

Title. “Parental Use of Destination Language at Home and Academic Achievement of Immigrant-Origin Children”

Background. Children of immigrants, from most backgrounds, have long presented substantial deficits in academic achievement compared to native pupils, especially in Europe—see Heath, Rethon and Kilpi (2008) for an early review. Over time the attainment gaps have only marginally reduced, as children of immigrants still score lower on PISA assessments, they are overrepresented among early school-leavers and are less likely to access to upper or higher education. Previous research provides clear evidence that parental socioeconomic resources play an important role in shaping achievement disparities between native and immigrant (Drouhot and Nee 2019, van de Werfhorst and Heath 2019). Among other factors, language differences have been proposed as one source of the native-immigrant gaps in educational outcomes (Dustmann, Frattini and Lanzara 2014). The educational consequences of home language use yet remain less well understood, despite a well-documented heterogeneity in parental usage of heritage (L1) or destination (L2) language with children (Francot et al. 2025).

Aim. We aim at answering a critical question follows: do differences in actual home language practices shape immigrant children’s educational trajectories? Leveraging novel linked survey-registry data from the Netherlands, we contrast the effects of granular and aggregate home language practices on children’s language, mathematics and overall test scores at the end of primary school, a key test for access to later academic tracks, as well as later transition to Higher Education.

We formulate 4 hypotheses based on sociological (Alba and Nee 2003, Portes and Zhou 1993), sociolinguistic (Vygotsky 1978) and cognitive (Green 1998) models:

H1: There are unambiguously positive effects of more frequent L2-usage by parents, both with children and in the household, on children’s test scores and later transition to Higher Education (*straight-line assimilation*);

H2: There are unambiguously negative effects of more frequent L2-usage by parents, both with children and in the household, on children’s test scores and later transition to Higher Education (*segmented assimilation*);

H3a: There is a positive effect of more frequent L2-usage by parents, both with children and in the household, on children’s test scores in the language component, and presumably limited or no effects on the performance in the mathematical component (*input quantity pathway*);

H3b: There is a separate additive positive effect on children’s language test scores may come from high parental language proficiency in L2 (*input quality pathway*);

H4: There is a positive effect of non-monolingual practices by parents, both with children and in the household, on the mathematical component of the test, and a non-negative impact on the language component (*bilingual cognitive advantage*).

Methods. This study is based on a sample of parent-child pairs obtained from a merge of national harmonized immigrant surveys, population and school administrative data. The survey sources are: the Leefsituatie Allochtone Stedelingen survey (LAS 2004-2005), three

waves of Survey Integratie Minderheden (SIM 2006, 2011, 2015) and the Survey Integratie Nieuwe Groepen (SING 2009). The population registries used to match individual respondents with their children as well as with their household income data are: the Municipal Personal Records Database providing basic personal data and children-parent linkages; the Integrated Household Income dataset and its successor, the Household Income dataset to recover annual household income. Lastly, the characteristics of participants to the primary education final exam are retrieved annually from the dataset, and the Higher Education (HE) enrollment was obtained from the annual record of the highest level of education achieved/followed. We rely on OLS and logit models with rich sets of parental controls to produce estimates of test scores differentials and gaps in higher education enrollment among immigrant children, based on the language usage patterns. Lastly, we test for a mediating effect of the primary school test score on the enrollment in Higher Education institutions.

Results. Figure 1 shows a clear positive association between parent-child L2 use and children's test performance in language. In contrast, no significant association is found between parent-child destination language usage and performance on the mathematics test. L2-dominant language practices with children may enhance their performance in literacy tests (thus in favor of H3a), with overall performance reflecting this advantage—implying positive long-term effects (slightly supporting H1). Figure 2 presents the results for the household-level index of language use, which combines Dutch language use with children and partners into a four-category measure of frequency. This different metric instead reveals how more comprehensive household language measurements are needed to understand the effects of exposure to bilingual environments for children. Full language alignment may not be necessary for children to obtain better scores in literacy-based assessments, rather families with frequent but not exclusive use of L2 could help children develop also non-verbal cognitive processes (partially supporting H4). Under both metrics, parents' language skills in Dutch show no significant association with children's test outcomes (in contrast to H3b)—as reported in Table 1. Long-term effects are positive yet modest in statistical significance, as shown in Figure 3. After controlling for the test score, the effect of “always” speaking Dutch was almost halved and more inaccurate. These findings point to a substantial amount of mediation of long-term effects by the CITO score. Overall, we do not find evidence consistent with a selective acculturation mechanism, as prescribed in H2.

Conclusions. This study advances understanding of how family language practices shape educational outcomes among children of immigrants in the Netherlands. Using linked survey and registry data, we examine parent-child and interparental use of Dutch to capture household-level exposure. Results show that speaking Dutch with children improves literacy but not mathematics performance, suggesting domain-specific rather than general cognitive effects. Families combining Dutch with the heritage language display relatively strong outcomes, consistent with partial support for a bilingual advantage. Moreover, early test performance mediates the link between home language and later higher-education enrollment, indicating that early linguistic environments shape educational trajectories. Overall, the findings reveal that complete linguistic assimilation is not a prerequisite for academic success; balanced bilingual exposure may instead optimize both linguistic and cognitive development.

The study underscores the need to incorporate detailed intra-family language dynamics into sociological models of immigrant integration and educational inequality.

Figure 1. Effects of parental use of Dutch with children on children’s test scores.

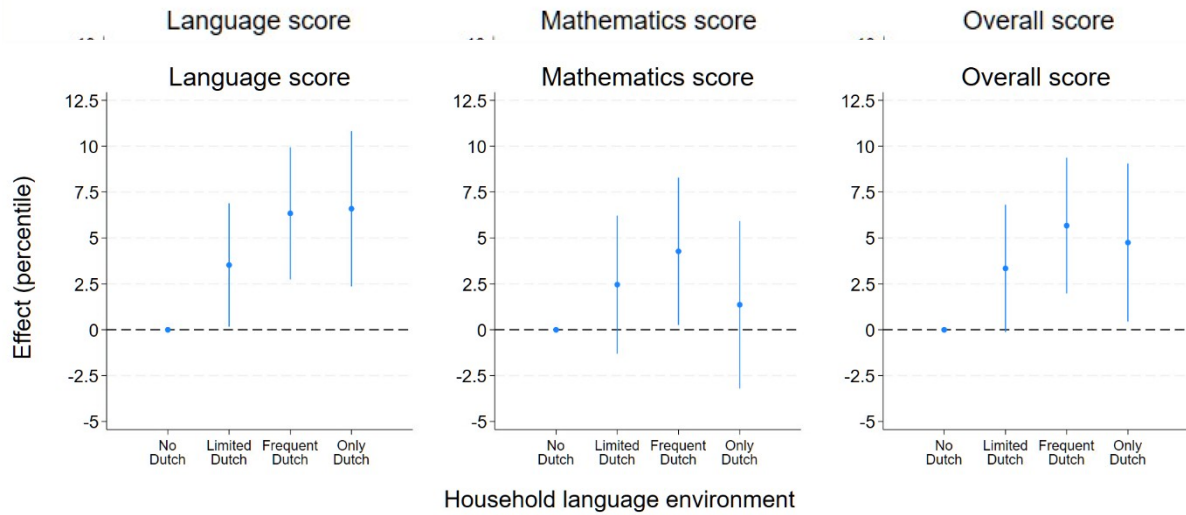
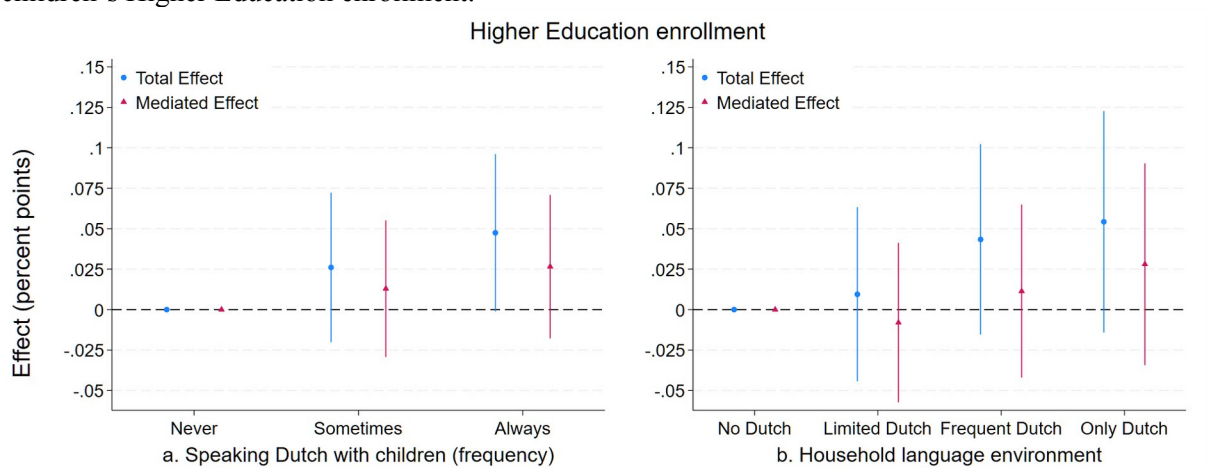


Figure 2. Effects of parental use of Dutch with children and with partner on children’s test scores.

Table 1. Effect of parental language skills on children’s language scores.

	Parent-child specifications		Household language environment specifications	
	(1)	(2)	(3)	(4)
Composite skill index (standardized)	0.780 (0.642)		0.536 (0.682)	
Interviewer’s assessment: (ref. Poor Dutch speaking)				
Moderate Dutch speaking		0.076 (2.717)		1.030 (3.032)
Reasonable Dutch speaking		-2.560 (2.555)		-1.842 (2.819)
Good Dutch speaking		2.212 (2.627)		1.543 (2.901)
Parental L2 usage	YES	YES	YES	YES

Figure 3. Effect of parental use of Dutch with children and household language environment on children’s Higher Education enrollment.



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