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Well-Being of Youth with Migration Background in Germany

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1 Introduction

This paper examines empirically the well-being of youth in Germany in a multidimensional setting. The special focus is on the differences between German and foreign youth in three well-being dimensions. The dimensions analyzed are education, life satisfaction and health. The welfare position is taken into account to define the outcomes in these three dimensions.

Existing literature and research mainly focus on groups of migrants, such as Turks or ethnic Germans, and their performance in single dimensions of well-being. For education, studies around PISA gained great attention when looking for differences between migrants and natives (Entorf and Minoiu, 2005). Life satisfaction is a subjective measure describing overall quality of life (Kahneman and Krueger, 2006). There are differences between natives and migrants in a cross country context (Safi, 2010) and for different age groups (Easterlin, 2001; Trzcinski and Holst, 2008). In a health dimension, results show that migrants seem to be happier when arriving in the host country but that there is adaptation of national health levels over time (Ronellenfitsch and Razum, 2004).

Only since the beginning of this decade Germany has acknowledged its status as an immigration country and realized the need for targeted policies for migrants. Thus a new era of migration policy has just begun where migration targets on integration meet political interests. Germany is a immigration country with a foreign population of 11% (Statstisches Bundesamt). For targeted integration policies it is of interest to find out whether migrants perform worse in comparison to German natives along several dimensions of well-being.

Studies up until now only focus on education, health or life satisfaction often in single dimensions. This study aims to bring findings about different well-being dimensions together and analyze these perspectives with a sample of teenager from Germany in more depth.

Therefore I apply a set of socioeconomic variables in an ample range to explore separately the three dimensions that determine well-being. Data is taken from the German Socio-Economic Panel (GSOEP). A sample of youth answers the special youth questionnaire each year since 2000. Information from the youth questionnaire is pooled with information from the individual and household questionnaire from 2001 to 2005 to acquire information about teenagers, their parents and the socioeconomic background of the household.[1]

For dealing with the definition of the foreigner or migrant status, three classification of foreigners are made. A simple foreigner definition by country of origin, a definition by generation of immigration and a division by nationality groups. Then the analysis of well-being is done applying two methods of discrete choice to investigate well-being from different perspectives within the GSOEP sample. First a multionominal logit model is estimated on the enrollment type of teenagers at the age of 16 to find out if it is the migrants status which makes these teenagers worse off in their performance. The analysis shows that youth with migration background still lack behind their native counterparts in education because they have a worse socioeconomic background compared to natives. Especially immigrants of the first generation face disadvantages compared to natives. But there are some positive findings as youth with origin in former Yugoslavia have a significantly higher probability to achieve the highest school level compared to other foreigner groups and Germans.

Second, an ordered probit model is estimated to analyze the impact of various socioeconomic factors on satisfaction in the life of youth. Former studies found that migrants are happier when they arrived in the host country but in the second generation they are unhappier than their

[1] Data from 2000 is left out because then only a test for the youth questionnaire was done. the questionnaire changed for 2001.

parents and comparable native cohorts. It is found that foreign overall is more happy than German youth, especially newly immigrated ones. Turkish youth have higher odds to be very satisfied with life.

Finally a simple probit model is used to determine important indicators contributing to a good self-rated health status of a youth to find out if foreign youth indicate better health than Germans. Former studies on children found foreigners to indicate a better health status and having lower mortality rates than comparable natives (Razum et al., 1998; Hermann and A.Mielck, 2001)

Analyzing differences between German and foreign youth in various dimensions gives useful insights for policy makers and responsible institutions working on integration. This paper first gives an overview over existing literature before presenting the results of the discrete choice models on the three well-being dimensions education, life satisfaction and health.

2 Empirical findings on Well-being of Youth with Migration Background

Immigrant children and teenagers were found to be deprived in comparison to Germans when looking at their perspectives for the future. Several studies found that immigrants are somehow worse off than Germans.

For the monetary dimension Frick and Wagner (2001) apply the GSOEP to analyze migrant children's well-being and living conditions based on income.[2] He finds immigrant children to live in households which have lower average incomes and face a higher probability of being unemployed. Especially children of non-European migrants from Turkey and former Yugoslavia, and those of recent immigrant cohorts, such as ethnic Germans, are found to be vulnerable to poverty. Immigrant children and youth therefore can be considered to be deprived in the income dimension.

A rather popular claim is that immigrants often rely on the welfare system and thus give the next generation worse changes because of less individual investment. A study of Castranova et al. (2001) however, using the GSOEP sample, does not find empirical evidence supporting the assertion that migrants are more likely to take-up benefits from social assistance compared to natives. Immigrants are more eligible to social assistance than natives because they perform worse in the decisive socioeconomic factors, specifically in income, education, household structure and age. It is not the immigrant status per se that leads to a higher take-up rate but decisive individual or household characteristics.

But what about other dimensions as education, subjective well-being and health? This section gives an overview over recent research in the discussed dimensions, if possible with a focus on immigrants.

Education

The first well-being dimension studied here is education. Immigrant students in Germany perform on average worse in reading scores of the PISA study than comparable natives and migrants in other European countries. In Germany, migrant youth are especially found to lack behind the native group and other comparable migrants in Europe (Entorf and Minoiu, 2005). A study with a smaller sample group, shows that foreign youth, first and second generation, perform worse than their German counterpart (Heckmann, 1999). Return plans of parents are

[2] Data from the years 1995/1996 is taken.

found to lower investment in own integration and investment in youth and children in educational terms (Dustmann, 2008).

However, in a case study analysis, Gang and Zimmermann (1999) find statistical significance on the influence of education of parents on the school performance of German youth, but they do not find this proved for the comparable group of migrant youth in Germany. Nevertheless it remains an important factor to be included in the later analysis of well-being of youth with migration background.

Büchel et al. (2001) approve a large impact of the pure economical situation of parents on children´s school performance.[3] They find children of lower quintiles of the income distribution to have a smaller probability to be enrolled in *Gymnasium*, the highest school level. Through using lagged income the authors show that income at the time of enrollment has a significant influence on the school type chosen.[4] The study further finds children of blue collar workers to be rather enrolled in lower levels of the school system.

Heckmann (2008) finds the socioeconomic background especially important for a child's opportunities in Germany.In contrast, a child´s social mobility is more independent from parental education in, e.g. Scandinavian countries. Germany received mostly inflows of low skilled workers in the past who went to the low paid manufacturing industries in jobs often labeled as "migrant jobs" (Gundel and Peters, 2007). Youth and children living in households with migration experience are thus deprived in an income dimension as well as in educational dimensions because they face extremely difficulties in school performance and their parents are less educated, and thus earn less. Winkelmann (2006) confirms these finding that one of the most determining factors of being in Gymnasium is education of parents.

Children and youth with a foreign background in their household have more difficulties in school and perform on average worse than Germans. It remains unclear if this is due to their migration background or their lower household endowment.

Life Satisfaction

One dimension which is important for well-being is life satisfaction (Kahneman and Krueger, 2006). This indicator gives a subjective perspective of a persons life. Several studies analyze the correlation and determinants of life satisfaction with various socioeconomic factors. Blanchflower and Oswald (2007) find, comparing data from the GSOEP, Eurobarometer and World Value Surveys, that satisfaction is U-shaped in age, so younger persons are more satisfied.

The factor income was identified as a determinant of life satisfaction, especially at a younger age (Easterlin, 2001). Both mentioned studies also see cohort effect as a contributor to these results.Winkelmann (2005) finds that family income has the expected positive effect as unemployment has a negative effect on subjective well-being of German family members. He further finds own educational attainment of youth has a positive effect on life satisfaction.

Trzcinski and Holst (2008) investigate subjective well-being in transition to adulthood. They use the GSOEP sample of youth and the corresponding individual questionnaire. They estimate a simultaneous equation model analyzing a teenager's life in the dimensions of satisfaction, satisfaction of her mother, the feeling about personal control over life and satisfaction with school grades. They find life satisfaction is higher when teenagers have quantitatively more and positive personal relationships, especially the relationship to the mother seems important.

[3] Data from the GSOEP on youth who turned 14 between 1986-1996. Income data is pooled for the 1980s and 1990s.

[4] This influence is assumed to loose weight afterwards, but in Germany already at the age of 10 a division od students into three school levels is made.

Personal traits and attitudes have a positive influence on subjective well-being. Satisfaction with grades depends significantly on whether teenagers have fights with parents about their grades. West German mothers are more satisfied than foreign ones, but foreign youth are more satisfied than Germans. Foreign youth have higher satisfaction with grades which seems to be contradictious when regarding that foreign youth perform worse at school. Family composition has no significant influence on youths well-being (Winkelmann, 2006; Trzcinski and Holst, 2008). (Winkelmann, 2006) finds no strong evidence, that parental separation lowers individuals well-being because the author suggests that living in a non-intact family is even worse as when parents are clearly separated.

Safi (2010) analysis on the European Social Survey, including 13 countries, shows that immigrants are significantly less satisfied than natives, with the second generation even more unsatisfied than their parents. Life satisfaction of foreigners living in Germany was higher before reunification and decreased afterwards. Especially for Turks, a falling trend is observed which was almost the same level as that of Eastern Germans in the late 90s. Easterlin and Zimmermann (2008) explain this through deteriorating economic conditions for Turks, mostly blue collar workers with worsening working conditions in that period. The increases in Eastern German's life satisfaction during the 1990ies is associated with increasing absolute and relative income.

As life satisfaction is higher at a younger age, teenagers will be on average more satisfied than adults. For foreigners former studies found that they are less satisfied with their lives than natives which can be explained through lower income and less working perspectives.

Health

Another perspective to describe well-being is health. Factors as health satisfaction, self-rated health status and access to health facilities can be taken into account to describe this dimension. Health satisfaction is found to decrease with age, because the awareness of mortality in form of physical limitations rises. A further finding is that people from Eastern Europe are overall less satisfied with their health status (Deaton, 2007). Despite their income advantages to countries with lower socioeconomic status and higher mortality rates, they are the least satisfied with their lives.[5]

Self rated health is a good predictor of mortality and useful for a health screening measuring morbidity (Jylhä, 2009; Idler and Benyamini, 1997). The indicator combines physiological and biological factors where especially poor rated health is an indicator for a problem. Thus it is interesting to see how German and foreign youth differ in their healths status as we know from cross-sectional studies that their might be differences because of different origins of immigrants.

The self rated health status is taken as a proxy in this study as it is highly correlated with health satisfaction (0.65) but accepted as the better measure for this purpose. Especially for youth the value for self-rated health can be expected to better than that of adults. There is a gradient in self rated health in the early twenties. Self rated health depends on long-term and short-term circumstances. School performance has a rather long-lasting effect. Housing conditions and income have increasing effects with age (Power et al., 1998). Current illness can influence health in the sort run.

Overall foreign children and teenagers (age 0 to 18) are found to be healthier, measured as sickness in last four weeks (Hermann and A.Mielck, 2001). This appears although foreign parents, proxy here is the mother, are sick more often, smoking in the household is more likely and they have an economically weaker position. Hermann and A.Mielck (2001) see the reason for this better health status of foreign children in network effects of extended families on subjective well-being, which then translate in a further positive impact on health status. An underreporting of sickness from foreigners is a further possibility for better health.

For migrants in Germany Razum et al. (1998) found mortality rates of Turkish men and women who stayed in Germany lower than the mortality of returned migrants in Ankara. For Turkish males and females in all age groups mortality rates are lower than that of Germans. They explain this with a persistent self selection process. Healthy workers arrived in Germany as Gastarbeiter, those who failed, the sick ones, returned back to Turkey. The healthy ones stayed in Germany. Contradictious to these findings, Sander (2007) finds that the probability that migrants return home is more likely if they report very good health. The return probability is higher for healthy Turks and less likely for Eastern European immigrants. Ronellenfitsch and Razum (2004) find that the higher indicated health satisfaction of first generation immigrants deteriorates over time. Younger immigrants seem to be more satisfied in the beginning but getting unhappier although their wealth status improves. Migrants from Eastern Europe have the highest deteriorating health.

In this study we thus focus on health status of foreign youth and analyze how this differs to their German counterpart.

The presented studies analyze well-being from various perspective for different population groups. Education plays an important role for life but immigrant youth in Germany still perform worse than natives. Overall life satisfaction is an interesting measure for quality of life, especially when regarding immigrants it can give interesting insights how well migrants feel in the new country. Health is a substantial contributor to well-being. Here there exists literature with

[5] The study of Deaton (2007) uses the World Poll data set.

differing results and it is not clear if migrants have a better health status than natives because it is difficult to control for selection effects. In the next section results on the estimations on well-being are presented.

3 Method

The analysis of well-being of youth with migration background is done in three methodological ways. First we run a multinominal logit regression on educational attainment School performance at the age of 16 or 17 can be seen as a major determinant for individual future occupational opportunities and, as mentioned previously, in Germany the school level itself determines possible career alternatives. So a glance on factors characterizing educational performance is an important element of well-being analysis. The second model estimated is an ordered probit model on life satisfaction. The last model is a simple probit model on a good health status of a teenager.

The first dimension analyzed here is education. The dependent variable is school performance, coded from 1 to 3 for Hauptschule to Gymnasium. Therefore a multinominal logit model of educational attainment is tested on various socioeconomic factors of the youth, similar to the model of Frick and Wagner (2001) and Winkelmann (2005). The property of this model is that the outcome categories are not ordered like in the technique above. In Germany there are three school levels, namely high, medium and low school level[6], which is a distinctiveness of the German school system. The three outcomes are not ordered because a student does not have to attain a lower level for getting into a higher school level. Therefore the multinominal logit method is useful for this kind of analysis.

For the ordered probit model I take self-reported life satisfaction as dependent variable like in the studies of Winkelmann (2005, 2006). [7] In this case, satisfaction is ranked from zero to 10, where 0<1<2<...<10 are clearly ordered, because each category represents a higher value of satisfaction, where the former has to be included. The ordered probit model measures the probability that an individual chooses Y=1,...,Y=10 depending on different socioeconomic factors.

The last dimension analyzed is health. Here a probit model is run on having a good health status. This variable was a categorial variable ranked from very good= 1 to bad =5. As the incidence of a bad health status is low, we recode this variable to 1 if someone indicates very good health and 0 otherwise.

Testing different indicators gives an idea of the impact of socioeconomic and social factors on various dimensions of well-being.

4 Data and Descriptive Statistics

The German Socio-Economic Panel was launched in 1984 and is currently one of the most extensive longitudinal micro data bases in Europe. To reflect the large immigrant flows into Germany, a special immigrant sample was also introduced (Sample B).[8] In 1990 the panel was enlarged by 2000 households from the former German Democratic Republic (Sample C)(Haisken-DeNew and Frick, 2005). To capture new foreign arrivals since 1984, especially

[6] This categorization is equal to German Gymnasium, Realschule and Hauptschule.

[7] Admittedly this model here is different because it is a cross sectional analysis of 2005. Thus no panel data methods, as random or fixed effects, can be used.

[8] Sample A includes German households.

the ethnic Germans, in 1995 an additional immigrant sample was included (sample D). Researchers acknowledge the GSOEP as a representative sample of the foreign population, what makes descriptive analysis, in single sample dimensions or for the whole foreign population, possible (Burkhauser et al., 1997; Bauer and Zimmermann, 1995).

In 2000, an additional youth questionnaire was introduced. For all household members, the minimum respondent age is 16. Teenager answer the special youth questionnaire and the individual questionnaire in the year they turn 17.[9] The youth questionnaire collects data about personality, leisure-time activities, school satisfaction and attendance, and on relationships to family and friends. The questionnaire also contains prospective questions about the individual´s attitude to the future, and retrospective questions such as the age when the teenager first started a job (Lohmann and Goroncy, 2007).

For this paper, households which comprehend a teenager who once answered the youth questionnaire between 2000 and 2005, are the target group for the analysis of well-being. Information from the youth questionnaire is pooled with information of the individual and household questionnaire. Reducing the sample to these households and dropping the ones with missing values in any of the variables needed for the analysis, gives a total observation number of 9106 persons, including teenagers, siblings and parents. Table 1 provides a list with the coding and important means of variables used in the analysis.

We have specific youth information from one year as well as the current interview.[10] In total there are 1420 teenagers in 2005 who have answered the questionnaire between 2000 and 2005 and have all needed information completely available.

The choice of variables results from the discussion on well-being from above. First fundamental socioeconomic variables, such as income, education, country of origin, and nationality are selected. The above discussed studies on well-being reveal further dimensions which must be included into the analysis, namely non-income indicators like health, social relations, and satisfaction. Tables 1 provide an overview over selected objective and subjective indicators of the sample.

The foreigner status receives special interest. First, I construct a dummy variable turning 1 if a teenager either indicates foreign nationality or a foreign country of origin. Second I divide persons with a foreigner status under the first definition into a first and a second generation of immigrants. Finally I create dummies for different nationality groups. Of the 1420 teenagers who answered the youth questionnaire, 21 percent are foreigners under the first used definition. Table 2 shows the share of different foreigner groups in the sample.

For the education regressions I take the level based school attendance variable as dependent variable. The youth questionnaire allows to distinguish between the 3 existing school levels in Germany, namely Gymnasium- the highest level, Realschule - the middle level and Hauptschule- the lowest level. More than 20 percent of foreign youth are in the lowest school level while only 7 percent of Germans are participating in Hauptschule.[11] Foreigners are under represented in the highest school level with just 24 percent of them attaining Gymnasium where natives have a share of 41 percent. So it seems that migrant youth still lack behind their native counterparts in educational terms. For parents, education is quoted in education years. Foreign

[9] So respondents are either 16 or 17 at the time of interview.

[10] After 2005 the interview method was changed. Now youth answer the youth questionnaire in their first year and in the following year, when they turn 18, they answer the individual questionnaire for the first time.

[11] A further reason for choosing this variable is the German school system itself. The system defines three school levels which final certificates already determine the occupational career that opens up to young persons. The classification of students into the three levels is already at the age of 10, for which the system is fundamentally criticized for giving too less opportunities to individuals.

fathers are on average 1.2 years less educated than their German counterparts, foreign mothers have on average 1.5 years less education.

For the analysis on subjective well-being the overall satisfaction with life variable is taken as outcome variable. The variable is scaled from 0 (low) to 10 (high). The difference between mean life satisfaction of German and foreign youth is statistically significant.

In the health dimension I take self rated health status as the dependent variable. Originally the variable is coded from one (very good) to five (bad). A binary dependent variable is constructed with one when having a very good health status and zero otherwise. This measure is regarded as a valid instrument to measure mortality and morbidity (Jylhä, 2009; Idler and Benyamini, 1997). The self rated health status is taken as a proxy in this study as it is highly correlated with health satisfaction (0.65) but accepted as the better measure for this purpose.

In the next section the results od the estimations on well-being are presented.

5 Estimation Results on Dimensions of Youth Well-being

In this section I present the results of the estimations on different dimension of well-being of foreign and German youth. First the the multinominal logit is tested on school performance of youth. The school level is a decisive factor for satisfaction and future perspectives. It can explain why migrants face less future opportunities and thereby lower their subjective and objective well-being outcomes. Life satisfaction, standing for the subjective part, is examined in a second step. Here an ordered probit model with self-rated life satisfaction as response variable is estimated on a set of subjective and objective determinants. Finally well-being is explored in an health dimension, measured by a simple binary response variable if the individual has a very good health status or not. Thus this is not an objective measure itself, as the health status is not observed but reported, the measure is valid for estimating influences on the outcome health.

School Level Determinants

Access to education, or respectively being well educated, is a major goal of national and international policy programs. Studies as PISA of the OECD first provided information about mathematical and reading achievement of teenager through a large cross-national evaluation. In Germany, migrant youth are especially found to lag behind the native group and other comparable migrants in Europe (Entorf and Minoiu, 2005). This section explores determinants of a higher school achievement for a subsample of youth from the GSOEP.

First a one dimensional model with foreigner status is estimated on school performance (see Table 3). The base outcome is Gymnasium, thus all results are read in comparison to students in Gymnasium. Being in Hauptschule or Realschule compared to Gymnasium is significantly more likely for foreigners. This finding is not surprising, but we want to explore why the foreign status lowers the possibility of being enrolled in higher school levels.

To find out, several socioeconomic indicators of the teenager's household as well as subjective indicators of teenagers and parents were added to the estimates. The coefficient for Hauptschule stays significant. Immigrant youth are more likely to end up in the lowest school level. For Realschule indeed we get interesting results. To achieve the middle school level, only household and parental characteristics are determining, it is not foreigner status per se. Endowment of the household, thus education of parents and income are decisive. Girls have higher chances to achieve Gymnasium. A larger household size makes it more likely to end up in lower school levels compared to Gymnasium. But endogeneity might drive the results. Higher education can also mean higher income, but higher education means also less, or rather no children in

Germany (Statstisches Bundesamt, 2009). For achieving Gymnasium, household endowment with education and (resulting) higher income are the decisive factors based on this analysis, results which confirm the findings of Winkelmann (2006).

In a next step the foreigner status is decomposed into first and second generation immigrants and nationalities. While we differentiate by generation of immigration, we would expect that especially newly migrated youth have problems in school. These assumptions are confirmed in Table 5 and Table 6, but also teenagers who were born here and grew up here, did not advance. Being in Hauptschule is especially true for both, first and second generation immigrants. Thus these results confirm the findings by Heckmann (1999) but also show that immigrants as a whole perform worse than natives, despite integrational programs.

Looking at the different foreign nationality groups shows that in the simple model, see Table 7, all groups are threatened with a higher probability of being in Hauptschule. Turkish youth are most threatened with being in Hauptschule and Realschule, followed by lower chances for the future. For the extended model with socioeconomic controls (Table 8 we get clearer results on who is the especially deprived and who is the advanced group. Teenagers with roots in former Yugoslavia have a significantly higher probability to achieve the highest school level. This is the only group of nationalities that has higher odds to end up in Gymnasium. Turkish and Non-European youth are the ones who did not catch up and have a higher predicted probability for Hauptschule.[12]

However these findings are not surprising. The German system got aware of this problem some years ago and special focus was set on immigrant children in various integration programs. But is this really enough to focus on foreign students or do these identifiers tell the wrong story?

These findings show, that it is not the foreigner status per se which increases the probability of being enrolled in lower school levels. These children get less endowment and it is not only the influence of being immigrants. Thus the focus should not be on integration solely, it is about endowing children and youth whose household characteristics give them less chances. Integration can then be an outcome. But first there has to be endowment with education and skills and not only German language and culture. Maybe programs should try to have some important subjects as mathematics and English in home country language, then children can catch up faster in those parts and slowly adopted German in other parts. For second generation immigrants the situation is serious as these children grew up here but do not hold on with native children. As the German school system divides children already at the age of ten between the three school levels, children get lost in lower levels very early and determine with this their future.

Determinants of Life Satisfaction

To find out which factors play a decisive role for enhancing a teenager's quality of life, the impact of various dimensions of well-being are estimated on life satisfaction. For the analysis of well-being, five dimensions are taken to estimate their influence on life satisfaction of youth. The dimensions chosen are income, household structural variables, health, education and mental factors.

The difference between German and foreign youth's life satisfaction is significant on an 5% level. The results of the the simple ordered probit model on life satisfaction show that foreign youth are more satisfied than German ones (see Table 9). This result holds in Table 10 when further socioeconomic factors of teenagers and household characteristics are included into the analysis of subjective well-being. Foreigners are significantly more satisfied with their lives

[12] In the Non-European group the largest shares of teenagers are from Africa and the Americas.

and, interestingly, income does not turn significant in the regression. From Easterlin (2001) we would have expected a significant influence of income on subjective well-being as persons of younger age were found to care more about income than older age groups.

Safi (2010)'s analysis on 13 European countries found immigrants, especially in the second generation, more unhappy than natives. In a second step thus, the foreigner dummy is split into first and second generation of immigration. In contrast to these findings, German second generation immigrants are more happy than Germans and first generation immigrants (see Table 11). Thus there seems to be no happy-migrant effect for the time after migration. Only for second generation immigrants to Germany the coefficient turns positive and significant. A negative coefficient would have been expected from Safi (2010). The other controls have the expected sign: unemployment in the household has a negative influence, good own self- rated health has a positive influence and parents that are more satisfied raises their children's well-being (see Table 12).

In a final step the group of foreigners are categorized by their nationalities. Turkish and Non-European teenagers have higher odds to be satisfied (see Table 13). After controlling for the other socioeconomic household characteristics, these two groups are the ones with a significantly higher predicted probability of being satisfied (see Table 14). This is interesting, as these groups are especially deprived in an income and educational dimension. But income seems not to play a decisive role for youth at the age of 17 as doesn't satisfaction with school. Good predictors are satisfaction of parents and own health, thus more personal factors driving the quality of life.

The analysis on life satisfaction shows that foreigners are more happy with their lives than Germans. First generation immigrants are the most satisfied. Of the analysis on nationality groups we conclude that Turkish and Non-European teenagers are happier than the others of their cohort. These results are interesting, because income is not the decisive determinant but personal conditions in life as parental life satisfaction and health.

Health Status Determinants

Health is an important dimension contributing to educational skills and life satisfaction, namely well-being as a whole. Former studies found foreigners to indicate better and more satisfaction with their health. However their is no agreement whether there is a selection effect and immigrants are the healthy ones who arrive in a host country, or if they are overall more satisfied with living conditions and public services and are therefor happier and feel better, which reveals in higher self-reported health.

In Table 15 a probit model of foreigner status on health is measured. Health is a dummy variable turning one if the teenager indicated very good and good health and zero otherwise. The foreigner dummy turns significant and positive implying that foreigners indicate better health. When further controls are added in Table 16 this dummy stays significant. Girls have a lower predicted probability for good health. Further important factors influencing the self-reported health are the health status of the parents and household size. Hermann and A.Mielck (2001) see the positive effect of household size due to positive network effects of the extended family. Not doing sports has a negative effect on self reported health. Sports raises coenesthesia and overall fitness and everybody can imagine that this translates into a better health status.

In a next step, foreigner status is again divided into generation of immigration. First the simple model with only two dummy variables is estimated, see Table 17. In contrast to the findings of Ronellenfitsch and Razum (2004), there is no happy migrant effect of first generation immigrants. But the coefficient for second generation immigrants turns significant. In Table

18 we add the established set of controls. As above, there is no healthy migrant effect of first generation immigrants. The controls have, the expected signs as in the regression with foreigner dummy only.

When finally differentiating between different nationality groups, we see no specific group being better off then others (Table 19. In the final setting in Table 20 with socioeconomic controls, we see only Turkish teenagers having a higher predicted probability to have good health.

Summing up, youth with migration background have higher odds to have a good health status. Factors as household size, health status of parents and own fitness activities are further important predictors for self-rated health. This results confirms Hermann and A.Mielck (2001) but already the authors assume that there might be underreporting of bad health and the positive result for foreigners can be driven through measurement error.

6 Conclusion

This study analysis well-being of youth with migration background compared to Germans in three dimensions: educational performance, life satisfaction and health status. For the educational dimension school level determinants are analyzed. Life satisfaction is a scale measure from 1 to 10. The health status is defined through a dummy variable coded 1 for good health and 0 otherwise. Different discrete choice models are applied to deal with the categorial response variables.

The findings on school level performance confirm former studies on PISA results and immigrational studies which show that foreigners are significantly more like to end up in lower school levels. Especially the second generation did not catch up and persists in the lowest school level. Teenagers of Turkish origin are the largest foreigner group faced with educational disadvantages.

The analysis on life satisfaction shows that foreign youth are more happy with their lives than natives. Decisive determinants are personal circumstances as satisfaction of parents and own health. Immigrants who newly arrived in Germany are more satisfied than their native counterparts. Income only plays a minor role for life satisfaction for youth. Educational performance turns not significant as an predictor for life satisfaction. Income and being well educated are no necessary conditions for being satisfied in this analysis although foreign youth especially face disadvantages in these dimensions. This finding is interesting as social and household conditions are the ones better predicting higher satisfaction. To find out about the exact direction of the effect of personal traits and satisfaction is difficult. It is unclear whether satisfaction with education or of parents leads to higher satisfaction, or being satisfied causes satisfaction with school because of more motivation and thus better performance. Nevertheless this makes clear that satisfaction and school performance are related, but through the channel of motivation and not directly affecting each other. After controlling for various socioeconomic factors, Turkish and Non-European immigrants are more satisfied than natives.

Foreign youth are more likely to report very good health than natives. Especially for second generation migrants, Turks an Non-Europeans their is a significant relationship. This can be due to a self-selection process of migrants with only the healthy ones making the decision to move. Former studies stated this can be due to underreporting as well, because feeling ill can be different in different 'cultures'. Also this better health can be due to effects of the social network of larger families.

To achieve social mobility for children in an educational dimension it is important that children and teenagers of deprived households get special endowment. It is not the immigrant status per se but also educational and monetary endowment of the household which hinders immigrant children to catch up with natives. However income and education seem not to be necessary conditions to be satisfied or healthy. Foreigner youth are more satisfied with their lives and indicate better health. There is no deprivation of migrants in these dimensions. Personal circumstances, proxy is satisfaction of parents, play a larger role for life satisfaction as do material factors.

For future research it is important to understand why migrants can be more satisfied and healthy while having less endowment with money and education. Or why are Germans less satisfied, although they have a higher income and more chances in the future because of higher education. For policy makers it is important to target children who are deprived in an income and educational dimension and give them endowment that they have the same chances as children from richer, more educated household.

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	German	Foreign	Total
School Level			
Hauptschule (%)	7.42	20.93	10.28
Realschule (%)	51.03	54.49	51.76
Gymnasium (%)	41.55	24.58	37.96
Very Good Health Teenagers (%)	37.71	44.85	39.23
Very Good Health Mother (%)	6.61	7.31	6.76
Very Good Health Father (%)	7.6	8.97	7.89
No sport activities (%)	34.94	35.88	35.14
Feeling of control over own life (%)	14.66	23.59	16.55
Satisfied with school performance (%)	32.89	30.56	32.39
Mean life satisfaction youth	7.68	7.91	7.73
Mean life satisfaction mother	7.01	7.03	7.06
Mean life satisfaction father	6.92	7.26	6.94
Mean annual net capita income	11744.24	9273.26	11220.46
Mean education years mother	12.48	10.99	12.16
Mean education years father	12.79	11.49	12.51
Average household size	4.19	4.68	4.3
Unemployment in household (%)	15.37	22.26	16.83
Internet in household (%)	63.72	36.54	57.96
Watching television daily (%)	82.48	83.72	82.75

Table 1: Descriptive Statistics

	German	Foreign
Population shares (%)	78.8	21.2
First generation immigrants (%)		40.53
Second generation immigrants (%)		59.47
Turkey (%)		20.47
Yugoslavia (%)		6.71
European Union (%)		20.47
Eastern Europe (%)		38.26
Non EU (%)		14.09

Table 2: Foreigner Shares by different Definitions

Table 3: Multinominal Logit School by Foreigner

Variable	**Coefficient**	**(Std. Err.)**
Equation 1 : Hauptschule		
foreign	1.565**	(0.209)
year_2001	0.197	(0.304)
year_2002	0.071	(0.341)
year_2003	0.530†	(0.318)
year_2004	0.342	(0.331)
Intercept	-1.963**	(0.255)
Equation 2 : Realschule		
foreign	0.593**	(0.154)
year_2001	0.224	(0.171)
year_2002	0.015	(0.193)
year_2003	0.059	(0.192)
year_2004	0.149	(0.192)
Intercept	0.098	(0.138)
Equation 3 : Gymnasium is base outcome		

N	1420
Log-likelihood	-1306.972
$\chi^2_{(10)}$	62.609

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

Table 4: Multinominal Logit School by Foreigner and Soioeconomic Factors

Variable	**Coefficient**	**(Std. Err.)**
Equation 1 : Hauptschule		
foreign	0.686**	(0.266)
lg_equiv_income	-1.051**	(0.341)
educfather	-0.312**	(0.064)
educmother	-0.294**	(0.064)
hhsize	0.352**	(0.096)
motrule	0.381	(0.271)
agemother	0.023	(0.022)
hhunemp	1.003**	(0.285)
female	-0.704**	(0.226)
internet	-0.789**	(0.253)
read_leisure	-0.285**	(0.085)
tv_leisure	0.307†	(0.163)
control over life	1.004**	(0.282)
year_2001	-0.232	(0.355)
year_2002	-0.394	(0.392)
year_2003	0.127	(0.382)
year_2004	0.355	(0.381)
Intercept	13.811**	(3.429)
Equation 2 : Realschule		
foreign	0.063	(0.185)
lg_equiv_income	-0.395†	(0.207)
educfather	-0.217**	(0.032)
educmother	-0.155**	(0.032)
hhsize	0.182**	(0.070)
motrule	-0.033	(0.172)
agemother	-0.011	(0.015)
hhunemp	0.331	(0.219)
female	-0.320*	(0.137)
internet	-0.747**	(0.159)
read_leisure	-0.329**	(0.053)
tv_leisure	0.163	(0.100)
control over life	0.641**	(0.208)
year_2001	-0.138	(0.207)
year_2002	-0.395†	(0.228)
year_2003	-0.359	(0.239)
year_2004	0.184	(0.228)
Intercept	9.818**	(1.996)
Equation 3 : Gymnasium is base outcome		

N	1420
Log-likelihood	-1044.197
$\chi^2_{(34)}$	588.16

Significance levels : † : 10% * : 5% ** : 1%

Table 5: Multinominal Logit School by Generation of Immigration

Variable	**Coefficient**	**(Std. Err.)**
Equation 1 : Hauptschule		
firstimmigrant	1.742**	(0.286)
secimmigrant	1.429**	(0.260)
year_2001	0.161	(0.306)
year_2002	0.042	(0.342)
year_2003	0.525†	(0.318)
year_2004	0.329	(0.331)
Intercept	-1.945**	(0.254)
Equation 2 : Realschule		
firstimmigrant	0.508*	(0.232)
secimmigrant	0.648**	(0.191)
year_2001	0.230	(0.171)
year_2002	0.020	(0.193)
year_2003	0.060	(0.192)
year_2004	0.152	(0.192)
Intercept	0.095	(0.138)
Equation 3 : Gymnasium is base outcome		

N	1420
Log-likelihood	-1305.852
$\chi^2_{(12)}$	64.849

Significance levels : † : 10% * : 5% ** : 1%

Table 6: Multinominal Logit School by Generation of Immigration and Soioeconomic Factors

Variable	Coefficient	(Std. Err.)
Equation 1 : Hauptschule		
firstimmigrant	0.726*	(0.360)
secimmigrant	0.644†	(0.330)
lg_equiv_income	-0.998**	(0.347)
educfather	-0.323**	(0.066)
educmother	-0.300**	(0.064)
hhsize	0.345**	(0.096)
motrule	0.378	(0.271)
agemother	0.020	(0.022)
hhunemp	1.004**	(0.286)
female	-0.692**	(0.227)
internet	-0.786**	(0.254)
read_leisure	-0.287**	(0.086)
tv_leisure	0.318†	(0.164)
control over life	1.026**	(0.283)
year_2001	-0.265	(0.357)
year_2002	-0.407	(0.393)
year_2003	0.111	(0.382)
year_2004	0.345	(0.381)
Intercept	13.598**	(3.471)
Equation 2 : Realschule		
firstimmigrant	-0.160	(0.272)
secimmigrant	0.215	(0.232)
lg_equiv_income	-0.426*	(0.208)
educfather	-0.214**	(0.032)
educmother	-0.154**	(0.032)
hhsize	0.184**	(0.070)
motrule	-0.042	(0.172)
agemother	-0.012	(0.015)
hhunemp	0.343	(0.220)
female	-0.320*	(0.137)
internet	-0.753**	(0.159)
read_leisure	-0.328**	(0.053)
tv_leisure	0.162	(0.100)
control over life	0.634**	(0.208)
year_2001	-0.130	(0.207)
year_2002	-0.386†	(0.228)
year_2003	-0.364	(0.240)
year_2004	0.187	(0.228)
Intercept	10.131**	(2.017)
Equation 3 : Gymnasium is base outcome		
N	1420	
Log-likelihood	-1042.903	
$\chi^2_{(36)}$	590.748	
Significance levels :	† : 10% * : 5%	** : 1%

Table 7: Multinominal Logit School by Nationality Groups

Variable	**Coefficient**	**(Std. Err.)**
Equation 1 : Hauptschule		
Turkey	3.137**	(0.515)
Yugoslavia	1.909**	(0.620)
EuropeanUnion	0.843†	(0.466)
EasternEurope	1.078**	(0.303)
NonEU	1.577**	(0.476)
year_2001	0.258	(0.309)
year_2002	0.149	(0.346)
year_2003	0.609†	(0.322)
year_2004	0.368	(0.336)
Intercept	-2.003**	(0.259)
Equation 2 : Realschule		
Turkey	1.778**	(0.482)
Yugoslavia	0.393	(0.562)
EuropeanUnion	0.588†	(0.300)
EasternEurope	0.212	(0.221)
NonEU	0.616	(0.384)
year_2001	0.251	(0.172)
year_2002	0.041	(0.194)
year_2003	0.088	(0.193)
year_2004	0.168	(0.193)
Intercept	0.081	(0.138)
Equation 3 : Gymnasium is base outcome		

N	1420
Log-likelihood	-1297.167
$\chi^2_{(18)}$	82.22

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

Table 8: Multinominal Logit School by Nationality Groups and Soioeconomic Factors

Variable	Coefficient	(Std. Err.)
Equation 1 : Hauptschule		
Turkey	1.019†	(0.608)
Yugoslavia	-0.326	(0.731)
EuropeanUnion	0.223	(0.555)
EasternEurope	0.570	(0.367)
NonEU	1.300*	(0.577)
lg_equiv_income	-1.067**	(0.347)
educfather	-0.318**	(0.065)
educmother	-0.308**	(0.067)
hhsize	0.345**	(0.097)
motrule	0.380	(0.273)
agemother	0.019	(0.022)
hhunemp	0.959**	(0.287)
female	-0.699**	(0.227)
internet	-0.814**	(0.255)
read_leisure	-0.283**	(0.086)
tv_leisure	0.323†	(0.165)
control over life	1.011**	(0.285)
year_2001	-0.279	(0.358)
year_2002	-0.416	(0.395)
year_2003	0.105	(0.385)
year_2004	0.353	(0.381)
Intercept	14.383**	(3.499)
Equation 2 : Realschule		
Turkey	0.463	(0.533)
Yugoslavia	-1.102†	(0.625)
EuropeanUnion	0.204	(0.370)
EasternEurope	-0.202	(0.260)
NonEU	0.527	(0.445)
lg_equiv_income	-0.451*	(0.209)
educfather	-0.211**	(0.032)
educmother	-0.157**	(0.033)
hhsize	0.183**	(0.071)
motrule	-0.039	(0.173)
agemother	-0.013	(0.015)
hhunemp	0.331	(0.220)
female	-0.320*	(0.137)
internet	-0.759**	(0.160)
read_leisure	-0.332**	(0.053)
tv_leisure	0.171†	(0.100)
control over life	0.622**	(0.210)
year_2001	-0.144	(0.208)
year_2002	-0.403†	(0.229)
year_2003	-0.356	(0.241)
year_2004	0.197	(0.229)
Intercept	10.403**	(2.030)
Equation 3 : Gymnasium is base outcome		
N	1420	
Log-likelihood	-1040.413	
$\chi^2_{(42)}$	595.728	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

Table 9: Ordered Probit Life Satisfaction by Foreigner

Variable	Coefficient	(Std. Err.)
Equation 1 : lifesatbio		
foreign	0.163*	(0.067)
year_2001	-0.023	(0.083)
year_2002	0.026	(0.094)
year_2003	0.042	(0.093)
year_2004	-0.199*	(0.093)
N	1415	
Log-likelihood	-2427.317	
$\chi^2_{(5)}$	15.098	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

Table 10: Ordered Probit Life Satisfaction by Foreigner and Socioeconomic Factors

Variable	Coefficient	(Std. Err.)
Equation 1 : lifesatbio		
foreign	0.122†	(0.072)
lg_equiv_income	0.019	(0.087)
educfather	0.018	(0.014)
educmother	-0.044**	(0.013)
hhsize	-0.020	(0.026)
agemother	-0.001	(0.006)
hhunemp	-0.287**	(0.082)
female	-0.031	(0.056)
hmother	-0.109	(0.115)
hfather	-0.191†	(0.108)
hbio	0.462**	(0.060)
lifesatfather	0.076**	(0.020)
lifesatmother	0.119**	(0.021)
happiness_school	0.246**	(0.061)
school	-0.038	(0.052)
control over life	-0.251**	(0.076)
year_2001	-0.109	(0.084)
year_2002	0.006	(0.095)
year_2003	0.008	(0.093)
year_2004	-0.161†	(0.094)
N	1415	
Log-likelihood	-2295.271	
$\chi^2_{(20)}$	279.189	

Significance levels : $\dagger$: 10% $*$: 5% $**$: 1%

Table 11: Ordered Probit Life Satisfaction by Generation of Immigration

Variable	Coefficient	(Std. Err.)
Equation 1 : lifesatbio		
firstimmigrant	0.060	(0.099)
secimmigrant	0.235**	(0.084)
year_2001	-0.015	(0.083)
year_2002	0.033	(0.094)
year_2003	0.043	(0.093)
year_2004	-0.196*	(0.093)
N	1415	
Log-likelihood	-2426.28	
$\chi^2_{(6)}$	17.171	

Significance levels : $\dagger$: 10% $*$: 5% $**$: 1%

Table 12: Ordered Probit Life Satisfaction by Generation of Immigration and Socioeconimc Factors

Variable	**Coefficient**	**(Std. Err.)**
Equation 1 : lifesatbio		
firstimmigrant	0.007	(0.105)
secimmigrant	0.197*	(0.087)
lg_equiv_income	-0.004	(0.088)
educfather	0.021	(0.014)
educmother	-0.044**	(0.013)
hhsize	-0.018	(0.026)
agemother	-0.002	(0.006)
hhunemp	-0.282**	(0.082)
female	-0.032	(0.056)
hmother	-0.105	(0.115)
hfather	-0.195†	(0.108)
hbio	0.461**	(0.060)
lifesatfather	0.077**	(0.020)
lifesatmother	0.120**	(0.021)
happiness_school	0.248**	(0.061)
school	-0.040	(0.052)
control over life	-0.258**	(0.076)
year_2001	-0.102	(0.084)
year_2002	0.012	(0.095)
year_2003	0.009	(0.093)
year_2004	-0.158†	(0.094)

N	1415
Log-likelihood	-2294.14
$\chi^2_{(21)}$	281.452

Significance levels : † : 10% * : 5% ** : 1%

Table 13: Ordered Probit Life Satisfaction by Nationality Groups

Variable	**Coefficient**	**(Std. Err.)**
Equation 1 : lifesatbio		
Turkey	0.265†	(0.136)
Yugoslavia	-0.134	(0.233)
EuropeanUnion	0.142	(0.137)
EasternEurope	0.109	(0.102)
NonEU	0.303†	(0.163)
year_2001	-0.021	(0.083)
year_2002	0.033	(0.094)
year_2003	0.045	(0.093)
year_2004	-0.195*	(0.093)
N	1415	
Log-likelihood	-2425.845	
$\chi^2_{(9)}$	18.041	

Significance levels : $\dagger$: 10% $*$: 5% $**$: 1%

Table 14: Ordered Probit Life Satisfaction by Nationality Groups and Socioeconomic Factors

Variable	**Coefficient**	**(Std. Err.)**
Equation 1 : lifesatbio		
Turkey	0.346*	(0.146)
Yugoslavia	-0.069	(0.240)
EuropeanUnion	0.018	(0.140)
EasternEurope	0.033	(0.105)
NonEU	0.320†	(0.168)
lg_equiv_income	0.003	(0.088)
educfather	0.021	(0.014)
educmother	-0.044**	(0.014)
hhsize	-0.024	(0.026)
agemother	-0.002	(0.006)
hhunemp	-0.298**	(0.082)
female	-0.032	(0.056)
hmother	-0.131	(0.116)
hfather	-0.197†	(0.108)
hbio	0.456**	(0.060)
lifesatfather	0.077**	(0.020)
lifesatmother	0.120**	(0.021)
happiness_school	0.255**	(0.061)
school	-0.034	(0.052)
control over life	-0.262**	(0.076)
year_2001	-0.104	(0.085)
year_2002	0.018	(0.095)
year_2003	0.015	(0.094)
year_2004	-0.156†	(0.094)
N	1415	
Log-likelihood	-2292.223	
$\chi^2_{(24)}$	285.286	

Significance levels : † : 10% * : 5% ** : 1%

Table 15: Probit Self Rated Health by Foreigner

Variable	Coefficient	(Std. Err.)
foreign	0.183*	(0.082)
year_2001	0.173†	(0.103)
year_2002	0.039	(0.117)
year_2003	0.123	(0.115)
year_2004	0.098	(0.115)
Intercept	-0.412**	(0.084)
N	1420	
Log-likelihood	-946.759	
$\chi^2_{(5)}$	8.560	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

Table 16: Probit Self Rated Health by Foreigner and Socioeconomic Factors

Variable	Coefficient	(Std. Err.)
foreign	0.200*	(0.088)
lg_equiv_income	-0.109	(0.106)
educfather	0.041*	(0.017)
educmother	-0.013	(0.017)
hhsize	0.098**	(0.032)
agemother	0.017*	(0.007)
hhunemp	-0.266**	(0.102)
female	-0.262**	(0.071)
hmother	0.553**	(0.139)
hfather	0.367**	(0.130)
school	0.018	(0.065)
nosport	-0.194**	(0.075)
year_2001	0.162	(0.105)
year_2002	0.066	(0.120)
year_2003	0.141	(0.117)
year_2004	0.103	(0.118)
Intercept	-0.758	(0.984)
N	1420	
Log-likelihood	-903.317	
$\chi^2_{(16)}$	95.443	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%

Table 17: Probit Self Rated Health by Generation of Immigration

Variable	Coefficient	(Std. Err.)
firstimmigrant	0.180	(0.121)
secimmigrant	0.186†	(0.102)
year_2001	0.173†	(0.103)
year_2002	0.039	(0.117)
year_2003	0.123	(0.115)
year_2004	0.098	(0.115)
Intercept	-0.412**	(0.084)
N	1420	
Log-likelihood	-946.758	
$\chi^2_{(6)}$	8.561	

Significance levels : $\dagger$: 10% $*$: 5% $**$: 1%

Table 18: Probit Self Rated Health by Generation of Immigration and Socioeconomic Factors

Variable	Coefficient	(Std. Err.)
firstimmigrant	0.159	(0.129)
secimmigrant	0.226*	(0.107)
lg_equiv_income	-0.116	(0.108)
educfather	0.042*	(0.017)
educmother	-0.013	(0.017)
hhsize	0.098**	(0.032)
agemother	0.017*	(0.007)
hhunemp	-0.265**	(0.103)
female	-0.262**	(0.071)
hmother	0.555**	(0.139)
hfather	0.366**	(0.130)
school	0.018	(0.065)
nosport	-0.197**	(0.076)
year_2001	0.165	(0.106)
year_2002	0.069	(0.120)
year_2003	0.142	(0.117)
year_2004	0.104	(0.118)
Intercept	-0.692	(0.995)
N	1420	
Log-likelihood	-903.223	
$\chi^2_{(17)}$	95.631	

Significance levels : $\dagger$: 10% $*$: 5% $**$: 1%

Table 19: Probit Self Rated Health by Nationality Groups

Variable	**Coefficient**	**(Std. Err.)**
Turkey	0.218	(0.165)
Yugoslavia	-0.206	(0.298)
EuropeanUnion	0.135	(0.166)
EasternEurope	0.124	(0.124)
NonEU	0.483*	(0.198)
year_2001	0.173†	(0.103)
year_2002	0.048	(0.117)
year_2003	0.123	(0.115)
year_2004	0.101	(0.115)
Intercept	-0.412**	(0.085)
N	1420	
Log-likelihood	-944.711	
$\chi^2_{(9)}$	12.655	

Significance levels : $\dagger$: 10% $*$: 5% $**$: 1%

Table 20: Probit Self Rated Health by Nationality Group and Socioeconomic Factors

Variable	**Coefficient**	**(Std. Err.)**
Turkey	0.350*	(0.178)
Yugoslavia	-0.194	(0.314)
EuropeanUnion	0.141	(0.170)
EasternEurope	0.148	(0.128)
NonEU	0.325	(0.204)
lg_equiv_income	-0.129	(0.107)
educfather	0.043*	(0.017)
educmother	-0.013	(0.017)
hhsize	0.096**	(0.032)
agemother	0.017*	(0.007)
hhunemp	-0.276**	(0.103)
female	-0.263**	(0.071)
hmother	0.538**	(0.140)
hfather	0.367**	(0.130)
school	0.022	(0.065)
nosport	-0.196**	(0.076)
year_2001	0.165	(0.106)
year_2002	0.077	(0.120)
year_2003	0.147	(0.117)
year_2004	0.109	(0.118)
Intercept	-0.579	(0.995)
N	1420	
Log-likelihood	-901.967	
$\chi^2_{(20)}$	98.143	

Significance levels : † : 10% ∗ : 5% ∗∗ : 1%