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## Social involvement and level of household income among immigrants: New evidence from the Israeli experience

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Income among Immigrants:  
New Evidence from the Israeli Experience**

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March 2012

# **Social Involvement and Level of Household Income among Immigrants: New Evidence from the Israeli Experience**

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## ABSTRACT

### **Social Involvement and Level of Household Income among Immigrants: New Evidence from the Israeli Experience<sup>\*</sup>**

Previous studies of immigrant populations suggest that *ceteris paribus* (after controlling for the number of years in the receiving country and other socio-demographic variables), the level of income is strongly and positively correlated with fluency in the local language. Based on a phone survey held in 2005 among a representative sample of Former Soviet Union (FSU) immigrants, the current study extends this literature and investigates the possibility that the standard model is misspecified. Unlike previous surveys, our dataset includes detailed subjective questions on the degree of social involvement. Our findings indeed support the conclusion that the standard model is misspecified. At 1% significance level, immigrants who are better assimilated within the receiving country are 11% more likely to attain a level of income that is equal to or higher than the average level of net family monthly income. Moreover, compared to the incorrectly-specified model, at 1% significance level a shift from lower to intermediate and high level of language proficiency does not significantly increase the level of income. Consequently, marginal probabilities of income shift, which have been mistakenly attributed to better language proficiency in the misspecified model, should have been, in fact, attributed to a higher level of social involvement. Finally, stratification of the sample based on gender and marital status shows that compared to unmarried females, married males have a higher return on social involvement. Among married men (unmarried women) a higher level of social involvement significantly increases the chances for higher income level by 15% (only 4%). Research findings thus stress the important role of better social involvement, particularly among married males: a higher degree of social involvement leads to improved social networking and, in turn, to better job opportunities and higher income.

JEL Classification: J15, Z13

Keywords: social involvement, income level, immigration, gender differences

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## 1. Introduction

The lifting of immigration restrictions in the Former Soviet Union (hereafter: the FSU) was followed by a massive wave of immigration to Israel during the period 1989-2004. This is considered to be a unique event, even in global terms, due to its magnitude relative to the population in Israel,<sup>1</sup> the immigrants' high levels of human capital and the need to absorb such a large number of immigrants within a relatively short period of time.

One of the more interesting features to have been examined in the relevant scientific literature is the correlation between fluency in the local language and level of income (Chiswick, 1998; Chiswick and Reppeto, 2001). The empirical evidence from previous studies of immigrant populations in the US, Canada, Australia and Israel suggests that after controlling for the number of years in the receiving country and other socio-demographic variables, there is a strong positive correlation between level of income and level of fluency in the local language. Nevertheless, the question still remains as to whether the standard model is misspecified, and some of this correlation should be attributed to the level of social involvement rather than the level of fluency. One would indeed expect the extent of social involvement to affect income, since social networking should lead to improved job opportunities and therefore to a higher level of income.

This study examines the correlation between the degree of social involvement among immigrants and their level of income. The research is based on a relatively recent and comprehensive survey requested by the Jewish Agency and held in 2006. The survey, which was conducted by a local firm specializing in providing survey and market research services, included in-depth telephone interviews of a representative sample of 501 immigrants.<sup>2</sup> The participants arrived into Israel from FSU between the years 1989 and 2004 and were living in locations throughout the country.<sup>3</sup>

As part of the survey, immigrants were asked to rank their level of income on a scale of 1 to 7, where 4 represents average net family income.<sup>4</sup> They were also asked to

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<sup>1</sup>According to the Israeli Central Bureau of Statistics (CBS) this wave of immigration increased Israel's population by more than 20%.

<sup>2</sup> The sample is representative of the immigrant population across number of years since migration, gender, age, and place of residence. For a comparison between the population and sample based on the number of years since migration see, for example, figure 2.

<sup>3</sup>This stands in contrast to previous surveys by the Central Bureau of Statistics (CBS), which were carried out immediately following the immigrant's arrival in Israel.

<sup>4</sup> Due to the nature of the question on the level of income, it was not possible to provide exact numerical estimates of the improvement in level of income resulting from a greater social involvement. Therefore, we

answer a variety of socio-demographic background questions, which included the numbers of years since their arrival and their level of fluency in Hebrew. Immigrants were also asked a unique series of subjective questions with respect to their level of social involvement: the extent of their assimilation in Israeli society, the extent of their knowledge in Israeli and Jewish history and their level of care and respect for Israeli culture.<sup>5</sup> These questions make it possible to extend the existing research by examining whether the degree of social involvement can explain part of the growth in income among immigrants in Israel.

Our findings may be summarized as follows. The likelihood of gaining a higher income increases by 2.12%-2.69% for each additional year in the receiving country. These figures are also statistically significant at a significance level of 1% (*t*-values of 3.46-4.49 and decreasing with the incorporation of additional explanatory variables). Also, in comparison to the base group (lowest level of proficiency in Hebrew), an intermediate (high) proficiency in Hebrew raises the marginal probability of earning an income above the average by 22%-24% (24%-25%). These figures are also statistically significant at significance levels of 1%-10% (*t*-value of 1.85-2.72 which decreases with the incorporation of additional explanatory variables). Finally, immigrants who are better assimilated within the receiving country are 11% more likely to attain a level of income that is equal to or higher than the average. The latter estimate is also statistically significant at a significance level of 1% (*t*-value of 2.62).

The latter findings indicate that a greater social networking, in addition to a higher level of language proficiency, is associated with a more successful assimilation and leads to better job opportunities and a higher level of income (marginal probability of 11%, which is significant even at the 1% level). In addition, when the correctly specified model (which includes the language proficiency variables as well as the significant social involvement variable) is used, the coefficient of the variable representing number of years since migration drops from 2.25% to 2.12% while the significance level of its calculated *t*-value declines somewhat (from 3.76 to 3.46). Moreover, at the 5%

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used a probit model in which the dependent variable equals 1 for income level equal or above the average and 0 otherwise.

<sup>5</sup> The terms "care," and "respect," are the closest English translation for the original Hebrew terminology that appears in the survey. Note that while one might feel unconcerned and careless about the local culture, he or she may yet maintain a high degree of respect to the culture. Similarly, the vice versa may hold. Indeed as one can see from the summary statistics in Table 1 below, while 61% of the sample states that they maintain high degree of care about the local culture, only 39% maintains a high degree of respect.

significance level compared to the incorrectly-specified model, a shift from lower to intermediate level of language proficiency does not significantly increase the level of income. The  $t$ -value of the coefficient decreases from 2.02 to 1.85, thus making the coefficient insignificant at the 5% level. At the 1% level even an improvement from lower to the highest level of language proficiency yields an insignificant marginal probability ( $t$ -value of 2.50, which is insignificant at the 1% level). This findings suggest that a marginal probability of income shift, which has been mistakenly attributed to better language proficiency, should have been, in fact, attributed to higher level of social involvement

Having demonstrated the implications of the misspecified model, we now turn to investigate the stratification of the sample across gender and marital status and based on the correctly specified model. Three important differences between the different groups are particularly noteworthy.

First, the return on higher level of social involvement is higher among immigrant married males compared to immigrant unmarried females. While a better social involvement is expected to significantly raise the chances of higher income level by 15% among married men, this figure drops to only 4% among unmarried women (the respective  $t$ -values are 2.05 and 2.14 and both are significant at the 5% level).

Moreover, compared to married males, unmarried males seem to improve their income level based on linguistic skills rather than social networking and level of education. While the coefficients of the language proficiency variables are highly significant among unmarried males (respective  $t$ -values of 6.52 and 5.47 among unmarried males, which are highly significant at 1% significance level) and insignificant among married males, the picture is reversed for the coefficient of the social involvement variable (respective  $t$ -value of 2.05 among married males, which is significant at the 5% level).

These findings stand in contrast to the comparison between female groups. In both groups of unmarried and married females, the coefficient of the language variable is highly significant (respective  $t$ -values of 8.10 and 15.36, which are highly significant at the 1% level). The only difference between immigrant female groups lies in the coefficient of the social involvement variable. The respective  $t$ -values are 2.14 for married women (significant at the 5% level) and 0.43 for unmarried women (highly insignificant)

Finally, while immigrant males have a significant positive return on higher education, immigrant females have negative return on higher education (respective t-values for married men are 4.30, 4.61, for unmarried women are -6.34, -6.74 and married women -2.86. All of these values are significant at 1% level).

The rest of the paper proceeds as follows: Section 2 presents a survey of the literature. Section 3 provides a detailed description of the data. Section 4 describes the methodology and results. Section 5 concludes.

## **2. Survey of the Literature**

One of the main questions examined in the immigration literature is the difference in earnings between immigrants and natives over time. The pioneering articles of Carliner (1981) and Chiswick (1978) pointed out that the earnings profiles of immigrants are steeper than those of natives. In this context, the work of Borjas (1994) initiated a debate as to whether the earnings of immigrants surpass those of natives at some point (Friedberg (1992) and Duleep and Regets (2002) also focused on this question). A general consensus was eventually reached among researchers that the gap in earnings between immigrants and natives narrows over time. However, the exact reasons for this phenomenon are not known with certainty. Although researchers have presented a number of hypotheses, the main factor discussed in the literature is fluency in the local language (see McManus, Gould and Welch, 1983; McManus, 1985; Chiswick, 1991; Tainer, 1988; Carliner, 2000; Dustmann and Van Vose, 2001; Dustman, 1994). Grenier (1984) claims that fluency in English raises the earnings of Hispanic immigrants in the US. Kossoudji (1988) found that there is a high cost to immigrants in the US for not knowing English.

Similar results were found for immigrants in Israel. Using data from the 1972 and 1983 Israel Survey of Income, Chiswick (1998) and Chiswick and Reppeto (2001), Beenstock, Chiswick and Reppeto, (2001) concluded that fluency in Hebrew increases with the immigrant's level of education and with years since arrival. In addition, they showed that an immigrant's income increases as his/her Hebrew writing and speaking skills improve.

Friedberg (2000, 2001) and Chiswick and Miller (1995) discussed the difficulty in isolating the effect of fluency in the local language on the growth in immigrants' income. This is due to the expected correlation between the control variables related to language and other variables, such as IQ, level of education, level of motivation to be integrated

within the host society and the degree of similarity between the immigrant's mother tongue and Hebrew.

Berman, Lang and Siniver (2003) attempted to deal with this difficulty by using an equation of differences, where the dependent variable is the difference between the current and initial levels of income and one of the explanatory variables is the difference between the current and initial levels of fluency in Hebrew. Their results were similar to those previously presented in the literature.<sup>6</sup>

Other studies have demonstrated a correlation between immigrants' fluency in the local language and their place of residence. Carliner (1981) and Lazear (1999) found that immigrants acquire the local language more successfully if they live in areas with a native majority. Immigrants who live in areas with an immigrant majority take longer to learn the local language. The researchers explained their findings using the rate of return on learning the language in areas populated by immigrants as opposed to areas populated by natives. Lazear (1999) claimed in his research that the behavior of immigrants with respect to their integration in the host country is similar to that in acquiring the local language.

Immigrants integrate more rapidly if they live in an area with a native majority relative to an area with an immigrant majority. Card (1990) found that due to the high proportion of Hispanics in Miami, the lack of fluency in the local language has only a limited effect on their income. The conclusion from the above mentioned studies is that an immigrant's income increases with his level of fluency in the local language, thus narrowing the gap in earnings between immigrants and natives.

Chiswick and Miller (2008) discuss the transferability of immigrants' human capital. Using census data for 2000, they found that immigrants in the US with more pre-immigration labor market experience achieve inferior job matches, due to the less-than-perfect international transferability of foreign experience. Using data from the 2001 Australian Census of Population and Housing, Chiswick and Miller (2009) found that the limited international transferability of human capital results in immigrants accepting jobs in relatively low-status occupations when they first enter the Australian labor market.

Cohen-Goldner and Eckstein (2008) examined the influence of vocational training on the earnings of male immigrants aged 23-58. They divided the immigrants into two

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<sup>6</sup> An equation of differences is an accepted methodology in fixed-effect models used to overcome the problem of heterogeneity in the characteristics of the respondents (see, for example, Johnston and Dinardo, 1997, pp. 395-397).

groups: blue collar occupations (such as sales, diamond cutting and construction) and white collar occupations (such as computers, bookkeeping, research and engineering). The research showed that vocational training contributes to earnings both for white and blue collar workers, and that white collar workers receive a higher return on their participation in vocational training than blue collar workers. They also found that fluency in Hebrew contributes to an immigrant's earnings, as does experience in the Israeli labor market, while experience in the home country has no effect.

Cohen-Goldner and Eckstein (2010) examined the effect of vocational training on the earnings of female immigrants and their prospect of finding a job. The research concluded that for women employed in white collar professions, vocational training increases both earnings and the prospect of finding a job. With regard to women in blue collar professions, vocational training has no effect on earnings but does increase the prospect of finding a job. Eckstein and Weiss (2004) found that the earnings of educated immigrants increase with the transition to professions that require a high level of human capital. Thus, when immigrants with a high level of education arrived in Israel they began working in occupations that require very little human capital; however, at a later stage, they moved to occupations that require a higher level of human capital and their earnings rose accordingly. This transition was primarily observed among immigrants who were aged 25-40 on arrival while immigrants who were older on arrival had difficulty making the occupational transition. It can be concluded that experience in the Israeli labor market primarily affects the earnings of educated immigrants who arrived at a young age.

Weiss *et al.* (2003) divided immigrants' occupations into three types: research and teaching, technical and nursing and the rest. They found that experience in Israel primarily affects the earnings of immigrants in the first two categories and that the lifetime earnings of immigrants are lower by 57% on average than those of similar native Israelis. They explained this as being the result of a lack of information among employers as to immigrants' skills, the immigrants' lack of relevant human capital (such as fluency in Hebrew) and their lack of networks. Thus, according to these findings, immigrants should focus on learning Hebrew and creating social networks in order to increase their earnings.

In addition to the level of fluency in the local language among immigrants, another subject related to our study is gender differences. Examining seventeen Latin American countries, Gandelman (2009) recently finds that, although female-headed households are, in general, less likely to attain homeownership, single, separated, or

divorced women (who head their families) have in fact higher probability of owning a home. These findings, however, are not necessarily consistent with those obtained in other countries. Lauridsen and Skak (2007) find that woman-headed households are less likely to attain homeownership in Denmark. In contrast, Van Leuvensteijn and Koning (2004) find higher probabilities of homeownership for female-headed households in the Netherlands, and Chiuri and Jappelli (2003) find no insignificant gender effect on homeownership in fourteen OECD countries. Lee *et al.* (2005) find that migration to the US increases homeownership attainment for women relatively more than it does for men. Finally, in a precursor to the current analysis, and based on the same sample, Arbel *et. al.* (2011) suggest that compared to the rest of the immigrant population, single or divorced women associate with greater likelihood to achieve homeownership.

### 3. The Sample

The data used in our study is from a survey that was requested by the Jewish Agency for Israel in 2005.<sup>7</sup> The survey, which was conducted by a local firm specializing in providing survey and market research services, included in-depth telephone interviews of a representative sample—representative of the immigrant population across gender, age, and place of residence—of 501 immigrants whose age is 18 years and over who arrived into Israel from the former Soviet Union between the years 1989 and 2004. During that period—after the Soviet Union lifted restrictions on emigration—Israel experienced a large wave of Jewish immigration that eventually led to a total population growth of more than 20%.

Figure 1 presents the number of immigrants who arrived in Israel from the former Soviet Union by immigration year for the examined period. As shown in Figure 1, after two years (1990-1991) of a particularly large migration wave, the number of immigrants leveled at about fifty thousand per year until 2001, after which the number further dropped to just over ten thousand immigrants per year until 2005. Figure 2 shows the proportion of the number of immigrants arriving each year out of the total number of immigrants who arrived over the examined period (1989-2004) for both the entire population and the sample. The two lines in the graph closely overlap, providing visual evidence for the choice of a representative sample.

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<sup>7</sup> The mission of The Jewish Agency for Israel states that the Agency is committed to the Jewish future in encouraging and assisting absorption of Jews from around the world into Israel. We thank Dvora Lipson and Sabina Lisizia for their assistance in attaining the dataset.

The sample includes 501 observations and contains information on the immigrants' level of income (as a categorical variable), personal characteristics (such as gender, age group, marital status, number of children, year of arrival and region of origin), socio-economic characteristics (such as employment, education and age group) and a series of subjective factors related to assimilation and attachment to the receiving environment (such as the immigrant's assessment of his/her proficiency in Hebrew, knowledge of Israeli and Jewish history, care and respect for the local culture and social ties with natives).

Table 1 presents the list of variables (in alphabetical order), along with their definitions and summary statistics. Responses in the survey that are in the form of rankings are correspondingly defined using dummy variables with two or more categories.<sup>8</sup> As can be seen from Table 1, only 25% of the immigrants report an income level (INCOME) equal to or above the average net family income.

With respect to individual characteristics, 53% are females (FEMALE) and 59% are married (STATUS). Computing the interaction variable STATUS×FEMALE shows that 24% of the sample are single or divorced females. In addition, 36% of the sample are in the 18-34 age group, 33% in the 35-54 age group and 31% in the 55+ group (AGE). The average number of children in a household under 18 years of age is 0.5 (CHILDREN) and the average number of years since arrival in Israel is about 14.5 (YEARS). While all the participants in the sample originate from the FSU, 91% come from the European republics with the rest from the Asian republics (ASIA).<sup>9</sup>

With respect to employment status, 56% are employed full-time, 28% are either employed part-time or unemployed and looking for a job and 11% are either out of the workforce, retired or in compulsory military service (EMPLOYMENT). With respect to schooling, 2% have an elementary school education or an incomplete high school education, 47% have a high school or post-high school (non-academic) education and 51% possess an academic degree (EDUCATION).<sup>10</sup>

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<sup>8</sup> For the justification of this procedure, see, for example, Kmenta (1997) pp. 461-466 and Greene (2003) p. 664.

<sup>9</sup> These proportions resemble those of the entire immigrant population who arrived in Israel from the FSU during that period (see Central Bureau of Statistics, 2009a).

<sup>10</sup> It should be noted that the wave of immigration from the FSU during this period constitutes a unique case study in this regard due to its unusual skill composition. Thus, the immigrants are in general highly educated and arrive with labor market experience. However, as noted by Friedberg (2001), the short-run impact of these traits may not be substantial relative to the long-run effect from a labor market perspective.

With respect to the subjective variables, 59% reported a high level of proficiency in Hebrew, 25% an intermediate level and 14% a low level (*LANGUAGE*). A majority (59%) reported a high degree of assimilation. While a majority (67%) reported a high level of knowledge of the host country's history, 27% reported an intermediate level and 6% reported a low level (*HISTORY*). Moreover, 61% declare that they care a great deal about Israeli culture, while 18% care only moderately and 18% care very little (*CARE*). At the same time, 39% of the sample stated that they have a high level of respect for Israeli culture, 53% an intermediate level and 7% a low level (*RESPECT*).<sup>11</sup>

#### 4. Methodology and Results

A probit model was estimated in order to analyze the correlation between social involvement and level of income.<sup>12</sup> The full model is given by the following equation:

$$(1) \quad \phi_1(INCOME) = \alpha_1 + \beta_1 \times YEARS + \gamma_1 \times LANGUAGE + \delta_1 \times SOCIAL + \omega_1 \times CONTROL + u_1$$

where  $\phi_1$  represents the values of a cumulative normal distribution that correspond to the respective estimated probabilities, *INCOME* is a dummy variable that equals 1 in the case that the immigrant's reported income is equal to or higher than the average family income and 0 otherwise, *YEARS* represents the number of years since arrival in Israel,<sup>13</sup> *LANGUAGE* represents the dummy variables associated with the immigrant's own ranking of his/her proficiency in Hebrew, *SOCIAL* includes the proxy variables associated with the level of social involvement (*ASSIMILATION*, *HISTORY*, *CARE* and *RESPECT*), the matrix *CONTROL* consists of column vectors of socio-demographic control variables (*AGE*, *EMPLOYMENT*, *STATUS*×*FEMALE*, *CHILDREN*, *EDUCATION* and *ASIA*),  $\alpha_1$ ,  $\gamma_1$ ,  $\delta_1$ ,  $\omega_1$  are vectors of parameters and  $u_1$  represents the stochastic random disturbance term. (For more detailed definitions, see Table 1).

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<sup>11</sup> As noted earlier, caring about the receiving country's culture does not necessarily imply that one also respects the culture. Indeed, it turns out that the Pearson correlation between the variables *CARE* and *RESPECT* is only about 0.3.

<sup>12</sup> See, for example, Johnston and Dinardo (1997) pp. 419-424 and Greene (2003) pp. 665-668. We chose the probit model due to the simple and direct interpretation given to the estimates it yields as marginal probabilities, unlike more complex procedures, such as, the ordered-probit. The results of the latter procedure are available by request from the authors.

<sup>13</sup> Our attempt to follow the common practice by incorporating both *YEARS* and its square into the model did not improve the results.

Table 2 presents the estimation results. Column 1 includes only *YEARS* and socio-demographic variables (i.e.  $\gamma_1=\delta_1=0$ ). Column 2 adds *LANGUAGE* (i.e. only  $\delta_1=0$ ). Column 3 adds the social involvement variables (*ASSIMILATION*, *HISTORY*, *CARE* and *RESPECT*), thus representing the full model.<sup>14</sup>

The outcomes reported in columns 1 and 2 are in line with previous findings in the literature. Thus, the likelihood of attaining a higher income increases by 2.12-2.69% for each additional year in Israel. These figures are statistically significant at a 1% significance level ( $t$ -value of 3.46-4.49 which decreases in columns 2 and 3 with the incorporation of additional explanatory variables). In comparison to the base group (lowest level of proficiency in Hebrew), an intermediate (high) proficiency in Hebrew raises the marginal probability of earning an income above the average by 22%-24% (24%-25%). These figures are also statistically significant at significance levels of 1%-10% ( $t$ -value of 1.85-2.72 which decreases in columns 2 and 3 with the incorporation of additional explanatory variables).

According to the outcomes reported in column 3, of the four proxy variables associated with the level of social involvement (*ASSIMILATION*, *HISTORY*, *CARE*, *RESPECT*), only *ASSIMILATION* was found to be statistically significant. The finding suggests that immigrants who are better assimilated within the receiving country are 11% more likely to attain a level of income that is equal to or higher than the average. The latter estimate is also statistically significant at a significance level of 1% ( $t$ -value of 2.62).

This finding indicates that a greater social networking, in addition to a higher level of language proficiency, is associated with a more successful assimilation and leads to better job opportunities and a higher level of income. In addition, when the correctly specified model (which includes the language proficiency variables as well as the significant social involvement variable) is used, the coefficient of the variable that represents the number of years since migration drops from 2.25% to 2.12% while the significance level of its calculated  $t$ -value declines somewhat (from 3.76 to 3.46). Moreover, our findings suggest that an increase in the level of income, previously attributed to language proficiency due to misspecification of the model, should be attributed to social involvement instead. Compared to the misspecified model, the

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<sup>14</sup> It should be noted that in several occasions we ran the Wu-Hausman procedure to rule out possible endogeneity between the dependent and independent variables. The outcomes of these procedures, which reject the hypothesis of endogeneity are available by request from the authors

LANGUAGE\_2 coefficient becomes insignificant at the 1% and 5% level and significant only at the 10%. The  $t$ -value of the coefficient decreases from 2.02 to 1.85, thus making the coefficient insignificant at the 5% level. At the 1% level even an improvement from lower to the highest level of language proficiency yields an insignificant marginal probability ( $t$ -value of 2.50, which is insignificant at the 1% level). This findings suggest that a marginal probability of income shift, which has been mistakenly attributed to better language proficiency, should have been, in fact, attributed to higher level of social involvement.

Having demonstrated the implications of the misspecified model, we now turn to investigate the stratification of the sample across gender and marital status and based on the correctly specified model. The results are reported in table 3. Three important differences between the different groups are particularly noteworthy.

First, the return on higher level of social involvement is higher among immigrant married males compared to immigrant unmarried females. While a better social involvement is expected to significantly raise the chances of higher income level by 15% among married men, this figure drops to only 4% among unmarried women (the respective  $t$ -values are 2.05 and 2.14 and both are significant at the 5% level).

Moreover, compared to married males, unmarried males seem to improve their income level based on linguistic skills rather than social networking and level of education. While the coefficients of the language proficiency variables are highly significant among unmarried males (respective  $t$ -values of 6.52 and 5.47 among unmarried males, which are highly significant at 1% significance level) and insignificant among married males, the picture is reversed for the coefficient of the social involvement variable (respective  $t$ -value of 2.05 among married males, which is significant at the 5% level).

These findings stand in contrast to the comparison between female groups. In both groups of unmarried and married females, the coefficient of the language variable is highly significant (respective  $t$ -values of 8.10 and 15.36, which are highly significant at the 1% level). The only difference between immigrant female groups lies in the coefficient of the social involvement variable. The respective  $t$ -values are 2.14 for married women (significant at the 5% level) and 0.43 for unmarried women (highly insignificant)

Finally, while immigrant males have a significant positive return on higher education, immigrant females have negative return on higher education (respective  $t$ -

values for married men are 4.30, 4.61, for unmarried women are -6.34, -6.74 and married women -2.86. All of these values are significant at 1% level).

## **5. Summary and Conclusions**

The current study extends the existing literature by attempting to determine whether, in addition to the level of fluency in the local language, social involvement variables can explain the growth in income among immigrants in Israel. The study makes use of data from a relatively recent survey carried out in 2005 by a local firm specializing in providing survey and market research services among 501 immigrants. As part of the survey and the in-depth telephone interviews, participants were asked a large number of subjective questions related to social involvement: their degree of assimilation in Israeli society, their degree of care and respect for Israeli culture, and the extent of their knowledge in Israeli and Jewish history. Similarly, they were asked how many of their friends and neighbors are immigrants. These questions have made it possible to extend the existing literature by examining whether the extent of social involvement, together with number of years in Israel, can explain the increase in income among immigrants, in addition to the effect of increased fluency in Hebrew.

The findings indeed support the hypothesis that the level of social involvement is positively correlated with the level of income among immigrants. Immigrants who are more successfully assimilated within Israel are 11% more likely to achieve an average or higher level of income. This finding can be explained by more extensive social networking, which is associated with a more successful assimilation, in addition to language proficiency. Improved social networking, in turn, leads to better job opportunities and raises the level of income.

In addition, when the correctly specified model (which includes the language proficiency variables as well as the significant social involvement variable) is used, the coefficient of the variable that represents the number of years since migration drops from 2.25% to 2.12% while the significance level of its calculated *t*-value declines somewhat (from 3.76 to 3.46). Moreover, at the 5% significance level compared to the incorrectly-specified model, a shift from lower to intermediate level of language proficiency does not significantly increase the level of income. The *t*-value of the coefficient decreases from 2.02 to 1.85, thus making the coefficient insignificant at the 5% level. At the 1% level even an improvement from lower to the highest level of language proficiency yields an insignificant marginal probability (*t*-value of 2.50, which is insignificant at the 1% level).

This findings suggest that a marginal probability of income shift, which has been mistakenly attributed to better language proficiency, should have been, in fact, attributed to higher level of social involvement.

In conclusion, the findings indeed suggest that part of the correlation between income and fluency in the local language should be attributed to social involvement, which leads to improved job opportunities and in turn to higher income.

Having demonstrated the implications of the misspecified model, we investigated the stratification of the sample across gender and marital status and based on the correctly specified model. Three important differences between the different groups are particularly noteworthy.

First, the return on higher level of social involvement is higher among immigrant married males compared to immigrant unmarried females. While a better social involvement is expected to significantly raise the chances of higher income level by 15% among married men, this figure drops to only 4% among unmarried women (the respective *t*-values are 2.05 and 2.14 and both are significant at the 5% level).

Moreover, compared to married males, unmarried males seem to improve their income level based on linguistic skills rather than social networking and level of education. While the coefficients of the language proficiency variables are highly significant among unmarried males (respective *t*-values of 6.52 and 5.47 among unmarried males, which are highly significant at 1% significance level) and insignificant among married males, the picture is reversed for the coefficient of the social involvement variable (respective *t*-value of 2.05 among married males, which is significant at the 5% level).

These findings stand in contrast to the comparison between female groups. In both groups of unmarried and married females, the coefficient of the language variable is highly significant (respective *t*-values of 8.10 and 15.36, which are highly significant at the 1% level). The only difference between immigrant female groups lies in the coefficient of the social involvement variable. The respective *t*-values are 2.14 for married women (significant at the 5% level) and 0.43 for unmarried women (highly insignificant)

Finally, while immigrant males have a significant positive return on higher education, immigrant females have negative return on higher education (respective *t*-values for married men are 4.30, 4.61, for unmarried women are -6.34, -6.74 and married women -2.86. All of these values are significant at 1% level).

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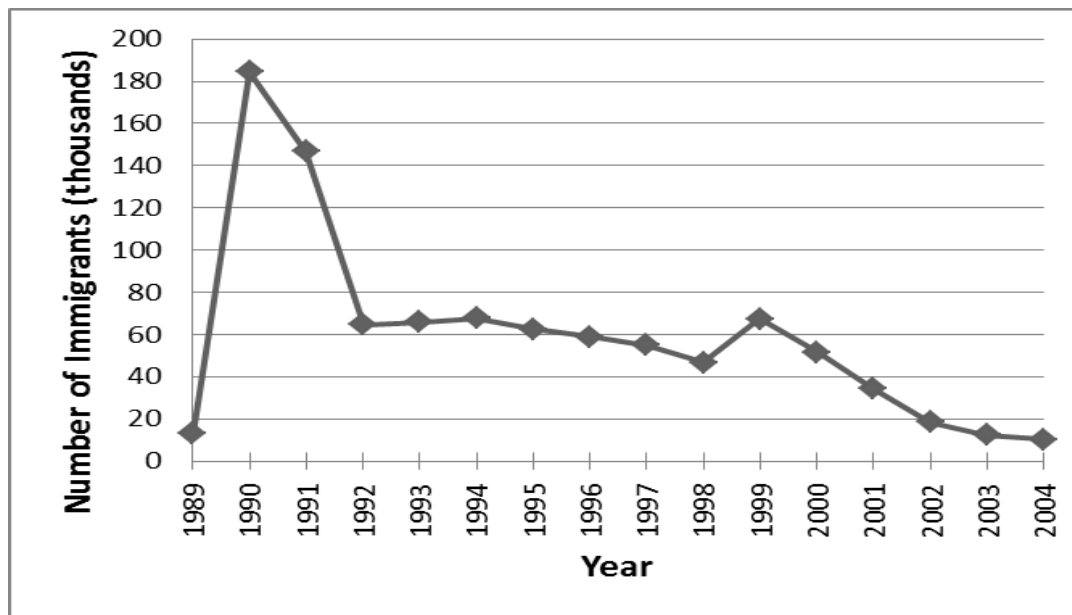
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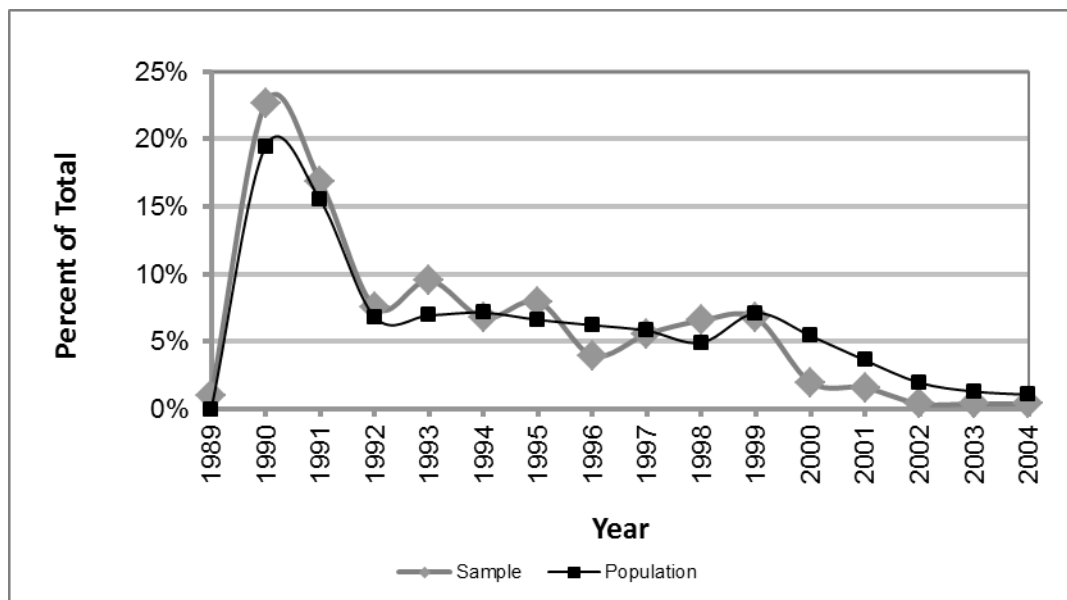
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**Figure 1:** Number of Immigrants Arriving into Israel from the Former Soviet Union by Immigration Year in Thousands (1989-2004)



Source: Israel Central Bureau of Statistics (2009)

**Figure 2:** Proportion of Immigrants Arriving Each Year into Israel from the Former Soviet Union Out of Total (1989-2004): Sample Versus Entire Immigrant Population



Source: Israel Central Bureau of Statistics (2009)

**Table 1:** Variables Used in the Estimation

<b>Name</b>	<b>Variable Definition</b>	<b>Avg.</b>	<b>Std.</b>	<b>Min</b>	<b>Max</b>
AGE_1	1 – 18-34 age group 0 – Otherwise	0.36	0.48	0	1
AGE_2	1 – 35-54 age group 0 – Otherwise	0.33	0.47	0	1
AGE_3	1 – 55+ age group 0 – Otherwise	0.31	0.46	0	1
ASIA	1 – Asian republic 0 – Otherwise (i.e. European republic)	0.09	0.29	0	1
ASSIMILATION_2	1 – High degree of assimilation in Israeli Society 0 – Otherwise	0.59	0.49	0	1
CARE_1	1 – Lowest degree of care and concern about Israeli culture 0 – Otherwise	0.18	0.39	0	1
CARE_2	1 – Intermediate degree of care and concern about Israeli culture 0 – Otherwise	0.18	0.39	0	1
CARE_3	1 – Highest degree of care about Israeli culture 0 – Otherwise	0.61	0.49	0	1
CHILDREN	Number of children in the household	0.50	0.86	0	4
EDUCATION_1	1 – Elementary school education or incomplete high school education 0 – Otherwise	0.02	0.13	0	1
EDUCATION_2	1 – High school or post-high school (non-academic) education 0 – Otherwise	0.47	0.50	0	1
EDUCATION_3	1 – Academic education 0 – Otherwise	0.51	0.50	0	1
EMPLOYMENT_1	1 – Working full-time 0 – Otherwise	0.56	0.50	0	1
EMPLOYMENT_2	1 – Working part-time or unemployed and looking for a job 0 – Otherwise	0.28	0.45	0	1
EMPLOYMENT_3	1 – Unemployed and out of the workforce or retired or in compulsory military service 0 – Otherwise	0.11	0.32	0	1
FEMALE	1 – Female 0 – Male	0.53	0.50	0	1

**Table 1 (continued): Variables Used in the Estimation**

<b>Name</b>	<b>Variable Definition</b>	<b>Avg.</b>	<b>Std.</b>	<b>Min</b>	<b>Max</b>
HISTORY_1	1 – Lowest level of knowledge of host country's history 0 – Otherwise	0.06	0.23	0	1
HISTORY_2	1 – Intermediate knowledge of host country's history 0 – Otherwise	0.27	0.44	0	1
HISTORY_3	1 – Highest level of knowledge of host country's history 0 – Otherwise	0.67	0.47	0	1
INCOME	1– Highest income category 0 – Otherwise	0.25	0.43	0	1
LANGUAGE_1	1 – Lowest level of language proficiency 0 – Otherwise	0.14	0.35	0	1
LANGUAGE_2	1 – Intermediate level of language proficiency 0 – Otherwise	0.25	0.44	0	1
LANGUAGE_3	1 – Highest level of language proficiency 0 – Otherwise	0.59	0.49	0	1
RESPECT_1	1 – Lowest degree of respect for Israeli culture 0 – Otherwise	0.07	0.25	0	1
RESPECT_2	1– Intermediate degree of respect for Israeli culture 0 – Otherwise	0.53	0.50	0	1
RESPECT_3	1 – Highest degree of respect for Israeli culture 0 – Otherwise	0.39	0.49	0	1
STATUS	1 – Single or divorced 0 – Otherwise	0.41	0.49	0	1
STATUS×FEMALE	1 – Single or divorced female 0 – Otherwise	0.24	0.43	0	1
YEARS	Number of years in the receiving country	14.45	3.40	4	19

**Table 2:** Probit Estimates of the Marginal Probabilities of Attaining an Income Level Equal to or Higher than the Average among FSU Immigrants in Israel (1989-2004)

<u>Coefficients of:</u>	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>
YEARS	$2.69 \times 10^{-2}$ (4.49)***	$2.25 \times 10^{-2}$ (3.76)***	$2.12 \times 10^{-2}$ (3.46)***
LANGUAGE_2	—	0.24 (2.02)**	0.22 (1.85)*
LANGUAGE_3	—	0.25 (2.72)***	0.24 (2.50)**
ASSIMILATION_2	—	—	0.11 (2.62)***
HISTORY_2	—	—	−0.04 (−0.46)
HISTORY_3	—	—	−0.08 (−0.85)
CARE_2	—	—	$5.77 \times 10^{-2}$ (0.81)
CARE_3	—	—	$5.56 \times 10^{-2}$ (0.94)
RESPECT_2	—	—	0.12 (1.32)
RESPECT_3	—	—	0.16 (1.63)
STATUS×FEMALE	$-3.80 \times 10^{-2}$ (−0.82)	$-3.65 \times 10^{-2}$ (−0.82)	$-4.78 \times 10^{-2}$ (−1.06)
CHILDREN	$3.19 \times 10^{-2}$ (1.37)	$2.95 \times 10^{-2}$ (1.33)	$2.51 \times 10^{-2}$ (1.13)
EDUCATION_2	−0.12 (−0.83)	−0.17 (−1.29)	−0.20 (−1.49)
EDUCATION_3	−0.01 (−0.07)	−0.09 (−0.67)	−0.13 (−0.97)
ASIA	−0.13 (−3.01)***	−0.13 (−2.95)***	−0.11 (−2.55)***
AGE_2	$-4.73 \times 10^{-2}$ (−1.02)	$-1.50 \times 10^{-2}$ (−0.32)	$3.09 \times 10^{-4}$ (0.01)
AGE_3	−0.21 (−3.78)***	−0.14 (−2.35)**	−0.13 (−2.12)**

**Table 2:** Probit Estimates of the Marginal Probabilities of Attaining an Income Level Equal to or Higher than the Average among FSU Immigrants in Israel (1989-2004)

<u>Coefficients of:</u>	<u>(1)</u>	<u>(2)</u>	<u>(3)</u>
EMPLOYMENT_2	-0.16 (-3.15)***	-0.13 (-2.50)**	-0.09 (-1.77)*
EMPLOYMENT_3	-0.06 (-0.98)	$-5.98 \times 10^{-2}$ (-1.05)	-0.07 (-1.32)
<u>Regression Statistics:</u>			
Observations	501.00	501.00	501.00
Log Likelihood	-232.46	-227.52	-220.02
LR Statistics	95.77***	105.65***	120.65***
Pseudo R-Squared	0.17	0.19	0.22

Notes: The dependent variable INCOME is a dummy variable, which takes a value of 1 for income equal to or above the average net family income, and 0 otherwise. The independent variables are defined in Table 1. Column 1 includes only YEARS and socio-demographic variables. Column 2 adds the LANGUAGE variables and Column 3 adds social involvement variables (ASSIMILATION, HISTORY, CARE and RESPECT). *T*-values appear in parentheses. Significant values at significance levels of 10%, 5% and 1% are marked with one, two, and three asterisks, respectively.

**Table 3:** Probit Estimates of the Marginal Probabilities of Attaining an Income Level Equal to or Higher than the Average among FSU Immigrants in Israel: Stratification based on Gender and Marital Status

<u>Coefficients of:</u>	<u>unmarried male</u>	<u>married male</u>	<u>unmarried female</u>	<u>married female</u>
YEARS	0.02 (1.45)	0.02 (1.81)*	$4.52 \times 10^{-3}$ (2.24)**	0.01 (1.74)*
LANGUAGE_2	0.96 (6.52)***	0.09 (0.63)	0.99 (8.10)***	0.99 (15.36)***
LANGUAGE_3	0.58 (5.47)***	0.16 (1.19)	0.59 —	0.77 —
ASSIMILATION_2	0.14 (1.30)	0.15 (2.05)**	0.04 (2.14)**	0.01 (0.43)
EDUCATION_2	0.11 (0.48)	0.86 (4.30)***	-0.97 (-6.34)***	-0.09 (-2.86)***
EDUCATION_3	0.17 (0.69)	0.81 (4.61)***	-0.93 (-6.74)***	— —
ASIA	-0.04 (-0.36)	-0.06 (-0.79)	-0.02 (-1.96)**	-0.07 (-2.40)**
AGE_2		-0.15 (-1.77)*	0.01 (0.57)	0.01 (0.36)
AGE_3	-0.05 (-0.27)	-0.30 (-2.62)***	-0.02 (-0.73)	-0.08 (-1.90)*
EMPLOYMENT_2	-0.04 (-0.21)	-0.17 (-1.69)*	$6.66 \times 10^{-3}$ (0.24)	-0.06 (-1.61)
EMPLOYMENT_3	-0.17 (-1.69)*	— —	$6.97 \times 10^{-3}$ (0.34)	— —
<u>Regression Statistics:</u>				
Observations	80	148	119.00	142.00
Log-Likelihood	-42.06	-63.42	-38.13	-38.13
LR-Statistics	7.98***	47.84***	31.51***	56.01***
Pseudo R-Squared	0.09	0.27	0.29	0.32

Notes: The dependent variable INCOME is a dummy variable, which takes a value of 1 for income equal to or above the average net family income, and 0 otherwise. The independent variables are defined in Table 1. The sample is stratified based on gender and marital status. Bachelor and divorced females were stratified into one group of unmarried females due to collinearity with independent variables. *T*-values appear in parentheses. Significant values at significance levels of 10%, 5% and 1% are marked with one, two, and three asterisks, respectively.