Chapter 4

Psychological, Socio-cultural and Demographic Correlates of Cognitive Skills Among Immigrant and Non-immigrant Children

Abstract

Research into the psychological and socio-cultural determinants of early cognitive skills among immigrant children with different ethnic background in Italy has been very limited to date. Using a sample of immigrant (Albanian, Serbian, Russian) and non-immigrant (Slovene and Italian) school-aged children, the present study investigates the associations among ethnic background, family SES, as well as child psychological and socio-cultural adjustment with cognitive skills. Results indicated that immigrant children’ scores on both language and cognitive tests were lower when compared to their peers from other ethnic non-immigrant groups. Importantly, presenting more psychological and socio-cultural adjustment problems was associated with lower language and cognitive skill scores and specifically in immigrant children from low SES families. Results are discussed with reference to the shared early social and educational experiences of immigrant children in respect to their non-immigrant peers.

4.1 Introduction

The present study intends to offer a more detailed analysis of children’s psychological and socio-cultural adjustment outcomes, expanding such analysis in two directions. Firstly, we investigated these outcomes in light of additional variables linked to child cognitive skills. Secondly, the relations among variables are parsed out through an investigation of their patterns in children from different ethnic groups with immigrant (Albanian, Serbian and Russian) and non-immigrant (Slovene and Italian) backgrounds.

In achieving such goals, two important methodological considerations guided our research plan. First, we aimed at focusing on the impact of immigration experience on child outcomes, opting for immigrant versus non immigrant comparisons. In doing so, we considered in conjunction our immigrant groups based on their distinctive
immigration experience. This approach was adopted in line with prior investigations into multicultural immigrant groups, which were conducted with regard to their immigration experiences (Leavey et al., 2004). Second, we considered separately our non-immigrant groups, i.e. Italian and Slovene, based on the conviction that they differ with respect to immigration, so children from both these groups could present similarities regarding the hypothesized relation between children’s immigrant background, psychological, socio-cultural outcomes and cognitive skills. Moreover, we thought that the Italian vs. Slovene group distinction is extremely important in terms of specific ethnic connotations. More precisely, the Slovene children are part of the autochthon minority with a specific ethnic status in the area investigated. They represent the dominant ethnic minority group, which is one of the important factors for regional development from a social and cultural point of view (Brezidar, 1999). Based on these considerations, we aimed to explore the existing differences in children’s adjustment and cognitive achievement due to different life circumstances, as they are reflected in school-aged multiethnic sample of immigrant (Albanian, Serbian and Russian) and non-immigrant (Italian and Slovene) pupils.

The school-age period is a particularly important time in children’s lives, linked to significant educational goals in cognitive and verbal skill performance that are predictive of later academic success (Alexander, Entwisle, & Horsey, 1997). Adequate levels in these skills are crucial in facilitating positive psychological and socio-cultural adjustment to academic and socially related settings. For example, children’s school achievement marked by verbal and cognitive performance, as well as demographic characteristics such as family SES levels and specific ethnic background, jointly facilitate or prevent children’s adjustment problems (Hall, Huppertz & Levi, 1977).

The relationship between child adjustment and cognitive skills is well established in the literature. A huge amount of research suggests the importance of the link between child cognitive achievement and adjustment, pointing out that maladjusted children lack in cognitive skills (Asarnow & Weintraub, 1985). For example, socially competent children are more capable of generating more and different problem solutions than their aggressive and socially isolated peers (Richard & Dodge, 1982). Thus, antisocial children and adolescents present poor social and cognitive functioning, as measured by standardized tasks (Jones, Forster & Skuse, 2007). Inadequate responses to such stress in children of school age generates a range of problems, including poor academic performance, anxiety and depression (Kovacs, 1997; Frydenberg et al., 2004).
For immigrant children, who frequently have been reported as having worse cognitive outcomes (Kolaitis et al., 2003) and higher rates of mental health problems than their non-immigrant peers (Yurtbay et al., 2003; Leavey et al., 2004; Jaycox et al., 2002; Sonderegger & Barrett, 2004; Dimitrova & Tallandini, 2006), positive psychological and socio-cultural adjustment in school and peer context may be particularly important for a successful cognitive achievement. To date, research has yet to investigate the strength of the association between psychological and socio-cultural characteristics and school-based cognitive skills among immigrant children. These issues are of extreme relevance to better understand their cognitive achievement in order to promote positive outcomes of this growing part of students in the Italian schools.

The current state of research into cognitive skills among immigrant children is limited. Sparse school-related research has been conducted in some European countries (Yurtbay et al., 2003; Leavey et al., 2004), thus there is a surprisingly small number of studies on children with immigrant background within Italian literature (Di Pentima, 2007). Despite this, findings indicate important trajectories to the study of immigrant child cognitive achievement. For instance, the studies of Kolaitis et al. (2003), report no differences between Russian immigrant and Greek native children in their psychological and socio-cultural adaptation in a working-class area of Athens. Despite such unexpected results, immigrant children were more disadvantaged in language-related and cognitive tasks. Moreover, poor cognitive performance in the immigrant group appeared to be a strong predictive factor for school failure and higher levels of school drop out than for those in the non-immigrant group.

In another study including immigrant children, cognitive skills appeared to be an important variable linked to severe psychological and socio-cultural problems of school-aged population in London (Leavey et al., 2004). Not having English as their first language was a significant risk factor for additional distress, as immigrant children recorded higher levels for psychological and socio-cultural problems, thus supporting the migration-morbidity hypothesis of the likelihood of greater distress among immigrant compared to non-immigrant groups.

However, though positive cognitive abilities have been shown to facilitate adjustment among immigrant children of other ethnic groups (Janssen et al., 2004), to our knowledge these associations have yet to be better identified in a sample of immigrant children with Albanian, Serbian and Russian background. As these abilities
Immigrant Children Cognitive Skills

may characterize the adaptation to the school context that in turn may promote successful academic and psychological outcomes, defining the association between language and cognitive skills among immigrant children may be important to understand their cognitive competence, as well as their influence on child psychological and socio-cultural adjustment. Therefore, we have included in the current study Slovene and Italian native groups in order to determine the impact of children’s psychological and socio-cultural characteristics on cognitive skills. To date, it is unknown whether these associations which had been observed in other ethnic groups may also apply to Albanian, Serbian and Russian, Slovene and Italian children. Furthermore, in case immigrant children’s psychological and socio-cultural adjustment characteristics are related to cognitive skills, we intend to verify whether such association is applicable only to this ethnic group of children, or may also be detected in children without immigration experience, as part of autochthon Slovene and native children in Italy.

Previous research has delineated several aspects of immigrant children language and cognitive skills, but no studies have yet investigated the relation between these skills and a child’s psychological and socio-cultural adjustment problems (Kolaitis et al., 2003). Moreover, in an attempt to address the gap in immigrant children cognitive research, we intend to explore the degree to which child psychological and socio-cultural outcomes are linked to both language and cognitive performance for immigrant (Albanian, Russian and Serbian) and non-immigrant (Slovene and Italian) children.

In order to investigate these associations, an integrative conceptual model of child development, specifically designed for immigrant and ethnic minority contexts, was applied (Garcia Coll & Szalacha, 2004). The model emphasizes the role of demographic context (poverty or family socio-economic status) in understanding developmental outcomes of immigrant children in terms of academic and cognitive skills. This context interacts with the child and the family as it reflects social stratification (founded on ethnicity, gender and social class) affecting a child’s developmental outcomes such as academic achievement. According to this framework, the social stratification produces common psychological and socio-cultural patterns among immigrant children, irrespective of their ethnic background. These patterns reflect adaptive cultures, which include goals, attitudes and behaviors, created by immigrant children in order to distinguish them from the dominant culture of the host country.
Based upon these considerations, our study comprises a sample of immigrant children from three different groups (Albanian, Serbian and Russian) who present shared immigrant backgrounds and social stratification processes, but also may share similar adaptive behaviors reflecting their promoting and/or inhibiting contexts which may influence their language and cognitive outcomes. For our immigrant children, these common adaptive patterns may be expressed by increased psychological and socio-cultural difficulties and may be influenced by promoting (e.g., having a higher family SES) or inhibiting (e.g., living in economically disadvantaged environment) contexts.

Therefore, we also refer to groups of Italian children, as well as Slovene minority children whose psychological and socio-cultural correlates of cognitive skills may present similarities, given their common experiences as children of non-immigrant native groups in the local territory. Such an approach could help to better understand whether the reported associations in the literature between language and cognitive skills with psychological and socio-cultural outcomes could be observed only in the immigrant children or could be extended to Italian native and Slovene minority children in Italy.

With reference to the conceptual model that guided the study (Garcia Coll & Szalacha, 2004), we opted for a within-ethnic group approach, which consisted of separate analyses for each group. This approach allowed us to analyse language, cognitive, psychological and socio-cultural variables distribution within ethnic groups. Additionally, such study design has been suggested for the investigation of children from different cultural settings (Cooper, Jackson, Azmitia, & Lopez, 1998).

Also with reference to the theoretical model and previous findings, the present study addresses the effects of demographic characteristics (family SES), child psychological (depressive symptoms), and socio-cultural (emotional instability, prosocial behaviour, aggression) adjustment factors on language and cognitive capacities. According to previous findings, it was expected that a) immigrant children, due to their different school and socialization experiences, would present lower levels in both language and cognitive skills than their non-immigrant Slovene and Italian peers (Kolaitis et al., 2003); b) positive child psychological and socio-cultural adjustment such as low depressive symptoms, low emotional instability, low aggression and high prosocial behaviour, would be associated with both baseline level in language and cognitive skills regardless of ethnicity, and c) living in low SES family would be negatively associated with levels in language, cognitive, psychological and socio-
Immigrant Children Cognitive Skills

cultural outcomes for all groups, though the negative association between these variables would be strongest for the immigrant group (Leavey et al., 2004).

4.2 Method

4.2.1 Participants

The participants were recruited from twelve elementary and middle schools located in North East Italy, representing various communities' socioeconomic levels ranging from lower to middle class. Before testing the children, parental consent was obtained for every participant.

To be eligible for participation, immigrant children were required to meet two basic criteria. First, only families who had immigrated into Italy were included. None of our participants came from mixed (immigrant and non-immigrant parent) or refugee families. Secondly, we recruited immigrant children from the most locally representative ethnic groups (i.e., Albanian, Russian and Serbian families) to facilitate data interpretation based on homogeneous cultural comparison (Marks & Garcia Coll, 2007). In performing such comparisons in our sample, two main considerations need to be pointed out. First, we were interested in investigating the impact of immigration experience on child adjustment. We opted for immigrant vs. non immigrant comparison regarding the hypothesized relation between children’s psychological, socio-cultural adaptation and cognitive skills. This methodological approach was based on prior between-subject analysis into multicultural samples from different countries of origin, which were compounded regarding their immigration experiences (Leavey et al., 2004).

Our second aim was to compare immigrant and non-immigrant children’s adjustment in relation to specific cultural backgrounds. Regarding the non-immigrant sample - Italian and Slovene children - we considered these two groups separately. We intentionally kept the separation between Italian and Slovene groups because of the underlying social and cultural connotations. More precisely, the Slovene children belong to an autochthon minority group in the area considered, which has its own distinctive characteristics in terms of historical presence, minority status and ethnic cohesion. Also, similar criteria were applied in prior research comparing adjustment of ethnic minority non-immigrant vs. ethnic majority non-immigrant children (Atzaba-
Poria et al., 2005; Marks & Garcia Coll, 2007). Regarding the Slovene group, it should be noted that these children are bilingual— they use and speak fluently both the Slovene and Italian languages (Stranj, 1992).

The total sample for this study consisted of 323 participants (137 boys and 186 girls). Of the total, there were 132 immigrant children of whom 13% were Albanian ($N = 42$), 13% Russian ($N = 43$) and 14% Serbian ($N = 46$) children. The non-immigrant group was represented by 40% Italian ($N = 128$) and 20% Slovene ($N = 63$) children. The age range for participants was 7 to 13 years, with a mean age of 8.99 years ($SD = 1.34$). It was only for the immigrant group that we collected data concerning the length of residence after migration into Italy, which were classified in three major groups – 1 to 3 years, 4 to 5 years and 5 to 7 years of residence. In our immigrant group, 44 children were resident in Italy from 1 to 3 years, 40 – between 4 and 5 years and the remaining 48 were in the category of 5 to 7 years.

Family socio-economic status (SES) was assessed according to parents’ occupational status following requirements provided by the Italian Institute Occupational Classification System (Scarnera, 2001). When considering the whole sample, descriptive analyses indicated that the vast majority of the children came from middle and low SES families. In fact, fifty six per cent of the children ($N = 183$) were from middle SES and thirty two percent ($N = 105$) from low SES families. The remaining children ($N = 26$) came from high SES family background.

In the immigrant group, there were 65 children having low SES, 58 middle SES and 6 high SES. Seventeen Slovene children registered low SES, 31 middle and 15 high. In the Italian group, 21, 99 and 8 children had low, middle and high SES respectively.

### 4.2.2 Procedure

Prior to data collection, schools, community and afterschool centres were contacted. During several meetings with principals and teachers, the purpose of the study was explained and their support was obtained. All school principals and families signed an informed consent, allowing the participation of each child. A standard procedure was followed for administration of the measures. In every school, each participating child was assessed in a large quiet room provided by teachers for individual testing. The participants were asked to leave the classroom during the test
administration, which was conducted by members of the research team. All examiners were trained in the administration of the measures to ensure standard data collection procedure. Prior to starting, it was explained to the children that their response would remain confidential and if they did not agree to participate, they were free not to do so.

All measures were administered individually in a single testing session, according to the standard approach described in the testing manuals (Kovacs, 1988; Caprara et al., 1992; Dunn & Dunn, 2000; Raven, 1984).

4.2.3 Measures

Peabody Picture Vocabulary Test - Revised (PPVT-R) (Dunn & Dunn, 2000) in the Italian version provided by Stella, Pizzoli and Tressoldi (2000) was individually administered to all children. The Peabody Picture Vocabulary Test - Revised (PPVT-R) was designed as a measure of receptive language vocabulary for standard American English and has replaced the original Peabody Picture Vocabulary Test (Dunn & Dunn, 1981). The PPVT-R contains 350 items making it more reliable than the PPVT, which had only 300 items. The test contains 5 training items arranged in order of increasing difficulty. Each item has four simple, black-and-white illustrations in a multiple-choice format. The child is asked to select the picture considered to illustrate best the meaning of a word presented orally by the examiner. Subsequent cards with four pictures on each are shown to the child, who was asked to point to the picture representing a given vocabulary item. The test is designed for persons from 2.5 to 40 years of age who can see and hear reasonably well. Scoring is rapid and is calculated by the total number of correct answers given by the child so that the mean score is 100 and the standard deviation 15.

The authors suggest its use as a scholastic aptitude test, since vocabulary is considered to be an important factor in school success. In school settings, it can be used as an initial screening device for verbal ability or language disorder in pre-school children. Also, it is particularly suitable for bilingual and immigrant children since the information provided by the test scores is useful for teachers who should adapt academic curricula at appropriate linguistic level for these pupils (Stella et al., 2000).

It is generally agreed that the PPVT-R has adequate psychometric properties (McCallum, 1985). Measures of internal consistency, reliability and retest reliability based on the standardization sample of 5,028 persons - 4,200 children and adolescents,
Immigrant Children Cognitive Skills

and 828 adults - have all been found to be respectable. Split-half reliability ranged from the .61 to the .88 and test-retest reliability ranged from the .70 to the .90. Concurrent validity with several other vocabulary tests and subtests was also assessed. Correlations with the Stanford-Binet Vocabulary subtest ranged from .68 to .76; with the WISC Vocabulary subtest from .37 to .83; and with the WAIS Vocabulary subtest from .60 to .67 (Dunn & Dunn, 1981).

The findings of numerous cross-cultural studies indicate validity data on the test as a culturally fair appropriate instrument for use with children from different ethnic origins i.e African American (Brooks-Gunn et al., 2003; Washington & Craig, 1999), European and Latin American (Izard et al., 2001), Canadian (Flipsen, 1998) and American (Ukrainetz & Blomquist, 2002; Miller & Lee, 1993).

Raven Coloured Progressive Matrices (CPM, Raven, 1984) were used in order to test for child cognitive ability. They are multiple choice tests originally developed by Raven (1938) to measure perceptual relations formation and reasoning by analogy independently of language and formal schooling of subjects from 6 years old to adult age.

According to their author, CPM measure two main components of general intelligence referring to the ability to think clearly and make sense of complexity, and the ability to store and reproduce information. Colored Progressive Matrices consist of three series of matrix designs, twelve in each series. In each test item, the child is asked to identify the missing segment sets A and B and Ab for a total of 36 items. Most items are presented on a coloured background to make the test visually stimulating and attractive for children. The subject's score is the total number of matrices correctly completed.

The tests have been widely used in a vast variety of cultural groups and have shown to have excellent psychometric characteristics. The reliability of CPM has been investigated in several studies, reporting that the test is internally consistent and homogeneous for young children with split-half correlation of .90 and test-retest reliabilities of .87 and .83 (Freyberg, 1966; Raven, 1965)

Moreover, CPM appear to be equally reliable for children from different ethnic groups – Anglo, African-American and Hispanic (Carlson & Jensen, 1981), Lithuanian (Lunn & Kazlauskaite, 2002), Italian (Pruneti, Fenu, Freschi & Rota, 1996), Pakistani (Jamal & Mallick, 1965), Brasilian (Rueda & Sisto, 2006).
Regarding the measure of language and cognitive skills, two main reasons determined their inclusion in our data collection. First, the measures applied to vocabulary and cognitive achievement are considered to be particularly suitable for bilingual and immigrant children (Stella et al., 2000; Brooks-Gunn et al., 2003; Lewis et al., 2007). Second, these two measures are frequently used to assess child cognitive abilities. For example, the CPM are designed to measure a person's present clarity of observation and level of cognitive development and are recommended by their author to be used in conjunction with a vocabulary test such as the Peabody Picture Vocabulary Test (Raven, 1965).

In addition, Children's Depression Inventory (CDI, Kovacs, 1988) and Childhood Social Adjustment Capacity Indicators Questionnaire (Caprara et al., 1992) previously described were used (see pages 46 and 48).

### 4.2.4 Data Analyses

Because past research has demonstrated gender effects among children on cognitive tasks (Lepola, Vauras, & Maeki, 2000), preliminary analyses were performed in order to test for possible gender effects on child language and cognitive abilities. These effects were not replicated in the present study, thus allowing us to compound child gender in all subsequent analyses.

Moreover, we checked for age differences in both measures relating to vocabulary and cognitive skills. Regarding CPM, our sample has an adequate age distribution according to the test manual. There is an increase in scores with child age - from 7 years ($M = 20.12, SD = 6.74$), 8 years ($M = 23.59, SD = 7.17$), 9 years ($M = 26.64, SD = 4.56$), 10 years ($M = 27.90, SD = 5.24$), 11 years ($M = 26.96, SD = 6.05$), 12 years ($M = 29.58, SD = 6.56$) to 13 years ($M = 26.40, SD = 8.64$). The scores observed in the sample for each age group collocate those children in the second class of cognitive ability reported in the test manual (Raven, 1985). Thus subjects in this class are ranged above the average performance mean for each group age and are considered to be able to solve cognitive tasks very effectively.

Regarding our sample distribution of vocabulary skills in each age group, the scores were normed so the mean score was 100 and the standard deviation was 15 (Stella et al., 2002; Brooks-Gunn et al., 2003). The following age distribution emerged...
Immigrant Children Cognitive Skills

on PPVT-R data in each age group – 7 years ($M = 87.54, SD = 12.03$), 8 years ($M = 96.13, SD = 15.11$), 9 years ($M = 102.61, SD = 14.88$), 10 years ($M = 95.88, SD = 16.51$), 11 years ($M = 96.14, SD = 19.75$), 12 years ($M = 109.00, SD = 15.34$). Similar average means for PPVT-R are reported in prior studies using multietnic minority and native samples (Brooks-Gunn et al., 2003).

Subsequently, we proceeded with our planned analysis. Firstly, we tested for ethnic differences by running multivariate analysis of variance (3 x 2) with independent variables of group (immigrant vs. Slovene vs. Italian children) and dependent variables of CPM cognitive performance score and total PPVT-R scores (prediction a).

Secondly, in order to verify the relationship between child psychological and socio-cultural adjustment, language and cognitive variables, we applied Pearson correlations (prediction b). The results revealed significant correlations among the variables considered. Therefore, we could proceed with an additional more detailed analysis. In particular, two series of linear regressions were performed with emotional instability, prosocial behavior, aggression and depression as independent predictive variables and total scores of CPM and PPVT-R as dependant variables.

Finally, we applied a single MANOVA in order to examine SES influence on child psychological, socio-cultural and cognitive outcomes (prediction c). The model comprised 3 x 3 x 6 interaction factors given by SES levels (low, middle, high), group (immigrant vs. Slovene vs. Italian children) as independent variables and scales of emotional instability, prosocial behavior, aggression, depression, CPM and PPVT-R as dependant variables.

4.3 Results

With regard to the hypothesized ethnic differences in child cognitive and language skills, the analyses showed significant results among immigrant, Slovene and Italian children (Table 1). Table 1 also presents group averages for both cognitive and verbal skill scores. In the immigrant group, children registered language and cognitive skills at comparable levels. The same levels are significantly lower than those of their Slovene and Italian peers, suggesting different population rates of cognitive performance distribution between these groups.
Table 1.

Child Language and Cognitive Skills: Immigrant and Non-immigrant Group Comparisons

<table>
<thead>
<tr>
<th>Variable</th>
<th>Immigrant (n = 132)</th>
<th>Slovene (n = 63)</th>
<th>Italian (n = 128)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Skills, M, (SD)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPM *</td>
<td>23.73 (6.98)</td>
<td>27.57 (4.99)</td>
<td>27.84 (5.56)</td>
</tr>
<tr>
<td>Language Skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPVT-R**</td>
<td>91.12 (16.06)</td>
<td>97.19 (14.76)</td>
<td>103.79 (14.21)</td>
</tr>
</tbody>
</table>

Note. Analysis of variance showed significant mean group differences for all cognitive and language skill scores.

* $F(3, 322) = 18.39, p < .001$.

** $F(3, 322) = 12.29, p < .001$.

As can be seen from table 2, significant correlation emerged as to the relation of child psychological, socio-cultural, language and cognitive skills. Firstly, there was a significant negative association between depressive symptoms and language skills. Negative, but non-significant correlations emerged among adjustment outcomes of aggression and emotional instability with language and cognitive skills. Secondly, positive association resulted among child prosocial behavior, language and cognitive abilities. The strength of the correlation between prosocial behavior and cognitive abilities was significant. These data confirm the hypothesized relation within the variables considered, meaning that adequate psychological and socio-cultural adjustment positively relates to better child language and cognitive ability.
Table 2.

*Pearson Correlations Among Child Psychological, Socio-cultural Adjustment Variables, Language and Cognitive Skills*

<table>
<thead>
<tr>
<th>Psychological and Socio-cultural Variables</th>
<th>CDI</th>
<th>EI</th>
<th>PB</th>
<th>A</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CPM</td>
<td>-.059</td>
<td>-.040</td>
<td>.403**</td>
<td>-.102</td>
</tr>
<tr>
<td>Language Skills</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PPVT-R</td>
<td>-.317*</td>
<td>-.215</td>
<td>.118</td>
<td>-.121</td>
</tr>
</tbody>
</table>

Note: CDI = Children’s Depression Inventory, EI = Emotional Instability, PB = Prosocial Behavior, A = Aggression.

* *p < .05
** p < .001

In order to better parse out these associations, the aim of the subsequent analysis was to examine the impact of psychological and socio-cultural difficulties in the context of language and cognitive factors in immigrant and native-born children. The linear regression analyses with emotional instability, prosocial behavior, aggression and depression as predictive variables and language and cognitive scores as dependant variables, revealed significant results. This analysis confirmed that negative psychological and socio-cultural outcomes were related to poor language and cognitive performance (Table 3).

In particular, lower prosocial behavior, t(323) = 6.27, p < .01 and higher depressive symptoms t(323) = 4.33, p < .01 were predictive of higher likelihood of cognitive difficulties. Similarly, lower prosocial behavior, t(323) = 1.90, p < .05 and higher emotional instability t(323) = 2.95, p < .01 were predictive of increased likelihood of vocabulary skills. There were non-significant results regarding the relationship of emotional instability and aggression with child’s cognitive abilities from one side, and of aggression and depression with language from another.
Table 3. Linear Regression Model: Psychological and Socio-cultural Variables as Predictive for Children’s Language and Cognitive Performance

| Psychological and Socio-cultural Variables | CPM       | Power
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>B</td>
<td>SE</td>
<td>B</td>
</tr>
<tr>
<td>Depressive Symptoms</td>
<td>.245**</td>
<td>.055</td>
</tr>
<tr>
<td>Emotional Instability</td>
<td>.054</td>
<td>.123</td>
</tr>
<tr>
<td>Prosocial Behaviour</td>
<td>.351**</td>
<td>.092</td>
</tr>
<tr>
<td>Aggression</td>
<td>.054</td>
<td>.130</td>
</tr>
</tbody>
</table>

* Significant at $p < .05$
** Significant at $p < .01$

Finally, we examined the relationship between child demographic variables such as group and SES levels, psychological and socio-cultural, language and cognitive scores through a multivariate between-subjects analysis. The aim was to investigate if low SES would be positively associated with low levels in language, cognitive, psychological and socio-cultural adjustment for all groups and in particular for the immigrant group.

The results revealed significant SES effects on the examined dependent variables in general and in particular for the immigrant group. In the whole sample, lower SES levels were associated with lower prosocial behavior $F(1, 320) = 3.12, p < .05$, higher aggression, $F(1, 320) = 3.12, p < .05$, depressive symptoms $F(1, 320) = 2.56, p < .05$ and lower vocabulary performance $F(1, 320) = 3.08, p < .05$. When parse analysis of these variables were considered regarding immigrant background, the main effects emerged only for SES, language and cognitive abilities interactions. In particular, immigrant children from lower SES families, compared to Italian and Slovene non-immigrant low SES children, registered lower scores on language $F(1, 320) = 2.58, p < .01$ and cognitive ability tasks $F(1, 320) = 3.38, p < .01$. 


4.4 Discussion

This study reports data on child’s psychological and socio-cultural adjustment, as well as language and cognitive skills in school-aged immigrant and non-immigrant children living in North East Italy. Emphasis was placed on the comparisons in relation to the migration process experienced by Albanian, Russian and Serbian children compared to their non-immigrant Italian and Slovene peers. In this study, analyses not only examined the variability and rate of language and cognitive achievement, but also explored the relationships between demographic factors (immigrant background and SES levels), child’s psychological (depression) and socio-cultural (emotional instability, prosocial behaviour, aggression) characteristics with language knowledge and cognitive skills.

In general, there were numerous similarities observed among immigrant Albanian, Russian and Serbian children’s psychological and socio-cultural correlates of language and cognitive skills. Conversely, important differences emerged when comparing immigrant children to their non-immigrant counterparts. Immigrants, in respect of Italian and Slovene children, reported lower scores in language and cognitive tasks.

The observed strengths of association between adjustment and skills in both language and cognitive abilities in immigrant children are interesting in light of other research with immigrant groups. Several past studies have indicated the importance of having positive psychological and socio-cultural outcomes in facilitating immigrant children’s early cognitive skill development (Kolaitis et al., 2003; Leavey et al., 2004). For example, one study of immigrant children (Kolaitis et al., 2003) suggests that these children perform less well in language and cognitive achievement tests. Also, it appears that, if compared to their native peers, immigrant children presented more socialization difficulties in terms of withdrawal experiences and higher school drop out in both academic and family settings. The authors suggested that many problems in cognitive performance and school difficulties, such as lower grades, lower language achievement and greater school drop out, observed among immigrant children may stem from cultural and socialization difficulties that these children may have experienced.
Several differences in patterns and strength of associations relating to psychological and socio-cultural adjustment with linguistic and cognitive skills were also observed. For example, prosocial behavior, depressive symptoms and emotional instability appeared to be predictive factors of an increased likelihood of poor cognitive performance. These results add to previous findings stating that a child’s positive psychological and socio-cultural adjustment contributes to adequate abilities in terms of better language and cognitive performance (Marks & Garcia Coll, 2007).

In addition to such important interaction, we examined whether socio-demographic characteristics due to family SES trigger adjustment and cognitive skills when children have had the experience of immigration. Prior research reports negative effects of low SES among immigrant populations compared to non-immigrant groups (Dilworth-Bart & Moore, 2006; Tallandini & Dimitrova, 2006), and that children of immigrants are more likely to suffer psychological, socio-cultural and academic maladjustment problems (Brody et al., 2002; Mistry et al, 2002). Our results confirm the relationship between SES, child adjustment and cognitive performance with regard to immigration experience.

Furthermore, adjustment difficulties appeared to be strongly associated with SES and cognitive skills. In the immigrant group, children from low SES families performed less well than middle and high SES children, reporting lower scores on language and cognitive ability tasks. In the non-immigrant group, for Italian and Slovene children, such association did not emerge. Our results are in accordance with other studies, reporting that low SES children are more likely to develop serious adjustment difficulties than their peers from less economically disadvantaged families (Evans, 2004; McLoyd, 1990), and that this also affects the development of additional cognitive difficulties (Nock & Kazdin, 2002; Takeuchi, Williams & Adair, 2006). This finding is particularly important in the context of early school intervention since the rates of cognitive performance for immigrant children from lower income families appear to be more disadvantaged than those of their middle-class non-immigrant counterparts. Considering such evidence, it may be extremely important to intervene during the period of immediate social and community placement of immigrant families prior to their children’s school entry in order to tackle these early adjustment and cognitive gaps.
Immigrant Children Cognitive Skills

The present study must be viewed in light of its limitations and of the need for additional investigation. Firstly, the findings result from a unique sample of immigrant and non-immigrant children in the area investigated and should not be generalized. Secondly, we did not take into consideration the specific school characteristics in the local area that may influence children’s adjustment and achievement. As stated previously, the Slovene community has its own school districts where classes are composed mainly of Slovene ethnic minority children, contrary to the Italian schools which include mixed ethnic classes with native and immigrant children from various cultural groups (Ires, 2006). Such socially different contexts may affect children’s outcomes in different and unique ways. Further studies are also needed to identify specific aspects of school settings that could be associated with different socialization practices which in turn may determine different developmental trajectories for children’s education and adjustment.

Finally, given the strong associations between positive adjustment and cognitive skills that resulted from the current study’s multiethnic sample of immigrant, Italian and Slovene children, future studies exploring the underlying aspects of community context and children’s bicultural socialization are needed. These should take into account the distinctive cultural and educational resources of each ethnic community of immigrants in the area considered. For example, community-based differences for Albanian and Serbian ethnic groups are reported in terms of historical presence, social cohesion, support and integration (Marra, 2002).

In conclusion, the current study confirmed that negative immigration consequences continue to emerge in relation to adjustment and cognitive achievement. Prior research has demonstrated that there are many aspects of early education that can promote positive adjustment such as teacher attitudes, parenting practices, and peer and school relationships (Garcia Coll & Szalacha, 2004). Based on such evidence, interventions that foster positive social influences should be carried out. With regard to immigrant children, special attention should be paid to involving school and family members in order to prevent poor psychological, socio-cultural and cognitive adjustment for these children.