

Education and the Transition to Employment: The experience of young Turkish and Moroccan adults in Belgium

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Abstract.

Turkish and Moroccan immigrants who have been arriving in Belgium from the late fifties onward, make up the most recent wave of labor migration to the country. Using data from two national surveys conducted in 1994-1996, the educational outcomes are examined for both the second generation and the young first generation of immigrants. Different effects of migration on the educational outcomes emerge depending on the timing of the disruption in the educational career. Disruptions at more advanced stages generally result in an early ending of the educational career, especially in the case of the Turkish immigrants. The bilingual educational system in Morocco is an additional factor causing the educational careers of Moroccan immigrants to deviate from what is found for Turkish students. The paper further examines the unemployment spells of Turkish and Moroccan school-leavers, expanding on the results of the previous analyses by explicitly introducing the educational trajectory of respondents as an explanatory variable. Transitions to white-collar versus blue-collar jobs are modeled as competing risks using discrete-time event history analysis. (3 figures, 9 tables)

1. Introduction

Turkish and Moroccan immigrants who have been arriving in Belgium from the late fifties onward, make up the most recent wave of labor migration to the country. Initially this migration consisted predominantly of workers who were recruited in their country of origin. Gradually, the family members and relatives who had initially stayed behind followed the early pioneers in migration. With an increasing number of Turkish and Moroccan youngsters growing up in Belgium, the demand for partners from the country of origin in turn gave cause to an immigration of brides and grooms (Reniers and Surkyn, 1997). As a result, young Turkish and Moroccan adults currently entering the labor market are highly heterogeneous with respect to their age-at-immigration, the form of their educational trajectories and their educational attainments (Neels, 1998; Neels and Stoop, 1998; Stoop and Booms, 1997). Young second generation adults typically received their education in the receiving country,

while foreign born who immigrated as children generally started their educational career in the country of origin and made a lateral entry into the Belgian educational system subsequently. Using the age-at-immigration and the country of education as a starting point, section 2 summarizes the results of earlier analyses of educational attainment (Neels, 1998). An inventory is made up of the most prevalent types of educational trajectories and the educational attainments are examined for each type. As from section 3, the focus shifts from educational to occupational attainments. The entry into the labor market and the characteristics of the first occupation are examined for Turkish and Moroccan men who finished their education in Belgium.

Both the analyses of educational and occupational attainments use survey data. The survey data stem from two successive national surveys among Turkish men (conducted in 1994-1995) and Moroccan men (conducted in 1995-1996) aged 18 years and older. The questionnaires were available in Dutch-Turkish, Dutch-Arabic, French-Turkish and French-Arabic versions. The interviewers were all recruited among their respective ethnic groups. The samples are drawn from proportionally stratified clusters. First, all municipalities (cluster) were selected with at least 100 Turkish or Moroccan inhabitants. These municipalities were stratified according to the degree of urbanization. In each stratum, clusters were selected at random, and in each cluster individuals were selected using the National Register. The survey yielded usable questionnaires for 1462 Turkish and for 1286 Moroccan men. The total non-response amounted to 28 percent for the Turkish and to 44 percent for the Moroccan men. Both for the Turkish and the Moroccan population, refusals accounted for some 39 percent of the non-response. The rest of the non-response is due to the fact that the selected person was temporarily absent or could not be located. For the Moroccan survey sampling weights were calculated per cluster in order to re-establish proportionality.

The survey data allow for a reconstruction of the educational trajectories of the second generation and Turkish and Moroccan men who immigrated before 1995-1996. The analyses of occupational attainment bear on Turkish and Moroccan men who finished their educational career in Belgium and entered the Belgian labor market subsequently, predominantly from the early 80's onward. For persons who studied elsewhere than Belgium or the country of origin, a full reconstruction of the educational career is not feasible. The frequency of this type of educational career is limited however for both Turkish and Moroccan men: respectively 2.1 percent and 2.4 percent of the total Turkish and Moroccan sample and 0.9 percent and 1.7 percent of Turkish and Moroccan men aged 18 to 29.

2. Educational trajectory and educational attainments

A substantial number of men in the Moroccan sample (approximately 11 percent) never received any formal education. This predominantly involves older immigrants who immigrated at ages of 18 and

older (the age-groups 30-39, 40-49 and 50 years and older constitute 10, 15 and 75 percent respectively). For subsequent cohorts of Moroccan men immigrating at ages 18 and older, a marked decline is observed of the proportion of men without formal education. Where the proportion amounted to 34 percent before 1970, it decreased to 18 percent in the period from 1970 to 1974, 17 percent in the period from 1975 to 1984 and reached a level of approximately 2 percent for the most recent migration cohort (after 1984). This decline reflects the gradual maturation of a bilingual (French/Arabic) educational system that originated after the independence of Morocco in 1956, from existing traditional and secular colonial educational networks. The 'recent' emergence of the educational system and demographic pressures caused the enrollment rates to increase only gradually (Lahjomri, 1988). In 1980-81 the enrollment rate of children aged 7 years reached 65 percent, not including those enrolled in the private sector (Lahjomri, 1988). In 1992, those enrolled in first cycle of basic education (ages 7 to 12) represented 75 percent of the relevant age group (Radi, 1995). This institutional factor not only accounts for the large number of older Moroccan immigrants without formal education, but partially explains the diverging educational patterns of younger Turkish and Moroccan adults as well.

The proportion of men without formal education is substantially lower among Turkish immigrants (4 percent of the total sample). The proclamation of the Turkish Republic in 1923 caused a unification of existing educational networks and the emergence of national educational system. As a result, compulsory school attendance for primary education was already made obligatory in the early 20's (Timmerman, 1996). By the early 30's – when the oldest respondents in the survey started entering education – obligatory school attendance had been in force for over 10 years. The decreasing proportion of men without formal education over subsequent birth-cohorts reflects the substantial increase of enrollment rates in primary education in Turkey. While the primary-school enrollment rate was only 22 percent in 1924, it increased to 86 percent in 1984 and to 94 percent in 1991 (Oney, 1995; Timmerman, 1996).

2.1 The second generation

Turkish and Moroccan men who were born in Belgium or immigrated before the age of six (the beginning of compulsory education in Belgium) are considered as the second generation (Philippart, 1995). The age-at-immigration criterion was relaxed to include all Turkish and Moroccan men who can be considered as having entered the Belgian educational system from below. For both samples, the second generation accounts for approximately 25 percent of the respondents. Approximately 97 percent of the Moroccan second generation studied exclusively in Belgium. For the Turkish second generation this proportion is considerably lower (87 percent) because 12 percent of the second generation Turks started their educational career in Belgium, but had study periods in Turkey

subsequently. For both nationalities high levels of school attendance were observed. At the time of the survey, 15.6 percent and 37.1 percent respectively of Turkish and Moroccan second generation youngsters aged 18 to 30 were still in education. For both nationalities this predominantly involves education at the higher secondary level and higher education (Stoop & Neels, 1998). Consequently, life-tables were drawn up to incorporate the information provided by these censored educational careers and to assess the educational attainment of the second generation. Table 1 reports the educational levels of Turkish and Moroccan men who studied exclusively in Belgium.

Table 1. Educational attainment of the second generation, by nationality and place of residence.

	<i>Brussels</i>		<i>Flanders</i>		<i>Walloons</i>		<i>Belgium</i>	
	<i>Turk</i>	<i>Moroccan</i>	<i>Turk</i>	<i>Moroccan</i>	<i>Turk</i>	<i>Moroccan</i>	<i>Turk</i>	<i>Moroccan</i>
Unqualified	0	0	0	0	0	0	0	0
Primary	8.7	12.7	7.0	7.1	6.7	12.2	7.5	11.0
Lower Secondary	34.7	30.4	30.6	31.6	34.3	17.7	32.8	28.8
Higher Secondary	43.7	36.5	52.1	44.3	47.2	28.2	48.3	37.0
Higher Education	12.9	20.4	10.3	17.0	11.8	41.9	11.4	23.2
Table Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
N	103	167	143	84	75	42	321	293

Source: UIAP Survey Data 1994-1996

The educational attainments differ substantially for Turks and Moroccans and are subject to significant regional variation. The proportion not reaching a level of education exceeding that of lower secondary, totals 40.3 percent for the Turkish second generation and 39.8 percent for the Moroccan second generation. A relatively large number of higher education graduates is found, however, for the Moroccan second generation. The observed differences between the Turkish and Moroccan second generation reflect both diverging aspirations and the different settlement patterns of Turkish and Moroccan immigrants. Regionally, the likelihood of taking up general education at the secondary level is higher in both Wallonia and Brussels, the highest concentrations in vocational or technical training being observed in Flanders. Controlling for this regional variation, Turkish second generation youngsters are more likely to take up technical or vocational training at the secondary level, mostly leaving school after graduating from higher secondary. Moroccans, on the other hand, are more likely to take up general education at the secondary level and higher education after graduating from the secondary level. However, higher proportions of dropping out in lower secondary and higher education indicate that aspirations are often too high. With Moroccans being concentrated in Brussels and important numbers of Turks living in Flanders, the patterns of settlement coincide and reinforce the diverging aspirations of second generation Turks and Moroccans, resulting in strongly diverging educational attainments.

2.2 Study leaves in the country of origin.

Approximately 75 percent of the Turkish men who had study leaves in the country of origin belong to the second generation. The remaining 25 percent involve Turkish men with an age-at-immigration between 6 and 11 who studied in Turkey after their initial migration to Belgium. Among the Moroccans, the proportion having study leaves in Morocco was limited to approximately 3 percent for the second generation and 2.5 percent of Moroccan men who immigrated at ages between 6 and 11. Considering the institutional restrictions of the Moroccan educational system, there is less of an incentive for Moroccans to return for educational purposes. In Morocco, for instance, the percentage of students transferring from the second cycle of basic education to secondary education is fixed at 40 because of financial constraints (Radi, 1995).

Table 2 reports the educational attainment of Turkish men with study leaves in the country of origin. Research in the Netherlands suggests that even a contemporary return to the country of origin has a negative impact on the educational achievement: the educational career is interrupted, linguistic development halts and the relevance of an education in the receiving country is questioned (Veenman, 1996). This hypothesis is corroborated by the data reported in table 2. Compared to the second generation, the 'return' category has higher drop-out rates throughout the educational career and lower percentages transferring to subsequent educational levels (Neels, 1998). As a result, 64.5 percent of the 'return' category do not reach a level of education exceeding that of lower secondary (versus 40.3 percent for the Turkish second generation).

Table 2. Educational attainment by type of educational trajectory

	<i>Return (Turks)</i>	<i>Age-at-immigration</i>				<i>>18 years (Moroccans)</i>
		<i>6 – 11 years</i>		<i>12 – 17 years</i>		
		<i>Turks</i>	<i>Moroccans</i>	<i>Turks</i>	<i>Moroccans</i>	
Unqualified	2.9	3.4	0.8	2.7	5.9	0
Primary	14.5	21.2	14.8	39.5	23.9	1.3
Lower Secondary	47.1	32.3	34.2	31.0	21.4	9.0
Higher Secondary	31.9	39.2	43.4	25.8	39.9	31.8
Higher Education	3.6	3.9	6.8	1.0	8.9	57.9
Table Total	100.0	100.0	100.0	100.0	100.0	100.0
N	69	118	122	111	85	78

Source: UIAP Survey Data 1994-1996

2.3 Delayed entries in Belgian education

2.3.1 Delayed entries at ages 6 to 11

For foreign born who immigrated at ages 6 to 11, participation in Belgian education after immigration has been virtually complete from the earliest cohort before 1974 up to the most recent migration cohorts. For a large number of Turkish and Moroccan men, the lateral entry into the Belgian educational system after migration was also the start of their educational career. Among the Moroccans 51.6 percent studied exclusively in Belgium, 44.3 percent started their education in Morocco and continued their education in Belgium after migration, and approximately 2 percent had study periods in both Belgium and the country of origin after the initial immigration. For the Turks the proportions amount to 36.7 percent, 48.2 percent and 11.5 percent respectively. The higher proportion of Moroccan children starting their educational career in Belgium after migration can partially be accounted for by the enrollment rates in the country of origin.

The educational attainments of the 'laterals' in primary education are reported in columns 2 and 3 of table 2. The proportion of 'laterals' with the highest certificate being that of lower secondary, amounts to 56.9 percent and 49.8 percent for Turks and Moroccans respectively (versus 40.3 and 39.8 percent for the Turkish and Moroccan generation respectively). The numbers graduating from general education and vocational or technical training suggest an even stronger concentration in vocational and technical education than was the case for the second generation (Neels, 1998).

2.3.2 Delayed entries at ages 12 to 17

Among foreign born Moroccans who immigrated at ages 12 to 17, approximately 5.6 percent studied exclusively in Belgium, 61.3 percent started their educational career in Morocco and continued their education after migration, and 32.2 percent studied exclusively in the country of origin before immigrating. For the Turks the proportions amount to 0.5 percent, 56.7 percent and 41.2 percent respectively. A marked increase is observed of the participation in Belgian education for subsequent Turkish and Moroccan migration cohorts. Before 1970, approximately 28 percent of the Moroccans immigrating at ages 12 to 17 studied in Belgium after migration. This increased to 53 percent in the period from 1970 to 1974, 82.9 percent in the period from 1975 to 1984 and approximately 90 percent for the most recent cohort. For the Turks, 48 percent of those immigrating before 1970 enrolled in Belgian education and the increase observed for subsequent cohorts is more moderate (52 percent, 64 percent and 66 percent respectively).

The educational attainments of Turkish and Moroccan men making a 'lateral' entry into Belgian education are reported in columns 4 and 5 of table 2. The proportion not reaching a level of education exceeding that of lower secondary totals 73.2 percent and 51.2 percent for Turkish and Moroccan immigrants respectively. Although all of these immigrants were aged 12 and older, a substantial number (approximately 25 percent) made a lateral entry into primary education instead of lower secondary. At the secondary level, the concentration in vocational and technical education is equally strong for Turks immigrating at ages 12 to 17 as for those who immigrated at ages 6 to 11, but drop-out rates are higher, however, for the older category (Neels, 1998). For Moroccans, the drop-out rates in lower secondary are higher for 'laterals' immigrating at ages 12 to 17 than for 'laterals' who immigrated at ages 6 to 11. The transfer to subsequent levels of education is higher, however, for the older age-at-immigration category. As a result, the educational attainment of the subsequent 'lateral' influx categories is more similar among Moroccans than among Turkish immigrants.

2.3.3 Delayed entries at ages 18 and older

Foreign born who immigrated at ages 18 and older typically finished their educational career in the country of origin before migration (Neels, 1998). The proportion of immigrants who continued their education after migration is limited to 2.6 percent and 10.7 percent for Turks and Moroccans respectively. A marked increase is observed of the participation in Belgian education for subsequent Moroccan migration cohorts. Whereas a continuation of the educational career was virtually unobserved among Moroccans who immigrated before 1974, the enrollment rate amounts to 17.8 percent in the period from 1974 to 1984 and increases up to 22.5 percent for the most recent migration cohort. The 'linguistic vacillation' of the Moroccan educational system partially explains the diverging patterns for Turkish and Moroccan immigrants. Obviously, the larger part of these recently arriving Moroccan students can be found in the French speaking parts of Belgium (62.8 percent and 25.6 percent settling in Brussels and Wallonia respectively).

Table 2 reports the educational attainment of Moroccans who continued their education after migration. Despite the age-at-immigration, a number of immigrants made a lateral entry at the secondary level. The proportion not reaching a level of education exceeding that of lower secondary is limited, however, to approximately 10 percent, whereas the proportion graduating from higher education exceeds 50 percent.

3. Leaving school and the transition to employment

Although the UIAP-Surveys provide data of Turkish and Moroccan men aged 18 and older, high levels of school attendance were found for the second generation and for the most recently arriving Moroccan immigrants. Truncations called for the use of life-tables for studying educational attainment and comparing educational levels. Table 3 reports both the adjusted measure of educational attainment for the second generation (*Adjusted*) as well as the educational level of second generation Turkish and Moroccan men who already had graduated or left school by the time of the survey (*Observed*). The confrontation of these distinct measures indicates that a substantial bias would have resulted from excluding students from the analyses of educational attainment. In general, the share of respondents having graduated from higher education would have been underestimated by approximately 10 percent.

Table 3. Observed and adjusted levels of education of the second generation.

<i>Educational Level</i>	<i>Moroccan Sample</i>		<i>Turkish Sample</i>		<i>Table Total</i>	
	<i>Obs.</i>	<i>Adjusted</i>	<i>Obs.</i>	<i>Adjusted</i>	<i>Obs.</i>	<i>Adjusted</i>
<i>Unqualified</i>	0.0	0.0	0.0	0.0	0.0	0.0
<i>Primary Education</i>	16.5	11.0	8.8	7.5	12.0	9.2
<i>Lower Secondary Education</i>	38.7	28.8	37.5	32.8	38.0	30.9
<i>Higher Secondary Education</i>	36.6	37.0	49.7	48.3	44.2	42.9
<i>Higher Education</i>	8.2	23.2	4.0	11.4	5.7	17.0
Table Total	100.0	100.0	100.0	100.0	100.0	100.0
N	194	293	272	321	466	614

Source: UIAP-Survey Data, 1994-1996

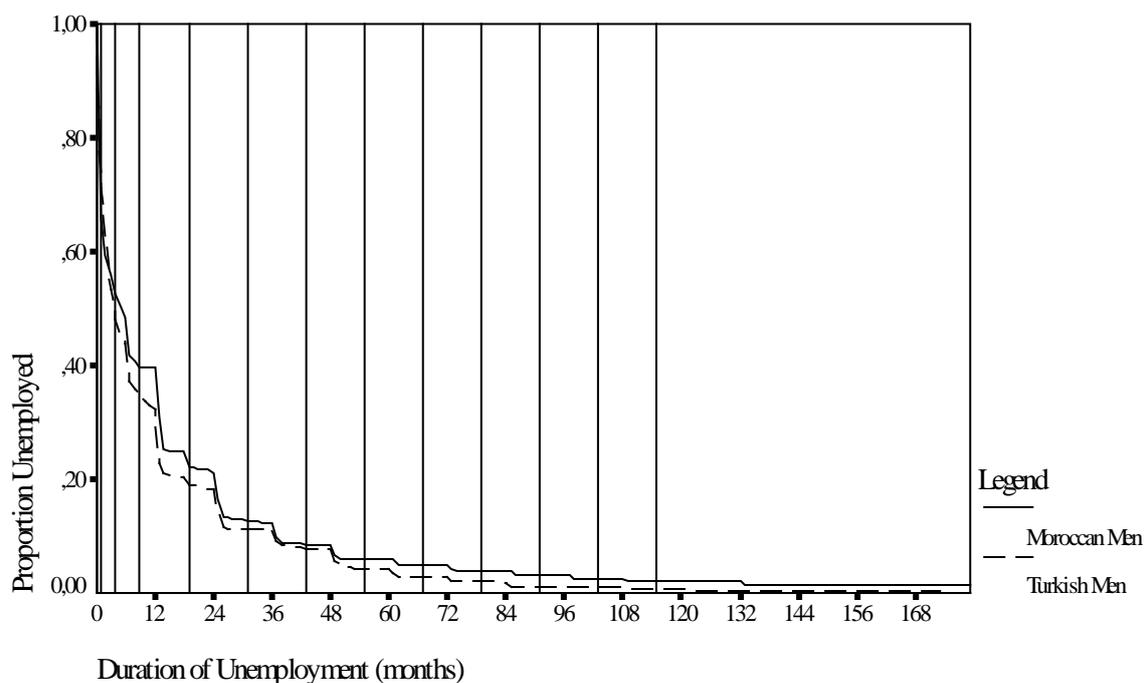
This finding has important implications for both the analyses of unemployment and occupational status. The low levels of education of men who have already graduated or left school indicate that the transition to employment has thus far been highly selective in terms of educational levels. Particularly for the Moroccan second generation the *current* labor force consists disproportionately of men with short educational careers and low levels of education. An important increase is to be expected in the share of higher education graduates who will subsequently enter the labor market (Neels, 1998).

4. The Duration of Unemployment: Basic Figures

The unemployment data concern 957 Turkish and Moroccan school-leavers *who finished their educational career in Belgium* and subsequently entered the *Belgian* labor market from the early 80's

onwards up to 1996. Although the larger part of these respondents (893) have already made the transition to employment, a number of the more recent school-leavers were still unemployed at the time of the survey. The proportion of right censored respondents or respondents still unemployed at the time of the survey amounts to 6.7 percent for the joint sample (8.7 percent in the Moroccan sample and 5.1 percent in the Turkish sample). Obviously, the duration of the unemployment period is unknown or truncated for these observations. Excluding censored observations from the analysis or assigning them the current duration of unemployment would result in substantial bias (Allison, 1984). Again, life-tables were drawn up for both nationalities to incorporate the information provided by censored observations. The cumulative proportions 'surviving' in unemployment are reported in Figure 1a whereas the hazards of finding a job are plotted against the duration of unemployment in Figure 1b. The *hazard* is the conditional probability of finding a job after a duration of unemployment of x months for those who were still unemployed at that time.

Figure 1a. Irregularities in retrospectively reported schedules of proportions still unemployed.

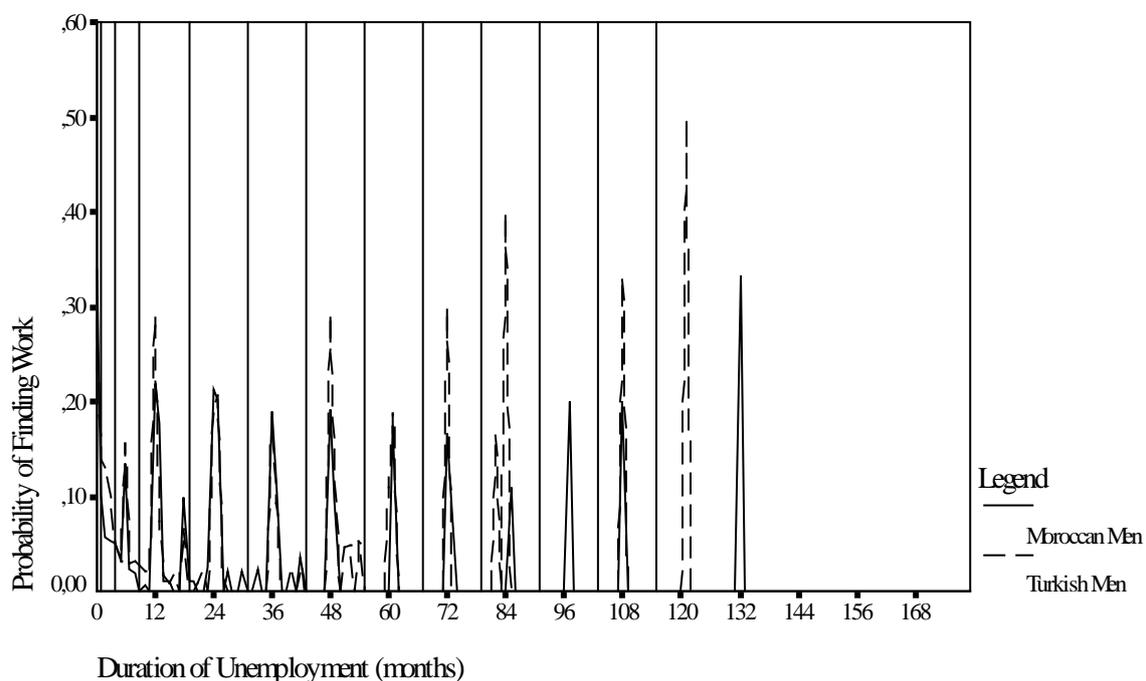


Source: UIAP Survey Data, 1994-1996.

The observed schedules indicate that 33.9 percent of the Moroccan men found a job within the first month after graduating or dropping out of school. The median duration of unemployment for the Moroccans amounts to 5.1 months. Approximately 31 percent, 22 percent and 17 percent of the initial stock of Moroccan school-leavers were still unemployed after 12, 18 and 24 months respectively. Approximately 3 years after school-leaving (37.1 months) 90 percent of the Moroccan school-leavers have found a job. The proportion of school-leavers finding a job within the first month of

unemployment is slightly lower for the Turks with 28.7 percent. On the other hand, both the median duration (3.6 months) and the proportions unemployed after 12, 18 and 24 months (23 percent, 19 percent and 15 percent respectively) indicate that Turks are slightly faster at finding jobs. After 36.7 months of unemployment 90 percent of the initial stock of Turkish school-leavers have made the transition to employment. For both nationalities the survivor function has a long tail, indicating that a number of school-leavers show a very long duration of unemployment before finding a job. Durations of unemployment of 5 years and longer were observed for 6.2 percent of the Moroccan school-leavers and 4.3 percent of the Turkish school-leavers.

Figure 1b. Heaping in the Discrete-Time Hazard.



Source: UIAP Survey Data, 1994-1996.

The type of data collection used gave rise to obvious defects in the duration data. As the durations were reported retrospectively, rounding errors are widespread, leading to massive concentrations at preferred durations (typically 3, 6, 12, 18 or 20 months and multiples of 12 months). As a result, a large number of *ties* occur in the data. Events are tied when two or more respondents in the sample experience the event at the same time (Yamaguchi, 1991). This is obviously the case for the unemployment data (figure 1b). The hazard plot equally suggests that respondents report durations more accurately when the durations are small causing rounding errors to become larger as the duration of unemployment increases. Consequently, the *actual* duration of unemployment of respondents *reporting* a duration of 24 months, for instance, may have any value ranging from 20 up to 28 months.

The consequences of ties and rounding errors for the analyses of the unemployment data will become apparent in the subsequent sections.

5. An event-history approach to unemployment

The life-table analysis in the previous section provided marginal evidence that the likelihood of finding work is lower for Moroccan school-leavers than it is for Turks. To gauge the relative importance of nationality and other variables (educational trajectory, level of education et cetera) on the likelihood of finding work, we will resort to *event-history analyses*. Quite simply, event-history analyses are regression methods in which the *hazard* depends on a linear function of the explanatory variables.

The way time or durations are measured (exact measurement versus measurement based on discrete times of fairly large intervals such as months or years) is an important dimension distinguishing different approaches to the analysis of event history data. In our case, *discrete-time methods* for event-history analysis are clearly more appropriate given the occurrence of ties and the measurement of durations in months¹. In practice, discrete-time event history analysis is similar to the procedure used in life-table analysis. For each time unit that each individual is known to be at risk a separate observational record is created. For each record, the dependent variable was coded 1 if the individual found a job during that period otherwise it was coded 0. Thus if an individual experienced an event at time 5, five different observations would be created. For the fifth observation, the dependent variable would be coded 1. For the other four observations, the dependent variable would be coded zero. The explanatory variables are assigned the values they took on in the period involved. Time-varying explanatory variables can thus easily be included because each time-unit a respondent is at risk is treated as a distinct observation. Finally, all of the person-period records are pooled and logit models for a dichotomous dependent variable can be estimated using readily available logistic regression procedures². Similar to life-table analysis, event-history analysis thus allows for an incorporation of the information provided by censored observations, being that they did not find a job in the period during which they were observed.

5.1 Explanatory Variables

The nationality of the respondent, the educational trajectory, the level of education and the place of residence are included as time-constant explanatory variables. Age is included as a time-varying explanatory variable. The minimum age for entry in the risk period (unemployment) was set at 14 years.

5.1.1 Educational Trajectory

The Turkish and Moroccan school-leavers in the analysis are strongly heterogeneous in terms of educational trajectories despite the fact that all of the respondents *finished* their educational career in Belgium. Hence, the educational trajectory is included in the analysis as a categorical explanatory variable (Belgian education, 'laterals' into primary, secondary and higher education and 'return' migration). Respondents who never received any education in the country of origin (or any other country) are considered as (head)starters in Belgian education provided that they were born in Belgium or immigrated before the age of six i.e. the beginning of compulsory education (Philippart, 1995). Ages of 6 and older give rise to classification into one of the 'lateral intake' categories. Respondents who received their education partially in Belgium and partially in the country of origin are considered as 'study returns' or 'lateral intake' into the Belgian educational system. Respondents are classified as 'lateral intake' provided that the age during the last grade in the country of origin does not exceed the age-at-immigration to Belgium. The classification of the lateral flows into primary, secondary or higher education depends on the *actual* level of entry in Belgian education rather than on the age-at-immigration. The 'return' category consists of respondents who started their education in Belgium but had study periods in Turkey or Morocco prior to their re-entry into the Belgian system.

5.1.2 Educational Level

The educational level refers to the highest certificate obtained by the respondent in Belgium or the country of origin. When certificates of an equal level (primary, lower secondary, higher secondary or higher education) were obtained in both Belgium and the country of origin, the Belgian diploma was retained for the analysis. For certificates of secondary education obtained in Belgium an additional distinction is made between certificates of general training and certificates of technical and vocational training. Certificates of secondary education obtained in the country of origin predominantly involve general education.

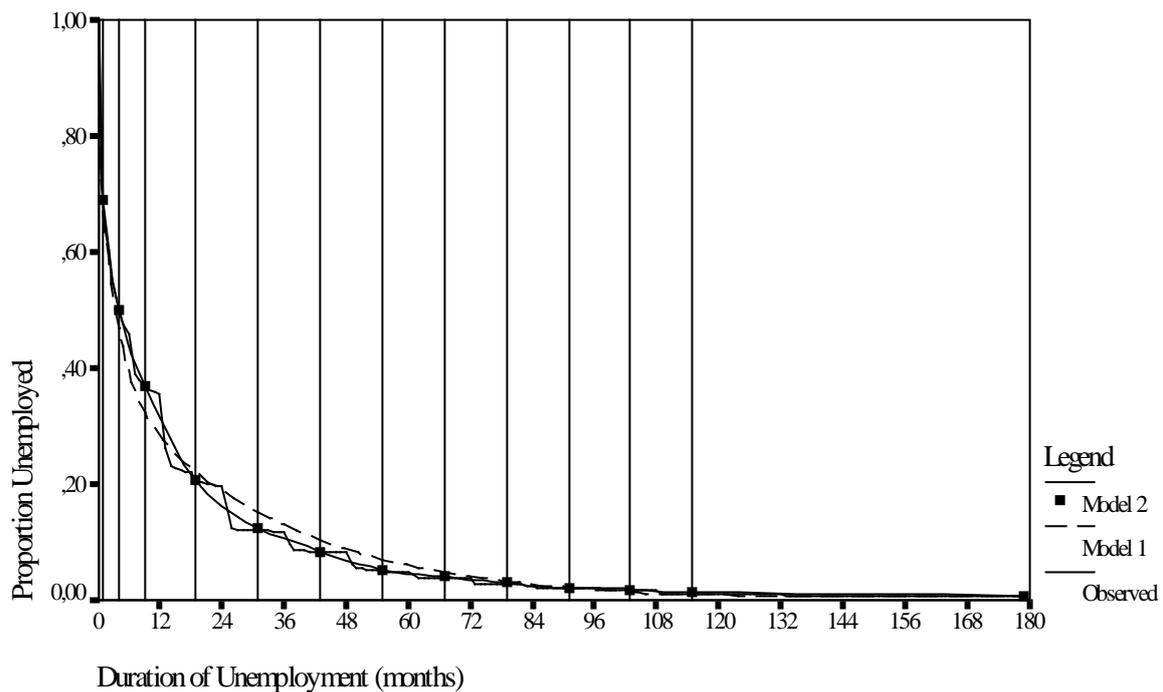
5.1.3 Place of Residence (Province).

Analyses of the 1991 Census data indicate that the job opportunities of both the Belgian population and Turkish and Moroccan immigrants are subject to significant regional variation (Stoop & Neels, 1998). The place of residence is included in the analysis to take into account the distinct patterns of settlement of Turkish and Moroccan immigrants and the resulting differential exposure to these local labor market conditions. Provinces with small numbers of Turkish and Moroccan inhabitants were excluded from the analysis (West Flanders, Namur and Luxembourg). The place of residence is assumed to be constant over time and unaltered since graduation or dropping out of school.

5.2 The chances of finding work for a given the duration of unemployment

The first question that will be addressed is whether the chance of finding a job is the same regardless of the duration of unemployment. An answer is obtained by comparing a model where we assume the hazard to be constant over time (Model 1 or an ‘intercept only’-model) with a model that allows the hazard to be different for every duration of unemployment (Model 2). The latter model is estimated by introducing a set of $(n-1)$ dummy variables (n being the number of time-units) into the equation (Allison, 1982; Allison, 1984). The coefficients for each of these intervals indicate to what extent the likelihood of finding a job in that particular interval is different from the likelihood of finding work in the reference interval.

As a result of rounding errors the majority of the monthly hazards equal zero (figure 1b). Estimation of models that allow the hazard to vary autonomously over time requires the exclusion of data pertaining to intervals in which no events occurred to any of the respondents (Allison, 1982; Menard, 1995). Consequently, the reported durations (in months) were converted to 13 larger duration intervals with the reported duration at the center of the interval. The reference lines in figures 1a & b and figure 2 represent the class limits of these collapsed duration intervals. In accordance with the timing of transitions (figure 1b) the interval length increases along with the duration of unemployment. For the 957 school-leavers, 2805 person-periods were generated using the collapsed duration intervals. Figure 2 shows what the survivor function of unemployment looks like using the hazards estimated by models 1 and 2. A likelihood ratio test comparing models 1 and 2 confirms what is readily apparent from figure 2: model 2 which allows the change of finding a job to vary for different durations of unemployment fits the observed survivor function far better than does the constant hazard model³.

Figure 2. Observed and estimated (Models 1 & 2) schedules of proportions unemployed.

Source: UIAP Survey Data, 1994-1996.

Both models yield the estimated conditional probabilities of finding work for each of the collapsed duration-intervals. For the second model this was accomplished by introducing a set of 12 dummy variables (one for each interval)(Allison 1982, Allison 1984). The estimated hazards can in turn be converted into the conditional *monthly* probabilities of finding work. The conditional probability of finding work after 4 months of unemployment, for instance, indicates what proportion of school-leavers who were unemployed for at least 4 months will find a job before reaching a duration of unemployment of 5 months. For the first three years of unemployment table 4 reports the estimated conditional probabilities of finding a job after x months of unemployment⁴. The estimated monthly hazards give an indication of how the likelihood of finding work depends on the duration of unemployment.

Table 4. Estimated (monthly) probabilities of finding work after n months of unemployment for the first 3 years of unemployment.

<i>Duration of unemployment</i>	<i>Monthly Hazard</i>	
	<i>Model 1</i> $\text{Ln}[P(Y=1)/1-P(Y=1)]=a$	<i>Model 2</i> $\text{Ln}[P(Y=1)/1-P(Y=1)]=a(t)$
<i>< 1 month</i>	0.313	0.310
<i>Month 1 – 3</i>	0.118	0.101
<i>Month 4 – 8</i>	0.072	0.058
<i>Month 9 – 18</i>	0.037	0.056
<i>Month 19 – 30</i>	0.031	0.041
<i>Month 31 – 42</i>	0.031	0.031

Source: UIAP-Survey Data 1994-1996.

The high probability of finding a job during the first month after leaving school can presumably be accounted for by Turkish and Moroccan men who left school with the prospect of a job. The chances of finding a job after the first full month of unemployment gradually diminish as the duration of unemployment increases. Approximately 10 percent of the Turkish and Moroccan school-leavers who were unemployed for at least 1 month after leaving school find a job before they reach a duration of unemployment of 2 full months. Similar proportions find work after 2 and 3 months of unemployment. For durations of unemployment ranging from 4 up to 8 months the chances of finding work have decreased to approximately 6 percent and decrease further to a level of approximately 3 percent for durations of 31 up to 42 months. The model that assumes the hazard to be constant for the all of the collapsed duration intervals overestimates the likelihood of finding work for the first 8 months (intervals 1-3) after leaving school and underestimates the likelihood of finding work for durations longer than 9 months. The probabilities estimated by model 2 are more moderate for durations of unemployment ranging from 1 up to 8 months, but they remain slightly more favorable for a much longer duration of unemployment (up to a duration of 30 months).

5.3 A general model of the transition to employment (all occupations)

The models presented in section 5.2 focused on the dependence of the hazard on the duration of unemployment. Similarly, models can be estimated where the hazard varies autonomously over time but depends on the explanatory variables as well. Table 5 reports the estimated coefficients (and the associated significance levels) for a model where the hazard varies autonomously over time and depends on age, nationality, educational trajectory, the level of education and the place of residence. Although this full model yields a significant improvement over model 2, only three of the 6

explanatory variables show a significant effect on the likelihood of finding work (duration of unemployment, educational trajectory and the place of residence)⁵.

The coefficient estimates of table 5 are reported as odds-ratios. *Odds* are a ratio of probabilities. For instance, the odds of Moroccan school-leavers to find work within the first month after school-leaving are 0.513, indicating that approximately 51 Moroccan school-leavers find work for every 100 staying unemployed. The *odds-ratios* for the categorical predictors reported in table 5 indicate whether the odds of the category under consideration are higher or lower than average. The (gross) odds-ratio of 1.52 for Antwerp indicates that the number of Turkish and Moroccan school-leavers who found a job (for every 100 staying unemployed) is 1.52 times higher in the province of Antwerp than average (Liao, 1994). The *gross odds-ratios* for the explanatory variables report the estimated coefficients for a model where the hazard varies autonomously over time and depends only on the independent variable under consideration. The *net odds-ratios* report the coefficients for the model where all six variables are entered in the equation and indicate how the gross effects of the explanatory variables are attenuated when controlling for the other independent variables.

Table 5. Estimates of the Logit Model Predicting the Odds of Employment (All Occupations).¹

Explanatory Variables	Gross	Odds-Ratios		Signif. ²
		Signif. ²	Net	
Age	0.9999		1.0401	
Nationality³				
<i>Moroccan</i>	0.9430		0.9284	
<i>Turkish</i>	1.0605		1.0771	
Educational Trajectory³		*		*
<i>Belgium (2nd Generation)</i>	0.9819		1.0340	
<i>Lateral into Primary</i>	1.1336		1.2242	*
<i>Lateral into Secondary</i>	1.1744		1.2904	**
<i>Lateral into Higher</i>	0.6796	**	0.6070	*
<i>Return</i>	1.1255		1.0086	
Educational Level^{3 & 4}				
<i>Unqualified</i>	0.9245		0.8096	
<i>Primary</i>	1.1690		1.0090	
<i>Primary^{B.}</i>	1.0617		1.0734	
<i>Lower Secondary</i>	1.0903		0.9836	
<i>Lower Secondary (Voc-Tech)^{B.}</i>	1.2400		1.1281	
<i>Lower Secondary (General)^{B.}</i>	0.7928		0.8794	
<i>Higher Secondary</i>	0.9288		1.3503	
<i>Higher Secondary (Voc-Tech)^{B.}</i>	1.1561		0.9965	
<i>Higher Secondary (General)^{B.}</i>	1.3419		1.3204	
<i>Higher Education</i>	0.5270		0.6614	
<i>Higher Education^{B.}</i>	1.0705		0.9945	
Province³		***		***
<i>Antwerp</i>	1.4340	***	1.5243	***
<i>Brabant</i>	0.8881	*	0.9232	
<i>East-Flanders</i>	1.4021	**	1.3787	**
<i>Hainaut</i>	0.8014	*	0.7574	**
<i>Liège</i>	0.6108	***	0.6182	***
<i>Limburg</i>	1.1442		1.1009	
N of Events	877		877	
N of Person-Periods	2805		2805	

¹ Source: UIAP-Survey Data 1994-1996² Significance levels: * Significant at 0,1 Level, ** Significant at 0,05 Level, *** Significant at 0,01 Level³ The coefficients indicate how much better or worse each category is compared to the average effect of all categories.⁴ Educational levels followed by ^{B.} concern certificates obtained in Belgium, other certificates were obtained in the countries of origin.

The results obviously suggest a strong effect of the local labor market opportunities on the likelihood of finding work. Above average levels of employment were found for the provinces Antwerp and East-Flanders (an increase of the odds of 43.4 and 40.2 percent respectively over the average level).

Limited employment opportunities were found for the two Walloon provinces in the analyses (the odds being 20 percent lower than average in Hainaut and up to 39 percent lower in Liège). The analyses of educational attainment indicated however that educational levels are equally subject to regional variation. Moreover, specific patterns of settlement were found for highly educated groups such as the Moroccan second generation and particularly Moroccan 'laterals' into higher education. The pattern of regional effects remains similar, however, when the effects of the explanatory effects are disentangled. At this point it is not clear what the impact of the other explanatory variables may be. No significant effect was found for the level of education on the likelihood of finding work⁶. Hence, no effect was found for nationality despite the diverging educational trajectories and the resulting differences in educational attainment. This absence of significant results suggests that different levels of education lead to different types of occupations after graduation or leaving school. Occupations will therefore be subdivided into 'white collar' and 'blue collar' groups.

Besides a strong regional variation, the results provide marginal evidence that the educational trajectory has an influence on the likelihood of finding work (significance at 0.10 level). When the influence of the educational trajectory on educational attainment is taken into account, 'laterals' into higher education show odds of employment that are over 30 percent lower than average (0.6070). Conversely, the odds of employment are higher for 'laterals' into primary and secondary education (odds-ratios of 1.22 and 1.29 respectively). Again, the results in terms of educational trajectories suggest that taking the type of employment into account would yield a more refined analysis.

5.4 Transitions to 'White Collar' versus 'Blue Collar' employment

The term 'white collar' refers to the Major Groups 1 through 5 of the International Standard Classification of Occupations (ISCO 88, International Labour Office, 1990). In this sense, the term 'white collar' covers a broad spectrum of occupations, ranging from 'Legislators, senior officials and managers' (Major Group 1) to 'Service workers and shop and market sales workers' (Major Group 5). In spite of this relaxed definition, 'white collar' employment turns out to be much rarer than 'blue collar' employment. A limited number of 173 transitions out of a total of 868 (19.9 percent) involve transitions to what are considered as 'white collar' occupations⁷. The level of 'white collar' employment differs considerably among Turks and Moroccans however (11.6 and 28.2 percent respectively). Table 6a reports the breakdown of 'white collar' employment into the Major Groups of ISCO 88. Although 'white collar' employment turns out to be a predominantly Moroccan matter, the nature of 'white collar' employment is similar for both nationalities. For both nationalities 'white collar' employment largely boils down to employment as 'clerks' or 'service workers' and related occupations. The low level of employment in Major Group 1 (managers, senior officials) can of course

be accounted for to a large extent by the fact that only the first occupation after leaving school is being studied.

Table 6a. Employment in ‘White Collar’ occupations by Major Group.

<i>Major Groups (ISCO 88)</i>	<i>Moroccan Sample</i>		<i>Turkish Sample</i>		<i>Table Total</i>	
	<i>N</i>	<i>Col %</i>	<i>N</i>	<i>Col %</i>	<i>N</i>	<i>Col %</i>
1. Legislators, Senior Officials and Managers	3	2.5	5	8.2	8	4.5
2. Professionals	18	16.4	10	16.4	28	16.4
3. Technicians and Associate Professionals	15	13.8	10	16.4	25	14.7
4. Clerks	9	7.7	1	1.6	10	5.5
5. Service Workers and Shop and Market Sales Workers	67	59.8	35	57.4	102	58.9
Table Total	112	64.7	61	35.3	173	100.0

Source: UIAP Survey Data 1994-1996

‘Blue Collar’ employment involves occupations of Major Groups 6 through 9 of the International Standard Classification of Occupations (ISCO 88, International Labour Office, 1990). Approximately 80 percent of the Turkish and Moroccan school-leavers take up ‘blue collar’ occupations after graduation or leaving school. ‘Blue Collar’ employment includes the following categories: ‘Skilled Agricultural and Fishery Workers’, ‘Craft and Related Trade Workers’, ‘Plant and Machine Operators and Assemblers’ and ‘Elementary Occupations’. Table 6b presents the breakdown of ‘Blue Collar’ employment into the Major Groups of ISCO 88.

Table 6b. Employment in ‘Blue Collar’ occupations by Major Group (ISCO 88).

<i>Major Groups (ISCO 88)</i>	<i>Moroccan Sample</i>		<i>Turkish Sample</i>		<i>Table Total</i>	
	<i>N</i>	<i>Col %</i>	<i>N</i>	<i>Col %</i>	<i>N</i>	<i>Col %</i>
6. Skilled Agricultural and Fishery Workers	5	1.8	8	1.8	13	1.8
7. Craft and Related Trade Workers	112	43.5	236	53.9	348	50.0
8. Plant and Machine Operators and Assemblers	68	26.3	99	22.6	167	24.0
9. Elementary Occupations	73	28.3	95	21.7	168	24.2
Table Total	258	37.1	438	62.9	696	100.0

Source: UIAP Survey Data 1994-1996

The level of employment in agricultural occupations is virtually negligible for both Turkish and Moroccan school-leavers (1.8 percent of all 'blue collar' employees). The greater part of 'blue collar' employment involves occupations coming under Major Groups 7 and 8 (76.5 and 69.8 percent for Turks and Moroccans respectively). However, for Moroccans 'blue collar' employment more often implies employment in 'elementary occupations' (Major Group 9 of ISCO '88) than is the case for Turkish school-leavers (28.3 percent versus 21.7 percent respectively).

5.5 Competing Risk Models

Whereas the single-event model (finding a job versus being unemployed) for discrete-time event histories could be estimated using logistic regression routines, the multiple-event or 'competing risk' model can be estimated using multinomial logit routines (Allison, 1982). In the single-event model we compared the likelihood of employment with that of being unemployed and a single odds-ratio could be used describing the marginal effect of explanatory variables on the odds of the event occurring versus not occurring. In the multinomial model, however, we have three mutually exclusive states (unemployment, 'white collar' employment and 'blue collar' employment). As a result, we compare the likelihood of 'white collar' employment with that of unemployment, the likelihood of 'blue collar' employment with that of unemployment and the likelihood of 'white collar' with that of 'blue collar' employment. Instead of the single odds-ratio in the dichotomous model we have three odds-ratios in the multinomial model. The gross and net estimated coefficients for nationality, educational trajectory, educational level and place of residence are reported in tables 7a & b respectively, together with the associated significance levels⁸. The estimated coefficients for the duration of unemployment (not reported) indicate that the odds of 'white collar' employment versus 'blue collar' employment are above average for the first 2 years of unemployment. When the duration of unemployment exceeds 2 years the likelihood of 'white collar' employment falls relative to that of taking up 'blue collar' occupations.

**Table 7a. ‘Competing Risks’ Model Results for Type of Occupation.
(Gross Odds-Ratios and Associated Significance Levels)**

<i>Explanatory Variables</i>	<i>Contrast</i>					
	<i>‘White Collar’ vs. Unemployment</i>		<i>‘Blue Collar’ vs. Unemployment</i>		<i>‘White Collar’ vs. ‘Blue Collar’</i>	
	<i>Odds-Ratios</i>	<i>Sig.²</i>	<i>Odds-Ratios</i>	<i>Sig.</i>	<i>Odds-Ratios</i>	<i>Sig.</i>
Age	1.1855	***	0.9403	***	1.2608	***
Nationality		***		***		***
<i>Moroccan</i>	1.4987		0.8471		1.7693	
<i>Turkish</i>	0.6672		1.1805		0.5652	
Educational Trajectory		**		***		***
<i>Belgium (2nd Generation)</i>	1.0890		1.0900		0.9990	
<i>Lateral into Primary</i>	0.9142		1.3524	***	0.6760	**
<i>Lateral into Secondary</i>	0.7835		1.4601	***	0.5367	***
<i>Lateral into Higher</i>	2.2385	***	0.3321	***	6.7399	***
<i>Return</i>	0.5727		1.3988	**	0.4094	**
Educational Level		***		***		***
<i>Unqualified</i>	0.7581		1.1234		0.6748	
<i>Primary</i>	0.6027		1.6358	***	0.3684	**
<i>Primary^B</i>	0.6930		1.4112	**	0.4911	**
<i>Lower Secondary</i>	0.2624		1.6303		0.1609	*
<i>Lower Secondary (Voc-Tech)^B</i>	0.7454		1.6784	***	0.4441	***
<i>Lower Secondary (General)^B</i>	0.8913		0.9514		0.9368	
<i>Higher Secondary</i>	2.3029	**	0.6449		3.5709	***
<i>Higher Secondary (Voc-Tech)^B</i>	0.7867		1.5398	***	0.5109	***
<i>Higher Secondary (General)^B</i>	4.0069	***	0.6748		5.9382	***
<i>Higher Education</i>	0.6456		0.6146		1.0505	
<i>Higher Education^B</i>	3.8659	***	0.3597	***	10.7476	***
Province		***		***		***
<i>Antwerp</i>	1.7103	**	1.4388	***	1.1887	
<i>Brabant</i>	1.7958	***	0.7622	***	2.3559	***
<i>East-Flanders</i>	0.7740		1.5418	***	0.5021	**
<i>Hainaut</i>	0.9352		0.7869	*	1.1884	
<i>Liège</i>	0.9077		0.5883	***	1.5430	
<i>Limburg</i>	0.4955	**	1.2776	**	0.3879	***

¹ Source: UIAP-Survey Data 1994-1996.² Significance levels: * Significance at 0.1 level, ** Significance at 0.05 level, *** Significance at 0.01 level.³ Educational levels followed by ^B concern certificates obtained in Belgium, other certificates were obtained in the countries of origin.

Table 7b. 'Competing Risks' Model Results for Type of Occupation.
(Net Odds-Ratios and associated Significance Levels)

Explanatory Variables	Contrast					
	'White Collar' vs. Unemployment		'Blue Collar' vs. Unemployment		'White Collar' vs. 'Blue Collar'	
	Odds-Ratios	Sig. ²	Odds-Ratios	Sig. ²	Odds-Ratios	Sig. ²
Age	1.1002	**	1.0185		1.0802	
Nationality				**		***
<i>Moroccan</i>	1.1765		0.8809	**	1.3355	***
<i>Turkish</i>	0.8470		1.1352	**	0.7488	***
Educational Trajectory				**		
<i>Belgium (2nd Generation)</i>	1.4203		1.0225		1.3891	
<i>Lateral into Primary</i>	1.1963		1.2940	*	0.9244	
<i>Lateral into Secondary</i>	0.9770		1.4655	**	0.6667	
<i>Lateral into Higher</i>	0.4965		0.5172		0.9601	
<i>Return</i>	1.2132		0.9972		1.2167	
Educational Level ³		***		**		***
<i>Unqualified</i>	0.8673		0.8585		1.0103	
<i>Primary</i>	0.9037		1.1866		0.7616	
<i>Primary</i> ^{B.}	0.6817		1.3400		0.5087	*
<i>Lower Secondary</i>	0.4684		1.2279		0.3815	
<i>Lower Secondary (Voc-Tech)</i> ^{B.}	0.7141		1.4268	**	0.5005	**
<i>Lower Secondary (General)</i> ^{B.}	0.7335		1.0584		0.6930	
<i>Higher Secondary</i>	3.0618	**	1.0911		2.8062	*
<i>Higher Secondary (Voc-Tech)</i> ^{B.}	0.6525	*	1.2815		0.5092	**
<i>Higher Secondary (General)</i> ^{B.}	2.5017	**	0.7050		3.5486	**
<i>Higher Education</i>	0.7187		1.0157		0.7076	
<i>Higher Education</i> ^{B.}	2.1233	**	0.3946	***	5.3812	***
Province				***		*
<i>Antwerp</i>	1.5575		1.6013	***	0.9727	
<i>Brabant</i>	1.2789		0.8812		1.4513	**
<i>East-Flanders</i>	1.0260		1.4150	***	0.7250	
<i>Hainaut</i>	0.9412		0.7237	**	1.3006	
<i>Liège</i>	0.8401		0.6027	***	1.3939	
<i>Limburg</i>	0.6188		1.1482		0.5389	**

¹ Source: UIAP-Survey Data 1994-1996² Significance levels: *, ** and *** indicate significance at the 0.1, 0.05 and 0.01 level, respectively.³ Educational levels followed by ^{B.} concern certificates obtained in Belgium, other certificates were obtained in the countries of origin.

5.5.1 Age

The gross odds-ratios indicate that the likelihood of taking up a ‘white collar’ occupation versus staying unemployed increases with age (1.19 or an increase in the odds of approximately 19 percent per year), whereas the odds of taking up ‘blue collar’ employment versus unemployment decline with age (0.94 or approximately 6 percent per year). The gross odds-ratios merely reflect that Turkish and Moroccan youngsters with a technical or vocational training (and more likely to take up ‘blue collar’ occupations) are on average younger when leaving school. Taking the educational level into account the odds of both ‘white collar’ and ‘blue collar’ increase with age (1.10 and 1.02 respectively), but the increase in the odds of ‘blue collar’ employment falls relative to the increase of ‘white collar’ (1.08). In other words, an increase in age by one year increases the likelihood of ‘white collar’ employment rather than that of ‘blue collar’ employment.

5.5.2 Differential entry into the labor market: the effect of nationality

Consistent with the single-event model (employment versus unemployment), neither Turks nor Moroccans have an increased likelihood of finding work regardless of the type of occupation. Instead, the ‘competing risk’ model suggests a strong relation between nationality and the characteristics of the first occupation after leaving school. For Moroccans the odds of taking up a ‘white collar’ occupation versus staying unemployed are 1.5 times higher than average (1.4987) and 2.25 times higher than those of Turks (1.4987/0.6672) whereas the odds of taking up ‘blue collar’ employment (versus staying unemployed) are approximately 15 percent lower than average (0.8471). Turkish school-leavers portray the opposite of what is found for the Moroccans. The odds of Turkish school-leavers to take up ‘blue collar’ employment are 18 percent higher than average (1.18) and their odds of ‘white collar’ employment (versus unemployment) are 33 percent lower than average (0.67).

Several factors can account for the increased likelihood of ‘white collar’ employment among Moroccan school-leavers:

- 1) A first partial explanation concerns the educational level of the second generation. Moroccan second generation youngsters are more likely to take up general education at the secondary level (partially as a result of diverging patterns of settlement). As a result, the relative number of higher education graduates is higher among Moroccan school-leavers of the second generation and certificates of secondary education more often concern general education than is the case for the Turkish second generation. Moreover, among Turkish second generation youngsters approximately 12 percent had study leaves in the country of origin, generally resulting in lower levels of educational attainment.

- 2) A second explanation concerns the differential patterns of settlement. In the sample the majority of Moroccan school-leavers were living either in Antwerp (21.6 percent) or Brabant (59.3 percent). Only 36.6 percent of the Turks live in those regions, whereas an important number (48.8 percent) live in Hainaut, Liège or Limburg (13.3, 10.6 and 24.9 percent respectively). If 'white collar' and 'blue collar' employment opportunities are subject to regional variation (which is in fact the case as will be shown in section 5.5.5), then the differential exposure of Turks and Moroccans to these local conditions could be an important factor explaining the observed differences.
- 3) A third explanation concerns the recent increase of participation in Belgian education of Moroccans immigrating at ages 18 and older. As was shown in the analyses of educational attainment, this group attains a level of education that is higher than that of the Moroccan second generation. Although their numbers are small (7,5 percent of the Moroccan school-leavers in the analysis), their numerical importance is equivalent to that of 'return' immigrants among the Turks (8.4 percent of the Turkish school-leavers in the sample report study leaves in the country of origin). The presence of such a select and highly educated group among the Moroccans could partially account for the observed differences.

The net results indicate, however, that higher levels of education and the different exposure to local labor market conditions can only partially explain the observed differences between both nationalities. The likelihood of 'white collar' employment versus that of 'blue collar' employment remains 1.34 times (or 34 percent) higher than average for Moroccan school-leavers once these other characteristics are taken into account, suggesting that Moroccans get more occupational 'mileage' from their educational attainments than Turks.

5.5.3 Educational trajectory

The odds of taking up 'white collar' occupations versus staying unemployed are significantly higher (2.06 times or 2.2385/1.0890) for 'laterals' into higher education than they are for the second generation with full education in Belgium. This is consistent with the high educational levels attained by these 'laterals' into higher education. The odds of taking up 'blue collar' employment versus unemployment are, however, significantly higher for 'laterals' into primary and secondary education (1.24 and 1.34 respectively) than for the second generation, and significantly lower for 'laterals' into higher education (0.30) than for the second generation. Note that, since 'blue collar' is the most important form of employment for Turkish and Moroccan school-leavers (section 5.4), the odds-ratios of 'blue collar' versus unemployment are very similar to the odds-ratios of employment versus unemployment reported in table 5. The net odds-ratios reported in table 7b indicate to what extent the observed differences can be explained in terms of educational levels.

'Laterals' into primary and secondary education

Important numbers of Turkish and Moroccan men entered Belgian education at the primary or secondary level (42.1 percent and 47.2 percent of the Turkish and Moroccan school-leavers in the analysis respectively). Compared to the second generation this generally resulted in lower levels of education and an increased concentration in vocational and technical education at the secondary level. As a result an increased likelihood is observed for these 'laterals' compared to the second generation to pick up 'blue collar' occupations after leaving school. This overrepresentation in blue collar employment persists however when the different levels of education are taken into account.

'Return migration' or study leaves in the country of origin

An increased likelihood of 'blue collar' employment is also observed for men who came to Belgium at early ages and reported study leaves in the country of origin after the initial migration to Belgium (Table 7a). As mentioned earlier, this is almost exclusively a Turkish pattern. Although the majority of the 'returns' involve second generation men, their educational attainment lags behind compared to that of second generation men who received their education in Belgium. The net results (table 7b) suggest that the increased likelihood of 'blue collar' employment of this group can be accounted for by this relapse in educational attainment.

'Laterals' into higher education

The share of higher education graduates among Moroccan men who immigrated at ages 18 and older and who continued their education is substantially higher than among the Moroccan second generation. The combination of high levels of education with settlement in Brussels (Brabant) results in odds of 'white collar' employment that are 2.24 times higher than average (and equally twice as high as the level observed for the second generation) and a below average likelihood of 'blue collar' employment. Net effects indicate that the educational attainments and local labor market conditions can account for the high observed level of 'white collar' employment. Once these factors are taken into account, the 'laterals' into higher education show a pattern of employment that is not significantly different from the average situation. Similarly, the odds of 'white collar' employment are no longer significantly higher for these 'laterals' than they are for the second generation.

5.5.4 Educational level

The likelihood of taking up a 'white collar' occupation versus staying unemployed increases as school-leavers enter the labor market with higher levels of education. The likelihood of 'white collar' employment is also higher for school-leavers entering the labor market with a certificate obtained in Belgian education than for school-leavers with certificates obtained in the country of origin. For certificates of *Higher Secondary Education*, the odds are 4.01 times higher than average for

certificates of general education obtained in Belgium and only 2.30 times higher for certificates obtained in the country of origin. For certificates of *Higher Education*, the odds are 3.87 times higher for certificates obtained in Belgium and over 30 percent lower than average (0.65) for certificates of obtained in the country of origin. Surprising, however, are the high odds (2.30) for respondents with a certificate of higher secondary obtained in the country of origin. These are predominantly men who finished (general) secondary education in the country of origin and subsequently took up higher education in Belgium, but who did not graduate. An additional competing risk model (not reported) was estimated further distinguishing various higher occupations (Major Groups 1,2 and 3 versus Major Groups 4 and 5). Turkish and Moroccan men entering the Belgian labor market with a certificate of secondary education obtained in the country of origin predominantly find jobs as clerks or service workers. Certificates obtained in Belgium are clearly a prerequisite for employment as (associate) professional or technician. Similarly, certificates of higher education obtained in the country of origin do not result in an increased likelihood of 'white collar' employment.

5.5.5 Place of residence

The chances of finding a job are subject to significant regional variation, even when no distinction is made between occupations (table 5). The likelihood of employment turned out to be significantly higher in the regions of Antwerp and East-Flanders, while being significantly lower in both of the Walloon provinces included in the analyses (Hainaut and Liège). The 'competing risk' model yields a more comprehensible picture of what these local labor market opportunities exactly are. The high level of employment in Antwerp (table 7a) involves both 'white' and 'blue collar' employment, the odds of 'white collar' employment being 1.71 times higher than average, the odds of 'blue collar' employment being 1.44 times higher than average. Particularly the likelihood of 'white collar' employment is high. The high levels of employment in the East-Flanders region, however, are solely due to an above average level of 'blue collar' employment (1.54 times higher than average). Hainaut and Liège portray the opposite of what was found for Antwerp: high levels of unemployment are found for these Walloon regions because of low levels of employment for both types of occupations. Especially the opportunities for 'blue collar' employment are limited (odds being 0.79 and 0.59 times the average level respectively). The highest levels of 'white collar' employment are found for Brabant (including Brussels) with odds being 1.80 times the average level. By far the lowest levels of 'white collar' employment are found in Limburg (an odds-ratio of 0.49).

The analyses of educational attainments indicated, however, that educational levels are equally subject to significant regional variation. Moroccan men (showing a higher likelihood of 'white collar employment') have a different pattern of settlement than Turkish men, and 62 percent of the Moroccan students entering Belgian education at the level of higher education settled in Brussels. These earlier

findings suggest that other important factors influencing the likelihood of ‘white collar’ employment coincide and possibly reinforce the observed regional variation (table 7a). A closer inspection of the net results (table 7b) confirms that the observed regional variation is at least partially attributable to these factors. Controlling for educational levels, nationality and the other independent variables, the pattern of regional effects is similar but differences between regions are less pronounced.

6. Conclusions

We can summarize the main points as follows:

- 1) The median duration of unemployment amounts to 3.6 months and 5.1 months for Turkish and Moroccan school-leavers respectively. For both nationalities a long tail of the survivor function is observed, indicating that an important number of school-leavers suffer from extended durations of unemployment. One year after leaving school 23 percent of the Turkish and 31 percent of the Moroccan school-leavers are still unemployed. Durations of unemployment of 5 years and longer were observed for 6.2 of the Turkish and 4.3 percent of the Moroccan school-leavers.
- 2) A strong concentration in vocational and technical training is observed among young Turkish and Moroccan adults. As a result, approximately 80 percent of the Turkish and Moroccan men who finished their educational career in Belgium take up ‘blue collar’ occupations after leaving school. The proportion of school-leavers taking up ‘white collar’ occupations is limited to approximately 20 percent.
- 3) Although at first sight the schedules of transition appear very similar for Turks and Moroccans, the use of ‘competing risk’ models reveals that in part different types of transitions are involved. Consistent with the high proportion of higher education graduates and the stronger concentration in general education at the secondary level, Moroccans show a stronger inclination toward ‘white collar’ employment. Turkish are predominantly found in ‘blue collar’ employment. Different levels of educational attainment, different educational trajectories and a different pattern of settlement offer but a partial explanation for the observed differences. These findings suggest that Moroccans get a greater occupational pay-off for their educational attainments.
- 4) The analyses of educational attainment indicated that an interruption of the educational career – in the form of an international move - negatively influences the outcomes of the educational career. Disruptions at more advanced stages generally result in an early ending of the educational career, especially in the case of the Turkish re-entering immigrants. The analysis of unemployment spells expanded on this finding by explicitly introducing the educational trajectory of respondents as an explanatory variable. Turkish and Moroccan men who entered Belgian education at the level of primary or secondary education show an increased probability of employment in ‘blue collar’ occupations. This finding subsists when the negative effects of an interruption of the educational career on the educational attainments are taken into account.

Notes

¹ An extensive discussion of discrete-time versus continuous-time approaches to the analysis of event history data can be found in Allison, 1982 and Yamaguchi, 1991.

² The complementary log-log model is an alternative specification for the dependence of the hazard on the explanatory variables. The use of logistic regression leads to a different model, a logit model of the survivor function. An extensive review of the logistic function, the complementary log-log function and their relation to continuous-time models can be found in Allison, 1982 and Yamaguchi, 1991.

³ Likelihood Ratio Test comparing models $\text{Ln}[P(Y=1)/1-P(Y=1)]=a$ (Model 1) and $\text{Ln}[P(Y=1)/1-P(Y=1)]=a(t)$ (Model 2), $p < 0.0000$.

⁴ The intercept only model imposes the constraint that the hazard be equal for the collapsed duration intervals. Assuming a constant hazard implies however that the *monthly hazards* decrease as the interval length of the collapsed duration intervals increases (see table 4).

⁵ As the aim of the analyses is exploratory, the usual .05 criterion for statistical significance was relaxed (Menard, 1995). Although this results in an increased risk of rejecting the null hypothesis when it is true (finding a relationship that does not really exist), it lowers the risk of failing to reject the null hypothesis when it is false (not finding an existing relationship). The statistical significance of the contribution of an independent variable (categorical or interval) to the explanation of the dependent variable is evaluated using the likelihood ratio test. For categorical variables the significance of individual categories is evaluated using the Wald Statistic. No significance levels were reported for single categories in absence of a significant contribution of the categorical predictor as a whole. For an extensive review of both statistics see Menard (1995).

⁶ The single-event model was re-estimated with fewer categories for the educational variable (no certificate, primary education, lower secondary, higher secondary and higher education). The model with the collapsed educational variable yields no different results from the model reported in table 5.

⁷ The joint number of transitions (N = 868) is slightly lower than the number of transitions reported for 'all occupations'-model (N = 877). As a result of distinguishing among occupations, respondents with missing values for the type of employment were excluded from the competing risk analysis.

⁸ For the estimation multinomial logit model the tail-intervals (9 through 13) of the duration variable were collapsed. This did not result in significant loss of information (*Likelihood Ratio Test*, $p = 0.4931$).

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