End-user perspective on the results and impact of European projects: a case of failure to innovate.

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ABSTRACT

First responder organisations (FROs) participating in European research projects often seem dissatisfied with their participation. This is because they are unable to implement the project results. This article looks at this phenomenon through the lens of ambidextrous organisations. It examines the different factors contributing to failure to innovate for FROs in EU projects by using interviews. The main results show that the structure of European projects is a major contributor to failure to innovate of the project results in FROs. Nonetheless, the structure of the FROs themselves can also provide hinderances.

Keywords

End-users, first responder organisation, failure to innovate, ambidexterity, project management.

INTRODUCTION

For the period of 2021-2027 the European Commission has invested over 1,8 trillion in European research projects (European commission, Directorate-General for budget, 2021a). Examples include the Seventh Framework, HORIZON 2020, HORIZON EUROPE, ISF, EUCPM, ESA and many other initiatives. One of the underlying principles of these frameworks is to not only invest in fundamental research, but also foster innovation and accelerate the adoption of new academic insights into practical applications. As the European Commission outlines: *"bringing about tangible results and positive change in the lives of citizens and other beneficiaries is, and will remain, a key priority for the Commission in all the interventions supported by the EU budget."* (European commission, Directorate-General for budget, 2021a, P4.)

This extends to specific programs aimed at increasing the resilience of the European Union in the field of emergency response and crisis management, among others in the Disaster Resilient Society program (DRS). Especially in these programs the connection between research and valorisation of the results to support first responders' organisation is strongly advocated. This is, among others, embodied by the program's requirement to include first responder organisation in the consortia that are submitting their project proposals under the call.

The question about the impact of these programs has been asked before (European Commission, Directorate-General for Research and innovation 2018). This paper examines specifically if the impact is applicable to the daily practise of first responder organisations, and if participating in EU projects is of added value for first responder organisations (FROs). This way, it examines if there is a disconnect between the intended outcomes of the projects and the actual impact they have in FROs.

Problem Description

There may be multiple reasons why such a discrepancy occurs. First, the EU projects and programs may have (too) strong a focus on innovation and research with a lower direct applicability to the objectives and operations of first responder organisations. However, this is not only addressed in the call for proposals, but even a strong requirement. For example, a certain technology readiness level (TRL) in Innovative Actions is expected to ensure a higher and quicker adoption rate (Rösner, 2023). Second, innovation and research programs may have insufficient connection to 'practice'. This is however also addressed in the programs by ensuring participation of First Responder Organisations in the consortiums as well as specific dissemination plans addressing primary end users (i.e. FRO's) throughout the project. Furthermore, participating FROs may lack resources to fully engage in these projects and/or adopt their results (Meijers et al., 2006). Again, measures such as increased funding rates are aimed at addressing these potential shortcomings. Most importantly: it is also not a shortcoming due to a lack of need, motivations or drive to participate in these projects. The need to innovate, adapt and gain new knowledge is well understood by FROs. It is evidenced by the following quote from one of the respondents in this research:

"[innovation] is essential. The world in which we work evolves quickly. As an organisation we need to stay relevant in this world we work in (...) it is not the question if we should, it is evident we should."

As the quote above from one of the respondents demonstrates, implementation of research and innovation (RI) is necessary for first responder organisations working in our fast-paced society. This article examines implementation of such project outcomes in FROs. Specifically, by focusing on the organisational capabilities and capacities to successfully leverage the potential of innovation projects in general, and EU-funded research programs aimed at first responder organisations in particular.

Research Questions

As mentioned in the introduction, there seems to be a failure to innovate European results at FROs. Thus, one objective of this article is finding out why that is the case. Therefore, the first research question (RQ) asks:

1. Why is there seemingly a failure to innovate of European Project results at first responder organisations?

The conceptual model in figure 2 shows two main relations that are of interest. The one between EU projects and project results, and the one between project results and implementation in FROs. If there is failure to innovate, there must be a breakdown in one of these relationships which interrupts the innovation stages. Therefore, the analytical interviews are used to examine where this breakdown occurs, why it occurs and what factors cause it to occur. The second research question goes one step further and asks what can be done about that breakdown.

2. Which action can first responder organisations take before, during and after European projects to prevent failure to innovate?

To answer RQ2, a handbook was developed for FROs to use before, during and after European projects which includes worksheets that can be used. Thus, the handbook should help FROs feel better prepared to work on EU project, but it should also make them aware of the pitfalls that may be common to FROs.

THEORETICAL BACKGROUND

Ambidexterity and First Responder Organisations

When considering the role first responder organisations play in society, a strange dichotomy presents itself. On the one hand, FROs need to react quickly to a crisis, while maintaining coverage of their district to respond to other incidents. On the other hand, FROs need to be prepared for the future, and the crises that come with that. In other words, FROs need to be ambidextrous. Preparing for the future also means being able to implement new RI in the organisation. Ambidexterity originated in the literature as a concept meant for companies. It is the ability to both maximise current profits and sales but are also being flexible and adaptable enough to respond to the future by implementing RI (O Reilly & Tushman, 2004; Birkinshaw & Gibson, 2005). Nowadays scholars also apply it to public organisations and non-for-profit organisations. For example, Narayanan and Altay (2021) use ambidexterity to describe humanitarian organisations like food banks and the salvation army. Others use it to describe to the functioning of the army during war time versus during peace time (Soeters 2008). Thus, applying it to FROs has precedent.

Another aspect of FROs is that they are often public in nature. Thus, the theoretical background takes into account literature around RI implementation for ambidextrous organisations, but also for public organisations. This information is fused with the results of the exploratory interviews, creating a conceptual model considering the unique characterises of a FROs as both a public organisation and an ambidextrous organisation.

FROs in European Projects

In this article "European projects" is used for all projects that are completely or partially funded by Europe (European commission, Directorate-General for budget, 2021a, 2021b). This article distinguishes 3 phases for European projects, based on the exploratory interviews and the literature. Firstly, the proposal phase, secondly the execution phase and thirdly the result phase.

- Proposal phase: during this phase the proposal is being written, and the consortium is created. Important steps in this phase are: 1) finding relevant partners, 2) dividing the budget, 3) dividing the tasks, 4) describing the expected impact. The proposal is then evaluated (European commission, 2018, 2021c, 2021d, 2022a, 2022b; Cunningham, O'Reilly, Hooper, Nepelski & Van Roy, 2020).
- Execution phase: during this phase the Grant Agreement needs to be executed. End-users (the role of participating FROs) often enact the following tasks:
    - Defining gaps in the work field
    - Formulating end user requirements
    - Scenario building
    - Validation of results
    - Dissemination of results (European commission, 2022c; 2022d)

  One of the respondents mentioned the following: *"FROs work on the practical side. We organise field trials, we test with the work field if something works or not. We start after the research has been done."*
- Result phase: in this phase the official project period has ended, and so had the financing. During this phase, the results should be implemented in either the participating organisations or the member states (European Commission, European Innovation Council and SMEs Executive Agency, Scherer, Weber & Alveen, 2022a).

According to Serwiak (2022), not all end users seem satisfied with the project results of EU projects. The following difficulties are often encountered:

1. Not enough resources to participate
2. EU projects are not part of the core tasks
3. Too little experience with EU projects
4. It takes too long for results to be usable
5. Shifting priorities of end users during a project
6. Bad experiences in previous projects (Serwiak, 2022)

Reasons to participate in European projects are similar for FROs as the reasons to participate in RI implementation. They want to improve the efficiency or effectiveness, involve citizens or corporations, increase safety and equality, or increase their own legitimacy (De Vries, Bekkers & Tummers 2014; Rip, 2016).

Factors Influencing Implementation

The process of innovation has multiple stages. In this article, 4 stages are identified. These are the initial stage, the development stage, the adoption stage and finally the implementation stage (Somech & Drach-Zahavy, 2013; De Vries, Bekkers and Tummers, 2014; Allen et al., 2017; Singh, Akbani & Dhir 2020). These stages overlap with the phases of European projects as seen in figure 1.

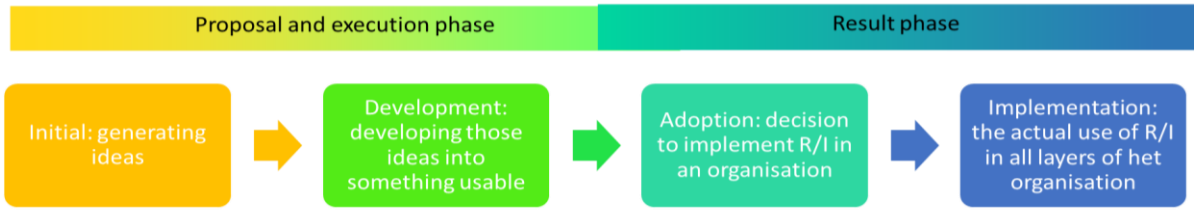

Figure 1. Overlap between innovation stages and EU project phases

The factors that influence research and innovation implementation in FROs can be divided into four categories. These are the characteristics of the project results, individual factors, organisational factors and environmental factors. The table below show the factors that can influence implementation (simplified). A "+" refers to a positive relation with implementation, while a "–" refers to a negative relation. The factors in bold have been emphasized because of their importance for RI implementation. There are a few factors that have a +/- sign, in this case there is either debate on the positive or negative relation, or it could work both positively or negatively depending on the other factors. This table does not show possible interactions between the factors.

Table 1. Factors influencing implementation

	Implementation (literature)	**Implementation (exploratory interviews) for European projects**
Characteristics RI (Meijers et al, 2006; De Vries, Bekkers, Tummers, 2014; Alexander, 2015; Owen, 2018; Brooks, Grugulis & Cook, 2021; MED1stMR, 2023 respondents)	- Abstraction + Complexity + Concrete solutions + Congruency with current way of working + Ease of use **++ Added value** - Costs + Testability + Access	+ Adaptability +/- Low TRL level
Individual (Mulgan & Albury, 2003; Starkweather, & Kardong-Edgren, 2008; Somech, & Drach-Zahavy, 2013; De Vries, Bekkers, & Tummers, 2014; Alexander, 2015; Hero, Lindfors, & Taatila, 2017; Owen, 2018; Moussa, McMurray & Muenjohn, 2018; Cunningham et al., 2020; Singh, Akbani & Dhir, 2020; respondents)	+Creativity +Communication skills +Flexibility	**++Combination of project management skills and operational experience as FR** +Communication skills +Flexibility
Organisational (Young, Charns & Shortell, 2001; Mulgan & Albury, 2003; Meijers et al., 2006; Edmond, Megivern, Williams, Rochman & Howard, 2006; Büschgens, Bausch, & Balkin, 2013; De Vries, Bekkers, Tummers, 2014; Jacobs et al., 2015; Mosadeghrad, 2015; Fu, Liu & Liao, 2018; Moussa, McMurray & Muenjohn, 2018; Owen, 2018; González Fernández, Kubus & Mascareñas Pérez-Iñigo, 2019; Clausen, Demircioglu, & Alsos, 2020; Cunningham et al., 2020; Singh, Akbani & Dhir, 2020 Stelzl, Röglinger & Wyrtki, 2020; Brooks, Grugulis & Cook, 2021; Koskinen, 2021; Akıncı, Alpkan, Yıldız & Karacay, 2022; Smara & Bogatyreva 2023; respondents)	+Active unlearning +reward for experimentation or risk taking +Demonstration and trainings +Diversity - Memories of the past - Hierarchy +Open and closed leader +Leader: specific and concrete vision of implementation. ++**Resources for R/I** +Encourage development of employees - Complexity **++Time for R/I** ++**Safe working climate**	+ Composition of the consortium **++Extra resources for R/I from EC** +Shared responsibility for project results in the consortium +/- Vision of project coordinator +/- Vision of participating consortium members
Environment (Young, Charn & Shortell, 2001; Strejcek & Theil, 2003; Mulgan & Albury, 2003; De Vries, Bekkers, & Tummers, 2014; Mosadeghrad, 2015; European Commission, Directorate-General for Research and innovation, 2018; Clausen, Demircioglu & Alsos, 2020; Brooks, Grugulis & Cook, 2021, respondents)	+participation in isomorphic networks +/- Economic pressure +/- Political pressure - changes in pressure	- European environment +/- societal relevance

Conceptual Framework

Based on the above literature and the exploratory interviews, a conceptual model can be created where the presence of factors is integrated with figure 1. This can be seen in figure 2. The figure shows that the EU project has influence on the project results that are achieved. The factors present in FROs influence that relationship via their participation in the project. Those project results then need to be implemented during the result phase. In this phase, the factors present in FROs influence that as well.

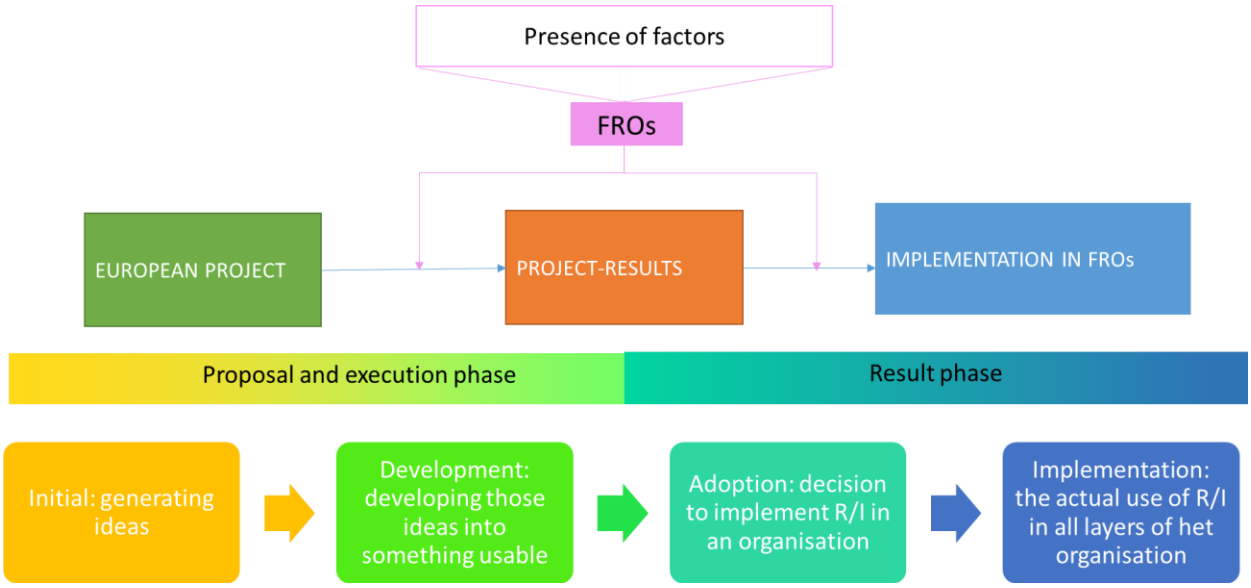

Figure 2. Conceptual model of FRO implementation of EU project results (own design)

RESEARCH APPROACH

Figure 3 shows the methodological approach in this article. Firstly, literature was found about implementation in public organisations and in ambidextrous organisations. On top of that, a round of five exploratory interviews was conducted to complete the theoretical framework. That framework exists out of a conceptual model and the first version of a handbook for FROs[1]. This model and the handbook were then evaluated in a second round of six analytical interviews. Based on those interviews, the conceptual model and the handbook were adjusted to their current version.

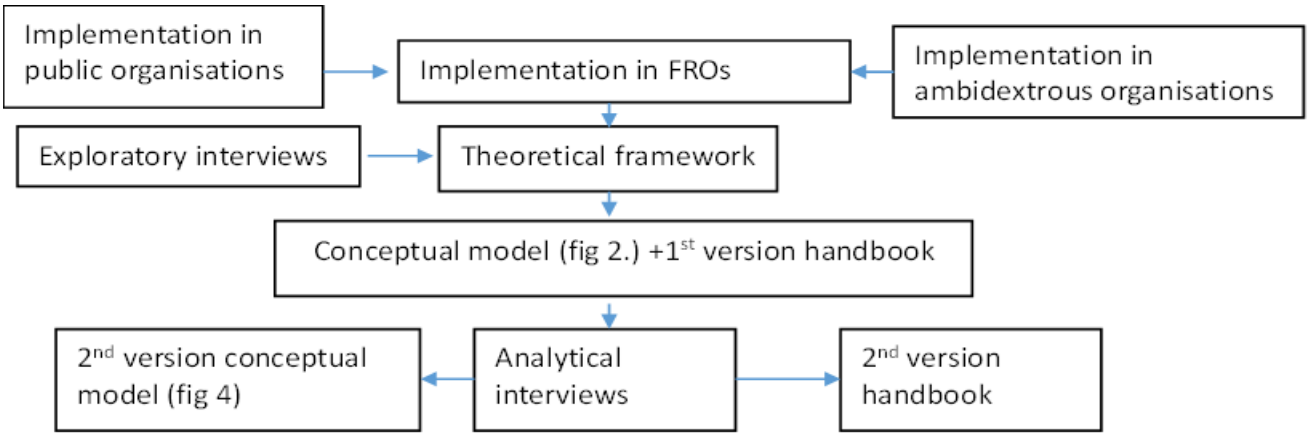

Figure 3. Methodological approach (Own design)

Data Collection

To choose what literature to use in this paper, we set up an excel table that tracked all found literature. It was then checked for inclusion of: RI implementation elements, if the end user was a FRO and if the paper addressed European projects. The articles in this paper include at least 2/3 elements. On top of that, priority was given to meta-analysis to get an overview of the different factors that influence implementation.

There were two rounds of interviews done for this research. The first round was the exploratory interviews. The

[1]Since this was only a concept version, it is not included in this article.

goal of these interviews was to gain a better understanding of the relationships in the conceptual model. For both interviews, we used the snowball method. On top of that, we tried to create a good spread of respondents, including both managerial roles as well as operational roles. The exploratory interviews were open conversations, belonging to the category of non-structured interviews. The shortest exploratory interview was 36 minutes and the longest was 1 hour and 12 minutes. The interviews were conducted in Dutch. 4 of 5 respondents were from the Flemish part in Belgium, and one was from the Netherlands. Of those exploratory interviews, 1 worked for the fire services and was a trainer in a training centre, 1 worked for the police department of a training centre, 1 worked for the national police, 1 for the medical services as well as being a trainer in a training centre and 1 as an advisor EU projects for a training centre. The exploratory interviews were transcribed via Amberscript. They were coded via the inductive method. Text fragments of interest were chosen and pasted into excel. Every new concept was then assigned a code that best represented the text fragment. This was done to all text fragments of the exploratory interviews. Because many codes were identified, some were linked to each other in themes. these themes were derived from the literature review done before.

For the second round of interviews, the analytical interviews, 6 respondents were interviewed. All 6 respondents were from the Flemish part of Belgium. the shortest interview was 1 hour and 2 minutes, while the longest was 2 hours and 16 minutes. Of these respondents 1 was from the fire services, 1 an advisor EU projects for a training centre and from the fire services, 2 worked for the police, 1 worked for a training centre, and 1 worked for a national crisis centre. All the respondents had experience with European projects, mostly with ISF (internal security fund) and HORIZON 2020 projects. In contrast to the exploratory interviews, the coding of the analytical interviews was done deductively. The codes and themes were based on those developed during the coding of the exploratory interviews. Nonetheless, new codes could still be added if necessary. This allowed for a structured but flexible framework through which to interpret the interviews. A semi-structured interview method was chosen for the analytical interviews because there were specific points that needed to be addressed. By using an interview protocol, we could make sure to discuss all those points. During the interviews there was room for new insights that could challenge the conceptual model made from the theoretical framework. Following an interview protocol but allowing for deviations made the semi-structure interview the best choice for this research.

Relevance and Validity

This research is exploratory in nature, more research is needed to explore the subject fully. The research is based on a total of eleven interviews, 5 exploratory and 6 analytical. The respondents of this research were found via the snowball method. The small number of respondents and the methods of finding respondents could lead to undesirable bias. It could be the case that the respondents are not representative for FROs working on EU projects, which could influence the validity of this research. On top of that, two authors work for a FROs that participate(d) in EU projects. This too could lead to unconscious bias, for example with confirmation bias.

RESULTS

For the analytical interviews, a total of 735 text fragments were encoded. Table 2 shows the top 10 codes[2] most associated with either the EU project structure or the FRO structure and table 3 shows the codes most used per project phase, mostly used for RQ2. Table 4 shows the top 3 codes associated with the themes. Interpretation of these results is found in the discussion.

Table 2. top 10 codes associated with project structure and FRO structure

EU projects structure codes top 10	**Amount**	**FRO structure codes top 10**	**Amount**
Profile project management	19	Vision on RI	37
Composition organisation	18	Management	28
Time	13	Resources	25
Administration	13	Added value	24
Management	12	Time	21
Resources	12	Innovation implementation	21
Profile expertise	11	Politics	20
Scale	9	Open attitude	20
Communication	8	Demo and trainings	12
Added value	7	Own initiative	12

Table 3. Most codes used per project phase

Project phase	**Top codes**
Call selection	Added value (5x) Concrete solutions (3x) Composition organisation (3x) Alternative(3x)
Proposal	Composition organisation (4x) Decide own objectives (3x) Profile project management (3x)
Execution	Administration (12x) Profile project management (10x) Composition organisation (9x)
Results	Innovation implementation (10x) Added value (9x) Concrete solution (9x)

[2] Translated from Dutch

Table 4. Most used codes per theme

Theme	Top 3 codes
EU project individual **Total: 42x**	Profile project management (16x) Profile expertise (11x) Communication (7x)
Individual **Total: 67x**	Own initiative (12x) Open attitude (12x) Profile expertise (8x) Ego (8x)
EU project organisation **Total: 123x**	Composition organisation (17) Time (13x) Administrative (13x)
Organisational **Total: 193x**	Vision on RI (33x) Leadership (28x) Resources (21x) Time (21x)
EU project environment **Total: 22x**	European rules and regulations (7x) Politics (4x) Society (4x)
Environment **Total: 79x**	Politics (19x) National networks (11x) Nationale rules and regulations (9x)
EU project characteristics **Total: 22x**	Added value (6x) Concrete solutions (5x) European collaboration (2x) Costs (2x)
Characteristics **Total: 23x**	Added value (13x) Abstraction (3x) Concrete solutions (2x) Ease of use (2x)
Use of project results **Total: 28x**	Innovation implementation (6x) Concrete solutions (5x) Added value (3x) Internal dissemination (3x)
Use of RI **Total: 17x**	Innovation implementation (5x) Research implementation (3x) Society (2x)
Advantages EU projects **Total: 30x**	Own network and contacts (5x) Resources (5x) Concrete solutions (4x)
Disadvantages EU projects **Total: 39x**	discouragement (7x) Abstraction (7x) Administration (7x)
Advantages RI **Total: 1x**	Reorganisation (1x)
Disadvantages RI **Total: 8x**	Reorganisation (4x) Efficiency (1x) TRL level (1x) Innovation implementation (1x) Changeability (1x)
Recommendations **Total: 41x**	Alternatives (11x) Composition organisation (6x) Decide own objectives (4x)

DISCUSSION/CONCLUSION

The Role of Characteristics

During the analytical interviews, it became clear that the characteristics play a crucial role in the implementation of results. The results needed to have added value and offer concrete solutions to relevant problems, but they often did not. Many respondents felt that the structure of EU projects was to blame for this. The following quote illustrates that: "*It often feels that end users in research project are an afterthought. We make a nice academic project, but we also need to involve first responders because of the commission. To tick all the boxes. So, we look for a few FROs that are not allowed to think in the front end about what we are investigating. We are going to research something that is academically relevant, the practical relevance does not matter.*"

Another respondent mentioned that you need to involve FROs to get the right characteristics. "*If you ask organisations to implement results that have been thought out only in the ivory tower, the results will be much worse than if they would have had actual good contact with our colleagues. Then you know, this has been developed by people like us. The moment it becomes abstract, it does not go well.*"

This section shows that if the results do not offer concrete solutions, added value or relevance, the implementation process stops after the EU project (RQ1). Thus, it is the creation of these characteristics during the project that is of importance. Furthermore, there are also hints that once a result is complete, the characteristics moderate the relationship between all the other factors (individual, organisational, environmental), and the implementation. De Vries, Bekers and Tummers (2014) mentioned that there is less interest in the influence of characteristics in the RI field for public organisations. This article shows that characteristics do play a major rule. Thus, characteristics especially should be considered a target for future RI research, and especially its possible moderating role.

Factors That Influence Characteristics in EU Projects

The next question that needs to be asked is which factors specifically are important for the creation of the characteristics. According to the respondents this is mostly the composition of the consortium, and the coordination of the project. Respondents mention (and are supported Cunningham, et al. (2020)), that often coordinators have a scientific or industry background, and that this influences their priorities. One of the respondents only participates in EU projects when they coordinate, while others mention that they do not have the means or experience to coordinate a project.

The composition of the consortium is another factor that influences the result. According to respondents it should be "*as big as needed and as small as possible"*. There is one respondent who prefers to work in consortia only with FROs, while the others believe that diverse consortia with different kinds of organisations are still the best to work with.

Respondents also mentioned that the European environment should do more to stimulate implementation of project results. For example, by representing the interest of end-users. Requiring their presence in a consortium is not enough. On top of that, it would be necessary to bridge the gap between the end of a project, when a result is (often) not ready to be implemented, and the actual time a result is implementable. Currently, the respondents feel that this is not being done sufficiently which harms the implementation. Furthermore, respondents feel that the administration that is needed to participate in EU projects is too time-consuming. One of them said: "*Of course you need to be accountable in EU projects. It is public money. But if you look at the archaic software in which everything needs to be reported and how you need to report the same thing three or four time, it takes many hours and many people working to do those things that have no use at all*."

Apart from the interim evaluation of the different European project programs, there was little research on the specific factors that influence characteristics in EU projects. Thus, this can be a possible gap in the literature that should be studied more in depth.

Other Important Factors for FROs Participating in EU Projects

Other impact factors to consider for FROs that participate in EU projects are:

- Individual
    - Ego: the respondents mentioned that many FROs were proud of the job they do, and wanting to implement change could be read as criticising the current way of working.
    - Own initiative: this can be illustrated by the following quote: "*Research and innovation [in FROs] is completely non-committal and depends on individual interest and initiative".*
    - Open attitude: the respondents remark that some first responders have a conservative attitude, while others have an "early adapter" mentality. Unlearning could be a way to convince FRs with a more conservative attitude, as discussed by Brooks, Grugulis & Cook (2021).
- Organisational
    - Time, resources, and a shortage of personnel are all hindrances to RI implementation in FROs. The importance of these practical factors is also underlined in the literature. The absence of these can completely block implementation (Mulgan & Albury, 2003; Edmond, et al., 2006; Meijers et al., 2006; Moussa, McMurray & Muenjohn, 2018; Smara, & Bogatyreva, 2023).
    - According to respondents, there is a lack of vision and objectives for RI in their organisations, which hinders implementation. One said: *There is no structured innovation in our organisation. (…) there are innovation procedures, but it is very incremental and slow. It is not based on a thought-out structured flow within the organisation, that is simply not present."* This confirms that vision plays an important role, which is concurrent with the literature (Young, Charns &

Shortell, 2001; De Vries, Bekkers, Tummers, 2014; Singh, Akbani & Dhir, 2020; Stelzl, Röglinger & Wyrtki, 2020)

- Environmental
    - Formal mandate: respondents mention that there is often not a formal mandate from the government to work on RI, or it is very limited. This means that all RI activities are done on top of the normal workload. Additionally, there are many different FROs who all have different mandates, and different speeds of implementation. This means that there is a lack of a harmonised approach. Even with a top down approach, this fragmentation could lead to a difficult implementation, as suggested by Boersma, Wagenaar and Wolbers (2012).

This article thus confirms the literature on the organisational level. However, on the individual and environmental levels, more research is needed, especially on the effect of ego and own initiative, as well as on the role of a formal mandate for RI. Literature highlights that in ambidextrous organisation, RI is part of the job description of individuals (Meijers et al., 2006; Owen, 2018; Brooks, Grugulis & Cook,2021; Koskinen, 2021). It however does not mention a formal mandate for FRO to work on RI.

Conceptual Model

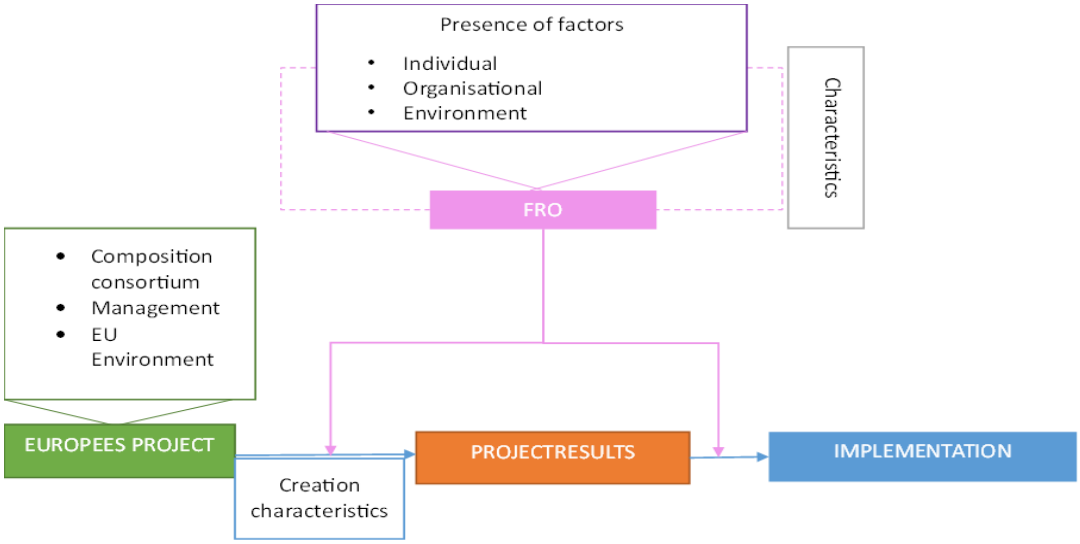

Figure 4. the renewed conceptual model

The above section has shown the role of the characteristics of EU project results, of the composition of the consortium the management, and the EU environment. This is visible in the new conceptual model in figure 4.

RQ1 asked: Why is there seemingly a failure to innovate of European Project results in FROs? It is clear from the respondents' answers that there can be a failure to implement project results. They often do not have desirable characteristics and thus, there is no enthusiasm to use them within FROs. The next step is determining why this is so. Is it the case because of the structure of EU projects? Or because of the structure of FROs? Or both? The respondents highlighted that the structure of the EU project can often be the problem. When the creation of characteristics goes wrong it leads to un-implementable project results. This happens during the EU project. It is however, also undeniable that there are factors in FROs that make implementation difficult to begin with. For example, a lack of vision and working without a structured flow of RI implementation.

Handbook

To give FROs a toolkit to prevent failure to innovate, and to answer RQ2, a handbook was created. This handbook was examined by all respondents and exists out of the following chapters (translated handbook: https://zenodo.org/records/10964582).

- Chapter 1 and 2: what are EU projects?
    - An explanation about the creation of the handbook, and of the most used jargon in EU projects.
- Chapter 3: requirements
    - The requirements that are needed for FROs to participate in EU projects. Of these requirements, a mix of people with project management experience and operational experience were

emphasized by the respondents. One respondent said: "*It is about bringing an operational background, the terrain knowledge to a more scientific or strategic project. You cannot get that knowledge from people who only know the procedures."*

- Chapter 4: selecting calls
  - Information on how to select calls. Respondents emphasised the importance of choosing project calls based on the concrete vision and objectives of the FRO. This chapter also gives an explanation on how to read project calls, based on Rösner (2023).
- Chapter 5: the proposal phase
  - During this phase, respondents mentioned that FROs should be aware of the composition of the consortium and of the coordinator. "*You need to look at: what is this project about, and how are we going to realise that with this group of people? That it is not all the same type of people when the call asks for someone else"*. Additionally, respondents mention that practical considerations need to be kept in mind.
- Chapter 6: the execution phase
  - Many respondents mention that during the execution phase, it is important to keep in mind your own vision and objectives and to be able to communicate those to the project partners.
- Chapter 7: the result phase
  - According to the respondents, this phase is crucial, but also the most overlooked. This is the time period that determines if results get implemented or not.
- Attachment: work pages
  - These can be filled in by FROs before, during and after the project, allowing them to track the project from beginning to end.

Recommendations

Based on the findings of this article, a few tentative recommendations can be made. Firstly, the current structure of EU projects includes hindrances that can lead to failure to innovate for FROs. These hindrances should be reduced. As such, the administrative burden of EU projects should be lowered if possible. On top of that, the current requirements demanded by the EC (high TRL for IA, required participation of end user organisation and specific dissemination plans) appear insufficient to ensure implementation in FROs. The utility of these requirements should be further evaluated. Secondly, FROs should be better prepared to participate in EU projects. They should develop a vision with concrete objectives about research and innovation implementation in their organisation. This should also explicitly address the project they are participating in. Thirdly, the gap between academics and FROs should be further closed by "translating" academic literature into concrete solutions, so that the project results are less abstract.

An overarching organisation that specializes in EU projects that employs active first responders and disseminates project results in different FROs could be a solution that addresses most of the recommendations. There would be expertise on the EU environment in this organisation, they would be prepared to participate, and they could support academics in the "translation" process.

Limits and Further Research

This was exploratory research only. More research is needed to further examine the findings of this article. A study with more FRO respondents in multiple European countries could be a good starting point. Additionally, how to encourage implementation of results in FROs should be further researched. For example, by exploring which additional requirements for EU projects could lead to more implementation.

There are several limitations to this research. Firstly, there is the possibility for a negativity bias, the tendency of respondents to focus more on the negative aspects then on positive aspects during an evaluation (Ito, Larsen, Smith & Cacioppo, 1998). Secondly, this article is focussed only on the FROs participating in European projects, it thus excludes the point of view of researchers, commercial parties, and the European Commission. Thirdly, the article had a small sample size, used the snowball method and was geographically in Belgium and the Netherlands. This sample therefore might not be wholly representative of all FROs participating in EU projects.

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