# Focus 6: Researchers from all ECIU member institutions should actively participate in ECIU University research

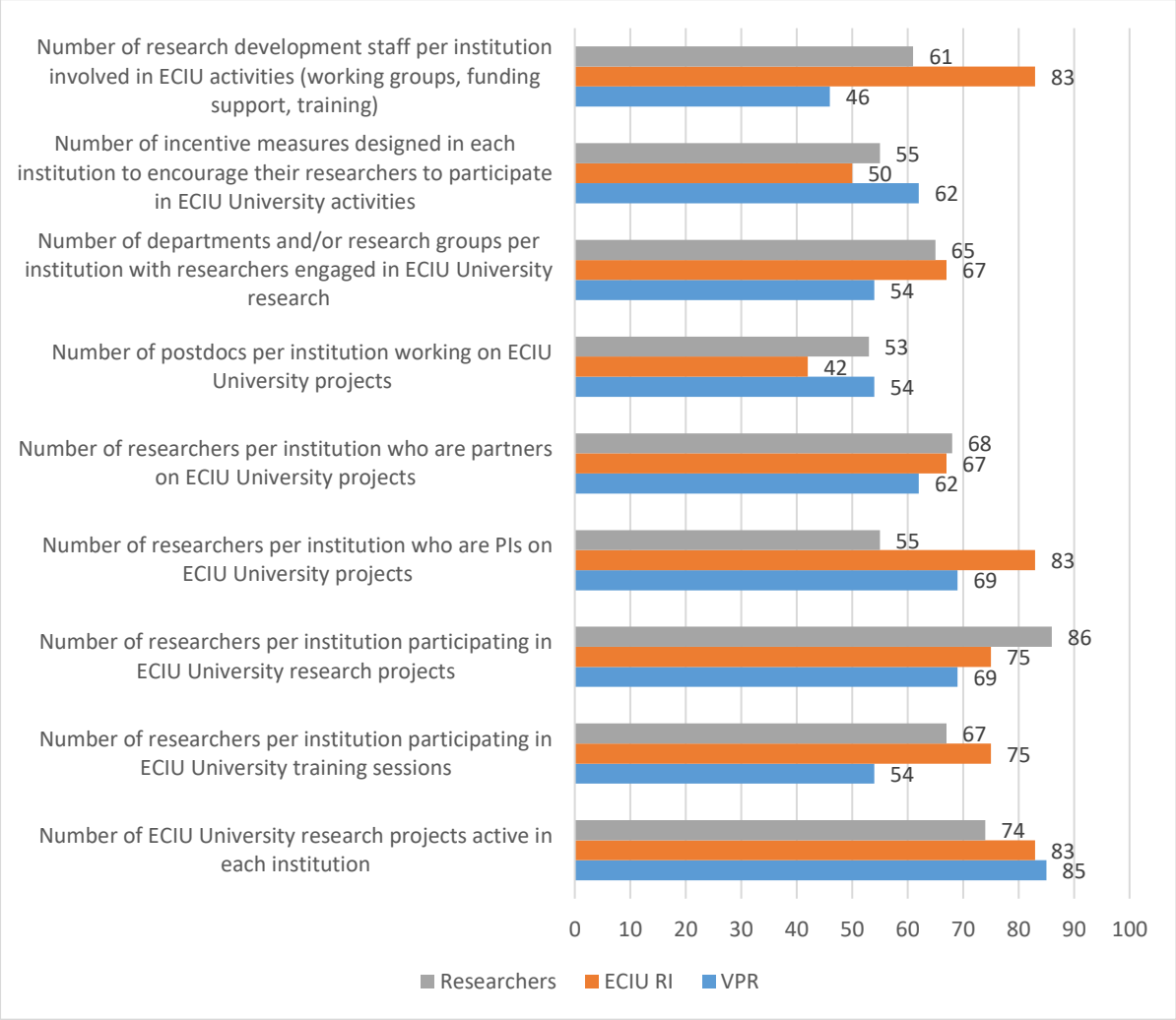


*Figure 21 Approval rates for Focus 6 metrics for each stakeholder group (%)*

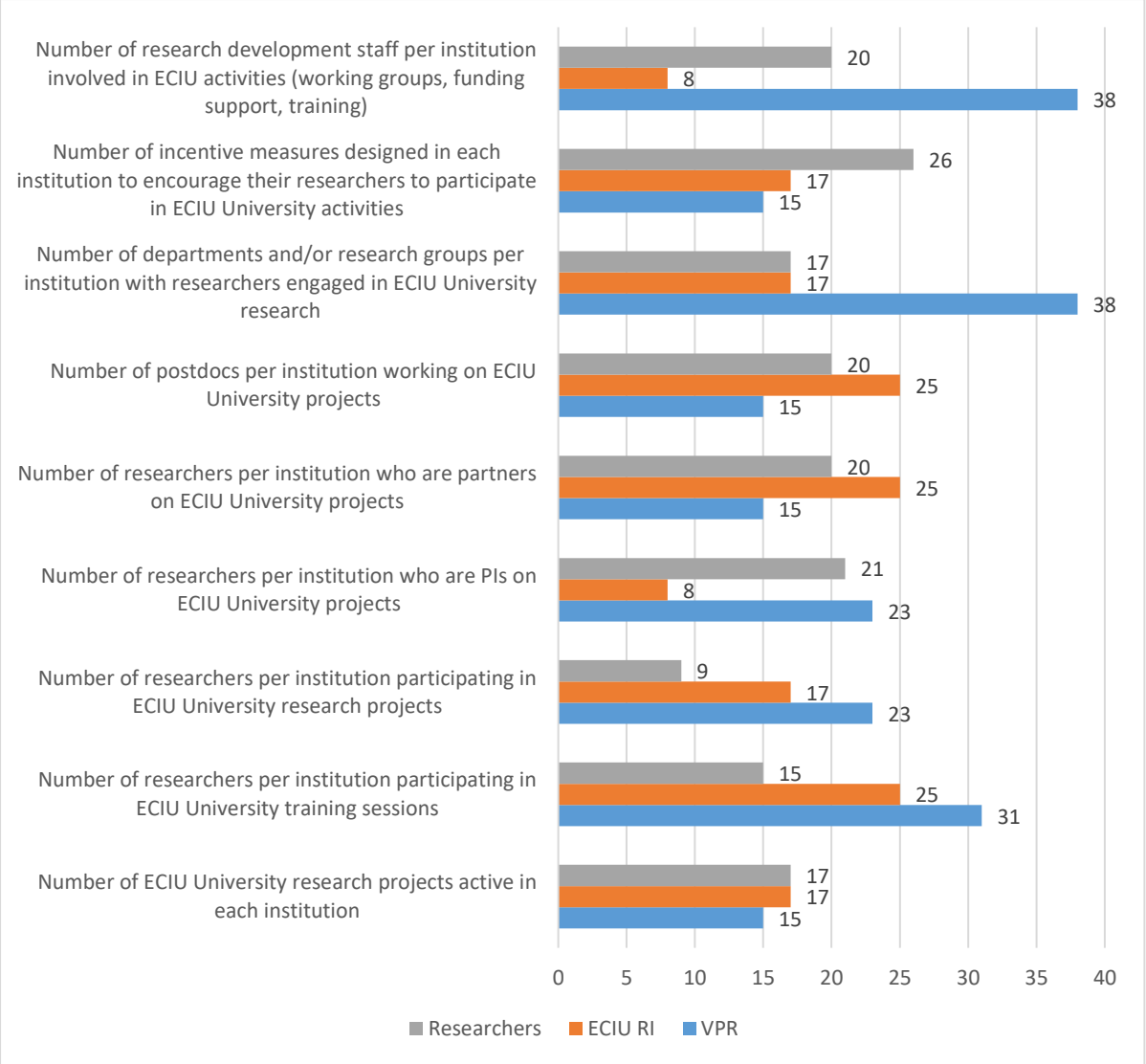


*Figure 22 Rejection rates to Focus 6 metrics for each stakeholder group (%)*

Which incentive measures would you recommend in relation to Focus 6?

| **VPR Expert Group (free box)** | **ECIU RI Group (free box)** | **Researchers (poll %yes)** |
|---|---|---|
| Number of ECIU institution who are partners on ECIU University projects. | Mobility Fund, Seed money, ECIU internal applications to grants. | Information sessions for the research community to raise awareness of the ECIU University project: 86%. |
| N/A | The researchers should see that they can get reward for their efforts. One idea could be ECIU badges, or prices that are awarded each year. E.g. best citizen science project. | ECIU Researcher Mobility Fund supporting short visits to other ECIU member institution: 88%. |

| | | |
|---|---|---|
| Active support for EU projects involving multiple ECIU members and external stakeholders. | Incentives to encourage collaboration with other ECIU colleagues, travel grants etc. | Seed funding to explore networking potential across ECIU member institutions: 92%. |
| Number of ECIU projects active across the network at any one time. | "Number of researchers per institution participating in ECIU University research projects" and "Number of researchers per institution who are partners on ECIU University projects" appear the same as they are formulated.<br>The "Number of departments and/or research groups per institution with researchers engaged in ECIU University research" may depend on the "granularity" of the member University; maybe the number of ECIU University projects where more Departments from the same member institution are involved would be a better measure. | Inclusion of participation in ECIU research project in career progression criteria: 53%. |
| This is an example of an area where too strong incentives may lead to nominal participation. Emphasis should be on real collaboration, adding real value. | The promotion of thematic info days for ECIU researchers (no focus on SDG 11). | Brokerage event organised by ECIU member institutions: 56%. |
| Difficult | Offering of free-of-charge services for project development for consortia incl. at least three ECIU members. | Training for researchers on interdisciplinary research: 82%. |
| Devoted part of overheads for funded collaborated ECIU projects. | Same comment as before on just using Numbers. We should be using Outcomes. | Training for researchers on how to apply to Horizon Europe funding: 85%. |
| No specific suggestions | Shared research agenda. | N/A |

| | | |
|---|---|---|
| No idea | - Focus 6 metrics should be incorporated into each institution's research strategy;<br>- ECIU coordinated communication to researchers to encourage participation in ECIU activities;<br>- support for researchers and staff's mobility to other ECIU partners to collaborate | N/A |
| 'Number of' should be substituted by 'fraction of'. Answers are given under the assumption of that substitution. | Joint calls for research projects. | N/A |
| No | Number of common research projects involving ECIU member institutions. | N/A |
| Same comment as before on just using Numbers. We should be using Outcomes. | The data may be interesting, but there is a cost in collecting all of this. Researchers should be encouraged to collaborate with those that are the best to advance their research. | N/A |
| Shared research agenda. | No answer provided | N/A |

# Appendix IV Results of the initial consultation per stakeholder

NB: Full anonymised data for the consultation can be provided upon request to ECIU University/SMART-ER project team members for further analysis during the lifetime of the project.

## Results of the consultation for the VPR Expert Group

### Focus 1: ECIU University Research should be relevant to challenges encountered by society

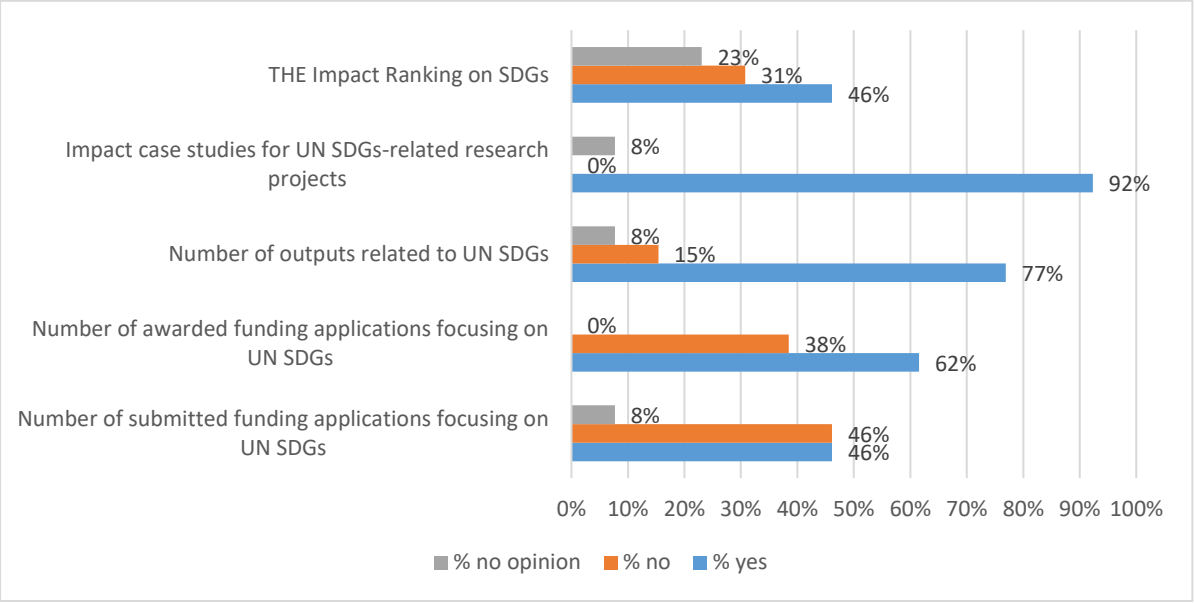


*Figure 23 Selection of the proposed metrics by the VPR Expert Group for Focus 1*

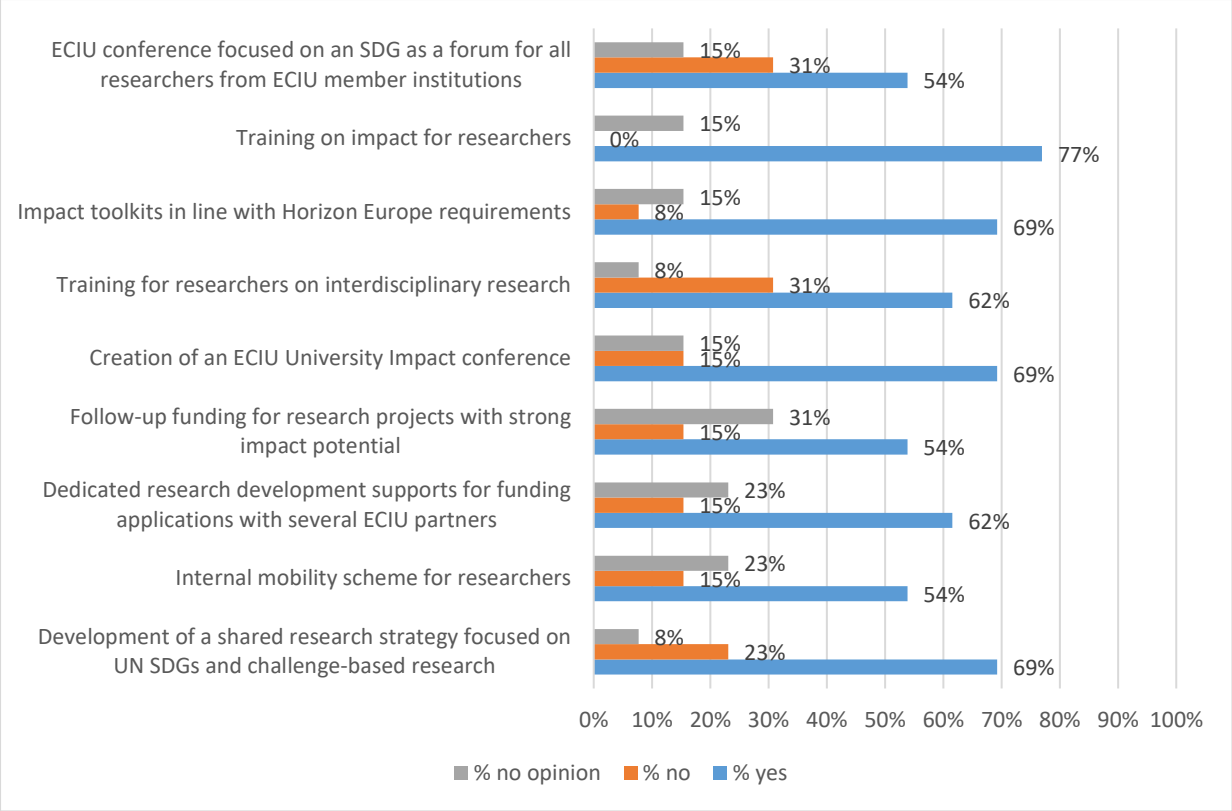


*Figure 24 Selection of the proposed incentives and supports by the VPR Expert Group for Focus 1*

## Focus 2: ECIU University Research should be accessible and transparent

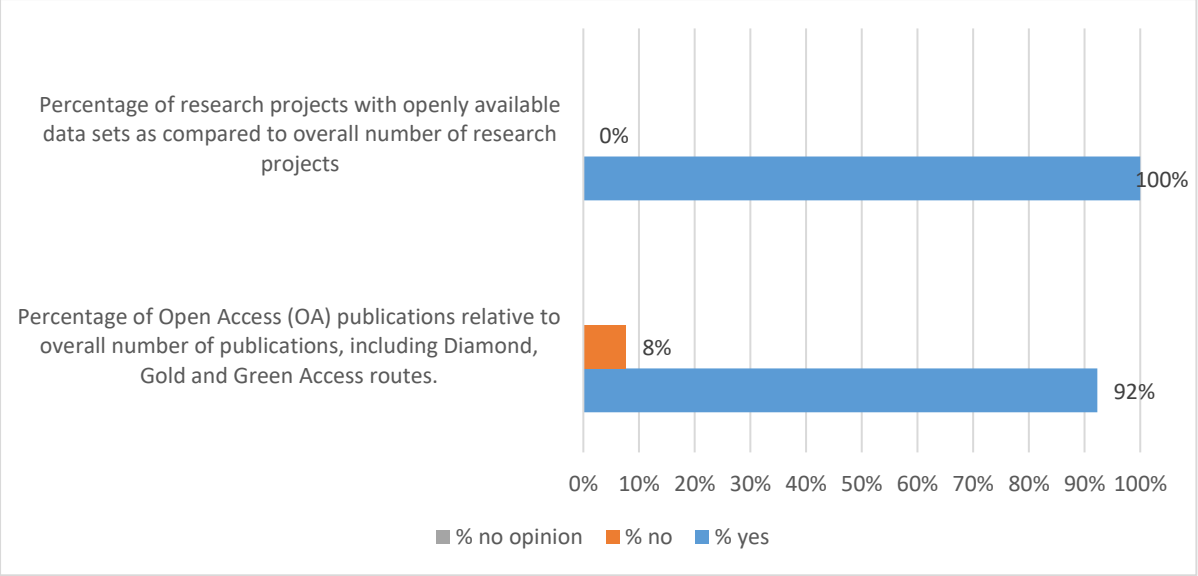


*Figure 25 Selection of the proposed metrics by the VPR Expert Group for Focus 2*

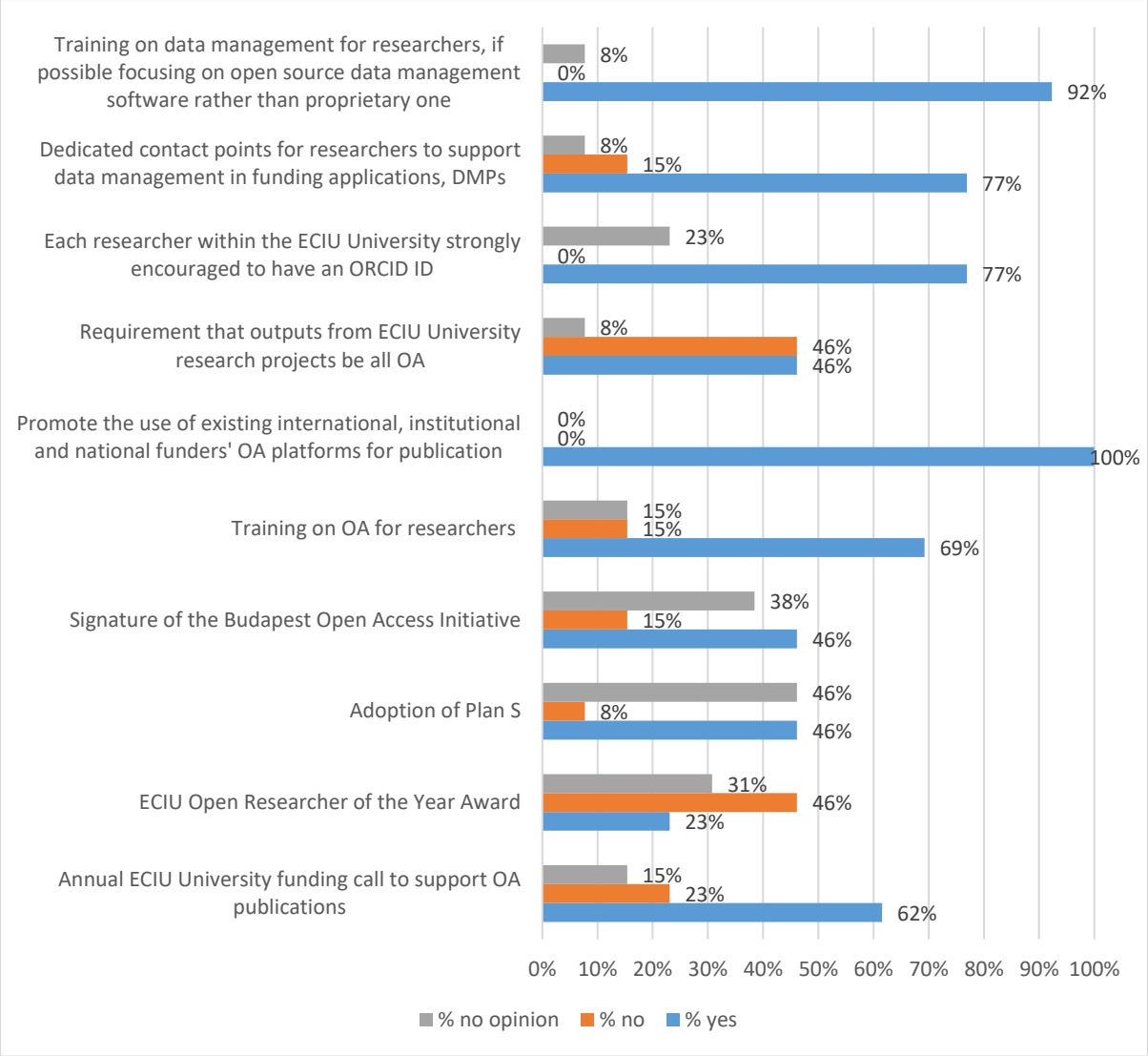


*Figure 26 Selection of the proposed incentives and supports by the VPR Expert Group for Focus 1*

## Focus 3: Research produced within the ECIU University should be communicated to all relevant stakeholders, within and outside of academia

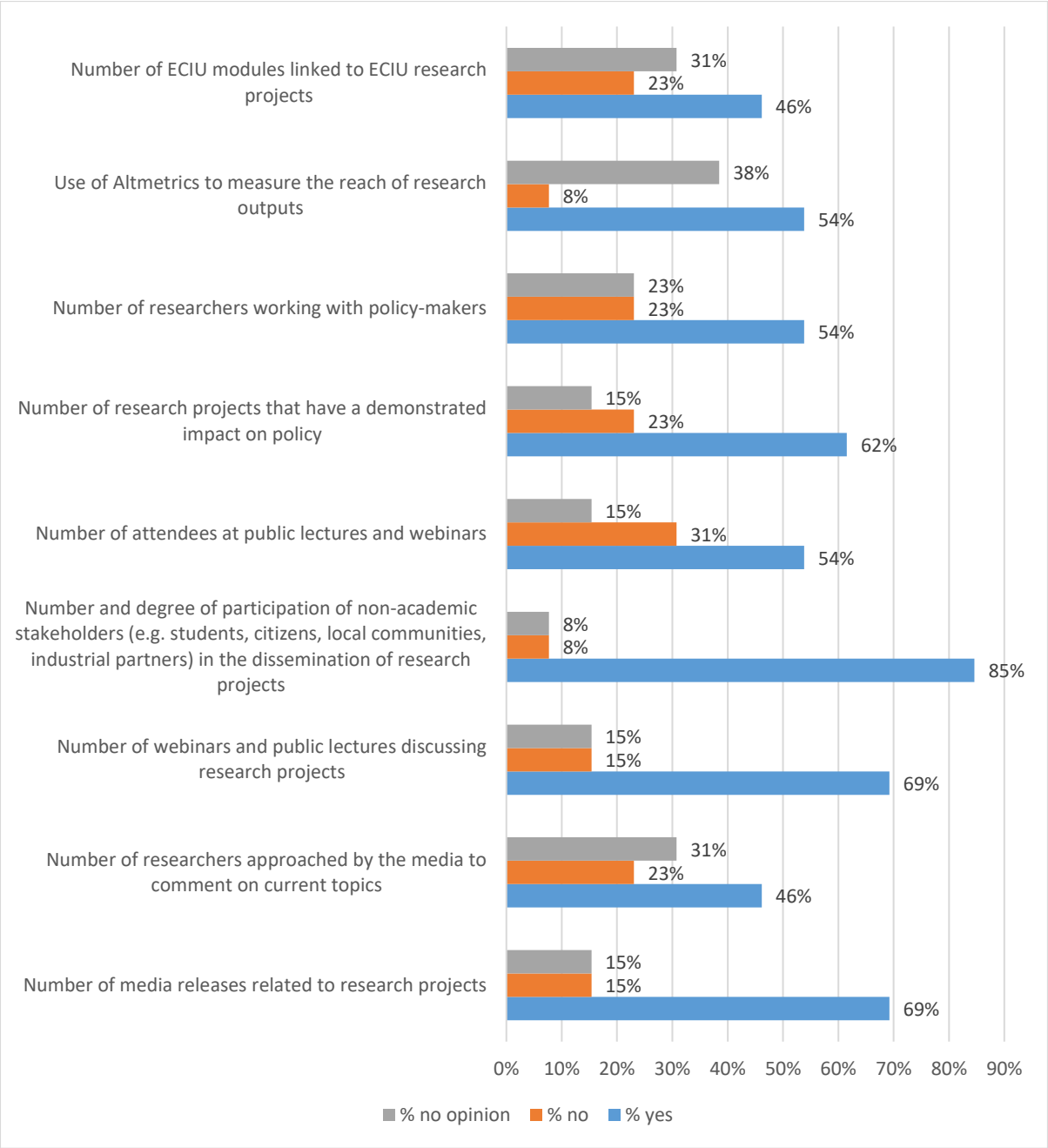


*Figure 27 Selection of the proposed metrics by the VPR Expert Group for Focus 3*

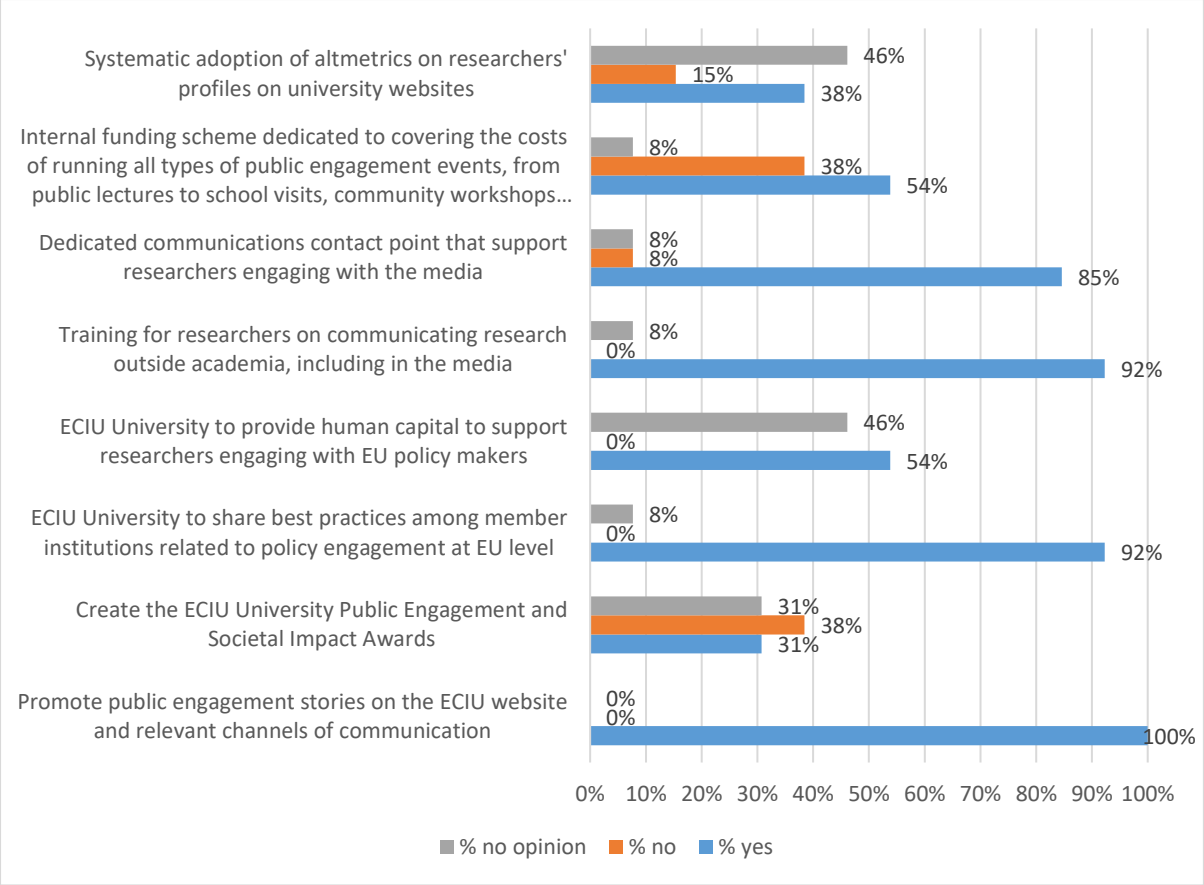


*Figure 28 Selection of the proposed incentives and supports by the VPR Expert Group for Focus 3*

## Focus 4: ECIU University Research should be co-created with relevant non-academic stakeholders

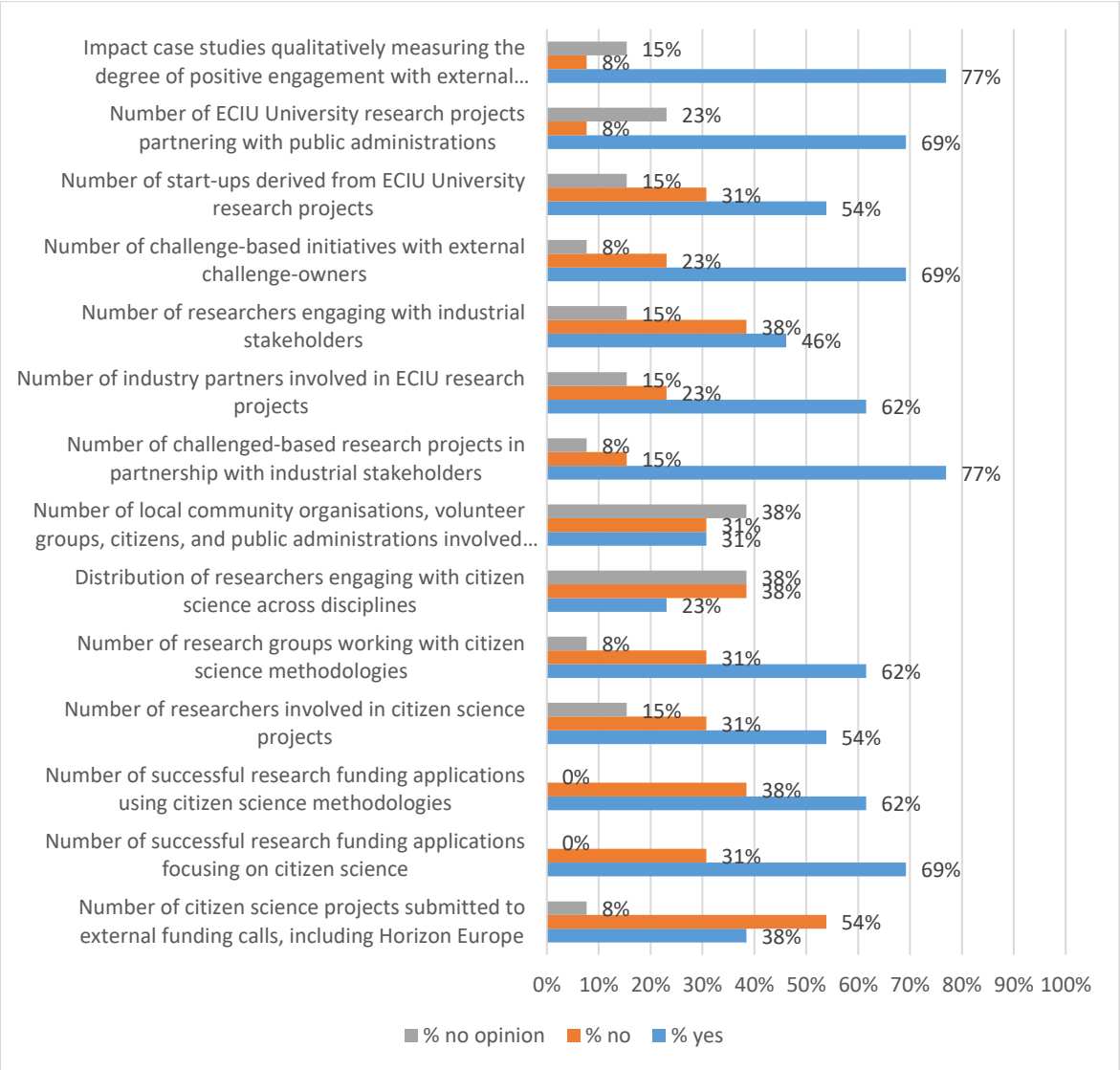


*Figure 29 Selection of the proposed metrics by the VPR Expert Group for Focus 4*

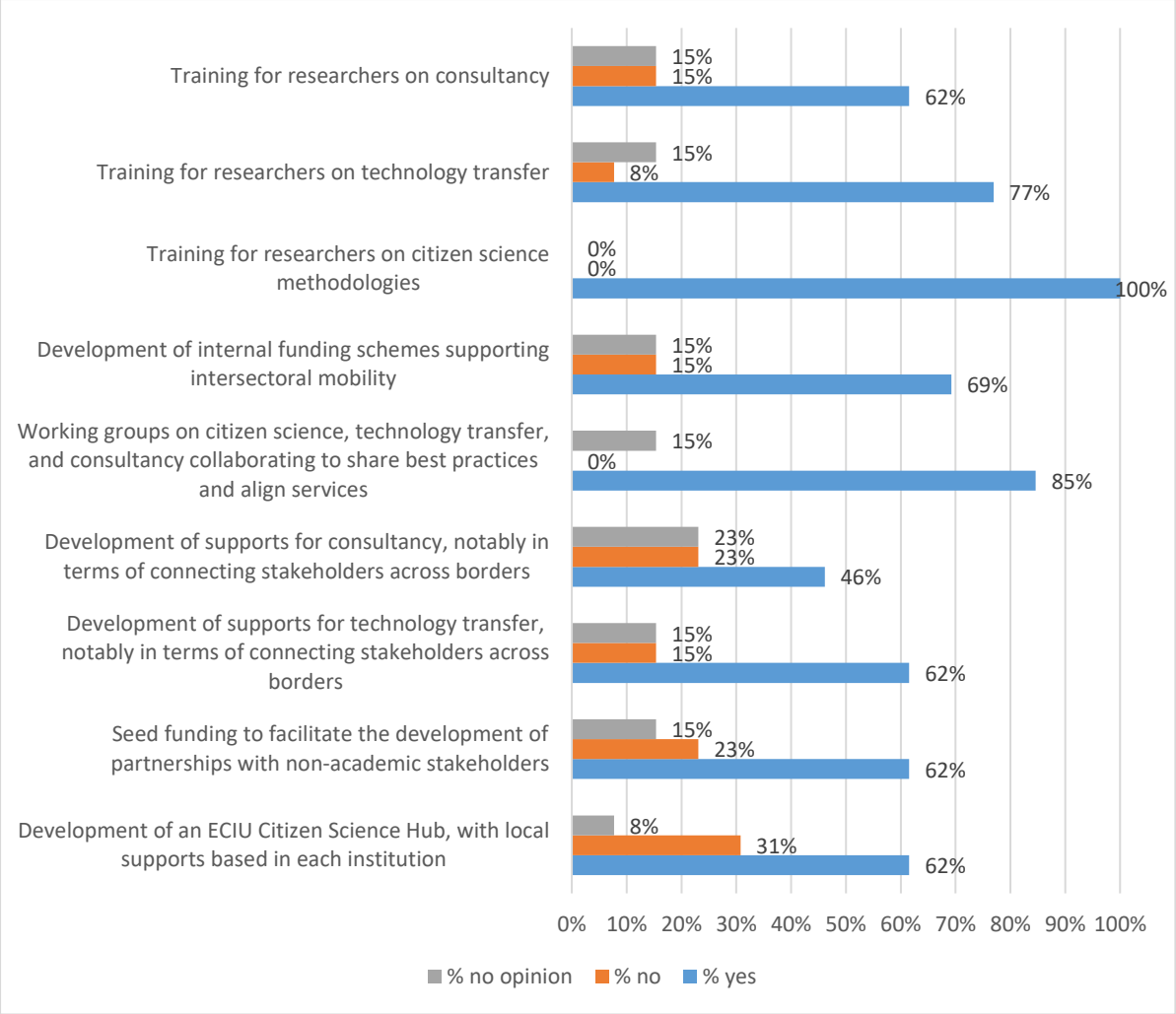


*Figure 30 Selection of the proposed incentives and supports by the VPR Expert Group for Focus 4*

## Focus 5: ECIU University should be a fair, equal, and attractive workplace for excellent researchers of all backgrounds

**Should focus 5 be linked with specific metrics for ECIU University? If so, please specify how you would recommend we measure the success of focus 5. Responses:**

- Maybe
- Number of hired researchers, teachers and technicians by ECIU Universities from other Universities and from other Countries.
- Perhaps the only way to do this is ask researchers about the attractiveness of working within ECIU. With a baseline, one should be able to measure differences over the years.
- Number of institutions with Diversity and Inclusion implementation plans.
- Yes. Since sensitive data are involved, a thorough consideration of justifiable methods is needed.
- Enquête with questionnaire to all participating researchers. This does unfortunately enough not address the issue of researcher which for some reason are excluded.
- Degree of internationality in recruited new positions.
- No specific suggestions
- The increase of OA papers, with integral text.

- No
- No
- Sign a specific policy document that supports Focus 5.
- Number of institutions signing ALLEA  code and HRS4R.

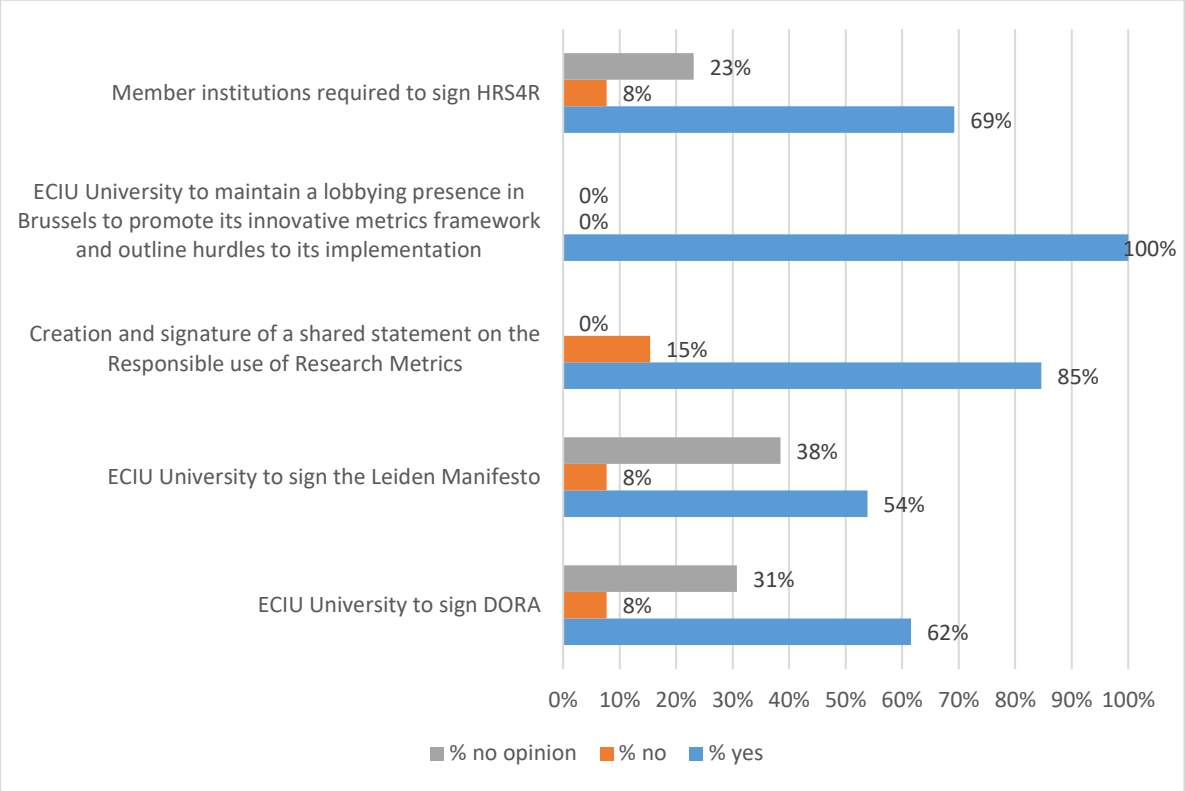


*Figure 31 Selection of the proposed incentives and supports by the VPR Expert Group for Focus 5*

## Focus 6: ECIU Member institutions should actively participate in ECIU University research

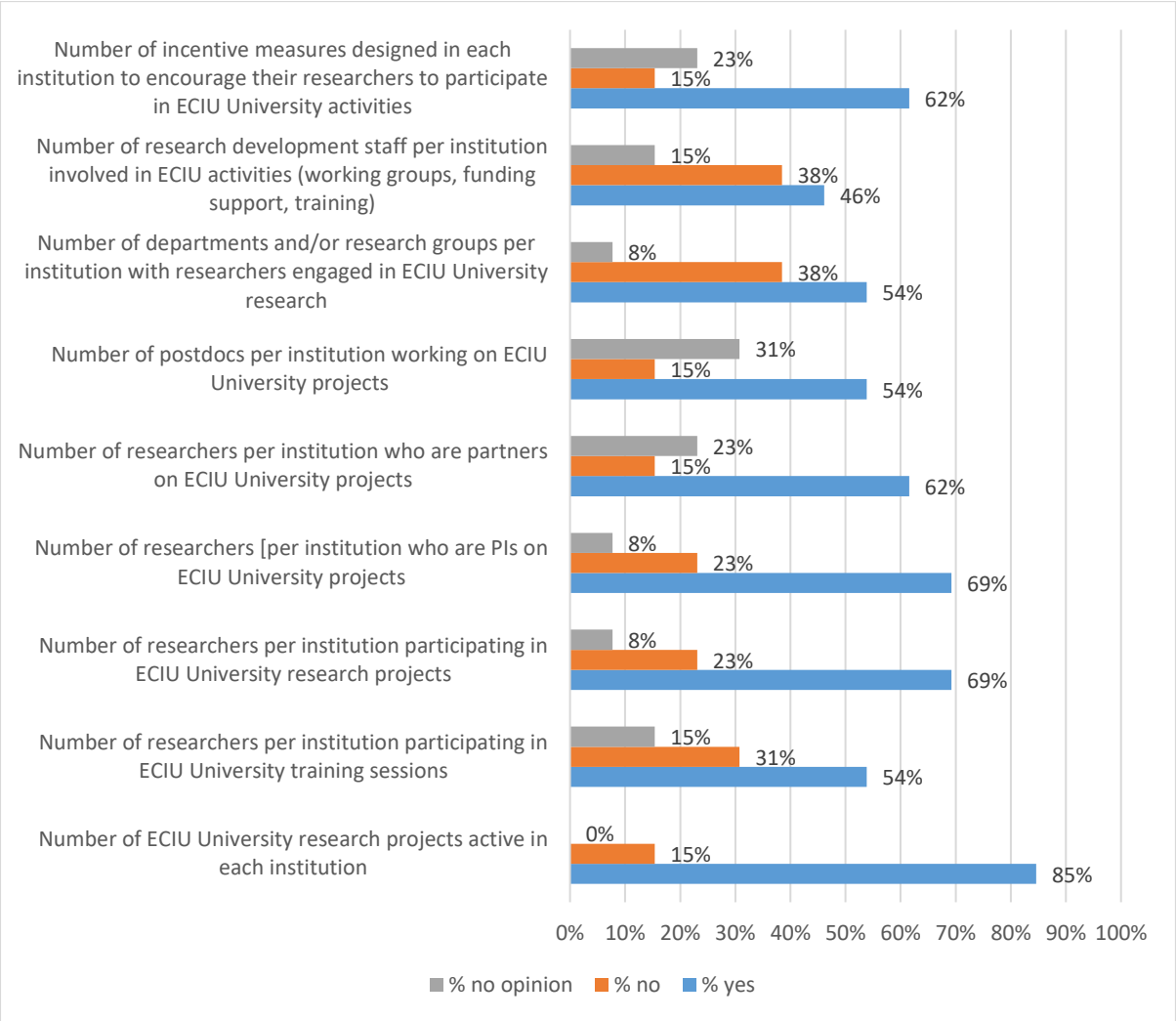


*Figure 32 Selection of the proposed metrics by the VPR Expert Group for Focus 6*

**Which incentive measures would you recommend in relation to Focus 6? Responses:**

- Number of ECIU institution who are partners on ECIU University projects.
- N/A
- Active support for EU projects involving multiple ECIU members and external stakeholders.
- Number of ECIU projects active across the network at any one time.
- This is an example of an area where too strong incentives may lead to nominal participation. Emphasis should be on real collaboration, adding real value.
- Difficult
- Devoted part of overheads for funded collaborated ECIU projects.
- No specific suggestions.
- No idea
- 'Number of' should be substituted by 'fraction of'. Answers are given under the assumption of that substitution.
- No

- Same comment as before on just using Numbers. We should be using Outcomes.
- Shared research agenda

# Results of the consultation for the ECIU R&I Group

## Focus 1: ECIU University Research should be relevant to challenges encountered by society

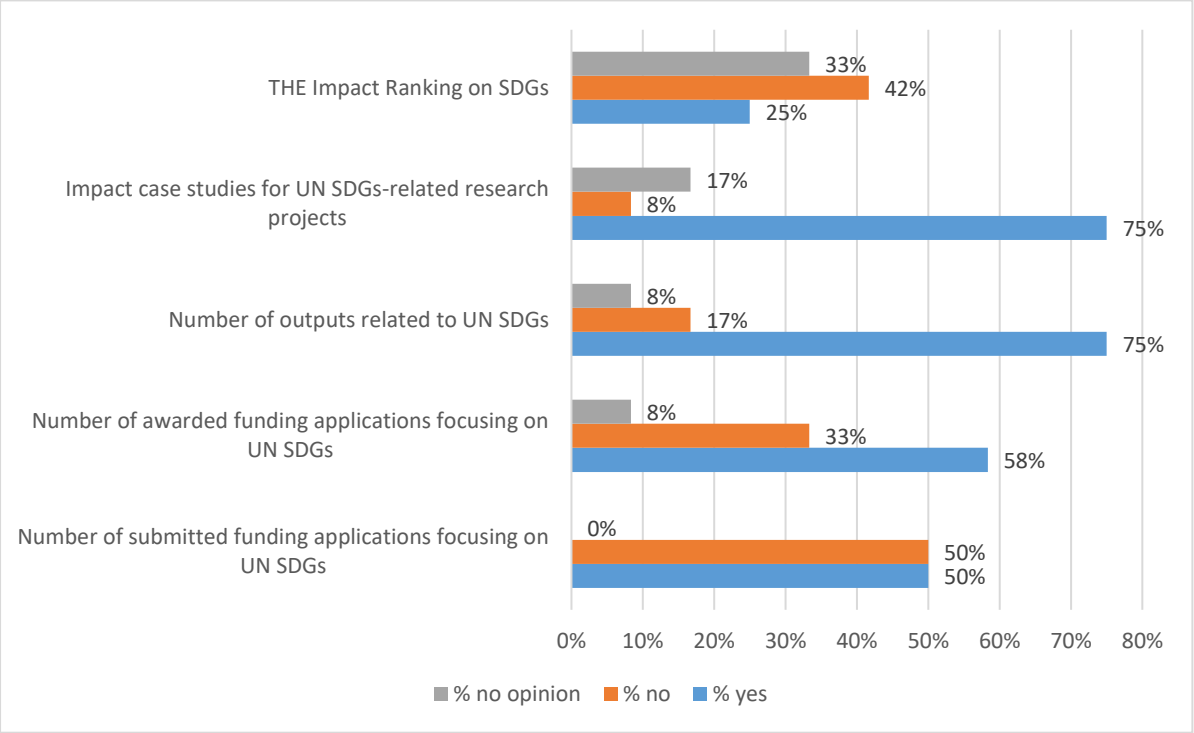


*Figure 33 Selection of the proposed metrics by the ECIU R&I Group for Focus 1*

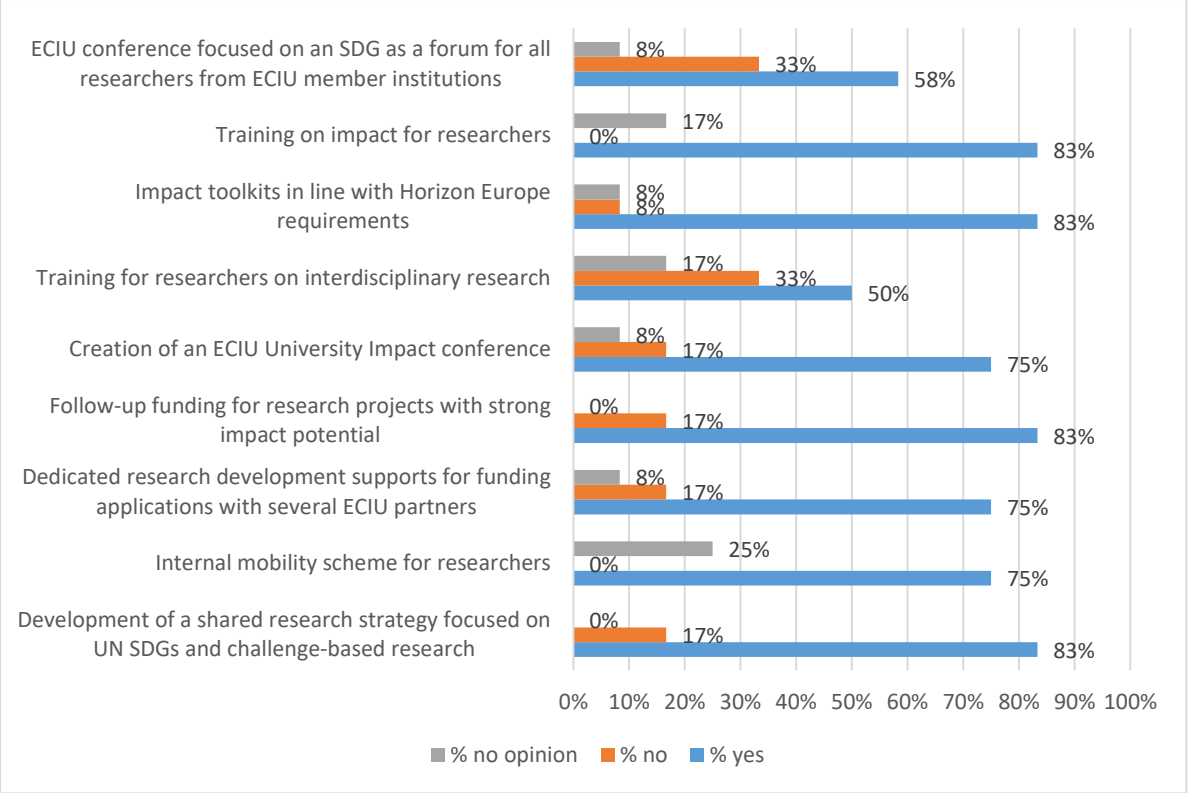


*Figure 34 Selection of the proposed incentives and supports by the ECIU R&I Group for Focus 1*

## Focus 2: ECIU University Research should be accessible and transparent

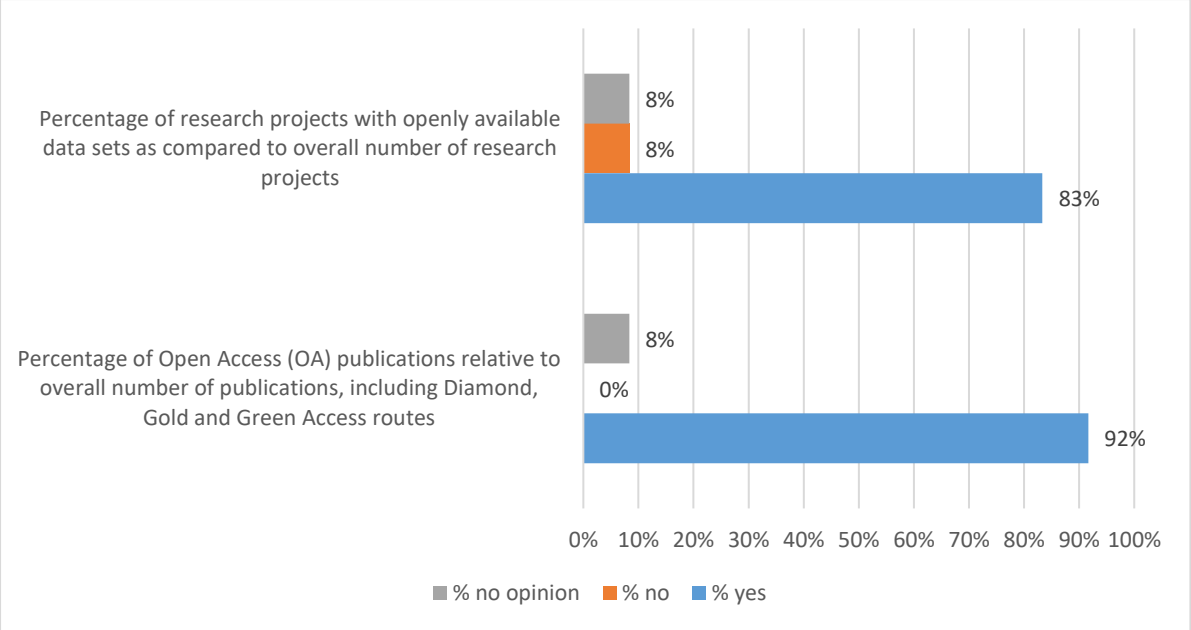


*Figure 35 Selection of the proposed metrics by the ECIU R&I Group for Focus 2*

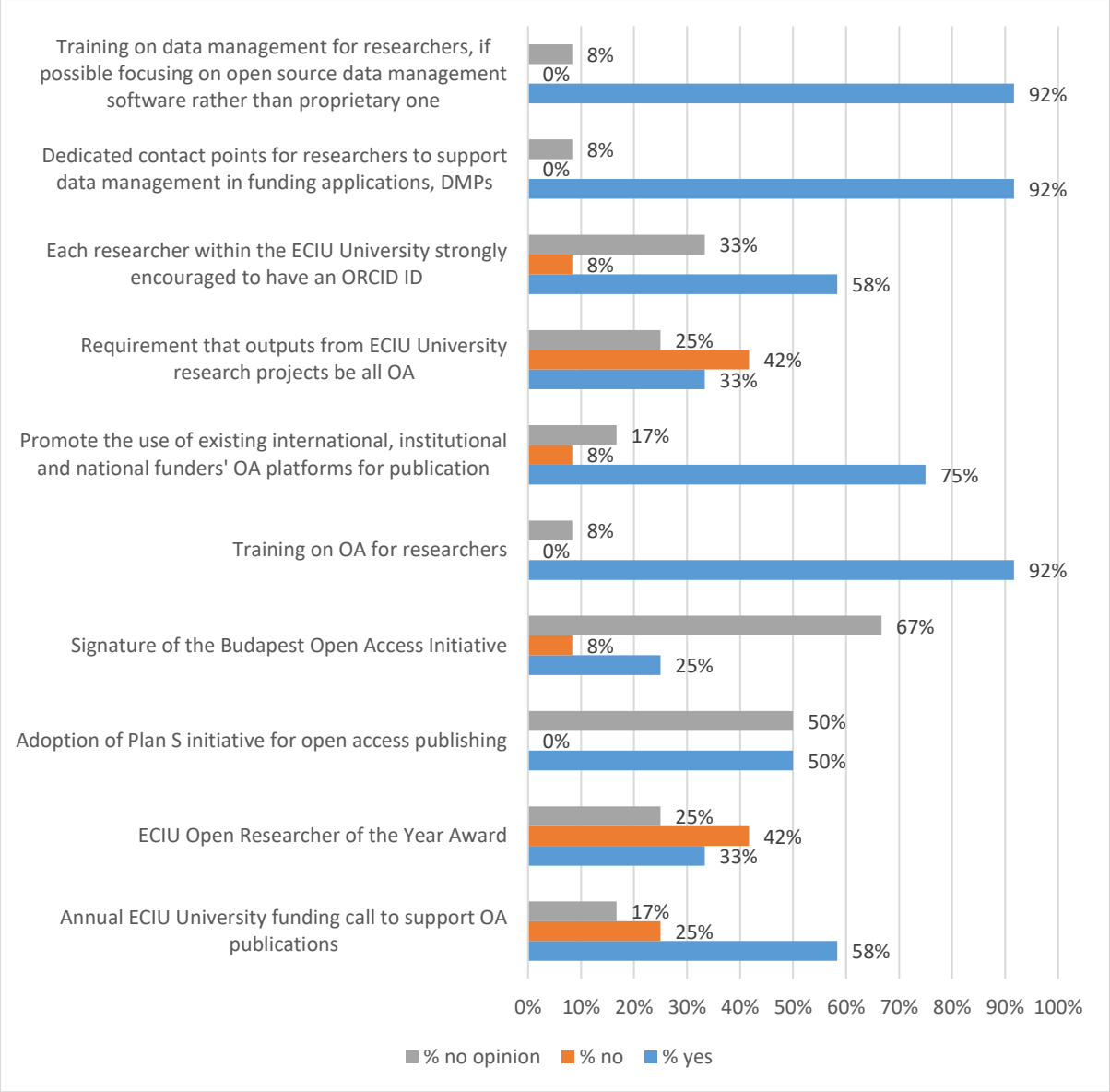


*Figure 36 Selection of the proposed incentives and supports by the ECIU R&I Group for Focus 2*

## Focus 3: Research produced within the ECIU University should be communicated to all relevant stakeholders, within and outside of academia

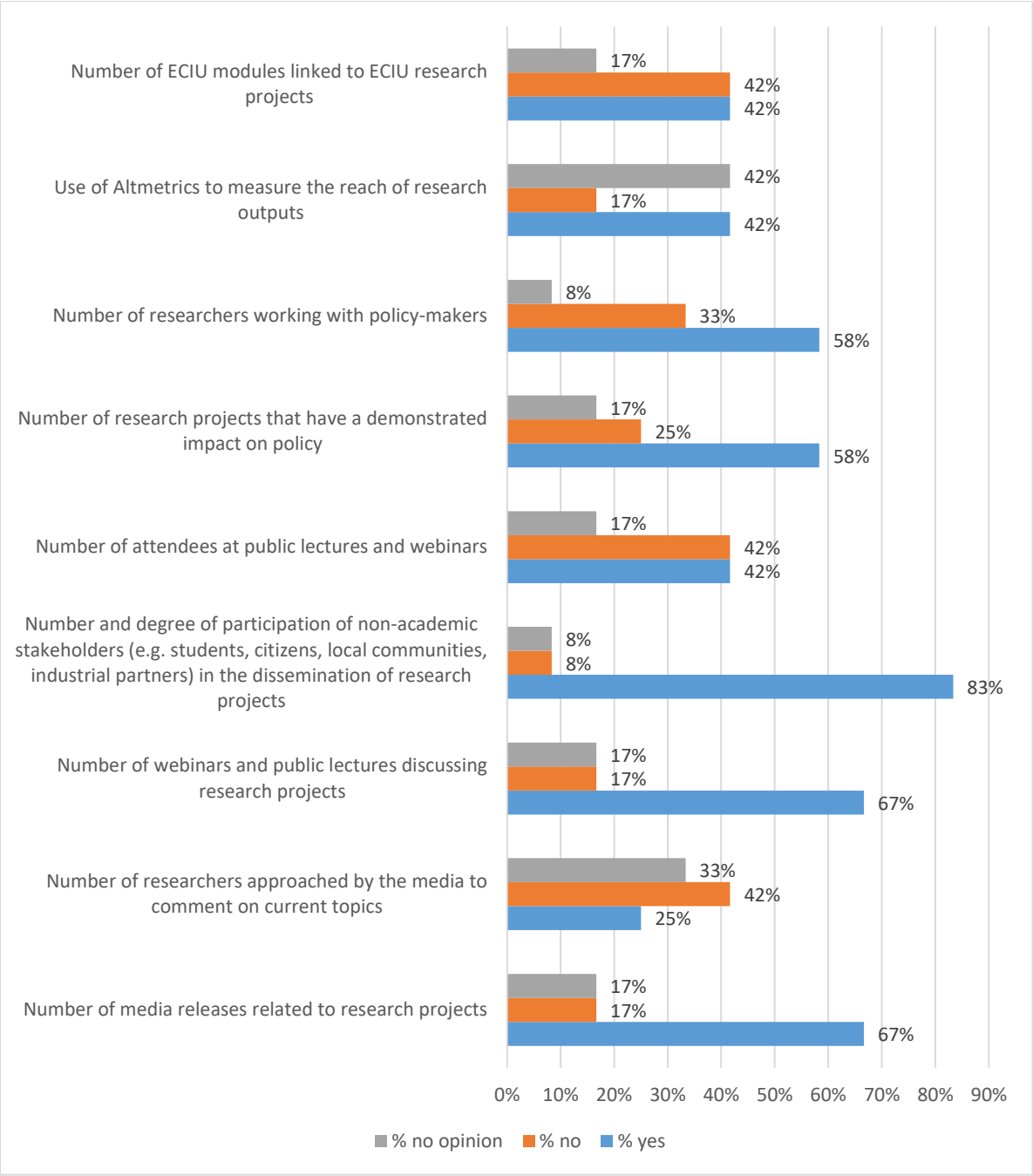


*Figure 37 Selection of the proposed metrics by the ECIU R&I Group for Focus 3*

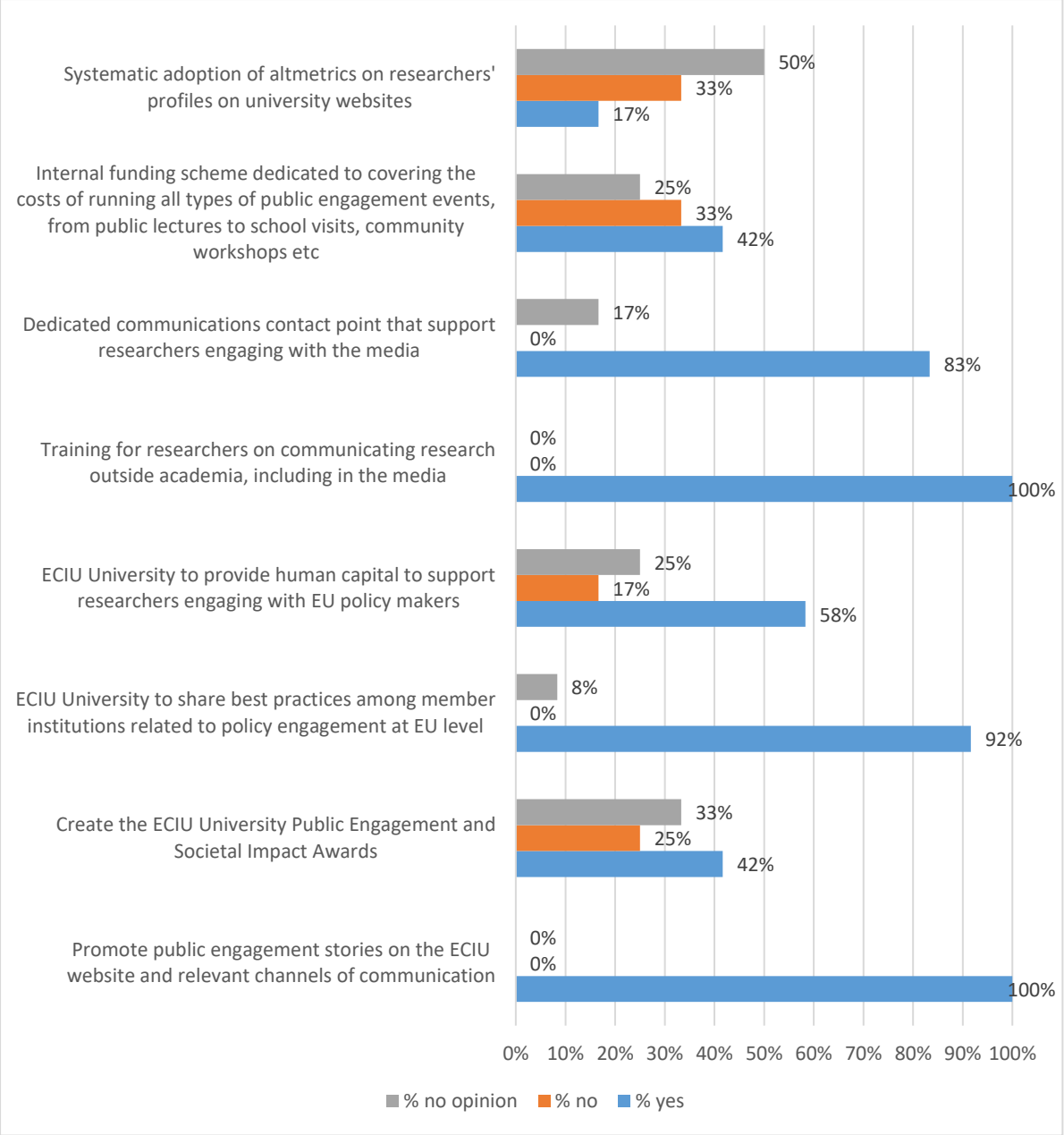


*Figure 38 Selection of the proposed incentives and supports by the ECIU R&I Group for Focus 3*

## Focus 4: ECIU University Research should be co-created with relevant non-academic stakeholders

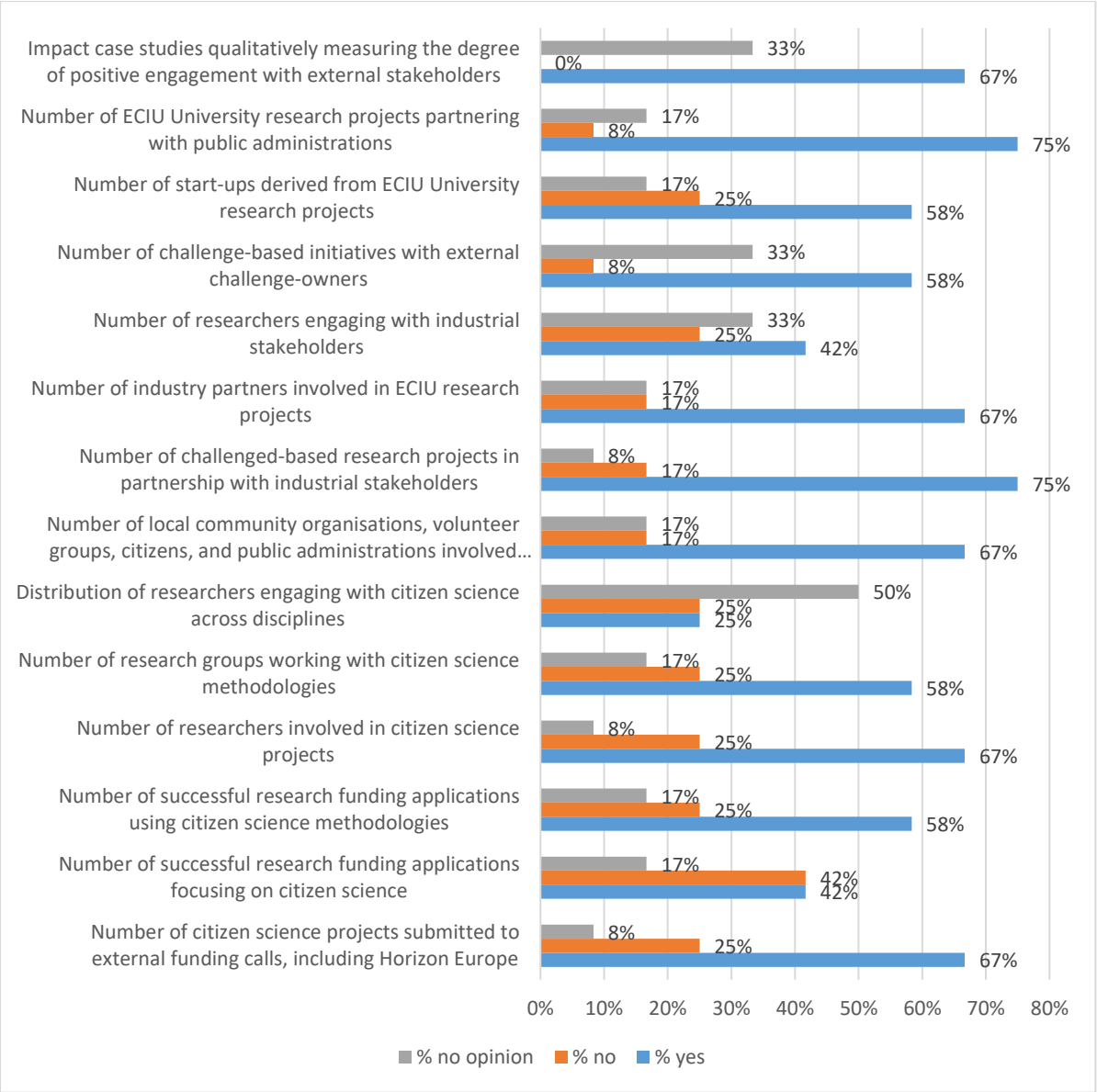


*Figure 39 Selection of the proposed metrics by the ECIU R&I Group for Focus 4*

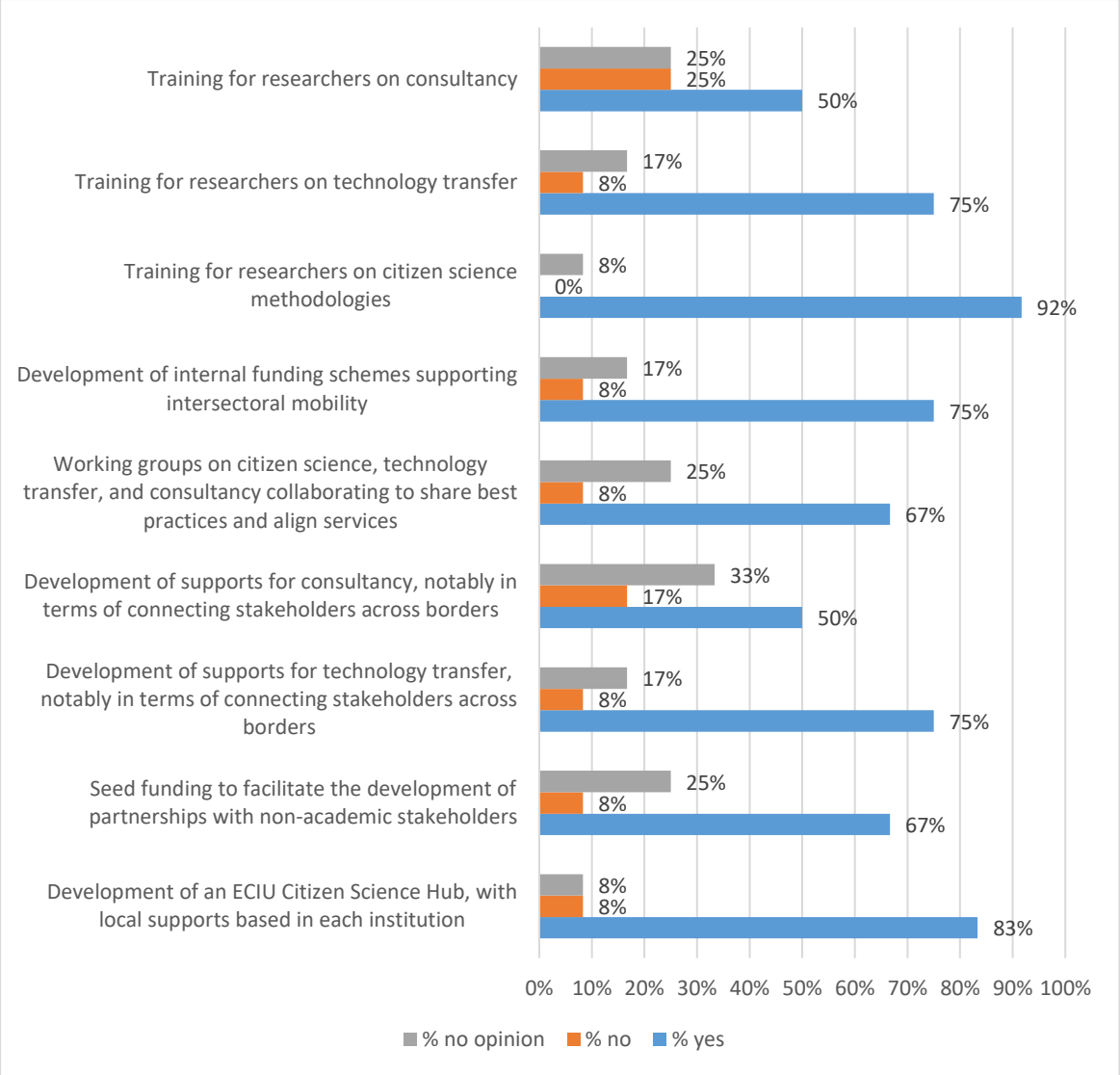


*Figure 40 Selection of the proposed incentives and supports by the ECIU R&I Group for Focus 4*

## Focus 5: ECIU University should be a fair, equal, and attractive workplace for excellent researchers of all backgrounds

**Should focus 5 be linked with specific metrics for ECIU University? If so, please specify how you would recommend we measure the success of focus 5. Responses:**

- Yes. implementation of HRS4R in all ECIU partners.
- No opinion
- Annual census of women in senior university positions across ECIU, same with other socio-economic categories of interest.
- I agree Focus 5 should be linked with specific metrics for ECIU University, and a specific evaluation approach on workplace and working conditions should be studied, for example by mean of simple questionnaires where an adequate number of ECIU network researchers shall participate, in order to have a sound statistical outcome. Even better if this approach could then spread also outside the ECIU community, so to be able to compare data with non-EICU researchers and research communities (for example by lobbying towards EU as in point 4 below).

- Number of external researchers recruited by ECIU institutions and affiliated to Virtual Research Institute
- In ECIU University streamline and renew current recruitment and selection procedures taking into consideration latest advancements and pilots (see e.g. Dutch NWO [Dutch Research Council] and narrative CV without traditional metrics) to increase equality.
- Sign a specific policy document that supports Focus 5.
- Number of institutions signing ALLEA code and HRS4R.
- Number of recruited women, disabled persons, international researchers, etc... + take into account recruited researchers' h-index?
- Multidisciplinary and multi-institutional collaboration between different researchers or different institutions.
- Define what to monitor e.g. recruitment, employment status and tenure, promotion, development, participation in relevant training, etc. and include all backgrounds such as gender, etc. Define focus group. Set goals. Review regularly and take actions when needed.
- One can't argue with the aspiration. The question is how to assess.

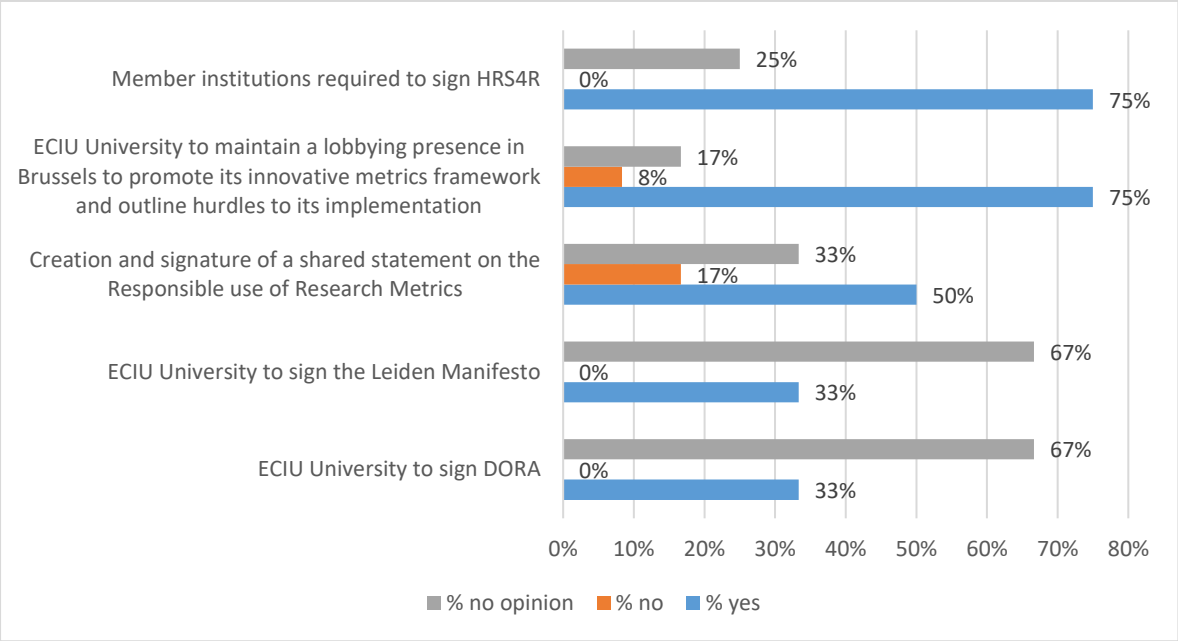


*Figure 41 Selection of the proposed incentives and supports by the ECIU R&I Group for Focus 5*

## Focus 6: ECIU Member institutions should actively participate in ECIU University research

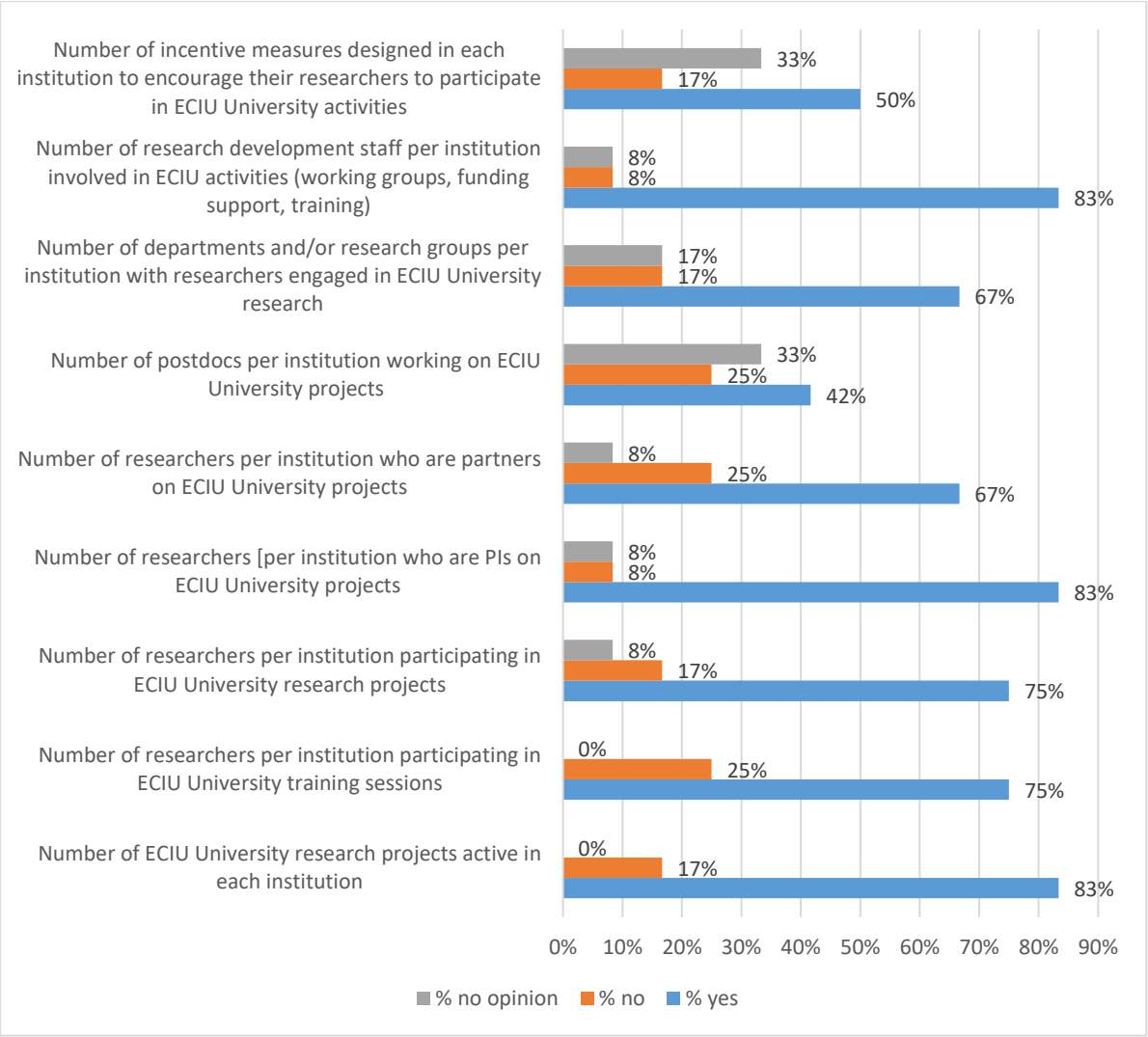


*Figure 42 Selection of the proposed metrics by the ECIU R&I Group for Focus 6*

**Which incentive measures would you recommend in relation to Focus 6? Responses:**

- Mobility Fund, Seed money, ECIU internal applications to grants.
- The researchers should see that they can get reward for their efforts. One idea could be ECIU badges, or prices that are awarded each year. E.g. best citizen science project
- Incentives to encourage collaboration with other ECIU colleagues, travel grants etc.
- "Number of researchers per institution participating in ECIU University research projects" and "Number of researchers per institution who are partners on ECIU University projects" appear the same as they are formulated. The "Number of departments and/or research groups per institution with researchers engaged in ECIU University research" may depend on the "granularity" of the member University; maybe the number of ECIU University projects where more Departments from the same member institution are involved would be a better measure.
- The promotion of thematic info days for ECIU researchers (no focus on SDG 11).
- Offering of free-of-charge services for project development for consortia incl. at least three ECIU members.
- Same comment as before on just using Numbers. We should be using Outcomes.

- Shared research agenda.
- - Focus 6 metrics should be incorporated into each institution's research strategy;
  - ECIU coordinated communication to researchers to encourage participation in ECIU activities;
  - Support for researchers and staff's mobility to other ECIU partners to collaborate.
- Joint calls for research projects.
- Number of common research projects involving ECIU member institutions.
- The data may be interesting, but there is a cost in collecting all of this. Researchers should be encouraged to collaborate with those that are the best to advance their research. Useful common activities lie in access to high-quality training.

# Results of the consultation for researchers from ECIU member institutions working on UN SDG11

## Focus 1: ECIU University Research should be relevant to challenges encountered by society

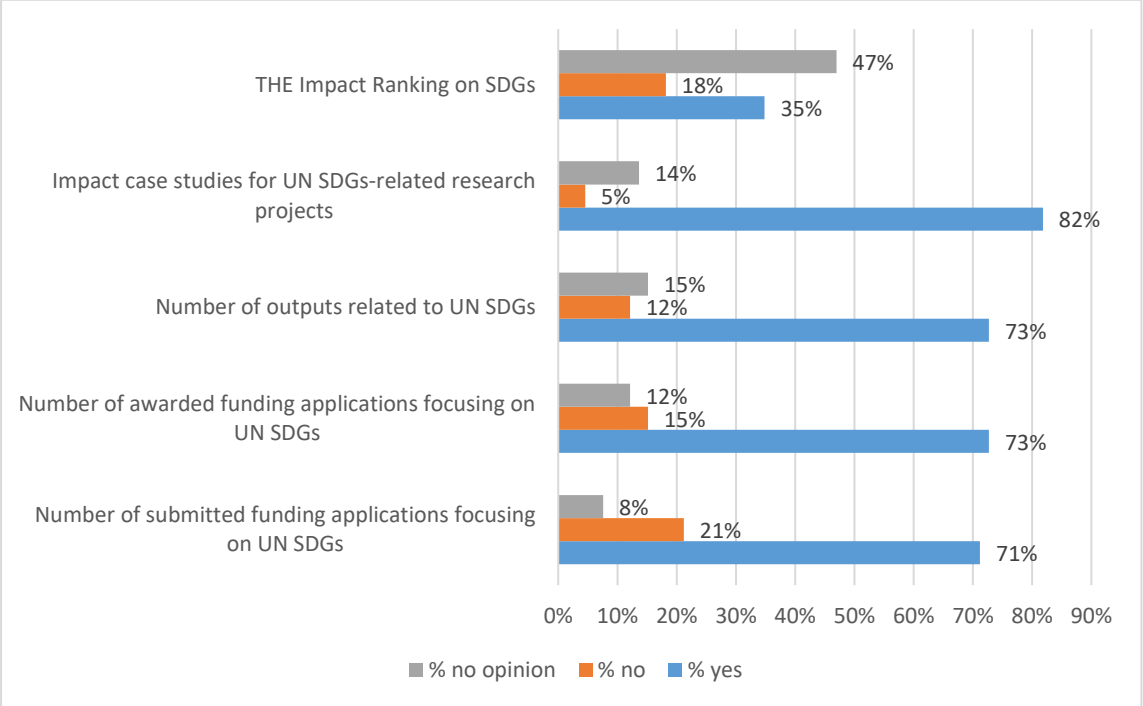


*Figure 43 Selection of the proposed metrics by researchers for Focus 1*

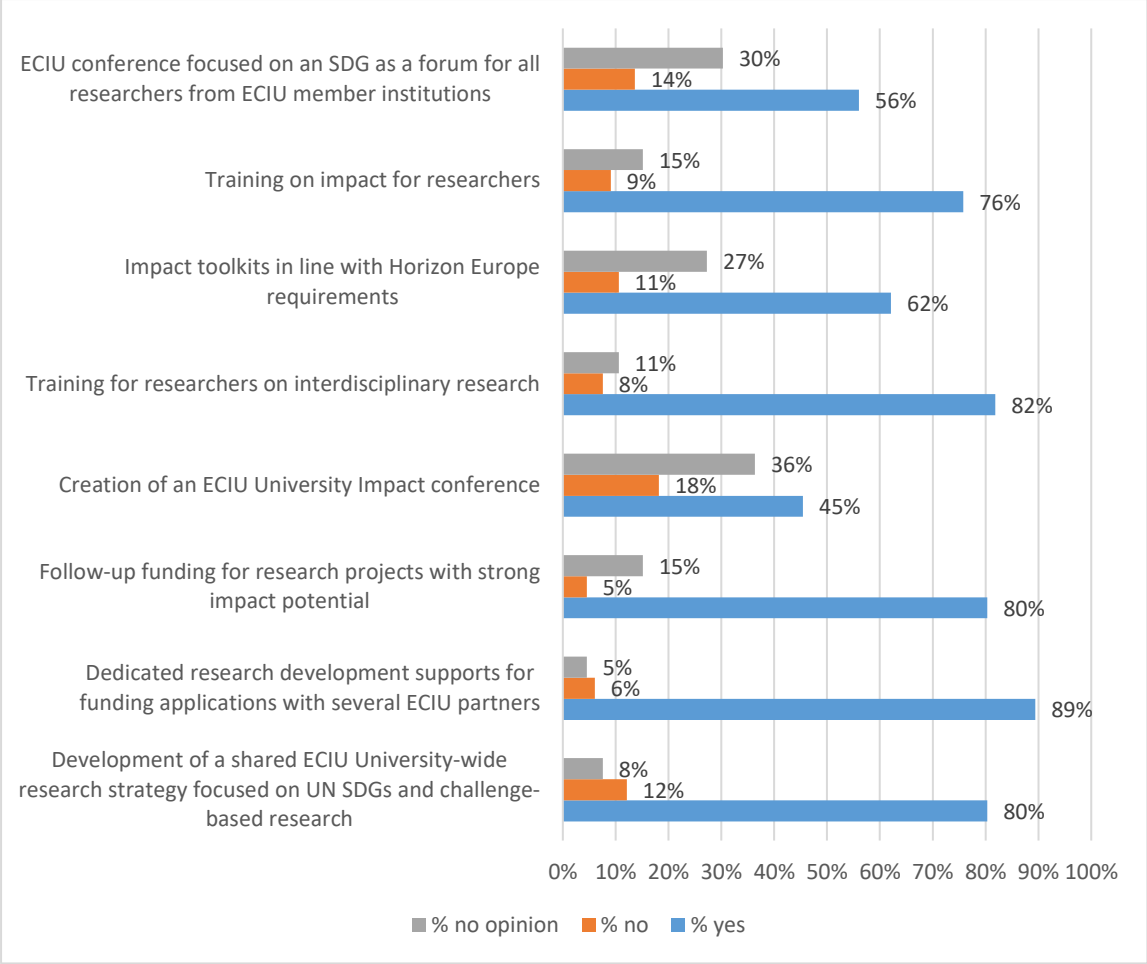


*Figure 44 Selection of the proposed incentives and supports by researchers for Focus 1*

## Focus 2: ECIU University Research should be accessible and transparent

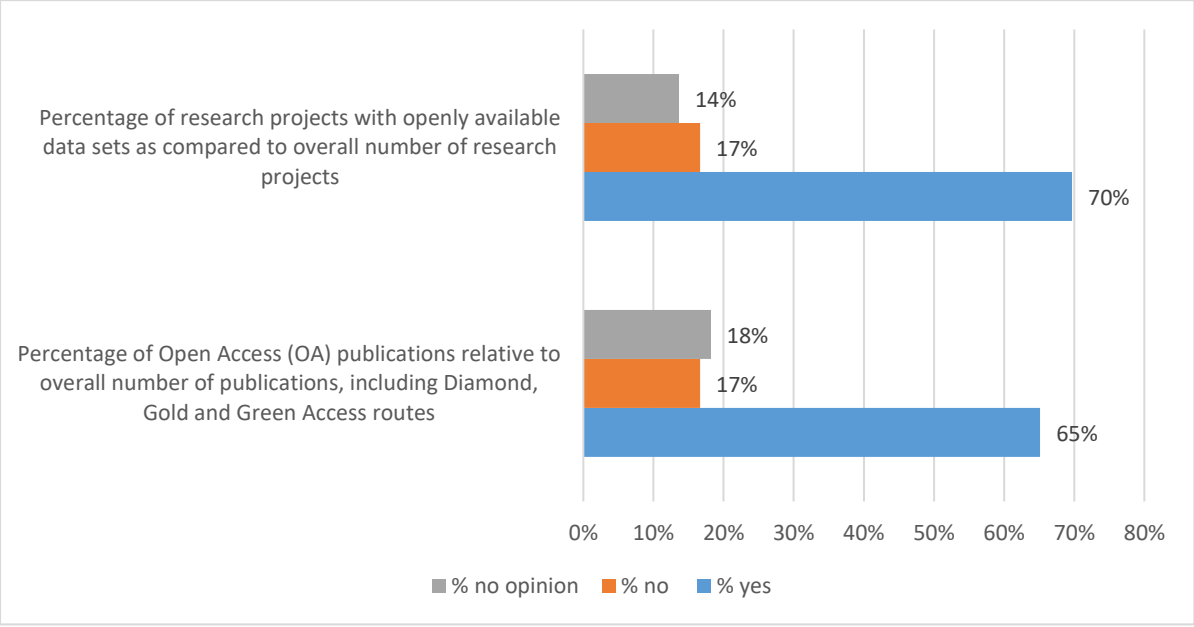


*Figure 45 Selection of the proposed metrics by researchers for Focus 2*

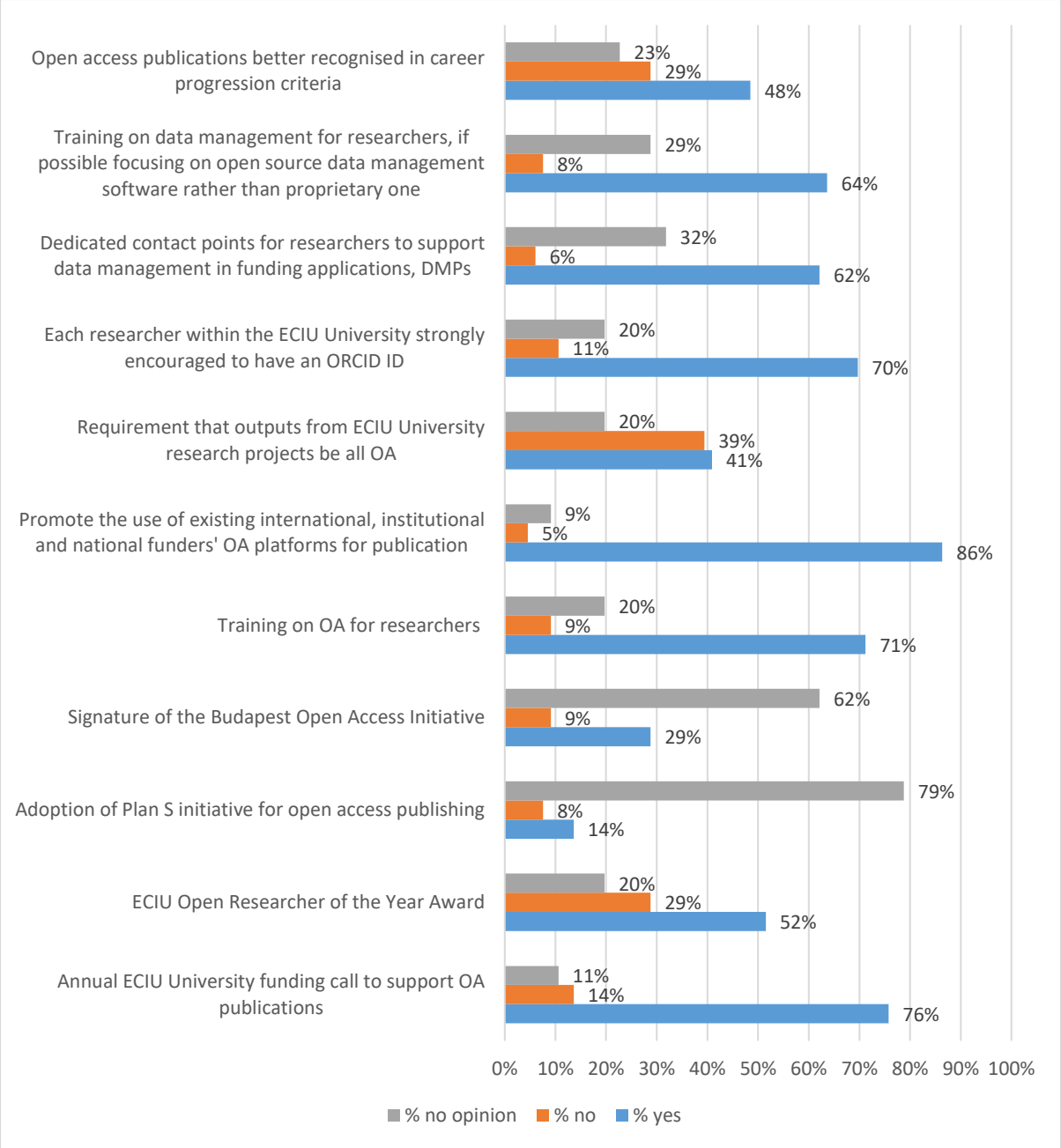


*Figure 46 Selection of the proposed incentives and supports by researchers for Focus 2*

## Focus 3: ECIU University Research should be communicated to all relevant stakeholders, within and outside of academia

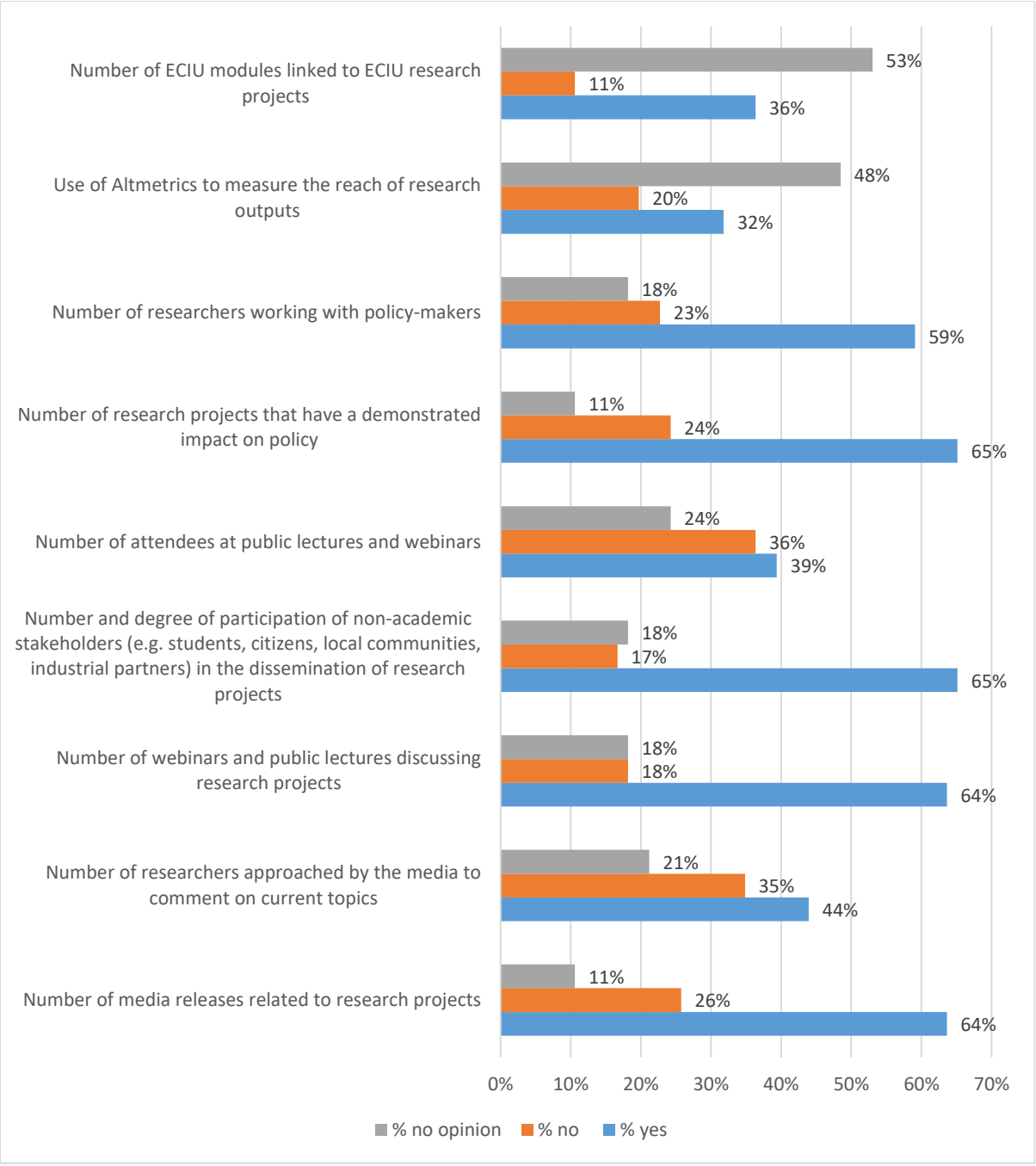


*Figure 47 Selection of the proposed metrics by researchers for Focus 3*

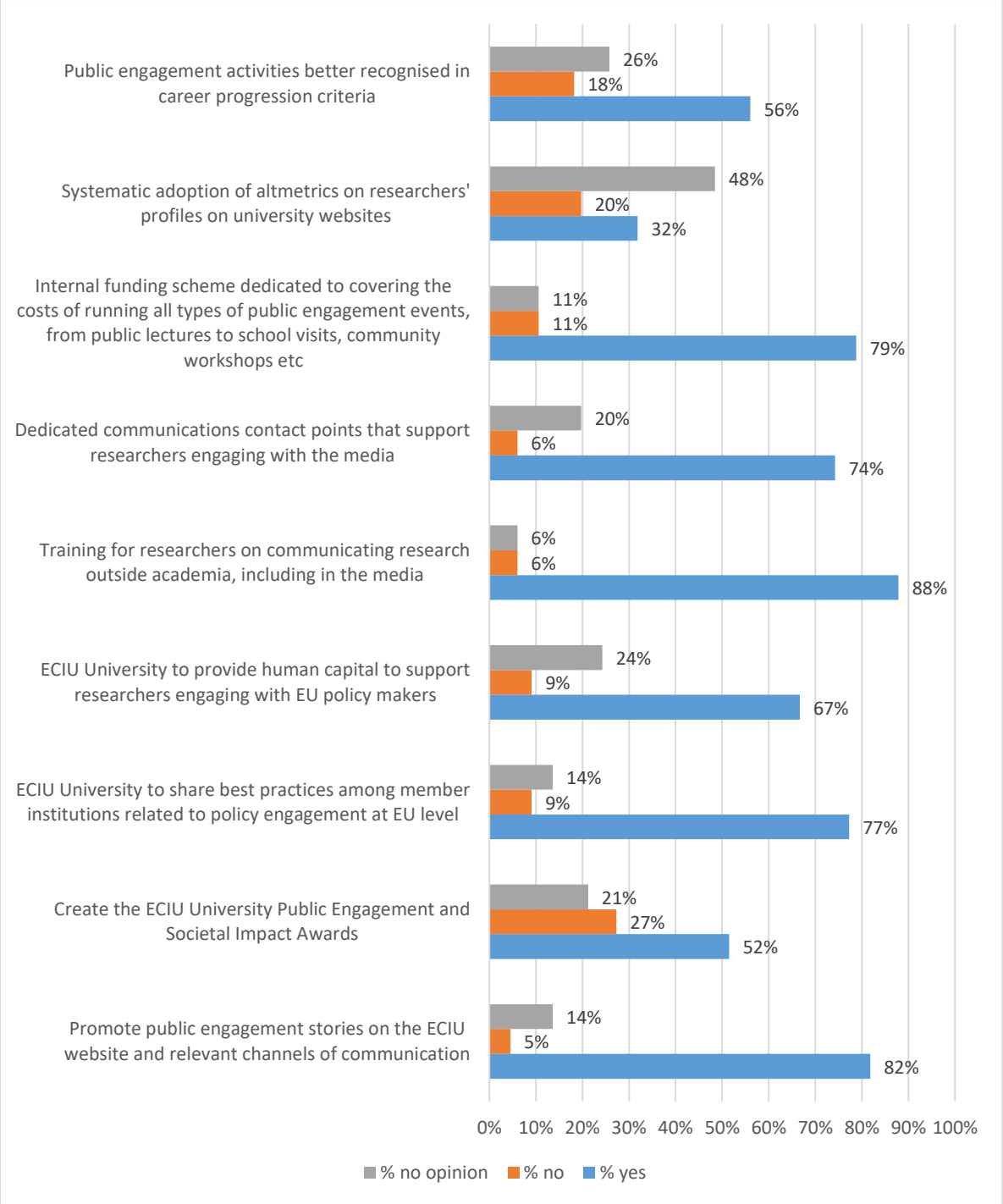


*Figure 48 Selection of the proposed incentives and supports by researchers for Focus 3*

## Focus 4: ECIU University Research should be co-created with relevant non-academic stakeholders

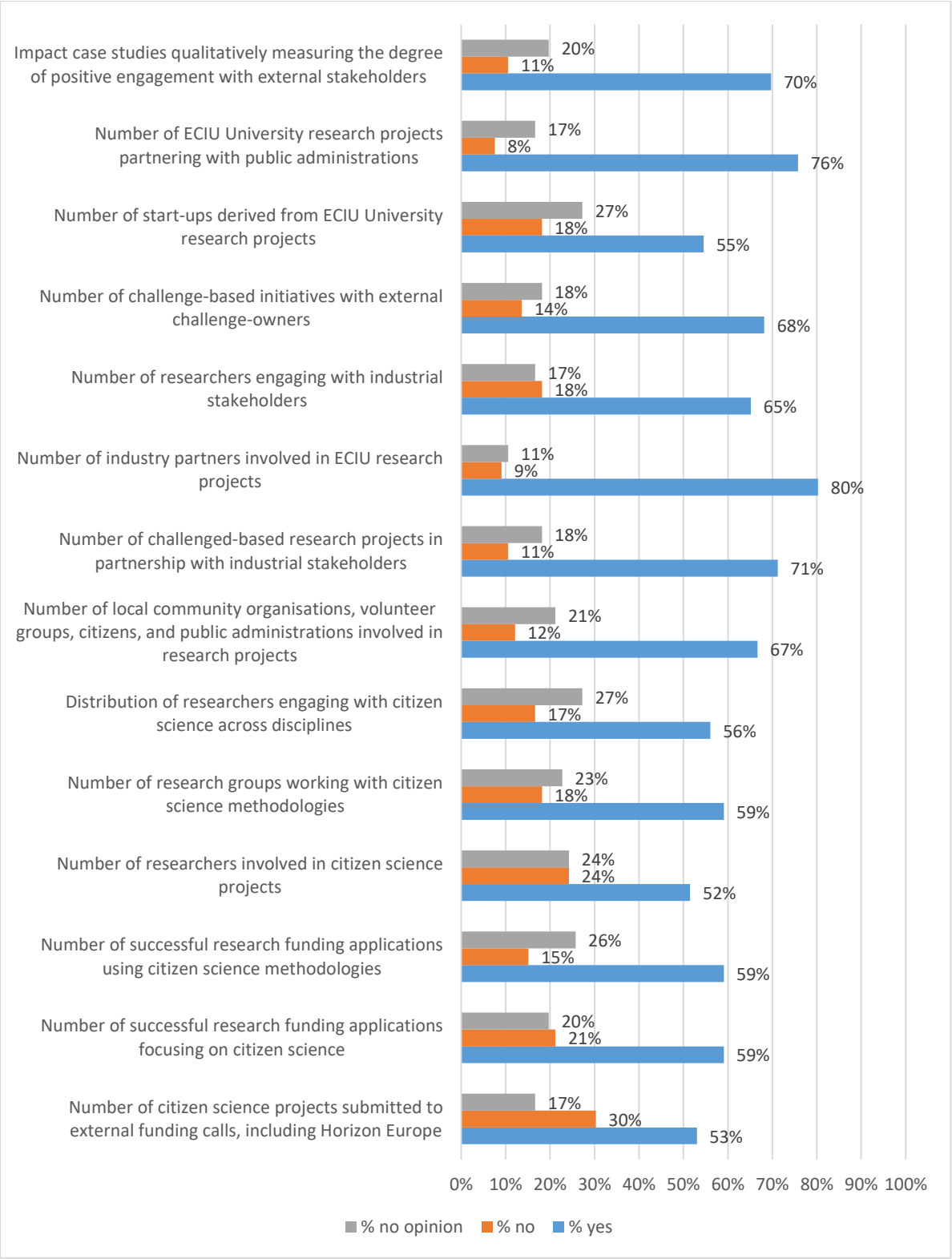


*Figure 49 Selection of the proposed metrics by researchers for Focus 4*

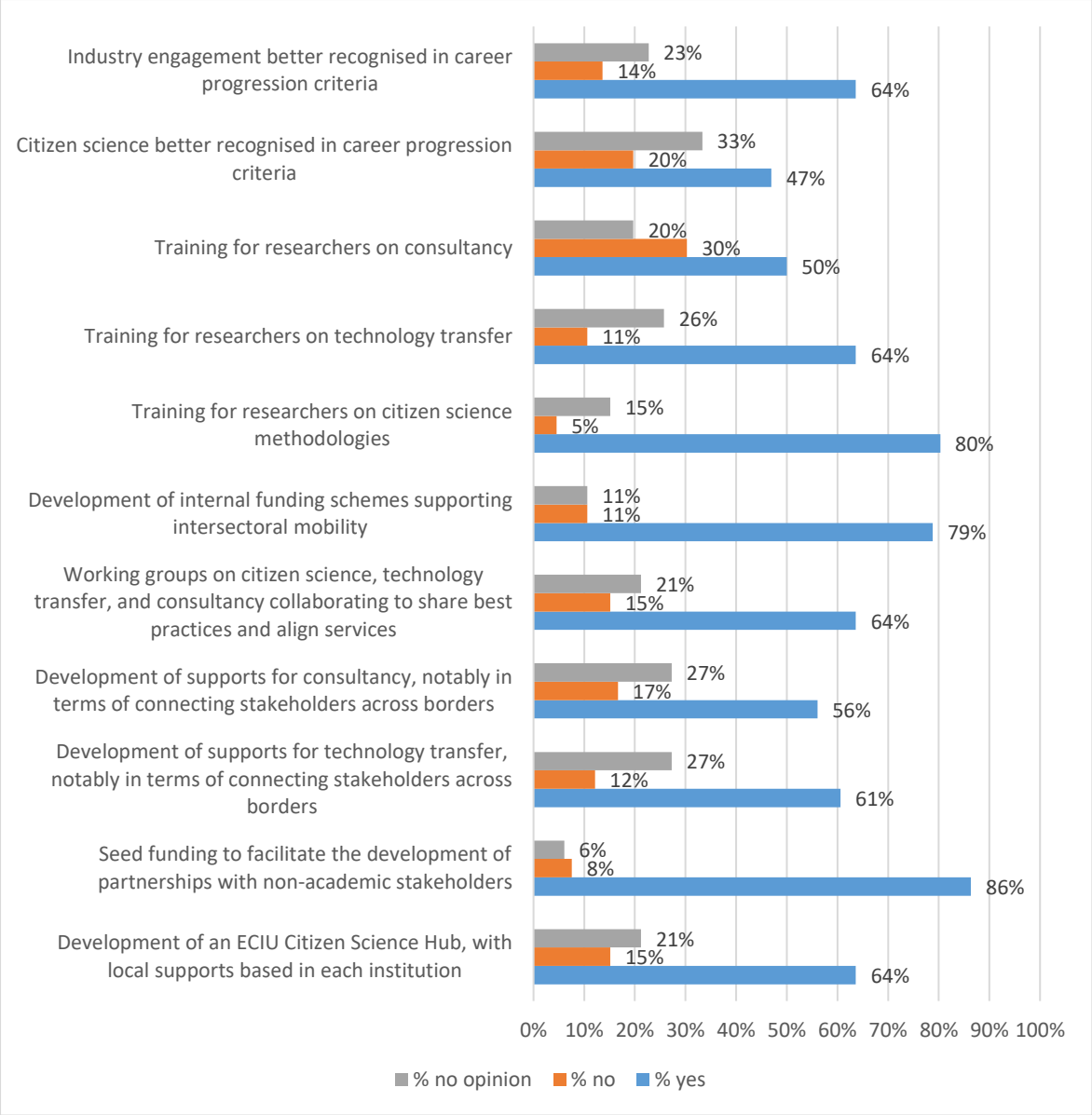


*Figure 50 Selection of the proposed incentives and supports by researchers for Focus 4*

## Focus 5: ECIU University should be a fair, equal, and attractive workplace for excellent researchers of all backgrounds

**Should focus 5 be linked with specific metrics for ECIU University? If so, please specify how you would recommend we measure the success of focus 5. Responses:**

- Track diversity metrics.
- Yes, this is important.
- Gender, race, age, working experience outside academia.
- Metrics are important in terms of measuring this, but so is engagement with the workforce to understand whether the appropriate culture is in place.
- Very important but not easy to measure. Would it possible to measure this through employee satisfaction that are being done anyway?
- Number of researchers from abroad.
- No

- Yes; from annual surveys to researchers on these issues so they can express their opinions on such subjective matters.
- Prestige and to host the best faculty.
- Overall engagement for each researcher.
- We should have a balance of at least gender-related positions, including students involved in the projects. Besides gender, I would suggest to try to develop groups with international character.
- We need more quantitative indicators able to assess the quality of the impacts and outputs.
- Open to all kind of efforts and disciplines.

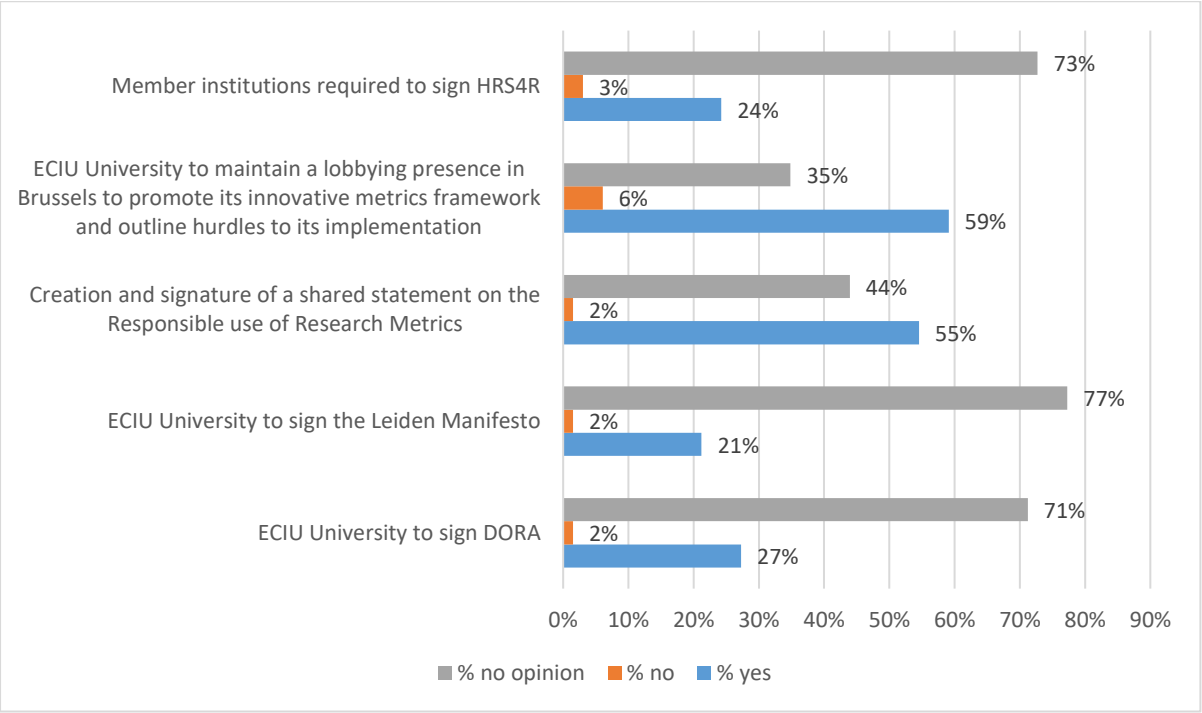


*Figure 51 Selection of the proposed incentives and supports by researchers for Focus 5*

## Focus 6: Researchers from all ECIU member institutions should actively participate in ECIU University research

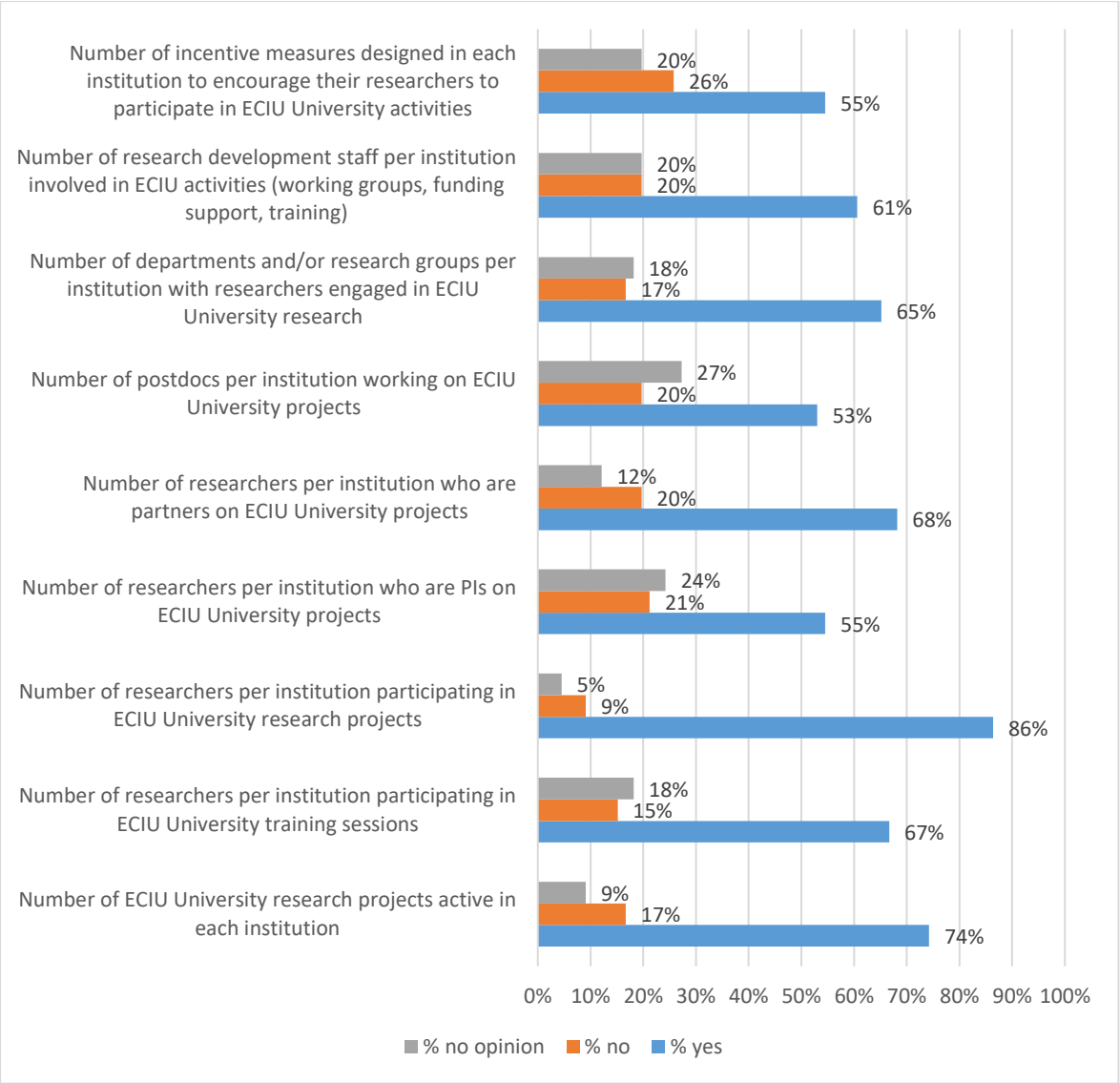


*Figure 52 Selection of the proposed metrics by researchers for Focus 6*

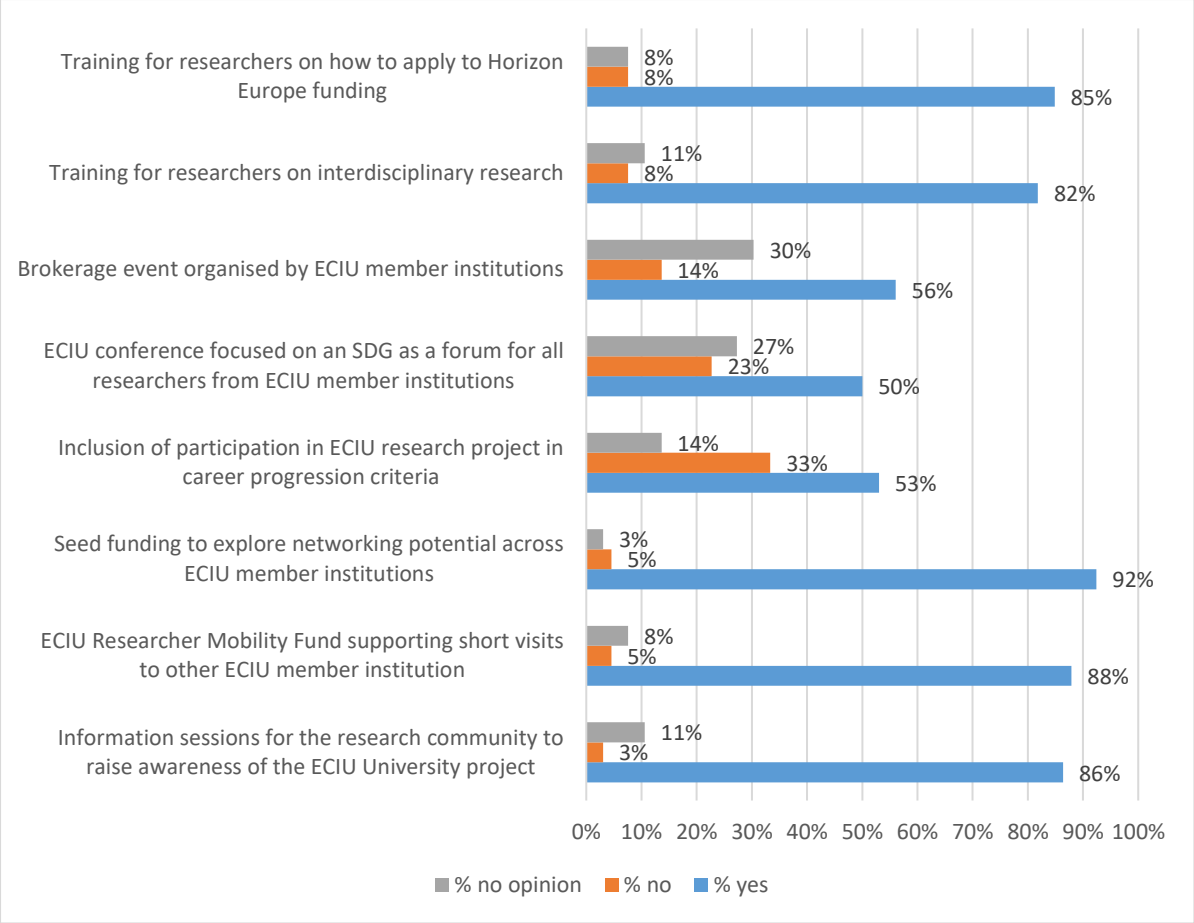


*Figure 53 Selection of the proposed incentives and supports by researchers for Focus 6*

# Appendix V Results of the final survey sent to the Vice-Rectors for Research Expert Group

This final survey was developed using the results of the initial questionnaire sent to the Vice-Rectors for Research Expert Group, ECIU R&I Group, and researchers. Each of the proposed measures in the final survey was approved by at least 60% of the Expert Group, and by 51% of both the ECIU R&I group and the researchers working on UN SDG11 across the ECIU Alliance who answered our survey. Some of the measures have also been amended and/or added to reflect comments and suggestions from the different stakeholders.

The respondents to this final survey were only given two options: yes and no, and an answer was requested for each proposed measure.

NB: Full anonymised data for the consultation can be provided upon request to ECIU University/SMART-ER project team members for further analysis during the lifetime of the project. Please also note that the focus areas were amended between the two stages of the consultation process to reflect the results of the initial survey.

# Focus 1: ECIU University research should be based on collaboration across ECIU member institutions

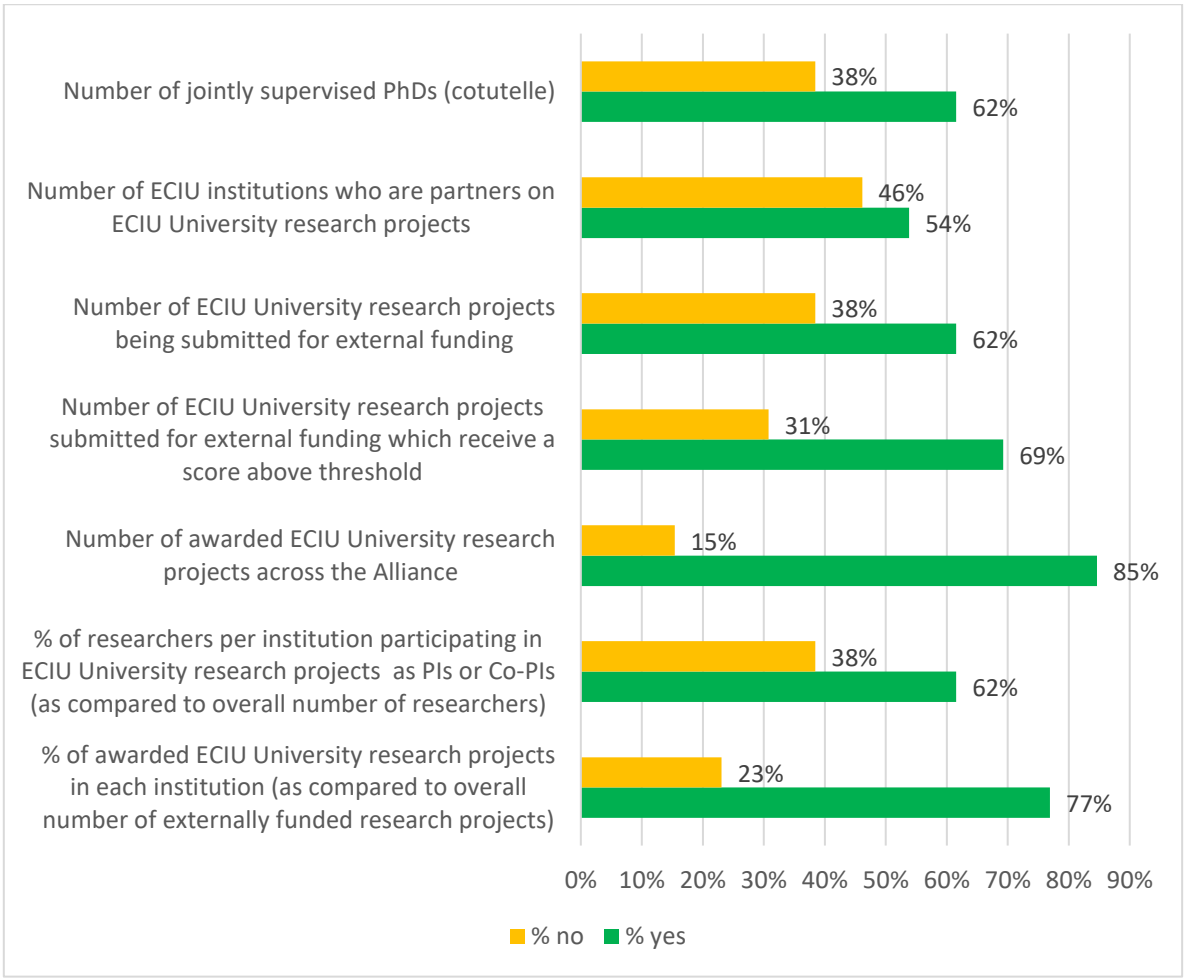


*Figure 54 Final recommendations for Focus 1 metrics*

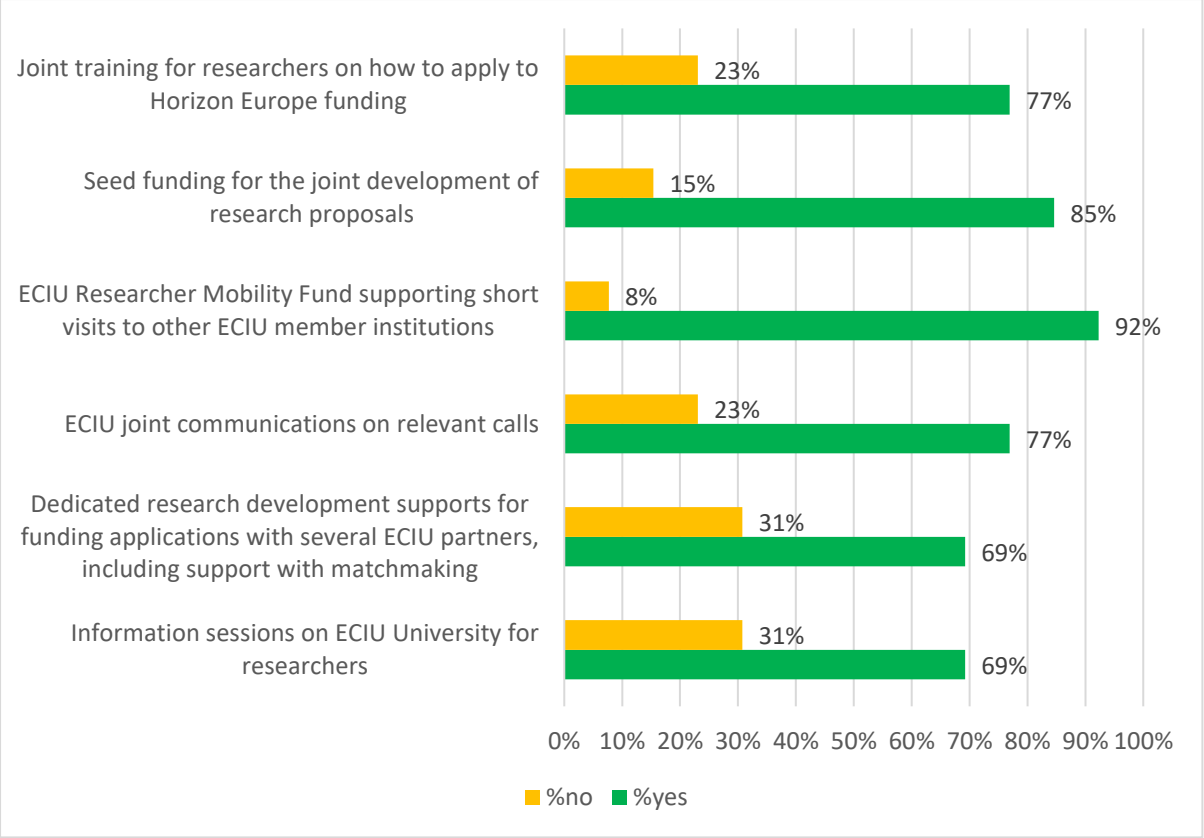


*Figure 55 Final recommendations for Focus 1 incentives and supports*

# Focus 2: ECIU University research should be relevant to societal challenges

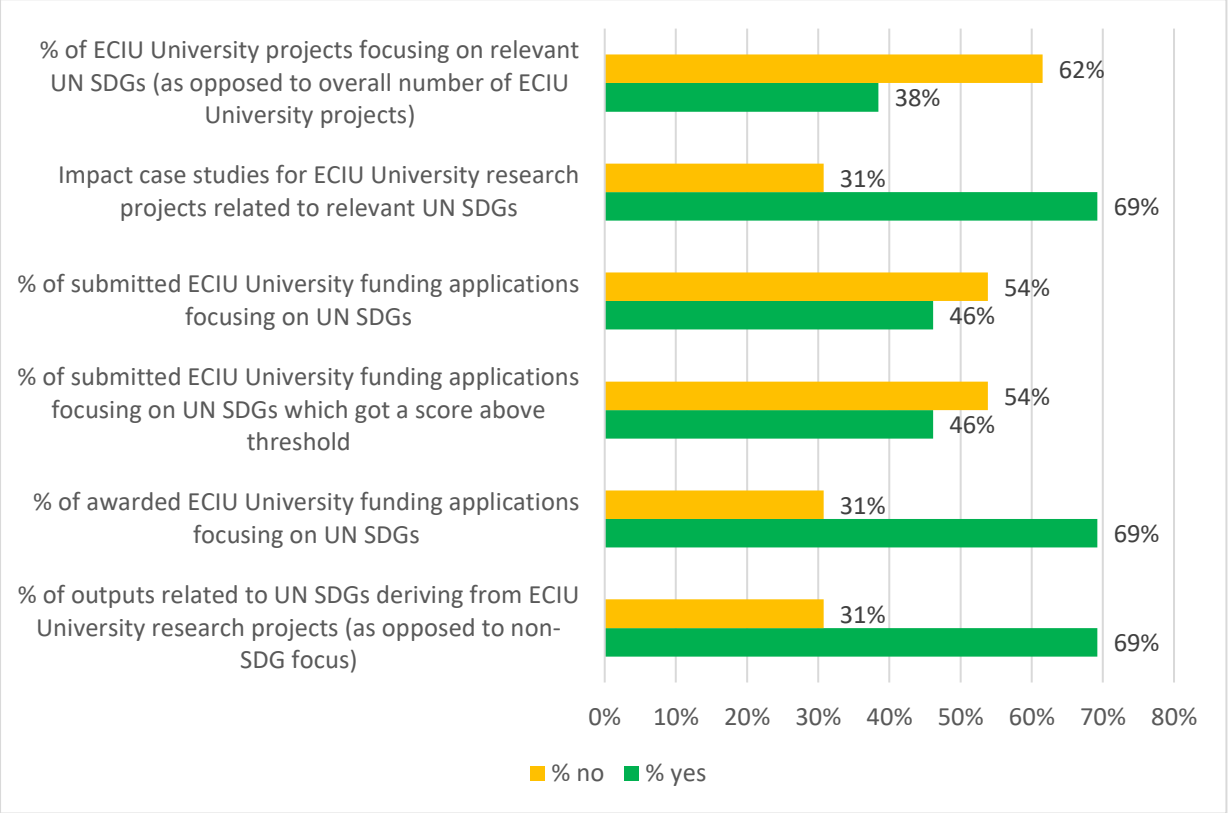


*Figure 56 Final recommendations for Focus 2 metrics*

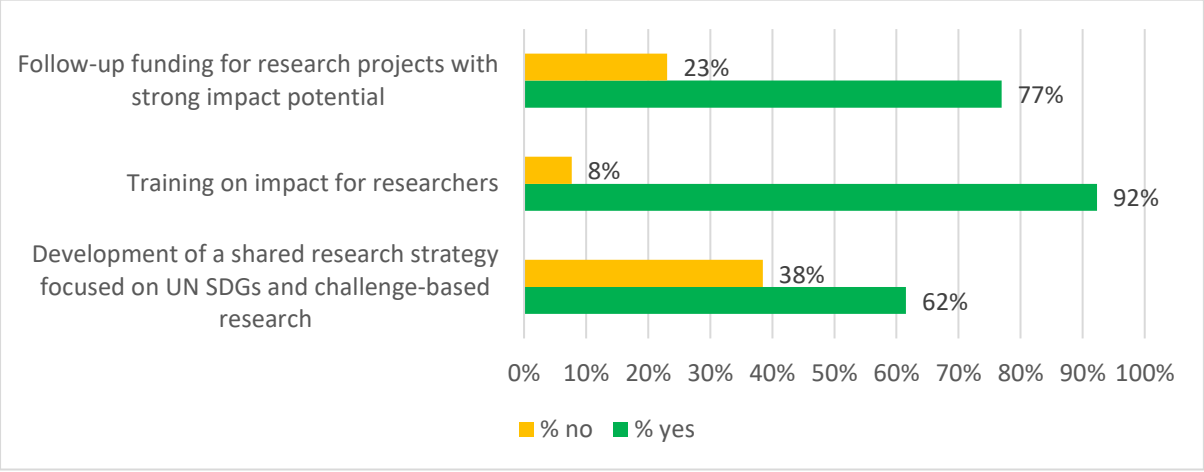


*Figure 57 Final recommendations for Focus 2 incentives and supports*

# Focus 3: ECIU University research should be open

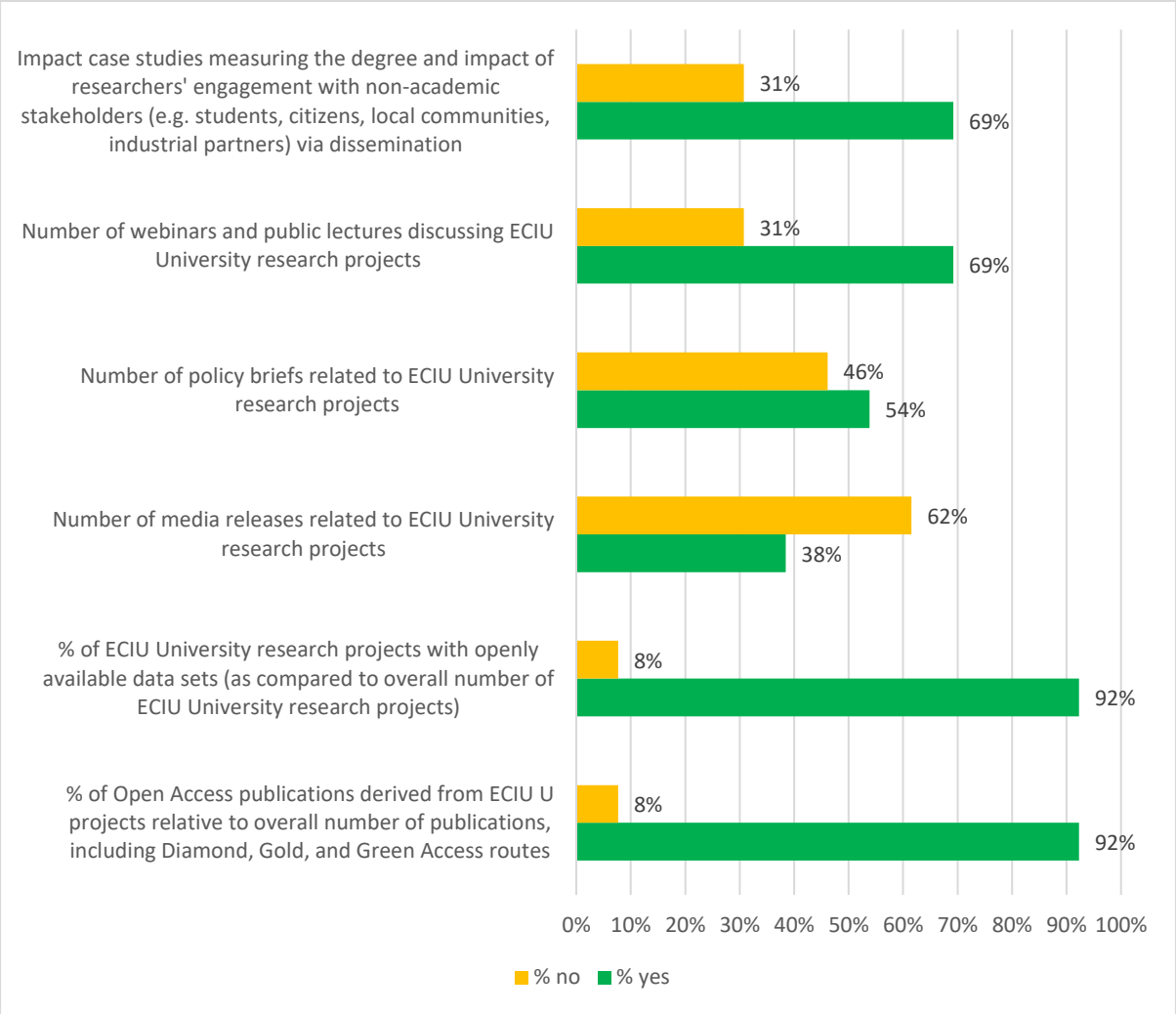


*Figure 58 Final recommendations for Focus 3 metrics*

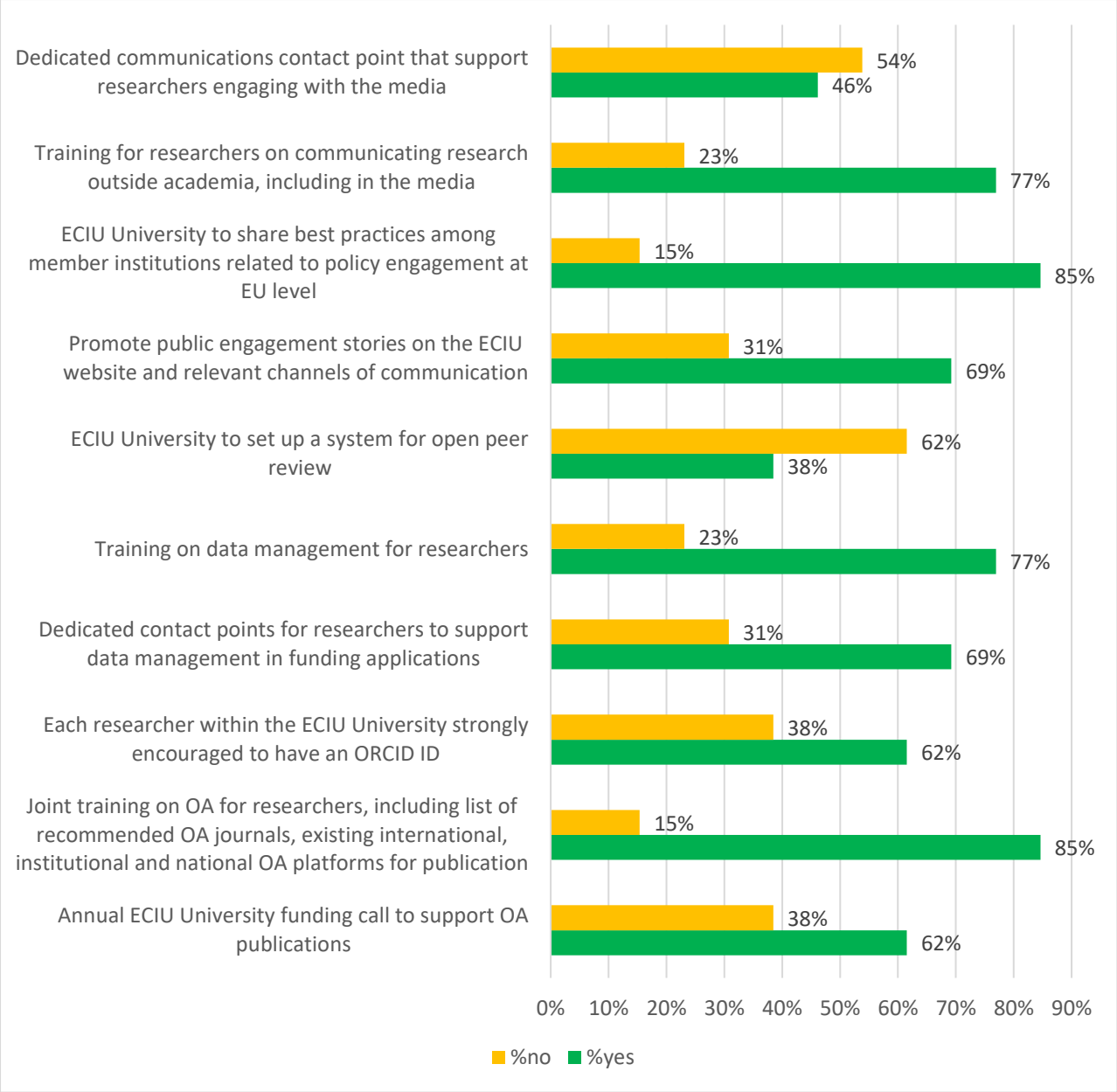


*Figure 59 Final recommendations for Focus 3 incentives and supports*

# Focus 4: ECIU University research should be co-created with non-academic stakeholders

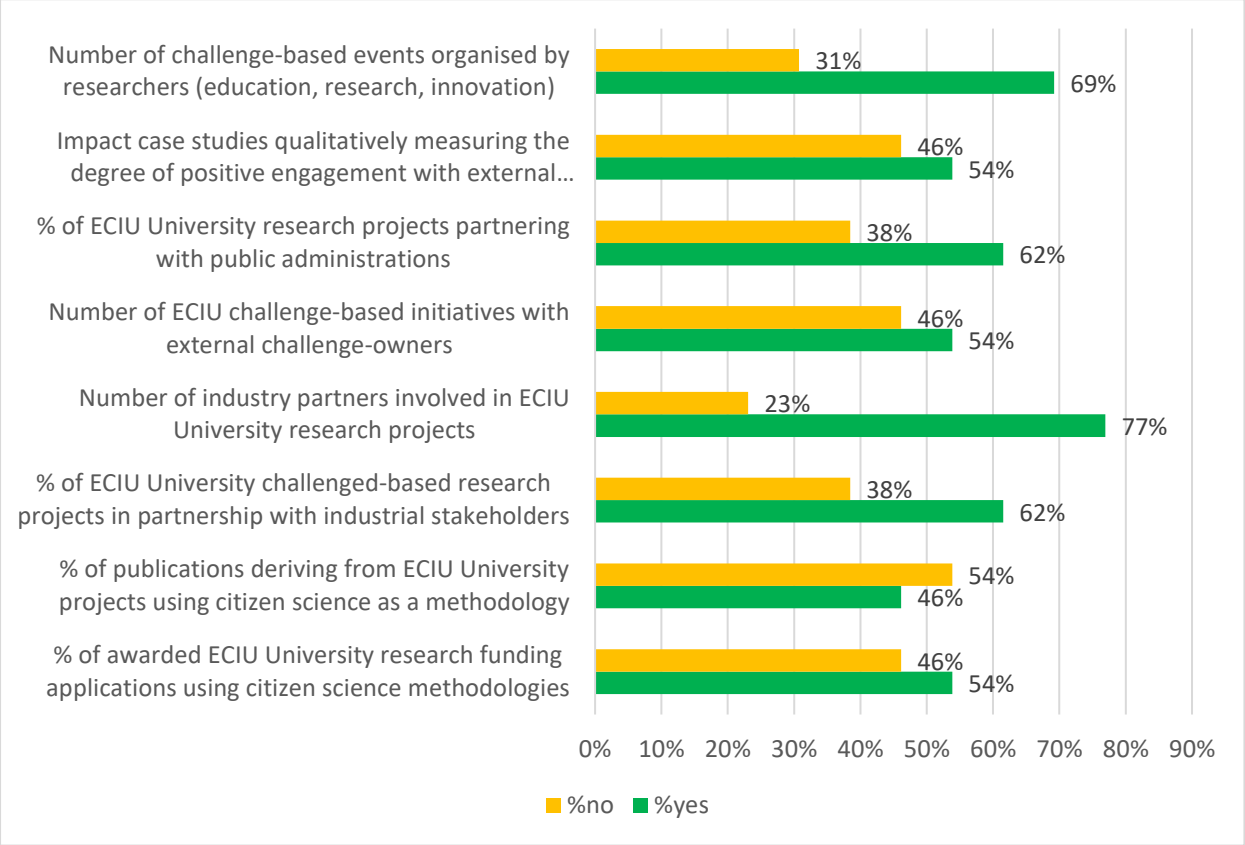


*Figure 60 Final recommendations for Focus 4 metrics*

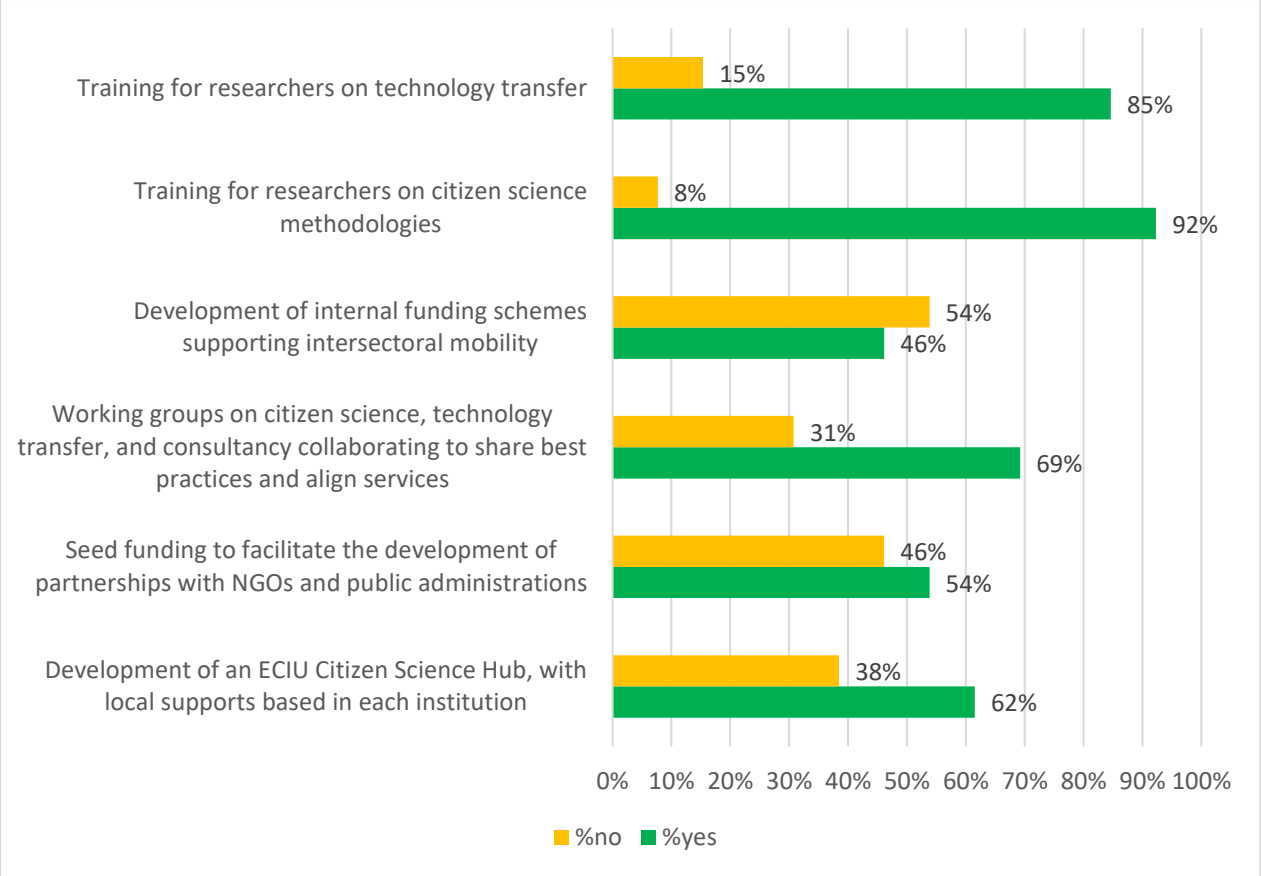


*Figure 61 Final recommendations for Focus 4 incentives and supports*

# Focus 5: Building a better ECIU University

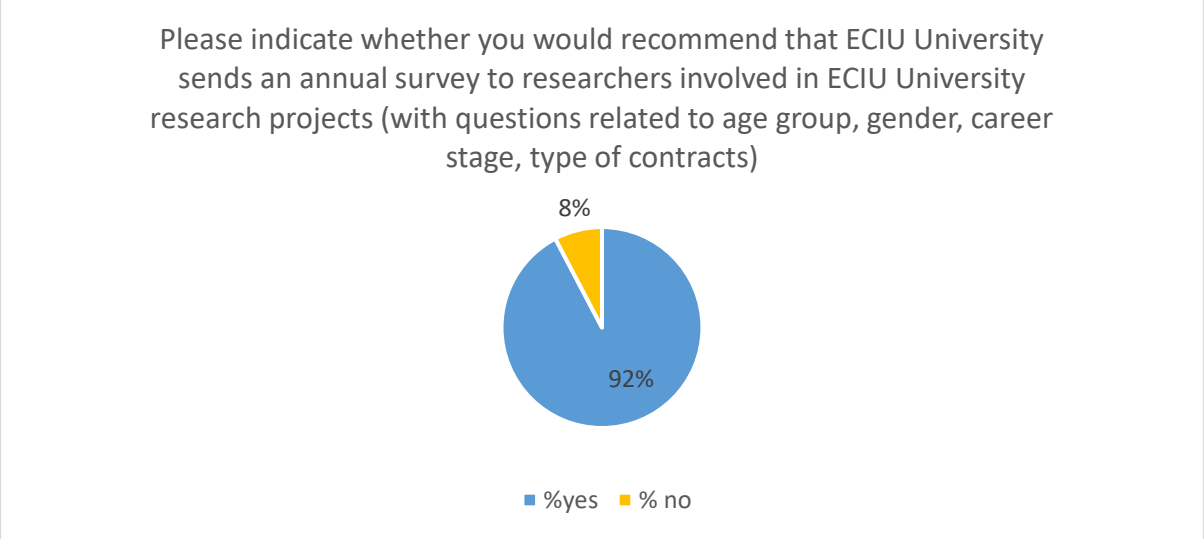


*Figure 62 Final recommendation for Focus 5 metrics*

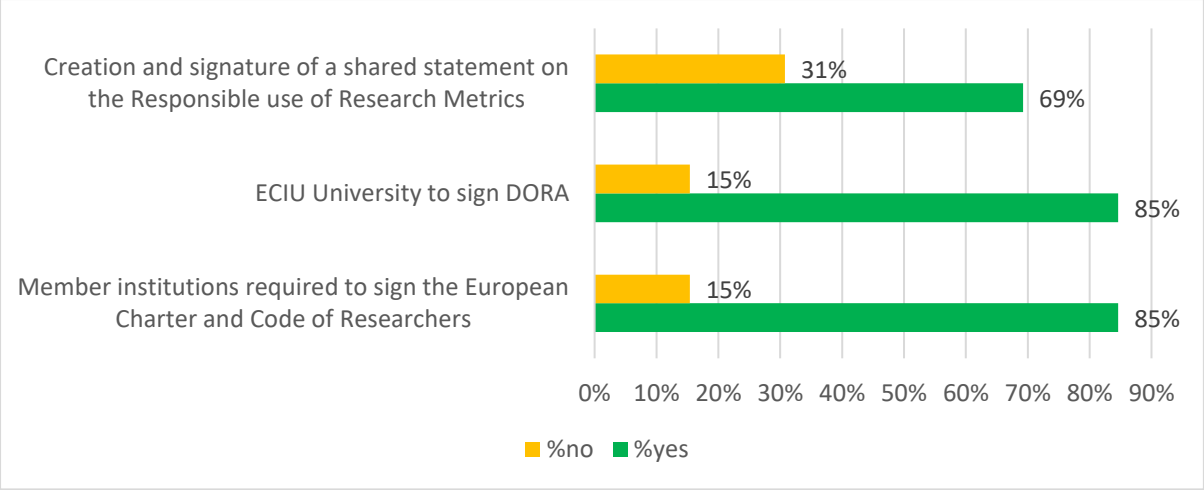


*Figure 63 Final recommendations for Focus 5 incentives and supports*