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## Utilization of extended education offerings at all-day schools in the German-speaking part of Switzerland

### Abstract

*There is an expectation that all-day schools – schools that provide regular compulsory school instruction and in addition extended education offerings for voluntary participation – will reduce existing education inequality. This study focuses on whether utilization of extended education offerings varies in dependency on family background (migration background and socioeconomic status) or whether all-day schools are utilized equally by all students. In the framework of the research project EduCare-TaSe – All-Day Schools and School Success? this study examined utilization of extended education offerings in 1,099 students in Grade 1 at 53 all-day schools in the German-speaking part of Switzerland. The main finding is that the odds of utilizing extended education offerings are higher for students with a migration background and, further, that the odds of utilizing extended education offerings increase with higher socioeconomic status. Among children who utilize extended education offerings, intensity of utilization was higher for students with a migration background and for students with low socioeconomic status. But there are no indications that these two (risk) factors mutually influence each other with respect to intensity of utilization. For children at risk in the Swiss education system that have both migration background and low socioeconomic status only an additive effect can be detected.*

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**Keywords**

*All-day schools; Educational inequality; Migration background; Socioeconomic status*

## **Die Nutzung von Tagesschulangeboten an Deutschschweizer Tagesschulen**

**Zusammenfassung**

*Eine Erwartung an Tagesschulen – eine Schule, die neben dem obligatorischen Unterricht auch freiwillige Angebote führt – ist die Verringerung von bestehenden Bildungsungleichheiten. In der vorliegenden Studie wird die Frage fokussiert, ob das Tagesschulangebot in Abhängigkeit vom familiären Hintergrund (Migrationshintergrund und sozioökonomischer Status) unterschiedlich genutzt wird oder ob es der Tagesschule gelingt, alle Schülerinnen und Schüler gleich gut zu erreichen. Im Rahmen der Studie EduCare-TaSe – Tagesschule und Schulerfolg? wurden in der Deutschschweiz 1099 Erstklässlerinnen und Erstklässler aus 53 Tagesschulen hinsichtlich deren Nutzung des Tagesschulangebots untersucht. Zentraler Befund ist, dass Nutzende des Tagesschulangebots mit Migrationshintergrund einerseits und Nutzende mit einem niedrigen sozioökonomischen Status andererseits das Tagesschulangebot intensiver nutzen als Schülerinnen und Schüler ohne Migrationshintergrund bzw. mit hohem sozioökonomischem Status. Es gibt jedoch keine Hinweise darauf, dass sich diese beiden (Risiko-) Faktoren bezüglich der Nutzungsintensität gegenseitig beeinflussen. Bei den Risikokindern des Schweizer Bildungssystems, die sowohl einen Migrationshintergrund als auch einen niedrigen sozioökonomischen Status aufweisen, lässt sich somit lediglich ein additiver Effekt hinsichtlich deren Nutzung von Tagesschulangeboten feststellen.*

**Schlagwörter**

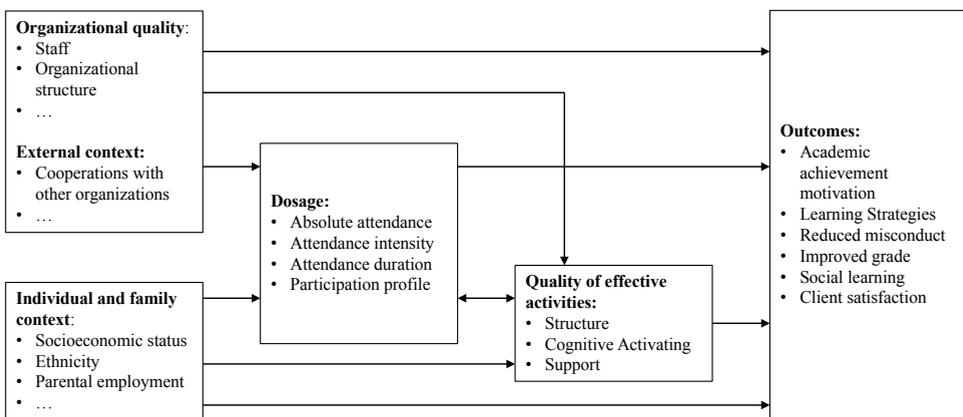
*Tagesschulen; Bildungsungleichheit; Migrationshintergrund; Sozioökonomischer Status*

**1. Introduction**

All-day schools are relatively new in Switzerland; although they are still few in number, all-day schools have been expanded strongly in the last ten years (Schüpbach, 2010). An all-day school in Switzerland is a school that provides the regular compulsory school instruction hours and, in addition, offers extended education activities for voluntary participation. The extended education offerings are mostly supervised lunch and afternoon care. These are usually offered on five days a week. Children who do not attend these extended education offerings are cared for by their parents at lunchtime and in the afternoon.

By expanding these all-day schools in the German-speaking part of Switzerland and Switzerland in general, the hopes and expectations are for better reconciliation of family life and work and better support for development of academic achievement. There is also the expectation that all-day schools can help combat existing educational inequality (Holtappels, 2006; Schüpbach, Herzog, & Ignaczewska, 2013; Soremski, Urban, & Lange, 2011). It is expected that all-day schools, by providing an environment as optimal as possible, will better promote the development of educationally disadvantaged children (Bourdieu, 1982). As compared to other European countries, there is strong educational inequality in Switzerland, whereby the disadvantage concerns mainly children with a migration background and low socioeconomic status, who are also referred to as children at risk (Konsortium PISA.ch, 2014; Moser & Bayer, 2010). Relevant to the expectation that all-day schools can combat educational inequality, Brake (2011) brought up three fields of investigation that must be considered in this connection: First, the social-structural utilization of existing extended education offerings; here the aim is to examine whether and to what extent students with a migration background and low socioeconomic status utilize the offerings, which is the focus of this paper<sup>1</sup>. Second, it is important to examine the quality and form of the extended education offerings; the aim in this field of investigation is to look at the qualitative fit of the offerings to the needs of students with a migration background and low socioeconomic status. Third, research should also focus on the effects of extended education offerings – that is, study various aspects of the children’s development in connection with utilization of extended education offerings. These three fields of investigation presented by Brake (2011) are also found in a theoretical framework model by Stecher and Maschke (2013).

Figure 1: A general model of educational effectiveness in the field of extended education (Stecher & Maschke, 2013, p. 34)



1 The research was conducted at the University of Bern, Switzerland.

The goal of all-day schools (schools with extended education activities) is a variety of outcomes: academic achievement, learning strategies, social learning, and so on. However, it can be assumed that the outcomes are affected by the quality of the activities, the dosage of attendance (utilization), organizational context and other external contexts, and the individual and family context. In this paper we focus on the connection between the blocks *individual and family context* and *dosage* (Stecher & Maschke, 2013 – see Figure 1). Considering that outcomes are dependent also on the dosage, we wanted to find out what students make use of the extended education services. With regard to issues in educational inequality, we are interested in the utilization of extended education offerings by students with a migration background and low socioeconomic status. In a first step, this should be looked at with respect to the overarching issue of whether utilization of extended education offerings can be seen as a means to combat educational inequality.

### 1.1 State of research on utilization of extended education offerings

Up to now there has been no research in Switzerland on utilization of extended education offerings. Currently available are only education statistics on families in Switzerland and their utilization of childcare options outside the family. The data, collected by the Federal Statistical Office (Bundesamt für Statistik, 2008), include day schools for school-age children as well as all-day childcare services for preschoolers, privately organized non-institutional care (babysitter, nanny), and other formal care arrangements. The data provides no specific information on utilization of extended education offerings. The results of the Swiss Survey of Children and Youth – a representative longitudinal study in the German- and French-speaking parts of Switzerland – revealed that childcare services for children are utilized especially by families with high incomes and high educational attainment (Schmid, Kriesi, & Buchmann, 2011). But as the figures included privately organized forms of childcare, the results do not uncover utilization of extended education offerings.

Some research findings are already available from Germany, where the development of all-day schools has been similar in recent years. To be mentioned in particular are the results of the *Studie zur Entwicklung von Ganztagschulen* (StEG) [Study on the development of all-day schools], which is based on a Germany-wide representative sample of 373 all-day primary and secondary schools. In 2005 and 2007 data on utilization of all-day school offerings was gathered, and it was found that family social origin at the two measurement points (2005 and 2007) had an effect on the utilization of all-day school offerings at the primary level (Steiner, 2009). Children in families with an academic background had considerably greater odds of utilizing the extended education offerings than other children. The odds of utilizing extended education offerings were higher for families from East Germany, families where both parents worked, and single-parent families. No differences in utilization between families with and with no migration background were found.

Further findings of the StEG showed that the selection effect in utilization on the basis of unfavorable social background remains largely stable over time (Steiner & Fischer, 2011).

In addition to the results of the StEG, Germany-wide findings on the utilization of all-day schools at the primary level are also available from the German sample of the *Progress in International Reading Literacy Study* (PIRLS) of 2006. The descriptive analyses indicate that the number of students with a migration background and students with low socioeconomic status utilizing extended education offerings at all-day schools was disproportionately high (Holtappels, Radisch, Rollett, & Kowoll, 2010). The students were also examined more closely with regard to utilization intensity. Here, the same tendencies were found: Students utilizing all-day schools' extended education offerings more intensively more often had a migration background and low socioeconomic status than students utilizing the offerings less intensively (Holtappels et al., 2010). Willems, Wendt, Gröhlich, Walzebug, and Bos (2014) conducted analyses on utilization using the data from the German PIRLS 2011 and data from the *Trends in International Mathematics and Science Study* (TIMSS). The analyses are based on Germany-wide representative data from 181 school principals and 3,566 students in Grade 4. Regarding all-day schools with voluntary participation in extended education offerings as defined in this paper, socially-related selection effects were found. The offerings were utilized more often by children from families with a migration background and high socioeconomic status, whereby migration background was found to be a significant predictor.

Utilization of extended education offerings at all-day schools was examined in 2009 based on data from the *German Socio-Economic Panel* (SOEP). It was found that extended education offerings were utilized especially by children from families with very high and very low socioeconomic status (Eichhorst, Marx, & Tobsch, 2011). Children from families with middle socioeconomic status were underrepresented among users of extended education offerings. No differences in utilization between families with and with no migration background were found.

Research efforts on utilization of all-day school offerings were continued in the German federal state of North Rhine-Westphalia. In the context of the state-wide *Bildungsberichterstattung Ganztagschule NRW* (BiGa) [Educational reporting on all-day schools in North Rhine-Westphalia], data on all-day schools have been regularly and systematically collected since 2010. Börner, Steinhauer, Stötzel, and Tabel (2012) found that the odds of utilizing extended education offerings increased with higher socioeconomic status of the family. In addition, students with a migration background were overrepresented in extended education offerings in North Rhine-Westphalia in 2012.

In summary, the current state of research on utilization of extended education offerings at all-day schools in Germany is the following: It is relatively well supported empirically that children from families with higher socioeconomic status or higher educational attainment tend to utilize extended education offerings more often than other children. However, there are also studies that found the oppo-

site, such as the study by Holtappels et al. (2010). In addition, and as mentioned above, Eichhorst et al. (2011) found that children from families with middle incomes utilize extended education offerings at all-day schools less often than children from families with high and low incomes. The findings pertaining to migration background are not clear. Some studies in Germany found that students with a migration background are overrepresented at extended education offerings at all-day schools; other studies found no evidence of this. Further studies on origin-specific utilization of extended education offerings are needed.

Moreover, there are hardly any findings available on intensity of utilization. Holtappels et al. (2010) found that students with a migration background and students with low socioeconomic status tend to utilize extended education offerings at all-day schools more, but their analysis is purely descriptive.

The findings of the studies in Germany do not automatically apply to Switzerland, however. There are structural differences between Germany and Switzerland with regard to the costs that parents are required to pay for extended education offerings. In Germany in the year 2012, around 40 % of extended education activities were free of charge, with a small charge for school lunch (Fischer, Klieme, Holtappels, Stecher, & Rauschenbach, 2013). In Switzerland parents are required to pay an income-dependent, substantial fee for extended education activities and for school lunch. Further, all-day schools were frequently established in Switzerland for the purpose of assisting families with childcare (Bundesamt für Sozialversicherung, 2013), whereas in Germany there is an additional focus on the educational value of the offerings (Hömann, Holtappels, & Schnetzer, 2004). These and other differences between Germany and Switzerland indicate that the research evidence from Germany cannot be applied to Switzerland unconditionally.

## 1.2 Research questions

On the basis of Stecher and Maschke's (2013) model and the current state of research, this paper will analyze and answer the following research questions with regard to (a) general utilization, and (b) intensity of utilization:

- 1) How do the risk factors migration background and socioeconomic status affect students' utilization of extended education offerings?
- 2) Are there any interaction effects between these two factors (migration background and socioeconomic status) in students' utilization of extended education offerings?

These questions will be studied from two perspectives, considering (a) whether a student utilizes extended education offerings at all, and (b) whether the intensity of utilization is influenced by the two risk factors *migration background* and *socioeconomic status*. Analyzing interaction effects between the two factors will produce insight into the question as to how, and to what extent, the utilization of extended education offerings by children at risk, meaning children with both migration background and low economic status, is affected.

## 2. Method

### 2.1 Design und sample

The research questions were studied in a research project, *EduCare-TaSe – All-Day School and School Success?*, which is funded by the Swiss National Science Foundation. EduCare-TaSe is studying children in Grades 1 and 2 at all-day schools. At the voluntary all-day schools, some children utilize the extended education offerings, whereas others do not. A complete survey of primary schools with extended education offerings in the German-speaking part of Switzerland was conducted. As there is no uniform definition of all-day schools in Switzerland, EduCare-TaSe used the following definition and operationalization: A primary school with extended education, called an all-day school in the following, is a primary school with (a) open-attendance, voluntary extended education offerings, (b) extended education offerings on at least 3 days per week, and (c) extended education at lunchtime and in the afternoon. And for economic efficiency reasons, the study included only larger schools having (d) at least 2 parallel classes at the primary school level. Based on estimates provided by the education departments of the cantons in German-speaking Switzerland, 251 primary schools meeting these four criteria were identified. In the end, 53 primary schools and thus open-attendance all-day schools in 13 cantons participated in the study. 1,990 households were then asked to provide information on family background variables. We provided different possibilities to answer our call including paper-based or online questionnaires in several languages. Finally 55 % of the households responded to our call. As a result, the sample consisted of  $N = 1,099$  students in 120 Grade 1 classes at 53 all-day schools in 13 cantons. As to utilization, 284 (25.84 %) of the students utilized extended education offerings in Grade 1. In the total sample, 529 (48.13 %) students had a migration background (at least one parent had been born outside of Switzerland). The average socioeconomic status, measured using the *Highest International Socio-Economic Index of Occupational Status* (HISEI) (Ganzeboom, 2010), was 58.52 ( $SD = 21.02$ ).

### 2.2 Instruments and variables

#### 2.2.1 Dependent variable

*Utilization and intensity of utilization of extended education offerings.* The dependent variable ‘utilization and intensity of utilization of extended education offerings’ was measured by obtaining data from school principals. In all-day schools in Switzerland, parents will enroll their children for a certain number of hours per week before a school year begins. For each Grade 1 student participating in the study the heads of extended education provided this information on how many hours per week the students utilized extended education. The tally showed that

25.84 % (284 students) utilized an extended education offering. On average the 284 users utilized extended education for 8.87 hours per week, with intensity of utilization ranging from 0.83 (minimum) to 36.67 hours (maximum) ( $SD = 6.94$ ).

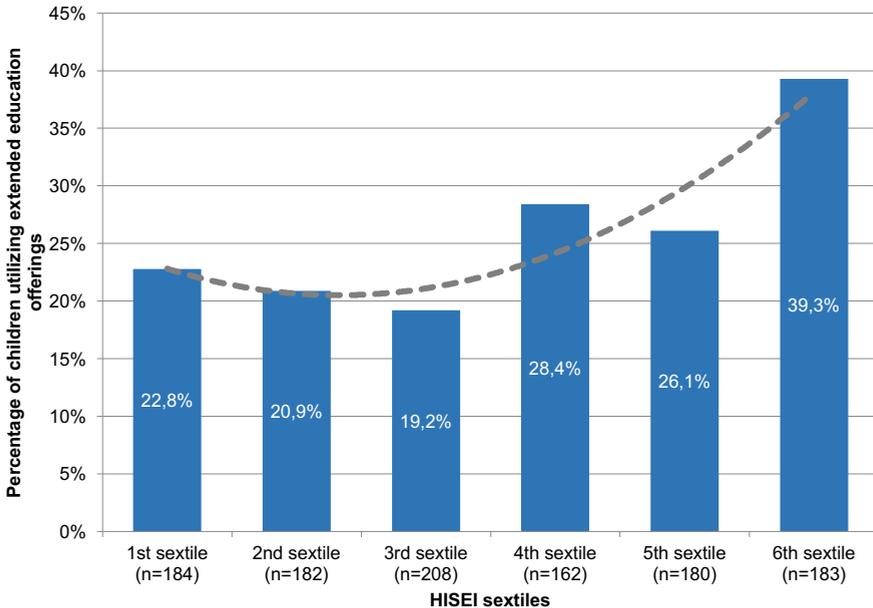
### 2.2.2 Independent variables

*Migration background.* Information on the students' migration background was collected by parent questionnaire. A child had a migration background if at least one parent had been born outside Switzerland; this included 1st and 2nd generation immigrants. This definition of migration background is the one used also by PISA 2012 (Prenzel, Sälzer, Klieme, & Köller, 2013). Among students that utilized extended education offerings, 54.58 % had a migration background; among the students that did not utilize extended education offerings, 45.89 % – a smaller percentage – had a migration background. The difference was statistically significant ( $\chi^2(1, N = 1099) = 6.02, p \leq .05$ ). Among users of extended education offerings, students with a migration background utilized extended education on average for 10.85 hours per week; students with no migration background attended extended education on average for 6.58 hours per week. The difference in the number of hours of utilization was significant ( $t(282) = -5.55, p \leq .001$ ).

*Socioeconomic status.* Socioeconomic status was captured by parent questionnaire, using the Highest International Socio-Economic Index of Occupational Status (HISEI) (Ganzeboom, 2010). The average HISEI of families with children utilizing extended education offerings was 62.23; the average HISEI of families with children not utilizing extended education offerings was 57.22. The difference was statistically significant ( $t(1097) = -3.49, p \leq .05$ ).

Using descriptive analyses we examined whether, comparable to Eichhorst et al. (2011), students with a middle HISEI possibly utilize extended education offerings less than students with a low or high HISEI. Indeed, children in families with a middle HISEI utilized extended education offerings less often. To illustrate, Figure 2 shows sextiles of the HISEI and the percentage of users of extended education offerings in each sextile. The strongest users of extended education were children in families with a high HISEI. Children in the second (20.9 % users) and third (19.2 % users) HISEI sextiles utilized extended education less than children in the first (22.8 % users) or in the fourth (28.4 % users), fifth (26.1 % users) or sixth sextile (39.3 % users). In the following analyses, we tested whether there was a significant quadratic relationship between utilization of extended education offerings and HISEI.

Figure 2: Percentage of children utilizing extended education offerings by socioeconomic status (HISEI) sextiles (N = 1,099)



### 2.3 Analysis and model specification

The statistical analyses were conducted using Software Mplus (Version 7.3). To answer the two questions, multiple two-part regression models were calculated. One two-part model makes it possible to analyze semicontinuous data (Olsen & Schafer, 2001). The dependent variable ‘utilization and intensity of utilization of extended education offerings’ is a variable of that kind, as the 815 students that do not utilize extended education offerings had the value 0 and continuous values exist only for the 284 students that utilize extended education offerings (utilization of extended education offerings in number of hours per week). Within one model, then, we calculated for users of extended education offerings: (a) using logistic regression analysis, the effect of the independent variable on general utilization of extended education offerings (dichotomous: utilization vs. no utilization), and (b) using linear regression analysis, the effect of the independent variable on intensity of utilization (continuous: utilization of extended education offerings in number of hours per week). Each model thus had two parts. The values of these part models differed due to the different scale level of the dependent variable. For (a) general utilization, the odds ratio (Exp(B)), and for (b) intensity of utilization, standardized regression coefficients ( $\beta$ ) were calculated and analyzed. It must also be noted that (a) for the logistic regression analyses, the calculated explained variance ( $R^2$ ) refers to Nagelkerke’s  $R^2$ , and (b) to the conventional squared correlation value ( $R^2$ ).

To answer the questions, four models were computed. In the first model the predictor *migration background*, in the second model in addition the predictor *socioeconomic status* (HISEI), and in the third model the *squared value of the HISEI* was added. With the third model, the aim was to check for the supposed quadratic relationship between HISEI and utilization of extended education offerings. For the HISEI variable, it is important to note that the z-transformed HISEI was squared. Children from families with a middle HISEI therefore had a smaller value on this squared variable than children from families with a low or high HISEI. An odds ratio greater than 1, or a regression coefficient greater than 0, means that students with a middle HISEI utilize extended education offerings less than students with a low or high HISEI. Using these three models, the first question can be answered.

The fourth model examined our second research question by adding the interaction term *migration background x HISEI* as a predictor. By means of  $\chi^2$  difference test using loglikelihoods each model was tested compared to the previous model to check whether the newly added predictor improved model fit. When estimating the standard error, in all analyses we used the option “type = complex” in Mplus to take into account the cluster structure of the data. For all 1,099 students, all values of the dependent and independent variables were available, so that no missing values had to be estimated.

### 3. Results

Table 1 shows the computed two-part regression models that answer the research questions. The first three models address the first research question: What students – in dependency on family background (migration background, socioeconomic status) – utilize extended education offerings (a) in general, and (b) how intensively? The predictor *migration background* was incorporated in model 1 and proved to be significant. With an odds ratio of 1.42 ( $p \leq .05$ ), the odds of students with a migration background utilizing extended education in general were 1.42 times that of students with no migration background. For users of extended education offerings, the predictor *migration background* was also found to be significant ( $\beta = 0.28$ ,  $p \leq .001$ ) with regard to intensity of utilization. This means that the intensity of utilization was higher for students with a migration background. Migration background explained (a) approximately 1 % ( $R^2 = .01$ ) of the variance of general utilization of extended education offerings, and (b) approximately 8 % of the variance of intensity of utilization of extended education offerings. The predictive power of migration background with regard to general utilization was thus moderate. Still, model 1 improved significantly compared to the “null model” with no predictors ( $\Delta\chi^2 = 25.86$ ;  $\Delta df = 2$ ;  $p \leq .001$ ). In model 2 multiple regression analyses were computed with HISEI as an additional predictor. As in model 1, migration background proved to be a significant predictor in both part models. The odds of a student using extended education offerings in general – independently of mi-

gration background – increased significantly with a higher HISEI ( $\text{Exp}(B) = 1.37$ ;  $p \leq .001$ ). The part analysis of intensity of utilization showed that the predictor *migration background* again had a significant effect on intensity of utilization ( $\beta = 0.23$ ;  $p \leq .001$ ), and *HISEI* had a significant negative effect on intensity of utilization ( $\beta = -0.16$ ;  $p \leq .01$ ). For users of extended education, intensity of utilization was higher for students with a migration background and decreased with increasing HISEI. Model 1 was significantly better than model 2 ( $\Delta\chi^2 = 27.21$ ;  $\Delta df = 2$ ;  $p \leq .001$ ). This is also indicated by the explained variances, which increased in the part model of (a) general utilization ( $R^2 = .04$ ) and also in the part model of (b) intensity of utilization ( $R^2 = .10$ ).

Model 3 tested whether there is a quadratic relationship between HISEI and utilization of extended education offerings, taking into account the linear portion of HISEI and migration background. As in model 2, the predictor *migration background* proved to be a significant predictor of general utilization of extended education offerings. The predictor *HISEI* (linear portion), with an odds ratio of 1.56 ( $p \leq .001$ ), and the predictor *squared HISEI* (quadratic portion), with an odds ratio of 1.35 ( $p \leq .001$ ), were significant with regard to general utilization of extended education offerings. The decision to utilize extended education offerings thus increases with higher HISEI (linear portion). This linear increase is due in particular to the more frequent utilization of extended education offerings by children from families with an especially high HISEI; the difference in utilization between children from families with a middle and low HISEI was less pronounced (quadratic portion). This part model of general utilization of extended education offerings explained approximately 5 % of the variance ( $R^2 = .05$ ). The analysis of users of extended education offerings showed that again, the predictor *migration background* had a significant positive effect ( $\beta = 0.23$ ;  $p \leq .001$ ) and *HISEI* had a significant negative effect ( $\beta = -0.14$ ;  $p \leq .05$ ) on intensity of utilization. The quadratic portion of HISEI did not significantly predict intensity of utilization ( $\beta = 0.05$ ;  $p > .05$ ). That means that users utilize extended education offerings less intensively with increasing HISEI and that there is no extra prediction power due to difference between children from families with a low, middle or high HISEI. This part model in intensity of utilization explained approximately 11 % of the variance of the dependent variable ( $R^2 = .11$ ). Altogether, model 3 had better fit than model 2 ( $\Delta\chi^2 = 12.43$ ;  $\Delta df = 2$ ;  $p \leq .01$ ). It should be noted here overall that the effects are statistically significant, but the explained variances with regard to (a) general utilization and (b) intensity of utilization of extended education offerings were rather small.

Model 4 served analysis of the second research question. Here, in addition to the predictors *migration background* and *HISEI*, the interaction *migration background x HISEI* was included as a predictor. Again, the predictors *migration background* and *HISEI* proved to be significant with regard to general utilization of extended education offerings. The odds ratio of the interaction term was not significant: 0.77 ( $p > .05$ ). Whether or not a student utilizes extended education offerings can therefore not be predicted by an interaction between the predictors *mi-*

Table 1: Two-part regression model with utilization of extended education as dependent variable

Predictors	Model 1		Model 2		Model 3		Model 4	
	a) General utilization (0 = No; 1 = Yes)	b) Intensity of utilization (in hours per week)	a) General utilization (0 = No; 1 = Yes)	b) Intensity of utilization (in hours per week)	a) General utilization (0 = No; 1 = Yes)	b) Intensity of utilization (in hours per week)	a) General utilization (0 = No; 1 = Yes)	b) Intensity of utilization (in hours per week)
	Exp(B)	$\beta$ (standardized) [SE]						
<b>Migration background</b> (Reference: no migration background)	1.42*	.28*** [.05]	1.65**	.23** [.06]	1.58**	.23*** [.06]	1.76**	.26*** [.05]
<b>Socioeconomic status</b> (HISEI)			1.37***	-.16** [.06]	1.56***	-.14* [.06]	1.63**	-.05 [.07]
<b>Squared socioeconomic status</b> (HISEI x HISEI)					1.35***	.05 [.08]		
<b>Interaction</b> (Migration background x Socioeconomic status (HISEI))							0.77	-.12 [.09]
<b>R<sup>2</sup></b>	.01	.08	.04	.10	.05	.11	.05	.11
<b><math>\chi^2</math> difference Test</b> (using LL / tested to zero-model)	$\Delta\chi^2 = 25.86^{***}$ (ndf = 2)		$\Delta\chi^2 = 27.21^{***}$ (ndf = 2)		$\Delta\chi^2 = 12.43^{**}$ (ndf = 2)		$\Delta\chi^2 = 3.30$ (ndf = 2)	

Note. N[students] = 1099; k [schools] = 53  
\*p ≤ .05, \*\*p ≤ .01, \*\*\*p ≤ .001

*migration background* and *HISEI*. The part model on intensity of utilization revealed that migration background was the only predictor that had a significant effect on intensity of utilization ( $\beta = 0.26$ ;  $p \leq .001$ ). Compared to model 2, the effect of the predictor *HISEI* ( $\beta = -0.05$ ;  $p > .05$ ) lost predictive power with regard to intensity of utilization when the interaction term was added to the model. As with the part model on (a) general utilization, the included interaction term in the part model on (b) intensity of utilization was not significant ( $\beta = -.12$ ;  $p > .05$ ). The explained variances ( $R^2 = .05$  and  $R^2 = .11$ ) showed that about 1 % more of the variance was explained than in model 2; however, model 4 did not appear to have better fit ( $\Delta\chi^2 = 3.30$ ;  $\Delta df = 2$ ;  $p > .05$ ) than model 2.

In summary, with regard to general utilization, students with a migration background and a higher HISEI were more likely to utilize extended education offerings. But it should be noted that students with a middle HISEI were less frequently users of extended education offerings than students with a low or high HISEI. Among users of extended education offerings, intensity of utilization increased with migration background and decreased with a high HISEI. There were no interaction effects between the predictors *migration background* and *HISEI*. As the results on general utilization and intensity of utilization were much the same for students in Grade 2, we report here the results for students in Grade 1 only.

## 4. Discussion

This study looked at students in Grade 1 that attend all-day schools with voluntary extended education offerings in the German-speaking part of Switzerland. Parents decide whether their children utilize extended education offerings or not. The main research questions were: (1) How do the risk factors migration background and socioeconomic status affect students' utilization of extended education offerings? and (2) Are there any interactions between these two risk factors? The two questions were studied with regard to (a) general utilization and (b) intensity of utilization. The questions are relevant in the light of today's education policy debate on all-day schools and the issue of whether all-day schools can be a means to combat educational inequality.

Regarding the first question, we found that the odds of utilizing extended education offerings increase if a child has a migration background or if the child comes from a family with high socioeconomic status. In addition, there is a quadratic effect of socioeconomic status on general utilization: Especially children from families with a high HISEI are more likely to utilize extended education offerings, whereas the difference in utilization between children from families with a middle or low HISEI is smaller. The finding that migration background is a significant predictor of utilization is in line with results of the PIRLS studies in Germany (Holtappels et al., 2010; Willems et al., 2014) and with studies conducted in the German federal state of North Rhine-Westphalia (Börner et al., 2012). In contrast,

the results of the StEG found no difference in utilization between students with and without migration background (Steiner, 2009; Steiner & Fischer, 2011). One reason for the inconsistent findings could be the different operationalization of migration background in the different studies.

The finding that children from families with high socioeconomic status are more likely to utilize extended education offerings is in agreement with current findings in Germany (Börner et al., 2012; Eichhorst et al., 2011; Steiner, 2009; Willems et al., 2014). A possible explanation for this finding is that parents with high socioeconomic status might pursue work more often than other parents, have less time for their children and accordingly show higher odds of utilizing extended education offerings. The income-dependent fee for the offerings charged in Switzerland could be a reason for the quadratic effect of socioeconomic status found in this study. From a financial standpoint, extended education offerings are possibly easier to afford by families with low and high incomes. For families with middle socioeconomic status and thus middle incomes, utilization of extended education offerings possibly does not pay. However, the fact that this effect in connection with income was found in Germany (Eichhorst et al., 2011), where there is usually no income-dependent charge for extended education offerings, shows that in addition to income-dependent charges also further, still unknown mechanisms may also be involved.

The analysis of intensity of utilization (question 1, b) reveals that intensity of utilization is higher with a migration background but at the same time decreases with higher socioeconomic status. Students with a migration background and students with a low socioeconomic status utilize extended education offerings the most intensively. The fact that students in Switzerland with a migration background utilize extended education offerings more frequently and thus show higher intensity of utilization could be due to families with a migration background having fewer resources. It is safe to assume that it tends to be less possible for families with a migration background to rely on relatives for childcare and that for this reason they utilize extended education offerings for their children more often and more intensively. Childcare provided by relatives continued to be the most common type of childcare in Switzerland in 2008 (Bundesamt für Sozialversicherung, 2013). Another reason could be that families with a migration background are more likely to utilize childcare services in the form of extended education offerings than families with no migration background due to their different traditional backgrounds. Parents with a migration background might have grown up within a context that, compared to Switzerland, has a stronger tradition of childcare service and will therefore have greater odds of utilizing extended education offerings.

This study also found that whereas with higher socioeconomic status, the frequency of utilization increases, the intensity of utilization decreases. The latter finding is consistent with the study by Holtappels et al. (2010). As we stated earlier, the higher probability of utilizing extended education offerings among parents with high socioeconomic status might be explained by assuming that those parents pursue work more often. However, at the same time it is conceivable that among the families who do utilize extended education offerings, those families with

high socioeconomic status more frequently use privately organized care for their children or more frequently work part-time due to better-paid employment, all of which results in a lower intensity of utilization among this group.

The analysis for the second research question revealed that there are no interaction effects between migration background and socioeconomic status with regard to both (a) general utilization and (b) intensity of utilization of extended education offerings. There are thus no indications that the two (risk) factors mutually influence each other with regard to intensity of utilization. For at-risk children in the Swiss education system with a migration background and low socioeconomic status, only an additive effect can be detected.

There are four main limitations of this study that should be mentioned. First, the data are on utilization of extended education offerings in Grade 1. The question arises as to how stable utilization behavior is across several grades of primary school also in dependency on family background characteristics such as migration background and socioeconomic status. The StEG in Germany found that utilization of extended education offerings decreases with increasing age of the children (Steiner & Fischer, 2011). Here the question arises as to whether exit out of extended education across the grade levels is again affected by background characteristics such as migration background or socioeconomic status. Second, for the sample recruitment, letters were sent to the parents of 1,990 students, and the response rate was about 55 %. Although various measures were taken, such as sending multiple reminders and using translators, selection effects in the sample cannot be ruled out. For instance, it is reasonable to assume that families with little knowledge of German are underrepresented in the sample. Furthermore, this sample is based on larger schools, wherefore no conclusions can be made concerning the utilization in smaller Swiss all-day-schools. Third, there was no information about the parents' employment status included. The parents' employment status will most probably correlate with the utilization of extended education offerings of their children and should therefore be considered in a further study. And fourth, structural characteristics of the individual all-days schools were not examined explicitly in the analyses in this study, even though the schools can differ, for example between the cantons (states) due to Switzerland's federalist education system. These should be examined in future studies.

All in all, the findings of this study can be seen as important building blocks in the discussion on all-day schools as a means to combat educational inequality in Switzerland. For children at risk in the Swiss education system, who have both a migration background and low socioeconomic status, there seem to be opposite effects in play: Migration background promotes general utilization, whereas low socioeconomic status hinders general utilization. This finding can be taken as an indication that students with a migration background and low socioeconomic status are not generally underrepresented at all-day schools. The fact that in addition users of extended education offerings with a migration background and low socioeconomic status belong to the students using these offerings more often indicates that disadvantaged students can be reached. In terms of social inequality this re-

sult is to be rated positively because it opens up the possibility of all-day schools indeed fostering children at risk. Research efforts on the effectiveness and quality of all-day schools gain legitimacy through these findings. It is to be hoped that particularly also the findings on the unequal utilization and intensity of utilization of the extended education offerings – low utilization by children from families with middle socioeconomic status or also the decrease in intensity of utilization with increasing socioeconomic status – will provide an impetus for the expansion of all-day schools currently underway in Switzerland.

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