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Öğrencilerin Sosyal Dışlanmışlık Düzeylerinin Kantil Regresyon ile Analizi

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Özet

Sosyal dışlanma, bireyin içinde yaşadığı topluluk üyeleriyle karşılaştırıldığında bu topluluğun dışında kaldığı anlamına gelmektedir. Bireylerin sosyal, kültürel ve ekonomik yaşama etkin bir şekilde katılamamalarıyla ilgilidir. Bu çalışmada, üniversite öğrencilerinin sosyal dışlanmasıyla ilişkili sosyo-demografik özellikler araştırılmıştır. Çalışma grubuna 287 gönüllü üniversite öğrencisi katılmıştır. Çalışmaya katılan öğrenciler, sosyo-demografik özellikler ve sosyal dışlanma ölçeğinin yer aldığı bir anket doldurmuşlardır. Öğrencilerin sosyal dışlanmışlık düzeylerini incelemek için 10., 50. ve 90. persantiller belirlenmiş ve kantil regresyon analizi uygulanmıştır. Bu analiz sonucunda hangi değişkenlerin hangi kantillerde anlamlı olduğu belirlenmiştir. Düşük sosyal dışlanmışlık düzeyini gösteren 10. kantilde cinsiyet, ekonomik durum ve barınma değişkenleri anlamlı bulunurken, orta düzeyde sosyal dışlanmışlık düzeyini gösteren 50. kantilde cinsiyet, annenin iş durumu, ekonomik durum ve barınma değişkenleri istatistiksel olarak anlamlı bulunmuştur. Cinsiyet, sınıf, annenin iş durumu ve ekonomik durum değişkenleri yüksek sosyal dışlanmışlık düzeyini gösteren son kantilde anlamlı değişkenler olarak belirlenmiştir.

Anahtar Kelimeler

Sosyal Dışlanma
Üniversite Öğrencileri
Kantil Regresyon
Sosyo-Demografik Özellikler

Makale Hakkında

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A Quantile Regression Analysis of Students' Social Exclusion Levels

Abstract

Social exclusion means that the individual is excluded when compared to members of the community in which he or she lives. The purpose of the study to explore socio-demographic characteristics associated with the social exclusion of university students. There were 287 university students in our study group. The students completed a questionnaire including socio-demographic characteristics and social exclusion scale. Quantile regression analysis at the 10th, 50th and 90th percentile was used to examine the social exclusion levels of the students. As a result of this analysis we determined the variables that are significant in different quantiles. In the 10th quantile, the gender, economic situation and accommodation variables were found to be significant, while in the 50th quantile, the variables of gender, mother occupation, economic situation, and accommodation were statistically significant. Gender, grade, mother occupation, and economic situation were found to be significant in the last quantile.

Keywords

Social Exclusion
University Students
Quantile Regression
Socio-Demographic Characteristics

About Article

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Introduction

The term social exclusion probably first appeared in France and was used by the state to exclude those who flee the social insurance system (Silver, 1994; Burchardt, Le Grand, and Piachaud, 1999). The opposite of social integration (Robila 2006), which reflects being a part of society and being integrated into society, is known as the concept of social exclusion. Social exclusion is related to the inability to participate effectively in social, economic, and cultural life. Also social exclusion in some characteristics, it shows distance from mainstream society (Atkinson, 1998; Klasen, 2001). Social exclusion focuses on low income as well as -in a broader definition- even includes polarization, inequality, and differentiation (Burchardt, et al., 1999).

The effect of exclusion from social integration brings together some psychological problems such as depression, anxiety, isolation and low self-esteem in the individual and family as negative results (Goodban, 1985). Social exclusion has a wide content that includes many concepts. Some important factors affecting social exclusion as low income, school problems, family conflict, living area, age, and disability. The most important of these problems are poverty and low income. Social exclusion refers to a gradual process leading to social and cultural losses and material deprivation. If the deprivation of individuals persists or worsens over time, the individual is socially excluded (Chakravarty and D'Ambrosio, 2006). Townsend (1993) revealed the difference between material deprivation (eating-drinking, dressing and shelter, etc.) and social exclusion (family, entertainment and education, etc.).

Social exclusion is a multidimensional phenomenon occurring in life, both economic-structural and socio-cultural (Jehoel-Gijsbers and Vrooman, 2007). Social exclusion must be examined as a process, taking into account the various dimensions and dynamics between them. The interaction of all these dimensions are caused to the emergence of social exclusion. Problems that because social exclusion could come together and strengthen each other's effects (Social Exclusion Unit, 2001; Chakravarty and D'Ambrosio 2006). Therefore, it is necessary to understand the process of social exclusion and to examine the factors that cause social exclusion together. While there are many social exclusion studies conducted on individuals (Bhalla and Lapeyre, 1997; Howarth, Kenway, Palmer and Miorelli, 1999; Robila, 2006; Dahl, Fløtten and Lorentzen, 2008; Adaman and Ardıç, 2008; Bayram, Sam, Aytac and Aytaç, 2010; Bayram, Aytac, Aytac, Sam and Bilgel 2012; Chung, Jeon, Song and Kim, 2019), there are few studies conducted with university students (Subrayen, 2011; Bayram, 2017).

The aim of the study was to determine the factors affecting the different social exclusion levels of the university students. In order to achive this aim, quantile regression analysis method was applied using at the 10th, 50th and 90th percentile values. With the idea that the social exclusion variable used in this study will make difference at low, medium and high levels, quantile regression was applied to reveal the difference in the 10th, 50th and 90th quantities. Regression estimates can be made in different levels of quantiles. In this study, social exclusion was only handled for 3 quantiles. Therefore, three different regression models were estimated for different levels of the social exclusion variable, unlike previous studies.

Method

Participants

The participants of the study consisted of Bursa Uludag University students. A total of 287 volunteer students participated in the study. 46% of these students are female and 54% are male students. A questionnaire was filled out by the participants anonymously.

Measures of Social Exclusion

Social exclusion is a multidimensional phenomenon, both economic-structural and socio-cultural (Bhalla and Lapeyre 1997; Chakravarty and D'Ambrosio 2006; Jehoel-Gijsbers and Vrooman 2007). Social exclusion scale was developed by Jehoel-Gijsbers and Vrooman (2007). Scale has four dimensions that named: cultural integration (CI), social participation (SP), obtaining social rights (SR), and material deprivation (MD). The social rights dimension is divided into two subdimensions: benefiting from public institutions and benefiting from appropriate home and environmental conditions. In order to measure social exclusion, we used the scale developed by Jehoel -Gijsbers and Vrooman (2007). Validity and reliability of the scale for Turkey were examined by Bayram, Aytaç, Aytaç, Sam and Bilgel (2011). A 5-point Likert-type scale was used to measure social exclusion. Higher scores indicated that a higher level of social exclusion (Bayram et al., 2011). The scale consisting of 35 items can be used considering all dimensions separately and can be used as a single dimension. In this study, the scale was considered as a single dimension in the form of social exclusion. For all scale Cronbach's alpha value was found 0.84 in this study.

Explanatory Variables

In this study, we used a questionnaire to measure the social exclusion levels of the students but also their some demographic characteristics. Demographic characteristics were determined as gender, grade, parental education level, occupation, economic situation, mother/father marriage status, accommodation, sisters/brothers and residency, which are thought to be effective on social exclusion.

Grade variable coded as 1 for first grade, 2 for second grade, 3 for third grade, and 4 for fourth grade. Gender was dichotomized as female (coded as 1) and male (coded as 0). Education was measured as a four-level ordered variable coded as 1 for primary, 2 for secondary, 3 for high school, and 4 for university. Mother occupation was dichotomized as working (coded as 1) and not working (coded as 0). Father occupation was dichotomized as a blue collar worker (coded as 1) and other (coded as 0). The economic situation was measured as a three-level ordered variable coded as 1 for bad, 2 for moderate and 3 for good. Mother/Father Marital status was also dichotomized as married (coded as 1) and other (coded as 0). The accommodation was dichotomized as stay with family (coded as 1) and other (coded as 0). The residency was dichotomized as a big city (coded as 1) and other (coded as 0). The variable named sisters/brothers was used as a continuous variable.

Quantile Regression Analyisis

Quantile regression was introduced by Koenker and Bassett (1978). They searched the 'estimation of conditional quantile functions in which quantiles of the conditional distribution of the dependent variable are expressed as functions of observed covariates' (Koenker and Bassett, 1978; Koenker and Hallock, 2001; Humer, Moser, and Schnetzer, 2015). In the quantile regression, when x is given, the conditional distribution function of y_i in pth quantile is shown as in equation 1.

$$\boldsymbol{Q}^{(p)}(\boldsymbol{y_i}|\boldsymbol{x_i}) = \boldsymbol{\beta}_{\boldsymbol{0}}^{(p)} + \boldsymbol{\beta}_{\boldsymbol{1}}^{(p)}\boldsymbol{x_i} \quad (1)$$

The quantile regression was developed to estimate the functional relationship between independent variables and any quantile in the distribution of the dependent variable. The quantile regression functions allow estimating the marginal effect for different quantiles of the dependent variable distribution (Yavuz and Aşık, 2017; Tan and Wang, 2017; Yu, Lu and Stander, 2003; Tareghian and Rasmussen, 2013). The analysis is applied to interpret various problems such as financial analysis, wages, economic research, health expenditures, environmental studies, biomedicine, etc (Bassett and Chen, 2001; Machado and Mata, 2005; Hendricks and Koenker, 1992; Pandey and Nguyen, 1999; Yavuz and Aşık, 2017; Chen & Wei, 2005).

The standard regression models only the average relationship between the dependent and independent variables. Quantile regression is used in studies where not only the average of the dependent variable, but also the estimation of other quantile values is important. In this study, quantile regression approach was performed to examine the social exclusion levels of the students. To give a more complete of the relationship between social exclusion and demographic characteristics, we gave 10%,50% and 90% sample quantiles.

Findings

Table 1 shows socio-demographic characteristics of students at different levels of the social exclusion. Our study group ages were between 18-24 with a mean age of 20.89±1.59 years. The mean of sisters/brothers was 2.57±1.00 sisters/brothers. The table shows the overall and quantiles at the 10th, 50th and 90th percentile. We mentioned before higher scores indicates a higher level of social exclusion. Therefore, the model established in the 10th percentile is valid for students with low social exclusion, the model established in the 50th percentile is for students with middle social exclusion, and the model established in the 90th percentile is valid for students with high social exclusion. The level of social exclusion increases from the 10th to the 90th percentile.

Table 1. Socio-Demographic Characteristics of Students at Different Levels of the Social Exclusion

		Quantile		
	Overall	**P10**	**P50**	**P90**
Gender				
Female	77.31	59.40	76.00	99.00
Male	83.72	62.00	82.00	108.00
Grade				
Grade 1	79.22	58.20	76.00	106.90
Grade 2	78.81	60.30	76.50	101.40
Grade 3	82.64	61.90	81.50	108.00
Grade 4	81.35	61.00	81.00	102.40
Education				
Mother Education 1	82.14	61.00	81.50	108.00
Mother Education 2	78.54	59.00	75.00	101.70
Mother Education 3	78.63	60.10	76.50	99.00
Mother Education 4	83.37	60.80	81.00	115.60
Father Education 1	81.57	61.00	81.00	108.00
Father Education 2	83.71	62.00	84.00	102.00
Father Education 3	78.10	58.70	76.00	102.60
Father Education 4	81.45	61.60	78.00	108.00
Occupation				
Mother Occupation				
Working	83.00	61.90	80.50	108.10
Not Working	80.18	61.00	79.00	106.00
Father Occupation				
Blue Collar Worker	83.75	61.00	84.00	108.00
Other	79.82	61.00	78.00	102.00
Economic situation				
Economic situation 1	88.28	63.50	86.00	113.20
Economic situation 2	76.41	56.20	74.00	96.60
Economic situation 3	82.42	61.00	91.50	107.00
Mather/Father Marital Status				
Married	80.50	61.00	79.00	107.00
Other	82.87	64.60	84.00	98.00
Accommodation				
Stay with family	73.93	51.50	71.50	102.00
Other	91.98	62.00	81.00	107.00
Residency				
Big city	79.84	61.00	77.50	105.80
Other	81.50	61.00	81.00	107.00

The descriptive statistics provide insights into the relationship between socio-demographic characteristics and a social exclusion levels. The values given in Table 1 are the 10th, 50th and 90th percentile values of the social exclusion variable for all variables. All variables' values at the 10th percentile of social exclusion levels are lower than in the overall sample. Social exclusion levels are different at 10th, 50th and 90th percentiles for different variables. It is seen that social exclusion scores differ in terms of variables in different percentiles.

Regression model is below.

$$\begin{aligned} SocExc = {} & \beta_0 + \beta_1 Female + \beta_2 Grade1 + \beta_3 Grade2 + \beta_4 Grade3 \\ & + \beta_5 M\_Edu1 + \beta_6 M\_Edu2 + \beta_7 M\_Edu3 + \beta_8 F\_Edu1 + \beta_9 F\_Edu2 \\ & + \beta_{10} F\_Edu3 + \beta_{11} M\_Ocu + \beta_{12} F\_Ocu + \beta_{13} Eco1 + \beta_{14} Eco2 \\ & + \beta_{15} Sis\_Bro + \beta_{16} MF\_Mar + \beta_{17} Accom + \beta_{18} Residency + \varepsilon \end{aligned} \quad (2)$$

The dependent variable is the social exclusion. All independent variables are dummies with the exception of Sisters/Brothers.

When percentile values in Table 1 are analyzed, 90% of social exclusion scores for women are below 99 points, 10% is above 99 points. For men, 90% of social exclusion scores are below 108 points, while 10% are above 108 points. In addition, it is seen from the table that the level of social exclusion of male students (at all percentiles and overall) is higher than female students. When percentile values are analyzed for the economic situation variable, 90% of social exclusion scores of those with bad economic conditions are below 113.2 points. On the other hand, 10% of the social exclusion scores of those with good economic conditions are above 96.6 points. This situation shows that those with good economic conditions have low social exclusion levels. Similarly, other values can be interpreted.

Table 2. Regression Estimates for Social Exclusion

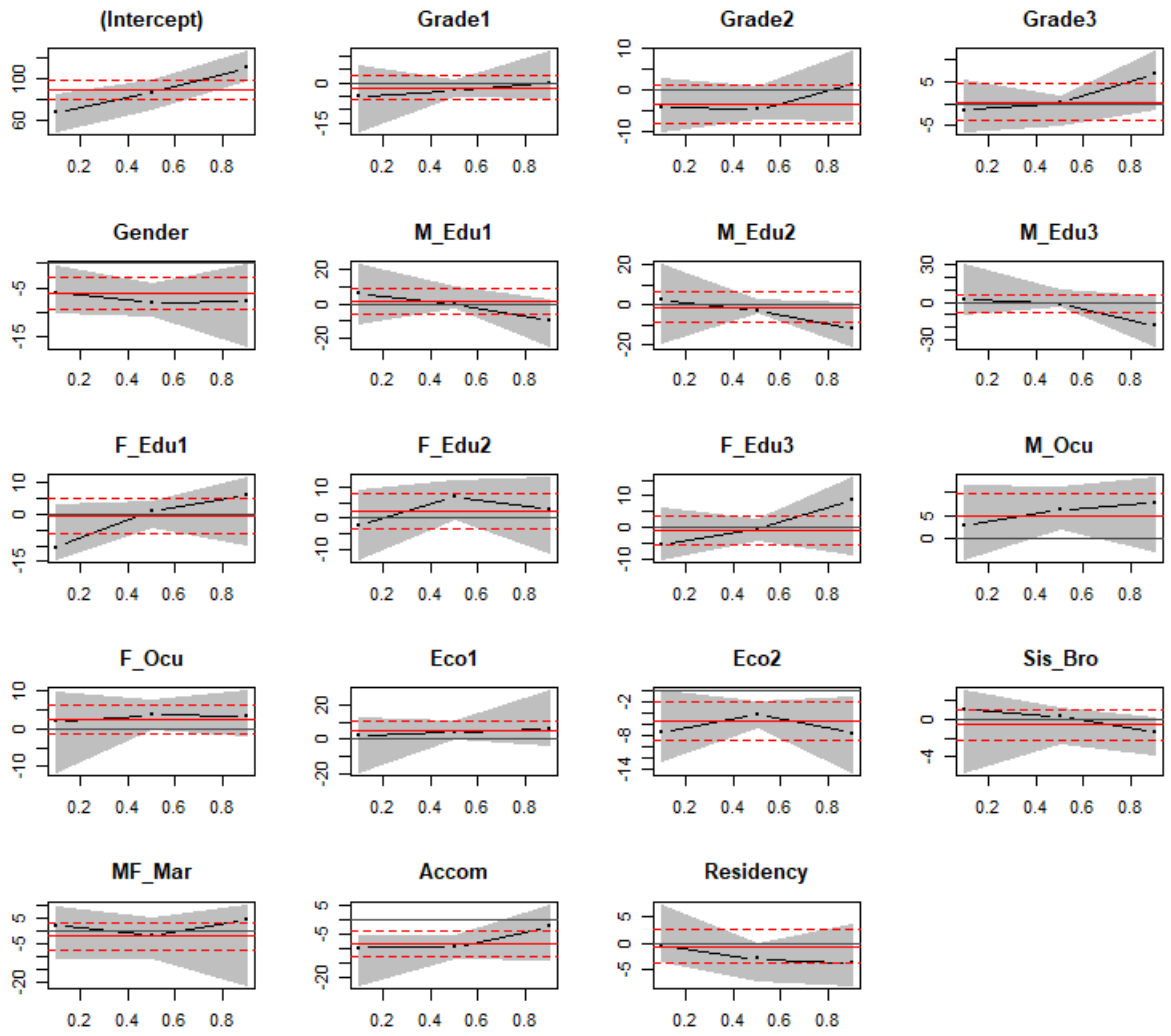
	OLS	Quantile regression		
	Mean	P10	P50	P90
Intercept	89.32 **	67.50**	86.40**	111.15**
Gender	-6.07**	-6.00*	-7.87**	-7.98**
Grade 1	-1.73	-5.00	-2.73	-0.01
Grade 2	-3.32	-4.00	-4.75	1.41
Grade 3	0.34	-1.50	0.18	6.74*
Mother Education 1	1.39	6.00	-0.28	-9.96
Mother Education 2	-1.15	2.50	-2.63	-11.59
Mother Education 3	-0.97	2.00	-1.15	-18.29
Father Education 1	-0.44	-10.50	1.05	6.33
Father Education 2	2.46	-2.50	6.80	2.66
Father Education 3	-0.96	-5.50	-0.53	8.42
Mother Occupation	4.81	3.00	6.18*	7.71*
Father Occupation	2.42	2.00	3.70	3.44
Economic situation 1	5.08	2.00	3.83	6.13
Economic situation 2	-5.44**	-7.50*	-4.30*	-7.65**
Sisters/Brothers	-0.61	1.00	0.28	-1.39
Mather/Father Marriage Status	-2.09	2.00	-1.83	4.55
Accommodation	-8.28**	-9.50*	-9.38**	-2.20
Residency	-0.63	-0.50	-2.98	-3.89

Gender: 1 = Female; 0 = Male;
Grade 1: 1=I. Grade 0 = Other; Grade 2: 1=II. Grade 0 = Other; Grade 3: 1=III. Grade 0 = Other;
Mother/Father Education 1: 1 = Primary; 0 = Other; Mother/Father Education 2: 1 = Secondary; 0 = Other;
Mother/Father Education 3: 1 = High; 0 = Other
Mother Occupation: 1 = Working; 0 = Not working;
Father Occupation: 1= Blue Collar Worker; 0 = Other;
Economic situation 1: 1 = Bad; 0 =Other; Economic situation 2: 1 = Good; 0=Other;
Mather/Father Marriage Status = 1=Married; 0 = Other;
Accommodation: 1=Stay with family; 0=Other;
Residency: 1 = Big City; 0 = Other;
*p<.05; ** p<.01

Quantile regression considers the dependent variable conditional distribution. Table 2 depicts the parameter estimates of OLS and quantile regressions. The quantile regression was estimated for the 10th, 50th and 90th quantiles of the social exclusion distribution. When Table 2 is examined, it is seen that gender, grade, mother occupation, economic situation and accommodation variables are statistically significant in explaining social exclusion. Gender variable was found to be statistically significant according to OLS and quantile regression at the 10th, 50th and 90th percentiles. Accordingly, it was found that the social exclusion levels of male students were higher than female students.

In terms of grade variable, at the level of high social exclusion (P90), 3rd-grade students felt more excluded than other students. The level of social exclusion was higher in the middle (P50) and high (P90) for working mothers than for non-working mothers. In other words, the social exclusion level of students whose mothers are housewives is lower than those whose mothers work. According to OLS and in all percentiles of quantile regression (P10, P50, P90), social exclusion levels of students with moderate economic situation were found to be higher than those with good economic situation. In other words, the level of social exclusion of students with good economic situation is lower than other groups. The social exclusion levels of the students living with their families were lower than those who did not live with their families both in OLS and in the 10th and 50th percentiles of quantile regression (except P90).

Significant variables in the 10th percentile showing the lowest level of social exclusion; gender, economic situation, and accommodation are variables. Variables that are significant in the 50th percentile; gender is mother occupation, economic situation, and accommodation. The gender, Grade 3, mother occupation and economic situation variables were found statistically significant in the 90th percentile, which showed the highest level of social exclusion. This shows that gender and economic situation variables are significant in explaining social exclusion at all percentile levels. Mother occupation, grade, and accommodation variables are significant in different quantiles, but not in all of them.



The explanation of the abbreviations is in given notes.

Fig.1. Plots of quantile regression estimates

In each figure, the ordinary least squares estimate of the conditional mean effect was shown by the straight line. The two dotted lines represent 90 percent confidence intervals for the least-squares estimate. And confidence band for the quantile regression estimates was shown by the shaded gray area. In this case, as shown in the figures, the quantile regression results are quite consistent with the least squares results.

Conclusions

The starting point of the study is to investigate which variables are at low social exclusion levels, which variables are at medium social exclusion levels, and which variables are at high social exclusion levels more effective. Firstly variables that affect students' social exclusion were determined and the significance of these variables for different social exclusion levels were examined by quantile regression analysis.

Significant variables were found as gender, economic situation, and accommodation for students with low social exclusion (10th). Significant variables were found as gender, mother occupation, economic situation, and accommodation for students with middle social exclusion (50th). And finally, significant variables were found as gender, grade, mother occupation, and economic situation for students with high social exclusion (90th).

According to the regression of low social exclusion (P10), it was found that the social exclusion levels of male students, students with bad economic situation and students living outside the family were higher than the others. The same results were obtained for students with middle social exclusion (P50), just as for low social exclusion. In addition to these variables, social exclusion levels of the students whose mothers work were found to be higher. In the regression of high social exclusion level (P90), social exclusion levels of male students, students with bad economic situation, 3rd-grade students and those whose mother is working students were found to be higher. The results indicated that being male and less economic situation were significant indicators of social exclusion in the sample of students. In this study, which examined the significance of socio-demographic variables at different levels of social exclusion, gender and economic situation have retained their significance.

The results in the literature and the results of this study overlap. Some researches were found a relationship between age, marital status, education, economic level, residency, and social exclusion (Robila, 2006; Bayram, et al., 2011; Chung et al., 2019; Jehoel-Gijsbers and Vrooman, 2007; Aasland and Flotten, 2001; Adaman and Ardıc, 2008; Devicienti and Poggi, 2011). Some socio-demographic variables are important to explain social exclusion. As seen in many studies in common, economic situation plays an important role in social exclusion.

The concept of social exclusion is considered as a structure with different dimensions and is affected by different factors. In this study, which was carried out with the student sample, the factors were revealed by evaluating the students in terms of different social exclusion levels. As expected, the economic situation appears to be a problem for social exclusion. It has a significant effect on students' levels of social exclusion.

In the model predicted for low social exclusion level, the mother occupation variable was not significant, whereas, in the models predicted for the high social exclusion level, the mother occupation was found significant. This indicates that mother occupation has become a more important factor for students who experience more social exclusion. The opposite, accommodation is an important variable at low social exclusion levels, but not at the high social exclusion level. Similarly, the grade variable is an important variable for students at a high social exclusion level.

From this study, findings were obtained that different explanatory factors may exist for students who feel different levels of social exclusion. Since the study is one of the few studies investigating the levels of social exclusion of students, it will be useful to include different explanatory variables in the model and to use different samples in future studies.

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Notes of Fig.1

M_Edu1=Mother Education 1: 1=Primary; 0=Other; M_Edu2=Mother Education 2: 1=Secondary; 0=Other; M_Edu3=Mother Education 3: 1=High; 0=Other;

F_Edu1=Father Education 1: 1=Primary; 0=Other; F_Edu2=Father Education 2: 1=Secondary; 0=Other;F_Edu3=Father Education 3: 1=High; 0=Other;

M_Ocu=Mother Occupation: 1=Working; 0=Not working;

F_Ocu=Father Occupation: 1= Blue Collar Worker; 0=Other;

Eco1=Economic situation 1: 1=Bad; 0=Other; Eco2= Economic situation 2: 1=Good; 0=Other;

MF_Mar=Mather/Father Marriage Status = 1=Married; 0=Other;

Accom=Accommodation: 1=Stay with family; 0=Other.