

# A good place to live: On how municipality level characteristics explain municipality level variation in children's placement risk

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**The Rockwool Foundation Research Unit**

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# **A good place to live: On how municipality level characteristics explain municipality level variation in children's placement risk**

## **Abstract**

Previous studies find significant community-level differences in out-of-home placement rates. However, it remains unclear which community-level factors other than geographical factors explain differences in placement rates. This paper extends previous research by analyzing whether alternative municipal-level factors: provision of formal support and of social support, social disorganization and local political preferences, explains community-level variations in placement rates. The paper analyzes data from Danish administrative registers and, using multilevel models, it reports that municipal differences in levels of formal support, social support, and social disorganization affect out-of-home placement rates.

## **Introduction**

Research shows that a child's risk of experiencing maltreatment and out-of-home placement depends on both the child's individual characteristics (Bilaver et al., 1999; Egelund et al., 2004; Hansen et al., 2004; Roy et al., 2004; Schofield & Beek, 2005; Hussey & Guo, 2005) and on parental and family characteristics (Hestbæk, 1999; Brandon, 2000; Geen et al., 2002; Berger & Waldfogel, 2004; Hussey & Guo, 2005; Berger, 2006; Yampolskaya et al., 2007). In addition, studies also find that the family's place of residence matters for the risk of out-of-home placement. For example, children from rural areas spend more time in out-of-home placements than children from urban areas (e.g. Courtney, 1994; Glisson et al., 2000). Finally, many studies report that there is substantial geographical and municipal-level variation in the risk of out-of-home placement (Goerge, 1990; Becker et al., 2007; Lery, 2009). Consequently, where you live affects your risk of experiencing out-of-home placement.

The explanations of these community level differences are however, less obvious. While the empirical designs of the studies mentioned above demonstrate that community differences in population characteristics do not explain all the community level variation in placement rates, the studies refrain from investigating explanations of the remaining variation. However, knowledge on the power of various possible explanations is highly useful, not only for the obvious reason, that it will help us to better understand the observed differences in communities' placement patterns. More focus on how community level characteristics explain a child's placement risk will also emphasize that we cannot solve society's social problems by only targeting the individual level; to the extent that communities matter, we must supplement individual level interventions with interventions that also target communities. If not, we leave the treated individuals to an untreated community, which is likely to recreate some of the individual's initial problems (as emphasized in Freisthler et al., 2006; see also Sampson et al, 2002). However, to initiate community level interventions, we need extensive knowledge on which community level characteristics that matter.

This paper adds to existing research by analyzing how characteristics of local municipalities affect the risk of out-of-home placements in Denmark. Denmark has little over 270 municipalities which differ significantly in terms of their out-of-home placement rates. At any given time around 1 percent of all Danish children live in out-of-home care. However, in some municipalities as few as 0.25 percent of children live in out-of-home care while in others as many as 3.5 percent of children live in out-of-home care. Municipalities are self-governing local authorities which are responsible for delivering most social policies, including out-of-home placement programs. Consequently, while legislation concerning out-of-home placement is made at the national level, the actual implementation of

out-of-home placement is made at the local level (similar to local department of the US social services) and is subject to local economic, social, and political conditions. Differences in local economic, social, and political conditions would be expected to be a main contributor to explaining municipal-level variation in out-of-home placement rates.

The paper considers several types of municipal-level factors which might help to explain municipal-level variation in out-of-home placement rates: (1) *formal support* such as municipal social policy expenditure, (2) *social support* such as municipal aid to civil society and volunteering organizations, (3) *political factors* such as the share of social democratic and conservative members of the local governing council, and (4) *social disorganization factors* such as the local unemployment and crime rate. In addition to introducing new municipal-level explanatory variables, the paper also advances existing research by analyzing individual-level data covering the entire population of Denmark.

## Background

Existing studies on the relationship between out-of-home placement and place of residence do not provide explanations of why there should be community-level variation in out-of-home placement rates. However, theory in the related field of child maltreatment is useful for understanding why communities may matter. Following Brofenbrenner (1977), Belsky (1980, 1993) suggests that in addition to individual- and family-level factors also the formal and informal social structures in which children and their families reside matter for child outcomes. These structures, labeled the *exosystem*, include for example neighborhoods, informal social networks, the distribution of goods and services within a local community, as well as formal authorities such as local governments agencies. The ecological model suggests that the exosystem facilitates certain types of individual-level action while limiting or hindering other types of action. Consequently, the structural properties of communities may have important effects on the lives of vulnerable families and, directly or indirectly, affect whether or not children experience an out-of-home placement.

Empirical studies find that community-level factors affect child maltreatment rates and, thus, they confirm that the exosystem matters. One group of studies shows that formal support systems such as municipalities' preventive services affect levels of child maltreatment (e.g., Duggan et al., 2004; Geeraert et al., 2008). A second group of studies find that social support systems, for example voluntary organizations targeting vulnerable families in the community and a socially cohesive society, affect child maltreatment levels (e.g., Garbarino & Kostelny, 1992; Vinson et al., 1996; Artaraz et al., 2007). A third group of studies shows that the level of social disorganization within a community affects child



maltreatment (e.g., Garbarino & Kostelny, 1992; Krishnan & Morrison, 1995; Freisthler, 2004; Merritt, 2009; for reviews see Freisthler et al., 2006; Coulton et al., 2007). Finally, a fourth group of studies indicates that local politicians' preferences for how to deal with social problems affect child maltreatment levels (e.g., Jørgensen et al., 1989; Crittenden, 1992).

Despite empirical evidence that several factors in the exosystem affect child maltreatment levels, existing research has not yet analyzed if these factors also affect out-of-home placement rates. This is an important limitation: Child maltreatment rates and placement rates are likely to reflect the same underlying social problems and the ways in which the society deals with these problems. Child maltreatment is a precursor of out-of-home placement, and because the decision to place a child in out-of-home care also relies on other factors than maltreatment there is no deterministic correlation between a community's child maltreatment and placement rates. Consequently, we cannot automatically infer child maltreatment to out-of-home placements rates.

Consequently, the aim of this study is to analyze whether the four community-level factors described above: Formal support, social support, social disorganization, and political factors affect municipalities' out-of-home placement rates when we also account for population differences between municipalities. In the following sections I argue how the four community-level factors may appear at the municipality level, how they may affect placement rates, and how they may lead to variation in placement rates between municipalities.

### **Formal support**

Formal support is support organized in bureaucratic structures, support which is task-oriented and which applies professional knowledge and skills to perform these tasks (Lipman & Longino, 1982; Castillo, 2009). This type of support comprises universal, selective, and intensive services where universal services target everyone, selective services target specific groups, and intensive services target specific problems in specific groups (Hardy & Darlington, 2008). The availability of formal support is likely to affect the lives of the vulnerable families, as it may provide for example financial aid or professional counseling on how to deal with family problems (for reviews and meta analyses see Geeraert et al., 2004; Klevens & Whitaker, 2007; Krugman et al., 2007; Thomas & Zimmer-Gembeck, 2007; MacMillian et al. 2009, see also Tucker & Hurl, 1992; Becker et al., 2007; Bugental & Schwartz, 2009).

In Denmark municipalities are the principal providers of formal support for vulnerable families. First, municipalities provide intensive preventive help for families at risk of having a child put in out-of-home care. This help consists,

among other things, in educating parents on how to deal with difficult children or in providing periods of relief where the child spends time away from the family. This type of support aims at improving the vulnerable family's well-being and, indirectly, preventing an out-of-home placement. Second, municipalities also provide general help through social services such as aids for the handicapped or the elderly, day care for children, and help for marginalized groups such as drug addicts. While these universal and selective support systems do not directly aim at vulnerable families or at reducing out-of-home placement rates, it is likely that they also make a difference. For example, the support reduces the impact of factors that may otherwise represent important stressors in the lives of families and which, in extreme cases, could stress family life to the extent that an out-of-home placement is the only solution.

While national legislation requires municipalities to offer these various services, municipalities have considerable discretion in deciding how they offer services and how much money they wish to spend on them. This situation means that two municipalities with otherwise similar demographic and socioeconomic populations may provide very different service levels. Consequently, differences in municipalities' out-of-home placement rates may result from differences in their expenditures on different service. In the empirical analysis I thus expect to find a negative correlation between municipalities' spending on formal support and their placement rate. It is also possible, though, that municipalities' use of formal support is positively correlated with the local placement rates because the use of such measures may increase municipal awareness of the problems vulnerable families face and, as a consequence, increase the awareness of the need for placement. A positive correlation might also be an indication that a high expenditure on formal support reflects the municipality's wish to intervene.

However, it is important to consider how the use of formal support might also be an indicator of local political preferences for intervention. If local politicians have a strong preference to intervene, it may reflect in both high levels of formal support and high placement rates, as both are measures of interventions. Also, some politicians might wish to intervene, but believe that a child's needs are best cared for by the biological parents, and they may choose to increase the use of preventive measures while reducing the use of placements. In the first case we would find a positive correlation between spending on formal support and placement rates, and in the second case the correlation would be negative. However, in both cases the correlation would be an indication of the effect of policy preferences on support levels rather than of the direct effects of the different types of support. I shall deal with this problem below.

**Social support**

Social support manifests at many levels. It is the support given by close friends or family (conceptualized as “informal support”, see Lipman & Longino, 1982; Traustadottir & Sigurjonsdottir, 2008; Castillo, 2009), but it may also come in the form of formalized social support such as support offered by voluntary or other civil society organizations. The literature shows that vulnerable families often lack personal social support, for example by having fewer friends and contacts than “normal families” (Belsky, 1993). However, there is evidence that vulnerable families benefit from living in a socially cohesive community. Thus, vulnerable families who live in socially cohesive communities fare better than other vulnerable families because this community on the one hand provides social support and, on the other hand, it enforces social control which reduces deviant behavior (Gabarino & Kostelny, 1992; Vinson et al., 1996). Furthermore, vulnerable families also tend to rely more heavily than “normal families” on the social support systems provided by voluntary organizations like the Red Cross (Pettit, 2004; Manji et al., 2005; Terrion, 2006; Rodrigo et al., 2007). Together, these results suggest that social support in the local community and support provided by voluntary organizations benefit vulnerable families.

While municipalities do not offer this type of support directly, the activities of institutions facilitating social support still, to some degree, rely on mechanisms at the municipality level. First, in Denmark municipalities provide financial support to voluntary organizations, just as they support other social activities which may be important for the well-being of vulnerable families such as sports clubs or cultural activities. While none of these organizations directly target vulnerable families they facilitate social connections that may be useful for vulnerable families. Second, municipalities often delimit the geographical area within which other non-governmental organizations such as self-help groups and volunteer centers act.

Municipalities also differ in their financial support for voluntary organizations and social activities. This means that the quality and presence of the social supports systems which, directly or indirectly help vulnerable families, also vary between municipalities. Consequently, some of the municipal-level variations in placement rates might be ascribed to differences in the social support system which is either aided by municipalities themselves or by voluntary organization within municipalities. In the empirical analysis I expect the degree of social support available to vulnerable families in a municipality to be negatively correlated with the municipality’s placement rate. Alternatively, it may also be possible that higher degrees of social support is positively correlated with placement rates if the social ties and social networks built through the strong social support increase municipal awareness of vulnerable families.

However, again it is important to note that municipal spending on social support may be an indicator of local politicians' preferences. If the local politicians have a strong preference for non-intervention, and they expect the availability of social support to reduce the need for interventions, they may choose to increase their spending on social support. This will then offer a different explanation of a possible negative correlation between social support indicators and placement rates, which will refer to the local politicians' preferences for intervention, rather than to the effect of the social support. I shall deal with this problem below.

### **Social disorganization**

The degree of social disorganization in a community, defined both by the physical appearance of the community (for example, poor housing) and its social condition (for example, level of crime) may also affect placement rates. Studies show that signs of disorder create anxiety and fear and lead to distrust between inhabitants in the community. Lack of trust reduces the community's social cohesion, which subsequently lowers social support and reduces social control (Sampson et al., 1997; Obasaju et al., 2008). As argued earlier, lack of social support may cause problems for vulnerable families, just as lack of social control reduces the likelihood that these families comply with prevailing social norms (Woolcock, 2001; Terrion, 2006). Consequently, social disorganization may increase placement rates by lowering the degree of social support available to vulnerable families and by reducing the normative pressure put on families to comply with social norms. This also means that the degree to which social disorganization differs between municipalities may help to explain variation in the municipalities' out-of-home placement rates.

### **Political preferences**

As previously argued, previous research shows that the political ideology of local politicians affects local child maltreatment rates. These ideologies may also affect local out-of-home placement rates. The needs of children rather than the needs of families and parents are at the core of political ideologies. However, ideologies differ with regard to whom they consider to be responsible for meeting children's needs. Conservatism praises the importance of the home and the biological parents, while social democracy emphasizes the role of the state in providing social security. The degree to which the majority of political decision makers in local municipalities adhere to either ideology might affect a child's risk of experiencing out-of-home placement (Bryderup, 2005).

In Denmark, elected politicians in local government authorities are members of local social service committees which handle child welfare cases. Politicians with different political views follow different child welfare ideologies. For instance,

members of the Conservative Party find that social problems are best cared for within the family unit<sup>1</sup>, while the Social Democrats are more likely to consider governmental interventions and thus the use of out-of-home placements<sup>2</sup>. Because local politicians' participate actively in child welfare cases, their ideological or political preferences regarding the use of out-of-home care and the share of different types of politicians in municipalities is likely to affect local placement rates directly.

Moreover, as discussed at the end of two previous sections, the ideologies of local politicians may affect the municipality's spending on formal support and social support. Here, Conservative politicians are likely to increase the use of preventive measures and aim to reduce the use of placements. And as the Conservatives are known for their appreciation of civil society, they are likely to also work for an improvement of the social support levels in the municipality. The Social Democrats would, on the other hand, be likely to increase the use of both the various types of formal support, but at the same time maintain high placement rates. This means that the degree to which local politicians commit to either one of these ideologies will also provide an indirect effect on a child's placement rate.

All in all, I expect a positive correlation between placement rates and the share of local politicians who are members of the Social Democratic party, and a negative correlation between placement rate and the share of Conservative local politicians.

## **Empirical strategy**

I use a multilevel model to analyze if the four types of municipal factors: (1) formal support, (2) social support, (3) social disorganization, and (4) political preferences affect the likelihood that a child experiences an out of-home placement. The multilevel model is well-suited in my application because I wish to explain an individual-level outcome (the likelihood of out-of-home placement) using variables measures at both the individual and the municipal level. The multilevel model separates the total variance in the outcome variable into variance between individuals and families (level 1) and variance between municipalities (level 2). The variance at level 2,  $\rho$ , is modeled as a normally distributed random effect and it captures the total impact of municipalities on out-of-home placement risks. The outcome at level 1 is a binary variable and is modeled as a logistic regression model (Goldstein, 2003).

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<sup>1</sup> See their Danish webpage <http://www.konservative.dk/Politik/Politiskeemner/Socialpolitik/Sider/Udsatteboernogunge.aspx>

<sup>2</sup> See their Danish webpage <http://websikon.socdem.dk/book.asp?ord=tvangsfjernelser>

## Data

For the individual-level variables I use administrative data from Statistics Denmark for the years 2004 and 2005 which contains comprehensive information on all children and their parents living in Denmark. In Denmark, all residents have a unique personal number which identifies the resident in a great many transactions, such as tax forms, visits to the doctor, interaction with the welfare system, schooling, work status, and registration of residence. Statistics Denmark conducts a yearly collection of the information registered by this personal number and makes these data available for statistical and research purposes. The available data is a panel which goes as far back as 1980, which contains all Danish residents, and which allows for a linking of parents and children. The registers also include information on which social policy interventions children receive, both preventive measures and actual out-of-home placements. As a consequence, I have information on the number of placements a child has received as well as extensive information on both children and their parents.

In the analysis I use data which include all children, both those who never experience an out-of-home placement, those who have experienced a placement prior to 2004, those who experience a placement after 2005, and those who experience a placement at some point during 2004 or 2005. However, I exclude children who are in out-of-home care before the study window (2004 and 2005) and who continue to be in out-of-home care throughout the study period because these children have moved beyond the point where municipality level characteristics might affect their risk of experiencing an out-of-home placement. These restrictions leave me with information on 2,174,847 children.

My administrative data has several advantages compared to traditional survey data. First, when assessing the probability that a child in a given municipality experiences an out-of-home placement, I need information both on children in that municipality who experience an out-of-home placement and children who do not experience a placement to get sufficient within-municipality variation. Having almost full population data ensures that I have all this information. Second, by using almost full population data I am sure that even small municipalities are represented. Third, because administrative data does not rely on the individuals' self reporting there is no attrition in the data.

I supplement the individual-level data with a range of indicators which are measured at the municipal. The data sources used for these indicators is describe below.

## **Outcome**

My outcome variable is a dummy variable which takes the value one if a child experiences an out-of-home placement during either 2004 or 2005, according to the official registers, and zero otherwise.<sup>3</sup> Table 1 shows that 2 permille (n=3,960) of the children in my data experience an out-of-home placement during 2004-2005. This share corresponds with the official statistics on new placements, as published by Statistics Denmark.<sup>4</sup>

## **Explanatory variables**

A key strategy in my analysis is to try to explain away municipal differences in placement rates which may be ascribed to differences in the socioeconomic and social composition of the population across municipalities. This strategy ensures that effects of the municipal-level indicators are not caused by underlying differences in the composition of the population, which is correlated with the municipal-level variables. Consequently, I should control for all individual-, parent, and family-level factors which may influence a child's risk of experiencing an out-of-home placement in a given year. For this purpose, I base my choice of explanatory variables on the existing literature on factors influencing a child's placement risk and include three groups of variables.

The first group of variables pertains to children. I include the child's age, birth weight in kilograms, gender, ethnicity, and whether the mother smoked during pregnancy. Previous research has shown that all these characteristics matter for the child's risk of experiencing an out-of-home placement (e.g. Webster et al., 2000). Table 2 shows that the children are on average just over 8 years old, about half are female, and 13 percent have non-Danish parents (either one or both). The average birth weight is 345.55, equaling 3455.5 grams, and 9 percent of mothers smoked during the pregnancy.

The second group of variables pertains to parents. Previous studies show that parents' socioeconomic status, criminal behavior, and health influences a child's placement risk (Hestbæk, 1999; Brandon, 2000; Geen et al., 2002; Berger & Waldfoegel, 2004; Hussey & Guo, 2005; Berger, 2006). Consequently, I include

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<sup>3</sup> I hereby attribute the value zero to children who experience an out-of-home placement after the study window and this introduces an issue of right-censoring, that could cause me to underestimate the effect of the various community level factors; this happens if municipality level factors measured in 2004 and 2005 affect the placement risk of children who experience an out-of home placement in the future (who count as non-placed). However, as such information on future treatment is not available to me, I cannot deal with the problem.

<sup>4</sup> These official statistics are available from [www.statistikbanken.dk](http://www.statistikbanken.dk)

variables measuring parents' labor market status: if they have a job or are unemployed, students, on early retirement pension or are outside the labor force. In the data 76 percent of mothers work, 11 percent are unemployed (or participate in an active labor market program), 6 percent are students, 2 percent receive early retirement benefits and 5 percent are outside the labor force. Among fathers 84 percent work, 6 percent are unemployed (or participate in an active labour market program), 2 percent are students, 2 percent receive early retirement benefits, and 6 percent are outside the labor force. This second group of variables also contains variables measuring parents' education measured by years of schooling, age and income, and indicators of whether or not they have any criminal convictions. Table 2 shows that both mothers and fathers have on average 13 years of schooling, that fathers earn more than mothers, and fathers are slightly older than the mothers. Fathers also have more criminal convictions than mothers. With regards to health, the second group also contains variables on the number of medical diagnoses each parent has received, and the number of times they have been admitted to a hospital. Table 2 shows that mothers have more diagnoses and more hospital admissions than fathers. For a small group of children I have no information on the father – either because he is dead or lives in another country. To account for this situation, I include a dummy variable which takes the value 1 when information for the father is missing (this applies to 1 percent of the children) and zero otherwise. In addition, I assign the value 0 to all other variables related to father's characteristics for these children.

The third group of variables pertains to the characteristics of the family at the time of the first placement. Studies show that children from broken homes and children who grow up with a step-parent are more likely to experience an out-of-home placement than other children. Similarly, the number of children in the family is important (Hestbæk, 1999; Yampolskaya et al., 2007). As a consequence, I include indicators of the number of children in the family and whether the mother lives alone, with the biological father or a stepfather. Table 2 shows that 75 percent of mothers live with biological fathers, 8 percent live with another man, and 17 percent live alone. The average number of children in the families is 2.

## **Municipal-level indicators**

To investigate how formal and social support, social disorganization, and political preferences affect municipalities' placement rates, I include indicators as described in the following sections.

### **Indicators of formal support**

Formal support provided by the municipality may affect the lives of vulnerable families by reducing the effect of stressful factors. To investigate this claim I



include a range of indicators of formal support in the analysis. First, I include the municipality's use of preventive measures as an indicator of the intensity of services. Second, I include two indicators of the municipality's universal social spending: one measuring the municipality's spending on social services relative to other municipalities, and one measuring how much staff each municipality has relative to other municipalities. These two measures capture variation in the financial and human resources municipalities spend on universal formal support. Third, I include three measures of selective support directed against the needs of the children of the municipality: one measuring the municipality's expenditure per student on schools, one measuring expenditure on day care per child, and one measuring the average number of students per class in municipal schools. The first two indicators measure the municipality's prioritization of each area – higher expenditures signal stronger priorities – and the third indicator measure sums the teacher resources per student. These indicators then express an important aspect of the economic and human resources available for children in the municipality, and thus of the selective formal support offered by the municipality.

### **Indicators of social support**

Social support may affect the lives of vulnerable families as these families benefit from living in a socially cohesive community and from aid provided by voluntary organizations in that community. To investigate this claim I include a range of indicators of social support. First, I use a count variable indicating whether certain types of organizations are located within the municipality: 1) a volunteer center which organizes social activities for vulnerable families, 2) one or more self-help-groups in which individuals can meet and discuss problems with others who are neither part of their direct peer network nor part of the formal social system, and 3) other types of volunteer associations which are likely to assist vulnerable families.<sup>5</sup> <sup>6</sup> This variable, which takes values from 0 (the municipality accommodates none of the above) to three (the municipality accommodates all of the above) captures the availability of social support systems for vulnerable families.

Second, I use two indicators of the more general level of social activities and cohesion within the municipality. The first type of indicator measures municipal spending on local voluntary associations. Since 1997, Danish municipalities have earmarked funds to support voluntary organizations such as amateur sports clubs,

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<sup>5</sup> Of the typical examples of such institutions are the “Mother-help” - a private humanitarian institution which supports needy single parents and vulnerable families - “Adult-friend” - arranges contacts between children from vulnerable families and other adults for the purpose of giving the child a stable adult friend relationship – “The valve” – a meeting place for quiet and lonely youngsters.

<sup>6</sup> I construct these indicators from information found at [www.frivillighed.dk](http://www.frivillighed.dk).

local historical associations, amateur theater, and Boy Scout or Girl Guide associations. Active associations are more likely to get funding, and thus municipal expenditure on voluntary organizations is a proxy for these organizations' activity level. The second type of indicator comprise a continuous variable for per capita municipal spending on cultural and sport/leisure activities such as museums, theaters, musical arrangements, sports facilities, and local leisure activities like continuation school.<sup>7</sup> These two indicators express the degree to which the municipality supports activities which strengthen social ties (see Putnam (1993) and Coffé & Geys (2005) for studies which use similar measurements of social support in a community).<sup>8</sup>

### **Indicators of social disorganization**

The degree of social disorganization within a municipality may affect placement rates because disorganization reduces social cohesion and social control. To investigate this claim I construct a latent indicator of social disorganization. Existing research uses different indicators of social disorganization in communities such as neighborhood poverty, share of female-headed families, unemployment rates, and number of immigrants. While my data contain a range of such indicators, one might argue that social disorganization is a latent characteristic of communities of which each of the indicators is a manifest symptom. Accordingly, rather than including separate variables for each indicator it makes more sense to construct a latent factor variable based on the correlation between the different indicators and which represents an overall measure of social disorganization (as similar strategy for measuring the effect of community level characteristics is used by e.g. Lelieveldt, 2004; MacDonald & Stokes, 2006; Bolland & McCallum, 2009). I use

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<sup>7</sup> I construct these indicators from information found at [www.noegletal.dk](http://www.noegletal.dk).

<sup>8</sup> I acknowledge that studies on social support, social ties and the related concept social capital targeted at vulnerable families is often studied at smaller levels of geography than the municipality level: This is emphasized by a range of empirical studies which then also operationalize social support using concepts that are not directly linked to the municipality level and which are measured through "softer" variables, usually captured through individual level surveys (see e.g. Hays (2002) who measures social support through individuals' attitudes towards the community; Brisson & Usher (2007), who ask their respondents on their perceptions of social cohesion in their neighborhood; Hoyman & Faricy (2009) who use religious pluralism in a community to measure social capital; or Hays & Kogl (2007) who focuses on specific details of individuals' interactions in neighborhoods, like whether or not an individual has borrowed tools from his or her neighbor within the last couple of weeks prior to the study; see also Rice (2001), Bolland & McCallum (2002), Lelieveldt (2004), MacDonald & Stokes (2006) and Saegert (2006)) for alternative measures of social support). However, since the present study focuses on municipal-level characteristics I leave it to future studies to investigate how social support indicators at lower community levels affect placement rates.

the following manifest symptoms of social disorganization in the latent factor which are all measured at the municipality level: 1) the municipal unemployment rate, 2) number of violent crimes by number of inhabitants, 3) number of property crimes by number of inhabitants, 4) share of immigrants, 5) rented housing as a share of total housing, 6) share of female-headed families, 7) share of people in the municipality who live in urban areas, 8) extent of migration in and out of the local municipality as share of the total population size (for studies which use similar indicators of social disorganization, see Sampson et al, 1997; Coffé & Geys, 2005).<sup>9</sup>

Table 1 shows results from the factor analysis of the manifest symptoms. Both the scree test and the Kaiser-Gutman rule indicate that I only need the first factor.<sup>10</sup> Note also the level of the Kaiser-Meyer-Olkin measure of sampling adequacy; the value of 0.76 indicates a middling degree of common variance between the nine items.

As seen, all factor loadings are positive and most are quite high, except for item 1 and 8. Thus it is my interpretation, that number of violent and property crimes, share of immigrants, of rented housing, of female headed families, share of people living in urban areas, local unemployment rate and migration is positively correlated with social disorganization. However, the last two indicators are not as strongly correlated with this underlying latent construct, as the first six.

**Table 1: Results from the factor analysis**

Item	Mean (std.)	Factor loading
1. Local unemployment rate	5.09 (1.44)	0.21
2. Number of violent crimes (pr. 1000 inh.)	1.92 (0.85)	0.68
3. Number of property crimes (pr. 1000 inh.)	71.74 (44.62)	0.55
4. Share of immigrants (pr. 10.000 inh.)	323.88 (185.98)	0.82
5. Share of rented housing	0.21 (0.15)	0.55
6. Share of female headed families	0.17 (0.05)	0.91
7. Share of people living in urban areas	0.84 (0.16)	0.75
8. Migration	0.12 (0.04)	0.08
Eigenvalue		3.19
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.76

<sup>9</sup> These indicators are found at [www.noegletal.dk](http://www.noegletal.dk)

<sup>10</sup> I use standard principal factor methods, which means that the communalities are set to the squared multiple correlation coefficients.

## Indicators of political preferences

The political preferences of the local politicians may affect placement rates in a municipality by directly affecting the degree to which decisions on child welfare cases favor family based or government based solutions. Preferences may also affect placement rates indirectly through via municipal spending on formal and social support. To investigate this claim I include two indicators of the political preferences of the local politicians. The first indicator measures the share of elected local politicians in local government councils that are members of the Conservative party, and the second indicator measures the share of elected local politicians that are members of the Social Democratic party.<sup>11</sup> As mentioned earlier, I expect the two types of politicians to represent the two extremes with regard to the ideology they apply to their decisions regarding child welfare cases and spending on formal and social support.

## Descriptive statistics

The lower part of Table 2 shows descriptive statistics for the municipal-level indicators. All indicators are measured in 2003, and I have logged all measures of the municipalities' expenditures. The table shows that the mean number of preventive measures is 0.41 and mean social expenditure is 1.00 (which reflects that this is a relative measure). The average number of staff per 100 inhabitants is 71, which reflects the large public sector in Denmark. I also see that municipalities spend almost the same on schools as they spend on day care per student/child. The mean number of students per class is 20. With regards to social support, Table 2 shows that municipalities' support for civil society activity varies between 0 and 338. However, there is less variation in municipal expenditure on cultural and sport/leisure activities. On average, the municipality has 1.2 volunteer centers, self-help groups or other relevant volunteer associations. The table also shows that 11 percent of the elected local politicians in the average municipality are members of the Conservative party, while 32 percent are social democrats. By construction, the disorganization factor has a mean of zero.

**Table 2: Descriptive statistics**

Variable name	Mean (std. dev.)	Min.	Max
Dependent variable			
Out-of-home placement	0.002	0	1
Child characteristics			
Age	8.28 (5.08)	0	17

<sup>11</sup> I find these indicators at <http://www.kmdvalg.dk/kv/2001/>

Variable name	Mean (std. dev.)	Min.	Max
Female	0.49	0	1
Ethnicity (neither father nor mother from a western country)	0.13	0	1
Birth weight, in 10 grams	345.55 (64.54)	0	700
Mother Smoked during pregnancy	0.09	0	1
<b>Mother's characteristics</b>			
Working	0.76	0	1
Unemployed, including participation in ALMPs	0.11	0	1
Student	0.06	0	1
Early retirement pension	0.02	0	1
Outside the labor force	0.05	0	1
Educational level in years	12.94 (1.82)	7	21
Log (income/10,000)	2.34 (1.47)	-9.21	6.34
Age	37.51 (6.35)	15	78
Criminal behavior (number of crimes)	0.01 (0.13)	0	463
Number of diagnoses	0.21 (0.52)	0	9
Number of hospital admissions	0.10 (0.49)	0	38
<b>Father's characteristics</b>			
Working	0.84	0	1
Unemployed, including participation in ALMPs	0.06	0	1
Student	0.02	0	1
Early retirement pension	0.02	0	1
Outside the labor force	0.06	0	1
Educational level in years	12.70 (1.96)	7	21
Log (income/10,000)	2.69 (1.58)	-9.21	8.29
Age	40.10 (7.04)	16	87
Criminal behavior (number of crimes)	0.28 (2.28)	0	20
Number of diagnoses	0.08 (0.33)	0	13
Number of hospital admissions	0.09 (0.50)	0	72
Father missing	0.01	0	1
<b>Family characteristics</b>			
Mother lives with father	0.75	0	1
Mother lives with other man than father	0.08	0	1
Mother lives alone	0.17	0	1
Number of children in family	2.10 (0.93)	0	12
<b>Municipality level characteristics</b>			
<i>Formal support</i>			
Number of preventive measures in 2003, by # of inhabitants in municipality	0.41 (0.06)	0.20	0.54
Social expenditure in 2003, by # of inhabitants in municipality	1.00 (0.06)	0.88	1.35

Variable name	Mean (std. dev.)	Min.	Max
Staff in municipality relative to other municipalities	71.24 (7.29)	38.4	91.4
Expenditure on schools	8.85 (0.14)	8.29	9.21
Expenditure on day care	8.79 (0.22)	8.09	9.25
Number of students pr. class	19.91 (1.28)	13.9	23.4
<i>Social support</i>			
Log (public support for civil society activities in 2003, by # of inhabitants in municipality)	18.79 (46.91)	0	338.54
Municipality spending on cultural/sport/leisure activities	7.24 (0.38)	6.01	8.13
Presence of volunteer center, a self-help group or other relevant volunteer association in the municipality	1.20 (1.22)	1	3
<i>Political preferences</i>			
Share of elected local politicians which are members of the Conservative party	11.00 (9.93)	0	64.33
Share of elected local politicians which are members of the Social Democratic party	32.40 (11.27)	5.31	66.02
<i>Social Disorganization</i>			
Disorganization factor	0.00 (1.00)	-1.97	2.10

## Results

This section describes the results from the analysis. I begin by reporting the effects of the municipal-level characteristics, as these are of main interest to the focus of the paper.

### Municipality level characteristics

The lower section of Table 3 shows the effect of the municipality level variables on the likelihood that a child experienced an out-of-home placement. Of the 12 included variables 7 are significant.

First, we see that four of the six variables related to the municipality's formal support are significant. They show that the higher the degree to which the municipality offers preventive measures, the fewer are the children in the municipality who experience an out-of-home placement. This result suggests that preventive measures make a positive difference but it might also indicate that municipalities have chosen to use either out-of-home placements *or* preventive measures, meaning that the two will always be negatively correlated. Results for the formal support variables also show higher spending per student/child on school and day care is associated with a higher risk of experiencing an out-of-home placement. Thus higher spending on meeting the needs of the children in the municipality, i.e. spending on selective support, does not necessarily lead to a

lower risk of placement. This result might reflect both that high expenditure increases municipalities' awareness of the needs of the children in the municipality, but it might also be an indication of the municipality's desire for intervention, as described earlier. The last results related to the formal support variables shows that the municipality's placement rate is negatively correlated with the number of students per class. This result suggests that the fewer human resources that are available to the children, the more likely is it that they experience an out-of-home placement. Thus, the lack of that type of formal support is potentially problematic. One should also note that the indicators of universal support come out insignificant.

Second, I find that two of the three indicators of social support have significant effects on the likelihood of out-of-home placement. The higher municipal spending on civil society activities and cultural/sport/leisure activities the lower the likelihood that a child experiences an out-of-home placement. This result suggests that the availability of social support, or, more specifically, the presence of a strong social network in the municipality makes a positive difference for vulnerable families. It does not make a difference by creating a stronger awareness of placement needs, but rather by reducing these needs probably by helping vulnerable families before placing their children in out-of-home care. One might note, though, that the indicator of the presence of self-help groups, volunteer centers or other relevant institutions in the municipality is not significant.

Third, we see that the higher the degree of social disorganization in the municipality, the more children in the municipality experience an out-of-home placement. This finding corresponds with expectations and shows that the consequences of living in deprived areas, with uncertainty and lack of trust between residents, is potentially problematic for the vulnerable families and their children.

Both political preference measures are insignificant. Thus, when we have taken all other aspects of the municipalities priorities into account it is irrelevant who makes the decisions in the municipality.

We also see that the model's  $\rho$  has a value of 0.035: while the likelihood ratio test shows that  $\rho$  is significantly different from zero – i.e. that the municipality level characteristics of this model does not explain away all municipality level variation – we need to compare this value to the  $\rho$  value of a model, that does not include any municipality level characteristics ( $\rho = 0.046$ ). This comparison shows that the municipality level characteristics included in this model explain almost 24 per cent of the municipality level variation in placement patterns.<sup>12</sup>

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<sup>12</sup>  $1 - (0.035/0.046) = 0.239$

**Table 3: The probability that a child experiences an out-of-home placement in 2003/2004**

Variable name	Coefficient (std. err)
<b>Child characteristics</b>	
Age	0.174 (0.005)***
Female	-0.063 (0.033)†
Ethnicity	-0.506 (0.053)***
Birth weight	-0.002 (0.000)***
Mother smoked during pregnancy	0.605 (0.063)***
<b>Mother's characteristics</b>	
Working (ref.: outside the labor force)	-0.428 (0.078)***
Unemployed (ref.: outside the labor force)	0.322 (0.067)***
Early retirement pension (ref.: outside the labor force)	0.572 (0.076)***
Student (ref.: outside the labor force)	-0.509 (0.103)***
Educational level	-0.173 (0.011)***
Log (income/10000)	-0.096 (0.015)***
Age	-0.039 (0.004)***
Criminal behavior	0.429 (0.034)***
Number of diagnoses	0.445 (0.034)***
Number of hospital admissions	0.131 (0.029)***
<b>Father's characteristics</b>	
Working (ref.: outside the labor force)	-0.523 (0.068)***
Unemployed (ref.: outside the labor force)	0.039 (0.063)
Early retirement pension (ref.: outside the labor force)	0.012 (0.074)
Student (ref.: outside the labor force)	-0.627 (0.156)***
Educational level	-0.146 (0.011)***
Log (income/10000)	-0.058 (0.013)***
Age	0.005 (0.003)
Criminal behavior	0.151 (0.020)
Number of diagnoses	0.174 (0.069)*
Number of hospital admissions	-0.048 (0.046)
<b>Family characteristics</b>	
Mother lives with father (ref.: single mom)	-1.301 (0.045)***
Mother lives with other man than father (ref.: single mom)	-0.230 (0.044)***
Father missing	-2.811 (0.405)***
Number of children in family	-0.328 (0.017)***
<b>Municipality level characteristics</b>	
<i>Formal support</i>	
Number of preventive measures in 2003, by # of inhabitants in municipality	-4.859 (1.305)***
Social expenditure in 2003, by # of inhabitants in municipality	-0.957 (0.629)
Staff in municipality relative to other municipalities	0.003 (0.005)
Expenditure on schools	0.559 (0.333)†



Expenditure on day care	0.589 (0.230)**
Number of students pr. class	0.060 (0.026)**
<i>Social support</i>	
Log (public support for civil society activities in 2003, by # of inhabitants in municipality)	-0.003 (0.001)*
Log(Municipality spending on cultural/sport/leisure activities)	-0.287 (0.105)***
Presence of volunteer center, a self-help group or other relevant volunteer associations in the municipality	0.021 (0.039)
<i>Political preferences</i>	
Share of elected local politicians which are members of the Conservative party	-0.004 (0.004)
Share of elected local politicians which are members of the Social Democratic party	-0.001 (0.003)
<i>Social Disorganization</i>	
Disorganization factor	0.142 (0.075)†
Intercept	-6.142 (1.926)***
Wald $\chi^2$	9552.13***
$\rho$	0.035
Likelihood-ratio test of $\rho = 0$	129.20***

\*\*\*:  $p < 0.001$ , \*\*:  $p < 0.01$ , \*:  $p < 0.05$ , +:  $p < 0.1$ .  $N = ?$ .

### **Individual- and family-level characteristics**

Table 3 also shows the effects of the individual- and family-level characteristics on the likelihood of experiencing an out-of-home placement and, overall, the results correspond with findings from existing research. Here, I find that a child's risk of experiencing an out-of-home placement increases by age and decreases by birth weight. Children whose mothers smoked during pregnancy have a higher probability of experiencing a placement, while the opposite effect applies to children whose parents (either one or both) are immigrants. While this last result may seem at odds with knowledge from other countries on immigrant children's placement rates, it is consistent with the knowledge produced in previous Danish studies.<sup>13</sup> A straightforward interpretation of the result could be that immigrant families have fewer social problems than the native Danish families, but it might also reflect either that immigrant families solve their problems within the (extended) family or that they live in parallel societies which are difficult for public authorities to reach.

With regards to mother's and father's characteristics, I find that mother's characteristics seem to matter more than father's, as the coefficients of mother's characteristics tend to be larger than the coefficients of father's characteristics.

<sup>13</sup> For evidence in Danish, see [http://www.tekno.dk/pdf/projekter/p02\\_anbragte-born-oplaeg.pdf](http://www.tekno.dk/pdf/projekter/p02_anbragte-born-oplaeg.pdf)

But we do see that both mother's and father's employment situation and whether parents are students have negative effects on a child's placement risk, and furthermore that neither mother's nor father's unemployment matters (the reference category is outside the labor force). However, if mother receive early retirement benefits children have a higher risk of experiencing an out-of-home placement. I also find that the placement risk decreases by both mother's and father's education and by family income. However mother's age has a negative effect while father's age has a positive effect on placement risk. This result indicates that the older the mother, but the younger the father, the better for the children. Criminal behavior and number of diagnoses, both fathers and the mothers', and the number of hospital admissions for mothers increase the probability that a child experiences a placement.

With regard to family-level characteristics, I find that both children whose mother lives with their biological father and with another man have a smaller risk of experiencing an out-of-home placement compared to children who live with a single mother. Number of children in the family has no effect, while "father missing" has a negative effect.

## **Conclusion and implications**

Placing a child in out-of-home care is an invasive intervention which has long-lasting impacts on the child and its family. Consequently, understanding the mechanisms which lead to out-of-home placement is important for reducing the need for out-of-home care. A majority of existing studies have focused on how individual-, parent-, and family-level characteristics affect a child's placement risk. These studies provide systematic evidence on how to identify children who are at risk. This research is important for targeting policies towards children and their families in need. However, as mentioned in the introduction, we cannot rely only on targeting individuals and the families. To the extent that also their context affect their problems, we need additional plans for changing and improving the communities in which these families lives.

As a response to such considerations, this paper investigates whether municipal-level characteristics explains municipal-level variance in placement patterns. This is an important question, as knowledge on the effect of these municipality level characteristics facilitates direct means of policy interventions for changing the environments of vulnerable families. For instance, to the extent that the municipalities' investments in cultural, sports and leisure activities affect the local placement rates – as the results of this paper indicate – a straightforward action for improving the conditions for the vulnerable families and thus preventing too many out-of-home placements is to increase the investments in such activities. Also, the

knowledge that the level of social disorganization matters for placement rates should inspire municipalities to make efforts to reduce the disorganization.

However, a valid objection to the findings of this study would be that our municipality level indicators only explain a fourth of the municipality level variation, and that some of the indicators might be imprecise. Future studies should therefore aim at refining the analysis and further explore what explains the effect of place of residence on a child's placement risk. In addition, it is important to note that the municipality level is only one of a range of potentially important community levels; while e.g. Freisthler et al. (2006) notes that effects of community level factors on child maltreatment does not seem to vary by the community level under study – whether it is e.g. zip code areas or neighborhoods – it is worth investigating if this also applies to studies on placement risks.

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