**Proactive vs. Reactive Policy Entrepreneurship Among Public Servants: A Network Approach**

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A policy entrepreneur is a distinct kind of political actor aimed at affecting change. The theoretical narrative regarding policy entrepreneurs is underpinned by their commitment to a policy solution, the multi-dimensional strategies they use to promote that solution, and a suite of attributes and skills facilitating their actions. Policy entrepreneurs reveal themselves through their attempts to transform policy ideas into policy innovations and, hence, disrupt status quo policy arrangements. (Petridou and Mintrom, 2021). Indeed, policy entrepreneurs share sensibilities with entrepreneurs in the market, whose conceptualization served as a heuristic for their counterparts in policy and politics. The emphasis on change based on innovative solutions distinguishes policy entrepreneurs from many other actors, who aim at the maintenance of current institutional settings and power relations. The growing scholarship on policy entrepreneurship has assumed thus an intentionality inherent to the policy entrepreneur and their actions, foregrounding the image of the tenacious political actor set on steering their *a priori* pet policy to a suitable problem. Recent research on policy entrepreneurs has produced a more nuanced understanding of such actors in their identity as public servants. A recent paper by Petridou et al. (forthcoming) developed the concept of *reactive entrepreneurship*, engendered in the aftermath of focusing events characterized by a compressed time horizon; a policy community in consensus; low levels of ambiguity the urgency for a satisficing solution, and the framing of the policy problem in technical terms. In this paper, we adopt a formal social network analysis to explore proactive and reactive entrepreneurship in flood risk governance in two Swedish municipalities. We use centrality measures to articulate power of the flow of resources and trust in the respective networks concluding with an analytical framework of reactive and proactive policy entrepreneurship in relational terms.

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## Introduction

Flood risk is a concern worldwide (Grobicki et al., 2015), and though most vulnerable populations live in low-income countries, floods pose significant risks in advanced western democracies as well (Priest et al., 2016; (Fekete & Sandholz, 2021; Schnitzler et al., 2007), undermining sustainable development and resulting in extensive monetary damages, and casualties. Flood risk is inextricably tied to the consequences of climate change (IPCC, 2022) and their increased frequency and intensity has focused scholarly attention on the governance and administrative systems tasked to mitigating flood risk (Becker, 2018, 2020). Many actors in multi-level governance structures are involved in the task of mitigating flood risk, but municipal administrations are especially salient when it comes to facing the administrative and social challenges this issue engenders (García et al., 2019). The prominence of the local level is especially pronounced in federal systems, but also in unitary states with a decentralized system of administrative responsibilities. This is the case in the Nordic environment, where responsibilities as well as resources are decentralized to the local level (Harjanne et al., 2016). In Sweden, specifically, a large number of floods resulting in systemic disruptions have occurred since the 1980s (Nyberg, 2008) and its 290 municipalities have considerable leeway on how to arrange the administration handling them. Moreover, floods span jurisdictions and involve conflicting interests and a diverse number of actors attempting to solve a problem with ambiguous causes and contested solutions often underpinned by uncertainty— in other words, they constitute a wicked problem (Alford & Head, 2017; Rittel & Webber, 1973). For this reason, scholars have articulated the salience of collaborative governance structures (Becker, 2021; Bodin et al., 2020) on the one hand, and the importance of agency (Peters, 2015), and especially policy entrepreneurial agency on the other (Mintrom, 2019; Mintrom & Luetjens, 2017). The implication is that effective flood risk mitigation necessitates the active engagement of actors at multiple levels of governance aimed at effecting transformative change (Petridou et al., 2021).

Policy entrepreneurs have long been recognized within the public policy scholarship as agents of change, namely actors that are influential in the process of effecting transformative policy change, in a number of contextual settings and policy sectors (Carter and Scott, 2010; Mintrom, 2000; Mintrom and Norman, 2009; Schneider and Teske, 1992; Schneider, Teske and Mintrom, 1995; Mintrom and

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Thomas, 2018; Sheingate, 2003), including crisis management and flood risk mitigation (Petridou et al., 2021; Petridou & Sparf, 2017). In other words, policy entrepreneurs matter (Arnold 2020). Policy entrepreneurs constitute a distinct kind of political actor, who are alert to opportunities and channel a variety of resources to the deployment of strategies for the purpose of effecting change in a number of policy sectors, including environmental policies (Mintrom, 2000; 2019; Petridou and Mintrom, 2021; Zahariadis, 2002; 2007). Implicit in the conceptualization of entrepreneurial agency is a certain intentionality and the idea that entrepreneurs have an *a priori* solution in mind looking for a problem (Olsson & Hysing, 2012; Petridou et al., 2015).

Early policy entrepreneurship literature conceptualized these actors as members of the political elite (Dahl, 2005). They were portrayed as exceptional, heroic actors (Christopoulos, 2006; Ingold, 2015; Lewis, 1980), while the role of public servants has traditionally not garnered much attention by scholars (Frisch Aviram et al., 2020; Frisch-Aviram et al., 2018; Olsson & Hysing, 2012; Petridou, 2018; Petridou et al., 2021). This lack of scholarly attention is curious because implementation is an integral part of the political process, with street-level bureaucrats playing a significant role in the process (Frisch-Aviram et al., 2018; Jordan & Huitema, 2014). Additionally, a recent systematic review of policy entrepreneurs found that the lowest percentage of scholarship was devoted to the local governance level, as opposed to the regional, national, and supranational levels (Frisch-Aviram, Cohen, and Beeri 2019). This lack of scholarly attention results in a lack of understanding of bureaucratic policy entrepreneurs in terms of how they make use of the array of strategies at their disposal in their efforts to influence the policy making process. It also has empirical implications because the micro-actions of policy entrepreneurs that have the potential to effect macro-level results by their engagement in environmental issues, including, *inter alia* flood risk mitigation (Petridou et al., 2021).

Given the different identities of policy entrepreneurs (Petridou & Mintrom, 2021), the question that emerges is whether we need additional theoretical tools to understand policy entrepreneurship among public servants tasked with implementing a policy formulated and decided at a higher level of governance. In this paper, we challenge the notion that policy entrepreneurs must necessarily have a specific policy in mind as they work to affect change. We posit that, similarly to market entrepreneurship, policy entrepreneurship may emerge, not through opportunity structures, but through

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conditions of *necessity*. Based on a comparative network study of flood risk mitigation in two municipalities in southern Sweden, we continue the work of Petridou et al. (2021) who theorized the policy entrepreneurial skills of sociability and credibility and the ability of policy entrepreneurs to frame a technical policy problem as a social one for the purpose of mobilizing a wider array of actors.

**Theoretical Underpinnings**

Entrepreneurs have historically been considered salient societal actors because their innovative actions disturb equilibria in economy and society (Becker, Knudsen and Swedberg, 2012; Kirzner 1973; 1997; Schumpeter, 1934). In political science and policy studies in particular, the literature on policy entrepreneurship has exploded since 1984 with John Kingdon's *Agendas, Alternatives, and Public Policies.* The variety of distinct assumptions placed on the concept of the entrepreneur by researchers working from different disciplines has contributed to the concept's versatility, but also fuzziness.

Policy entrepreneurs are underpinned by a set of assumptions (Mintrom, 2000). Firstly, policy entrepreneurs must be creative and insightful with the ability to imagine how their proposals will affect the policy debate in the long run. Secondly, policy entrepreneurs are socially sensitive and politically acute so that may be able to view problems from many different angles. Thirdly, policy entrepreneurs must be able to move in and out of a variety of social and political settings—in other words, they must be networked. Fourthly, policy entrepreneurs must be able to argue persuasively, in other words they must be able, through effective rhetoric, to transform social perceptions. By reframing an issue "the entrepreneur generates 'needs' and then meets those needs with specific responses" (Scheider, Teske, and Mintrom, 1995, p. 43). Fifthly, policy entrepreneurs must be able to build teams able to pursue their goal successfully. Sixthly, they must be able to 'lead by example' that is, inspire their team with their vision for the future, which must appear realistic. Finally, the public entrepreneur is not an individual working in isolation; rather the context in which they operate is very important and the social character of entrepreneurship is undisputed (Mintrom, 2000). Contacts are commonly the main source of ideas that public entrepreneurs come across and take advantage of. They are social actors embedded in local networks, an embeddedness which may alleviate some of the costs associated with entrepreneurial action.

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Policy entrepreneurs possess a number of attributes which, in conjunction to a set of skills they exhibit, inform their strategies (Frisch Aviram et al., 2020; Mintrom, 2019) In recent work, Mintrom (2019; 2020) has noted that *sociability* and *credibility* are attributes policy entrepreneurs possess. Credibility can be achieved by demonstrating expertise in a certain field or holding certain positions, or generally appearing as having 'what it takes'. Sociability may be understood as likeability, the ability to consider others and their ambitions and desires in the process of trying to achieve one's own purposes (Mintrom 2020). Both attributes constitute an important impetus for the relational strategies of entrepreneurs. Petridou and colleagues (2021)

Entrepreneurs have traditionally been considered crucial societal actors who develop and bring new products and services to market. Through their actions, entrepreneurs often catalyse new forms of economic and social activity (Casson, 1982; Kirzner, 1997; Schumpeter, 1934). Often, entrepreneurs in the marketplace face strong competition. Existing producers, perceiving threats to their business, can resist the actions of new actors trying to break in a new market. It is perhaps that for this reason, the fact that entrepreneurs have to overcome resistance, that when entrepreneurs are successful, they can generate dynamic change. Entrepreneurs distinguish themselves from mainstream business owners because they demonstrate creativity in the sense that they do things differently, often taking risks, with a view to making profit.

In the market sphere, this intentionality underpinning the creation of new profit opportunities is not always present in policy entrepreneurs. *Entrepreneurship by necessity* entails that people feel forced to start their own business because they are not able to find employment anywhere else (Angulo-Guerrero, Pérez-Moreno, and Abad-Guerrero 2017). Market entrepreneurship by necessity is a state where individuals are driven to entrepreneurship for two reasons: first, they do not have another choice when it comes to employment, second, there is no safety net in terms of unemployment insurance or re-training (Fairlie and Fossen 2018; Serviere 2010). Actors driven to entrepreneurship by necessity "perceive entrepreneurship as the only option for their survival" (Serviere 2010: 42, see also Arc, Arenius, Hay, and Minniti 2004).

We posit that in the politics sphere, actors may be driven to entrepreneurship because of a perceived necessity, or even for the sake of professional survival. Specifically when it comes public

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servants, they may act entrepreneurially because in their professional position they were assigned to implement a particularly vexing policy or handle a complex problem, resulting in *reactive* policy entrepreneurship.

**Relevance of Case**

Sweden is divided in 290 municipalities. These are relatively large and complex organizations, thought there is considerable variation in size and complexity between the populous south and sparsely populated north. This variation notwithstanding, municipalities have a multifaceted range of responsibilities related to mitigating flood risk (Becker, 2020) legislated in the mid-1980s (SFS 1987:10; SFS 1986:1102; Prop. 1985/86:150 Bil. 3). The Swedish legal framework confers rights to municipal administrations to adopt land use plans (SFS 2010:900), explicitly pointing out considerations for flood risk (Ch.2, Sect.5), and they have the responsibility to remove surface water from settled areas (SFS 2006:412). What is more, municipal administrations must have an action program to mitigate risk (SFS 2003:778), and regularly assess risk and vulnerability within their jurisdiction (SFS 2006:544). This broad competence of municipal administrations in mitigating flood risk makes the cases relevant for the study of policy entrepreneurial action among public servants.

**Method and Data**

In this paper, we adopted a comparative case design (Yin, 1994), consisting of two municipalities in the catchment area of Höje Å located in southern Sweden: Lomma and Lund. The comparative case study integrated structural and interpretive analysis (White 1997). This is because since the observed actions of actors contributing to flood risk mitigation are defined both by their social relations and by the institutional context in which they are embedded (DiMaggio 1992). Social network analysis has proved useful in revealing underlying processes (Robins, Lewis, and Wang 2012), while qualitative research is useful in the investigation of their reasons and meaning (Bernard 2006). We therefore used both formal social network analysis and qualitative analysis to understand the networks of actors within each municipal administration contributing to the governing of flood risk mitigation.

Delimiting the boundaries of the network is a question that all researchers face when conducting social network analysis. In practice, most networks have no obvious limits, which makes boundary decisions less evident (Knoke and Yang 2008; Robins 2015). We bounded the network with snowball

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sampling, starting with 10 participants in each municipal administration identified as likely to contribute to mitigating flood risk, including civil servants working with land use planning, water and sewage, and environmental issues. We used a name-generating question concerning actors each informant depended upon for input to be able to contribute to mitigating flood risk. The data collection continued in principle until no more new informants were identified, but involved in practice boundary judgements of relevance (Becker, 2018). This resulted in 35 participants in the municipality of Lomma and 88 participants in the municipality of Lund[1]. All the participants were contacted with a response rate of 98.4 percent.

Social network data were collected through structured interviews. Based on Becker (2018), we followed a framework of seven kinds of input to operationalize dependencies among actors which in turn represent the empirical observations of interactions among them. These inputs were rated on a five-point Likert scale from not at all (0) to extremely important (4), which were then aggregated and normalized. The seven types of input included (i) reports of activities; (ii) equipment and material; (iii) funding; (iv) technical information; (v) rules and policy: (vi) advice and technical support, and (vii) pepping and moral support. Informants were also asked to rate the level of trust they have that they will be provided the input they need from each identified actor (on a similar Likert scale, from no trust to full trust), which was also normalized for clarity. These data were complemented by semi-structured interviews in conjunction with the collection of the network data and recorded through extensive notes taken at the time of the interviews. Most interviews lasted between 60 and 90 minutes, with a few shorter interviews with actors less engaged in flood risk mitigation. All interviews were done face-to-face to minimize non-responses and to allow for clarification and probing (Borgatti, Everett, and Johnson 2018), as well to provide an opportunity to hold the open qualitative conversations. The social network data were analyzed using UCINET (Borgatti, Everett, and Freeman 2002) and R.

Identifying policy entrepreneurs was a two-step process. First, and in order to understand the agency of actors in the network based on their position in it, we calculated three types of centrality measures for each actor. Centrality measures have often been used in the literature to determine policy

[1] This included VA SYD, the regional water and sewage organization that Lund is a part of.

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entrepreneurial actors (Christopoulos and Ingold 2015; Knocke et al. 1996;(Petridou, 2018). Centrality measures articulate aspects of an actor's prominence in a network by summarizing the structural relations of all nodes. Centrality is a heuristic for the power a node possesses and exerts in network; different centrality measures focus on different aspects that power (Knoke and Yang 2008; Wasserman and Faust 1996).

In the analysis that follows, the in-degree centrality of an actor operationalized the aggregated importance of inputs to all dependent actors and reflects the actor's local control of resources in the network. This corresponds to the notion of the level of popularity of a node (Borgatti, Everett, and Johnson 2018). Conversely, betweenness centrality typically reveals the capacity for control of resource flows through the network—these are gatekeepers exerting power in the network through control of resources such as information, for example (Borgatti, Everett and Johnson 2018). In this study we include directionality indicating the way resources flow. Finally, in-eigenvector centrality was used to capture the influence an actor has over other influential actors (Bonacich 1987; Borgatti, Everett, and Johnsson 2018; Robins 2015); here applied in a manner making it the same as positive Bonacich power/Beta centrality (Borgatti, Everett and Johnson 2018), which has been suggested as a useful tool for detecting policy entrepreneurs (Christopoulos and Ingold 2011; Ingold and Christopoulos 2015). Finally, we triangulated the network data with the qualitative interview data in order to identify any entrepreneurial actors, understand their use of skills and strategies, and contextualize the discussion in a comparative perspective.

**Preliminary Results**

As a first step, the entrepreneurs were identified by the informants through their answers to the question regarding the most important actors contributing to flood risk mitigation in the respective municipalities. This is established praxis in studies of policy entrepreneurship (see (Mintrom, 2000). The qualitative data informed the social network analysis because they nuance the resultant networks.

In both municipalities, the actors working with water and sewage are most central, which is not surprising given the nature of flood risk mitigation. Having said this, in Lomma, there was one actor not part of the civil servants working with water and sewage who was unambiguously identified as a policy entrepreneur. This was the environmental strategist, working cross-sectorally in the municipality with

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flood risk mitigation issues. The network structure in Lomma seemed to at least partly have consciously been cultivated by the policy entrepreneur. She credits the leeway she is afforded by her manager: “ he is the best manager. […] he lets me do what I need to do”, which includes mobilizing people: “I have worked for a long time to get everybody involved. Some came along right away. When the politicians started to think it was important, all managers became interested and then everybody was involved shortly thereafter […]”. Indeed, the Lomma flood risk mitigation network exhibits the most integration of politicians and other senior management civil servants— more so than in Lund.

Futhermore, the environmental strategist has the highest score of all 35 actors in the Lomma network in-eigenvector centrality (positive Bonacich power), which is an indicator of policy entrepreneurship. The highest scores of the next two actors, the head of the water and sewage unit and the head of the technical department, are approximately 20 and 30 per cent lower, respectively, while that of the most senior politician and manager, the two next highest scoring actors in in-eigenvector centrality, score almost 50 per cent lower. In addition, the environmental strategist is scoring equally high when analyzing the corresponding network of trust that each actor will provide what dependent actors need to contribute to flood risk mitigation, with the following five actors scoring 83, 76, 75, 72, and 55 per cent of her score.

In Lund, the structure of the flood-risk mitigation network is similar, but the processes creating it were very different, top-down in character. The municipality was tasked with implementing a project, “Lund’s Water”, which created the reason for mobilization of actors around the question of flood-risk mitigation. In Lomma, the driver was a (proactive) policy entrepreneur, whereas in Lund the project created conditions of necessity for reactive entrepreneurship: “we have always considered water, but when floods because a higher priority, we had to find new ways to work together. Also now, with the project ‘Lund’s Water’. We find a way that works, and we stick to it (Civil Servant, Lund). Whereas in Lomma the environmental strategist focused on elevating the question of flood risk mitigation in Lund it was the project resulted in the elevation of the question among the public servants: “five years ago, we didn’t see this as our responsibility. Now it’s a top priority and we work closely together with other departments to see where the money we have would be put to best use to solve the problem (Civil servant, Lund).

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The figures below show the visualizations of the risk mitigation networks and Lomma and Lund respectively.

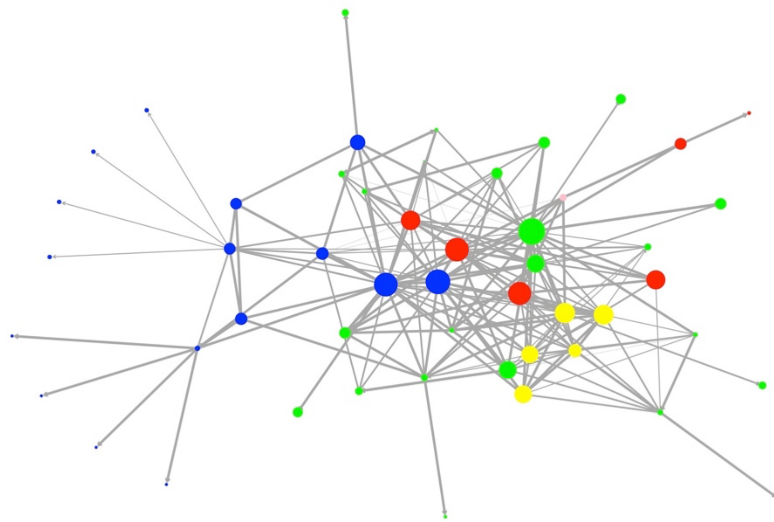
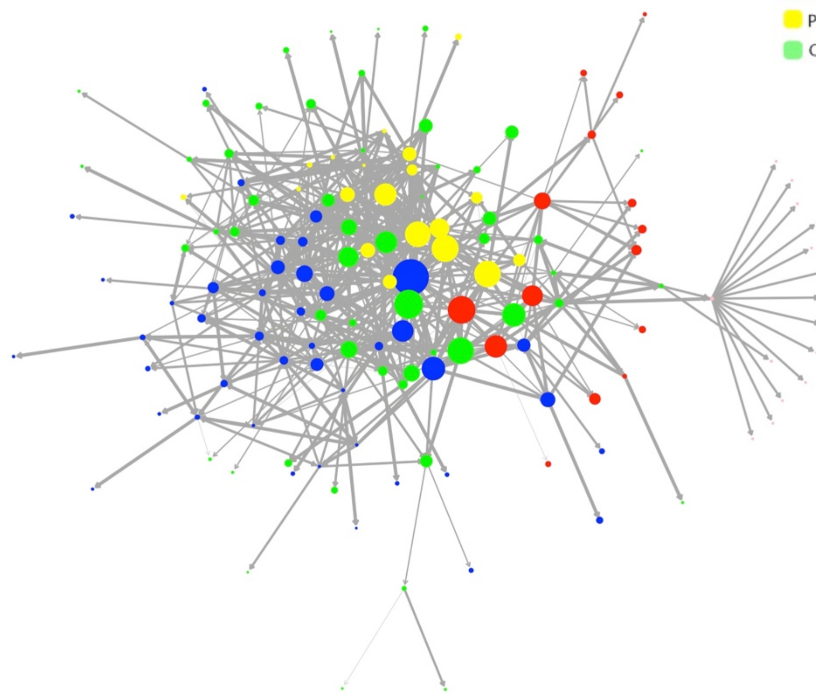


*Figure 1 Eigenvector centrality (trust) of the risk mitigation networks. (Lomma above, Lund below)*




**Conclusions**

This paper is work in progress. Preliminary analyses indicate that the proactive entrepreneur in Lomma, based on high levels of sociability and credibility, was able to mobilize a diverse number of actors and elevate the question of flood risk mitigation as a priority issue in the municipality. In Lund, flood risk

mitigation was elevated by the adoption and implementation of the project “Lund’s Water”. This project created a structure of necessity (as opposed to an opportunity structure) for public servants to act entrepreneurially and mobilize actors and resources for flood risk mitigation.

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