

# Administrative Grouping in Public Service Agencies



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Administrative Grouping in  
Public Service Agencies

PhD Dissertation

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# Preface

This is a summary of my dissertation, "Administrative Grouping in Public Service Agencies." The dissertation consists of this summary and the three single-authored articles below. The purpose of this summary is to provide an overview of the theoretical arguments, the research designs and the findings of the papers and to relate these to each other in a theoretical framework about the influence of administrative grouping. Specific details on the samples, designs and robustness of the findings are available in the individual papers. Throughout the summary, I will refer to the articles by their short titles, in parentheses, or their letter.

While the foundation of this dissertation is the study of individual behavior the purpose is not to point out flaws in individual street-level bureaucrats' work, but to identify patterns in public service provision, which may help us increase fairness and reduce inequality.

- Paper A (Special Education)  
Administrative Grouping and Equality in Public Service Provision, e-pub ahead of print *Journal of Public Administration Research and Theory*
- Paper B (Grading)  
Grouping Bias and Noise in Street-Level Bureaucracy, *Working paper*
- Paper C (Boarding Schools)  
Peer Effects in Administrative Grouping, *Working paper*



# Chapter 1

## Introduction

Public service provision usually entails some kind of delegation of cases to individual street-level bureaucrats or a smaller group of street-level bureaucrats. This delegation creates administrative groupings of cases, like the group of patients assigned to the same general practitioner, the group of students in a classroom, the group of unemployed people referred to the same case worker or the division of neighborhoods into patrol districts. Administrative groupings are everywhere, and often they are a prerequisite for the provision of public services. Legal regulation as well as the bureaucratic organization of public service agencies ought to secure equal treatment of citizens (Weber, 1947), but the underlying question of this dissertation is whether and how administrative groupings matter to the distribution of public service outcomes in practice.

There is substantial research on street-level bureaucracy that illustrates that empirically similar cases are not always treated equally (e.g. Carlana, 2019; Guul, Pedersen, & Petersen, 2021; Olsen, Kyhse-Andersen, & Moynihan, 2021; Olson, 2016). Most research on differential treatment identifies discrimination in relation to characteristics of the citizen or the street-level bureaucrat, but this dissertation addresses how differential treatment may also be rooted in organizational design. This argument builds on insights from various literatures. Leading scholars in public administration research have argued that the organization of a bureaucracy shapes the behavior of individual bureaucrats within it, because the organization fosters specific expertise and limits the available set of options as well as the available comparative standards (Hammond, 1993; Simon, 1945). Psychological research on human processing of information points to the need for comparison when making judgements (Canguilhem et al., 1978; Helson, 1948; Tversky & Kahneman, 1974), and in the street-level bureaucracy literature it is furthermore an underlying assumption that street-level bureaucrats compare their clients to each other to figure out whom to prioritize when resources are scarce (Lipsky, 1980; Tummers et al., 2015). Lastly, economists have pointed

to potential effects of grouping arising from peer effects between citizens who interact with each other (e.g. Angrist and Lang, 2004; Kling, Ludwig, and Katz, 2005; Salvy et al., 2012 and see Sacerdote, 2014, for a review). Thus, there are several theoretically grounded arguments for why administrative grouping is more than an administrative necessity.

The aim of this summary report is to provide an overview of the theoretical arguments, methodological considerations and empirical findings in the dissertation and to combine the insights from the studies into a theory of how administrative grouping influences the distribution of public services. I argue that the group may influence the distribution of public service outcomes through two mechanisms, namely that the group may be used as a comparative standard for assessments of needs or eligibility, either consciously in a prioritization process or unconsciously as a frame of reference, and that group members may influence each other when they interact within administrative groups.

Administrative groups are very often not randomly created, and therefore the primary concern in studies of the effects of grouping is to overcome selection issues. To do so, studies in this dissertation identify and exploit natural variation or create experimental variation in group formation. This implies that all studies rely on actual groupings and real outcomes. The exogeneity in group formation enables me to estimate the causal influence of the administrative grouping. All the studies investigate the influence of groups in relation to education, but there is substantial variation between the cases, and therefore there are good reasons to expect that the findings will apply to groups in public service agencies other than the ones investigated here.

Results show that group composition influences street-level bureaucrats' assessments and that interaction between group members influences the group members. Thus, there are good reasons to consider grouping as something more than just a division of work—the grouping itself may affect the distribution of public service outcomes. Implications of these findings fall into two categories. The first category includes efforts to create groups in a way that promotes equality. The second category includes means to alleviate instances where administrative grouping creates inequality. Unfortunately, this dissertation cannot provide clear guidelines on how to create better groups, but it points to an in-

creased reliance on guidelines and higher levels of expertise as measures to alleviate unwarranted consequences of administrative grouping.

The following four chapters of this dissertation are structured as follows: In Chapter 2, I present the theoretical framework of the articles. I conceptualize administrative grouping, present theoretical arguments for why it matters to the distribution of public services and discuss potential moderators of this influence. In Chapter 3, I outline the challenges related to studying groups and provide an overview of how these challenges are addressed in the papers. Chapter 4 outlines the primary empirical results of the studies in the dissertation and discusses how they relate to each other and to the theoretical arguments presented in Chapter 2. In Chapter 5, I discuss limitations and point to remaining questions in relation to administrative grouping and suggest implications of the findings for society.



# Chapter 2

## Theoretical Framework

In this chapter, I will present the concept of administrative grouping and discuss two different mechanisms through which we may expect administrative groupings to influence service outcomes for citizens in public service agencies. Further, I will discuss how different organizational characteristics moderate this influence and what this tells us about expected influences of administrative groupings across different public agencies.

### 2.1 Administrative Grouping

To paraphrase Gulick (1937, p. 3), work needs to be divided because people differ in nature, capacity and skill, and gains can be achieved from specialization. No one can be in two places at the same time, or do two things at the same time. Further, the different skills needed in modern society are too numerous and too extensive for anyone to acquire alone. Therefore, division of work is *a question of human nature, time, and space*. Thus, Gulick argued that organisations are a necessity of the modern state, because they are the institutionalized division of work.

In this dissertation, I will investigate the influence of the administrative grouping of cases or citizens created by the division of work in public service agencies. Many public services are provided locally, and the service is provided in response to the situation or needs of the individual citizen. These characteristics require decentralized and individual service provision, which again necessitates some kind of division of cases between street-level bureaucrats. The grouping of cases or citizens that occurs when citizens are assigned to a public service agency or a sub-unit within it is what I call administrative grouping, and this concept of grouping and its implications for public service provision is the focal point of this dissertation.

Administrative groupings are everywhere in society, and for the reason stated above, in many public agencies there is no alternative to ad-

ministrative grouping. To exemplify what I mean by grouping, we can look to a very rough empirical overview of some of the administrative groups in Danish society. Unemployed people are served by 98 different municipal job centers, and within these they are divided into several smaller groups. This division of cases in job centers creates administrative groupings, where a case worker or a smaller group of case workers are assigned an administrative group of unemployed people whom they have to support. Another example is the assignment to general practitioners. Each citizen is assigned to one of 3,315 general practitioners, who, except for urgent and severe cases, will treat her group of patients' illnesses and operate as the gatekeeper to the health care system. Patients who need more specialized healthcare than their general practitioner can provide are grouped in one of around 1,000 specialized hospital departments. Elderly people who need extensive care are grouped in one of 946 nursing homes. Neighborhoods are geographically divided into patrol districts in which the same police officers patrol, respond to citizens' calls and undertake crime prevention initiatives. Solving cases is centered in 14 geographically dispersed units, and complex cases are grouped in specialized national units. Litigation involving less severe crimes is assigned to one of around 250 city court judges, who—of course according to law and current judicial practice—rule in their group of cases. Convicted citizens serve their sentences grouped with other criminals in a block in one of the 14 Danish prisons. Primary school students are grouped in 1,768 schools and further in around 35,000 classes. Younger children are grouped in nurseries with around 10-15 children in each. And before giving birth, pregnant women are each assigned a midwife, who continuously follows her group of mothers-to-be in order to check that the fetuses are developing as they should.

Administrative groupings, therefore, are important to be concerned with because they are inevitable. Administrative groupings may take different different forms and have different implications across different agencies, which I will elaborate upon in Section 2.4, but all administrative groups have in common that they are administratively created, known by the public agency and necessary for the delivery of public services.



In this dissertation, I argue that administrative groupings are important to study because groupings may influence citizens and the service they are provided by public service agencies. I provide arguments for two different mechanisms through which the grouping of cases or citizens affects service provision. The first mechanism considers how grouping may affect the behavior of the street-level bureaucrat, and the second mechanism is concerned with how the interaction among citizens within administrative groupings may influence the citizens' behavior and thereby influence their public service outcomes. Below, I will first discuss the arguments related to street-level bureaucrats, and then the argument concerning interaction between citizens in administrative groupings.

## **2.2 Comparative Standards**

Administrative grouping may influence how street-level bureaucrats assess cases by providing them a comparative standard to consider each case against. The use of this comparative standard may work both as a conscious prioritization of some cases in the group and as an unconscious frame of reference for assessments of cases. Both processes take their starting point in the street-level bureaucracy literature. Below, I will briefly review this literature before going into detail about the two different uses of administrative groups as a comparative standard.

### **2.2.1 Street-Level Bureaucracy**

Weber argues in his description of the ideal-type bureaucracy that a bureaucratic organization fosters expertise, establishes accountability and ensures that rules and norms prevail over personal matters. Weber's ideal-type bureaucracy facilitates the equal treatment of everyone in the same empirical situation (Weber, 1947). From an ideal-typical point of view, administrative groupings in themselves are therefore not expected to influence the service provided to individual citizens.

However, in his seminal work *Street-level Bureaucracy: Dilemmas of the Individual in Public Services*, Lipsky (1980) analysed the important role in the implementation of policies played by street-level bureaucrats like teachers, police officers, doctors, judges, case workers etc. Lipsky argued that street-level bureaucrats can be considered day-to-day

policymakers, because they decide how policies are implemented. Whenever they provide a public service, assess eligibility, impose sanctions or enforce policies, they decide how to implement a given policy in a specific situation. This implementation of policy often has substantial influence over citizens' lives, which makes street-level bureaucrats' decision-making important to understand.

Weber's notion of equal treatment of empirically similar cases can be regarded as fairness. Another important objective of public agencies is responsiveness. Responsiveness towards citizens enables street-level bureaucrats to supply the support most needed in a specific case. Both objectives are considered important, but often they are in conflict with each other. Responsiveness requires the street-level bureaucrat to look beyond regulation in attempts to meet citizens' needs, whereas fairness requires a strict reliance on regulation to ensure that everyone is treated the same (Wilson, 1989).

Fairness in Weber's definition is most obviously achieved through detailed regulation of service provision to ensure that everyone in the same situation will be treated the same, including across agencies. A challenge in this regard is that most cases that street-level bureaucrats face are multifaceted, unpredictable and context-dependent, and therefore it is almost impossible to make tight regulations of street-level bureaucrats' work. Such regulation would often need to be so extensive that it would severely reduce the efficiency of the agency (Lipsky, 1980). Furthermore, extensive regulation is also likely to make street-level bureaucrats weigh different and additional considerations in their assessments, which would likely reduce the responsiveness of the agency and increase the risk of laborious service provision out of sync with public demand. Therefore, street-level bureaucrats are often granted substantial discretion in their work, even though this discretion is likely to reduce fairness and constitute a threat to the promise of treating empirically similar cases equally (Brodkin, 1997; Davis, 1970; Kahneman, Sibony, & Sunstein, 2021).

There is a long research tradition of identifying how discretionary decision-making may lead to differential treatment. For example, Olsen, Kyhse-Andersen, and Moynihan (2021) find that school leaders are less likely to admit a minority student to their school than a majority stu-

dent. Olson (2016) finds that black inmates in American prisons are more often sanctioned with solitary confinement than white inmates. And Pedersen, Stritch, and Thuesen (2018) find that Danish case workers are more likely to impose sanctions on non-complying unemployed minorities than unemployed people with majority status. In relation to gender, Wenger and Wilkins (2008) find that automation of unemployment insurance claims was beneficial to women, highlighting that the room for discretion before automation induced a gender bias in the public service agency. Carlana (2019) finds that teachers' gender stereotypes can explain the performance gap between boys and girls in math. Tummers (2017) find that street-level bureaucrats are more inclined to prioritize citizens they deem to be motivated. Guul, Pedersen, and Petersen (2021) find that case workers are more willing to support citizens they perceive as competent and motivated, and Maynard-Moody and Musheno (2003) report from several different professions how the perception of citizens' worthiness guides street-level bureaucrats' behavior towards citizens. Soss, Fording, and Schram (2011a) show how poor people are more strongly sanctioned and Harrits (2019) find that children's social class influences when professionals worry about them.

Thus, there is widespread agreement that empirically similar cases are not always treated equally. Several researchers have argued that the differential treatment identified in the street-level bureaucracy literature is not a result of conscious preferences for one citizen or the other, but a result of organizational or societal routines, norms or categorizations (Guul, 2018; Soss, Fording, and Schram, 2011b, and see Tummers et al., 2015, for a review). Regardless of the reasons for differential treatment, the majority of studies on this have investigated how it is associated with characteristics of the citizen. This dissertation investigates how administrative grouping may come to work as an unexplored source of differential treatment. In the following three subsections, I will first present the theoretical arguments underlying the expectation that the group influences street-level bureaucrats' assessments and then three potential moderators of this influence.

### **2.2.2 Prioritization**

When supply is scarce, street-level bureaucrats are forced to prioritize between cases and clients. A prioritization process implies a comparison of the different cases in order to determine how to distribute a limited supply in the best possible way. Therefore, in a prioritization process, service levels do not solely depend on the need of the individual but on the distribution of needs within the group. In this way, prioritization implies a conscious use of the group as a comparative standard in the assessment of the individual case.

Unfortunately, public service provision is often characterized by a demand for service that is larger than the supply (Lipsky, 1980; Tummers et al., 2015). Supply can take many forms, including material resources like vaccines or vouchers, capacity such as hospital beds or openings in preschool programs, or the time or attention a street-level bureaucrat can offer each case, which will determine the levels of support and the waiting time.

One could make the argument that prioritization is a legitimate group influence, because prioritization is a conscious act of ranking based on political decisions about resources and service levels. This claim of legitimacy assumes that the politicians who allocate resources are aware of the prioritization and that budgets are made prior to the assessments, but in accordance with the specific needs of the citizens in the agency. Secondly, changes in group size or in the needs of the group may occur more rapidly than changes in organization, which again will lead to differential treatment. An example of this could be that unemployment declines in an area, but it takes a while before the number of case workers is reduced accordingly. In this example the case workers will have more time available to support the remaining unemployed people in the area than the case workers have in neighboring areas where unemployment stayed the same. These arguments imply that prioritization as a conscious comparison of individual cases against the group is in some instances legitimate and fair, but also that this is not always the case.

I do not investigate this conscious use of the administrative group as a comparative standard in any papers in the dissertation, but group influence in relation to prioritization is theoretically well supported and therefore deserves mention here. Furthermore, prioritization is an im-

portant condition to be aware of and to control for when investigating the unconscious use of the administrative group as a comparative standard in street-level bureaucrats' decision-making, which I will turn to now.

### **2.2.3 Frame of Reference**

Prioritization is to a large degree a conscious consideration of the group, but the group may also more unconsciously influence the street-level bureaucrats' frame of reference and thereby function as a comparative standard for street-level bureaucrats' decision-making. This unconscious reliance on the group is what the majority of the dissertation is concerned with. From psychological research on human processing of information, we know that humans are not very good at applying absolute scales. Instead, impressions and information are evaluated comparatively with existing knowledge or prior experiences (Helson, 1948; Kahneman, Sibony, & Sunstein, 2021). As an illustration of this, Simon (1939, p. 106) wrote *"The only sound basis for decisions about numbers is numerical factual information about past experiences or the experiences of others—nothing more nor less than comparative statistics."* But this comparison is not limited to numerical evaluations; it is also well documented in relation to, for example, judgements about size, sensory perceptions, fairness, performance, emotional evaluations and assessments of one's own competencies (e.g. Adelson, 1993; Brickman, Coates, & Janoff-Bulman, 1978; Festinger, 1954; Helson, 1947; Hollingworth, 1910; Kahneman, 1992). Even in cases where there is no relevant comparison to make, humans have been shown to anchor their evaluations in relation to any available information (Tversky & Kahneman, 1974).

In the public administration literature, frames of reference are widely acknowledged as a means to evaluate performance information, employed by both leaders and citizens (e.g. Holm, 2017; P. A. Nielsen, 2014; Olsen, 2017; Simon, 1939). But the comparative element of more complex evaluations in public agencies is practically unexplored. The argument put forward in this dissertation is that administrative grouping shapes street-level bureaucrats' frame of reference and provides a comparative standard by which they evaluate the needs, behaviors or eligibility of a citizen. Such use of the administrative group would imply that the same citizen would be evaluated as being more in need if the other citizens in his ad-

ministrative group had low needs for public service than if they were in great need.

Sociological work on normalcy and categorizations has also emphasized the relational component of assessments and categorization. An example is Canguilhem's (1978) very famous account of how there is no objective concept of the normal. Instead, the definition of the healthy or normal exists in relation to the pathological. In line with this, Yanow (2003) argues that we create categories based on the perception of "sameness of things," and Bourdieu (1989) introduces the idea of distance as an important element in our classification of others. Building on these insights, Harrits and Møller (2014) construct the argument that street-level bureaucrats draw on social and relational perceptions of normality, and they show how this perception of normality guides street-level bureaucrats in their identification of children in need of extra support. The comparative element of street-level bureaucrats' assessments is also touched upon by Lipsky, who wrote that "*it is probably fair to say that clients will always be differentiated in terms of their perceived relative normality, regardless of how absolutely receptive to intervention they are*" (Lipsky, 1980 [2010], p. 113).

Thus, the idea that comparisons are used to classify and categorize is not novel in itself; but the question is whether administrative groupings provide a comparative standard that affects street-level bureaucrats' assessments of an individual case. There are probably comparative standards other than the administrative group of cases or citizens that are relevant to street-level bureaucrats' decision-making. One such comparison could be the regulations they are operating under. The rules and regulations demarcate the available room for maneuver, but as discussed above, regulation on street-level bureaucrats often leaves considerable room for discretion, and as illustrated from the studies of differential treatment in street-level bureaucracies cited above, differential treatment does occur.

The knowledge of the importance of comparisons for human assessment, the sociological insight on how we construct and perceive normalcy in relation to our surroundings, and the level of discretion street-level bureaucrats exercise in public service agencies all come together in the hypothesis that the administrative group will influence street-level

bureaucrats' frame of reference. Thereby, the administrative grouping of cases or citizens in public service agencies will come to work as a comparative standard for street-level bureaucrats' assessments of an individual case.

## **2.2.4 Moderators**

Above, I argued that administrative grouping may consciously and unconsciously influence street-level bureaucrats' decision-making in relation to public service provision. I do not expect this comparative standard to be equally strong in all decisions. The degree to which administrative grouping influences street-level bureaucrats' assessments may be dependent on a set of moderators. Below, I present three different expected moderators of the influence of administrative grouping on public service provision, namely the degree of discretion, the level of expertise, and the scarcity of resources.

### **2.2.4.1 Discretion**

Discretion is defined in a variety of ways, but within public administration a common understanding of discretion is that it *"indicates the legitimate space for the officials to make their own decisions and exercise their own judgement about how public services are delivered and the degree of freedom from external control they have in doing this"* (Evans & Hupe, 2020, p. 4). Thus, the room for discretion enables street-level bureaucrats to analyze a case and weigh different characteristics and information in their decisions. When the room for discretion is larger, there is also a greater risk that two street-level bureaucrats will arrive at different decisions (Howlett, 2004; Lipsky, 1980; Maynard-Moody & Musheno, 2012; Weber, 1922). With increased regulation or control, the legitimate space to make one's own decisions decreases, and thereby it also becomes less likely that the information gained from the administrative grouping of cases will influence street-level bureaucrats' decision-making. Therefore, the room for discretion that street-level bureaucrats have is expected to moderate the influence of administrative grouping, such that more discretion leads to a larger group influence.

#### **2.2.4.2 Expertise**

Expertise is considered important, because it is expected to enable street-level bureaucrats to use their discretion in a legitimate and optimal way and thereby ensure that decisions are not based on irrelevant cues, like an unconscious reliance on the administrative group. Abott (1988) describes how professional knowledge enables professionals to identify issues, reason about them and determine how best to treat them. Furthermore, Cecchini and Harrits (2021) uncover this process empirically and identify what they call a professional agency narrative in street-level bureaucrats' behavior. They find that street-level bureaucrats rely on their education and experiences in their processing of cases, and they demonstrate how this expertise guides street-level bureaucrats in complex and discretionary assessments. This implies that street-level bureaucrats' education and experiences provide a meaningful standard for comparison in the assessment of the cases they encounter.

The reliance on expertise does not necessarily rule out any other cues. One can be informed by multiple comparative standards, but it seems plausible to expect that the comparative standard provided by the administrative grouping is less influential when other, more salient comparative standards like professional knowledge are available (Kahneman, 1992). Empirically there is also support for this expectation. Several studies have found that expertise decreases reliance on irrelevant information. For example, Pedersen, Stritch, and Thuesen (2018) find that racial biases are smaller or even non-existent among more experienced case workers, and Chen, Moskowitz, and Shue (2016) find more experienced and better-educated judges to be less influenced by the sequence of cases. In line with these results, Harrits (2019) and Einstein and Glick (2017) find that street-level bureaucrats who work in more heterogeneous contexts and therefore have a broader experience of cases were less likely to apply stereotypes in their interactions with citizens.

#### **2.2.4.3 Scarcity**

Lastly, scarcity is expected to moderate the influence of administrative groupings. Scarcity increases the need to prioritize, which inherently increases the influence of grouping, as argued in Section 2.2.2. More indi-



rectly, scarcity is also expected to increase the work pressure experienced by street-level bureaucrats, because scarcity increases the discrepancy between the demand for public services and their supply. Work pressure is widely assumed to lead to coping behavior from street-level bureaucrats (e.g. Andersen & Guul, 2019; Lipsky, 1980; Loon & Jakobsen, 2018; Schram et al., 2009; Tummers et al., 2015). Coping behavior includes reliance on rules of thumb, social categories, heuristics and other mental shortcuts. The argument is that the reliance on information provided by the group could be yet another shortcut for assessment of cases, and therefore that this unconscious use of the group as a comparative standard is in fact a coping mechanism. Following this argument, the scarcity of resources may moderate the degree to which street-level bureaucrats consciously and unconsciously rely on information cues from administrative groupings in their decision-making.

### **2.3 Peer effects**

Peer effects are the influence humans exert on each other in their social interactions. When public services are provided in settings where members of the administrative groups interact with each other, the group may, in addition to influencing the street-level bureaucrats, also influence the other citizens assigned to the same administrative group. These interactions between citizens may create learning opportunities, inspirations or distractions, and provide help or support, all of which will affect the outcome for the individual citizen (see Sacerdote, 2014, for a review). In this way, administrative grouping also shapes the potential peer effects citizens experience in public service provision. Peer effects have been widely investigated, specially in economics, but unfortunately the implications of peer composition are still largely unknown.

The investigation of peer effects in this dissertation serves two purposes. First, citizens have historically had a very secluded position in public administration research, even though there is widespread agreement that their actions are important to the provision of public services (V. L. Nielsen, Nielsen, & Bisgaard, 2021). One purpose of this dissertation is therefore to combine insights on peer influence from related fields with considerations in public administration research. Second, the dis-

sertation aims to contribute to the peer effects literature by taking a step back and investigating peer effects in relation to the process of public service provision to get a better understanding of the mechanisms through which peers influence outcomes for each other.

Peer effects are often identified through the correlation between the outcome for one individual and the outcomes for their peers. A typical example is that peer effects on students' academic achievement are estimated by the correlation between the individual's academic achievement and the academic achievement of their peers. Studies of effects from peer outcomes have shown very mixed results on various individual outcome measures like wages, educational achievement and crime (e.g. Angrist & Lang, 2004; Carrell, Sacerdote, & West, 2013; Cornelissen, Dustmann, & Schönberg, 2017; Kling, Ludwig, & Katz, 2005).

One explanation for the ambiguous results in relation to outcomes is that the chain from peers' outcomes to the individual outcome is too long to be captured within the time frame of most studies. This suggestion highlights the potential of peer effect studies to move closer to the production of these outcomes and investigate how peers affect each other in this. Along these lines, Sacerdote (2014) concludes in his review that identification of peer effects on behaviors seems more promising than identification of peer effects on outcomes. In studies investigating peer effects on behaviors, there also seems to be a more consistent pattern, namely that peers influence each other and become more alike over time. Such peer effects have been identified in relation to a variety of different behaviors, such as eating and exercising (Salvy et al., 2012; Yakusheva, Kapinos, & Eisenberg, 2014), alcohol consumption (Duncan et al., 2005; Guo et al., 2015) and delinquency (Billings, Deming, & Rockoff, 2014; Kling, Ludwig, & Katz, 2005).

Behavioral peer effects in administrative groupings are important to citizens' public service outcomes for two reasons. First, citizens' attitudes and behaviors may affect street-level bureaucrats' decision-making towards them and thereby influence the provision of public services (e.g. Jensen & Pedersen, 2017; Maynard-Moody & Musheno, 2003; Mik-Meyer & Silverman, 2019; Soss, Fording, & Schram, 2011a)". But second and more important, citizens' behaviors are the means through which public service inputs are transformed into individual outcomes. Public services

are almost always produced in an interaction with the citizen: students need to listen and engage with the teaching to learn, patients need to show up, take their medication and follow the doctor's instructions in order to get well, and while the unemployed may find help and support in their interactions with a case worker, they need to write applications and show up at job interviews in order to get back into the labor force. Therefore, citizens' input to the production of public services becomes a moderator of the public service outcome they experience (Alford, 2009; Jakobsen, 2013; Thomsen, 2017).

An indicator of citizens' input to service production is their conscientiousness. This is a socio-emotional competence that reflects dutifulness, diligence and self-discipline (Almlund et al., 2011). Several studies have demonstrated how conscientiousness is related to behaviors that promote better outcomes such as goal setting (Corker, Oswald, & Donnellan, 2012; Gerhardt, Rode, & Peterson, 2007; Klein & Lee, 2006), persistence (Wilmot & Ones, 2019) and avoiding procrastination (Dewitte & Schouwenburg, 2002; Scher & Osterman, 2002). Following these insights, there is compelling evidence that conscientiousness is strongly and positively related to a long list of desirable public service outcomes including academic achievement, health and delinquency (e.g. Almlund et al., 2011; Bogg & Roberts, 2004; Heckman & Kautz, 2012; Mammadov, 2021; Poropat, 2009; Roberts et al., 2007). Citizens' conscientiousness is therefore expected to be closely related to their attitudes and behaviors in the production of public services, and this again in ways that are expected to be important to their public service outcomes.

Thus, the expectation is that peers in administrative groups may influence each other's conscientiousness and that these interactions will make the members of the same group more similar over time. Knowing that conscientiousness is important to service outcomes for the individual citizen, the contribution of this dissertation is to take a step back and investigate peer effects in the process of public service provision. When the focus is moved from outcome to process, we may get closer to an understanding of the mechanism of peer effects in administrative groupings.

## **2.4 Groupings Across Agencies**

This theory chapter so far has made the case that administrative groupings may influence the public service enjoyed by each citizen. In this last section of the theory chapter, I will reflect upon how the organizational designs of different public service agencies may cause the influence of grouping to be smaller or larger.

While Weber's (1947) promise of bureaucracy as the guarantor of equal treatment for similar cases is appealing, it is rarely straightforwardly implemented. Neither an organization's objective nor the specialization needed to achieve it are generally uni-dimensional. Therefore, the design of an organization is also inherently a prioritization of some aims and specializations above others (Gulick, 1937; Hammond & Thomas, 1989). Organizations require that their employees have received certain training, they institutionalize norms and they direct attention towards the options of importance to the organization (Simon, 1944). This implies that the design of an organization very likely shapes the behavior of employees working within it. Therefore, one may also expect that the organizational design of public service agencies influences the importance of administrative grouping.

In Section 2.2.4, I discussed how discretion, scarcity and expertise may moderate street-level bureaucrats' reliance on the administrative grouping in their assessments of individual cases. These characteristics are important, but they are not necessarily a result of the organization of the agency. Below, I highlight two organizational characteristics that may be important to understanding the influence of administrative groupings across different public service agencies. These are the base of specialization and simultaneity in the processing of cases; that is, the degree to which the entire group is observed at the same time, as opposed to one by one.

### **2.4.1 Base of Specialization**

Specialization is an important attribute of bureaucracy, since increased specialization is expected to increase bureaucratic efficiency and expertise, which as argued above may reduce the unconscious influence of the group (Weber, 1922). The role of specialization has been much debated

in public administration research. The most well-known account of specialization is probably Gulick (1937), who argues that there are four different bases of specialization: specialization by purpose, specialization by process, specialization by clientele and specialization by place. An organization cannot pursue all of these specializations equally, and therefore the costs and benefits associated with each base of specialization need to be carefully considered in the design of public agencies.

It seems uncontroversial that there are certain trade-offs in any organizational design, but in Gulick's description of the different bases of specialization it becomes evident that the four bases he suggests are ambiguous and overlapping. For example, schools are used as an example of specialisation by purpose: they provide education; but also of process: they teach; and of place: they are generally very decentralized units, serving a small geographic area. As a consequence of this ambiguity, Simon (1945) severely criticized Gulick's notion of specialization, arguing that most often purpose, process and clientele are inherently related, making it impossible to distinguish between them. Simon reduced the four bases of specialization to two: specialization by function and specialization by place. But even with this simplification, Simon argued that it is problematic that different bases of specialization serve different ends, because this implies that an aim of specialization in itself will not provide any guidance on how to organize an agency (Simon, 1946). While this is evidently true, I think the trade-offs related to the bases of specialization highlighted by Simon and Gulick may inform decision-makers about the potential costs and benefits associated with different bases of specialization.

The trade of between specialization by function and specialization by place is a trade-off between easy access and functional expertise. When services are provided locally, the local agencies typically offer a wider range of services in a smaller geographical area, and thereby they provide a rather easy access to public services for the everyone in their areas. This often entails greater heterogeneity in the needs of the citizens and requires that the local agencies undertake some screening in order to refer the citizens with a need for such to more functionally specialized agencies. The broader set of tasks undertaken by more locally specialized agencies is likely to cause these agencies to develop less expertise

in relation to the public services they provide compared to functionally specialized agencies. Considering the trade-off between specialization by function or by place, the question is not necessarily about which of the two, but rather a question of degree. This is particularly the case in relation to public service agencies, because the provision of services always has a geographical dimension to it. This leads to the argument that these different bases of specialization are two ends on a continuum rather than two distinct phenomena.

It is worth noting that even in very local agencies, street-level bureaucrats are often professionals who may have different individual levels of expertise, which, as discussed in Section 2.2.4, is expected to moderate the unconscious use of the comparative standard provided by the administrative grouping. Thus, locally specialized agencies are not without expertise, but the expectation is that more functionally specialized agencies may foster more expertise and hence that administrative grouping will be less influential in these agencies.

### **2.4.2 Simultaneity**

The administrative group is likely to be more influential when the degree of simultaneity in service provision is higher that is when all cases are processed simultaneously. Simultaneity is important because this may determine the likelihood of peer effects and affect the salience of the administrative group to the street-level bureaucrat. The highest level of simultaneity occurs in agencies where services are provided to citizens simultaneously, like schools, preschools and some unemployment programs. The lowest levels of simultaneity occur in situations where cases are processed one by one. In between these two are agencies where cases are processed one by one, but where street-level bureaucrats have the opportunity to go back and forth between cases, which occurs in grading of exams as well as in much police work and agencies where services are delivered individually but in the presence of the group, such as nursing homes or hospital departments.

Simultaneity is related to the influence of peers in administrative groupings, because citizens interacting in administrative groups are likely to influence each other, and probably more so when services are delivered to the entire group at the same time. Simultaneity is also expected to be

important to street-level bureaucrats' perceptions of an individual case. In groups where everyone is observed simultaneously, the awareness of the distribution of needs among group members is likely to be more salient, and these groups thereby provide the street-level bureaucrat with a clearer comparative standard in the assessment of the individual than groups where citizens or cases are observed one by one.

### **2.4.3 A Conceptual Framework**

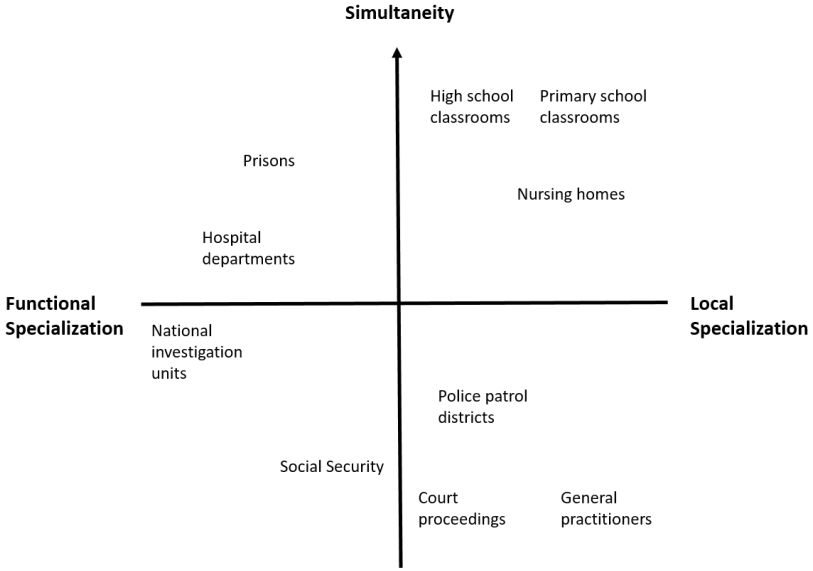
The two dimensions discussed above—the base of specialization and the simultaneity of case processing—can be combined in a conceptual framework, as pictured in Figure 2.1. Simultaneity in service provision is more likely to foster peer effects, and a simultaneous processing of cases is expected to increase the saliency of the group to the street-level bureaucrat, thereby making prioritizations and assessments of cases more likely to be made against the group. Therefore, the influence of groups is expected to increase as one moves up the y-axis. On the other dimension, more local service provision comes at the cost of less functional specialization, which may increase unconscious reliance on the group. Therefore, the influence of groups is likewise expected to increase as one moves out the x-axis.

As an illustration, Figure 2.1 places some of the examples from Section 2.1 along the two dimensions. The position of these agencies is based on Danish conditions, and it might look slightly different in other national contexts.

Groups in the first quadrant include classrooms, nursing homes and nurseries. These are the groups where the risk of group influence on service provision is expected to be largest. Functional specialization is low, which increases the risk of reliance on information provided by the group composition. The comparative standard provided by the group to the street-level bureaucrat is highlighted because the entire group is observed simultaneously. Many agencies in this quadrant also provide services in settings where group members interact with each other, which may cause peer effects.

Groups in the second quadrant are served by street-level bureaucrats who are functionally specialized, which is expected to provide them with other, more professional comparative standards than the group. On the

Figure 2.1: Conceptual Framework



other hand, the simultaneous processing of cases may cause peer effects and increase the salience of the cues provided to the street-level bureaucrat about the group. Examples of groups in this quadrant are prisons and hospital departments.

In the third quadrant are groups like national investigation units and social security offices. These groups, like the groups in the second quadrant, are served by more functionally specialized street-level bureaucrats, which is likely to reduce the street-level bureaucrats' unconscious consideration of the group composition in their decision-making. Furthermore, cases are not observed simultaneously and there is little or no interaction between group members. Therefore, groups in the third quadrant are likely to be the least influential groups.

Groupings in the fourth quadrant include patients served by the same general practitioner, court proceedings and neighborhoods. These are local, which makes reliance on group distribution likely. However, the group members are to a large degree observed one by one, which may cause the information retrieved from the group composition to be less clear, and the group therefore may not provide a comparative standard



to the same extent as groups in the upper quadrants of the coordination system. Furthermore, groups in lower quadrants of the coordination system do not facilitate peer interaction, and therefore this influence is not relevant to these groups.

Thus, organizational design is expected to moderate the influence of grouping in relation to the likelihood of peer effects as well as the influence on street-level bureaucrats' assessments. The moderators discussed in Section 2.2.4 are expected to influence street-level bureaucrats across all agencies, though their relevance will be largest in agencies that are more locally specialized and have higher degrees of simultaneity in the processing of cases.



## **Chapter 3**

# **Research Designs and Data**

This dissertation asks the causal question of whether and how the administrative grouping of cases and citizens in public service agencies influences service provision. In this chapter, I will discuss the challenges related to answering causal questions and how I have addressed these in the three studies in this dissertation. After presenting the identification strategy in the three papers, I will reflect on the two central measures in the studies and the implication of missing data, and lastly, I discuss the case selection and what we can infer from studies of these cases.

### **3.1 Selection and Identification**

The aim of this dissertation is to investigate how the administrative grouping of cases and citizens in public service agencies affects service provision. Unfortunately, this may be easier said than done. When studying the causal influence of administrative grouping, there is one major challenge to address, namely the selection into groups. Selection is the relation between characteristics of the group and characteristics of the individuals within them. For example, children are not randomly placed into their group of classmates. This is a result of where a family has decided to live and maybe also their choice of schools based on the reputation of different schools in the neighborhood. Likewise, it is not random which hospital department will treat your illness. This depends on the illness you have and the competencies of the hospital departments. When characteristics of the group correlate with characteristics of the individual, we cannot know whether any difference between service provision across groups is in fact due to differences in composition of groups or due to characteristics of the individual or the public service agency administering the group. Therefore, causal claims about the influence of administrative grouping require that this selection issue is overcome (Angrist & Pischke, 2008; Murnane & Willett, 2011).

One can overcome selection issues by randomization of individuals into groups. Randomization ensures that there is no systematic variation between the individuals and the group they are assigned to. Therefore, randomization of a sufficiently large sample will assure that group assignment is the only systematic difference between the individuals assigned to different groups, and thereby different outcomes can be ascribed to differences between the groups (Angrist & Pischke, 2008; Holland, 1986).

Given by the central limit theorem, the random allocation of citizens and cases to groups will make the groups resemble each other, but since the groups are not infinitely large, there will also be random variation between the groups (Stock & Watson, 2015; Wooldridge, 2014). This random variation between groups enables me to estimate the influence of groups and to make the causal claim that differences in outcomes for individuals in different groups are actually *caused* by the differences between groups.

The aim of all studies in this dissertation was to identify the causal effects from the administrative grouping of cases and citizens in public service provision, and therefore it was a key feature of the studies to overcome the selection issue in group formation. To that end, I have identified, exploited and created random variation between groups. Table 3.1 provides an overview of the designs, samples and data sources of the studies in this dissertation, and below I will briefly comment on the methodological considerations in each of the three studies. Details are available in the papers.

Table 3.1: Overview of Research Designs and Samples

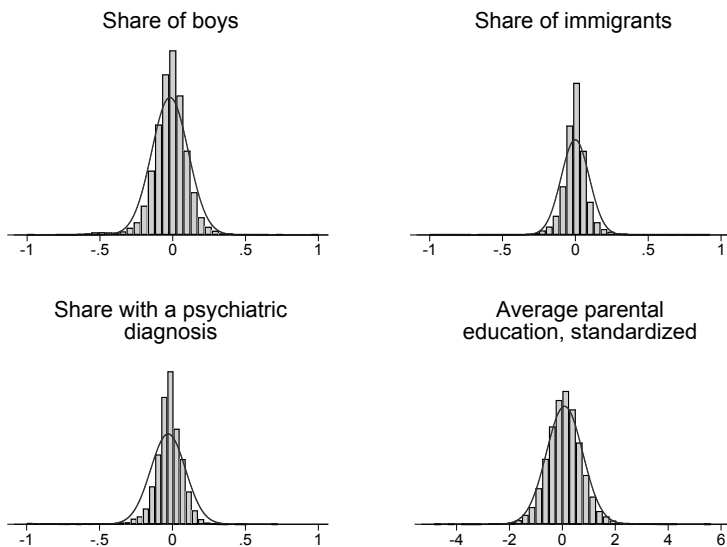
Short Title	Design	Dependent Variable	Primary Independent Variable	Sample	Data source
Paper A - Special Education	School Fixed effects	Referral to special education	Classroom academic achievement	312,000 Danish primary school students, grades 4-9	Registry data
Paper B - Grading	Field and Natural Experiments	Grade assigned	Academic level of group	280 primary school exams 156 university exams 272 research abstracts	Administrative recordings and surveys
Paper C - Peer Effects	Natural Experiment	Students' conscientiousness	Roommates' conscientiousness	393 9 <sup>th</sup> and 10 <sup>th</sup> grade students in Danish boarding schools	Two-wave panel survey

### **3.1.1 Paper A - Special Education**

In Paper A, I investigate how the composition of the classroom affects the likelihood that a student will be referred to special education. This cannot be done by a simple comparison between referrals to special education across different schools. Students are not randomly assigned to schools, and the education provided in each school is furthermore dependent on the students within it. An example is that more resources are often allocated to schools with many bilingual students. Therefore, a comparison of students in different schools is very likely to capture differences in selection rather than actual differences in service provision based on the administrative grouping of students.

To overcome these selection issues, I rely on a quasi-experimental design using register data on more than 300,000 students in Danish primary schools. The quasi-experimental design is a school fixed effects design, which implies that I compare students in different classes within the same school. Within schools, students are as-good-as-randomly assigned to classrooms. Most schools aim for a balanced gender composition, and some schools also actively assign students to classes in ways that secure a social and geographic balance between classes. Figure 3.1 shows the distribution of classroom deviations from the school cohort average on selected important characteristics. When differences between classes are random, the deviations are normally distributed. As Figure 3.1 shows, the classroom deviations from the cohort follow the plotted normal distribution curve for all variables, though the differences seem to be a bit smaller than one would expect from completely random assignment. The principles of classroom formation and the distributions in Figure 3.1 imply that classes are not created completely at random but instead deliberately balanced, and therefore the variation between classes can be considered as-good-as-random for the purpose of this study. This implies that the school-fixed effects specification successfully eliminates the correlation between the classrooms and characteristics of the individual students. Thereby, this identification strategy enables me to make causal claims about how the groupings affect referrals to special education.

Figure 3.1: Classroom Deviation from School-Cohort Average



### 3.1.2 Paper B - Grading

In Paper B, I investigate how the group of cases a street-level bureaucrat assesses affects her assessment of the individual case. To avoid the risk that cases are assigned to street-level bureaucrats based on a match between characteristics of the case and characteristics of the street-level bureaucrat, I rely on experiments where groups are randomly created. This enables me to overcome selection in group formation and identify the causal impact of group composition on assessment.

The study consists of experiments in three different settings, namely grading of primary school exit exams in Danish and mathematics, grading of university exams and assessments of conference abstracts in relation to admission to a research conference. Data on primary school exams are from an experiment conducted by the Ministry of Education to evaluate a new assessment scheme in primary school. Data from university grading is from an experiment I conducted myself. I coordinated randomization of papers between assessors with the secretary of studies

and created an online survey to collect the grades the examiners would award each paper before coordinating the final grade with the other examiner. The data from this survey are what I use in the analysis of university grading. Data on the assessments of research abstracts stem from a natural experiment occurring in the process of admitting researchers to a research conference. The assessment of research abstracts was made prior to my studies. In all experiments, each case was randomly allocated to two different groups and individually assessed in both of them. I use the grade awarded in one assessment as a proxy for the correct assessment, and thereby I can exploit the variation between group compositions to estimate the influence of the group on street-level bureaucrats' assessments.

### **3.1.3 Paper C - Boarding Schools**

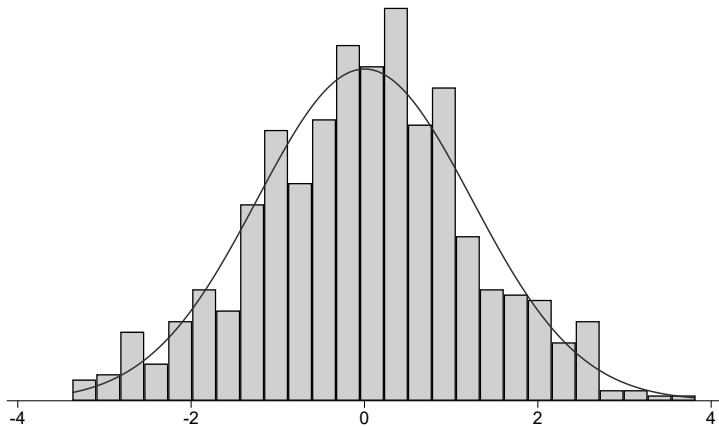
In Paper C, I investigate how students assigned to the same administrative group influence each other's conscientiousness. Like the other groups studied in this dissertation, peer groups are very rarely randomly created. People often form networks with others similar to themselves on observable characteristics like age, education or ethnicity. Furthermore, individuals close in time and space share non-observable characteristics due to their shared environment and experiences (Angrist & Pischke, 2008; Manski, 1993). Since we seldom have the chance to manipulate human interactions, it is extremely difficult to determine the influence of peers, and thereby the knowledge on peer influence in administrative grouping is limited.

To illuminate peer influence in administrative grouping, I exploit a natural experiment occurring in Danish boarding schools. Danish boarding schools provide an optional alternative to ordinary 9<sup>th</sup> or 10<sup>th</sup> grade. Students typically choose a boarding school based on the elective courses offered by the school. Around a fourth of all students take their final year of primary school in a boarding school, and though there are school fees for attending boarding schools, these are subsidized based on parental income. Therefore, boarding schools bring students from various different backgrounds together. Within schools students are as-good-as-randomly assigned to rooms with 1-3 roommates, and thereby the assignment to rooms creates exogenous variation in peer groups.



All students answered a questionnaire in the beginning of the school year and a slightly modified version at the end of the school year. This two-wave panel enables me to estimate how roommates influence individual students' development over the year. To examine the assumption of as-good-as-random assignment to rooms, I also made a questionnaire for the school leaders, asking them about their admission processes, the assignment of students to rooms and roommates and the conditions under which students would be assigned new roommates. The answers from school leaders as well as the distribution of individual deviations in conscientiousness from the room average illustrated in Figure 3.2 support the assumption of as-good-as-random assignment to rooms. Thus, the assignment to rooms provides the exogenous variation in peer networks that enables identification of the peer effects investigated in Paper C.

Figure 3.2: Distribution of Initial Differences Between Roommates' Conscientiousness



### 3.2 Measures

The measures differ between the studies in the dissertation, but the underlying concepts are the same. Below I will briefly present some reflec-

tions on the two central measures of the dissertation, namely the measure of the group and the measure of the individual case independent of the group. Although the papers study different groups and different implications of grouping, all model specifications, in a simplified form, look like:

$$y_{ij} = \beta \bar{X}_j + \gamma X_{ij} + \epsilon_{ij},$$

where  $y_{ij}$  is the outcome of individual  $i$  in group  $j$ ,  $\bar{X}_j$  is the average of the group on a certain characteristic  $X$ , and  $X_{ij}$  is a measure of the individual case on characteristic  $X$ .  $\epsilon_{ij}$  is the error term.

$X_{ij}$  is supposed to capture the true status of the individual case independent of the group. In Paper C, this is a student's conscientiousness before they interact with their administrative group. In Paper B, it is a proxy for the true assessment of the paper, and in Paper A it is the students' academic competencies, which is a proxy for the necessity of special education. In most cases the status of the individual case is non-measurable and therefore one needs to rely on qualified proxies. This challenge is exacerbated by the fact that many cases in public service agencies are much more multifaceted than what can be captured by one or a few variables. Therefore, an important consideration was to find measures that were strongly related to the outcome of interest even in relation to multidimensional outcomes. When  $X_{ij}$  is strongly related to the outcome, it may not capture the entire variation between cases, but it will severely reduce the risk that the outcome is systematically driven by an unobserved variable.

All studies measure the group by its average on a relevant characteristic, that is  $\bar{X}_j$ . In Paper A, this is the average academic competence of the class, in Paper B it is the average academic level of the papers in the group, and in Paper C it is the average conscientiousness of the roommates. There are two caveats to this group measure. First, it proposes a very simple mechanism: that the average of a group in one characteristic leads to a change in the outcome of a case on that same or a closely related measure. One could argue that other characteristics of the group would affect the outcome of the case on the measure of interest. I rely on this one-to-one group measure because it is an obvious starting point for investigation of group effects and it is theoretically in line with the argument of comparative standards investigated in Paper A and B. Second,

when the group is measured by the average, it implies that the distribution is a zero-sum game: Whatever someone gains from the composition of a particular group will be lost by others in other groups. I will get back to this in the discussion of how to measure the group in Section 5.1. Despite these reservations, the average has the advantage that it is easy to estimate and that it is easy to legitimate. The results are not an artifact of the operationalization of the group, and the identification of group effects from this rather simple specification emphasizes that administrative groupings do matter.

### **3.3 Missing Data**

Missing data is always an issue, but when one studies administrative grouping, missing data is not only related to the individual observation, but also to the validity of the group measure. If respondents are not missing at random, this has three implications. First, we cannot be certain that our group measure is valid; second, we cannot be certain the counterfactual is valid; and third, it may reduce external validity if specific groups of respondents are underrepresented (Rubin, 1976). Thus, missing data constitutes a threat to the validity of the results, and the group level in the estimations exacerbates these issues. Therefore, implications of missing data were a central concern in this dissertation.

In Paper B, very few observations are missing, and given the setup of the experiments, there is no reason to believe that the missing data is not missing completely at random. Therefore, the validity threat posed by missing data in this study is minor. In Paper A, I rely on groups where no more than three students have a missing test score. A robustness analysis with only complete groups reveals an effect size even larger than the one identified in the full sample. This implies that results are not driven by systematic missingness. There might be a tendency for lower-performing students to be more likely to miss a test, and therefore the poorest performing classrooms are more likely to be excluded from the analysis due to missing data. However, less than 5 % of the students do not take the national test, so even if slightly more classes are missing in the bottom of the distribution, missingness is sufficiently small and the sample sufficiently large to include classes from a very broad per-

formance distribution. Therefore, missing data is not considered to be problematic to the validity of the analyses in Paper A.

In Paper C, a fourth of the students in the participating schools do not answer the first questionnaire. Unfortunately, I have no information on the non-participating students, and therefore it is neither possible to investigate patterns in the missing data nor to adjust for non-random missingness. Furthermore, attrition is large, and attrition therefore risks inducing a selection bias. Analyses of attrition show no correlation between the independent variable, conscientiousness and response rate or the group level conscientiousness and response rate. This indicates that the attrition is not systematically correlated with any of the independent variables. Assuming the same pattern in non-responses in the first questionnaire as in attrition between the first and the second questionnaires, missing data may be assumed to be as-if-random in relation to the characteristic of interest and the conclusion is considered to be valid despite the attrition.

### **3.4 Case Selection**

All studies in this dissertation investigate the influence of groupings in an educational setting. While education agencies do not constitute a universal case, it is an important one. Most individuals are grouped in education agencies for multiple years of their lives, education agencies employ many street-level bureaucrats and a substantial part of public spending is devoted to education. These characteristics make administrative groups in education agencies important to study in themselves, but the result may not be of relevance to education agencies only.

Public agencies providing education share characteristics with several other public service agencies. The service is delivered by professional street-level bureaucrats, who work in decentralized agencies with high levels of discretion in their work (Meier & O'Toole, 2006). Even though the empirical settings investigated in this dissertation are all about education, the groups and the contexts they appear in are very different across the three studies. In relation to the conceptual framework presented in Section 2.4, there is large variation on the specialization dimension: the teachers and ordinary examiners are very spatially special-

ized, university examiners are more functionally specialized and expert examiners even more so. By contrast, all groups have high degrees of simultaneity: they are easily defined, constant over the period of study and all cases were present rather simultaneously, either as students in a classroom or as papers on the desk, which the examiner could go back and forth between as she liked.

Thus, the cases investigated here are to a large extent most-likely cases of group influence, but the diversity between the investigated cases and the shared characteristics between education agencies and other public service agencies indicate that results are probably applicable to agencies other than the ones investigated in this dissertation.

Furthermore, all data are data on actual groupings in public service agencies and actual outcomes of the cases and the citizens. The reliance on actual groupings and outcomes increases the validity of the results, and the investigation of the question in different empirical contexts with different identification strategies also increases the the external validity of the findings. I return to this in Section 5.1.



# Chapter 4

## Results

In this chapter, I will present the key results from the studies in this dissertation and discuss how the findings relate to each other and to the theoretical framework presented in Chapter 2. The central claim of the dissertation is that the administrative grouping of cases and citizens affects the service provided to and enjoyed by the individual citizen. In the theory chapter, I argued that the group may influence the assessments street-level bureaucrats make and that the interaction between group members in administrative groupings may cause peer effects within administrative groups.

Below, I will first discuss the findings of Paper A and Paper B, which both investigate how the group may affect street-level bureaucrats' assessments, and then I will turn to the findings of Paper C, which investigates peer effects.

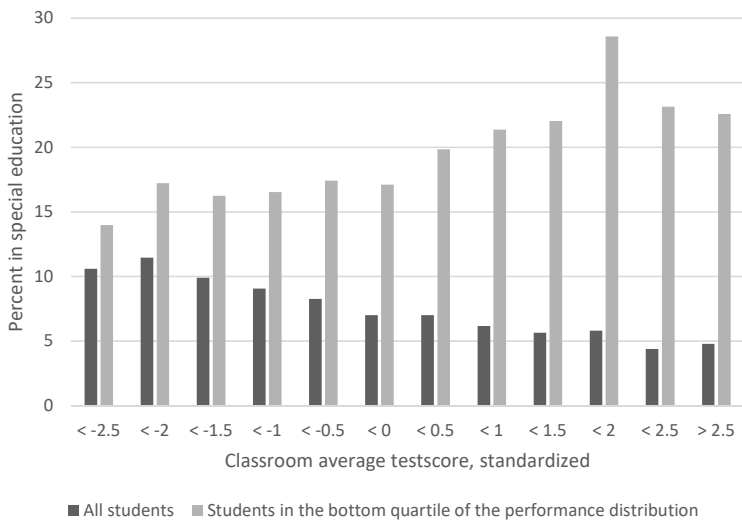
### 4.1 Grouping Effects on Assessments

The argument, as discussed in Section 2.2, is that the administrative group influences assessments by providing street-level bureaucrats with a comparative standard that the individual case may be assessed against. In both Paper A and Paper B, I focus on the unconscious comparative standard provided by the group, and therefore I have carefully selected settings where there is no prioritization or where prioritization is held constant to make sure that any identified effect is actually an unwarranted effect of administrative grouping.

In Paper A, I investigate the effects of classroom composition on referrals to special education. As pictured in Figure 4.1, I find that more students in low-performing classes receive special education; that is the tendency illustrated by the dark bars. The dark bars illustrate the share of all students receiving special education, whereas the light bars illustrate the share of students from the lowest quartile of the performance distribution receiving special education. When the analysis is conditioned

on the student’s own performance, students in low-performing classes are no longer more likely to receive special education. The light bars indicate that when conditioning on the student’s own academic level, students are more likely to receive special education if they are grouped with better-performing classmates. More precisely, I find that a student in a classroom performing one standard deviation above the average classroom on the national reading test is 1.5 percentage points more likely to receive special education than an equally performing student in an average-performing classroom. Considering that the share of students receiving special education is only 7.23 %, a 1.5 percentage point increase is a very substantial effect, amounting to an increase of 20.7 %.

Figure 4.1: Referrals to Special Education





Paper B investigates the same mechanism, but in other empirical settings and with a more stringent design. In Paper B, I investigate whether the group of cases affects the assessment the street-level bureaucrat makes in each case. Contrary to the setting in Paper A, groups in Paper B are experimentally manipulated, the assessment is more uni-dimensional and there is no interaction between the street-level bureaucrat and the individual whose work is under assessment. The risk of unidentified confounders is therefore lower.

Paper B consists of analyses of six different assessments, namely assessment of a university exam, assessment of research abstracts for admittance to a research conference and four assessments of primary school exams: two in written Danish and two in written mathematics, one of each assessed by an ordinary examiner and the other assessed by an expert examiner. To make it easier to keep track of the different experiments, the results are reproduced in Table 4.1.

Table 4.1: Assessments

	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
	Control examiner mathematics	Expert examiner mathematics	Control Examiner Danish	Expert examiner Danish	University Exam	Research Abstract
Grouping effect	0.020 (-0.012, 0.066)	0.025 (-0.007, 0.074)	-0.081* (-0.141, -0.013)	-0.010 (-0.416, 0.471)	-0.005 (-0.142, 0.169)	-0.134* (-0.236, -0.042)
Academic level	0.997*** (0.932, 1.061)	1.032*** (0.976, 1.088)	0.763*** (0.635, 0.891)	0.705*** (0.588, 0.823)	0.498*** (0.383, 0.614)	0.515*** (0.441, 0.589)
Constant	-0.071 (-0.154, 0.012)	0.026 (-0.045, 0.098)	-0.008 (-0.181, 0.166)	-0.003 (-0.436, 0.429)	0.004 (-0.140, 0.149)	-0.002 (-0.143, 0.138)
N	139	137	136	136	312	584

Note: Bootstrapped cluster robust 95 % confidence interval in parentheses.

\*p < .05; \*\*p < .01; \*\*\*p < .001.

The expected influence—that a better group causes a lower assessment of the individual case—is present in two out of six analyses. These are the ordinary examiners’ assessments of written Danish and the assessment of research abstracts. In the other four experiments the relation is statistically as well as substantially insignificant.

In sum, Papers A and B find that groups influence street-level bureaucrats’ assessments both in relation to multifaceted assessments such as referrals to special education and more uni-dimensional assessments such as the academic quality of a paper. When the group on average is better, the individual case is rated lower. Luckily, however, they also show that this group influence is not the most important information for street-level bureaucrats’ assessments, and in some cases it is even irrelevant. The results in Paper A and the pattern of findings in Paper B may tell us something about when administrative groupings will influence street-level bureaucrats’ assessments.

Most striking is the difference between the results in Paper B on the analyses of primary school mathematics assessments and the other four. In the assessments of mathematics exams there is a very high correlation between the assessments given to a paper by different examiners. A correlation coefficient of 1 implies complete symmetry between the assessments made by different examiners, and both the expert examiner and the ordinary examiner in primary school math exams made assessments that were very close to perfectly correlated with the other assessments of the same paper. By contrast, in the remaining four experiments there was much more disagreement about the assessments between different examiners of the same paper. One reason for this difference could be the level of discretion exercised in the assessments in the different settings, as discussed in Section 2.2.4. The written mathematics exam was on arithmetical problem solving, where problems have right and wrong answers, leaving little room for disagreement between examiners of the same paper—and therefore also for an influence of the administrative grouping in the assessment. On the other hand, the other four are responses to an open-ended question, where answers are not right or wrong but more or less qualified. In these assessments, the examiners have considerable room for discretion, and thereby the risk of group biases is also larger. This argument is in line with the statistically signif-

icant interaction term in Paper A between the student's own academic level and the classroom academic level. This interaction term indicates that special education referrals for students with lower test scores are less sensitive to the classroom average, which implies that classroom composition is most important in borderline cases, where the assessment is also more discretionary. Hence results from Papers A and B both point to the argument that groups probably do not have the same influence in all cases, but become relevant when guidance provided by guidelines, rules and regulation is low; that is, in cases where street-level bureaucrats' room for discretion is largest.

Another interesting difference between the experiments in Paper B is the different levels of expertise held by the assessors. The expert examiners in the primary school written Danish and written mathematics exams are more experienced and more familiar with the material and the learning goals of the subject than the ordinary examiners of primary school exams. Further, one could argue that the university examiners also have high levels of expertise. That exam is from an introductory undergraduate course, and the sample only includes tenured staff who have done research on and taught this material for several years. By contrast, the researchers assessing research abstracts were not necessarily experts on the topic of the abstracts, and many of them were assessing conference abstracts for the first time, which implies that the assessment criteria may not have provided a very strong comparative standard in their assessments. If this assumption of the different levels of expertise is correct, increased expertise moderates group influence on assessments, as theorized in 2.2.4. While Paper A does not directly illuminate this dimension, Figure 4.1 illustrates that in low-performing classrooms, where the need for special education is higher, more students also receive special education. This emphasizes that characteristics of the case are a better predictor of assessment than group composition. Hence, expertise on students' learning, academic development and potential benefits from special education is an important predictor of service provision, even though it was not sufficient to completely alleviate group influence in the case investigated in Paper A.

The findings in Papers A and B predominantly support the hypothesis that administrative groupings provide a comparative standard for street-

Table 4.2: Peer Effects

	Model 1	Model 2	Model 3
	All students	Students in no-change schools	No-change students
Conscientiousness	0.759*** (0.034)	0.744*** (0.043)	0.750*** (0.047)
Roommates' conscientiousness	-0.049 (0.042)	-0.092 (0.047)	-0.106* (0.053)
Constant	-0.007 (0.032)	-0.022 (0.038)	-0.004 (0.041)
N	393	279	233

Note: OLS coefficients. Room cluster robust standard errors. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

level bureaucrats' assessments of the individual case over and beyond the prioritization of scarce resources. They further add to the argument that this influence may be moderated by the degree of discretion in the assessments and by level of expertise, though it is worth noting here that these moderators are introduced to understand the results rather than *a priori* assumptions about the nature of group influence.

## 4.2 Grouping Effects on Peers

In Paper C, I investigate the hypothesis that citizens grouped together will influence each other's conscientiousness and become more similar due to these interactions. In doing so, I investigate whether students in Danish boarding schools assigned to roommates with high levels of conscientiousness will increase their own conscientiousness during the school year. Contrary to the theoretical expectations, I find that students assigned to roommates with higher levels of conscientiousness are more likely to experience a drop in their own conscientiousness over the school year than are students assigned to roommates with lower levels of conscientiousness. The results of this analysis are shown in Table 4.2.

The first column shows the peer effects on conscientiousness for every student who answered both questionnaires and whose roommates answered at least the first questionnaire, regardless of whether they lived

with these roommates the entire year. The results here are negative, but not statistically significant at the 0.05 level. The second column restricts the sample to students enrolled in boarding schools where new rooms were only assigned in cases of continuous conflict between roommates. Here the peer effects are larger and more precisely estimated. In Column 3, the sample only includes students who actually stayed with the same roommates the entire year. These results are of the same magnitude as the results in Column 2, but they are more precisely estimated and statistically significant at the 0.05 level. The difference between Column 1 and Column 3 can be considered a difference of dosage. In Column 1, the average time the students lived with the roommates whose influence is estimated in the analysis is shorter than it is for students in Column 3. Taken together, there seems to be a tendency that having more conscientious roommates decreases the individual's conscientiousness over the course of the school year, but the effect seems to be driven by those students who stayed with the same roommates the entire year.

The peer effects measured in the group of students who stayed in the same room is not negligible. Thus, a student with roommates who are one standard deviation more conscientious than the average room experiences an average decrease in his own conscientiousness of 0.11 standard deviation. In a meta-analysis of the correlation between conscientiousness and academic performance, Poropat (2009) finds that an increase of one standard deviation in conscientiousness was related to an increase in academic performance of 0.46 standard deviation. A comparison of standard deviations across samples assumes that all samples are randomly drawn from the same underlying population. This is an extensive assumption to make, but if it is true, the results of Paper C imply that the change in conscientiousness caused by roommates may translate into a change in academic performance of 0.05 standard deviation. The students in Danish boarding schools may be more similar to each other than the underlying population, and hence a change in conscientiousness of one standard deviation in this sample may correspond to a smaller change in academic achievement than the one identified by Poropat (2009). However, considering that the time period is only one year, that conscientiousness is related to several beneficial outcomes other than just academic performance, and that grouping is not a

costly intervention but an administrative necessity, the influence seems substantial.

Unfortunately this effect is not easily converted to guidelines on assignment to administrative groups, because the peer influence identified in Paper C is in the opposite direction of the expectation. One explanation for this could be that students differentiate themselves from peers who are very different from themselves. Analyses of the correlation between the initial differences in roommates' conscientiousness and their internal relationships show that students report spending less time with their roommates and that they are less likely to characterize their roommates as friends when their initial differences in conscientiousness were larger. This indicates that students choose to spend time with students other than their roommates when they experience large differences between themselves and their roommates. This distance may imply that the expected learning effects fail to appear and maybe even that the students were differentiating themselves from their roommates.

Following the conceptual framework in Section 2.4, Danish boarding schools are a most-likely case of peer effects because of the high levels of simultaneity over a longer period of time. When the desired learning effects are not identified here, beneficial peer effects probably do not occur simply when different people are grouped together. However, on a positive note, this may also imply that the risk of harmful peer effects is also lower in administrative groups with lower levels of interaction between group members.

This result highlights how hard it is to offset endogenously created networks. Self-selection into networks may be an important driver for learning in these, and therefore while groups do matter, it is not clear how to make people interact in ways that make them better off.





# Chapter 5

## Discussion

In this chapter, I will discuss what can be learned from the studies in this dissertation. In doing this, I point to the limitations of the studies and to remaining unanswered questions for future research to explore. Lastly, I try to address the implications the conclusions may have for society.

### **5.1 Limitations and Avenues for Future Research**

In this dissertation, I have put forward the theoretical argument that the administrative grouping of cases and citizens in street-level agencies affects the distribution of public service outcomes. Using data from actual groups, I have tested how administrative grouping influences street-level bureaucrats' assessments and how groupings may create peer effects. While this brings us a long way, this dissertation also leaves a number of questions open and points to various potential directions for future research.

#### **5.1.1 Generalizability**

A first point concerns the generalizability of the results. All groupings studied here are groups in an educational context. Education agencies employ professionals, they are decentralized units and there is considerable room for discretion in their service provision, as touched upon in Section 3.4. Hence, education agencies share defining characteristics with other street-level agencies. Furthermore, there are significant differences between the cases investigated in this dissertation. While all of them feature a certain degree of professional knowledge, they differ in their degree of functional specialization. The variation in expertise across cases legitimates inference to a broader set of agencies.

However, the cases are more similar in relation to the level of simultaneity, which is high in all of them. As discussed in Section 2.4.2, a high degree of simultaneity is likely to enforce the comparative standard

provided by the group and thereby increase the influence of the group. However, studies of assessments made case-by-case reveal a consistent pattern of influence from the sequence of cases, such that cases are less likely to be assessed as compliant with a set of criteria if the previous case was assessed as compliant (Chen, Moskowitz, & Shue, 2016; Simonsohn & Gino, 2013). These studies indicate that other group members may influence the street-level bureaucrat's assessment even when the degree of simultaneity is low, though the mechanism in these groups may be different. I return to this below.

In relation to the two dimensions in the conceptual framework, the cases investigated here do to a large degree constitute most-likely cases of unconscious reliance on the comparative standard provided by the group, but they do not inform us about the conscious reliance on the administrative group. In both Papers A and B resources were held constant: in Paper A, by comparing classes within in the same schools, which are assumed to draw on the same pool of resources, and in Paper B by investigating an assessment with no economic costs associated. Thus, studies in this dissertation have not addressed how prioritization and scarcity may affect assessments, but as argued in Section 2.2.2, prioritization is inherently associated with a group influence, and scarcity is very likely to increase both prioritization and an unconscious reliance on the group composition. That group influence is identified in cases where resources are held constant implies that grouping in itself influences the assessment of the individual beyond the conscious act of prioritization. It also points to the argument that the influence of administrative grouping is potentially larger in agencies where resources are scarce.

Thus, there are reasons to expect administrative groups to matter in agencies other than the ones investigated here, though the effects may be smaller when there is a lower degree of simultaneity or expertise in the agency. The arguments and the results presented in this dissertation point to different directions for future research on how and to what extent administrative groupings matter. The conceptual framework and the moderators proposed in this dissertation are based on theoretical insights and *post hoc* analysis of moderators. Therefore, a first and important step would be to make the proposed moderators subject to empirical investigation.

### 5.1.2 Measuring Group Influence

Another relevant question is whether the mechanism of group influence actually works through the average of the group. Measuring the group by the average implies that the distribution is a zero-sum gain. The gains from the composition of a particular group will be equivalent to the loss by others in another group. In the example of peer effects, the benefits of a good peer group to some individuals is exactly equivalent to the costs of a bad group to other individuals. As could be interpreted from the results in Paper C, human interactions are probably much more complicated than what can be captured from an average, and it may be that more advanced measures of the peer group would be able to identify a plus-sum game.

In relation to assessments, the mechanism suggested by the average may also be too simplistic—at least in relation to the simultaneity of service provision. In groups with a low degree of simultaneity, the group may be a less clear concept for two reasons. First, when cases are processed one by one, it may be harder to form an impression of the group, and second, one-by-one processing implies that some cases in the group may still be unknown when a given case is processed. If some cases in the group are still unknown, it seems implausible that these cases could influence the assessment. Under such circumstances, one would not expect the group average to be relevant, but rather that the comparative standard provided by the group would be updated with every new processed case. Further, one could expect that the first cases become more important than subsequent cases, especially in agencies with lower degrees of expertise. This is a question for future research.

In groups with higher levels of simultaneity, the average (or a perception of it) may be known when the individual case is processed. But even in such groupings, one may question whether the average is the most important mechanism for group influence. An alternative mechanism of group influence is that street-level bureaucrats incorrectly assume that the group is normal and assess cases in relation to an expected distribution rather than assessing the individual cases. An uninvestigated consequence of this could be that official guidelines or knowledge of societal distributions influence assessments. This would imply that there were some implicit floor or ceiling effects in the assessment of cases, and

therefore that the share of the group already deemed eligible would be more important than the average. Examples of this could be if teachers had an implicit maximum of the share of students who could be awarded an A, if case workers had an implicit understanding of the share of unemployed people who qualify for early retirement or if a general practitioner applied the guidelines on how large a share of the population ought to be prioritized for early vaccination to her own group of patients.

The results of Papers A and B are compatible with this mechanism too, but it might be that the argument of implicit distributions is closer to the actual mechanism of the comparative standard provided by the group, and that an operationalization of the group influence derived from this argument would reveal larger effect sizes. Clarifications of this will ease the process of mitigating unwarranted group influence. However, the identification of group effects measured by the simple average emphasizes that effects from administrative groupings can be identified even in very simple model specifications, at least in groups with a high degree of simultaneity.

## **5.2 Implications**

Results from the studies in this dissertation have shown that the administrative grouping of cases and citizens in street-level agencies sometimes affects the service provision and the outcomes experienced by citizens. The groups provide a comparative standard that affects street-level bureaucrats' assessments of the individual case, and citizens interacting in administrative groups may also influence each other and thereby affect the public service outcome enjoyed by the individual. Therefore, the assignment to groups is not a trivial division of work, but an organizational decision with implications for the distribution of public services. Practical implications of this conclusion can be labeled in two different categories. In the first category are attempts to create groups that promote equality, and in the second category are instruments to mitigate group influence.

### 5.2.1 Better groups

The first type of implication of the findings is that public service agencies should strive to create groups that promote equality. Attempts to do so exist already, like busing of minority students to schools with a more privileged student body (Damm et al., 2021), or the Danish "law of public housing," which requires neighborhoods characterized as ghettos to reduce their share of public housing to no more than 40 % (Indenrigs- og Boligministeriet, 2021) or municipal guidelines with a cap on the share of bilingual children in daycare (e.g. Henriksen, 2019, August 27; Lund, 2021, March 23). The underlying logic behind these initiatives is to make citizens better off and promote equality by increasing the heterogeneity of administrative groups. The results from Paper C and the peer effect literature in general do not provide an answer to the question of whether increased diversity in administrative groups will also increase equality. Peer effects in general are ambiguous, and the results in Paper C indicate that heterogeneity in groups may even have adverse effects on the individual.

The groups in Paper C were administratively created, but the supplementary analyses of social interaction illustrate that the grouping of citizens in specific administrative groups may not succeed in offsetting the endogenous creation of networks. If people seek the company of others similar to themselves, it might be difficult to create the desired peer effects between group members who are very different. This inspires the hypothesis that learning effects are more likely if group members have more in common. However, this condition will severely reduce the usefulness of actively inducing peer effects by creating particular peer groupings, but it may help to make groups that are at least not harmful to the individuals within them. At the very least, it seems that increasing diversity will not in itself create the desired distributive effects. More research is needed to provide guidelines on how groups may facilitate beneficial peer effects.

The attempts to increase diversity in administrative groupings may, however, serve another purpose, namely to diminish potential group biases in street-level bureaucrats' assessments. If groups are more heterogeneous and to a larger extent representative of the population, the comparative standard provided by the group will be less likely to cause

assessments to be biased. This may increase fairness, and especially so in cases where resources are distributed according to street-level bureaucrats' assessments of needs. A caveat to mention here is that while more diverse groups may reduce group biases in assessments, more homogeneous groups may foster specialization in relation to the particular needs and characteristics of the group and thereby facilitate better service provision. The equality reached by more heterogeneous groups therefore risks coming with an efficiency cost that is potentially larger than the gain.

Another uncertainty in relation to alterations of groups is that studies in this dissertation have investigated effects of existing groups only. Since most groups are at least to a certain degree endogenously created, the groups themselves may influence selection into groups and also who seeks employment in a given agency. These endogenous processes imply that re-organizations of groups may have dynamic effects on the group and the service provided to each member. The dynamic effects of reorganizations are beyond the effects investigated in this dissertation. Therefore, given the current state of knowledge, it is uncertain whether administrative groups can be altered in a way that promotes fairness and if they can, how to do so. This ambiguity calls for more research into administrative groupings and their consequences, but also for a serious consideration of moderators of group influence.

### **5.2.2 Mitigation of Group Effects**

There may be several means available to mitigate an unwarranted group influence. The arguments proposed in Section 2.4 imply that group influence will be smaller in groups with a lower degree of simultaneity. Within groups with higher degrees of simultaneity, the arguments presented in Section 2.2.4 and the results in Section 4.1 suggest that the level of expertise and the room for discretion moderate the group influence on street-level bureaucrats' assessments. Means to increase fairness and reduce group influence could therefore include reducing discretion through increased regulation or automation. While this may seem like an easy solution, one needs to consider the reasons that street-level bureaucrats are granted discretion in the first place. Regulations may fail to cover all the relevant aspects of a case, or conversely succeed in covering so many

different aspects that they become too extensive to easily apply in daily work. Extensive regulation is likely to lead to rigid and tedious administration, and discretion is granted to mitigate this; to secure efficiency and to enable street-level bureaucrats to be responsive to citizens' needs. Additionally, discretion has been shown to be an important precondition for street-level bureaucrats' willingness to implement policies at the front line, and thereby discretion may also work as a means to increase reliance on regulation (Thomann, van Engen, & Tummers, 2018).

An alternative to increased regulation is to reduce discretion by increased automation of decision-making in street-level agencies. Automation as a substitute for street-level bureaucrats' discretion, however, is not necessarily flawless. Depending on the input to such automation processes, the algorithms underlying automation risk reproducing existing biases. Automation furthermore has the same shortcomings as regulation, in that it often fails to take the context or other relevant considerations into account, especially on those dimensions that are hard to measure. Automation is therefore likely to be most successful in cases where discretion is already low.

The pitfalls associated with limitations in discretion are huge. However, studies indicate that instead of replacing discretion with rules and automation, guidelines and automated risk scores may assist street-level bureaucrats' decision-making (Anderson, Kling, & Stith, 1999; Cárdenas & Cruz, 2017; de Boer & Raaphorst, 2021). Such measures are likely to increase focus on the most important parts of a case, and they may therefore help street-level bureaucrats to navigate the plethora of information at hand and to discard irrelevant pieces. Like automation, guidelines or risk scores may not be flawless, but an important difference is that these means do not replace discretion. Instead they guide decision-making and prompt more thorough reasoning about deviations from predicted decisions. Thereby an increased use of guidelines is likely to reduce biases and increase fairness without the costs of restricting discretion.

As a supplement to guidelines or in cases where it is not possible to make useful guidelines, Kahneman, Sibony, and Sunstein (2021) suggest that the shortcomings of discretion can be reduced by averaging over several independent assessments. When decisions are complicated, the room for discretion is often larger, and thereby the risk of a flawed as-

assessment is also larger. The uncertainty of the assessments may be reduced in such cases if more people work on the same case. They may have different professional knowledge and different experiences and thereby their frames of reference and their susceptibility to different information cues may be different. This claim is also supported by the findings in Paper A. When an expert from outside the school assessed students' need for special education, the relationship between special education and the classroom disappeared. A combination of different assessments is therefore likely to increase fairness in public service provision. Providing more assessments is of course costly, but in cases of great importance the increased fairness may be worth the costs.

Following these arguments, more people working with the same case brings different knowledge and experience to bear, and it can therefore be considered an increase in expertise in relation to the task. Other means to increase expertise could be continuing professional development or recruitment of employees with experience from agencies that work with other types of groups. The argument is that when the perceptions of normality, needs and eligibility are rooted in a broader frame of reference, either individually or through collaboration between street-level bureaucrats, the influence from a specific grouping is expected to be weaker than if the grouping itself constituted the primary experience of normality, needs and eligibility.

### **5.3 Concluding remarks**

Provision of many public services necessitates division of cases or citizens into smaller administrative groups. The aim of this dissertation has been to investigate whether and how the administrative grouping of cases and citizens matters for the distribution of public services. Results show that administrative groups may provide a comparative standard for street-level bureaucrats' assessments, such that cases in better-performing groups are likely to be assessed as more poorly performing. Furthermore, interaction between group members may influence the individual group members' attitudes and behaviors and thereby influence their outcomes.



This dissertation combines arguments from different fields and draws on fundamental insights from the public administration literature in the construction of a conceptual framework of administrative grouping. Relying on actual groups within education agencies, the dissertation both exploits natural randomness and creates experimental randomness to investigate the causal influence of administrative grouping. Across three empirical studies, the conclusion is that administrative groups are more than simply a division of work. The organization of administrative groups may have unintended and unwarranted influence over the behavior of citizens within the groups and of the street-level bureaucrats serving them.

The current body of knowledge on this topic does not provide any clear guidelines on how groups can be administratively created to secure more equal outcomes, but results suggest that the group influence on street-level bureaucrats' assessments may be alleviated by increased expertise and reliance on guidelines.

Administrative grouping is everywhere, and often grouping is a prerequisite for the delivery of public services. Therefore, investigating the implications of grouping and how they can be mitigated is an important agenda for public administration scholars to pursue. This dissertation has taken the first steps in this endeavour.



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## English summary

Public service provision usually entails a division of work, where cases are delegated to individual street-level bureaucrats or a smaller group of street-level bureaucrats. This delegation creates administrative groupings of cases, like the group of patients assigned to the same general practitioner, the group of students in a classroom, the group of unemployed people referred to the same case worker or the division of neighborhoods into patrol districts. Administrative groupings are everywhere, and often they are a prerequisite for the provision of public services. Legal regulation as well as the bureaucratic organization of public service agencies ought to secure equal treatment of citizens, but the underlying question of this dissertation is whether and how administrative grouping matters to the distribution of public service outcomes in practice.

This dissertation presents two arguments for why administrative grouping is more than simply a division of work. First, the group may, consciously or unconsciously, provide street-level bureaucrats with a comparative standard that each case in the group may be assessed against. This implies that the assessment of the individual case will be dependent on the group and not on characteristics of the case alone. Second, when citizens interact in administrative groupings they may influence each other, and thereby affect the outcomes for the individuals within the group.

In three empirical studies of actual groups, the dissertation either exploits natural randomness or creates randomness experimentally to investigate the causal influence of administrative grouping. The groups all relate to education, but the outcomes range from referral to special education to grading to development of socio-emotional competencies, and there is considerable variation between the cases. Therefore, one may also expect that the findings will apply to groups in public service agencies other than the ones investigated here.

Results show that administrative groupings do matter. Groups sometimes provide a comparative standard for street-level bureaucrats' assessments, such that cases in better-performing groups are likely to be

assessed as more poorly performing. This comparative assessment influences service provision in the individual case over and beyond what would be expected from a prioritization of scarce resources within the group. Second, interaction between group members does influence individuals on important dimensions. Thus, there are good reasons for both researchers and practitioners to be concerned with how cases and citizens are assigned to groups, because the grouping itself may influence the distribution of public service outcomes. The dissertation suggests that the influence is largest in groups where street-level bureaucrats provide the service to everyone in the group at the same time. Further, the results indicate that an increased reliance on guidelines and higher levels of expertise may alleviate unwarranted consequences of administrative grouping.

## Dansk Resume

Levering af offentlige services forudsætter som regel en fordeling af sager eller borgere til enkelte frontlinjemedarbejdere eller en mindre gruppe af frontlinjemedarbejdere. Denne fordeling skaber administrative grupperinger, såsom patienter hos en praktiserende læge, elever i en skoleklasse, arbejdsløse med samme sagsbehandler eller politiets inddeling af områder i patruljedistrikter. Administrative grupperinger er allevegne i den offentlige sektor og er ofte en forudsætning for levering af offentlige ydelser. Lovgivning og regulering samt den bureaukratiske organisering af offentlige services burde sikre lige behandling af borgerne, men det underliggende forskningsspørgsmål for denne afhandling er, hvorvidt den administrative gruppering alligevel har betydning for fordelingen af offentlige services.

Afhandlingen fremfører to argumenter for, hvorfor den administrative gruppering er mere end blot fordeling af arbejdet. For det første kan gruppen bevidst eller ubevidst komme til at udgøre sammenligningsgrundlag for frontlinjemedarbejderen, som den enkelte sag kan blive vurderet op imod. Det betyder, at vurderingen af den enkelte sag ikke udelukkende vil afhænge af forhold ved selve sagen, men også af den gruppering, sagen indgår i. For det andet kan borgere, der interagerer med hinanden i administrative grupperinger, også påvirke hinanden gennem deres interaktioner og dermed influere hinandens udbytte.

Det empiriske grundlag er tre studier af faktiske grupperinger i den offentlige sektor. Gennem identifikation af naturlig tilfældig variation mellem grupperinger og ved eksperimentelt at skabe tilfældig variation undersøges den kausale indflydelse af grupperinger. De undersøgte grupperinger relaterer sig alle til uddannelse, men der er store forskelle mellem studierne, og de undersøgte outcomes varierer fra henvisning til specialundervisning over karaktergivning til udviklingen af socio-emotionelle kompetencer. Derfor er det også forventeligt, at resultaterne fra disse studier vil være overførbare til grupperinger i andre offentlige instanser.

Resultaterne viser, at den administrative gruppering betyder noget. Gruppen bliver nogle gange brugt som et sammenligningsgrundlag for

vurderingen af den enkelte sag, hvilket betyder, at den enkelte sag vurderes dårligere, hvis gruppen generelt er god. Denne komparative vurdering har betydning for fordelingen af offentlige services, og indflydelsen er større, end hvad en prioritering af knappe ressourcer inden for gruppen tilskrives. Derudover påvirker interaktion mellem borgere i administrative grupperinger det enkelte gruppemedlem på centrale dimensioner. Der er altså gode grunde til, at både forskere og praktikere bør fokusere på, hvordan administrative grupperinger sammensættes, da grupperne i sig selv kan påvirke fordelingen af offentlige services. Afhandlingen vurderer, at indflydelse fra grupperinger er størst i grupper, hvor service leveres til alle medlemmer på samme tid. Ydermere indikerer resultaterne, at større brug af guidelines og et højere niveau af ekspertise kan modvirke uønskede konsekvenser af den administrative gruppering.