

Evaluation of Funding Practices at Östersjöstiftelsen

Academic report from
The Danish Centre for Studies in Research and Research Policy

2019

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**DANISH CENTRE FOR STUDIES IN
RESEARCH AND RESEARCH POLICY**
DEPARTMENT OF POLITICAL SCIENCE
AARHUS UNIVERSITY



Series title and number	Academic Report from The Danish Centre for Studies in Research and Research Policy
Title	Evaluation of Funding Practices at Östersjöstiftelsen
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Department	Department of Political Science, Aarhus University
Publisher	The Danish Centre for Studies in Research and Research Policy
Year of publication	2019
Editing completed	September 2019
Financial support	Financed by Östersjöstiftelsen

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Summary

The Foundation for Baltic and East European Studies (Östersjöstiftelsen) commissioned in autumn 2018 a study of Östersjöstiftelsen's funding practices of research activities at Södertörn University to the Danish Centre for Studies in Research and Research Policy (CFA). This report presents the outcome of this study. CFA was asked to evaluate the efficiency of the practiced funding instruments given the existing contextual framing, i.e. Östersjöstiftelsen's statutes and regulations, and this report is meant to give Östersjöstiftelsen a solid foundation for discussing and making decisions concerning the composition and balance of their overall funding instrument portfolio. A prerequisite in the evaluation assignment has been that Östersjöstiftelsen's statutes and regulations are fixed. However, Section 1 briefly describes the history of Östersjöstiftelsen, Södertörn University and their relationship through more than two decades.

Section 2 reviews the international literature on research funding, presents a typology of research funding instruments and discusses strengths and weaknesses of different instruments as well as interactions between them. The section focuses on literature on the distribution of competitive research funding and discusses systematically advantages and disadvantages of different types of funding research and research activities. As the research funding system is considered the most important policy instrument in defining the scope, content and direction of public research activities, the section provides up-to-date knowledge for future discussions within Östersjöstiftelsen on existing and new funding instruments.

As Östersjöstiftelsen has funded research, doctoral studies and academic infrastructure at Södertörn University since 1994, a large portfolio of funding instruments has already been in use during the last 25 years. Section 3 presents and discusses the historical and current funding practices at Östersjöstiftelsen using the typology developed in Section 2. The manifold purposes of Östersjöstiftelsen's funding are manifested in a dynamic and challenging reality caused by a continuously changing pressure on the statutes under which Östersjöstiftelsen works. This evaluation does not make a single recommendation regarding efficient funding instruments. Many funding instruments have been in use, and will probably stay in use.

Section 3 also describes the present research profile and impact of Baltic and East European research at Södertörn University. The bibliometric study of Baltic and East European Research from Södertörn University, which provides the profile, shows that researchers at Södertörn University increasingly collaborate with researchers at other institutions. Furthermore, it shows that the publications seem to be cited less than average in the field, probably because researchers publish in less cited journals.

As evaluations often focus on ex post funding and its impact in an attempt to extrapolate the findings to efficient future research funding instruments, Section 4 reports on the results of a survey of recipients of past funding from Östersjöstiftelsen in which they were asked about their ideal future research grant or research funding in general from Östersjöstiftelsen. The most prevalent answers included funding for 'collaboration', 'interdisciplinary research', 'existing' and 'new' research agendas and groups, but also funding for 'basic research'. A widely expressed wish was for better opportunities to embed PhD-students into research projects. However, characterising the frames of an ideal research grant, the average answer fit the existing three-year individual research grant quite well, although a little longer than the current 3 years, with 2-5 researchers involved and with 1-3 million SEK in funding per year.

Asked about the perceived impact of their funding from Östersjöstiftelsen, the respondents reported a number of significant and positive impacts in the form of new research qualifications, increased productivity and novelty, career advances and new research collaborations. They also reported that the execution of their research project was highly dependent on funding from Östersjöstiftelsen, and would often not have been possible without.

This evaluation contributes with evidence and information to a long discussion of how a funding organisation should fund research activities. Section 5.2 discusses how Östersjöstiftelsen can implement a funding portfolio that funds Baltic and East European Research at Södertörn University in a way that fits Östersjöstiftelsen's purposes and statutes. Basically, the funding instruments best suited for the needs of the organization highly depend on the context of the funding (objectives, researchers, institutions, traditions etc.) and attention therefore has to be given to the particular context in which the instruments are supposed to work. As such, transparency, justification and acceptance in the organisation, i.e. Södertörn University, seem to be important to achieve and maintain a portfolio of funding instruments at Östersjöstiftelsen that could increase the impact of the funding.

1.0 Introduction

1.1/ The evaluation assignment

The evaluation of funding practices at the Foundation for Baltic and East European Studies (Östersjöstiftelsen) is the outcome of a study of Östersjöstiftelsen's present and past funding of research, doctoral studies and academic infrastructure at Södertörn University. Östersjöstiftelsen commissioned the evaluation to the Danish Centre for Studies in Research and Research Policy (CFA), and it was carried out in autumn 2018 and spring 2019. Östersjöstiftelsen asked CFA to evaluate the efficiency of the practiced funding instruments given the existing contextual framing, i.e. Östersjöstiftelsen's statutes and regulations. The evaluation is meant to give Östersjöstiftelsen a solid foundation for discussing and making decisions concerning new funding instruments and for the composition and balance of the overall funding instrument portfolio.

Section 2 conducts a systematic literature review of research funding research, presents a typology of research funding instruments, and discusses strengths and weaknesses of different instruments as well as interactions between them. Section 3 describes the development of Östersjöstiftelsen's funding of research activities at Södertörn University, direct and indirect funding instruments used over time and finally the current research profile and impact of Baltic and East European research at Södertörn University. The results are discussed in relation to earlier evaluations when relevant (e.g. KVA 2014, Technopolis 2009A, 2010A, 2010B).

Focussing on the core beneficiaries of Östersjöstiftelsen's funding, i.e. researchers and others at Södertörn University, section 4 presents the findings of a survey to recipients of direct or indirect funding from Östersjöstiftelsen. The outcome reveals the desired ideal research funding seen from the researchers' point of view and their experienced efficiency, outcome and impact of previous funding. Section 5 concludes on the match between Östersjöstiftelsen's present research funding portfolio and Södertörn University's multidimensional demands, and suggests a way forward towards a more coherent, multidimensional, and flexible but also targeted research-funding model that ensures an optimal balance between different instruments and makes it possible for researchers to produce excellent research at Södertörn University.

A condition or restriction in the assignment has been that Östersjöstiftelsen's statutes and regulations are fixed and not to be challenged. They have therefore not been treated or discussed in the present evaluation.

1.2/ Östersjöstiftelsen

Östersjöstiftelsen was founded by the Swedish Government in 1994. Its mission is, according to its statutes, to support research, doctoral studies and the academic infrastructure at Södertörn University, cf. <http://ostersjostiftelsen.se/in-english>. Since its foundation, Östersjöstiftelsen has granted SEK 3.6 billion to the university, including approximately 265 research projects in the Humanities, Social Sciences, and Natural Sciences between 1998 and 2019, led by 180 different Principal Investigators (PIs) (own calculations). Numerous doctoral students have been financed as well.

In recent years, Östersjöstiftelsen has granted approximately SEK 180 million per year to Södertörn University, cf. <http://ostersjostiftelsen.se/in-english>. Of these funds, about 40% have been granted to research projects, and the remaining funds to research planning, professorships, visiting research fellows, travels and conference attendance, as well as academic infrastructure at

Södertörn University. The continuous funding from Östersjöstiftelsen during more than two decades has enabled the university to build, strengthen and maintain its Baltic and East European Research profile.

Östersjöstiftelsen has for example contributed to the construction of the Center for Baltic and East European Research (CBEEES) at Södertörn University, which was established in 2005. The center hosts the graduate school, Baltic and East European Graduate School (BEEGS). Funds have also been granted for the construction and maintenance of the university's new library, and since 2008, the foundation finances the quarterly magazine *Baltic Worlds*. Östersjöstiftelsen's activities are led by a board, which is appointed by the government (two members) and by the board itself (seven members), mainly after nominations from different academic societies. The board has established a placement delegation that manages Östersjöstiftelsen's capital and a research delegation that prepares research issues. According to the statutes, the capital may not be consumed, and only the direct return can be used for the purpose of Östersjöstiftelsen, cf. Östersjöstiftelsen's statutes (2019).

1.3/ Södertörn University

Södertörn University was established in 1996 to expand the supply of higher education environments in the Stockholm area. The political will was in support of a new university in Southern Stockholm to attract and educate students outside the usual higher education student population, and Södertörn University started with 1200 students. With close to 11000 students in 2019, the mission to attract students from Stockholm's environs and from segments unfamiliar with higher education succeeded, cf. Södertörns Högskola (2016).

Today, Södertörn University offers numerous educations on BA and MA levels in the Humanities, Social Sciences, and Natural Sciences (SER 2015; SER 2017), and some of the programs provide unique interdisciplinary combinations. Doctoral education has been growing steadily and consists in 2018 of around 100 doctoral students within the Humanities, Social Sciences, and Natural Sciences.

Since the political concern in the 1990s also focused on the Baltic and East European region, Södertörn University was required to perform research in this thematic or geographically demarcated field. Östersjöstiftelsen was established to finance this requirement and it is today still one of the most important funding sources for research at Södertörn University. Hence, the strategic focus on Baltic and East European research has been part of Södertörn University in its entire existence. An example of this focus is the creation of Centre for Baltic and East European Studies (CBEEES) and its Baltic and East European Graduate School (BEEGS).

An internal evaluation in 2015 (SER 2015) concludes that Södertörn University in its relatively short lifetime has achieved research of high, and sometimes the highest international class, in some of its research fields. It also appears that Baltic and East European issues have gained a good foothold in most subject environments, i.e. research fields. However, despite several contributions, no one has been able to show a significant causal relation between the funding construction and the research impact, such as citations and the like. For example, Technopolis (2010A) and KVA (2014) conclude that funding from Östersjöstiftelsen may not always result in research with the highest possible impact scores.

1.4/ Coexistence by statutes

The coexistence of Södertörn University and Östersjöstiftelsen was established in the early 1990s. Södertörn University was created to supply higher education in the Southern Stockholm area, but it was also mandated to have a thematic focus on the Baltic and East European regions. According to its statutes, Östersjöstiftelsen was formed to support research, postgraduate education and an academic infrastructure within this theme at Södertörn University. The overall purpose and framework for funding from Östersjöstiftelsen is specified in Östersjöstiftelsen's statutes.

The statutes and regulations have been questioned in previous evaluations of Östersjöstiftelsen by e.g. KVA (2001, 2014) and Technopolis (2009A) where the locked context for Östersjöstiftelsen's funding of Baltic and East European research at Södertörn University has been criticised, and it has been questioned whether the best and most objective outcome of the funding has been obtained. This specific funding construction has been widely debated (e.g. KVA 2014), but it remains fixed and represents a contextual framework throughout this evaluation.

2.0 Review of the Literature on Research Funding

2.1/ Introduction

Stakeholders, professionals and analysts consider the research funding system the most important policy instrument in defining the scope, content and direction of public research activities (Edquist 2003; Aagaard 2017; Aagaard et al. 2019a). Arguably, changes in the volume and composition of funding as well as the combination of funding schemes have significant consequences for the production of scientific knowledge (DFiR 2016).

One of the most salient trends in the funding of university research in recent decades is the gradual replacement of a public research sector, primarily driven by institutional block grant funding (known as 1st stream), with a system relying on a growing share of competition-based funding as well as earmarked funding for strategically oriented research within selected areas ('2nd stream') (Heinze 2008; Heinze et al. 2009:620; Hessels et al. 2011:558; Luukkonen and Thomas 2016:100; Aagaard 2017). Thus, competition-based funding plays an increasingly pivotal role in the funding of public sector research, and international debates on the most optimal distribution of research funding are ongoing and yet unsettled. A pertinent question in this regard is whether scientific productivity and breakthroughs are best supported by concentrating funding on a limited number of research entities and high-achieving PIs, or by distributing funding more evenly on many small and medium-sized teams. The question how to maximize the returns of research funding investments is thus not only central to science-policy makers but has also received considerable attention in the international science funding literature (Aagaard et al. 2019a; Aagaard et al. 2019b). Relevant discussions about funding distribution include: the increasing use of competition-based funding schemes (Aagaard 2017; Heinze 2008), the interplay between external funding and block grant funding (Aagaard 2017), the limited funding opportunities for early career scientists (UFM 2016; 2018), how different funding mechanisms either suppress or enable creativity, risk taking and diversity in the research conducted (Aagaard et al. 2019a; Hellström et al. 2017; Kimble et al. 2015; Peifer 2017), the most efficient ways to allocate resources in terms of funding size and degree of concentration (Aagaard et al. 2019b), the consequences of focusing research efforts in centers of excellence and large-scale grant schemes (Bloch et al. 2016; Bloch and Sørensen 2015; Stilgoe 2014), and finally, what type of research grants that are most sought for among researchers (Wohlert et al. 2018).

This section presents a systematic review of the international literature on research funding with a particular focus on contributions concerning the distribution of competitive research funding. Special attention is devoted to the balance between concentration and dispersal of research funding. The intention is to qualify a broader discussion of the advantages and disadvantages of different types of funding schemes and provide ÖSS with empirically grounded suggestions for deciding on an efficient composition of their overall funding portfolio.

First, we give a broad introduction to the selection of articles and the literature reviewed by detailing the search strategy, the selection criteria and the main characteristics of the literature surveyed. Second, we develop typologies of different types of funding instruments and discuss benefits and drawbacks of different funding models. Third, we synthesize the main arguments in favor of concentration and dispersal of research funding. Fourth, we summarize main conclusions from two empirical studies that identify characteristics of excellent research environments and high performing research groups respectively. Finally, we report results from a Danish survey

study that explores the type of research grants that are most sought for among a population of grant-winning scientists.

2.2/ Description of the literature at hand

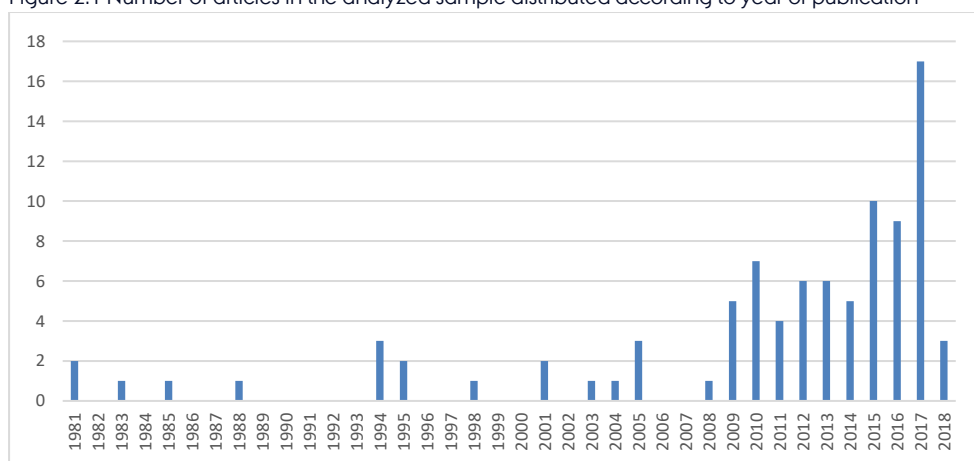
The following section presents a review of the international literature on the distribution of competitive research funding. The review is based on a comprehensive survey of the funding literature conducted by CFA, which sought to synthesize arguments for and against the effects of concentration and dispersal of research funding (Aagaard et al., 2019a; Aagaard et al. 2019b). The scientific article (Aagaard et al., 2019b) that presents the findings of the scoping review is forthcoming, but a preprint is accessible (see Aagaard et al., 2019b under references).

The available literature on concentration and dispersal of research funding is fragmented and characterized by conceptual and methodological inconsistencies and limitations. Furthermore, the irregular character of the literature is illustrated by a lack of cross-referencing across the articles included in the final review.

Studies on the concentration and dispersal of research funding still constitute a relatively new and emerging research field, and empirical knowledge on the topic is scattered. In addition, there is a lack of knowledge about the degree of research funding concentration at the individual-, group-, and domain-specific level, the interaction between public and private funding bodies as well as the interplay between different types of funding schemes and mechanisms. While some knowledge exists on the distribution of competitive research funding at the level of main field, country, region and institution, empirical evidence regarding the actual distribution of funding at the micro level remains sparse.

As illustrated in Figure 2.1, research on the consequences of concentration and dispersal of research funding has increased significantly during the past ten years.

Figure 2.1 Number of articles in the analyzed sample distributed according to year of publication

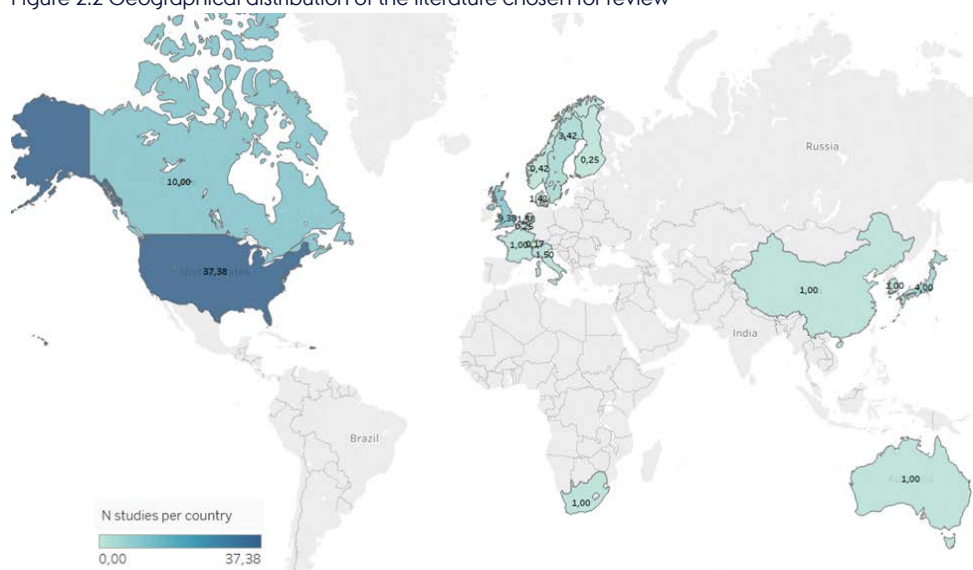


Note: 2018 is not complete as the data collection ended mid-year.

In the initial phases of the review, we conducted a systematic literature search in the Web of Science and Scopus databases. In this search, we identified 3,567 potentially relevant research articles. Through a careful screening process, we selected 91 articles that fulfilled our selection criteria from this pool. We based the selection of the final set of articles on the following criteria: a key focus on concentration or dispersal of research funding at the grant-, unit-, group-, or individual level. We excluded articles focusing on national, regional, institutional, sub-disciplinary, faculty and department-level trends, as well as papers with primary focus on differences between public and private funding schemes, differences between competitive grants and block grants, and issues related to gender, age and race diversity in funding.

The final sample of 91 publications consists of empirical papers with and without focus on the association between funding size and research performance, review papers, conceptual and theoretical papers, opinion-based short-papers, editorials, comments, and blogposts from agenda-setting funding agencies in the US. It is important to note that the literature does not cover the science system as a whole in terms of disciplines or geography. As illustrated by Figure 2.2, the literature has a predominant North American orientation; in particular, the US is strongly represented with 37 contributions. Furthermore, there is a clear predominance of contributions with a main focus on medical sciences, especially biomedicine. Despite this overrepresentation of US contributions and the medical area, we assess that the main points of the literature can be carefully generalized to a broader international context and a broader selection of scientific fields.

Figure 2.2 Geographical distribution of the literature chosen for review



2.3/ Benefits and drawbacks of different types of funding and grant schemes

In this paragraph, we provide definitions and typologies of various types of funding and grant schemes and discuss strengths and weaknesses of different funding models (for a summary of discussions see Table 2.1). The typologies are developed on the basis of current international debates on how to maximize returns of research funding investments and how to best support public research activities.

Core funding/block grants: Recurrent funding is resources provided on a yearly basis by universities as a general research infrastructure and covers: scientists' salaries, rent for offices and laboratories, water, electricity, equipment and its maintenance, technical support (ICT), library, etc. (Laudel 2006). Until recently, the provision of floor funding for research and teaching has been the predominant funding model in most of Europe (Aagaard 2017).

One of the key arguments in favor of core funding is that block grants facilitate stability and flexibility in funding and provides scientists with a great degree of autonomy (Aagaard 2017; Bloch et al. 2016; Bonaccorsi and Daraio 2005). Laudel (2006) observes that recurrent funding used to allow scientists to develop their own line of research and enabled them to apply for additional funding from external sources that in turn could be spent on pursuing promising leads emerging from research undertaken with core funding. In addition, government support for basic research has been conceived to lead to unpredictable breakthroughs that would eventu-

ally materialize in unexpected societal benefits and innovations (Aagaard 2017). Another advantage of this funding model is that a large share of core funding to the universities is expected to ensure high-quality research-based education (Aagaard 2017).

One of the strongest arguments against a funding model based on high levels of floor funding is that it is expensive. Another frequently mentioned argument is that block grants result in stasis and a lack of dynamism in the public research sector as well as too little competition over research funding (Aagaard 2017).

External funding/competitive project grants: Due to shrinking budgets and a general decline in the availability of recurrent funding at European universities, academic scientists are now increasingly dependent on attracting external funding to finance their research. Competitive funding for curiosity-driven research allows scientists to apply for grants without predetermined topics and thematic restrictions (Laudel 2006).

Among policy makers, competitive funding schemes are thought to foster healthy competition between scientists and universities, which in turn is assumed to result in research of higher quality. In addition, many competitive funding schemes allow for a great degree of financial autonomy and thus give scientists considerable freedom to carry out research projects of their own choosing (Laudel 2006).

An obvious drawback of peer-reviewed grant distribution is the time and resources spent by applicants and reviewers on grant writing and evaluation procedures (Aagaard et al. 2019a; Laudel 2006). Likewise, it is suggested that the low success rates induce conservative, risk-averse and short-term thinking among applicants, reviewers and funders (Aagaard et al. 2019a; Gordon and Poulin 2009).

Curiosity-driven research: Policies aimed at supporting curiosity-driven basic research are by proponents perceived to secure a broad knowledge pool and a greater research breadth where seed money is provided to researchers within more marginal research areas, thereby allowing pockets of excellence to grow outside of mainstream areas (Aagaard et al. 2019a; Bloch and Sørensen 2015). Another key argument for supporting bottom-up, researcher-initiated ideas is that nobody can predict where the next breakthrough will take place.

In opposition to these arguments, we find a dominant political impression that there is a risk of spreading funding too thinly in the system by supporting a wide variety of lines of inquiry and research ideas (Aagaard 2017). Furthermore, it is argued that it is a risky investment strategy to support scientists with innovative and potentially path-breaking ideas that, by definition, cannot promise success (Aagaard et al. 2019a; Gordon and Poulin 2009).

Strategic/targeted research: During the last couple of decades, science policy analysts and academics alike have observed a general shift away from funding for curiosity-driven basic research towards more strategic and innovation-oriented research within areas that are given high political priority. The political demand for selectivity in research has resulted in strong support for certain research entities located within strategically important research areas and weakening support for research entities working within low-priority and marginal research fields (Ziman 1994:93).

One of the main arguments in favor of focusing national research efforts within selected areas and key sectors is the achievement of a critical mass of research competencies (see Bloch and Sørensen 2015). The growth in global competition gives national science systems an incentive to concentrate resources on certain high-performing research environments in order to increase international visibility and achieve a competitive edge over other regions and nations (Aagaard 2017; Hellström et al. 2017). The rationale behind focusing efforts and concentrating funding

within certain strong research environments is essentially to boost growth at the regional and national level (Bloch and Sørensen 2015). Another argument for geographical concentration of research capacities in science areas, regions, districts, clusters, and hubs is to enhance scientific productivity by achieving what is termed agglomeration effects (Aagaard et al. 2019b). According to the 'agglomeration economies' argument, the concentration of research capacities in the same area does not only yield scientific returns but may also improve scientific spillover, linkages and collaboration (see Bonaccorsi and Daraio 2005).

Disproportionate financial support for strategic research within highly specialized research areas is seen to threaten the diversity of disciplinary fields and might ultimately hinder potential breakthroughs within low-priority research areas (Aagaard et al. 2019a; Bloch and Sørensen 2015). Another view is that heavy support for research within narrowly defined disciplinary boundaries will suppress scientific creativity and risk-taking and push scientists to pursue more mainstream and less imaginative research (Kimble et al. 2015; Peifer 2017).

Small grants. In relation to funding size, a pertinent question is whether it is more effective to provide small grants to many researchers ('many small' strategy) or large-scale grants to a chosen few ('few big')? (Aagaard et al. 2019a; Fortin and Currie 2013).

A key argument in favor of allocating funding via small grants is that spreading out grants among many researchers and supporting a larger number of investigators at moderate funding levels is an investment strategy that on average yields higher research outputs (Aagaard et al. 2019b). According to proponents of the 'many small' strategy, the chances of making path-breaking discoveries will increase by supporting a wide web of research and a broad variety of research topics (Aagaard et al. 2019b; Lorsch 2015). In addition, it is suggested that a reduction in the size of grants will improve the funding success rate and ultimately optimize the scientific impact of research program portfolios (Aagaard et al. 2019b; Gallo et al. 2014).

Conversely, two main arguments against distributing funding in smaller grant portions stand out. Berg (2012) describes how a policy that aims to reduce resource concentration at the U.S. National Institutes of Health has been criticized for adding to the administrative burden as distribution of funding in small grant portions necessitates additional scrutiny and resources for lengthy peer-review evaluation procedures. Another argument points out that a strategy to spread out funding too thinly on too many scientists and problem areas will result in the dilution of resources (Hicks and Katz 2011; Vaesen and Katzav 2017).

Large grants. The main argument in favor of distributing funding in large grants is essentially the flipside of one of the arguments presented in favor of small grants. Proponents of this funding model point to smaller administrative burdens when research money is allocated in fewer and bigger grant portions (see e.g. Johnston 1994).

In contrast, a key concern in relation to funding in large grant portions is the low hit rates and the concentration of high amounts on fewer scientists. These tendencies toward funding concentration are seen to endanger the growth layer and the next generation of early and mid-career scientists that are incapable of competing with the track records and the amount of resources accumulated by their senior colleagues (Kimble et al. 2015; Peifer 2017; Fortin and Currie 2013; Gallo et al. 2014).

Large-scale center grants. Finally, the support for large research entities by way of center grants and excellence schemes is yet another funding instrument aimed at concentrating research efforts in an attempt to create excellent research environments.

In the literature, some studies generally find positive epistemic effects of resource concentration in large research centers (Bloch et al. 2016; Hellström et al. 2017; Ida and Fukuzawa 2013). A

number of closely related arguments highlight that the concentration of resources in large centers creates the critical mass necessary for the promotion of scientific excellence. These types of arguments claim that scientific productivity increases with the size in critical mass since certain epistemic advantages accrue from scaling and agglomeration effects (Aagaard et al. 2019a; Bloch and Sørensen 2015). Another argument suggests that investments in large research units provide scientists with the necessary availability and flexibility of funding to pursue innovative and high-risk, high-impact research (Bonaccorsi and Daraio 2005; Hellström et al. 2017). Accordingly, it is argued that the sheer size of large-scale research operations justifies the need for large investments in equipment, infrastructure and costly apparatus (Bloch and Sørensen 2015; Bonaccorsi and Daraio 2005; Breschi and Malerba 2011).

By contrast, one of the most frequently mentioned drawbacks of large research centers, consortia and groups is that their excess size can result in organizational fragmentation, cumbersome levels of administration and, ultimately, inefficient use of research funding (Alberts 1985; Breschi and Malerba 2011; Nag et al. 2013). Others argue that the so-called ‘few-big’ funding strategy is risky because it reduces the number of experiments by prioritizing selected research areas and a more limited number of scientists that do not necessarily have the greatest potential for making scientific breakthroughs (Aagaard et al. 2019b; Bloch and Sørensen 2015; Fortin and Currie 2013).

Table 2.1. Benefits and drawbacks of different types of funding/funding instruments

Funding type/ instrument	Benefits	Drawbacks
Core funding/ block grants	Funding stability and flexibility, scientific autonomy, enable pursuit of promising research leads, high-quality research-based education.	Costly funding model, can lead to stasis, lack of dynamism and competition over funding.
External funding/ competitive project grants	Fosters healthy competition, offers high degree of financial autonomy and freedom to choose research problems.	Grant writing and evaluation procedures are time and resource consuming, low success rates induce conservative and short-term thinking.
Blue sky/curiosity-driven research	Securing broad knowledge pool and research breadth, seed money for pockets of excellence, unpredictable where next breakthrough will come from.	Funding is spread too thinly, risky strategy to support research ideas that cannot promise success.
Strategic/ targeted research	Achievement of critical mass, increases international visibility, achieving competitive edge, boosts scientific productivity and economic growth, science spillover.	Threatens diversity of fields, hinders potential breakthroughs within marginal research areas, suppression of creativity and risk-taking, more mainstream research.
Small grants	Support for many scientists spreads investment risk, increases likelihood of making path-breaking discoveries, improvement of funding success rates.	Grant peer-review adds to administrative burden, dilution of resources.
Large grants	Smaller administrative burden in grant peer-review process.	Low hit rates, high amounts of resources on fewer scientists, endanger growth layer and the next generation of scientists.
Center grants, centers of excellence and consortia	Achievement of critical mass, scientific productivity increases with size, scaling and agglomeration effects, funding flexibility to pursue high-risk, high-impact research.	Excess size leads to organizational fragmentation and inefficient use of research funding, reduces number of scientific experiments.

2.4/ Synthesis of arguments in favor and against concentration and dispersal of research funding

In this section, we present a synthesis of main arguments for and against concentration or dispersal of research funding. Based on a systematic review of the selected set of 91 articles we were able to distil a number of key arguments that highlight benefits and drawbacks of resource concentration (Aagaard et al. 2019b). The question of how to distribute funding is high on the science policy agenda, since policy makers and funding bodies alike are interested in finding ways to maximize returns of research funding investments.

2.4.1/ Arguments in favor of concentration

As illustrated in Table 2.2 below, key arguments in favor of resource concentration can be subsumed under one of the following three broad categories: 1) efficiency-related arguments, 2) arguments related to epistemic effects, and finally 3) arguments pertaining to organizational issues.

Efficiency: The arguments revolving around efficiency are predominantly framed in economic terms and focus on concepts such as critical mass and economies of scale (Aagaard et al. 2019a). According to this group of arguments, concentration of research funding enables research entities to obtain critical mass in terms of tangible resources such as manpower, equipment and critical research infrastructure, and intangible assets such as expertise and know-how (Bloch and Sørensen 2015; Bonaccorsi and Daraio 2005; Breschi and Malerba 2011). Finally, another strand of argumentation advocates the concentration of resources as a means to avoid the dilution of resources (Hicks and Katz 2011; Johnston 1994; Johnston et al. 1995; Vaesen and Katzav 2017; von Tunzelmann 2003).

Epistemic factors: Another group of arguments are preoccupied with epistemic factors and quality-related concepts such as merit and excellence (Aagaard et al. 2019b). A dominant argument here suggests that selectivity in the distribution of resources will ensure that the most productive and capable scientists with the greatest potential for scientific breakthroughs are supported according to their abilities (Bloch and Sørensen 2015; Hicks and Katz 2011; Johnston et al. 1995). Another line of thought sees resource concentration as a precondition for the creation of scientific excellence, especially in a science system characterized by intensified global competition where sustaining a competitive edge over others is of key importance (Bloch and Sørensen 2015; Johnston et al. 1995). The most unanimous support of stronger concentration is found by Hicks and Katz (2011), who see concentration as the desirable result of a merit-based funding system that follows a power-law distribution of productivity and resources (Lotka 1926).

Table 2.2 Arguments in favor of concentration of research funding

Type of argument	Argument	Selected references
Efficiency	Critical mass/avoiding dilution of resources	Hellström et al. (2017); Bonaccorsi and Daraio (2005); Johnston et al. (1995); Hicks and Katz (2011); Vaesen and Katzav (2017); Kenna and Berche (2011)
	Economies of scale	Hellström et al. (2017); Ida and Fukuzawa (2013); Bloch et al. (2016)
	Smaller administrative burden	Berg (2012); Johnston (1994)
Epistemic effects	Scientific excellence	Hellström et al. (2017); Bloch et al. (2016); Hicks and Katz (2011); Breschi and Malerba (2011); Hellström et al. (2017); Bloch and Sørensen 2015
	Merit-based funding system	Hicks and Katz 2011; Berg (2012)
Organizational conditions	Stability/flexibility	Hellström et al. (2017); Bonaccorsi and Daraio (2005)
	Collaboration	Hellström et al. (2017); Bloch et al. (2016); Bonaccorsi and Daraio (2005); Johnston (1994)
	Spillover effects	Bonaccorsi and Daraio (2005)
	Recruitment	Hellström et al. (2017); Bloch et al. (2016); Bonaccorsi and Daraio (2005); Johnston (1994)
	Equipment/infrastructure	Bonaccorsi and Daraio (2005); Gallo et al. (2014); Johnston (1994)

Organizational conditions: The third group of arguments has an explicit focus on organizational conditions (Aagaard et al. 2019a). A predominant view is that the general move from individual (small science) towards collective modes of knowledge production (big science) is reliant on concentration in the allocation of research funding (Johnston 1994). A related argument stresses

that growth in expenditure levels for equipment and infrastructure necessitates access to costly research infrastructure and concentration of funding in large units (Bonaccorsi and Daraio 2005; Gallo et al. 2014; Johnston 1994). Finally, funding concentration is seen as a way to increase international visibility and attractiveness because stable financial conditions are thought to attract top scientists and talents (Bloch et al. 2016; Bonaccorsi and Daraio 2005; Hellström et al. 2017; Hicks and Katz 2011).

2.4.2/ Arguments in favor of dispersal

Similarly, the arguments in favor of dispersal of research funding (Table 2.3) can also be placed under a number of broader categories, many of which can be seen as the flipside of the arguments in favor of concentration. Again, we operate with the same three categories as above: 1) efficiency, 2) epistemic effects, and 3) organizational issues (although in this third category we also include arguments explicitly targeting the systemic level). In addition, a fourth category is included concerned with problems pertaining to peer review and allocation procedures.

Efficiency: Among the efficiency-related arguments, a significant number of contributions point out that too much concentration of research funding might result in diseconomies of scale as opposed to the claimed economies of scale (Aagaard et al. 2019a; Bloch et al. 2016; Bonaccorsi and Daraio 2005; Johnston et al. 1995; Nag et al. 2013). The largest bulk of empirical studies surveyed shows that a high degree of funding concentration on average leads to decreasing marginal returns (measured by number of citations and impact factors) (Cook et al. 2015; Fortin and Currie 2013; Lorsch 2015). In fact, a substantial body of research suggests that scientific productivity can be increased by scattering resources on many small and medium-sized research teams with an average size of 5-8 group members (Bloch et al. 2016; Johnston et al. 1995; von Tunzelmann et al. 2003). In a similar vein, Alberts (1985) early on alluded to the tendency that funding concentration would turn group leaders in large research teams into 'science managers' and fund raisers who mainly spend time on grant writing, science administration and organizational issues, leaving little time for research activities and mentoring of students and junior staff (Aagaard et al. 2019b; see also Kimble et al. 2015). Finally, some contributions point to what they conceive of as allocative and economic inefficiencies in the funding system as scientists who have already secured sufficient funding are incentivized to apply for research grants beyond what they can productively spend (Aagaard et al. 2015; Hicks and Katz 2011; Sousa 2008).

Epistemic effects: Another group of prominent arguments concern epistemic effects. Here, the claim is that diversity in research investments spreads risk and hence the chances of scientific breakthroughs (Fang and Casadevall 2016; Lorsch 2015; Peifer 2017). Each grant recipient is seen as an experiment, meaning that a large number of grantees will increase the amount of experiments (Aagaard et al. 2019b; Fortin and Currie 2013). Proponents of the 'many small' strategy suggest that the chances of making path-breaking discoveries will improve by supporting a broad variety of lines of inquiry (Lorsch 2015).

Organizational (and systemic) issues: The articles that speak in favor of dispersal and diversity also subscribe to certain arguments tied to organizational and systemic issues. One of these arguments highlights that funding a larger number of individual scientists will increase the diversity of disciplines and research specialties and thus the range of opportunities available to students and early career researchers (Fortin and Currie 2013; Lauer 2014; Vaesen and Katzav 2017). The argument is that a funding strategy with the deliberate aim to spread out research grants will serve to keep more students and scientists active in research and contribute to securing a strong growth layer of early and mid-career researchers (Fortin and Currie 2013; Berg 2012; Fang and Casadevall 2016).

Grant peer review and allocation procedures: Finally, the last group of arguments questions the current grant review and allocation procedures and the notion that the best researchers are rewarded according to their abilities. According to this line of thought, grant peer review is not only expensive and resource demanding but also unreliable and biased (Gordon and Poulin 2009; Kimble et al. 2015; Vaesen and Katzav 2017). The system, it is argued, favors researchers who can guarantee results rather than those with wild but potentially path-breaking ideas who cannot promise success (Gordon and Poulin 2009). In addition, authors suggest that reviewers tend to reward past performers and disadvantage applicants with a poorer track record (Aagaard et al. 2019a; Bloch and Sørensen 2015). In light of some of these issues, a number of authors call for a reform of the current system and even for a replacement of grant peer review with a more egalitarian distribution of funding (Fang and Casadevall 2016; Fortin and Currie 2013; Gordon and Poulin 2009; Vaesen and Katzav 2017).

Table 2.3. Arguments in favor of dispersal of research funding

Type of argument	Argument	Selected references
Efficiency	Diseconomies of scale	Berg (2012); Cook et al. (2015); Lorsch (2015); Mongeon et al. (2016); Lauer et al. (2015); Peifer (2017); Fortin and Currie (2013); Bloch and Sørensen (2015); Breschi and Malerba (2011); Alberts (1985, 2012); Bonaccorsi and Daraio (2005)
	Diminishing marginal returns	Mongeon et al. (2016); Breschi and Malerba (2011); Lorsch (2015); Fortin and Currie (2013); Cook et al. (2015); Berg (2010, 2012); Peifer (2017); Alberts (2012)
	Small and medium sized research groups are more productive	Cook et al. (2015); Vaesen and Katzav (2017); von Tunzelmann et al. (2003); Johnston (1994); Bloch et al. (2016); Bloch and Sørensen (2015); Alberts (1985)
	Excess size leads to fragmentation, inertia and inefficiencies	Alberts (1985); Breschi and Malerba (2011); Bloch and Sørensen (2016); Mongeon et al. (2016); Fortin and Currie (2013); Vaesen and Katzav (2017); Johnston (1994)
	Innovative researchers are turned into fundraisers and managers	Kimble et al. (2015); Bloch and Sørensen (2014); Alberts (1985)
	Allocative and economic inefficiencies	Nag et al. (2013); Bloch and Sørensen (2015); Hicks and Katz (2011); Sousa (2008); Mongeon et al. (2016)
Epistemic effects	Diversification spreads risk and increases chances of breakthroughs	Fortin and Currie (2013), Lorsch (2015); Lauer (2014); Fang and Casadevall (2016); Peifer (2017); Ioannidis (2011); Vaesen and Katzav (2017); Berg (2012); Mongeon et al. (2016); Fang and Casadevall (2016)
	Dispersal of funding as means to avoid mainstream, risk-averse research	von Tunzelmann et al. (2003); Kimble et al. (2015); Peifer (2017); Bloch and Sørensen (2015)
Organizational issues/system-level issues	Dispersal keeps researchers and students active with research	Fortin and Currie (2013); Lauer (2014); Vaesen and Katzav (2017)
	Securing a strong growth layer of early and mid-career researchers	Peifer (2017); Fang and Casadevall (2016); Berg (2012); Alberts (1985)
	Broader knowledge pool and greater research breadth. Pockets of excellence	Fortin and Currie (2013); Vaesen and Katzav (2017); Bloch and Sørensen (2015); Kimble et al. (2015); Katz and Matter (2017); Lauer (2014)
	Avoid Matthew effects/ cumulative advantages and hypercompetition	Berg (2012); Fang and Casadevall (2016); Bloch et al. (2016); Bol et al. (2018)
Grant peer review and allocation procedures	Problems with peer review	Vaesen and Katzav (2017); Kimble et al. (2015); Fang and Casadevall (2016); Lorsch (2015); Katz and Matter (2017); Gordon and Poulin (2009);
	Egalitarian distribution of funding	Fortin and Currie (2013); Gordon and Poulin (2009); Ioannidis (2011); Vaesen and Katzav (2017)

2.5/ Excellent research environments and high performing research groups

Another recurring question in these debates is how to foster excellent research environments and high-performing research groups? In the following, we will address this two-split question by briefly summarizing main conclusions from two empirical studies that respectively identify characteristics of eminent research environments and high-performing research groups.

The first study by Kalpazidou Schmidt and Graversen (2018) presents the results of an empirical study undertaken in 2002 identifying key characteristics of 15 dynamic and innovative public research environments in Denmark. They revisit the research sites after more than a decade and map their development over a 10-year-period. The 15 units are all institutions of higher education and span a variety of research areas and disciplines: university departments, research centers, virtual centers and public-sector research units from multiple faculties (Kalpazidou Schmidt and Graversen 2018).

According to the authors, the literature suggests that excellence is not only dependent on the individual skills of excellent researchers but also on the research conditions of the environments in which they work, i.e. aspects related to organizational structure, funding situation, type of leadership and research collaborations (Heinze et al. 2009; Hemlin et al. 2008; Katz and Martin 1997; Lee and Bozeman 2005; Smeby and Try 2005). Correspondingly, Howe et al. (1998) stress that excellence is largely determined by factors in the research environment, especially the training of researchers and the possibilities to carry out research.

In conclusion, the study identifies the following features as characteristic of excellent research environments: flagship research environments located in unique positions in the national research system; a solid and internationally recognized research base of high quality and productivity; the ability to attract high levels of funding from external sources; and frequent interactions with the surrounding society and the political establishment (Kalpazidou Schmidt and Graversen 2018; Kalpazidou Schmidt et al. 2003; Graversen et al. 2005).

In the second study, Degn et al. (2018) examine the common traits of four high-performing research groups in Denmark and the Netherlands and discuss whether these groups can be conceived of as 'communities of practice' or whether they display 'team'-like characteristics. In line with previous studies, the authors suggest that the successful research groups under study do in fact share many characteristics with what can be understood as communities of practice (Degn et al. 2018).

The study finds that the groups examined tend to be more oriented toward group identity rather than specific tasks or goals and that their identity is closely tied to notions of teamwork and freedom (Degn et al. 2018). The authors emphasize a set of key characteristics of the high-performing research groups under study that closely resemble the main traits of communities of practice, i.e. a high degree of enculturation and shared epistemic and ontological principals, peer learning, openness and freedom, and finally a sense of being part of a community among researchers (Degn et al. 2018). In accordance with findings from previous studies, the study suggests that communities of practice may have a positive influence on the overall performance of organizations (Wenger et al. 2002; Schenkel and Teigland 2008; Storck and Hill 2000; Fontaine and Millen 2004) by stimulating a stronger sense of cohesion in the group and a greater willingness to share knowledge internally (Degn et al. 2018). In conclusion, the authors call for greater attention to creating conditions conducive to communities of practice, rather than today's policy initiatives, many of which are tailored to foster excellence in work teams, due to a strong focus on predefined goals, milestones, work packages, and consortia organized according to a top-down model (Degn et al. 2018).

2.6/ What does an ideal funding scheme look like according to scientists?

As pointed out earlier in this section, the question of how to distribute funding is subject to intense debate in international science policy circles. Scientists' perspectives are often missing in these debates because scientists rarely get the opportunity to share their opinions about and personal experiences with how national research policy decisions and funding dispositions affect their conditions.

In 2017, the Danish Think Tank (DEA), the Independent Research Fund Denmark (DFF) and the Young Academy of Denmark (DUA) undertook an investigation of the type of research grants that is most attractive to a population of grant-winning scientists in Denmark. A survey was sent to 923 recipients of DFF-grants during the period 2010-2014; 455 participated in the study (Wohlert et al. 2018).

In the following, we report the results and main conclusions drawn from this study. First, the scientists were asked to reflect on how large research grants should be in order for them to carry through their preferred type of research projects. 73 percent of the respondents preferred to receive individual project grants ranging from 3-10 million Danish kroner (DKK); 26 percent wanted single grants ranging from 3-5 million DKK; and respectively 24 percent and 23 percent preferred grants ranging from 5-7 and 7-10 million DKK. The result is noteworthy since the scientists seem to prefer small and medium-sized grants, which goes against the recent international science funding trend to increasingly allocate funding in relatively large grants (Wohlert et al. 2018). Second, 90 percent of the respondents answered that they preferred project grants with a minimum length of 3-5 years. Third, approximately two-thirds preferred group sizes ranging from 3-8 team members for each research project (Wohlert et al. 2018).

Finally, the scientists were asked to report the sort of research activities they would wish to spend their funding on. The respondents emphasize five points as important for funding bodies to pay attention to when handing out research grants: 1) One out of ten respondents mention the difficulty of obtaining funding for early career scientists who have yet to form their own research groups. 2) Four out of five respondents wish to continue working within existing research trails that could potentially lead to new discoveries and insights into already established research fields. This could be achieved by for instance extending or expanding ongoing research projects. 3) Two-thirds of respondents wish to pursue new research trails, topics and questions for which they currently need funding. In summary of point 2 and 3, the study concludes that it is significantly easier to receive financial support for new ideas and projects than it is to secure funding for established research trails and ongoing projects. 4) Two-thirds of the respondents would like to spend a future grant on establishing or expanding novel or existing collaborations with colleagues and leading research groups abroad. 5) Finally, more than half express that they would want to spend grants on continuing and expanding existing research groups. In addition, notably senior scientists/professors wish to receive earmarked funding for retaining research competences and 1-2 key members of the research team. Scientists who prefer grants amounting to 11 million DKK or above express a keen interest in continuing or expanding existing research groups (74 pct.), establishing a research center (52 pct.) and obtaining resources for critical research infrastructure (46 pct.) (Wohlert et al. 2018).

In conclusion, the findings point to the need for discussing whether new types of funding instruments could contribute to continuity and consolidation in ongoing research activities in parallel with continued support for new research projects, thereby enabling research organizations to fulfil long-term goals.

3.0 Funding Practices at Östersjöstiftelsen

The duality of purposes given in Östersjöstiftelsen's statutes has demanded a variety of funding types since its foundation in 1994. The establishment and maintenance of a physical and academic infrastructure, the continuous funding of research and research education fixed by the thematic field of Baltic and East European studies at Södertörn University together with a demand for the highest possible research quality, have been challenging goals to meet, cf. e.g. Technopolis (2010A, 2009A), KVA (2001, 2014). A persistent focus by Östersjöstiftelsen on outcome and impact of the research and infrastructure funding has been documented in a number of evaluations that can be found on <http://ostersjostiftelsen.se/om-ostersjostiftelsen/utvarderingar>. As they are primarily for internal use and discussion at Östersjöstiftelsen and Södertörn University and secondarily input into a continuous Swedish national justification of the constructed symbiosis between the two, most are published in Swedish.

As previous evaluations have already evaluated the research outcome and impact of the funding as average or above relative to ex ante (internal) expectations (e.g. SER 2015) and as average or below relative to other research environments (e.g. Technopolis 2010A, KVA 2014), we will not focus further on these dimensions here. Nor will we discuss whether the constructed set-up of Baltic and East European research activities and infrastructure at Södertörn University is optimal, cf. KVA (2014).

Instead, we analyse the development of funding and funding types over time in Section 3.1, and identify the published outcome from Södertörn University in the Baltic and East European research field and examine it in relationship to earlier findings in section 3.2, (see also Technopolis 2010A, 2010B, 2009A, 2009B; Södertörn University library 2017; Södertörn Högskola (2003-2017 - annual reports to Östersjöstiftelsen) and internal evaluations; e.g. SER (2015).

Over two decades, Östersjöstiftelsen has used a wide range of the funding types or instruments described in Section 2. This has resulted in a time-varying funding balance between curiosity-driven bottom-up-initiated research and strategic top-down funding desires from the academic leadership at Södertörn University, cf. Tables 3.1 and 3.2 below.

3.1/ Development in funding and funding types over time

In section 2, we presented a general review of recent findings on research funding, incentive structures and potential outcomes and impact. Some past evaluations of Östersjöstiftelsen have also focused on research funding, funding practices, and impact, cf. Technopolis (2010A, 2010B, 2009A), KVA (2014), together with a number of internal evaluations at Södertörn University, e.g. SER (2015), Södertörn University Library (2017) among others. Furthermore, annual reports from both Östersjöstiftelsen and from Södertörn University document the amounts, purposes and outcome of direct and indirect funding from Östersjöstiftelsen, e.g. Östersjöstiftelsen (1994-2018 - Annual reports), Södertörn Högskola (2003-2017 - annual reports to Östersjöstiftelsen).

The overall impression from these evaluations is that Östersjöstiftelsen and Södertörn University in cooperation have created a funding model that over the last 25 years has suited the purposes described in Östersjöstiftelsens' statutes as well as the development of research and infrastructure at Södertörn University well. Whether it could have been done in another or more efficient way is not the topic of this analysis. Instead, the report contributes to a discussion among bene-

ficiaries and stakeholders of the future prioritisation of the research funding from Östersjöstiftelsen. It is our impression that the previous evaluations have managed quite well to catch the pros and cons of Östersjöstiftelsen's direct and indirect research funding to researchers at Södertörn University. Hence, a transparent and continuing discussion among beneficiaries and stakeholders at Östersjöstiftelsen and Södertörn University of which funding types are most efficient seems to be a way forward. Our analysis does not find evidence of one particular or a bundle of funding types that best suit all bottom-up researcher-initiated or top-down strategic management desires.

3.1.1/ Direct and indirect research activity funding

We distinguish between direct and indirect research funding. As two sides of the same coin, they coexist and create synergies when combined in an optimal way. In the case of Östersjöstiftelsen's funding of research at Södertörn University, the direct research funding finances research performed in the Baltic and East European research field. Additionally, indirect research funding finances activities that facilitate or affect these research activities, e.g. infrastructure like a library, buildings, and other facilities as well as the administration and management, collaboration, and research-preparing costs.

In reality, the different funding types often cover both direct and indirect research activities. For example, an individual research project grant includes both salaries to the researchers and overhead to the surrounding research infrastructure. In Table 3.2, the funded activity types are divided in research activities and in academic infrastructure. We are aware that such a division is not straightforward and that both types may include direct as well as indirect research activity funding.

3.1.2/ Funding types used

Following the typology presented in Section 2, Table 3.1 shows the identified funding types used by Östersjöstiftelsen during the last 20 years. The listed funding types and instruments cover the most significant or visible types in Östersjöstiftelsen's annual reports since 1994 (information for the period before 2010, especially before 2000, was less accessible). Many of the smaller funding types ran for a few years, typically 1-3 years, while for example Individual Research Projects funded (new) activities every year (for a three-year period each). Consequently, the funding types sum up to very different amounts from 1994 to 2018, cf. Table 3.2 as an example of the last decade.

As Table 3.1 shows, Östersjöstiftelsen has used all seven types of funding or funding instruments identified in section 2 in its funding of the Baltic and East European research at Södertörn University. However, Table 3.1 does not show how many years each type has been funded and the funding amounts of the different types. Hence, if it had been possible to identify and separate the research outcome and impact of each funding type, a blend or composition of the most efficient funding types could be recommended following the findings in for example Bloch et al. (2016) and Norn (2019). However, as section 2 also concludes, an optimal mix is subject to internal discussions among beneficiaries and other stakeholders and highly context dependent. This means that even if it were possible to extract the complete outcome and impact of previously used funding instruments, these findings would not be directly transferable to today.

Table 3.1 Östersjöstitfelsen's research funding types in the last two decades categorised by funding type/instrument, cf. Table 2.1

	Core funding/ block grants	External research funding/ competitive project grants	Curiosity-driven research	Strategic/targeted research	Small grants	Large grants	Centre grants/CoE/ consortia
Individual Research Projects		X	X			X	
Professor Programme	X		X	X		X	
Centre for Baltic and East European Studies, CBEES			X	X		X	X
MARIS, SCOHOST, Samtidshistoriska instituttet, IBEEs			X	X	X		X
Baltic and East European Graduate School, BEEGS	X			X			X
Special targeted funding inside the thematic field		X	X	X	X		
Collaboration with society and business		X	X	X	X		
Cross disciplinary funding		X	X	X	X		X
Environmental research		X	X	X	X		X
Interreligious relations		X	X	X	X		
Complementary support	X	X		X	X		
Extended infra structural support	X			X	X		
Co-financing EU-projects	X	X	X	X	X		X
Library	X						
Research laboratories	X						
Rectors pool for strategic dispositions	X						
Funding of organisation development	X						
Planning support	X						
Travels, conferences	X						
Publication committee and Baltic Worlds	X						
Literary translator seminar	X						
Dissertations Collection (library)	X						
Jubilee Conference	X						

Source: Annual reports (1994-2018) from Östersjöstitfelsen.

Note: The listed funding types and instruments are not exhaustive but cover the most significant or visible types as they are presented in Östersjöstitfelsen's annual reports.

3.1.3/ Distribution of annual funding over the last decade

While Östersjöstiftelsen has used many different funding types and instruments during the last two decades, a few of them dominate in size and duration, cf. Table 3.2. The development in total funding amount has been rather stable during the last decade just as the approximate distribution across the different funding types. Hence, it may at first sight look like a predictable and stable distribution of research funding as well as academic infrastructure funding. If we look at the historical decisions behind the development of funding types over time, a more complex story is revealed. Over the years, different compositions of the funding types have been used to increase the outcome and impact of Östersjöstiftelsen's funding.

It is not obvious what the optimal and most efficient mix of funding types is – and whose views should be prioritised when trying to answer this question. However, following Norn (2019) and Dimke (2019), we focus on the views of the researchers in this report. As section 4 will show, they ask for a flexible funding scheme with a variety of funding instruments. In the case of Östersjöstiftelsen's funding of Baltic and East European research activities at Södertörn University, this, of course, has to be constructed under the present statutes of Östersjöstiftelsen.

Table 3.2 Östersjöstiftelsen's annual research funding amount in the period 2019 back to 2011 categorised by main funding type/instrument, cf. Table 2.1

Funding type (Mill. nominal SEK)	2019	2018	2017	2016	2015	2014	2013	2012	2011
Research funding (Incl. overhead etc.)									
Individual Research Projects	76	85	84.4	82.7	83.2	78.5	81.5	80.8	86
Professor Programme	29.1	29.1	29.1	29.8	26	34	30	26	26
CBEES and BEEGS	50.6	42.1	37.1	40	44.2	37.8	48.3	54	40.8
Small strategic research funding						2.6	3.6	3.2	9.9
Special targeted funding inside the thematic field							1.5	3	
Academic infrastructure									
Publication committee and Baltic Worlds	2.6	2.6	2.6	2.5	1.8	2.2	2.1	1.5	0.9
Special occasion funding, e.g. jubilee or conferences			0.3	0.3	1.3	1.4	1.3		0.7
Södertörn University strategic management funds	4	4	4	5	3	5.5	3		0.6
Competence development and project preparations								1.2	0.7
Infra structural support						5		5	
Library	18.2	18.2	18.2	18.2	18.7	14.7	9.7	9.7	9.7
Budget balance corrections							-5	-9	
Total	180.5	181	175.6	178.5	178.2	181.6	176	175.3	175.5

Source: Annual reports (2012-2018) from Östersjöstiftelsen.

Note: The listed funding types are summed into the most significant or visible types from Östersjöstiftelsen's annual reports. 2019 figures are budgeted amounts. Total funding from Östersjöstiftelsen to Södertörn University for the period 2001 to 2013 can be found in Diagram 1 in KVA (2014, p.11).

3.2/ Research profile and impact

Knowing the profile of funding types and annual funded amount from Östersjöstiftelsen over time since its creation in 1994, gives a unique opportunity to analyse whether a pattern exists between funding types and amounts and the resulting research outcome and impact. However, as with most old data, it is difficult to access individual specific grant data at the necessary micro

levels. Hence, we approximate outcome and impact in the same way as Södertörn University Library (2017) and Technopolis (2010A), among others, have done previously, using publications and citations from an existing accessible and quality-enhanced database to link funding to researchers' production of new knowledge. We used the CWTS improved Web of Science, WoS, database on bibliographic information in the analysis and quality assured the findings in a comparative study with an extended sample found by acknowledgement search as well as a full sample of registered publications from Södertörn University Library.

As also found in Södertörn University Library (2017), the present analysis is approximate and guiding. For example, coverage in the database is not completely comprehensive in the scientific fields where Södertörn University has its major research activities, i.e. Social Sciences and Humanities, or for output types such as Swedish language books and anthologies. Knowing this, the following results must be read with caution, even though they do not deviate much from previous results in Södertörn University Library (2017) and Technopolis (2010A). In the analysis, we look at developments and do not intend to evaluate whether the levels, i.e. quality, of the revealed indicators are sufficient. Hence, we analyse whether the recent developments in funding types and amounts have maintained (or improved) the performance of Södertörn University's researchers in the Baltic and East European research field measured by publications and citations.

3.2.1/ Analysis of research impact

The most recent evaluation of Östersjöstiftelsen, KVA (2014, chapter 4), finds it difficult to evaluate the research impact of Östersjöstiftelsen's funding as there exists no obvious reference cases to compare with. Due to the special construction of Östersjöstiftelsen's funding of Baltic and East European research at Södertörn University in its limited scientific fields, it is difficult to find 'similar' research environments to compare with. However, KVA did choose a few 'comparable' institutions in their evaluation.¹ A similar methodology is used in Technopolis (2010A, 2009A). However, even while KVA (2014) establish a reference frame and even though there are thematic compliance, the institutions and structural identities are still quite uneven.

Therefore, the finding that outcome and impact of performed research in the Baltic and East European research field at Södertörn University is below the standard of the institutions it has been compared with might be caused by other contextual facts such as historic academic reputation. For example, as established in 1994, Södertörn University is still a young university, and there may exist other institutions that were better to compare with in an evaluation. It takes time and a very persistent and continuing effort to establish the core competences that are sustainable and over decades maintain an excellent research environment in a knowledge field, i.e. Baltic and East European Studies or parts hereof.

As the internal studies by Södertörn University Library (2017) and SER (2015) show, funding from Östersjöstiftelsen has a large impact on research outcome and education outcome. Our survey to researchers who have been funded by Östersjöstiftelsen reveals similar results, cf. Section 4. The researchers point out that funding from Östersjöstiftelsen significantly promotes research, competences and impact in the Baltic and East European research field.

Even though the results in Section 3.2.2 below indicate an impact below world average for the (broader) field as also found in KVA (2014) and Technopolis (2009A), there still is evidence of a significant research impact and visibility of the outcome of Baltic and East European Studies at Södertörn University, cf. Södertörn University Library (2017) and SER (2015). However, from a

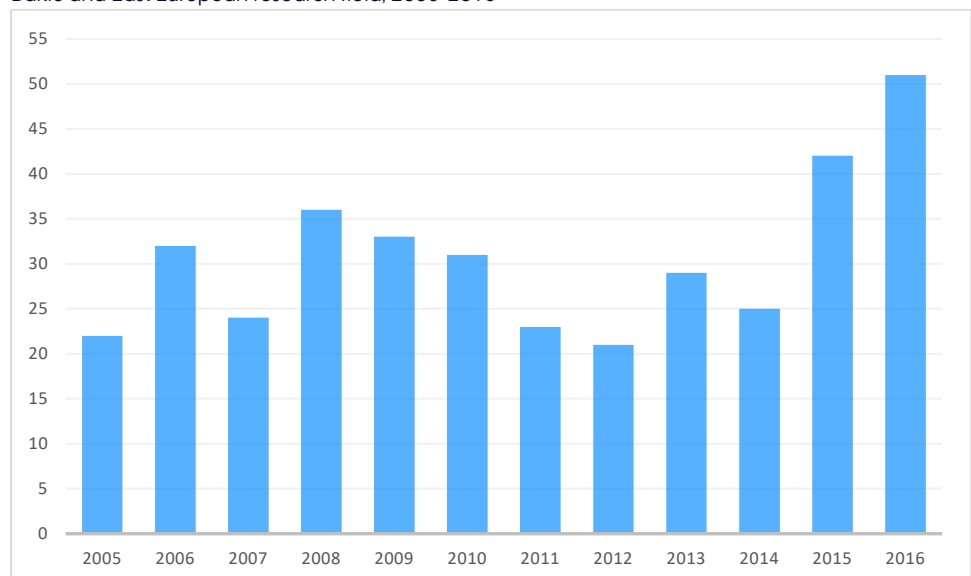
¹ A methodology comparing individual funded researchers with 'similar' but not funded researchers is similarly difficult to operationalise since the number of researchers funded by Östersjöstiftelsen under each single grant is difficult to identify and match with 'similar' rejected researchers in the same fields and research topics. Due to the small number of researchers, a robust analyse of impact differences in e.g. citations become troublesome and untrustworthy.

stakeholder point of view, it is always harder to justify research activities in a competitive and impact-focused funding system when indicators are below a common threshold, and other stakeholders forget the politically decided purposes and reasons behind the specific funding system, cf. Östersjöstiftelsen's statutes.

3.2.2/ Research impact of publications with author affiliation to Södertörn University

Published research and review articles in registered journals in CWTS-WoS were collected using affiliation of at least one author to Södertörn University and thematic publication of research in the Baltic and East European research field using a similar list of topics and themes as used in Södertörn University Library (2017). The total number of published research is given in Figure 3.1. The distribution shows two peak years, 2008 and the most recent year 2016. Depending on the viewpoint, another first observation seems to indicate a stable although fluctuating production of publications up to 2014 and a potential increasing trend towards 2016 where Södertörn University had its 20-year jubilee. However, the numbers are small, and any type of conclusion seems insecure.

Figure 3.1 Total number of published articles per year by researchers affiliated to Södertörn University in the Baltic and East European research field, 2005-2016



Note: Only research and review articles are included. 2017 and 2018 are not included because the following citation period, i.e. number of years for these, is too small; see also Table 3.3. Total numbers are not adjusted for changes in the researcher staff over time.

Using the number of publications shown in Figure 3.1, Table 3.3 shows a number of impact indicators, e.g. relative citation, and their development over time. Here, the number counting in Figure 3.1 is replaced by indicators whose size is relative to themselves over time, and to indicators from other similar research environments as defined in CWTS-WoS. The rolling four-year publication period is used to create more time robust indicators and identify trends in the developments over time.

Table 3.3 Four-year average impact scores for the published articles by researchers at Södertörn University in the field of Baltic and East European studies 2005-2016

Publication period	Number of publications	Fractionised number of publications (P)	MNCS –	PPtop10 percentage	MNJS –	Share with co-authorship from another institution	Share with international co-authorship from another institution
			Mean Normalised Citation Score		Mean Normalised Journal Score		
2005-08	114	50.3	1.01	5.3%	1.23	72%	32%
2006-09	125	52.6	0.99	6.1%	1.19	81%	38%
2007-10	124	51.3	0.97	6.2%	1.11	82%	37%
2008-11	123	53.6	0.99	5.8%	1.16	76%	30%
2009-12	108	45.2	0.77	5.2%	0.96	76%	33%
2010-13	104	40.0	0.75	4.2%	0.96	75%	37%
2011-14	98	36.5	0.81	4.8%	1.05	73%	41%
2012-15	117	36.8	0.76	4.4%	0.93	81%	55%
2013-16	147	44.4	0.87	7.7%	0.98	82%	57%

Note: The impact analyses are made on four-year average publication periods in order to create more robust indicators, i.e. a moving average-smoothing process. The indicators are calculated in the same way as in the Leiden Ranking, LR, including a fractionated publication counting on institutional level, e.g. an article with two authors from Södertörn University counts half for each of them in the indicator calculation. This means in principle that the calculated indicators for Södertörn University are comparable with indicators in other similar research environments. However, only in principle as indicated by the fact that the Leiden Ranking does not include Södertörn University due to its small output size.

The P-value measures the number of publications corrected for co-authorship, which reduces the single publication count, i.e. when an article is co-authored by two researchers from Södertörn University, the publication counts 0.5 for each researcher in the total sum etc. A P-value below the total number of publications indicates that some publications have several authors. As the P-value decreases slightly over time, it indicates that researchers on average have increased the number of co-authors from Södertörn University, i.e. own institution. Furthermore, looking at the share of publications with co-authorship and especially the share of publications with international co-authorship from another institution, researchers from Södertörn University seem to publish a large fraction of their articles in cooperation with researchers from other institutions, and increasingly with researchers from foreign institutions. A minor technical insecurity connected to these shares is that a researcher affiliated with Södertörn University and another institutions as well counts as a co-authorship, so the shares may be overrated. However, a double affiliation also indicates a kind of collaboration with another institution, and even though the increase in international co-authorship resembles the development at other universities, the increase at Södertörn University is above average.

Focusing on relative impact, the MNCS, PPTop10% and the MNJS are commonly used indicators for impact of published research articles. An MNCS that equals one means that the articles are cited averagely in their field. A decreasing MNCS trend in Table 3.2 means that the articles increasingly are cited below average in their field. However, MNCS is calculated relatively to the specific field, which makes it vulnerable to differences caused by a potential narrower or more specialized research field or the opposite at Södertörn University.

PPTop10% is a percentile (non-parametric) indicator that indicate the proportion of papers for a unit, i.e. Södertörn Högskola, among the 10% most highly cited. However, again the low number of observations may influence the calculated figures, which should be 10% if publications from Södertörn University are cited like the average. Since the research fields at Södertörn University probably are not like the average in the defined fields in the database, the size is of less importance, although the decreasing tendency, except for the last period, is problematic. It might indicate that the publications are less important than the average articles or are published in less cited journals.

The MNJS enlightens this, as an MNJS that equals one indicates that articles are published in average cited journals. In the start 2000s, the MNJS was considerable higher than one while it is slightly below one in the most recent periods. This indicates that the articles increasingly are published in below average cited journals. As MNCS, PPTop10% and MNJS are all positively correlated, the decrease in MNCS (and PPTop10%) in recent years may be explained by researchers publishing in less visible (cited) journals.

Finally, we should warn against too radical use of the impact findings. The indicators are based on a small number of articles from Södertörn University in the Baltic and East European research field, and hence covering fields that the CWTS-WoS database is known not necessarily to cover fully. Hence, the absolute numbers may be underestimated, and the relative indicators may be slightly misleading if Södertörn University's research profile is significantly different from the normalizing measures in the calculating algorithms. However, we do feel confident in the conclusions concerning development and changes over time.

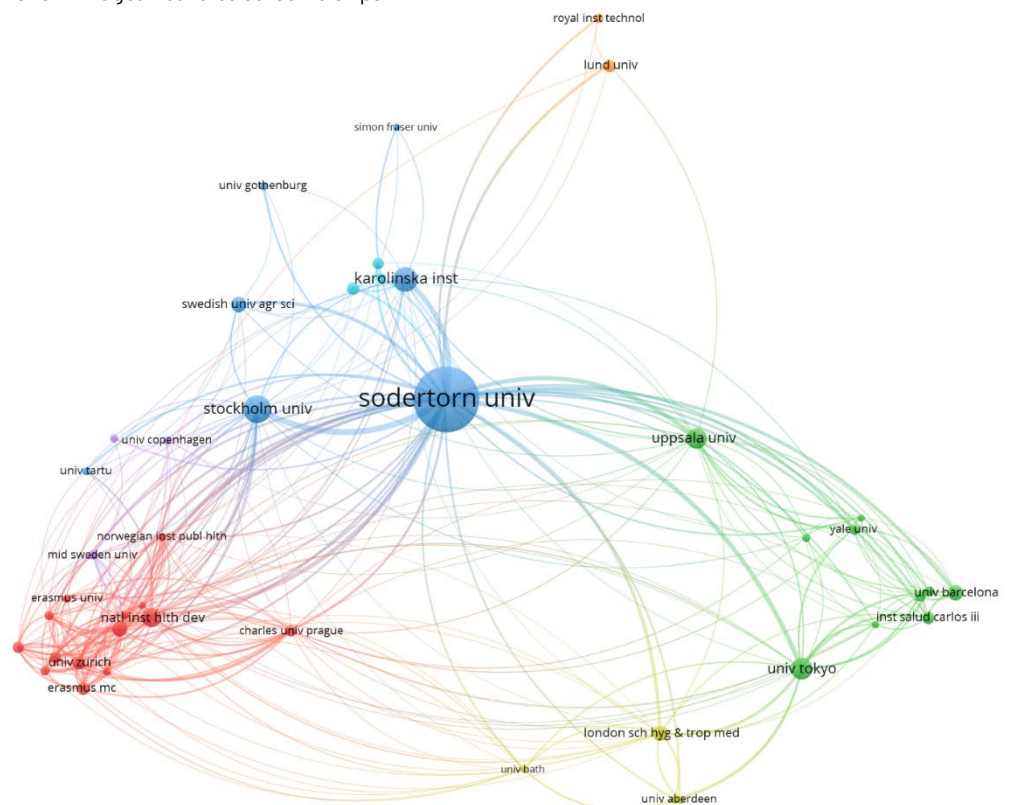
To give an impression of the information embedded in the used bibliometric data for the period 2005-2016, we have used VOSviewer² to construct an author affiliation or network diagram in Figure 3.2. Each publication included has at least one author affiliated to Södertörn University. Figure 3.2 shows the authors' affiliation as points with institution names, where the point sizes

² VOSviewer is a software tool for constructing and visualizing bibliometric networks (www.vosviewer.com).

reflects the relative numbers of authors from each institution, and the lines indicates co-authorship linkages. An author counts for each publication (s)he is co-authoring. The majority of the identified authors are affiliated to Södertörn University but a large fraction of co-authors is affiliated with other institutions, i.e. co-authoring publications with researchers from Södertörn University. Linkages between other institutions means co-authorship including researchers from these institutions together with an author from Södertörn University.

The colours are a visual suggestion on how to interpret or read the diagram, and is based on a clustering algorithm where relative many internal co-authorships defines the clusters, e.g. the red or green marked institutions respectively have co-authors together with an author affiliated to Södertörn University. The demarcation is not clear-cut and can be interpreted otherwise neglecting the colours.

Figure 3.2 Author affiliation institutions in publications in the Baltic and East European research field, 2005-2016. Linkages illustrates co-authorships.



Note: Based on CWTS' WoS database on bibliographic information. Publications in registered journals were collected using affiliation to Södertörn University and thematic publication of research in the Baltic and East European research field. Be aware that coverage in the database is less complete in the scientific fields where Södertörn University has its major research activities, i.e. Humanities and Social Sciences and especially in Swedish, and for output types such as (Swedish-language) books and anthologies.

Södertörn University Library (2017) has produced comparable network diagrams on national Swedish research collaboration in the Baltic and East European research field covering the period 2012-2016 for the scientific fields Humanities, Social Sciences and Environmental Sciences respectively. Figure 3.2 as well as the report by Södertörn University Library (2017) identifies ex-

isting collaboration linkages in the Baltic and East European research fields that Östersjöstitfelsen and Södertörn University can use in an informed discussion of future research supporting strategies.³

In continuation to the network diagram in Figure 3.2 and using the same bibliometric data, we constructed and included a research fields diagram in Figure A.1 in appendix 7.2, which shows the identified research subfields in published output by researchers affiliated to Södertörn University in the Baltic and East European research field in the period 2005-2016. The research fields are pre-defined by all journals included in WoS and based on a pre-constructed base map defined by mutual citations among all included journals in 250 categories. These mutual citations also defines the clustering and distances between points. However, the actual point sizes indicate the relative number of publications, with an author affiliated to Södertörn University. The colours in Figure A.1 represents main scientific fields such as Social Sciences, Humanities, Health, and Environmental Sciences.

Furthermore, we have in Figure A.2 in appendix 7.2 used keywords given by authors to create a research topics network diagram. The authors' keywords are converted into more general topics, and clustered according to their mutual co-occurrence in the publications using the VOSviewer software. The relative size of the topic points reflects the occurrence rate of each topic. The colours in Figure A.2 helps illustrating a three-dimensional diagram, e.g. that there seems to be a fourth (yellow) cluster behind two others (green and blue). Whether there actually exists three or four core topic clusters are discussable and needs deeper knowledge in the Baltic and East European research field.

Figure A.1 and A.2 gives an overview of research topics of interest for researchers at Södertörn University in the Baltic and East European research field, their cooperative linkages, and helps to facilitate an informed discussion of which research fields, themes and topics that could be prioritised to create additionality by building on existing strengths, see also Appendix 7.2.

³ Södertörn University Library could probably be asked to deliver updated and more recent diagrams as part of an ongoing reporting on cooperation linkages, as illustrated in Figure 3.2, and on research fields and topics as illustrated in Figure A.1 and A.2.

4.0 The ideal funding desired by beneficiaries

While a large part of the literature, as discussed in Section 2, extensively connects funding and performance in an ex post manner, only a few studies have asked the researchers themselves about their perception of an ideal research grant. Bloch et al. (2016), DEA (2017) and Norn (2019), among others, have analysed how grants and performance correlate. The outcomes are manifold and reflects the discussion in Section 2, giving rise to a diverse picture of how and why different grant types seem to be optimal in different contexts. For example, Norn (2019) concludes that the Matthew effect is present, that research funding seems to be concentrated among specific recipient groups, e.g. male researchers in Natural Science, but that little is known about how it influences research performance. Among top-performing research centres, Bloch et al. (2016) found a non-linear relation between grant size and performance over grant time, suggesting the existence of an optimal grant size that results in optimal scientific performance. However, identifying the actual optimal grant size given the present structural and grant-specific dynamic context is not easy if even possible.

Bloch et al. (2016) also found a cumulative effect, i.e. already funded researchers obtained additional funding, which was often spent on early-career researchers. Thereby, the funded centres and researchers could transfer a substantial scientific heritage in the topic field. On the other hand, Nicholson and Ioannidis (2012) identify a presence of the Matthew effect in research funding in the US and warn that funding existing research prevents funding of riskier and more innovative research. Dimke (2019) and Norn (2019) warn against the same tendency, and advocates for a research funding system that continuously discuss how and why the different research funding instruments function and how to obtain a balance between them. This means that a funding body like Östersjöstiftelsen needs to engage proactively with beneficiaries to learn more about current desires for grant types. Only in this way can Östersjöstiftelsen ensure an up to date funding scheme that can help it reach its goals.

The present section discusses the outcome of a survey to all previous grantees of project funding from Östersjöstiftelsen over the last 20 years. The survey asks what an optimal grant from Östersjöstiftelsen looks like. The grantees have all worked at Södertörn University and experienced the impact of their grants. This makes them grant 'experts' when it comes to designing future funding instruments from Östersjöstiftelsen. Of 257 grantees, 195 received and 107 answered the questionnaire. The survey is explained further in appendix 7.1.

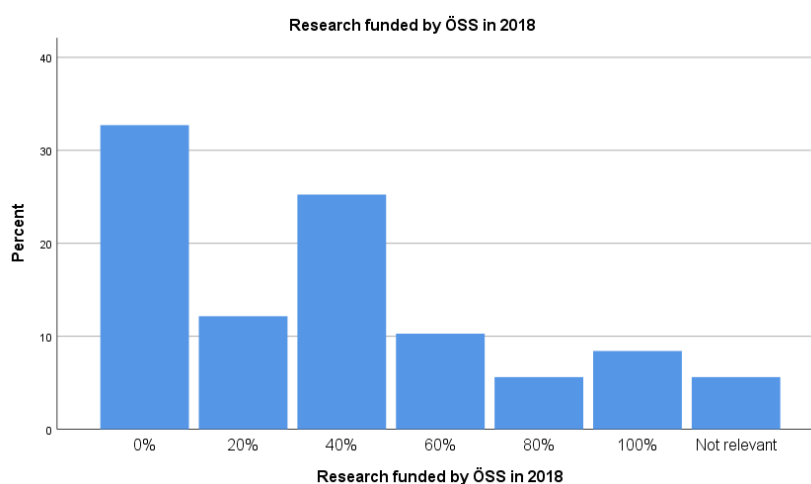
4.1/ Survey to direct and indirect beneficiaries

All survey respondents are currently or previously connected to Södertörn University. In 2018, the year before data collection, 66 respondents (62 percent) had research activities that were partially funded by Östersjöstiftelsen (see Figure 4.1). The most common funding share was 40 percent. The 35 respondents (33 percent) with no funding from Östersjöstiftelsen in 2018 have previously been funded. A small fraction from administration or management did not find it relevant to answer the question.

As Figure 4.1 shows, only 8 percent had all their research funded by Östersjöstiftelsen in 2018. The 62 percent whose research was partially funded by Östersjöstiftelsen in 2018 needed supplementary funding for the remaining research activities. This means that Södertörn University continuously are obliged to finance these researchers fully or partially by other means when they are full-time permanent employees and not funded by other sources. More than half of the

respondents were professors, a quarter were senior lecturers, and a tenth were associate professors, i.e. senior research staff. Hence, one also has to bear in mind that the survey lacks answers from early-career researchers, although a comparative Danish study by Wohler et al (2018) did not find systematic differences in funding desires between junior and senior research staff. Furthermore, 57 percent of the respondents represent Humanities, 36 percent represent Social Sciences and 7 percent represent Natural Sciences. The most represented subject among respondents is history followed by political science and international relations. The gender balance is very close to 50-50. Hence, while the sample may be somewhat representative of permanent employed researchers at Södertörn University, it is not representative of researchers in general.

Figure 4.1 Share of research directly or indirectly funded by Östersjöstiftelsen in 2018



Note: 5 percent, i.e. administrators, retired researchers etc., did not find it relevant. Percentages are based on 107 respondents.

More than half of the respondents characterise themselves as researchers when asked about their main current employment status in the survey. A third characterises themselves as teachers, meaning that a large share of the respondents identify themselves as or at least work more as teachers than as researchers in their current employment. A few respondents also commented negatively on the teaching load in the free text answer option in the survey.

4.2/ Beneficiaries' desired ideal funding type from Östersjöstiftelsen

The most important issue in the survey was ideal funding from Östersjöstiftelsen, taking into consideration the present context and Östersjöstiftelsen's statutes. A similar survey of researchers from all scientific fields at all Danish Universities was completed in 2018 (Wohler et al., 2018; Dimke et al., 2019), and the results from this study will be compared with the present results whenever it makes sense.

The most prevalent activity that beneficiaries wish to have funded by Östersjöstiftelsen is 'new or expanded collaboration with leading researchers or research environments abroad' and 'interdisciplinary research and/or collaboration'. These are followed by funding of 'existing' and 'new' research agendas, funding of 'new' and 'existing' research groups and funding of 'basic research'. This means that collaboration and interdisciplinarity are high on the respondents' wish list.

Less than 20 percent desires funding of infrastructure. However, since all respondents have an existing infrastructure in the Baltic and East European research field at Södertörn University, the low share may indicate that only 19 percent need more than the existing infrastructure.

In Wohler et al. (2018), Danish researchers within all fields, at all universities and at all employment levels were asked about similar activity types. Their answers are largely in line with the answers in the present survey. The wish for more funding for collaboration was almost the same, while desires for research funding as well as infrastructure were 10-20 percentage points higher in Denmark. Funding wishes for establishment of a research group was 20 percentage points lower in Denmark. However, these differences may be explained by researchers' employment levels and scientific fields, i.e. Natural Science and Health research (present in the Danish study) need expensive infrastructural frames like buildings and instruments, while younger researchers (larger share in the Danish study) less often are Principal Investigators with a need to establish research groups.

Table 4.1. Activities included in or covered by an ideal next research grant from Östersjöstiftelsen. Ordered by share of respondents wishing the activity type to be funded.

Type of research related activity	Percent
Enabling new or expanded collaboration with leading researchers or research environments abroad	71
Funding of interdisciplinary research and/or collaboration	65
Continuation of an existing research agenda	54
Seek out a new research agenda	54
Establishment of a new research group	52
Funding of basic research with no apparent practical or commercial applications in sight	49
Maintaining or expanding an existing research group	43
Enabling research activities abroad (e.g. by providing funding for research stays, sabbaticals, fieldwork, etc.)	41
Enabling new or expanded collaboration with leading researchers or research environments in Sweden	38
Finishing an existing research project	22
Enabling new or expanded collaboration with stakeholders outside academia (e.g. relevant NGOs, companies, public institutions, etc.)	20
Establishing or accessing research infrastructure (e.g. library, advanced instrumentation, databases, laboratory facilities, experimental set-ups, etc.)	19
Funding of applied research with a broad practical or commercial application in sight	18
Enabling new or expanded activities related to the dissemination of research activities and results	13

Note: The question was formulated as 'What kind of activities should your ideal next grant for Baltic and East European research at Södertörn University be able to fund? Please tick all relevant categories.' Percentages are based on 107 respondents.

In addition to the predefined activities in Table 4.1, the respondents had the opportunity to recommend other types of research activities that Östersjöstiftelsen's funding could cover as well. For example, they wish for more flexibility and funding options for short-term activities. They wrote,

"Grants for preparation of publications, including translation and language check."

"short(er) term ... for individuals, to support very defined and limited research, with clear publication goals."

"Short term programs for guest researchers, both for senior and junior scholars."

“... funding for initial network meetings, research infrastructures, is very scarce and GBEEES funds very few such seminars per year. ... like to build groups ... invite to small symposium.”

Follow-up grants are high on the wishing list. The respondents writes, for example, that,

“A ‘project follow-up grant’ that would go to the writing of project-originating research publications after the project has ceased. ... short duration (one or two months) for each specific ‘follow-up’ activity with emphasis on international fora.”

“... some kind of fund that could cover this kind of project ‘heritage’- it could be a one-off affair involving short-time finance for each specific activity or publication.”

“I’d like to see some possibilities for my PhD students and other junior researchers to extend the work they started with projects funded by ÖSS.”

A fraction of the respondents asks for a looser definition of Baltic and East European research to be able to pursue research themes not covered today. However, it is questionable whether these new themes fit into Östersjöstiftelsen’s funding statutes. Another more urgent wish or need concerns PhDs. The most frequent free text comments concerned PhDs and their funding in projects. There seems to be a common and identical wish across fields and respondents for new opportunities to include PhDs in bigger research projects. This wish is, for example, expressed in this way,

“It would be good if ÖSS funded programmes also to include PhD students and postdocs. This would make PhD training connected to the best-equipped milieus for research training.”

“A new multidisciplinary and internationally connected research program, which allows funding of an experienced project leader, one or two postdocs, and 2-3 PhD candidates.”

“... large projects involving two or more researchers at Södertörn in cooperation with external colleagues, national or international, and including PhD students and postdocs would constitute an optimal research group.”

As Table 4.1 shows, the most frequent wish expressed in the survey concerns funding of interdisciplinary research and collaboration activities. This wish is further explained in some of the free text comments, like “...ÖSS have an important role in financing interdisciplinary ... research which is difficult to get funding for by others”. It was further emphasised that foreign and national research collaboration is important for research capacity building.

Finally, and in continuation of the collaboration theme, 40 percent ask for funding to enable research activities abroad, i.e. “A sabbatical, ie a full time semester or a year of research for a researcher/lecturer, in order to either start up research on a new field ... or finish off an ongoing or already started project ...”. This points to a wish for a flexible funding scheme that can fund activities when the researchers need the funding, a system where researchers can apply for funding on a running basis.

4.2.1/ The ideal grant length, annual budget and number of researchers

The respondents in the survey were further asked about the length, budget and number⁴ of researchers in an ideal grant from Östersjöstiftelsen. Here again, the results are similar to the findings in the Danish survey by Wohlert et al. (2018). One-fifth of the respondents commented on the funding length, especially pointing out that the present project funding length of three years is too short and that five to six years would be desirable (see Figure 4.2). However, the respondents do not agree on this,

“... more long-term programmes rather than shorter (=up to 3 years) project. Given the fact the very few

⁴ The number of researchers are measured as Full Time Equivalent, FTE. For example, 10 researchers working half time in a project correspond to five FTE researchers.

have research in their positions it does not promote the best research to have researchers continuously applying for short term projects... A minimum time would be 5 years since that time is sufficient to recruit and to finish PhD projects. Ideally, 6-10 year programmes would be best. That would also give the researchers the autonomy needed to develop strong research mileus. Today's system with up to 3 year projects does not allow for long-term planning."

"...design a research project over a longer period (minimum 5 years). It is needed because of research often only comprises 50% and other commitments can take over such as teaching, administration, peer reviewing ... during this time."

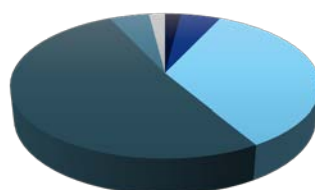
"...the duration must be longer than 3-years (4-6 years would be ideal, especially if PhD-students are included)."

The ideal annual budget size seems to depend on how large and small grants are defined by the respondents. The arguments for larger and smaller budgets are thus diverse, dependent on individual views of what big and small grants are, as well as field differences.

Similarly, the wish for personnel in the funded activities varies a lot, although a widespread view is that, "...including 1-4 persons is the most convenient and practicable and allows a maximum number of scholars from different career stages to profit from it."

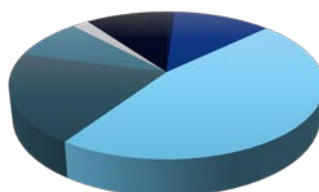
Figure 4.2 Distribution of wishes to length, annual budget and researchers involved in the respondents' ideal funding from Östersjöstiftelsen.

Project length



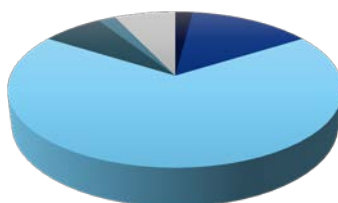
- Very short term (1-4 months)
- Short term (4-12 months)
- Medium short term (1-3 years)
- Medium long term (3-6 years)
- Long term (6-10 years)
- Don't know

Funding amount, SEK



- <300.000
- 300.000-999.999
- 1-3 million
- 3-6 million
- 6-9 million
- >10 million
- Don't know

Number of researchers



- <1 researcher
- 1--2 researchers
- 2--5 researchers
- 5--10 researchers
- 10--20 researchers
- Don't know

Note: The number of researchers are measured as Full Time Equivalent, FTE. For example, 10 researchers working half time in a project correspond to five FTE researchers. See also Table 4.2 and 4.3 for exact percentages. Percentages are based on 107 respondents.

As expected, there is a large coherence between ideal length, budget and personnel. Table 4.2 shows that the most prevalent funding desire is 1-3 million SEK and a length of or above 3 years.

More than half of the respondents ask for funding for 3-6 years; around half of them ask for an annual budget of 1-3 million; one-fifth ask for an annual budget of 3-6 million. A respondent wrote, "Maybe longer programmes 4-5 years but maximum 10 millions SEK". In a comparable Danish study (Dimke et al, 2019), the ideal grant size was defined as 3-10 million DKK lasting 3-5 years.

Table 4.2 Distribution of respondents by project length and annual budget, percent

	Annual budget, SEK						Don't know	Total
	<300.000	300.000-999.999	1-3 million	3-6 million	6-9 million	>10 million		
Very short term (1-4 months)	0	2	0	0	0	0	0	2
Short term (4-12 months)	1	0	0	0	0	0	4	5
Duration	Medium short term (1-3 years)	0	7	21	6	0	1	35
	Medium long term (3-6 years)	0	3	24	13	8	1	52
Long term (6-10 years)	0	0	1	2	1	1	0	5
Don't know	0	0	1	0	0	0	1	2
Total	1	12	47	20	9	2	10	100

Note: Percentages are based on 107 respondents.

If we compare Table 4.2 and 4.3, it seems that some respondents ask for 3-6 million annually for 2-5 researchers. The use of 3-6 million each year for 3-6 years for 2-5 researchers is remarkably well financed, unless, of course, they have very high costs for equipment etc.

Table 4.3 Distribution of respondents by the expressed wish for number of personnel¹⁾ and annual budget, percent

	Annual budget, SEK						Don't know	Total
	<300.000	300.000-999.999	1-3 million	3-6 million	6-9 million	>10 million		
Number of FTE researchers	<1	1	0	1	0	0	0	2
	1-2	0	3	12	0	0	0	14
	2-5	0	8	33	18	5	0	68
	5-10	0	0	1	1	4	1	7
	10-20	0	0	0	1	0	1	2
	Don't know	0	1	1	0	0	0	5
Total	1	12	47	20	9	2	10	100

Note: ¹⁾The number of personnel is measured as Full Time Equivalent, FTE. For example, 10 researchers working half time in a project correspond to five FTE researchers. Percentages are based on 107 respondents.

Overall, the questions about the length, budget and number of researchers in the ideal research project funded by Östersjöstiftelsen revealed a desire for slightly longer project periods than the present 3 years and for projects with 2-5 researchers involved per year. The ideal annual funding would be 1-3 million SEK for most respondents, although a fifth of the respondents expressed a wish for 3-6 million SEK annually.

4.3/ Experienced or expected outcome of funding from Östersjöstiftelsen

The respondents were further asked about the outcome of their current or completed research projects funded by Östersjöstiftelsen and about their perception of the outcome of their most recent research activities.

As Table 4.4 shows, funding from Östersjöstiftelsen led to significant advances in research qualifications, research production, and novel research results, according to the respondents. Furthermore, the respondents experienced significant advances in their own and in their partners' research careers as well as in new research collaborations. For around half of the respondents, the obtained funding resulted in other successful funding applications. Here, we also have to take into consideration that many respondents have not yet finished their research projects and therefore cannot fully judge the outcome of the project yet. Overall, only a very small fraction of the respondents did not report any of the listed outcomes in Table 4.4.

Table 4.4 Funding from Östersjöstiftelsen had the following outcome, percent

	To a great extent	To some extent	To a minor extent	Rest
It improved my qualifications as a researcher in my field	64	29	3	4
It boosted my own research career	56	35	4	5
It boosted other collaborating participants' research careers	55	25	13	7
It boosted my own research production	60	29	6	5
It yielded or contributed to generating novel research results within my field of research	59	31	3	7
It resulted in new cooperative relations with other research environments	45	38	9	8
It resulted in other successful funding or grant applications	18	33	22	27

Note: 'Rest %' contains 'not at all', 'it's too early to say', 'I don't know'. Percentages are based on 107 respondents.

The experienced high shares of positive outcomes of the funded activities also say something about Östersjöstiftelsen's funding schemes. According to the respondents, Östersjöstiftelsen's funding schemes seem to be very beneficial in the research system at Södertörn University. This conclusion can also be found in a significant number of researchers' comments about the role and influence of Östersjöstiftelsen's funding on the research quality at Södertörn University,

"...personally [I] very much appreciate the funding I have received both as a PI and as a part of other projects - It has provided funding for PhD student[s], for workshops and for publications and I have done some fantastic things thanks to this opportunity."

"Östersjöstiftelsen makes it possible to discover East European and Baltic Sea studies as an inspirational arena for joint ventures across the disciplines and nations."

The respondents further reflected on what would probably have happened with their funded research activity if they had not obtained funding from Östersjöstiftelsen. The funding seems to have been of high importance. Only 2 percent told us that the research would have been carried out anyway, i.e. if they had not obtained funding from Östersjöstiftelsen (cf. Table 4.5). Further, one fifth indicate that they would probably have carried out the research at a later stage or under different circumstances. However, three quarters of the respondents indicate that there is a small likelihood that the research would have been carried out or definitely would not have been carried out if they had not received the funding from Östersjöstiftelsen. Therefore, it seems that Östersjöstiftelsen's funding of research activities in the Baltic and East European field has a

clear effect on its own. It also seems that it has complementary funding effects and minor crowding-out effects relative to the existing funding system outside Östersjöstiftelsen, i.e., high additional impact in the research field.

Table 4.5. What would have happened to the planned Baltic or East European research activities without direct or indirect funding from Östersjöstiftelsen?

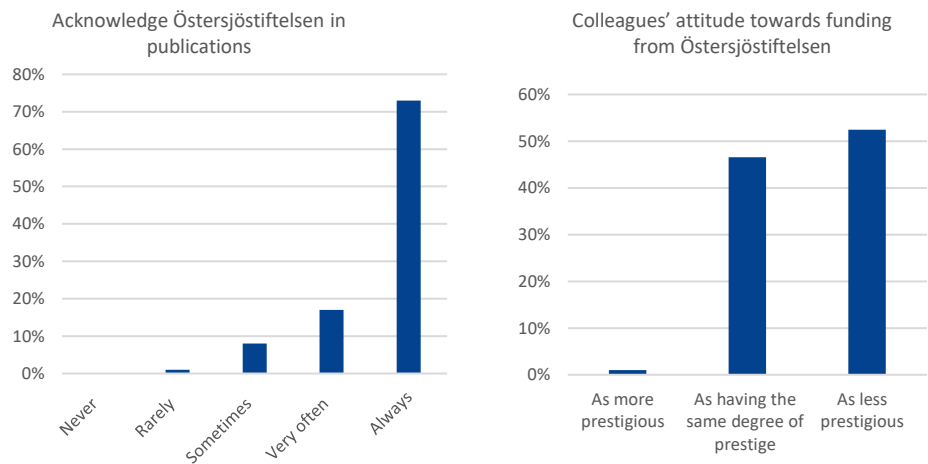
	Percent
The research would definitely have been carried out anyway	2
The research would most probably have been carried out anyway	19
There is a small likelihood that the research would have been carried out	53
The research would definitely not have been carried out	22
I don't know	5

Note: Percentages are based on 107 respondents.

Two questions were asked about reputation and the researchers' willingness to acknowledge funding from Östersjöstiftelsen: Whether they acknowledge funding from Östersjöstiftelsen in publications, and how prestigious they find funding from Östersjöstiftelsen. Figure 4.3 shows that a large majority of researchers do acknowledge funding from Östersjöstiftelsen when they publish their research. However, a quarter of the respondents do not always do it.

We do not know why this is, but it could be due to a lower than average perception of the prestige connected with funding from Östersjöstiftelsen. Thus, more than half of the respondents stated that colleagues at Södertörn University found the funding from Östersjöstiftelsen less prestigious than from other funding agencies (cf. Figure 4.3). Almost none stated that colleagues found it more prestigious.

Figure 4.3 How often researchers acknowledge Östersjöstiftelsen in publications funded directly or indirectly by Östersjöstiftelsen and researchers' attitudes toward funding from Östersjöstiftelsen



Note: Percentages are based on 107 respondents.

Respondents express the lack of prestige in, for example, this way,

“...[I] recently had funding from Östersjöstiftelsen, but my research from other funds, ... are seen as much more prestigious. I think that a wider approach, a demand on the funding being used in an inclusive manner can improve the results from the funding.”

It is a problem for the reputation of Östersjöstiftelsen, Södertörn University and the funded researchers that a large share of researchers at Södertörn University assess funding from Östersjöstiftelsen as less prestigious than other types of funding. It could indicate a lack of legitimacy, transparency and/or positive story telling around the research funded by Östersjöstiftelsen.

4.4/ Researchers' opinions about Södertörn University, research quality and funding from Östersjöstiftelsen

To examine whether researchers themselves at Södertörn University find research funding from Östersjöstiftelsen more or less attractive than other types of external funding, we asked a number of researchers, directly or indirectly funded by Östersjöstiftelsen, to assess this aspect (see table 4.6). Some of the answers can be compared with similar answers in Technopolis (2010B) and show robust answers over time. The overall impression is that the single researcher finds research funding from Östersjöstiftelsen more prestigious and welcomed today than in 2010, although this individual specific improved attraction or reputation may be caused by sample differences.⁵

Table 4.6 Researchers' impression of Södertörn University and research funding from Östersjöstiftelsen, per cent

	Disagree	Neither/Nor	Agree
Södertörn University			
Research in my field(s) at Södertörn University is recognized internationally for its high quality	7.5	13.1	75.7
Södertörn University offers attractive framework conditions for promoting research funded by Östersjöstiftelsen	6.5	26.2	62.6
Östersjöstiftelsen			
Östersjöstiftelsen makes a great effort to strengthen Baltic and East European research at Södertörn University	4.7	11.2	81.3
Östersjöstiftelsen is only funding high quality Baltic and East European research	18.7	19.6	45.7
Östersjöstiftelsen provides sufficient support for networking, knowledge exchange, and creation of scientific environments, which promotes Baltic and East European research	15.9	21.5	56.1
Researchers at Södertörn University			
Receiving funds from Östersjöstiftelsen is prestigious	12.1	21.5	63.5
My research has a clear Baltic or East European focus	9.4	11.2	78.6

Note: A minor residual group answered 'I do not know' or 'Not relevant' such that each row sums to 100%. Percentages are based on 107 respondents.

4.5/ Structural considerations

Although it was not the purpose of the survey to collect suggestions for improvements of the existing funding schemes at Östersjöstiftelsen and Södertörn University, a large number of respondents made various suggestions. Although they are partial and context-dependent suggestions, they deserve visibility and can be used as inspiration for a continuous discussion on how to improve the existing funding schemes.

⁵ In Technopolis (2010B), 23.5% did not know or did not have a clear Baltic or East European focus in their research, which made funding from Östersjöstiftelsen less likely. In the present survey, the corresponding share is 10.5%.

The respondents point out problems and barriers in the existing funding instruments, but they also come up with ideas for improvements and changes. Many of them are quite negative, but based on the previous findings there is no reason to think that they are representative of all researchers at Södertörn University. We bring the comments here, because they can be used in future discussions of Östersjöstiftelsen's and Södertörn University's funding schemes and collaboration.

Financial coverage and academic merit

"A key restraint is that we can not pay wages for non-Swedish researchers, but it is still expected that the research will be collaborative, including researchers from the Baltic States."

"Ideally it would be easier to include international collaborators. The employment/payment processes are so difficult as to almost be prohibitive."

"One of the biggest problems today is the lack of funding for PhD students, which creates a disproportion between the number of supervisors and PhD graduates ... as it prevents (associate & full) professors to get the merit of being supervisor and also diminishes the speed and range of renewal and vitality in the departments."

The review process

"Much of the research ... is of an interdisciplinary character, but selected evaluators often have a very poor record of interdisciplinary research therefore they lack understanding for it."

Östersjöstiftelsens support

"Applicants must themselves pursue and establish connections and networks in the Baltic and in Eastern Europe. ÖSS does little to help potential applicants proactively."

Östersjöstiftelsens funding biases

"Östersjöstiftelse should ... encourage the university management to support quality, rather than to use research funding for other reasons. Östersjöstiftelsen should also try to end the programme with Östersjöprofessors, since it produces huge inequalities in the research environments, with a handful of people having vast research resources, while most have basically nothing. It would be better to give those funds to individual research environments/subjects in order for them to distribute as fits them best."

"...divide the funding into one portion that is used to fund a researchers center (CBEES) with a rather small number of top quality Baltic Sea and East European researchers and a larger portion rather funding top quality research at Södertörn which would be relevant for this type of research indirectly. This would avoid the rather forced associations to the Baltics and East European created by researchers at Södertörn to get access to funding."

"Funding of Baltic and East European Research at Södertörn University should be less seen in isolation from other excellent research. There should be greater emphasis on the creation of synergies of Baltic and East European oriented research with excellent research in general. There is an area studies trap some of the better researchers seek to avoid, at the same time as there is a Baltic/East European-research opportunism among project applicants that is too often rewarded through positive funding decisions."

"The research field in itself is a construct, which in turn makes the research conducted within it less driven by curiosity and an open search for knowledge than had been the case without this geographic frame."

"In the selection process, there has been a clear advantage for humanistic subjects... something has to be done to this systematic imbalance in fundings."

"...project funding by ÖSS is ludicrously biased Trying to judge all project proposals by the same evaluative standards, regardless of the academic culture in which they are developed and assessed, perpetuates this bias."

Östersjöstiftelsen and Södertörn University

"This threatens the autonomy and freedom of research at our 'university' as we say in English, while this is only - part of the financial problem - a 'högskola', a lower-level organization infinitely poorer than real universities in Sweden."

"...discrepancy between the statutes of Östersjöstiftelsen and the structure at Södertörn university. If Östersjöstiftelsen is following its task of supporting scholars at Södertörn there needs to be a much more open minded understanding of what Östersjöforskning might be."

"...money and resources from Östersjöstiftelsen increasingly was appropriated to administrative

functions... The Östersjöstiftelsens money should be placed ... following established rules.”

Research quality consequences of lacking transparency

“The assessment of applications is not sufficiently stringent. ... the applications are not ranked in a transparent and consistent way.”

“The monopoly of ÖSS funding by Södertörn-based researchers, and (2) Södertörn's extremely restrictive approach to project-funded employment of external researchers, is a textbook recipe for producing mediocre research.”

4.6/ Concluding remarks

We have presented the main results from our survey study of grantees' experiences of research funding from Östersjöstiftelsen. Among other things, we asked the respondents about what an ideal grant from Östersjöstiftelsen would look like, and there are many different ideal grants. The respondents express a desire for many different types of funding from easily accessible short-term funding of application preparations or result dissemination, i.e. articles, to long-term funding of large research groups or international research collaboration as shown in Section 4.2. Table 4.1 showed the support to a list of potential fundable research activities supplemented with free suggestions, like short-term funding of activities such as publication preparation, network initiation, and follow-up grants. More specifically, the respondents point towards research activities with a length of 3-6 years, an annual budget of 1-3 million SEK, and 2-5 fulltime researcher as their idea about an ideal grant (cf. Figure 4.2).

A quite representative quote summarizes and pinpoints the overall finding in present survey (see Table 4.1) and the specific questions on grant and personnel size, and duration in Figure 4.2. It is all about flexibility and timing according to the respondents and in full accordance with the findings in the Danish study (Wohlert et al., 2018).

“...funds are needed in various forms, research initiation, publication support, network support and short and longer projects (both 1-3 and 3-6 years) to create larger research groups and international collaborations. The form of support is simply dependent on the purpose for which the money is sought.”

Our survey also shows that the respondents themselves assess the impact of the funding from Östersjöstiftelsen as being significant. According to them, it has led to new research qualifications, increased productivity and novelty, research career advances and establishment of new collaborations. Combined with the fact that 75 percent of the respondents would not have been able to carry out the research had they not been funded by Östersjöstiftelsen, the funding seems to have a significant influence on research activities in the Baltic and East European research fields.

However, the researchers do not seem to be proud of the funding from Östersjöstiftelsen, as more than 50 percent indicate that their colleagues at Södertörn find it less prestigious than other types of research funding. This in combination with many suggestions for improvement of the present research funding system indicates a need for more openness and transparency in the funding criteria and review process. If transparency increases the legitimacy of funding decisions, Östersjöstiftelsen needs to engage their grantees, other beneficiaries and stakeholders proactively in discussions about how the legitimacy of funding from Östersjöstiftelsen can be augmented to the benefit of researchers, Södertörn University and ultimately science in the Baltic and East European research field. It seems like the present funding system lacks some legitimacy among some of the academic beneficiaries. Listening to their wishes and discussing current instruments with them could result in a more optimal and balanced portfolio of research grant instruments, a heightened status of the funding from Östersjöstiftelsen, and more excellent research from Södertörn University.

5.0 Summary and a way forward

5.1/ Short summary of main results

This report has presented the results of the Danish Centre for Studies in Research and Research Policy's evaluation of Östersjöstiftelsen's funding of Baltic and East European Research at Södertörn University. The report consists of four sections plus this concluding section, which summarises the main results and discusses a possible way forward for improving the funding instruments of Östersjöstiftelsen.

In section 1, the evaluation assignment was presented along with a brief history of Östersjöstiftelsen, Södertörn University, and the relationship between the two institutions. Section 2 presented a review of the international literature on research funding with particular focus on contributions concerning distribution of competitive research funding. In addition to a systematic discussion of the advantages and disadvantages of different types of funding, the section especially looked at concentration versus dispersal of research funding and thus provided up-to-date knowledge for future discussions in Östersjöstiftelsen on existing and new funding instruments.

In section 3, the historical and current funding practices at Östersjöstiftelsen were described and discussed, and a bibliometric study of Baltic and East European Research from Södertörn University was presented. This study showed that researchers at Södertörn University increasingly collaborate (publish) with researchers at other institutions in Sweden and abroad – and that they do it more than other researchers within the same fields. However, publications within Baltic and East European Research from Södertörn University seem to be cited less than average, with a decreasing tendency. The reason for the decrease in mean normalized citation score (MNCS) and share of top 10% publications (PPtop10%) may be that researchers publish in less visible (and cited) journals.

Section 4 reported on the results of a survey of present or former recipients of funding from Östersjöstiftelsen. Among other questions, the respondents were asked about their perception of an ideal future research grant from Östersjöstiftelsen. The most prevalent answers were funding for 'new or expanded collaboration with leading researchers or research environments abroad' and 'interdisciplinary research and/or collaboration' together with funding for 'existing' and 'new' research agendas, funding for 'new' and 'existing' research groups and funding for 'basic research' (cf. table 4.1).

Besides predefined categories, respondents also had the opportunity to write additional wishes for funding in open text fields. Here, many respondents expressed a wish for better funding opportunities for embedding PhD-students into larger research projects. Asked to reflect on the ideal length and size of a research project, the respondents indicated that the ideal length of a research project period would be a little longer than the present 3 years, and they preferred projects with 2-5 researchers involved per year and with 1-3 million SEK in annual funding.

Regarding impact of the funding from Östersjöstiftelsen, the respondents were very positive and stated that it had led to new research qualifications, increased productivity and novelty, career advances and establishment of new research collaborations. Nevertheless, funding from Östersjöstiftelsen is still seen as less prestigious than other forms of funding by many researchers at Södertörn University.

5.2/ How can Östersjöstiftelsen use the results from the evaluation?

As the literature review in section 2 reveals, there are pros and cons to all funding schemes. For example, there can be good reasons for increased concentration of funds in large grants or in so-called Centres of Excellence. These include a smaller administrative burden in the grant peer-review process, the establishment of a critical mass of researchers and skills, increasing scientific productivity and an opportunity for the funded researchers to pursue high-risk, high-impact research. However, there are also many advantages to small grants; for example, spreading the investment risk by supporting many scientists increases the likelihood of making path-breaking discoveries, and funding success rates are improved.

However, these benefits have to be weighed against potential disadvantages. For large grants and Centres of Excellence, these include low hit rates, endangerment of the growth layer and the next generation of scientists as large resources are given to few, already established scientists, organizational fragmentation, inefficient use of research funding and a reduced number of scientific experiments. A disadvantage of funding many small projects instead of bigger projects is an increased administrative burden.

Every funding organization therefore has to weigh the pros and cons of the different funding instruments against the purposes and statutes of the specific organization before deciding which instruments to use. There are no one-size-fits-all instruments. Which instruments are best suited for the needs of the organization is highly dependent on the context of the funding (objectives, researchers, institutions, traditions etc.). Attention therefore has to be given to the particular context in which the instruments are supposed to work. For Östersjöstiftelsen, this means 'Baltic and East European Research' at Södertörn University, but what funding instruments work best within this context? Again, there is probably more than one answer to this question. However, if we listen to the researchers, who are or have been funded by Östersjöstiftelsen, they are largely satisfied with the impact of the funding, but they also have concrete suggestions for improvements:

- More funding opportunities for embedding PhD students into research projects.
- More funding opportunities for interdisciplinary research.
- More funding opportunities for international collaboration.
- The possibility to apply for funding on an ongoing basis whenever the funding is needed or an unexpected opportunity comes up (e.g. for a research stay abroad).
- More flexibility in project length and grant size/less standardized instruments.

There seems to be some low-hanging fruits here that only require small adjustments to the existing portfolio of funding instruments at Östersjöstiftelsen. Implementing these adjustments and new instruments could potentially increase the impact of the funding and further improve researchers' satisfaction with funding from Östersjöstiftelsen. We therefore recommend that Östersjöstiftelsen start a dialogue process with researchers at Södertörn University to concretize their needs in this regard. In this dialogue process, Östersjöstiftelsen could also talk to the researchers about instruments that can enhance the citation scores for research within the Baltic and East European area from Södertörn University. Some of the questions that could be discussed with the researchers would be: How the citation rates can be increased or better measured? How can Östersjöstiftelsen most effectively support publishing in the best journals within the subfields of this research area?

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7.0 Appendix

7.1/ Survey respondents and other information sources

A list of around 250 unique researchers that have received project funding from Östersjöstiftelsen during the last 20 years were identified through Östersjöstiftelsen's listing of grantees (<http://ostersjostiftelsen.se/forskare>). They have all received project funding in the Baltic and East European research field and were asked about the most recent funded project if they had received more than one grant. Contact information on all researchers was found through the project links, at Södertörn University or by web searches. The majority was still employed at Södertörn University and easily tracked, although Södertörn University's launch of a new web homepage in early 2019 made everything harder. The list of respondents was supplemented with indirect beneficiaries presently employed at Södertörn University in administration or management etc. in the Baltic and East European research field.

257 respondents were identified. 56 had untraceable contact information, and 5 refused to participate, so the final sample ended with 195 directly project-funded researchers or indirectly funded beneficiaries. Of these, 77 did not respond after a reminder. Another 11 only opened the on-line questionnaire without answering more than the 'acceptance of consent' question. Hence, 107 (response rate on 55%) grantees (majority share) and other beneficiaries (minority share) answered the questionnaire regarding Baltic and East European research, their ideal research grant (if relevant), and attitude towards and perception of Baltic and East European research at Södertörn University and Östersjöstiftelsen's funding practices.

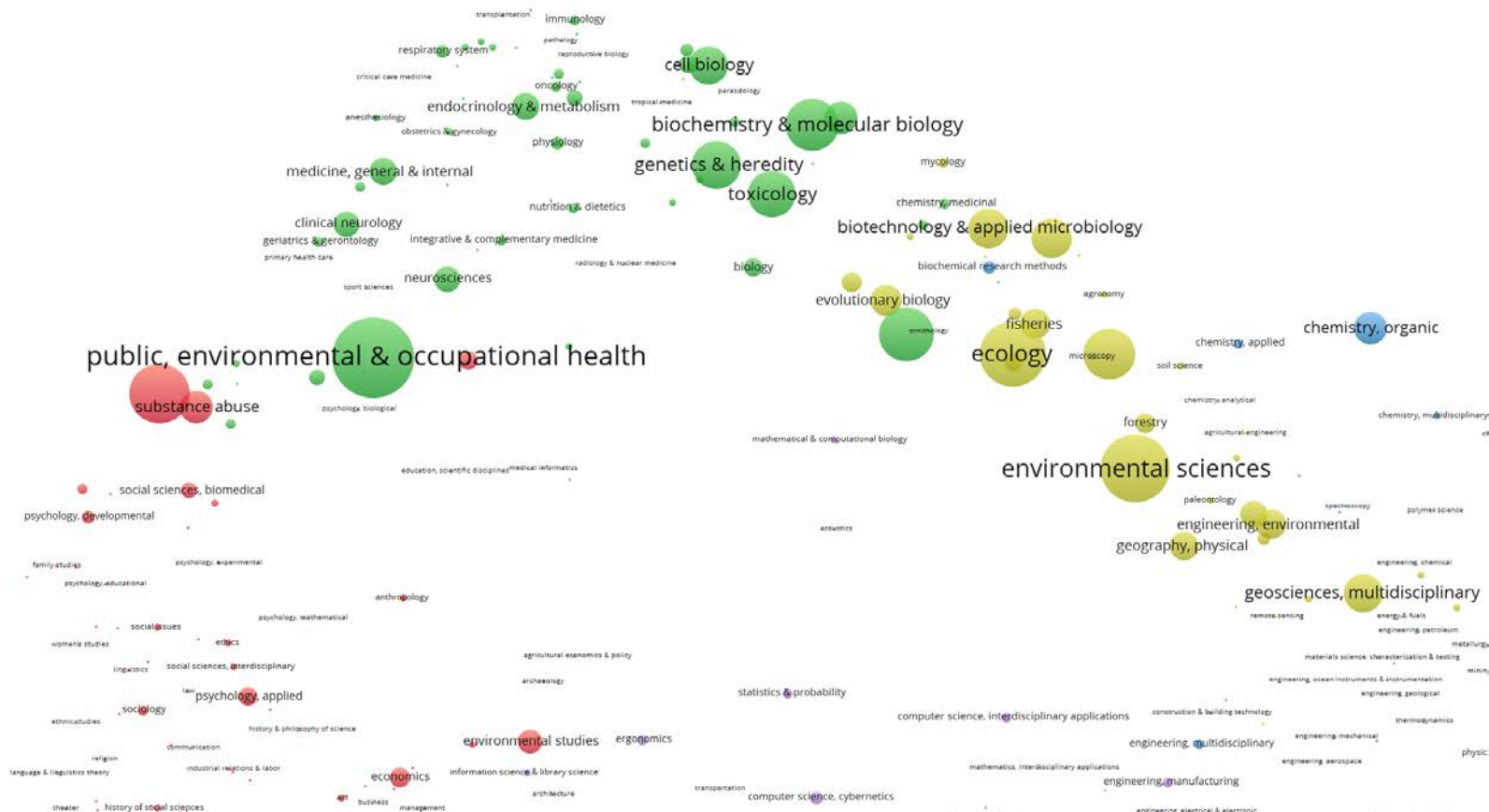
The questionnaire is mainly inspired by an analysis by Wohlert et al. (2018, The Ideal Research Grant), supplemented by questions used in Technopolis (2010B, Röster om Östersjöstiftelsen) and finally coordinated with and approved by Östersjöstiftelsen. The answers are used in the analysis in Section 4. The questionnaire can be requested from the report authors.

7.2/ Research fields and research topics in published output

The two diagrams A.1 and A.2 below illustrates the identified research fields as well as research topics in published output in the Baltic and East European research field by researchers affiliated to Södertörn University in the period 2005-2016. The research fields in the published research are based on common research subfields clustered by journals as they are defined in CWTS-WoS. Article authors give keywords as part of their initial description of the publication topics, and these are clustered in common more general topics as well. In both figures, point sizes indicate the relative number of publications, with an author affiliated to Södertörn University, that covers each subfield or topic. The linkages in Figure A.2 illustrates co-authorship, i.e. collaboration. See also Section 3.2.2.

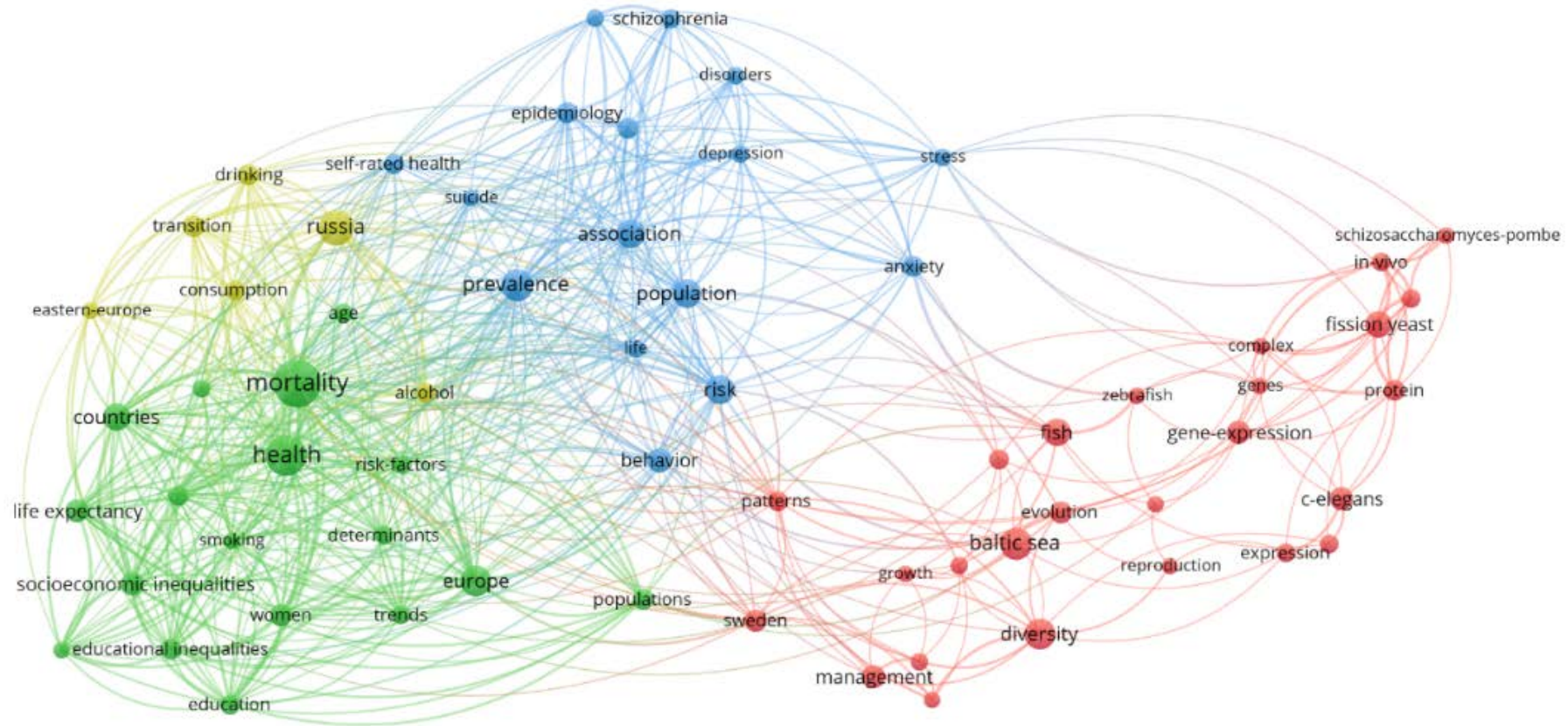
The colours in Figure A.1 represents main scientific fields such as Social Sciences, Humanities, Health, and Natural Sciences. The clustering and distances between points are based on a pre-constructed base map in CWTS-WoS defined by mutual citations among all included journals in 250 categories. The colours in Figure A.2 is based on mutual co-occurrence and helps illustrating a fourth (yellow) cluster behind the two others (green and blue). Whether there actually exists three or four core topic clusters are discussable and needs deeper knowledge in the Baltic and East European research field.

Figure A.1 Research fields present in published articles in the Baltic and East European research field, 2005-2016.



Note: Based on CWTS' WoS database on bibliographic information. Published articles in registered journals were collected using affiliation to Södertörn University and thematic publication of research in the Baltic and East European research field. Be aware that coverage in the database is less complete in the scientific fields where Södertörn University has its major research activities, i.e. Humanities and Social Sciences and especially in Swedish, and for output types such as (Swedish-language) books and anthologies. Topics pre-defined by CWTS-WoS, and topics without a bullet point illustrates the complete research topic landscape.

Figure A.2 Interlinked research topics by article keywords in published articles in the Baltic and east European research field, 2005-2016.



Note: Based on CWTS' WoS database on bibliographic information. Published articles in registered journals were collected using affiliation to Södertörn University and thematic publication of research in the Baltic and East European research field. Be aware that coverage in the database is less complete in the scientific fields where Södertörn University has its major research activities, i.e. Humanities and Social Sciences and especially in Swedish, and for output types such as (Swedish-language) books and anthologies.

