

# Sixty Years after the Magic Carpet Ride: The Long-Run Effect of the Early Childhood Environment on Social and Economic Outcomes<sup>\*</sup>

ERIC D. GOULD  
HEBREW UNIVERSITY, CEPR, AND IZA

VICTOR LAVY  
HEBREW UNIVERSITY, ROYAL HOLLOWAY UNIVERSITY OF LONDON, CEPR, IZA, AND NBER

M. DANIELE PASERMAN  
BOSTON UNIVERSITY, CEPR, IZA, AND NBER

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## Abstract

This paper estimates the effect of the early childhood environment on a large array of social and economic outcomes lasting almost 60 years. To do this, we exploit variation in the living conditions experienced by Yemenite children after being airlifted to Israel in 1949. We find that children who were placed in a more modern environment (i.e. with better sanitary and infrastructure conditions) were more likely to obtain higher education, marry at an older age, have fewer children, and work at age 55. They were also more likely to be assimilated into Israeli society, to be less religious, and have more worldly tastes in music and food. However, these effects are found mainly for women, and not for men. We also find an effect on the next generation – children who lived in a better environment grew up to have children with more education.

**Key Words:** neighbourhood effects, childhood environment

**JEL Codes:** J24, J13, F22.

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## 1. INTRODUCTION

The long-term social and economic effects of an individual's early childhood conditions are of major interest to social scientists. Yet drawing causal inference about this relationship is complicated by the possibility of unmeasured individual or family-level attributes that influence both an individual's outcomes in life and the conditions of his or her childhood environment. In this paper, we exploit the airlift of Yemenite immigrants in 1949, known as "Operation Magic Carpet," as a natural experiment to overcome this identification problem. As a result, we provide rare evidence on the very long run effect of the early childhood environment on an array of social and economic outcomes, including the educational attainment of the next generation.

In September 1949, a rescue operation began to airlift the entire Yemenite Jewish community to Israel. By the end of the operation in early 1950, approximately 50,000 Yemenite Jews had been flown to the new state of Israel.<sup>1</sup> The immigrants were uprooted from their traditional way of life, and suddenly found themselves in a modern society and culture which they did not understand. Upon their arrival, the Yemenites were dispersed throughout the country into makeshift absorptions camps and new settlements. Conditions in these settings were sparse – they often slept in tents with no running water, bathrooms, and electricity.

During this period, Israel had just won its War of Independence, and struggled to absorb immigrants from all over the world – Holocaust survivors from Europe and refugees fleeing Arab and Muslim countries. For security reasons, the new immigrants were often strategically placed in areas across the country where the population needed bolstering. The Yemenites, who received rigorous religious training but lacked any formal schooling or knowledge of a western-style culture or bureaucracy, believed that they were being "redeemed," and put their trust in the Israeli authorities to make decisions about where they should go and what they should do. As a result, they were scattered across the country in a manner which was largely irrespective of their background characteristics – which was not difficult to do since they all lacked formal schooling and arrived essentially without any belongings or wealth.

This quasi-random allocation of immigrants to locations presents a unique opportunity to estimate the long-run effect of the environment on the social and economic conditions of the individual. In general, studying this issue is complicated by the fact that individuals are not randomly sorted into locations. To establish causality, one needs to find a situation where individuals do not sort themselves into locations according to their income and other personal

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<sup>1</sup> The airlift of the Yemenite Jews is commonly known as "Operation Magic Carpet," even though its official name was "Operation On The Wings of Eagles."

characteristics which affect their outcomes directly. The historical episode of the Yemenite immigration would appear to satisfy this criterion -- due to their homogenous background, lack of understanding of spoken Hebrew, complete culture shock, and reliance on Israeli bureaucrats to tell them where to live and what to do. Furthermore, the overall chaotic and precarious situation of the entire country was reflected in the absorption process of the Yemenite immigrants. As a result, this episode is a rare opportunity to study the long-run effect of the childhood environment on various social and economic outcomes.

Due to the lack of existing data, we conducted a survey of the entire population of immigrants who were born in Yemen between 1945 and 1950, and arrived in Israel during 1949-50. The sample was restricted to immigrants who arrived as children, since our focus is to estimate the effect of the early childhood environment. Each respondent answered a series of questions regarding: (i) their family background in Yemen; (ii) the location of residence and living conditions upon arrival to Israel, and for up to two moves afterwards; and (iii) a variety of social and economic outcomes over the course of their lives (employment, income, marriage, fertility, health, cultural tastes, and their children's educational outcomes). In 2006, the individuals in our sample were between 56 and 61 years old, so the outcomes that we are studying are very much "long term outcomes."

From the information gathered in our survey, we construct three summary measures of the childhood environment: 1) whether the home had running water, sanitation and electricity; 2) whether the locality of residence was in an urban environment (which typically had a more advanced economic infrastructure than remote towns and villages); and 3) whether the locality of residence was a Yemenite enclave (built exclusively for Yemenite immigrants). After linking information about the individual's early childhood environment with their later outcomes, we find that children in families that were placed in a more modern environment (i.e., better sanitary and physical infrastructure conditions) accumulated more human capital, married at an older age, had fewer children, and were more likely to be employed at the age of 55. In addition, they were less likely to be religious, and were more likely to have worldly tastes in music and food. However, we find no effect on political views and only weak evidence on the long-term health outcomes of individuals. More importantly, the significant effects are found mainly for women, with little evidence that the environment had any effect on the long term outcomes of males. As we discuss, larger effects for females versus males is consistent with the existing literature, and could be due to either gender discrimination in the allocation of scarce resources, or a stricter enforcement of traditional norms in rural areas.

One of the distinguishing features of this paper is that its long term perspective allows us to study the effects of the childhood environment not only on those directly affected, but also on the outcomes of the next generation. Remarkably, we find some evidence that children who lived in a more modern environment grew up to have children with higher educational achievement. The size of the effect on the second generation is about one-third the size of the effect on the first generation, which is consistent with much of the existing evidence on the intergenerational correlation in economic status (Solon, 1999).

These findings can be considered causal effects if the Yemenites were indeed sorted randomly into their childhood locations. The data are generally supportive of the idea that the Yemenites were sorted initially into locations in a manner uncorrelated with their income, education (which everyone lacked), and ability. However, over time, the data show that some effort was probably made to enable immigrants with an agricultural background to live in remote farming communities versus cities in Israel. But, there are several reasons why we believe the results are not due to sorting on the basis of the family's agricultural background: (1) there does not appear to be any sorting on a variety of other important background variables; (2) the families of boys and girls were sorted similarly, so if sorting is producing our results, we should obtain similar results for males versus females, but we do not; (3) there does not appear to be any sorting within the sample that had an agricultural background in Yemen versus those that did not, and the results are similar within each group as well as to those obtained from the full sample; and (4) the results are similar with no additional controls at all and after controlling for a large variety of background variables. The robustness of our results to the inclusion of so many observable characteristics justifies our assumption that our estimated treatment effect is not confounded by unobservable characteristics of the individual's background. For these reasons, it is reasonable to interpret the estimated effects in a causal manner.

There is a well-documented correlation between neighbourhood characteristics and individual outcomes, even after controlling for a wide range of background characteristics (Brooks-Gunn et al. 1993).<sup>2</sup> However, it is difficult to rule out that the correlation is driven by the sorting of high-ability families into better neighbourhoods. A number of recent papers have tried to overcome the identification problem by exploiting experimental settings in which residential location was randomly assigned. This literature includes Oreopoulos (2003) and

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<sup>2</sup> See also Jencks and Mayer (1990), for a survey of the early literature.

several papers on the “Moving to Opportunity” (MTO) program.<sup>3</sup> Oreopoulos examines the long-run labour market outcomes of adults who were assigned, during their youth, to public housing projects in Toronto which differed substantially in neighbourhood quality. He finds that neighbourhood quality plays little role in determining a youth’s eventual earnings, unemployment likelihood, and welfare participation. The MTO literature exploits the random assignment of housing vouchers as a source of exogenous variation in the quality of the neighbourhood. This exogenous variation is used to examine a variety of social and economic outcomes. For example, Kling, Liebman, and Katz (2007) found that being in a safer neighbourhood had beneficial effects on education, risky behaviour, and health for girls, but not for boys. Gould, Lavy, and Paserman (2004) adopt an approach similar to the one in the current paper, by estimating the effects of the initial environment on the schooling outcomes of Ethiopian immigrants who arrived in Israel in the context of Operation Solomon in May 1991. They find that attending a high-quality elementary school has a large positive effect on high school matriculation outcomes.

In contrast to these studies, this paper examines outcomes that span almost 60 years. Oreopoulos (2003) examines the effect of the neighbourhood on labour market outcomes thirty years later. This study is the closest to ours in terms of the long-term nature of the outcomes, but the time horizon is only half of our study, and we examine an array of social and economic outcomes, not just labour market activity.<sup>4</sup> Our focus on very long-run outcomes (up to 60 years later), including the effect on the next generation, is one of the key distinguishing features of the paper.

By looking at how the early childhood environment affects outcomes of individuals later on in life, this paper contributes also to the debate over whether investments in the early stages of a child’s development have long-term payoffs. Heckman (2000) argues that early investments in human capital for children have a larger payoff than interventions at a later stage, which aim to close the gap between troubled students and regular students. Some evidence for this claim has been found by Krueger and Whitmore (2001), Currie (2001), Currie and Thomas (2001), and Garces, Thomas, and Currie (2002).<sup>5</sup> Our paper is the first to examine the impact of an early intervention over the life cycle of the individual.

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<sup>3</sup> For example, see Katz, Kling, and Liebman (2001); Ludwig, Duncan, and Hirschfield (2001); Goering and Feins (2003); Kling, Ludwig, and Katz (2005); Sanbonmatsu, Kling, Duncan, and Brooks-Gunn (2006); and Kling, Liebman, and Katz (2007).

<sup>4</sup> Our focus is on the long-term effect of neighbourhood conditions rather than the contemporaneous effect of neighbourhood characteristics on labour market outcomes (Weinberg, Reagan, and Yankow, 2004).

<sup>5</sup> Our analysis is also related to the literature on the role of the environment and peer effects in the creation of human capital. This literature examines whether students benefit from being in contact with better students (Arnott and

The remainder of the paper is organized as follows. The next section describes the Magic Carpet operation and its historical background. Section 3 describes the survey and the data that we collected. Section 4 describes the empirical strategy and tests for whether the data accord with the random placement of Yemenite children into different environments in the early 1950's. Section 5 presents the empirical estimates of the effect of the early childhood environment on a variety of social and economic outcomes. Section 6 presents additional evidence on the effect of the early childhood environment using Israeli 1961 Census data. Section 7 discusses the differential results for boys versus girls, and Section 8 provides concluding remarks.

## 2. OPERATION MAGIC CARPET AND ITS HISTORICAL BACKGROUND<sup>6</sup>

According to most sources, there has been a Jewish community in Yemen from at least the time of the Second Temple. They enjoyed times of relative prosperity until the rise of Islam in the 7<sup>th</sup> Century, when a variety of restrictions and bans were imposed on Jews, including seclusion into ghettos and special taxes. The Jews of Yemen often worked in occupations avoided by Muslims, including trades such as blacksmiths, tool makers, pottery, tailoring, and carpentry. Formal schooling was not available, but Yemenite boys received a rigorous education in biblical texts.

The harsh conditions in Yemen, combined with news about the Zionist resettlement of Palestine, spurred a “messianic” movement to emigrate to the Holy Land at the end of the 19<sup>th</sup> century. These initial immigrants settled in agricultural communities in Jerusalem and Jaffa. Although they were quite poor, they sent money and letters back to their relatives in Yemen, encouraging them to emigrate as well. There was a steady, slow stream of immigration from Yemen in the early part of the 20<sup>th</sup> century, but during the 1930's and 1940's Jews were forbidden from leaving by the local authorities due to political considerations.

The drought of 1942-43 and the impending war between the Arabs and Jews in Palestine led to a dramatic deterioration in the conditions of the Jews in Yemen. These conditions spurred many Yemenite Jews to flee to Aden, which was under British rule at the time. Under a cloud of secrecy, a limited number of flights were allowed to take them to Israel. Thus, “Operation Magic Carpet” secretly began in late 1948 and lasted for a few months. After the armistice agreement

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Rowse (1987), Sacerdote (2001), Zimmerman (2003)) or immigrant students (Gould, Lavy, and Paserman (2009a)), or whether neighbourhoods affected student outcomes (Jacob (2003) and Goux and Maurin, (2007)). This issue has also guided other researchers, who have looked at whether desegregation policies in the United States (such as bussing) help or hurt the achievements of blacks and whites ((Hoxby (2000); Angrist and Lang (2002); Hanushek, Kain, and Rivkin (2009)).

<sup>6</sup> This section relies on Barer (1952) and Sachar (1979).

between Egypt and Israel was signed in February 1949, the ruler of Yemen agreed in April 1949 to let the Jews leave for Israel, on the condition that they teach their trades to their Arab neighbours and leave their property behind. In May, news of this decree and the free transport to Israel spread through Yemen. At the time, there were roughly 40,000 Jews in Yemen, and they responded by trekking on foot to Aden, a journey that lasted weeks and sometimes months under treacherous conditions. In Aden, they waited in a makeshift refugee camp to be flown to Israel. The actual airlift was carried out by American and British pilots who ran a renegade airline, Alaska Airlines, which specialized in dangerous missions after World War II.

The awe of the immigrants with respect to the operation is described aptly by one of the pilots involved in the mission:

*It's difficult to put into words, but it gives me a strange feeling to see these Jews . . . They wander about on foot for weeks till they reach the camp near Aden. They arrive hungry and sick and naked . . . But you'll find every man carrying his Bible, and every other man clinging to a huge holy parchment scroll clasped in front of him. That camp is just a piece of desert with almost nothing on it, just a few tents and straw mats, but they behave as if they had just stepped into Paradise. Then we pile them into those planes and they're terribly confused, but they keep mum. When they climb out at Lydda (the airport in Israel), you feel they're so excited they ought to throw themselves on the ground and kick, yet what do they do? They move about with shining eyes and don't say a word. They look to me like people going awake through a dream.<sup>7</sup>*

The pilots also testified to the Yemenites' submissive demeanour:

*"They look like prophets stepping out of the bible . . . their average weight was seventy or eighty pounds, and up to a hundred and forty of them could be put on a plane normally carrying less than half that number. It was a strange experience for them to travel by air – not only were they unfamiliar with airplanes, but the steep metal ladders used for climbing aboard planes had to be replaced with wooden ramps with shallow steps to enable them to go aboard. However, they behaved admirably and gave little trouble."<sup>8</sup>*

Despite perilous conditions flying over enemy territory, about 50,000 Yemenite Jews arrived in Israel without a single loss of life by the summer of 1950. They landed, however, into a chaotic environment as Israel was struggling to absorb immigrants from Europe, Africa, and other Arab countries. The Jewish population in Israel was 650,000 in 1948, and this number would more than double in the next few years. Upon arrival, the Yemenites were taken to absorption camps, consisting of tents with no running water, kitchens, bathrooms, and other sanitation

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<sup>7</sup> Barer (1952).

<sup>8</sup> Robert Maguire and Hank Mullineaux, quoted in Barer (1952).

facilities. There were four main absorption camps which were spread out all over the country: Ein Shemer, Beit Lid, Rosh Ha'ayin, and Atlit. Some of the immigrants stayed in the camps for up to a year, but most were moved to other arrangements after a month or two. The second placement was usually in a small agricultural community ("*moshav*"), or a somewhat more permanent type of camp in which immigrants were required to work for their sustenance ("*ma'abara*"). These camps consisted of canvas huts or aluminium houses, but often lacked running water, bathrooms, and other sanitation facilities.

During this period, the Israeli government strategically placed immigrants in settlements throughout the country and steered the immigrants into low-skill agricultural jobs for ideological reasons. Many Yemenites were placed in their own communities, but many were mixed with immigrants from all over the world. Rosh Ha'ayin, which was one of the biggest immigrant camps built exclusively for Yemenites, later turned into a permanent immigrant camp ("*ma'abara*"). Today, it is a thriving city in Israel, still heavily populated by Yemenite immigrants and their descendants.

Without knowing modern Hebrew and generally lacking any understanding of the workings of a modern society and bureaucracy, the Yemenites placed their fate at the mercy of the Israeli government. Perhaps it is also part of their nature, but they believed they were being redeemed, and did as they were told. However, tensions did arise as many Yemenites complained about being forced into a secular environment. Zameret (2001) reports that about two-thirds of them were sent to agricultural communities associated with the secular Mapai party, while only a third were sent to places associated with the religious parties. The fact that many were sent to secular agricultural communities demonstrates how powerless they were to determine where to live.

Gradually, the Yemenites moved into more permanent housing, or the camp itself transformed into a modern community. Over the years, the adults tended to work in low-skill jobs in manufacturing, agriculture, skilled trades, and cleaning jobs. To this day, Yemenite immigrants and their children complain that they were not treated as well as immigrants from Europe. Indeed, Yemenites have not been immune to discrimination by Israelis of European origin.<sup>9</sup> However, despite being very well integrated into all aspects of society, they still represent a distinctive

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<sup>9</sup> A major source of resentment revolves around the case of the missing Yemenite infants. According to some allegations, hundreds of Yemenite babies who were reported to have died or to have disappeared after their parents came to Israel were actually kidnapped and given or sold for adoption to European-born Israelis and American Jews. A number of Government Commission of Inquiries have investigated these allegations, and confirmed that some cases of missing babies cannot be accounted for, but the actual extent of the phenomenon is still controversial.



sector in Israeli society – often living in predominantly Yemenite communities and marrying within their group.

### 3. THE SURVEY AND DATA

In order to study the effect of the initial childhood environment on long-term social and economic outcomes, we need three types of information about each Yemenite immigrant: (1) the immigrant's family background in Yemen; (2) where the immigrant was placed upon arrival in Israel and in subsequent years; and (3) the immigrant's social and economic outcomes over the course of almost 60 years. This information does not exist in any existing data set, since governmental surveys do not ask about the person's family background in their country of origin and the person's living situation in Israel over 55 years ago. Therefore, we conducted our own survey to obtain this information.

From the Ministry of the Interior, we received a list of names and addresses of the entire population of people born in Yemen between 1945 and 1950, and were still alive as of January 2006.<sup>10</sup> We restricted the age range to include only people who immigrated as young children, since the focus of the study is to examine the effect of the early childhood environment. At the time that the survey was conducted in the summer of 2006, these immigrants were between the ages of 56 and 61.

The list received by the Ministry of Interior included 5,776 individuals. We contracted with a private company (Taldor) to administer a telephone survey to this population. Taldor was able to locate valid telephone numbers for 4,160 individuals on the list. All of the subjects were sent a letter in advance, which explained the purpose of the research and indicated that they would soon be contacted by phone by Taldor. 795 subjects either refused or were unable to answer the survey. Out of the remaining 3,365 respondents, 374 were discarded because they did not match our requirements in terms of place of birth (Yemen), year of birth (between 1945 and 1950), and year of immigration (between 1948 and 1951).<sup>11</sup> This left us with a sample of 2,991 completed surveys. This represents more than 50% of the original list, and a nearly 80% response rate among people whom we were able to contact. Since one of the key variables for our analysis

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<sup>10</sup> In our request to the Ministry of the Interior, we were limited to two dimensions along which to cut the data: year of birth and country of birth. Therefore, our sample included some people who migrated before 1948 or after 1951. These observations were not used in our analysis.

<sup>11</sup> Of the discarded observations, 158 stated that they were not born in Yemen. Most of the remaining discarded observations did not meet the year of immigration requirement. A small number of observations were discarded because their reported year of birth fell out of the 1945-1950 range, in contradiction with the official birth date available in the Ministry of the Interior data.

is the childhood environment, we also called back 264 individuals for whom it was difficult to establish the locality in which they grew up based on the original survey. In the end, we were able to establish the childhood environment for 2,927 individuals. The survey questionnaire included more than 130 questions, and usually took between 20 and 30 minutes to complete.<sup>12</sup>

It is important to keep in mind that although we contacted the immigrants themselves, we asked many questions which concern details about the time before they were born (their family background in Yemen) or when they were very young. Therefore, they most likely responded to these questions according to what they learned from their parents and relatives as they grew up.<sup>13</sup> For this reason, we often asked multiple questions in order to elicit similar types of information. The sample size varies across questions, as many people were able to recall information for some questions but not others.

### Family Background Information

For our empirical strategy, we need to know the extent to which the quality of one's childhood environment was correlated with family background characteristics. A typical measure used to capture the family background is the educational attainment of the person's parents. However, modern education was non-existent in Yemen at the time. As a result, we built the questionnaire to acquire information about other relevant variables indicating the person's socio-economic status: the occupation of the head of the household, whether the family owned animals or a farm, whether the family was considered rich or poor, whether the family employed workers, whether the head of the family was a religious or political leader, whether they came from a big city or remote village, and whether they had relatives already in Israel. Descriptive statistics for the key background variables are presented in Table 1.

Table 1 indicates that the head of the household for most immigrants was a craftsman (58 percent) or a merchant (25 percent). A sizable minority came from a major city in Yemen (44 percent) and had relatives already in Israel (40 percent), although we do not know when those relatives arrived. Only two percent came from a female-headed household, while roughly a

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<sup>12</sup> Even though obtained a relative high response rate for this type of study, we still end up interviewing only about 55% of the original sampling frame. Our estimates may therefore suffer from sample selection bias. To address this issue, we examined whether the response rate was correlated with characteristics of the locality of *current* residence (population, year of establishment, and type of locality). We found no systematic differences in the characteristics of those who did and did not respond, leading us to believe that sample selection bias was probably not substantial.

<sup>13</sup> The letters sent in advance created a "buzz" among this population, and it is possible that some of the information for our questionnaire was obtained from older siblings who were not part of our sample. We received numerous phone calls from Yemenites who were eager to share their personal stories or to volunteer their help.

quarter came from families where the head was a religious or community leader. Thirty-one percent came from families which were considered “rich,” while only 17 percent were considered poor. It is important to note that Table 1 shows that the means across all of the background variables are very similar for boys and girls, which is a result that will be important for us later.

### Information about the Childhood Environment

The survey asked each immigrant about their initial placement upon arrival to Israel, and regarding two subsequent placements after that. Specifically, we asked whether the immigrant was placed in one of the four main absorption camps: Atlit, Bet Lid, Rosh Ha’ayin, or Ein Shemer. If the immigrant was placed in a different location, we asked for the name and location of the place (region of the country), and whether it was in a city, an agricultural community (“*moshav*”), a communal agricultural community (“*kibbutz*”), an immigration camp other than the four main ones listed above, or an abandoned Arab village. We also asked if the place had been built exclusively for Yemenite immigrants, and about their living conditions – whether they slept in a tent or a more permanent house, and whether the house had running water, a bathroom, or electricity. Finally, we asked how long they stayed in that particular place, and whether their family chose to live there or whether they were directed to go there by the government. The same set of information was gathered for the second and third locations the immigrants lived in after arriving in Israel. This information is summarized in Appendix Table 2.

Most of the immigrants did indeed start out in one of the four immigrant camps (86 percent). The majority started out in Rosh Ha’ayin (22.3 Percent) and Ein Shemer (46 percent), while 84.5 percent were placed in a location built exclusively for Yemenite immigrants. Almost all of them (98 percent) were sent to their initial placement by the government. Roughly 8 percent are still living in the same place today. The initial location was also the primary childhood environment (to be defined later) for about 12.5 percent of our respondents. Most of the immigrants moved away from the initial placement after only a few months or a year at most. For those that moved, most of them moved to a place built exclusively for Yemenites (51 percent), which usually was another immigrant camp or a small agricultural community. About 80 percent reported that the government chose the location for them, which again reflects their heavy dependence on the authorities at the time. Half of these people never left the second placement, which demonstrates just how important this location decision was at the time. Relocating was costly, as the Yemenites arrived in Israel with essentially no wealth or physical capital. Note also that the immigrants’ second residence was much more geographically

dispersed, with most of the immigrants concentrated in the Northern and Central regions, but a substantial minority moving to Jerusalem and the South.

Given that most immigrants left their initial placement and moved to many different kinds of environments, we needed to derive standard measures to characterize the early childhood environment in a consistent way for every child. To do this, we used the information gathered on the duration of stay in each of the first three locations to determine their location as of 1955 (or the closest year that we could confidently place them). We chose to measure the location as of 1955 because by this time most of the dust that followed the 1948 Arab-Israeli war and the mass migration had settled down. Therefore it is likely that the 1955 location is the location in which the individual spent the most time during childhood, and therefore is the most likely to capture the factors which may have influenced the person during the early years in the country.

After determining the individual's "childhood location" as of 1955, the list of "childhood places" consisted of 233 different locations.<sup>14</sup> In order to characterize each location in a consistent way, we choose to focus on three broad measures of the environment: a summary of the sanitary and other living conditions in the home, the urban/rural status of the locality, and whether the place of residence was a settlement built specifically for Yemenite immigrants. These three measures capture the overall health, economic, and social conditions experienced by the Yemenite immigrants during their first years upon arrival.

There is a substantial literature showing the importance of these conditions for a variety of labour market and other socioeconomic outcomes. It is well documented that workers in cities earn a substantial wage premium, and there is mounting evidence that this premium is not due just to selectivity, but reflects the notion that cities foster the accumulation of human capital (Glaeser and Maré, 2001; Gould, 2007). Health conditions, and in particular the prevention or eradication of infectious diseases, have been shown to have a large impact on children's educational outcomes (Kremer and Miguel, 2004; Bleakley, 2007). Finally, there is a significant debate about whether ethnic enclaves, and more generally, ghettos are good or bad for immigrants and minorities (Borjas, 1995; Cutler and Glaeser, 1997; Bertrand, Luttmer and Mullainathan, 2000; Edin, Fredriksson and Åslund, 2003).

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<sup>14</sup> Many of the respondents did not remember the exact dates of transitions between places of residence, given that they were young children at the time. Therefore, the interviewers asked for verbal answers (e.g., "less than a year", "a few months," etc.), to the question of how long they stayed in each place, and we used these statements to determine where they were living as of 1955. In order to reduce the uncertainty about some cases, 264 respondents were re-interviewed to clarify the information they provided.

### *Accuracy of the Data and Recall Bias*

Of course, when one collects retrospective information from more than 50 years ago, the potential for inaccuracies and misreporting is not negligible. However, there are distinct patterns in the data that support the notion that the retrospective information is of reasonably high quality. For example, in Appendix Table 1, we verify whether the information regarding one's family background in Yemen is internally consistent. In the first column the table, we regress the variable for whether the person described his or her household as "rich" on several of the other characteristics individually. The second column of the table contains a similar regression where the dependent variable is for being "poor" in Yemen. The results display a consistent pattern: being rich in Yemen is strongly positively correlated with the head being a merchant (not a craftsman or farm worker), living in a city, owning a farm and animals, employing workers, having relatives already in Israel, and being a community or religious leader in Yemen. We find a similar but opposite-signed relationship between all these variables and the indicator for being poor. In addition, the correlations between the objective measures of the family background in Yemen are also sensible. In the last set of columns in the table, we report the correlations between "living in a big city in Yemen" and all of the other background variables. People who lived in large cities were substantially less likely to own land or livestock (as expected) even though they were more likely to employ domestic workers, which is consistent with their higher socioeconomic status.<sup>15</sup>

To provide further support for the accuracy of our data, we found the information reported in our data to be comparable to similar information collected during the 1961 Israeli Census. For example, 22 percent of individuals in our sample reported living in an agricultural community (moshav) during their early childhood in the 1950's, while 21 percent of a similarly defined sample of Yemenite immigrants reported this type of residence as of 1956 (five years prior to the Census). We find very similar percentages of people living in agricultural communities between our sample and the 1961 Census also when we condition on gender or on father's occupation in Yemen. In Section 6, we also show a striking similarity between the results using our data versus

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<sup>15</sup> Interestingly, we also find that the pattern of correlations between these background variables does not depend on the person's education or gender. For example, if one regresses "living in a major city in Yemen" on each one of the other background variables, a high school matriculation dummy, and the interaction between the two, none of the interactions are statistically significant. The pattern of correlations is also similar between males and females. These findings suggest that individuals were able to recall their family's information in a similar way across education levels, thus mitigating concerns that certain people were more capable of producing accurate and consistent information about their family background.

those obtained using the 1961 Census, which suggests that recall bias is not driving our main results. And, given that our main results are different for males versus females, it seems unlikely that a gender difference in recall bias could produce such a pattern of results.

### *Quality of the Childhood Environment*

Summary statistics for the three summary measures are presented in the first three columns of Table 2. The first summary measure is an indicator for whether the respondent lived in a home with all three of the following: running water (48 percent), a bathroom (29 percent), and electricity (31 percent). Only 22 percent had all three amenities in their houses. The second measure is an indicator for whether the locality of residence was a “city.” We define a locality as a city if the place of residence was classified as such in the 1961 Israeli Census, and the respondent described it as a city, an “abandoned Arab village,” or “other.” Close to 20 percent of immigrants lived in a city according to this measure.

Our third measure is a self-assessed indicator for whether the place of residence was built exclusively for Yemenite immigrants. This variable is meant to capture the extent to which the place of residence was a segregated ethnic enclave. Many Yemenite immigrants were sent to remote agricultural communities in frontier areas, established in the early 1950s and built exclusively for new immigrants. Others lived in segregated neighbourhoods within larger towns that were populated exclusively by Yemenite immigrants. The table shows that 44 percent of the respondents lived in such an enclave.

Table 2 also shows that the means of the childhood environment variables are roughly similar for men and women, although women tended to report slightly better conditions than men, and these differences are statistically significant.

The correlations between all of the childhood environment measures are presented in the right panel of Table 2. There is a clear pattern that immigrants who lived in cities had better conditions – they were more likely to have a bathroom, running water, and electricity. On the other hand, immigrants who lived in a place built exclusively for Yemenites lived in more rugged living conditions – they were less likely to have a bathroom, electricity, and running water.

Overall, the data reveal that the Yemenites lived in generally sparse conditions, but there is considerable variation to exploit – roughly half of the immigrant children lived without water in their home, or in a new settlement built exclusively for Yemenite immigrants. Roughly a quarter of them lived with electricity, a bathroom, or near a city. Taken as whole, the Yemenites did not wind up in uniform conditions, and this variation will be exploited to test for their long-

run effects on various social and economic outcomes. Although we will estimate the treatment effect of each individual measure of the childhood environment, we view each one as capturing more broadly the overall quality of the environment. In this sense, we view the results as being suggestive of the likely mechanisms at work, rather than attempting to identify the precise mechanism through which childhood conditions affect lifetime outcomes.

### *Social and Economic Outcomes over the Lifetime*

The goal of the paper is to study whether the childhood environment affects a broad array of social and economic outcomes throughout the life of an individual. To this end, we asked each respondent about outcomes related to educational attainment, marriage and fertility, health, employment, political views, religious observance, cultural tastes, and children's educational attainment. Table 3 presents the means for each outcome.

We find that 28 percent of the respondents obtained a high school matriculation degree, and 21.5 percent obtained some sort of post-secondary degree (not necessarily a four-year college). The average of years of schooling in the sample is 11.6. These statistics, and other measures we show below, are roughly comparable to those obtained in the 1995 Israeli Census for Yemenites born between 1945 and 1950.<sup>16</sup> This similarity supports the credibility and accuracy of the survey data.

The means for the fertility outcomes show that the average number of children is 4.04, while 93.2% were married at least once (slightly lower than in the Census, where the percentage of people ever married is 96.1). The divorce rate is quite low (a total of 6.25% are currently divorced), and 4.58% are widowed. The mean age at first marriage was 23.8 years old. In terms of health outcomes, 40 percent reported having some health problems, while only 12.5 reported receiving disability income support from the government. The latter number comes from a standard question that is asked on the Israeli Labour Force Survey, and is perhaps a more objective measure of health status. Regarding employment, 68.7 percent of the men and 58.3 percent of the women were employed at the time of the survey.

The next set of variables in Table 3 captures political and religious attitudes. The political attitudes index ranges from 1 (strongly right wing) to 4 (strongly left), and the religious index ranges from 1 (ultraorthodox) to 5 (secular). The results indicate that the Yemenites are generally

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<sup>16</sup> In the census for this population, the percentage with a high school diploma is 29.2% (std. error 1.4%), average years of schooling is 10.9 (std. error 0.09), and the percentage with some sort of post-secondary degree is 25.4% (std. error 1.3%).

on the right end of the political spectrum, as well as on the orthodox end of the religiosity spectrum. However, the Yemenites are clearly not monolithic in their views -- there appears to be considerable variation in both of these variables. Marrying a fellow Yemenite is very common in our sample, with 72 percent marrying within the group.

We created two variables that are meant to capture the extent of an immigrant's cultural assimilation, by measuring preferences for typically Yemenite foods or performing artists. We asked each respondent to give a rating from 1 to 5 for nine Israeli performing artists that were very popular over the last few decades. Four of them are of Yemenite origin, four of them are of European descent, and the last one is from a Muslim country other than Yemen. To summarize their tastes in music, we use the first principal component from their responses to all nine singers. This variable gave positive weights to Yemenite singers versus non-Yemenite singers.<sup>17</sup> Therefore, a higher value of this variable is indicative of stronger tastes for their own culture versus the music of other cultures. Similarly, each respondent was asked to rate nine different foods from 1 to 5. Three of the food items are considered traditional Yemenite food, one is considered to be exclusively European, one is considered to be very modern, two are considered mainstream Israeli, and two originate in other Middle Eastern countries. The first principal component of all these nine foods put a higher positive weight on Yemenite food.<sup>18</sup> Therefore, a higher value is indicative of someone who is more loyal to Yemenite food (less assimilated in their tastes in food).

Finally, since Operation Magic Carpet occurred about 60 years ago, we are able to observe second-generation outcomes for each immigrant. These variables are presented in the last two rows of Table 3, and indicate that 77.9 percent of the offspring of these immigrants obtained a high school matriculation degree ("Bagrut"), and 45 percent obtained a college degree.<sup>19</sup>

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<sup>17</sup> The factor loadings for the principle component of preferences for singers are: Boaz Sharabi (0.081), Ofra Haza (0.354), Shimi Tavori (0.571), Zohar Argov (0.643) (all these four singers are from a Yemenite origin), Chava Alberstein (-0.718), Arik Einstein (-0.756), Yehoram Gaon (0.047), Shlomo Artzi (-0.486) and Haim Moshe (0.528). Before computing the factor loadings on the variables for each singer, the mean rating an individual gave for all singers was subtracted from the rating the individual gave to each particular singer, in order to remove the fixed-effect for individuals who like all singers versus individuals that do not like singers in general. We did this in order to focus on explaining differences in tastes for a given individual across different artists, rather than capturing variation across individuals in tastes for all music in general.

<sup>18</sup> The factor loadings for the first principal component for preferences for different types of food are: jachnun (0.693), schug (0.190), malawach (0.753) [Yemenite], gefilte fish (-0.591) [European], sushi (-0.44) [modern], hummus (-0.032), falafel (0.223) [Israeli], couscous (-0.241), kubeh (-0.476) [Middle Eastern]. Similar to the procedure used for computing the principal component of singers, the overall mean for each respondent for all foods was subtracted from the individual's rating for each particular food before conducting the factor analysis.

<sup>19</sup> The survey collected information on the first three children's gender, age and educational outcomes. Children's educational attainment is calculated using the average of the first three children over age 19 (for high school completion), and the average of the first three children over age 26 (for college completion).



#### 4. THE EMPIRICAL STRATEGY

Our empirical strategy is to exploit the placement of Yemenite children across different kinds of living conditions in order to identify the causal effect of changing the child's environment on an array of economic and social outcomes measured 60 years later. Our basic regression model explains the outcome of person  $i$  who lived in a childhood environment with characteristic  $j$  with the following equation:

$$\text{Outcome}_{ij} = \lambda_0 + \alpha(\text{Childhood Quality})_j + \lambda_1(\text{Personal and Family Background})_i + u_{ij}$$

The quasi-randomization of immigrant children to settlements and camps throughout Israel should guarantee that the key explanatory variable, childhood quality, is uncorrelated with the residual, thus estimates for the parameter  $\alpha$  can be interpreted as causal. Although  $\alpha$  would be identified without further controls for the person's individual and family characteristics if the treatment were truly ignorable (randomly assigned), these additional measures are included in order to improve the precision of the estimates. We present results with and without an extensive set of personal and family control variables, and we will argue that the generally small differences between the two sets of estimates substantiate our claim that the Yemenites immigrants were placed into their childhood environment in a way that was uncorrelated with other factors which affect lifelong outcomes, so that it is appropriate to give our estimates a causal interpretation.

##### *Evidence on the Validity of the Identification Strategy: Balancing Tests*

The key assumption for the identification strategy is that variation in the quality of the early childhood environment for Yemenite immigrants was indeed random. Anecdotal evidence is consistent with this hypothesis, given the chaotic nature of the country at the time, the strategic policy of scattering immigrants throughout the country, and the homogenous background of the Yemenites themselves (no formal schooling, no understanding of a modern culture, arriving with no belongings, etc). To this day, Yemenite immigrants complain about how the government treated them differently than other immigrant groups. The idea that the Yemenites lacked any significant power of choice is supported in our data by the high fraction of immigrants who claim that the government chose their location of residence. This diminishes the possibility of a

significant selection problem. Nevertheless, we checked whether various characteristics of the respondent's early childhood environment are correlated with family background characteristics in Yemen. If the assignment was indeed random, we would expect to find no significant correlation.<sup>20</sup>

These “balancing tests” are presented in Table 4, which contains the coefficients from regressing each family background characteristic on the three summary measures of the environment (in separate regressions). The first three columns present the estimated coefficients using the whole sample. The treatment indicators (the childhood environment measures) seem to be well balanced in terms of whether the family was rich or poor in Yemen. However, several of the other coefficients on the background variables are significant, and the pattern of these results indicates that government agencies probably did make an effort to guide Yemenite immigrants with an agricultural background into rural environments in Israel.<sup>21</sup> In particular, the characteristics that seem to be imbalanced by treatment status are mainly related to whether the family resided in a city in Yemen and whether they owned a farm or animals. The coefficients indicate that immigrants from a farming background in Yemen had a higher probability to be placed in a farming community in Israel, and urban residents in Yemen were more likely to end up in a city in Israel. Whether the head of household is a community or a religious leader also appears to be somewhat imbalanced, being negatively correlated with having all sanitary conditions and residing in a city. However, the sign of these imbalances is counter-intuitive, since we would expect community leaders to find their way into better living conditions in Israel.

The next columns of Table 4 present similar balancing tests for specific subsamples. Since most of our analysis examines males and females separately, we present balancing tests for the “all conditions” variable separately by gender (columns 4 and 5). We find that the extent of imbalance is fairly similar for the two genders, with those coming from an agricultural background being guided into more rural environments.<sup>22</sup> As we will later see, this relative similarity in the balancing tests between genders stands in sharp contrast to the substantial gender differences we find in the relationship between the treatment and the outcome variables.

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<sup>20</sup> This is not necessarily proof of ignorability (random assignment), as the assumption requires there to be no correlation between the childhood environment and both observable and unobservable background characteristics. However, the lack of a significant relationship between the childhood environment and observable characteristics suggests that it is unlikely that such a relationship exists with the unobservable characteristics.

<sup>21</sup> Although 25 of the 36 coefficients in the first three columns of Tables 4 show statistically significant differences, only five of the normalized differences exceed 0.25, which indicates that size of the differences are rather small. The normalized differences appear in Tables 4a and 4b of a previous version, Gould, Lavy, and Paserman (2009a).

<sup>22</sup> The full set of balancing tests for males and females separately are presented in Appendix Tables 3a and 3b.

Since there appears to have been some effort to guide Yemenites with a farming background into agricultural communities in Israel, we next present balancing tests within three different sub-samples which are characterized by the extent of the family’s farming background in Yemen. We attempted to identify families with and without an agricultural background by using the indicators of whether a family owned a farm in Yemen and whether it lived in a major city. We divided the sample into three groups as follows: farm owners who lived outside city (noted as “rural”), city dwellers who did not own any land (noted as “urban”) and the rest (noted as “others”). The first group clearly had farming/agricultural activities in Yemen, the second clearly did not, and the third is a mixed group.

The balancing tests for these three samples on the “all conditions” indicator are presented in the last three columns of Table 4. The results for all three samples show a somewhat weakened pattern of correlations between the background characteristics and the various measures of treatment. For example, nine of the coefficients are significant using the entire sample, while only one is significant for the “rural” sample, seven are significant in the “urban” sample, and five are significant for the “others” sample. In addition to the reduction in significance, the magnitudes of the coefficients are substantially smaller in two of the three samples.<sup>23</sup> We show below that the outcome results obtained from these relatively well-balanced samples are consistent with those obtained using the full sample, which supports our argument that the treatment variable is not correlated with unobserved factors which affect later outcomes.

Overall, the evidence is reasonably consistent with the idea that the process of placing immigrants into the four camps and subsequently re-locating them over time occurred in a rather random fashion. There is some evidence that authorities may have tried to match the occupational background of the families with their occupation in Israel, but there is no indication that authorities directed high ability or wealthy immigrants into certain locations. In any case, in the outcome regressions, we present estimates with and without controlling for the background variables from Yemen, and show that the estimates are not sensitive to these controls. In addition, we will show that the overall results are very similar to those obtained within the three relatively balanced sub-samples which were defined by the degree of the family’s farming background in Yemen. These patterns indicate that the selection of individuals into childhood environmental conditions is not affecting the estimated results on future outcomes.

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<sup>23</sup> The reduction in statistical significance is not due to the reduction in precision due to smaller samples. The normalized differences exceed the 0.25 threshold only for four of the 34 coefficient estimates.

## 5. EMPIRICAL RESULTS

### 5.1 The Effect on Educational Outcomes

We first present the estimated effects of the childhood environment on long-run education outcomes. Table 5 presents our main results for the effect of having all three sanitary amenities in the house (the “all conditions” indicator) on the high school matriculation rates of boys and girls separately. Appendix Table 4 presents the coefficients for each one of the individual components of the “all conditions” variable (water, electricity, or WC) separately.

The first column in each panel of Table 5 presents the most basic specification which includes only the treatment variable as an independent variable. The results indicate that having “all conditions” in the early environment increased the matriculation rate by a highly significant 10.5 percentage points for girls, and an insignificant 3.6 percentage points for boys. The second column adds “limited controls,” which include dummies for birth year (1945-1950), immigration year (1949-1951), and whether or not the person was in the sample of 264 individuals that were re-interviewed. The addition of these basic controls does not alter the point estimates in a noticeable way. The third column adds several background characteristics which appeared to be imbalanced in Table 4 (those indicating whether the person’s family came from a large city, had an agricultural background, or whether the father was a community leader). Adding these imbalanced controls has no effect on the point estimates for girls, and makes the point estimates for boys become essentially zero. The robustness of the point estimates to these controls supports our assumption that the results are not confounded by unobserved components of the individual’s background. Finally, the fourth specification in Table 5 adds several controls that appeared to be balanced in Table 4 (family coming from a rich or poor background, and dummies for each occupation of the household head).<sup>24</sup> Again, the results are very robust to the exclusion or inclusion of a vast array of background variables, which provides support for the causal interpretation of the estimated treatment effects.

It is worth noting that the coefficient estimates on the background variables, including most of the imbalanced ones, are not significant in Table 5. The signs of the coefficients are also inconsistent with a sorting scenario: owning a farm lowers education but owing animals increases the matriculation rate. These findings reinforce our argument that the treatment variable is

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<sup>24</sup> We regressed “all conditions” on all the additional controls in the fourth specification, and the F-statistic yielded an insignificant effect of all the slope coefficients.

uncorrelated with factors which systematically affect later outcomes, despite being somewhat correlated with the family background in Yemen.

Table 6 presents results for additional educational outcomes and for the other two ways of measuring the early environment (city status, living in a place built for Yemenites). To conserve space, we only present the coefficients on the treatment variables (from separate regressions) for the “limited” and “full” controls specification used in Table 5, plus an additional specification which adds measures for local income and income growth into the “full controls” specification. One may be concerned that locations with better measures of the environment in the early 1950s also experienced faster economic growth in subsequent decades. Hence any effects we identify may be due to this income effect faced in later years rather than the quality of the environment faced during childhood per se. To address this concern, the third specification in Table 6 adds two variables to the “full controls” specification: log average income in the respondent’s subdistrict in 1972 as a proxy for local income growth in the first 25 years since the creation of Israel (1972 is the earliest year in which income by subdistrict is available), and income growth in the subdistrict from 1972-1995.<sup>25</sup>

Table 6 examines three educational outcomes: high school matriculation, an indicator for successful completion of some type of post secondary schooling (not necessarily an undergraduate degree), and the number of years of schooling. Similar to Table 5, the results show that a more modern and urban childhood environment had a positive and significant effect on the educational attainment for females, but not for males. The most significant environmental measure is the “all conditions” variable, and it is important to note that each individual condition yields similar results to the “all conditions” measure (see Appendix Table 4). Growing up in a city also seemed to have a positive effect on schooling for females, while living in a Yemenite settlement had a negative effect on education outcomes. Moreover, controlling for measures of income growth has essentially no effect on the treatment coefficients, even though the coefficients on the two income growth variables are generally positive and statistically significant.

The finding of differential effects for males versus females provides additional support to the causal interpretation of our estimates. There would be no reason to observe a different effect of the environment on males and females if it was all due to endogenous sorting, especially given

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<sup>25</sup> Average income is calculated as the average real monthly income (in 1995 NIS) for males aged 25-54 by subdistrict. Subdistricts are the smallest geographic areas that are identifiable in Israeli data. The whole Israeli territory (excluding the West Bank and Gaza) is divided into 15 subdistricts. Data on income are taken from the 1972 and 1995 Israeli Censuses of Population and Housing.

the fact that we did not observe meaningful gender differences in the balancing tests (Table 4 actually shows stronger sorting for males than for females).

According to the “full controls” specification in Table 6, growing up in a house with running water, WC, and electricity increases the probability that a female obtains a matriculation diploma by 8.8 percentage points, which implies a 30 percent increase in the matriculation rate relative to the 26.7 percent average matriculation rate observed among females. The estimated effect of growing up in a city environment is similar: an increase of 6.3 percentage points. Living in an ethnic enclave lowers the high school matriculation rate by 4.1 percentage points.

The early environment also affects a female’s probability of obtaining a post-secondary degree and total years of schooling. For example, having all three conditions increases the probability of obtaining a post-secondary degree by 6.2 percentage points relative to the overall rate of 22.2 percent, and increases years of schooling by 0.6 years relative to a mean of 11.4 years. The former effect is particularly large in magnitude. The effects of living in a city and in an ethnic enclave are smaller and not always statistically significant.

Relative to the large estimated effects for females, we find much weaker or no effects at all for males. For example, the estimate for “all conditions” on having a high school matriculation diploma is 0.013 (s.e. 0.032) versus 0.088 (s.e 0.028) for women. The effect of living in a city or outside of an ethnic enclave has an effect on matriculation outcomes that is larger and comparable to the effect for females, though not always precisely estimated. The estimated effects of the early conditions on total years of schooling and post-secondary degree for men are even negative (though not significant) in comparison to the positive and large estimated effects for women. This is a striking contrast, and is a pattern which tends to repeat itself throughout the rest of the paper.<sup>26, 27</sup>

## 5.2 Robustness Checks

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<sup>26</sup> To assess sensitivity of our results to the definition of the childhood environment, we also ran a specification in which we used as the treatment variable the average of the three basic conditions (water, WC and electricity) over the first three locations in Israel. Specifically, we defined 9 binary indicators (water in location 1, WC in location 1, electricity in location 1, water in location 2, etc.) and we calculated the average of these 9 indicators for every individual in the sample. The results are very similar to the ones obtained in the main specification.

<sup>27</sup> One could make a case for using settlement characteristics for the first or second settlement alone, since the Yemenites were less likely to have moved to a settlement of their own choice, and the authorities had less opportunity to gather detailed information on the immigrant families. However, living conditions in the second place of residence are correlated with background characteristics in Yemen almost to the same extent as the conditions in what we define as the childhood environment in the main analysis. As for the first place of residence, there is almost no variation at all in living conditions (less than 2 percent of the sample had all three basic conditions), and the duration of stay was probably too short to affect later outcomes in a significant manner.

The results presented in Tables 5 and 6 were not sensitive to several other variations in specification which are not reported.<sup>28</sup> First, including an additional control variable for whether the family placement in the childhood locality was determined by the government (which was true for about 70 percent of the sample) left all the parameter estimates almost unchanged. Similar results were also obtained after including indicators for whether the “childhood place” was the first, second, or third location of the family after arriving to Israel.

We also explored whether the effects differ by the age of immigration by including an interaction between our treatment variables and year of birth. The results indicated that the effect of the childhood environment was slightly larger for older girls, although the estimates were not very significant statistically (for example, when the dependent variable is high school matriculation, the interaction term has a t-statistic of 1.57).

To further examine whether our results are driven by selection, we performed a similar analysis within three subsamples defined by the extent of the family’s farming background (described above in Table 4). Table 7 presents results obtained from the “rural” sample (panel A), the “urban” sample (panel B), and the “other” sample (panel C). Recall that in comparison to the full sample, these samples were well balanced in terms of the characteristics of the family in Yemen. To save space, we present only the “full controls” specification, but the estimates are not sensitive to the inclusion or exclusion of a long list of control variables, reflecting the balancing results in Table 4.

The pattern of results in Table 7 is similar to the previous two tables: positive estimated effects on females for the “all conditions” measure in all three samples and no significant effect on any of the male education outcomes in two of the three samples. Overall, the point estimates in the “rural” sample are slightly larger than those from the other two samples. For example, the effect on the female matriculation rate is 0.120 (marginally insignificant) versus 0.094 in the “urban” sample and 0.079 in the “others” sample. Overall, the estimates in Table 7 are less precise than those in Table 6, most likely because of the much smaller sample sizes in comparison to the full sample. However, the estimates based on the three samples do not point to much heterogeneity in the treatment effect. These results strengthen our confidence that the estimated effect of our childhood environment measures on girls’ educational outcomes is causal and not due to endogenous placement.

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<sup>28</sup> The results mentioned in this section are available upon request from the authors.

### 5.3 The Effect on the Human Capital of the Second Generation

In this section, we assess whether the childhood environment affects the educational outcomes of the next generation. We focus on the human capital of the first three children because the other children are most likely too young to complete their schooling at the time of the survey. Also, we want to compare the outcomes of children across families, and therefore, not controlling for family size may confound the estimated treatment effect on human capital with the treatment effect on family size.

In the survey, we asked each respondent for the education levels of their first three children. Specifically, we know whether each child completed high school and whether he or she obtained a B.A. degree from a university or other institution of higher education. We then averaged this information over all three children aged 19 and above (for high school completion) and aged 26 and above (for college completion).<sup>29</sup> For this outcome, we estimate reduced form equations focusing on the three summary measures of the early childhood environment. We consider this “reduced form” in the sense that we do not estimate the distinct channels through which there might be an effect – such as through observed effects on the parents (perhaps their level of human capital) or unobserved channels (through the quality of the spouse if there is assortative matching based on different childhood conditions).

Table 8 presents the estimated effects of the three childhood conditions on the respondent’s children’s educational outcomes, estimated from separate regressions. The sample includes all female respondents in the first two columns, and all male respondents in the next two columns. We also present the results for the entire sample of respondents in the last two columns of the table. In addition to the usual controls, the regressions also control for the gender of the children (female children have significantly better educational outcomes), and the average age of the children (which has little effect on outcomes).

We find that parents growing up in a more modern childhood environment had children with slightly higher educational outcomes. This is true of both female and male parents, but the coefficients are not very significant. When we pool all respondents together, we obtain more precise estimates and find that parents who lived with “all conditions” during their childhood had children with a significantly higher matriculation rate and college completion rate by 3.2 and 3.3 percentage points respectively. The size of this estimate is about one third of the size of the effect of the environment on the parents’ educational outcomes. This number is roughly what one would

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<sup>29</sup> Because of compulsory military service, most Israelis complete their college education no earlier than age 25.



have expected given the large literature on the intergenerational correlation in economic status: the central tendency of estimates of the intergenerational correlation coefficient is between 0.3 and 0.4 (Solon, 1999).

Table 9 explores the issue further by examining whether the effect on the next generation differs by the gender or birth order of the child in the next generation. The results are not very different for boys versus girls in the next generation, although they appear to be a little stronger for boys. In contrast, the results seem to be stronger for the second and third child versus the first child. The relatively consistent pattern of results across these distinct sub-samples serves as a useful robustness check for the findings in Table 7 for the whole sample.

#### 5.4 The Effect on Non-Educational Outcomes

##### Marriage and Fertility

We consider three marriage and fertility related outcomes: age at first marriage, currently divorced, and total number of children. The mean age of marriage is 22.5 for women and 25.1 for men. Almost 7 percent of women in the sample are divorced versus 5.7 percent among men. The mean number of children among women and men in the sample is almost identical, four children per family.

Table 10 presents the estimated effects for these three outcomes. Again, strong effects are found for women and little effects are found for men. For women, better childhood conditions raise the age at first marriage and the divorce rate (this should probably be interpreted as an indicator of women's independence and increased bargaining power within the household), but lowers fertility. The coefficient on whether the place was built for Yemenites has the expected sign, but is significant only for the fertility outcome, while growing up in a city has no effect on any of the female outcomes. The effects for "all conditions" are not only significant, but substantial in magnitude: having all three sanitary amenities during childhood increases a woman's age of marriage by two-thirds of a year, raises the divorce rate by almost 5 percentage points, and lowers the number of children by about one-fifth of a child. In light of the patterns displayed in Tables 8 and 9 regarding the "quality" of the respondent's children, these findings indicate that a more modern childhood environment led women to choose a lower quantity of children, but with higher quality. Overall, the results indicate that a more established childhood environment helped women to achieve outcomes that conform less to traditional gender roles within the family.

For men, we find mostly insignificant results for the living conditions and the ethnic enclave indicators, but growing up in an urban environment significantly raises the age at first marriage and lowers fertility. These results suggest that the larger choice set in urban marriage markets may have enabled Yemenite men to deviate more from the norm of marrying at a young age and having a large family. We later will see that growing up in a city also lowered the probability of men marrying within the Yemenite community.

### Health and Employment

Table 11 examines the effect of the early childhood environment on health outcomes and employment status at the time of the interview in 2006, when respondents were in their late 50s and 60s. We use two measures of health status: an indicator of whether the individual has health problems (self-assessed); and an indicator for whether the individual receives disability income support from the National Social Security System, which can be viewed as a more objective measure of health. Forty percent of men and women report that they have health problems. Fourteen percent of men and 11 percent of women receive disability income.

Almost all of the health related estimates in Table 11 are small and not significantly different from zero, and the signs of the coefficients paint a somewhat mixed picture about the relationship between the quality of the early childhood environment and health outcomes later in life. For women, there is evidence that growing up in an urban environment had a positive effect on health outcomes: growing up in a city lowers the probability of reporting a health problem by 6.2 percentage points. On the other hand, the other summary measure of living conditions and the indicator for living in a Yemenite enclave do not appear to have any effect on health outcomes. For men, the pattern is reversed: a poor childhood environment lowers self-reported health status by 4.8 percentage points, but living in a city has no effect on health outcomes. An important caveat to these results is that differential mortality could be a source of bias in the analysis. Specifically, it is possible that poor sanitary conditions early in life had an effect primarily on child mortality. We are only able to observe individuals who reached an advanced age: hence, our sample may be selected to include only relatively healthy individuals, who were less susceptible to disease during their youth. This type of selection would bias the results against finding a significant effect on health outcomes.<sup>30</sup>

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<sup>30</sup> Unfortunately, we did not have information on deceased individuals, and we did not feel comfortable asking the respondents about siblings who died as children because of the sensitivity of the subject matter, especially given the controversy surrounding the case of the "missing Yemenite children." See also footnote 9.

For women, we find evidence that growing up in a more established environment had a positive effect on employment fifty years later. Living in a household with all three conditions of the childhood environment raises the employment rate by 7.2 percentage points for women, an effect quite large in magnitude. This finding is remarkable given that employment is a very long-term outcome, and many mediating factors could have intervened to weaken the impact of living conditions during childhood. For men, there is no evidence that a better childhood environment had a positive effect on long-term employment outcomes. If anything, there is some evidence that growing up in a city lowers the probability of being employed at age 56-61.

### *Political Attitudes, Religiosity, and Social Assimilation*

Table 12 analyzes the effect of the early childhood environment on political and religious attitudes, and on three measures of social assimilation. The first column in each panel of the table shows that the early childhood environment has no effect on the political attitudes of either men or women.<sup>31</sup> The second column, on the other hand, shows that good living conditions and living outside of a Yemenite enclave strongly reduce the probability of being religious for women. For men, the probability of being religious is negatively affected only by childhood living conditions.

We then examine three indicators of the extent of social integration into Israeli society. The first is an indicator for being married to a spouse of Yemenite origin (i.e., a spouse either born in Yemen or whose father was born in Yemen). Seventy-one percent of the men and 73 percent of the women married within their group. This probability increases substantially for both men and women if they grew up in a Yemenite enclave, but the effect for women is larger by about 60 percent. Interestingly, growing up in a city reduced the probability of marrying within the Yemenite community for men, but had no effect on women. These results suggest that women were less likely to take advantage of the increased matching opportunities available in cities, and were more likely to be shielded by their families. It appears that growing up in an immigrant enclave slows down the process of assimilation into society at large.

Finally, we show that the early childhood environment affected the individual's tastes in food and music. In particular, both men and women who grew up in an immigrant enclave were more likely to develop a loyalty to Yemenite cultural tastes, and less likely to develop worldly tastes in music and food. These results join the growing literature on the importance of culture in

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<sup>31</sup> To facilitate the interpretation of the coefficients, the models in columns 1 and 2 were estimated as a linear regression, even though the dependent variable is ordered and discrete. Results using an ordered probit are essentially identical.

shaping economic outcomes (Guiso, Sapienza and Zingales, 2006; Bisin and Verdier, 2000; Bisin, Topa and Verdier, 2004; Fernández, Fogli and Olivetti, 2004; Fernández and Fogli, 2009; Alesina and Giuliano, 2007), and contribute to the understanding of the dynamics of cultural assimilation. They are consistent with the theoretical and empirical findings of Lazear (1999), who documents that immigrant cultural assimilation (as measured by language proficiency) is inversely related to the relative size of the immigrant community.<sup>32</sup> Our results show that this prediction extends also to other dimensions of cultural assimilation, as well as to the generation who migrated at a very young age, and thus did not face language problems. Importantly, our results show that the transmission of cultural traits and preferences across generations is not fixed and immutable, but is also mediated by the outside environment.

## 6. ADDITIONAL EVIDENCE FROM ISRAELI CENSUS DATA

In this section, we use data from the 1961 Israeli Census to corroborate the findings described above. The advantage of the 1961 Census data is that the information available is not subject to any form of recall bias, and it allows us to investigate more deeply some of the outcomes, such as human capital accumulation, that were determined early in life.

One of the disadvantages of the Census data is that we only have limited information on the initial location of the Yemenite immigrants. However, we can approximate the childhood environment using information on the locality of residence in 1956, five years before the Census was conducted. Specifically, we use as our measure of the environment an indicator for whether the 1956 locality of residence was a rural locality (a large village, a small village, a collective moshav or a kibbutz) built for immigrants (i.e. established after 1948). Using the same sample restrictions as we used in the main analysis (i.e. year of birth between 1945 and 1950, year of immigration between 1948 and 1951), we find that 27% of respondents lived in such a locality in 1956.

Table 13 presents a series of balancing tests, where we regress a number of background characteristics of the two parents on an indicator for whether the locality of residence in 1956 was a rural locality built for immigrants. The first column presents the balancing tests for the sample of all Yemenite immigrants meeting our sample selection criteria. The second and third columns look at males and females separately. Relative to the data collected for the main analysis, the

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<sup>32</sup> Similarly, Fernández and Fogli (2009) find that the effect of cultural proxies on the work and fertility behavior of second-generation immigrant women is amplified by the greater the tendency of immigrant groups to cluster in ethnic neighbourhoods.

1961 Census allows us to include some additional variables, such as the parents' age and illiteracy status, and the proportion of children born to the mother abroad who did not survive.

The results are in many ways similar to those obtained using our own retrospective survey. The likelihood of living in an isolated rural locality was higher for children whose fathers were craftsmen in Yemen, and lower for children whose fathers were employed in commerce. Father's education and illiteracy status were uncorrelated with the type of locality in 1956, but children with illiterate mothers and mothers with high child mortality rates were more likely to live in relatively weak environments. One important feature that jumps out from this data is that younger parents were substantially more likely to live in rural localities, presumably because younger workers could be more productive in the agricultural sector.

Overall, the pattern that emerges is that, as in our main analysis, locality of residence was somewhat correlated with background characteristics. However, this correlation was likely small and not economically important. The last two columns of Table 12 show the balancing tests for all other immigrants (column 4) and for all immigrants from Middle Eastern countries. The contrast in the relationship between father's years of schooling and type of locality is especially striking: fathers of other immigrants living in rural localities had between 0.6 and 0.9 fewer years of schooling relative to fathers living in other localities. Also, the effect of having an agricultural background on the probability of living in a rural locality was larger for other immigrants than it was for Yemenites. These findings suggest that the pattern of selection into localities based on observed (and possibly unobserved) characteristics was much weaker for Yemenites than it was for other immigrants.

Table 14 examines the effect of living in a rural locality in 1956 on the education and employment outcomes of Yemenite immigrants. The Census asked questions about enrolment in school, completed years of schooling, and employment status only for people aged 14 and above. Therefore, we can investigate the effect of the environment only for the older cohorts among the population of interest (those born between 1945 and 1947). The first two rows of the table present the means of the dependent variable by type of locality in 1956. For females, the results are strikingly similar to those obtained in the main analysis. Living in a rural environment in 1956 reduces enrolment rates of 14-16 year old girls by almost 15 percentage points. This difference is unchanged when we control for year of birth and year of immigration dummies (third row of the table), and is slightly smaller when we control for all of the parental background variables described in Table 13 (fourth row of the table), but is still large in magnitude and statistically significant at the ten percent level. This same finding is confirmed when we use completed years

of schooling as the dependent variable: girls in rural localities had completed on average one full year of schooling less than those in other localities. Lower female enrolment rates in rural localities are compensated by substantially higher employment rates. More than one third of the girls in rural localities worked for pay in the week prior to the census, as opposed to barely 12 percent in other localities. For boys, we find some evidence that enrolment rates in rural localities were higher, but the difference is not robust to the specification used, and there is no evidence for a rural-urban gap in completed years of schooling and in employment rates.

## 7. DISCUSSION

Using two distinct sources of data, our findings indicate that Yemenite girls who grew up in less advanced environments tended to drop out of school earlier and accumulate less human capital. On the other hand, there is no evidence that boys in less advanced environments attained lower educational outcomes. This pattern is probably not due to a higher likelihood for girls to substitute for their mother's labour supply in rural areas, since the labour supply of older women was very close to zero in both urban and rural areas. Therefore, what can explain this pattern?

One possible explanation is based on the idea that cultural norms were probably easier to enforce in remote villages and Yemenite enclaves versus more urban, modern environments. Stronger cultural norms could have increased the return to human capital for boys relative to girls in rural environments, as well as raising the costs for girls relative to boys in acquiring human capital. The returns to education were probably lower for girls, since Yemenite men, not women, were expected to provide for their family. Women typically did not work outside of the house, and therefore, the returns to human capital are likely to be lower in rural areas where these traditions were more likely to be maintained. Traditional values would also raise the costs to education in rural areas for girls, since students in rural areas frequently had to travel several miles to neighbouring villages to attend high school, and Yemenite parents were probably more uncomfortable with girls travelling far from home unsupervised than with their sons.

In general, a larger degree of independence for boys would allow them to overcome the physical isolation of remote communities, exposing them to modern influences much more than girls growing up in a rural environment. Therefore, the conditions of the immediate environment would be less influential for boys versus girls, where girls would need to be closer to modern amenities and cultural influences to be affected by them. This mechanism is related to the arguments made by Munshi and Rosenzweig (2006), who show that women are more likely to be affected by their exposure to modernity than men.

Our findings are also consistent with the literature on gender bias in the allocation of nutrition and other resources in developing countries, particularly in times of unusual hardship. For example, Maccini and Yang (2009) show that fluctuations in rainfall during early childhood impact the long term outcomes for women but not for men in Indonesia. Earlier studies also have found that the short-term negative impacts of shocks are greater for girls than for boys.<sup>33</sup> The Yemenite population in our study originated from a very poor, developing country, and therefore our findings could be explained by a similar gender bias against girls in the face of adverse economic shocks. In particular, Yemenite parents may have tried to compensate for weak external factors by investing in the human capital of their sons, but not that of their daughters.

Additional evidence for gender asymmetries in the effect of the childhood environment can be found in data from developed economies as well. In their study of the “Moving to Opportunity” (MTO) program, Kling, Liebman, and Katz (2007) found that being in a safer neighbourhood had beneficial effects on education, risky behaviour, and health for girls, but not for boys. In the Israeli context, Frisch and Zussman (2009) find that “age-at-immigration” had a much larger detrimental impact on schooling attainment for girls versus boys who immigrated to Israel from Arab countries in the early 1950s. A similar pattern is found for the Yemenite immigrants: using data from the 1995 Israeli Census, we regressed completed years of schooling on age at immigration for Yemenite immigrants from 1948-1951 who immigrated before the age of 10: the estimated coefficient is -0.36 (s.e. 0.03) for women and -0.16 (s.e. 0.03) for men. Immigrating at an older age is in some ways similar to growing up in a more difficult environment, because younger children acquire language skills more easily and therefore face lower obstacles in school (Bleakley and Chin, 2004). Hence, the fact that age at immigration has a much larger effect on women than on men is consistent with the notion that the environment had a larger impact on Yemenite girls versus boys.

## 8. CONCLUSION

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<sup>33</sup> Das Gupta (1987) finds that girls in rural India have twice the mortality rate as boys, arguing that the differential is due to differences in medical care, nutrition, and clothing. Behrman (1988) and Behrman and Deolalikar (1990) document biases favoring boys in nutrient allocation in Indian households during difficult times. Rose (1999) finds that the gender bias in infant mortality in India narrows when districts experience higher rainfall. Cameron and Worswick (2001) find that, in response to crop loss, Indonesian families with girls are more likely to reduce educational expenditures than are families with boys. Jayachandran (forthcoming) finds that negative shocks to air quality in Indonesia affect female more than male infant mortality.

This paper exploits a unique episode where 50,000 Yemenites were airlifted to Israel in 1949 over the course of a few months. The Yemenites lacked any formal schooling, and literally arrived to Israel without any money or belongings. Being completely unfamiliar with the environment they suddenly found themselves in, the Yemenites essentially followed the instructions of governmental authorities who scattered them across the country for strategic reasons.

As a result, this operation presents a rare opportunity to estimate the effect of the childhood environment on a large array of social and economic outcomes. Our focus on long-term outcomes lasting almost 60 years, including the educational attainment of the next generation, is a key distinguishing feature of the paper.

Our analysis indicates that children who were placed in a more established environment were more likely to obtain higher education, marry at an older age, have fewer children, and be more assimilated into Israeli society. We also find an effect on the next generation – children who lived in a more modern environment grew up to have children who had higher educational attainment. Most of these effects are much more pronounced for girls than boys. Although we do find that the Yemenite immigrants from families with a farming background in Yemen were more likely to find themselves in farming communities in Israel during their childhood, we provide several reasons to believe that this kind of sorting is not responsible for the results summarized above. For example, we show that the families of boys and girls were sorted similarly, so if sorting is producing our results, we should have obtained similar, rather than very different results for males versus females. In addition, there does not appear to be any sorting within the sample that had an agricultural background in Yemen versus those that did not, and the results are similar within each group as well as to those obtained from the full sample. Finally, the results are very similar with no additional controls at all and after controlling for a large variety of background variables. All of this evidence supports a causal interpretation for the estimated effects summarized above.

It is worth noting that the estimated effect of the early environment on education levels in our analysis is quite substantial. Growing up in a high quality environment led to a 9 percentage point increase in the high school matriculation rate (relative to a mean of 27 percent), and to a 0.6 increase in total years of schooling (relative to a mean of 11.4). These are equivalent to increases of about 0.18-0.20 standard deviations in the outcome measures. Data from the 1961 Census shows that the difference in the share of adults with a high school education between new localities built for immigrants (our proxy for a low-quality environment) and other localities is



about 9 percentage points (14 percent versus 23 percent), or roughly 0.25 of a standard deviation. By comparison, the difference in neighbourhood characteristics (e.g., the average poverty rate, or whether drugs were sold or used in the neighbourhood) between subjects assigned to the experimental and control groups in the Moving to Opportunity experiment in Boston was also 0.25 of a standard deviation, and this was associated with a 0.14 standard deviation increase in a broad educational index for girls (but not for boys).

The type of treatment that we analyze, however, is perhaps more easily comparable to an intervention that rapidly brings modernization to a community in a developing country. So, for example, it may be instructive to compare our estimates to the estimates of Duflo (2001), who studied the large school construction program implemented in Indonesia in the 1970s. This program added on average two more primary schools per 1000 children in the districts affected. Duflo finds that one extra school per 1000 children raises total years of schooling by between 0.12 and 0.19. In our analysis, moving a child from a rural environment with fewer amenities to a more modern environment raises education levels by 0.6 for girls, which is roughly three times larger than the estimated impact of the treatment measure in Duflo (2001).

Our research sheds light on a number of important issues related to immigration, welfare policies, and the process of development. All industrialized countries have seen a sharp increase in immigration from the developing world in the past two decades. Some of these immigration waves originate from countries where the gap in income per capita relative to OECD countries is similar in magnitude to that between Yemen and Israel in the 1950's.<sup>34</sup> Our results suggest that encouraging lower income families and immigrants to locate into more established neighbourhoods could have long-lasting effects. In addition, the transition from a mostly rural and impoverished environment to a modern economy experienced by the Yemenites is in many ways comparable to the process of modernization and urbanization that continues to take place in many less developed countries. Our study can shed light on the factors that can affect the migrants' accumulation of human capital, and on how these effects are transmitted across generations.

Moreover, we view the differential effects between girls and boys as being particularly important from a policy perspective. Growing up in a more modern environment has large effects on female educational investments, which also translate into a number of other outcomes later in

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<sup>34</sup> For example, more than 50 percent of the asylum seekers in Sweden studied in Edin et al., (2003) come from the Middle East and Africa. Similarly, the nationalities most represented in the sample of refugees resettled in the United States analyzed by Beaman (2009) include some of the poorest countries worldwide, such as Afghanistan, Sudan and Liberia.

life: delayed marriage, reduced fertility, and higher employment rates at age 60. These patterns suggest that female outcomes are highly responsive to outside interventions. Given the literature on the importance of education for women's reproductive behaviour, and how this affects their well-being and the economic opportunities of their offspring (Schultz, 2010), our findings imply that there may be substantial scope for policy interventions that improve welfare by raising female investments in human capital in developing countries.

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Table 1: Descriptive Statistics of Family and Personal Characteristics

Measure	Full Sample	Female	Male
	Mean (n)	Mean (n)	Mean (n)
<b>Family Background</b>			
Head of household's occupation: merchant	0.246 (2720)	0.259 (1336)	0.233 (1384)
Head of household's occupation: craftsman	0.578 (2720)	0.585 (1336)	0.572 (1384)
Location in Yemen: major city	0.435 (2339)	0.456 (1135)	0.416 (1204)
Family has relatives living in Israel	0.401 (2656)	0.384 (1316)	0.419 (1340)
Head of household is female	0.021 (2897)	0.032 (1457)	0.011 (1440)
<b>Family Wealth Status in Yemen</b>			
Rich	0.310 (2785)	0.311 (1395)	0.309 (1390)
Poor	0.166 (2785)	0.160 (1395)	0.172 (1390)
Owned farm	0.386 (2424)	0.363 (1186)	0.408 (1238)
Owned animals	0.696 (2565)	0.670 (1245)	0.721 (1320)
Employed workers	0.250 (2615)	0.245 (1304)	0.256 (1311)
<b>Family Social Status in Yemen</b>			
Head of household is religious leader	0.288 (2795)	0.298 (1389)	0.277 (1406)
Head of household is community leader	0.255 (2745)	0.260 (1356)	0.251 (1389)

Notes: Numbers of observations are presented in parentheses. Sample size varies by indicators, reflecting differences in number of missing values. All variables are indicators that assume a 1 or 0 value.

Table 2: Descriptive Statistics and Correlation Matrix of Various Measures of the Early Childhood Environment

Measure	Full Sample	Female	Male	Correlation matrix					
	Mean (N)	Mean (N)	Mean (N)	Water	WC	Electricity	All conditions	City	Place was built for Yemenites
Water	0.477 (2744)	0.515 (1362)	0.439 (1382)	1.000	-	-	-	-	-
WC	0.285 (2799)	0.308 (1404)	0.261 (1395)	0.638	1.000	-	-	-	-
Electricity	0.311 (2764)	0.342 (1377)	0.280 (1387)	0.675	0.669	1.000	-	-	-
<b>All conditions</b>	<b>0.220</b> <b>(2809)</b>	<b>0.241</b> <b>(1410)</b>	<b>0.198</b> <b>(1399)</b>	0.571	0.855	0.802	<b>1.000</b>	-	-
<b>City</b>	<b>0.203</b> <b>(2870)</b>	<b>0.213</b> <b>(1434)</b>	<b>0.194</b> <b>(1436)</b>	0.280	0.377	0.287	<b>0.336</b>	<b>1.000</b>	-
<b>Place was built for Yemenites</b>	<b>0.444</b> <b>(2794)</b>	<b>0.443</b> <b>(1379)</b>	<b>0.445</b> <b>(1415)</b>	-0.245	-0.314	-0.256	<b>-0.298</b>	<b>-0.340</b>	<b>1.000</b>

Notes: Number of observations are presented in parentheses. Standard deviations are presented in brackets. The variable "All conditions" is a dummy variable equal to 1 if the respondent lived in a home with running water, WC and electricity during the childhood period. All correlation coefficients have a p-value lower than 0.001.

Table 3: Descriptive Statistics of Outcomes Variables

Measure	Full Sample	Female	Male
	Mean	Mean	Mean
<b>Education Outcomes</b>			
High school matriculation diploma	0.279 (2882)	0.267 (1458)	0.291 (1424)
Post Secondary Diploma	0.215 (2873)	0.222 (1452)	0.208 (1421)
Years of Schooling	11.613 (2908)	11.397 (1466)	11.832 (1442)
<b>Marriage and Fertility</b>			
Age at First Marriage	23.838 (2798)	22.537 (1392)	25.126 (1406)
Divorced	0.063 (2922)	0.069 (1471)	0.057 (1451)
Number of Children	4.037 (2866)	4.001 (1429)	4.072 (1437)
<b>Health and Employment</b>			
Has Health Problems	0.399 (2874)	0.402 (1454)	0.396 (1420)
Receiving Disability Income Support	0.125 (2876)	0.110 (1458)	0.140 (1418)
Currently Employed	0.635 (2908)	0.583 (1464)	0.687 (1444)
<b>Attitudes and Assimilation</b>			
Political Affiliations (right=1 left=4)	1.619 (2130)	1.589 (1031)	1.648 (1099)
Religiosity Level (religious=1 secular=5)	2.837 (2910)	2.803 (1469)	2.871 (1441)
Married to Yemenite	0.720 (2911)	0.733 (1464)	0.707 (1447)
Preference for Yemenite foods	0.000 (2269)	-0.141 (1171)	0.150 (1098)
Preference for Yemenite singers	0.000 (2762)	-0.117 (1398)	0.120 (1364)
<b>Children's Outcomes</b>			
Children's Bagrut Average	0.779 (2765)	0.788 (1373)	0.770 (1392)
Children's BA Average	0.450 (2639)	0.455 (1315)	0.446 (1324)

Notes: Numbers of observations are presented in parentheses. Sample size varies by indicators, reflecting differences in number of missing values.



Table 4: Balancing Test of Family and Personal Characteristics with Respect to the Treatment Variables, Specific Samples

	Treatment indicator and sample								
		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Mean	All Conditions, whole sample	City, whole sample	Place Was Built for Yemenites, whole sample	All Conditions, females only	All Conditions, males only	All Conditions, RURAL	All Conditions, URBAN	All Conditions, OTHERS
<b>DEPENDENT VARIABLE</b>									
<b>Family Background</b>									
Head of household's occupation: merchant	0.246	0.090* (0.020)	0.126* (0.020)	-0.033* (0.017)	0.103* (0.028)	0.073* (0.029)	0.039 (.053)	0.138* (.042)	0.057* (.026)
Head of household's occupation: craftsman	0.578	-0.074* (0.023)	-0.108* (0.024)	0.024 (0.019)	-0.094* (0.032)	-0.055 (0.034)	-0.002 (.063)	-0.150* (.045)	-0.046 (.031)
Location in Yemen: major city	0.435	0.202* (0.025)	0.224* (0.025)	-0.097* (0.021)	0.186* (0.035)	0.216* (0.035)	-	-	0.119* (.034)
Family has relatives living in Israel	0.401	0.073* (0.023)	0.077* (0.024)	-0.072* (0.020)	0.092* (0.032)	0.057* (0.034)	0.017 (.064)	0.106* (.046)	0.055* (.031)
Head of household is female	0.021	-0.003 (0.007)	-0.009 (0.007)	0.000 (0.005)	-0.011 (0.011)	0.004 (0.007)	0.009 (.017)	-0.005 (.014)	-0.006 (.009)
<b>Family Wealth Status in Yemen</b>									
Rich	0.310	0.048* (0.022)	0.010 (0.022)	-0.007 (0.018)	0.074* (0.030)	0.020 (0.032)	0.100 (.063)	0.119* (.040)	0.028 (.028)
Poor	0.166	-0.027 (0.017)	-0.010 (0.018)	0.005 (0.014)	-0.038 (0.023)	-0.013 (0.026)	-0.009 (.031)	-0.065* (.037)	-0.038 (.024)
Owned farm	0.386	-0.117* (0.024)	-0.103* (0.024)	0.074* (0.020)	-0.101* (0.033)	-0.129* (0.035)	-	-	-0.014 (.033)
Owned animals	0.696	-0.164* (0.022)	-0.155* (0.023)	0.083* (0.019)	-0.120* (0.031)	-0.207* (0.031)	-0.058* (.031)	-0.201* (.045)	-0.071* (.030)
Employed workers	0.250	0.045* (0.021)	0.026 (0.021)	-0.029* (0.017)	0.056* (0.029)	0.033 (0.031)	-0.053 (.065)	0.158* (.039)	0.031 (.026)
<b>Family Social Status in Yemen</b>									
Head of household is religious leader	0.288	-0.049* (0.021)	-0.061* (0.021)	0.019 (0.018)	-0.060* (0.029)	-0.039 (0.030)	0.012 (.059)	-0.047 (.039)	-0.049* (.028)
Head of household is community leader	0.255	-0.046* (0.021)	-0.069* (0.021)	0.029* (0.017)	-0.047 (0.028)	-0.047 (0.030)	-0.024 (.060)	-0.045 (.037)	-0.037 (.027)

Notes: Standard errors are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. Numbers in italics are the ratio of the mean difference by treatment status divided by the mean of the standard deviation of the characteristic.

Table 5: The Effect of the Childhood Environment on High School Matriculation

	Females				Males			
	No controls	Limited controls	Limited + unbalanced controls	Full controls	No controls	Limited controls	Limited + unbalanced controls	Full Controls
All conditions	0.105* (0.031)	0.108* (0.030)	0.102* (0.029)	0.088* (0.029)	0.036 (0.030)	0.039 (0.030)	0.012 (0.032)	0.013 (0.032)
Location in Yemen: major city			-0.006 (0.026)	-0.013 (0.027)			0.029 (0.025)	0.034 (0.025)
Owned farm			-0.058* (0.027)	-0.080* (0.029)			-0.029 (0.028)	-0.038 (0.027)
Owned animals			0.041 (0.025)	0.038 (0.025)			-0.063* (0.032)	-0.071* (0.031)
Employed workers			0.082* (0.035)	0.047 (0.037)			0.084* (0.027)	0.091* (0.030)
Family has relatives living in Israel			0.024 (0.029)	0.020 (0.029)			0.022 (0.022)	0.025 (0.022)
Head of household is religious leader			0.024 (0.025)	-0.003 (0.023)			-0.007 (0.030)	-0.019 (0.029)
Head of household is community leader			0.029 (0.026)	0.007 (0.028)			0.047 (0.029)	0.051 (0.031)
Rich				0.040 (0.034)				-0.034 (0.031)
Poor				-0.144* (0.026)				-0.051 (0.033)
Head of household's occupation: merchant				-0.015 (0.058)				-0.082 (0.051)
Head of household's occupation: craftsman				-0.054 (0.057)				-0.068 (0.053)
Head of household's occupation: construction				-0.031 (0.078)				-0.069 (0.073)
Head of household's occupation: academic				0.100 (0.075)				0.006 (0.074)
Head of household's occupation: professional				0.085 (0.101)				0.014 (0.093)
Head of household's occupation: public sector				-0.164 (0.113)				-0.080 (0.108)
Year of birth dummies	No	Yes	Yes	Yes	No	Yes	Yes	Yes
Year of immigration dummies	No	Yes	Yes	Yes	No	Yes	Yes	Yes
First immigration camp dummies	No	No	No	Yes	No	No	No	Yes

Notes: The dependent variable is a dummy for whether the individual obtained a high school matriculation degree. Standard errors adjusted for clustering at the level of childhood locality, are presented in parentheses. An asterisk denotes significance at 10%. The "all conditions" measure is a dummy variable for having water, WC and electricity during the childhood period. In addition to the variables listed, the limited controls specification includes a dummy for whether the person was re-interviewed. The "limited + unbalanced" and the full controls specification include a dummy for whether the person was re-interviewed, and dummies for whether each of the background variables was missing.

Table 6: Estimates of the Effects of the Childhood Environment on Education Outcomes

Treatment Measure	High School Matriculation			Post Secondary Diploma			Years of Schooling		
	Limited Controls	Full Controls	Full controls + income growth	Limited Controls	Full Controls	Full controls + income growth	Limited Controls	Full Controls	Full controls + income growth
<b>A: FEMALES</b>									
All conditions	0.108* (0.030)	0.088* (0.029)	0.090* (0.028)	0.069* (0.025)	0.062* (0.023)	0.063* (0.023)	0.842* (0.220)	0.607* (0.190)	0.605* (0.186)
City	0.069* (0.024)	0.063* (0.022)	0.073* (0.023)	0.018 (0.025)	0.021 (0.025)	0.027 (0.025)	0.690* (0.258)	0.563* (0.256)	0.574* (0.271)
Place was built for Yemenites	-0.057* (0.029)	-0.041 (0.026)	-0.038 (0.025)	-0.038 (0.024)	-0.031 (0.021)	-0.028 (0.021)	-0.503* (0.262)	-0.299 (0.229)	-0.283 (0.230)
<b>B: MALES</b>									
All conditions	0.039 (0.030)	0.013 (0.032)	0.010 (0.032)	0.001 (0.029)	-0.013 (0.024)	-0.013 (0.024)	0.096 (0.262)	-0.102 (0.258)	-0.135 (0.259)
City	0.067* (0.033)	0.047 (0.034)	0.038 (0.036)	0.050* (0.033)	0.044 (0.030)	0.048 (0.031)	0.346 (0.231)	0.159 (0.235)	0.096 (0.247)
Place was built for Yemenites	-0.055* (0.023)	-0.045* (0.023)	-0.040* (0.023)	-0.042* (0.025)	-0.038 (0.025)	-0.035 (0.024)	0.014 (0.188)	0.122 (0.185)	0.166 (0.186)

Notes: Standard errors adjusted for clustering at the level of childhood locality, are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. The limited controls specification includes birth year dummies (1945-1950), immigration year dummies (1949-1951) and a dummy whether the person was re-interviewed. The full controls specification includes in addition first immigration camp dummies and background in Yemen dummies: rich in Yemen, poor in Yemen, head of household (HH) was a merchant, HH was a craftsmen, HH was a builder, HH had an academic profession, HH had a free profession, HH worked in the public sector, HH was a religious leader, HH was a community leader, family owned a farm, family owned animals, family employed workers, family lived in a major city and family had relatives already living in Israel.

Table 7: Estimates of the Effects of the Childhood Environment on Education Outcomes - Specific Subsamples

Treatment Measure	Females			Males		
	High School Matriculation	Post Secondary Diploma	Years of Schooling	High School Matriculation	Post Secondary Diploma	Years of Schooling
	Full Controls	Full Controls	Full Controls	Full Controls	Full Controls	Full Controls
<b>A: Land owners outside of major cities in Yemen</b>						
All conditions	0.120 (.101)	0.119 (.092)	0.807 (.550)	-0.142* (.078)	-0.126 (.077)	-1.043* (.628)
City	0.183* (.069)	0.142 (.105)	0.661 (.552)	-0.037 (.086)	-0.010 (.076)	-0.751 (.682)
Place was built for Yemenites	-0.077 (.068)	-0.098* (.058)	-0.480 (.426)	-0.006 (.057)	-0.034 (.057)	0.820* (.492)
<b>B: Major city dwellers who did not own land</b>						
All conditions	0.094 (.066)	0.034 (.056)	1.202* (.366)	0.000 (.075)	-0.037 (.048)	0.024 (.544)
City	0.144* (.060)	0.042 (.059)	0.970* (.385)	0.105 (.068)	0.090* (.053)	0.002 (.402)
Place was built for Yemenites	-0.117* (.068)	-0.049 (.057)	-0.978* (.417)	-0.159* (.066)	-0.133* (.051)	-0.618 (.487)
<b>C: Others</b>						
All conditions	0.079* (.032)	0.054* (.029)	0.314 (.229)	0.081* (.043)	0.030 (.034)	0.037 (.343)
City	0.016 (.028)	-0.010 (.037)	0.344 (.370)	0.069 (.045)	0.040 (.036)	0.452 (.380)
Place was built for Yemenites	0.004 (.034)	0.011 (.029)	0.041 (.293)	-0.041 (.033)	-0.017 (.028)	0.082 (.211)

Notes: Entries in the table represent the coefficients from *separate* regressions of the outcome variable on the treatment measure. Standard errors adjusted for clustering at the level of childhood locality, are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. All specifications include birth year dummies (1945-1950); immigration year dummies (1949-1951); a dummy for whether the person was re-interviewed; first immigration camp dummies; rich in Yemen and poor in Yemen dummies; head of household (HH) was a merchant, a craftsman, a construction worker, had an academic profession, had a free profession, or worked in the public sector dummies; HH was a religious leader; HH was a community leader; family owned a farm; family owned animals; family employed workers; family lived in a major city and family had relatives already living in Israel.

Table 8: Estimates of the Effects of the Childhood Environment on Children's Education Outcomes

Treatment Measure	Female respondents		Male respondents		All respondents	
	Completed high school (average of first three children)	College degree (average of first three children)	Completed high school (average of first three children)	College degree (average of first three children)	Completed high school (average of first three children)	College degree (average of first three children)
All conditions	0.021 (0.022)	0.038 (0.025)	0.047* (0.024)	0.027 (0.030)	0.032* (0.015)	0.033* (0.019)
City	0.031 (0.020)	0.021 (0.030)	0.012 (0.021)	0.002 (0.028)	0.021 (0.016)	0.010 (0.022)
Place was built for Yemenites	0.009 (0.016)	-0.014 (0.022)	-0.003 (0.018)	0.001 (0.022)	0.002 (0.013)	-0.005 (0.017)

Notes: Standard errors adjusted for clustering at the level of childhood locality, are presented in parentheses. Entries in the table represent the coefficients from separate regressions. All specifications control for the gender and age of the children. In addition, they include birth year dummies (1945-1950); immigration year dummies (1949-1951); a dummy for whether the person was re-interviewed; first immigration camp dummies; rich in Yemen and poor in Yemen dummies; head of household (HH) was a merchant, a craftsman, a construction worker, had an academic profession, had a free profession, or worked in the public sector dummies; HH was a religious leader; HH was a community leader; family owned a farm; family owned animals; family employed workers; family lived in a major city and family had relatives already living in Israel.

Table 9: Estimates of the Effects of the Childhood Environment on Children's Education Outcomes

Treatment Measure	All respondents, male children		All respondents, female children		All respondents, first child		All respondents, second child		All respondents, third child	
	Completed high school	College degree	Completed high school	College degree	Completed high school	College degree	Completed high school	College degree	Completed high school	College degree
All conditions	0.030 (0.022)	0.044* (0.022)	0.038* (0.018)	0.006 (0.025)	0.016 (0.020)	0.017 (0.026)	0.037* (0.020)	0.007 (0.026)	0.035* 0.018	0.035 0.028
City	0.055* (0.019)	0.019 (0.027)	0.019 (0.022)	-0.003 (0.028)	0.025 (0.016)	-0.004 0.030	0.035* (0.021)	0.013 (0.033)	-0.005 0.023	0.012 0.026
Place was built for Yemenites	0.000 (0.018)	-0.026 (0.023)	0.024 (0.015)	0.020 (0.020)	0.004 (0.016)	0.028 (0.022)	0.005 (0.016)	-0.014 (0.021)	0.016 0.020	-0.009 0.025

Notes: Standard errors adjusted for clustering at the level of childhood locality are presented in parentheses. Entries in the table represent the coefficients from *separate* regressions. All specifications control for the gender and age of the children. In addition, they include birth year dummies (1945-1950); immigration year dummies (1949-1951); a dummy for whether the person was re-interviewed; first immigration camp dummies; rich in Yemen and poor in Yemen dummies; head of household (HH) was a merchant, a craftsman, a construction worker, had an academic profession, had a free profession, or worked in the public sector dummies; HH was a religious leader; HH was a community leader; family owned a farm; family owned animals; family employed workers; family lived in a major city and family had relatives already living in Israel.

Table 10: Estimates of the Effects of the Childhood Environment on Marriage and Fertility Outcomes

Treatment Measure	Female			Male		
	Age at First Marriage	Divorced	Number of Children	Age at First Marriage	Divorced	Number of Children
All conditions	0.641* (0.366)	0.048* (0.018)	-0.205* (0.120)	0.001 (0.264)	0.015 (0.015)	-0.050 (0.114)
City	0.189 (0.384)	-0.009 (0.020)	-0.144 (0.126)	0.785* (0.307)	0.026 (0.013)	-0.218* (0.123)
Place was built for Yemenites	-0.338 (0.262)	-0.022 (0.013)	0.239* (0.108)	0.115 (0.253)	-0.020 (0.015)	0.091 (0.112)

Notes: Standard errors adjusted for clustering at the level of childhood locality are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. All specifications include birth year dummies (1945-1950); immigration year dummies (1949-1951); a dummy for whether the person was re-interviewed; first immigration camp dummies; rich in Yemen and poor in Yemen dummies; head of household (HH) was a merchant, a craftsman, a construction worker, had an academic profession, had a free profession, or worked in the public sector dummies; HH was a religious leader; HH was a community leader; family owned a farm; family owned animals; family employed workers; family lived in a major city and family had relatives already living in Israel.

Table 11: Estimates of the Effects of the Childhood Environment on Health and Employment Outcomes

Treatment Measure	Female			Male		
	Has Health Problems	Receiving Disability Income Support	Currently Employed	Has Health Problems	Receiving Disability Income Support	Currently Employed
All conditions	0.024 (0.036)	-0.013 (0.020)	0.072* (0.036)	-0.048 (0.039)	0.020 (0.023)	-0.033 (0.032)
City	-0.062* (0.039)	-0.029 (0.018)	0.034 (0.035)	-0.013 (0.037)	-0.027 (0.025)	-0.060* (0.028)
Place was built for Yemenites	-0.032 (0.035)	0.006 (0.016)	0.009 (0.030)	0.005 (0.024)	-0.001 (0.018)	0.004 (0.024)

Notes: Standard errors adjusted for clustering at the level of childhood locality are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. All specifications include birth year dummies (1945-1950); immigration year dummies (1949-1951); a dummy for whether the person was re-interviewed; first immigration camp dummies; rich in Yemen and poor in Yemen dummies; head of household (HH) was a merchant, a craftsman, a construction worker, had an academic profession, had a free profession, or worked in the public sector dummies; HH was a religious leader; HH was a community leader; family owned a farm; family owned animals; family employed workers; family lived in a major city and family had relatives already living in Israel.



Table 12: Estimates of the Effects of the Childhood Environment on Attitudes and Assimilation Outcomes

Treatment Measure	Female					Male				
	Political Affiliations (right=1 left=4)	Religiosity Level (religious=1 secular=5)	Married to Yemenite	Preferences for Yemenite Food	Preferences for Yemenite singers	Political Affiliations (right=1 left=4)	Religiosity Level (religious=1 secular=5)	Married to Yemenite	Preferences for Yemenite Food	Preferences for Yemenite singers
All conditions	-0.063 (0.067)	0.128* (0.071)	-0.030 (0.030)	-0.073 (0.072)	-0.106* (0.057)	0.008 (0.063)	0.179* (0.072)	0.010 (0.031)	-0.113 (0.087)	0.000 (0.077)
City	-0.053 (0.079)	-0.023 (0.079)	-0.041 (0.024)	-0.107 (0.081)	-0.136* (0.050)	-0.050 (0.061)	-0.052 (0.066)	-0.077* (0.033)	-0.070 (0.067)	-0.062 (0.064)
Place was built for Yemenites	-0.029 (0.058)	-0.131* (0.070)	0.096* (0.021)	0.146* (0.058)	0.173* (0.057)	-0.041 (0.044)	-0.044 (0.054)	0.061* (0.028)	0.040 (0.055)	0.121* (0.056)

Notes: Standard errors adjusted for clustering at the level of childhood locality are presented in parentheses. An asterisk denotes significance at 10%. All regressions include the full set of controls (listed in the notes to Table 6). Factor loadings for the principal component of Preferences for Food items are: Falafel: 0.223 Melawach: 0.753 Couscous: -0.241 Hummus: -0.032 Gefilte fish: -0.591 Shug: 0.190 Cube: -0.476 Jachnun: 0.693 Sushi: -0.44. Factor loadings for the principal component of preferences for singers are: Yehoram Gaon: 0.047 Haim Moshe: 0.528 Chava Alberstein: -0.718 Arik Einstein: -0.756 Boaz Sharabi: 0.081 Shimi Tavori: 0.571 Shlomo Artzi: -0.486 Ofra Haza: 0.354 Zohar Argov: 0.643.

Table 13: Balancing Tests using 1961 Census Data

Dependent variable:	All Yemenites	Yemenites, Males	Yemenites, Females	All other immigrants	All other Middle eastern immigrants
Father's years of schooling	-0.217 (0.412)	-0.179 (0.499)	-0.250 (0.572)	-0.870* (0.189)	-0.574* (0.262)
Father illiterate	0.039 (0.044)	-0.021 (0.059)	0.097* (0.056)	0.054* (0.017)	0.034 (0.025)
Father's age	-2.619* (0.882)	-1.817 (1.161)	-3.375* (1.213)	-0.959* (0.370)	-1.597* (0.536)
Father's occupation abroad: commerce	-0.103* (0.040)	-0.106* (0.054)	-0.102* (0.049)	0.032 (0.021)	-0.014 (0.029)
Father's occupation abroad: agriculture	0.031 (0.024)	0.029 (0.032)	0.033 (0.033)	0.063* (0.012)	0.045* (0.014)
Father's occupation abroad: craftsman	0.107* (0.047)	0.101 (0.063)	0.113* (0.059)	-0.045* (0.020)	0.016 (0.028)
Mother illiterate	0.071* (0.021)	0.079* (0.026)	0.064* (0.029)	0.139* (0.021)	0.114* (0.027)
Mother's age	-1.515* (0.686)	-1.987* (0.901)	-1.054 (0.923)	-0.982 (0.309)	-0.975* (0.450)
Mother's child mortality rate (abroad)	0.055* (0.033)	0.071* (0.043)	0.040 (0.041)	0.049* (0.011)	0.076* (0.017)

Notes: Sample includes all respondents in the 1961 Israeli Census born between 1945 and 1st 1950, and immigrated to Israel between 1948 and 1951. The numbers in the table represent the coefficient in a regression of the relevant dependent variable on an indicator for whether the locality of residence in 1956 was a rural locality built for immigrants. Standard deviations in parentheses. An asterisk denotes significance at 10%.

Table 14: The Effect of Living in a Rural Locality Built for Immigrants on Education and Employment Outcomes of Yemenite Immigrants, 14-16 Years Old, 1961 Census Data

	Females			Males		
	Enrolled in School	Dependent variable: Completed Years of Schooling	Worked last week	Enrolled in School	Dependent variable: Completed Years of Schooling	Worked last week
Mean of the dependent variable in rural localities built for immigrants	0.622 (.488)	7.107 (2.077)	0.382 (.489)	0.766 (.427)	8.095 (1.489)	0.270 (.447)
Mean of the dependent variable in other localities	0.786 (.411)	8.200 (1.286)	0.115 (.320)	0.681 (.467)	7.874 (1.847)	0.233 (.424)
Adjusted difference, limited set of controls	-0.155* (0.059)	-1.012* (0.212)	0.250* (0.050)	0.092 (0.065)	0.294 (0.256)	0.049 (0.063)
Adjusted difference, full set of controls	-0.121* (0.062)	-0.932* (0.222)	0.264* (0.054)	0.147* (0.066)	0.302 (0.266)	0.076 (0.063)

Notes: Sample includes all respondents in the 1961 Israeli Census born in Yemen between 1945 and 1nd 1950, and immigrated to Israel between 1948 and 1951, and who were between ages 14 and 16 at the time of the 1961 Israeli Census. The numbers in the table represent the estimated coefficient on an indicator for whether the locality of residence in 1956 was a rural locality built for immigrants. Standard deviations in parentheses. An asterisk denotes significance at 10%. Limited set of controls: year of birth dummies and year of immigration dummies. Full set of controls: year of birth dummies, year of immigration dummies, father's age, father's years of schooling, whether the father is illiterate, dummies for father's occupation abroad, dummy for no father present, mother's age, whether the mother is illiterate, mother's infant mortality rate, an indicator for whether the mother's infant mortality rate is missing, and an indicator for no mother present.

Appendix Table 1: Family Background Variables and Economic Status in Yemen

	Dependent Variable			Dependent variable	
	1 if Rich	1 if Poor	Sample Size	1 if Location in Yemen: major city	Sample Size
<b>Family Background</b>					
Head of household's occupation: merchant	0.139* (0.021)	-0.074* (0.016)	2617	0.108* (0.024)	2218
Head of household's occupation: craftsman	-0.137* (0.018)	0.026 (0.014)	2617	-0.080* (0.021)	2218
Location in Yemen: major city	0.062* (0.020)	-0.005 (0.015)	2273	-	-
Family has relatives living in Israel	0.123* (0.019)	-0.053* (0.015)	2555	0.105* (0.021)	2175
Head of household is female	-0.093 (0.061)	0.126* (0.049)	2762	0.046 (0.068)	2328
<b>Family Wealth Indicators in Yemen</b>					
Owned farm	0.243* (0.019)	-0.166* (0.016)	2349	-0.084* (0.022)	2022
Owned animals	0.123* (0.020)	-0.115* (0.016)	2482	-0.150* (0.023)	2128
Employed workers	0.444* (0.019)	-0.194* (0.017)	2523	0.077* (0.024)	2167
<b>Family Social Status in Yemen</b>					
Head of household is religious leader	0.116* (0.020)	-0.042* (0.016)	2680	0.005 (0.023)	2265
Head of household is community leader	0.216* (0.020)	-0.102* (0.016)	2639	-0.036 (0.024)	2235

Notes: Each coefficient comes from a separate regression whereby the variable indicated in at the top of the column is regressed on the variable in each row. Sample size varies by indicators, reflecting differences in number of missing values. All variables are indicators that assume a 1 or 0 value.

Appendix Table 2: Descriptive Statistics of the First Three Locations Upon Arriving to Israel - All Sample

Measure	First Placement	Second Placement	Third Placement
	Percentage of Sample	Percentage of Sample	Percentage of Sample
<b>Location</b>			
Atlit (immigrant camp)	13.66 (2892)		
Rosh Haayin (immigrant camp)	22.27 (2892)	8.72 (2683)	3.77 (1539)
Ein Shemer (immigrant camp)	46.02 (2892)		
Beit Lid (immigrant camp)	4.05 (2892)		
Other	14.00 (2892)		
<b>Type of Settlement (Self Defined)</b>			
Immigrant camp (or <i>ma'abara</i> )	95.00 (2740)	42.15 (2607)	17.98 (1513)
Agricultural community ( <i>moshav</i> or <i>kibbutz</i> )	2.15 (2740)	28.19 (2607)	33.64 (1513)
City	0.88 (2740)	12.24 (2607)	30.87 (1513)
Other	1.97 (2740)	17.42 (2607)	17.52 (1513)
<b>Other Location Characteristics</b>			
Government chose the location	98.12 (2767)	79.79 (2429)	39.48 (1454)
Place was built for Yemenites	84.51 (2330)	51.37 (2488)	27.58 (1494)
Never left the placement	8.11 (2898)	43.01 (2674)	63.20 (1538)
Location was childhood place	12.46 (2858)	52.27 (2858)	35.27 (2858)
<b>Location Region</b>			
North region	65.02 (2867)	28.01 (2635)	18.93 (1516)
Center and Tel Aviv region	31.50 (2867)	41.37 (2635)	59.70 (1516)
Jerusalem region	2.55 (2867)	16.85 (2635)	11.61 (1516)
South region	0.94 (2867)	13.78 (2635)	9.76 (1516)

Notes: Numbers of observations are presented in parentheses. Sample size varies by indicators, reflecting differences in number of missing values.

Appendix Table 3a: Balancing Test of Family and Personal Characteristics with Respect to the Treatment Variables

**Females**

	Mean	Water	WC	Electricity	All Conditions	City	Place Was Built for Yemenites
<b>Family Background</b>							
Head of household's occupation: merchant	0.259	0.065* (0.025)	0.093* (0.026)	0.094* (0.026)	0.103* (0.028)	0.127* (0.029)	-0.064* (0.025)
Head of household's occupation: craftsman	0.585	-0.056* (0.028)	-0.062* (0.030)	-0.091* (0.029)	-0.094* (0.032)	-0.102* (0.033)	0.048* (0.028)
Location in Yemen: major city	0.456	0.101* (0.030)	0.179* (0.032)	0.113* (0.032)	0.186* (0.035)	0.176* (0.036)	-0.077* (0.030)
Family has relatives living in Israel	0.384	0.019 (0.028)	0.077* (0.030)	0.048 (0.029)	0.092* (0.032)	0.074* (0.033)	-0.077* (0.028)
Head of household is female	0.032	0.001 (0.009)	-0.002 (0.010)	-0.009 (0.010)	-0.011 (0.011)	-0.015 (0.011)	0.004 (0.009)
<b>Family Wealth Status in Yemen</b>							
Rich	0.311	0.001 (0.026)	0.056* (0.027)	0.002 (0.027)	0.074* (0.030)	0.010 (0.030)	-0.006 (0.026)
Poor	0.160	0.010 (0.020)	-0.044* (0.021)	0.005 (0.021)	-0.038 (0.023)	-0.008 (0.024)	0.028 (0.020)
Owned farm	0.363	-0.067* (0.029)	-0.124* (0.031)	-0.089* (0.030)	-0.101* (0.033)	-0.050 (0.034)	0.074* (0.029)
Owned animals	0.670	-0.076* (0.027)	-0.106* (0.029)	-0.109* (0.029)	-0.120* (0.031)	-0.139* (0.033)	0.076* (0.028)
Employed workers	0.245	0.038 (0.025)	0.037 (0.027)	0.031 (0.026)	0.056* (0.029)	0.017 (0.029)	-0.032 (0.025)
<b>Family Social Status in Yemen</b>							
Head of household is religious leader	0.298	-0.038 (0.025)	-0.060* (0.027)	-0.042 (0.027)	-0.060* (0.029)	-0.039 (0.030)	0.020 (0.026)
Head of household is community leader	0.260	-0.057* (0.025)	-0.051* (0.026)	-0.063* (0.026)	-0.047 (0.028)	-0.081* (0.029)	0.033 (0.025)

Notes: Standard errors are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. Numbers in italics are the ratio of the mean difference by treatment status divided by the mean of the standard deviation of the characteristic.

Appendix Table 3b: Balancing Test of Family and Personal Characteristics with Respect to the Treatment Variables

**Males**

	Mean	Water	WC	Electricity	All Conditions	City	Place Was Built for Yemenites
<b>Family Background</b>							
Head of household's occupation: merchant	0.233	0.023 (0.024)	0.057* (0.026)	0.049* (0.026)	0.073* (0.029)	0.122* (0.029)	-0.003 (0.023)
Head of household's occupation: craftsman	0.572	-0.017 (0.028)	-0.029 (0.031)	-0.057* (0.030)	-0.055 (0.034)	-0.115* (0.034)	0.001 (0.027)
Location in Yemen: major city	0.416	0.114* (0.029)	0.199* (0.032)	0.158* (0.032)	0.216* (0.035)	0.269* (0.035)	-0.117* (0.029)
Family has relatives living in Israel	0.419	0.016 (0.028)	0.037 (0.031)	0.049 (0.031)	0.057* (0.034)	0.082* (0.034)	-0.066* (0.027)
Head of household is female	0.011	-0.003 (0.006)	-0.001 (0.007)	0.005 (0.006)	0.004 (0.007)	-0.004 (0.007)	-0.003 (0.006)
<b>Family Wealth Status in Yemen</b>							
Rich	0.309	-0.037 (0.026)	-0.005 (0.029)	-0.016 (0.028)	0.020 (0.032)	0.011 (0.031)	-0.008 (0.025)
Poor	0.172	0.013 (0.021)	-0.005 (0.024)	0.017 (0.023)	-0.013 (0.026)	-0.011 (0.026)	-0.017 (0.021)
Owned farm	0.408	-0.083* (0.029)	-0.112* (0.032)	-0.092* (0.032)	-0.129* (0.035)	-0.154* (0.035)	0.074* (0.028)
Owned animals	0.721	-0.083* (0.025)	-0.162* (0.028)	-0.133* (0.028)	-0.207* (0.031)	-0.167* (0.032)	0.089* (0.025)
Employed workers	0.256	0.016 (0.025)	0.032 (0.028)	0.020 (0.028)	0.033 (0.031)	0.036 (0.031)	-0.026 (0.025)
<b>Family Social Status in Yemen</b>							
Head of household is religious leader	0.277	-0.043* (0.025)	-0.036 (0.028)	-0.049* (0.027)	-0.039 (0.030)	-0.085* (0.030)	0.017 (0.024)
Head of household is community leader	0.251	-0.004 (0.024)	-0.037 (0.027)	-0.033 (0.027)	-0.047 (0.030)	-0.056* (0.030)	0.026 (0.024)

Notes: Standard errors are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. Numbers in italics are the ratio of the mean difference by treatment status divided by the mean of the standard deviation of the characteristic.

Appendix Table 3c: Balancing Test of Family and Personal Characteristics with Respect to the Treatment Variables  
(RURAL - Owned Land and Lived Outside City)

	Mean	Water	WC	Electricity	All Conditions	City	Place Was Built for Yemenites
<b>Family Background</b>							
Head of household's occupation: merchant	.192	-.028 (.049)	.022 (.061)	-.028 (.058)	.025 (.069)	.038 (.070)	.033 (.047)
Head of household's occupation: craftsman	.543	.064 (.062)	-.000 (.077)	.060 (.073)	-.000 (.088)	-.020 (.089)	.003 (.061)
Location in Yemen: major city	.000	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Family has relatives living in Israel	.413	-.086 (.063)	-.091 (.078)	<i>-.126 *</i> (.075)	-.121 (.090)	-.033 (.091)	-.015 (.060)
Head of household is female	.007	.003 (.011)	.014 (.013)	.011 (.013)	.022 (.015)	.024 (.015)	-.014 (.010)
<b>Family Wealth Status in Yemen</b>							
Rich	.442	-.022 (.062)	-.076 (.077)	-.078 (.073)	-.055 (.089)	-.029 (.089)	.083 (.060)
Poor	.054	.045 (.029)	.076 * (.036)	.035 (.035)	.063 (.041)	.033 (.041)	-.018 (.028)
Owned farm	1.000	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Owned animals	.946	-.013 (.029)	-.053 (.036)	-.059 * (.035)	-.095 * (.041)	-.036 (.041)	-.025 (.028)
Employed workers	.432	-.022 (.063)	-.088 (.078)	-.088 (.074)	-.107 (.089)	-.052 (.091)	.023 (.062)
<b>Family Social Status in Yemen</b>							
Head of household is religious leader	.336	.005 (.059)	.064 (.072)	-.020 (.069)	.020 (.082)	-.089 (.085)	.054 (.057)
Head of household is community leader	.341	.084 (.059)	.027 (.074)	-.028 (.070)	-.064 (.085)	-.025 (.086)	.069 (.057)

Notes: Standard errors are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. Numbers in italics are the ratio of the mean difference by treatment status divided by the mean of the standard deviation of the characteristic.



Appendix Table 3d: Balancing Test of Family and Personal Characteristics with Respect to the Treatment Variables,  
(URBAN - City dwellers who did not own land)

	Mean	Water	WC	Electricity	All Condotions	City1	Place Was Built for Yemenites
<b>Family Background</b>							
Head of household's occupation: merchant	.192	-.028 (.049)	.022 (.061)	-.028 (.058)	.025 (.069)	.038 (.070)	.033 (.047)
Head of household's occupation: craftsman	.543	.064 (.062)	-.000 (.077)	.060 (.073)	-.000 (.088)	-.020 (.089)	.003 (.061)
Location in Yemen: major city	.000	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Family has relatives living in Israel	.413	-.086 (.063)	-.091 (.078)	-.126 * (.075)	-.121 (.090)	-.033 (.091)	-.015 (.060)
Head of household is female	.007	.003 (.011)	.014 (.013)	.011 (.013)	.022 (.015)	.024 (.015)	-.014 (.010)
<b>Family Wealth Status in Yemen</b>							
Rich	.442	-.022 (.062)	-.076 (.077)	-.078 (.073)	-.055 (.089)	-.029 (.089)	.083 (.060)
Poor	.054	.045 (.029)	.076 * (.036)	.035 (.035)	.063 (.041)	.033 (.041)	-.018 (.028)
Owned farm	1.000	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Owned animals	.946	-.013 (.029)	-.053 (.036)	-.059 * (.035)	-.095 * (.041)	-.036 (.041)	-.025 (.028)
Employed workers	.432	-.022 (.063)	-.088 (.078)	-.088 (.074)	-.107 (.089)	-.052 (.091)	.023 (.062)
<b>Family Social Status in Yemen</b>							
Head of household is religious leader	.336	.005 (.059)	.064 (.072)	-.020 (.069)	.020 (.082)	-.089 (.085)	.054 (.057)
Head of household is community leader	.341	.084 (.059)	.027 (.074)	-.028 (.070)	-.064 (.085)	-.025 (.086)	.069 (.057)

Notes: Standard errors are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. Numbers in italics are the ratio of the mean difference by treatment status divided by the mean of the standard deviation of the characteristic.

Appendix Table 3e: Balancing Test of Family and Personal Characteristics with Respect to the Treatment Variables  
(OTHERS - City dwellers who owned land and non-city dwellers who did not own land)

	Mean	Water	WC	Electricity	All Conditions	City	Place Was Built for Yemenites
<b>Family Background</b>							
Head of household's occupation: merchant	.192 276	-.028 (.049)	.022 (.061)	-.028 (.058)	.025 (.069)	.038 (.070)	.033 (.047)
Head of household's occupation: craftsman	.543 276	.064 (.062)	-.000 (.077)	.060 (.073)	-.000 (.088)	-.020 (.089)	.003 (.061)
Location in Yemen: major city	.000 283	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Family has relatives living in Israel	.413 271	-.086 (.063)	-.091 (.078)	-.126 * (.075)	-.121 (.090)	-.033 (.091)	-.015 (.060)
Head of household is female	.007 281	.003 (.011)	.014 (.013)	.011 (.013)	.022 (.015)	.024 (.015)	-.014 (.010)
<b>Family Wealth Status in Yemen</b>							
Rich	.442 278	-.022 (.062)	-.076 (.077)	-.078 (.073)	-.055 (.089)	-.029 (.089)	.083 (.060)
Poor	.054 278	.045 (.029)	.076 * (.036)	.035 (.035)	.063 (.041)	.033 (.041)	-.018 (.028)
Owned farm	1.000 283	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)	.000 (.000)
Owned animals	.946 276	-.013 (.029)	-.053 (.036)	-.059 * (.035)	-.095 * (.041)	-.036 (.041)	-.025 (.028)
Employed workers	.432 266	-.022 (.063)	-.088 (.078)	-.088 (.074)	-.107 (.089)	-.052 (.091)	.023 (.062)
<b>Family Social Status in Yemen</b>							
Head of household is religious leader	.336 280	.005 (.059)	.064 (.072)	-.020 (.069)	.020 (.082)	-.089 (.085)	.054 (.057)
Head of household is community leader	.341 276	.084 (.059)	.027 (.074)	-.028 (.070)	-.064 (.085)	-.025 (.086)	.069 (.057)

Notes: Standard errors are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. Numbers in italics are the ratio of the mean difference by treatment status divided by the mean of the standard deviation of the characteristic.

Appendix Table 4: Estimates of the Effects of Detailed Measures of the Childhood Environment on Education Outcomes

Treatment Measure	High School Matriculation			Post Secondary Diploma			Years of Schooling		
	Limited Controls	Full Controls	Full controls + income growth	Limited Controls	Full Controls	Full controls + income growth	Limited Controls	Full Controls	Full controls + income growth
<b>A: Females</b>									
Water	0.066* (0.025)	0.060* (0.025)	0.058* (0.025)	0.053* (0.021)	0.053* (0.020)	0.051* (0.021)	0.592* (0.194)	0.492* (0.180)	0.473* (0.177)
WC	0.103* (0.027)	0.086* (0.026)	0.086* (0.025)	0.066* (0.023)	0.063* (0.022)	0.064* (0.022)	0.889* (0.213)	0.690* (0.193)	0.694* (0.191)
Electricity	0.065* (0.028)	0.057* (0.027)	0.057* (0.026)	0.045* (0.024)	0.048* (0.023)	0.047* (0.024)	0.542* (0.218)	0.430* (0.183)	0.405* (0.182)
<b>B: Males</b>									
Water	0.038 (0.025)	0.022 (0.024)	0.022 (0.024)	0.025 (0.023)	0.016 (0.021)	0.017 (0.021)	0.062 (0.200)	-0.059 (0.196)	-0.059 (0.193)
WC	0.036 (0.030)	0.014 (0.029)	0.012 (0.030)	0.012 (0.031)	0.000 (0.026)	0.000 (0.026)	0.029 (0.243)	-0.159 (0.230)	-0.188 (0.229)
Electricity	0.048* (0.030)	0.035 (0.030)	0.033 (0.030)	0.010 (0.029)	0.001 (0.027)	0.001 (0.027)	0.057 (0.227)	-0.056 (0.216)	-0.083 (0.216)

Notes: Standard errors are presented in parentheses. An asterisk denotes significance at 10%. All conditions measure is a dummy variable for having water, WC and electricity during the childhood period. The limited controls specification includes birth year dummies (1945-1950), immigration year dummies (1949-1951) and a dummy whether the person was re-interviewed. The full controls specification includes in addition first immigration camp dummies and background in Yemen dummies: rich in Yemen, poor in Yemen, head of household (HH) was a merchant, HH was a craftsmen, HH was a builder, HH had an academic profession, HH had a free profession, HH worked in the public sector, HH was a religious leader, HH was a community leader, family owned a farm, family owned animals, family employed workers, family lived in a major city and family had relatives already living in Israel.