

Effects of Parental Structure and Resources on Children's Educational Outcomes at age 15 using Dutch register data (1999-2008)

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Introduction

Since 1950 an increasing instability is found in western families. Because of modernization, individualization and other factors divorce and step-relations became more common (Lesthaeghe, 2002; Liefbroer and Dykstra, 2000) and family relationships became less important (Popenoe, 1993; Bengston, 2001). By looking at recent birth cohorts (1984-1993) we investigate whether the trend continues and the living conditions of 15-year-old children over the years has become more unstable.

Growing up in an intact family is positively correlated with educational opportunities of children. A divorce has generally a negative effect on the school level of children (Bosman, 1993). Social opportunities and constraints are transferred from generation to generation true genetic transfers, socialization and social inheritance (Liefbroer and Dykstra, 2007). The parental context in which these transfer takes place is of interest as well (Sun and Li, 2011).

Transfer of parental resources can interfere in different ways with a divorce (Fischer, 2004). Beside the direct negative impact of separation to the development of minor children, we believe that the available amount of parental resources play an important role. Children lose on average more resources when more is available. The result is the loss hypothesis: the more resources parents have, the greater the negative impact of separation for the children involved.

In addition, parental resources can be a buffer against possible adverse effects of instability on the development opportunities of the children involved. Beside financial also cultural resources play a role. Research showed that increasing maternal age worked countervailing with respect to differences in educational attainment of earlier and later born (Black, Devereux and Salvanes, 2005; Kalmijn and Kraaykamp, 2005). What follows is the buffer hypothesis: the more resources parents have, the less the negative impact of separation for the children involved.

We think that both of these conflicting hypotheses are partially supported, if we distinguish between the financial resources of fathers and mothers. We suspect that the loss hypothesis particularly holds for the resources of the father, while the buffer hypothesis is valid regarding the resources of the mother.

Data and methods

The data for this study are derived from the Social Statistical Database (SSB) of Statistics Netherlands. The final version of the SSB is a set of linkable records which are coordinated and made consistent (Bakker, 2008, 2009). The analyse is conducted on data using 10 moments in time, namely in September 1999 to September 2008. The analysis of the development opportunities of the child are restricted to the 1988-1993 birth cohorts, because the school level is fully known from 2003 onwards. In the case of multiple 15-year old children per parents only one randomly child is selected in the analysis.

We describe the development in the family structure to resources of the parents in September of the year they were 15. The resources of the parents are derived from income percentiles and age at birth of the child. The relative distributions of the income percentiles are condensed to six categories. The age of the parents at birth of the child are combined in five categories.

The family situation in which children grow up is an important structural condition for subsequent transitions on education. The relationship between family situation and school level followed by 15-year-olds is therefore described. The school level is divided into six categories.

To analyze the coherence between the family situation and school level of recent birth cohorts of 15-year-olds, four multivariate regression model (OLS) are estimated with the school level as the dependent variable. The control variables are year, ethnic group, gender, region of residence and month of birth. The first model presents the estimation results of the regression with the variables for parental structure (living with both parents, with the mother, with the father, with the mother and a partner, with the father and a partner, without both parents) and age at birth of the child (as proxy for the cultural capital of the parents). The second model adds the income levels of father and mother. The third and fourth model include interaction terms (parental structure and parental resources) to test the loss and buffer hypothesis.

Results

Family situation (1999-2008) and school level (2003-2008)

The downward trend since 1950 of the proportion of 15-year olds, who live with their own parents in a family, continues in the most recent period. In 1999 78 percent of the 15-year-old was still living with both parents compared with 74 percent in 2008 (see Figure 1). In particular, the family situation where the child's mother lives with a partner replaces this, but also single parent families occur more often. Children living with their father and a partner remain scarce (<1 percent). The proportion of 15-year-olds, who live without their own parents, is stable over the period (2 percent).

Intact families are more common in the highest two quintiles of the income of the father. If the mother has no income or the income of the mother falls in the lowest quintile, the likelihood of an intact family increases and the family is more stable. Children, who live with parents of relatively old age, more often live in intact families.

A 15-year-old, who lives with both own parents, generally follows a higher school level. In addition, the level of children with a single parent or a parent with a partner is similar. The average school level of the child, broken down by the different categories of the parental resources, shows that children from relatively well-paid and late parents do better at school than average. Remarkably, especially the minority who has a mother with high income and / or higher age at birth do very well.

Parental structure, parental resources and school level; multivariate model

Compared with the intact situation, all other types of parental structure have a negatively significant effect on educational attainment (see Table 1). It is not surprising that children who live without their own parents are in a particularly disadvantaged position. It should be mentioned that the family situation, where only the child's mother or father lives is significantly better than the step situation, though the differences are small.

The second model shows that having a father who earns a lot contributes to differences between the school levels of the children. It is striking that having a father with a low income is slightly positively related to the school level. This is just a marginal group. On the one hand, these are men who have special revenue sources (income from property), which are not included in determining the quintiles. On the other hand, an (almost) non-working father is sometimes a temporary situation where the mother earns more. The effect of the income of mothers is more or less linear. Compared to a mother in the middle quintile is having a mother earning a lot positively, while earning less money or not working negatively related to the attended school level.

We see further that having a young father or mother is negatively related to the educational opportunities of children. It also holds that a relatively old mother is positively related to the educational attainment.

Interestingly, the differences between children growing up in the various non-intact families are significantly smaller after controlling for parental resources. Part of the negative effects of separation is due to the fact that in lower social classes more families fall apart. This is also evident when we compare the differences between the various ethnic groups: primary school levels among immigrant children are largely due to socioeconomic factors.

In the third model (see Table 2) we see that, controlling for all other factors, the development opportunities of children of divorced parents are on average a little more limited as the father earned

much (loss), while it is relatively strongly encouraged by a mother earning much (buffer). Especially the positive effect of a mother with a high income in a non-intact situation is noteworthy.

Model 4 confirms that the loss occurs only if the child does not live with the high-income-father, while high income of the mother equally buffer, apart from the situation that the child is registered with father and a new partner. Of course, the negative direct effect of the separation must be kept in mind.

Conclusion

The conclusion is that the percentage of 15-year-olds who live with their parents in a family has decreased in 10 years time from over 78 to 74 percent. In 1999 more than 14 percent of children lived in single parent families, which rose up to 17 percent in 2008. These are mostly single-parent families with mothers. The percentage of children living with one parent and a new partner rose from more than 5 percent in 1999 to over 7 percent in 2008. The proportion of children living without their parents is fairly constant (approximately 2 percent).

The analysis of the relationship between family situation and school level for the Dutch situation provides new insights. We can confirm other studies (cf. Fischer, 2004; Sun and Li, 2011) that an intact family is the best and the absence of both parents the worst basis for the development of children. It was also clear that the importance of income of the mother grows when children live in a non-intact family (buffer), while the loss of paternal economic resources is slightly greater if he has a higher income (loss).

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Tables and Figures

Figure 1 Parental structure of 15-year olds, 1999-2008

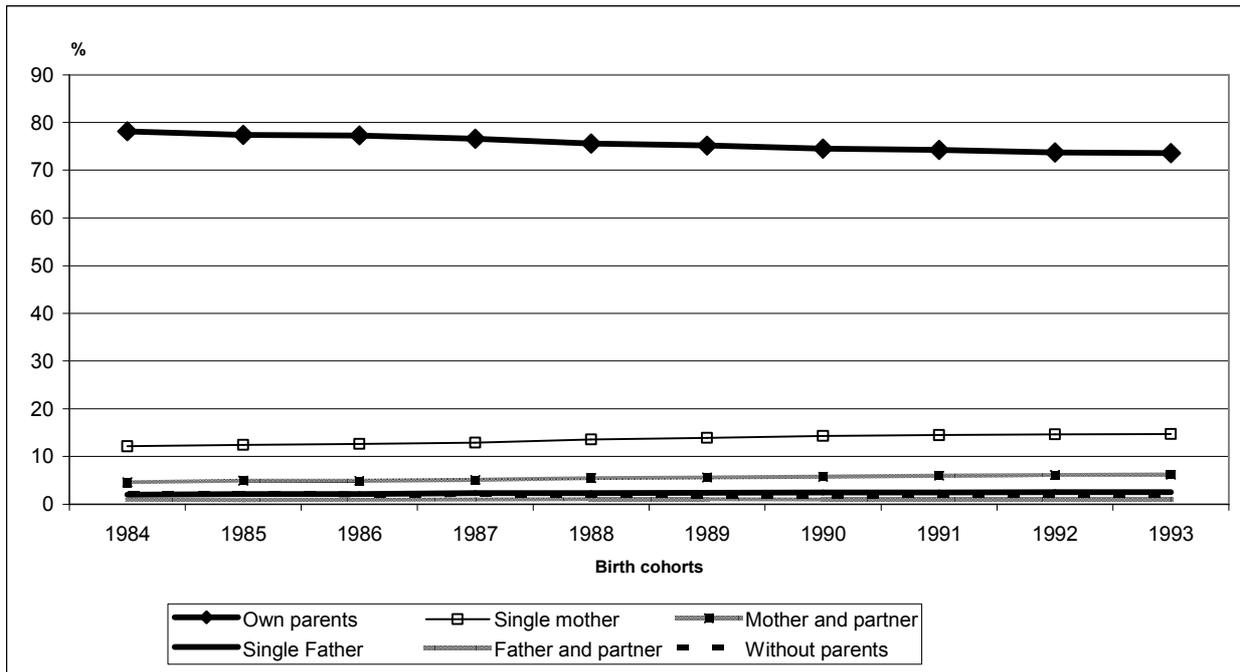


Table 1 Estimation results multivariate model (OLS): School level child (random child; 2003-2008)
 Controlled for birth month, year and region of residence

		Model 1		Model 2	
Gender	Daughter (ref.)	ref.		ref.	
	Son	-0.18	***	-0.18	***
Origin	Native (ref.)	ref.		ref.	
	Morocco	-0.50	***	-0.28	***
	Turkey	-0.35	***	-0.20	***
	Surinam	-0.12	***	-0.08	***
	Netherlands Antilles	-0.25	***	-0.21	***
	Other Non-Western	-0.22	***	-0.10	***
	Other Western	-0.03	***	0.00	
Age father at birth child	15-22 year	-0.19	***	-0.14	***
	23-27 year	-0.10	***	-0.07	***
	28-32 year (ref.)	ref.		ref.	
	33-37 year	0.03	***	0.02	***
	38 year and older	-0.03	***	0.00	
Age mother at birth child	15-22 year	-0.31	***	-0.22	***
	23-27 year	-0.16	***	-0.11	***
	28-32 year (ref.)	ref.		ref.	
	33-37 year	0.08	***	0.05	***
	38 year and older	0.08	***	0.08	***
Parental structure	Own parents (ref.)	ref.		ref.	
	Single mother	-0.26	***	-0.25	***
	Single father	-0.30	***	-0.30	***
	Mother and partner	-0.26	***	-0.22	***
	Father and partner	-0.27	***	-0.28	***
	Without parent(s)	-0.71	***	-0.65	***
Income father	No income			0.09	***
	1e quintile			0.04	***
	2e quintile			0.02	**
	3e quintile (ref.)			ref.	
	4e quintile			0.09	***
	5e quintile			0.42	***
	Income unknown			0.11	***
	Father unknown ¹	-0.21	***	-0.04	***
Income mother	No income			-0.16	***
	1e quintile			-0.18	***
	2e quintile			-0.12	***
	3e quintile (ref.)			ref.	
	4e quintile			0.13	***
	5e quintile			0.31	***
	Income unknown			0.01	
	Mother unknown ¹	-0.21	***	-0.27	***
	Constant	-61.67	***	-52.81	***
Observations		717076		717076	
R2		0.17		0.21	

* p<0,05, ** p<0,01, ***p<0,001

¹ Unknown because the parent died/does not live in the Netherlands

