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## Determinants of Underemployment During the Early Career: A Longitudinal Multi-country Study

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## Abstract

This paper explores the relative effects of individual, organizational, labor market, and societal components on underemployment of young adults during their early career.

Quantitative underemployment, defined as periods of unemployment, temporary employment, and part-time employment is of psychological importance, because it delays or hinders the integration of career starters into the world of work by excluding them from the experience needed to develop competencies and knowledge essential for functional participation in the labor force. A first step to decrease the occurrence of underemployment for career starters involves a better understanding of the relative importance of contributing factors. This paper used a longitudinal multi-country study to explore the relative weight of individual, organizational, and macro level factors on the occurrence of underemployment. From a sample of career starters in two occupational groups with relatively good employment prospects in six European countries, the results confirmed the relationships of underemployment to gender, education, initial experience, labor market outlook, and the socio-economic and socio-political situation of the country. The country specific variance in underemployment proved to be the most important predictor of youngsters later probability to be underemployed: its effect was about 2.5 times as large as the variance explained by the initial labor market experience and 10 times as large as the effect of the educational level.

## Keywords

organizational, labor market, underemployment, young adult, career, work, countries, youth

## Comments

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## WORKING PAPER SERIES

# Determinants of Underemployment During the Early Career

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Working Paper 94 – 06



**Determinants of Underemployment During the Early Career:  
A Longitudinal Multi-country Study**

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This paper has not undergone formal review or approval of the faculty of the ILR School. It is intended to make results of Center research, conferences, and projects available to others interested in human resource management in preliminary form to encourage discussion and suggestions.

### **Abstract**

This paper explores the relative effects of individual, organizational, labor market, and societal components on underemployment of young adults during their early career.

Quantitative underemployment, defined as periods of unemployment, temporary employment, and part-time employment is of psychological importance, because it delays or hinders the integration of career starters into the world of work by excluding them from the experience needed to develop competencies and knowledge essential for functional participation in the labor force. A first step to decrease the occurrence of underemployment for career starters involves a better understanding of the relative importance of contributing factors. This paper used a longitudinal multi-country study to explore the relative weight of individual, organizational, and macro level factors on the occurrence of underemployment. From a sample of career starters in two occupational groups with relatively good employment prospects in six European countries, the results confirmed the relationships of underemployment to gender, education, initial experience, labor market outlook, and the socio-economic and socio-political situation of the country. The country specific variance in underemployment proved to be the most important predictor of youngsters later probability to be underemployed: its effect was about 2.5 times as large as the variance explained by the initial labor market experience and 10 times as large as the effect of the educational level.

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## **Determinants of Underemployment During the Early Career: A Longitudinal Multi-country Study**

An extensive body of research documents evidence of the impact of unemployment on happiness, pleasure, life satisfaction, affect, self-esteem, general distress, anxiety, strain, and depression of adults (Warr 1987; Dooley and Catalano, 1988; Payne, 1990). Research focusing on youth experience of unemployment shows a more moderate impact of unemployment (Warr, 1987; O'Brien, 1986; Banks and Ullah, 1986; Banks et. al, 1992). This difference is attributed to the specific aspects of youth unemployment such as the short time period of unemployment, the availability of money from unemployment benefits and/or from parents, the physical security and the social support provided by parents, and the remaining opportunities for interpersonal contacts served by the former school networks. Therefore, the consequences of unemployment for youth in terms of financial and social constraints are relatively slight as compared to unemployment effects on middle-aged people (Warr, 1987, 229). However, short-term youth unemployment is harmful in a different way: these young adults are delayed in their attempt to become independent individuals, to develop new work-related competencies, and to establish an understanding of the domain of working and of their own work personality. As O' Brien (1986; 239) puts it "the unemployed may be frozen at a particular stage of development, while their employed counterparts are progressing". In addition, recent research by Feather (1990) illustrates that in case of long-term youth unemployment the integration of the young adult into the labor market is likely to be seriously hindered.

The above discussion stresses the importance of finding effective ways to protect young adults in the transition phase from school to work from experiencing unemployment. There is little dispute on this, and most advanced industrialized countries implement a variety of socio-political (e.g. educational and vocational curricula), labor market (e.g. job creating programs), organizational (e.g. initial training) or individual (e.g. vocational consulting) procedures for this group. Still, the success is limited as can be seen by statistics of youth unemployment in Belgium, England, Italy, Portugal, Spain, and the Netherlands (see Table 1).

**Table 1**  
**Youth unemployment and underemployment per country in 1989 (T2)**

Employment indicators in %	Belgium	UK	Netherl.	Italy	Portugal	Spain
Total youth (14-24y) unemployment	15.5	10.3	13.4	31.9	11.7	34.3
Male youth unemployment	11.4	11.2	12.7	26.0	8.5	27.5
Female youth unemployment	20.2	9.3	14.1	38.7	15.7	42.6
long-term unemployed youth (% of total unemployed youth)	55.7	22.3	21.4	69.0	39.4	54.6
Total unemployment rate	8.3	7.4	8.8	11.1	5.2	17.3
employees working part-time (% of total employees)	9.7	10.9	30.2	30.6	15.0	17.3
employees working temporary (% of total employees)	4.1	4.6	7.5	4.5	11.6	19.2

(1) Eurostat Labour Force Survey, Luxembourg 1992

In addition, institutional regulations, as for example part-time vocational education, work-training agreements, contracts for part-time work, programs for temporary employment of young people, workshop-schools, work-training subsidies, though well intentioned, also have their limitations, particularly in terms of establishing a surrogate youth labor market with part-time jobs and temporary jobs as alternatives to full-time, permanent employment (Aston, Maguire, and Spilsbury, 1990; Fevre, 1991). Table 1 shows the percentages of the employees working part-time and working temporary for the six European countries under study. A closer look at the employment situation in Europe (Commission of the European Communities, 1992) reveals that, at the time of our research, in the up to the age of 24 group, the proportion of women working part-time was 17% while for men it did not reach 5%. The proportion of women in temporary jobs was greater than for men in all the countries we study. Young people up to the age of 24 were also more employed part-time on fixed-term contracts, regardless of gender. Thus, besides unemployment, youth have to cope with another problem, that of avoiding underemployment and its consequences.

**This research study**

Underemployment is defined by the International Labor Organization (1983) as a situation where the employment of an individual does not meet certain standards or is insufficient compared to another possible job, taking into account the job qualifications of the involved person (such as training and occupational experience). The ILO further distinguishes between 'visible' and 'invisible' underemployment. Visible underemployment includes all persons (employed or self employed) who work less than the normal working hours within the industrial sector, and who are looking for an additional job or are available for a full-time job. Invisible underemployment is the consequence of a misallocation of available means concerning labor and is reflected for example in insufficient rewards for the performed labor, employees' working under their normal levels of ability and educational qualifications, and productivity. Kaplan's (1992) definition of underemployment combines both the visible and invisible component of the ILO definition by including the case that one's contract allows only for less hours as one would like to work, as well as the employment at lower pay than one had at a previous job, or the working below one's abilities. For O'Brien (1986) underemployment is low skill utilization and corresponds with the ILO's 'invisible' underemployment.

To categorize the literature we distinguish between two forms of (non-voluntary) underemployment: quantitative and qualitative underemployment. Quantitative underemployment includes persons having an employment contract, which offers less hours than one would like to work (e.g. non voluntary part-time work), or specifies (short-term) temporary constraints not sought by the individual (e.g. non voluntary temporary work). Therefore, in addition to ILO's definition of 'visible underemployment' our definition includes temporary work contracts if not preferred by the person. Quantitative underemployment lies between two extremes: unemployment, and employment entailing a work hour specification and tenure option as sought by the person.

Qualitative underemployment would generally include all persons forced to accept employment below one's qualification, experience or skill level. This often (although not always) goes along with lower pay as compared to the pay received by other employees with comparable qualification and experience. Examples for the extreme poles of qualitative underemployment are a skilled person to be pushed to take on unskilled work, and on the positive side, to be employed according to one's skill level. In this contribution we concentrate on quantitative underemployment as specified above and include unemployment as the upper limit of underemployment.



If, as discussed, for young career starters the main impact of unemployment lies less with the financial and social constraints but more with the lack of opportunities to gain experience needed to become a fully employed efficient member of the labor force, we can assume that underemployment will have similar, though perhaps less serious, effects on young workers' job satisfaction, performance and personality, than does unemployment. Recent research on underemployment supports this assumption (Khan and Morrow, 1991; Jones-Johnson and Johnson, 1992; Winefield, Winefield, Tiggemann, and Goldney, 1991; Borgen, Amundson, and Harder, 1988).

Although unemployment and underemployment reflect some kind of misfit between individuals' requests for labor and the availability of labor in a society, most research tends to limit the variables included in the analysis to either level. Economists interested in youth unemployment generally have focused on its relationship to labor market characteristics like adult unemployment, job creation, qualification shortage and demand, economic growth, and societal characteristics like population trends and urbanization (see for example Aston, Maguire and Spilsbury, 1990; Gaffikin and Morrissey, 1992). Sociological analysis of youth's experiences in their first "real" job have aimed at understanding the institutional and environmental contexts influencing social interaction and socialization of young workers in the work place (see for example Borman, 1991). Industrial psychologists and especially the career development specialists among them, have concentrated on organizational aspects like socialization qualities and individual attributes and behavior like qualifications, vocational decisions, or job search behavior (for example Hall and Associates, 1986; Montross and Shinkman, 1992).

This paper explores the relative effects of individual, organizational, labor market, and societal components on young adults' probability to become underemployed during their early career. The research question gains additional importance in the European countries involved in our study, because the Treaty on the European Union (signed 7 February 1992, in operation from 1 November 1993) grants geographical and occupational mobility of European citizens (i.e. every person holding the nationality of a Member State) in the internal market of the European Union (Council of the European Communities, 1992). Further the European Charter of Social Rights included in the Treaty on the European Union, puts the emphasis on the rights for the workers to better quality of working life. Clearly, within this frame, a better understanding of the occurrence of youth underemployment, its distribution among the countries, as well as an understanding of its major contributing factors, is needed.

The design of the study, part of a research on Work Socialization of Youth (WOSY International Research Group, 1989a), specifies that the respondents at the first measurement

moment are full-time employed in their first fully paid job. The reason for studying young workers who enter the labor market on a full-time job is to base the sample on youngsters who actually favor full-time employment over part-time jobs, temporary contracts, let alone unemployment. Thus it can be assumed that one year later - when we measure the eventual underemployment - their personal, family situations and preferences concerning employment will not have changed. According to our definition, we operationalize as underemployed those respondents that are unemployed but looking for work, work part-time, or work in temporary employment contracts.

### **Determinants of youth underemployment**

In our study of determinants of underemployment of young adults during their early career, we distinguish between rather fixed demographic/biological person-related characteristics; consequences of personal choices; offsprings of the initial labor market experience; and primary socio-economical and socio-political factors.

As person-related possible determinants of underemployment, the rather fixed demographic/biological characteristics such as sex and age are included. As the segmentation of the labor market shows, there exist specific occupational entry points attached to age, gender and qualification (Aston, Maguire and Spilbury, 1990). Despite all attempts in most European countries to increase equal opportunities for both genders in all occupational careers, women, as compared to men, have still a narrower range of job opportunities open to them, are predominantly in lower paid jobs, are concentrated in a more limited number of industries and trades than men, have more part-time and temporary contracts than men (Commission of the European Communities, 1992; Lee, 1991). For our sample of career starters, we still expect it to be harder for females to enter a full-time employment in line with their training, or in other words we expect females to have a higher chance of experiencing underemployment than males. In fact, this is already reflected in our attempt to sample two occupational groups in all of the countries, which resulted into an unequal sex distribution illustrating once again the pre-market segmentation according to gender: the machine operator group being mainly male (95.2%) and the office operator group being mainly female (70.1%).

Given that our sample is defined as first-time career starters and thus rather homogenous according to age, we do not expect age to have an impact on the probability to experience underemployment.

Within the group of consequences of personal choices as possible determinants of underemployment, we study the respondent's completed educational level, his/her decision for a specific occupational career, and the respondent's job search behavior (Gilman 1965).

Labor market statistics reflect that unemployment, is most frequent among the lower educated. This was confirmed by research (Mortensen 1986; Gilman 1965) showing that individual labor market prospects increase with the level of formal education completed. Thus we also expect that in our sample the educational background will have a negative effect on the probability of experiencing early unemployment and quantitative underemployment.

The choice for an occupational track is obviously related to later employment possibilities. In case of this study we included two occupational groups; one representing white-collar occupations: office technology operators, and one representing blue-collar workers: machine operators. Because of the restriction to these two groups with generally (over-country) similar positive labor market prospects, we expect that the choice of one of the two specific occupational careers, will have no significant impact on early underemployment.

In addition, we expect the effort a person puts into job search and thus the resulting quality of the job search behavior a person performs to be related to later underemployment. The young adults we study are in what Super (1957) denoted as the exploration stage of the career characterized by the individual's self-exploration and search for an appropriate occupation. Through this search behavior the youngster develops and refines a vocational self-concept. The process model of career exploration (Stumpf, Colarelli and Hartman, 1983) implies that individuals' beliefs and perceptions about exploratory behavior interacts with the actual exploration process and with reactions to exploration affecting further career development. In the practice of employment services, training in job search is a major tool in helping unemployed to find work. Courses preparing school leavers to the transition to work (should) include an introduction to various job search methods.

The quality and amount of initial labor market experience is expected to have a significant impact on the later career (see the discussion on the effects of un- and underemployment in the introduction on p6). Further, Morrison (1991) recent research has demonstrated that initial work experience has a major impact on the career progression. Those young adults which experience unemployment or underemployment at the beginning of their career should be worse off as compared to those being full employed, even if they are exposed to an organization of lower (career enhancing) quality. Thus, we expect initial underemployment after leaving the school to lead to a lack in career related organizational experience, and this in turn to induce a higher probability for continuing underemployment in the following year. For the same reason, initial employment experience in an organization emphasizing career development should lower the probability for later underemployment. Organizational socialization practices are examples of career development programs for integration and

socialization of new employees, which interact with the work personality of the youngsters and with other aspects of the work environment such as social supports, to become potential resources of individuals as they approach a new transition such as a first job (Leibowitz, Schlossberg and Shore, 1992). Organizational socialization tactics are related to task innovation behavior, role conflict, work centrality, mismatches, and career variables (WOSY International Research Group, 1992).

The wide range of macro societal factors which can determine the underemployment during the early career, can be divided into economic and non-economic factors. We study the labor market outlook and 'the country', the latter seen as an assessment of the totality of institutional influences underlying and determining the labor market.

Unemployment figures reflect differences in countries' labor markets. Such figures are presented regularly in the media, and thus are perceived by the career starters and supplemented by personal experience and other source of information to form a subjective view of current labor market prospects. The labor market outlook is one dimension of the beliefs about exploratory behavior (Stumpf, Colarelli, Hartman). We anticipate this perception to be accurate enough to predict later underemployment. Thus, labor market prospect, as perceived by the career starter, has an effect on later underemployment.

For skilled labor like our two occupational groups, the institutional structures of education and training regulates the flow of youth into the labor market. The countries under study differ in their educational and training systems as reflected for example in the duration of compulsory education - ranging for the respondents under study from 6 years in Portugal through 12 years in Belgium and the Netherlands - and in the variety of initial training systems such as apprenticeship, part-time vocational schools, skilled crafts centers (Commission of the European Communities, 1991). Further, countries differ in pay regimes which young workers encounter and in the segmentation of the labor market itself (Lee, 1991). We expect significant differences between the countries studied in the probabilities for career starters to experience underemployment.

## **Methods**

### Data

Data are collected from two occupational groups in six countries (Belgium, England, the Netherlands, Italy, Portugal, Spain) as part of an international research project on the work socialization of youth' (WOSY 1989a, 1989b, 1992). The WOSY study follows two target groups of youngsters (the office technology group and the machine operators in production/manufacturing) from the beginning of their work career in a full-time, fully paid job,

until two years later. Data gathering is through individual standardized interviews (WOSY International Research Group, 1989b) on three measurement points: between 9 months to maximum 12 months in first full-time, fully paid job (T1); one year later (T2); and an additional year later (T3).

Analysis of the first data wave results in a description of the starting phase of the work socialization process in the participating countries (WOSY International Research Team, 1992). The study of the actual process of work socialization commences when the second data wave becomes available (Class and Ruiz Quintanilla, 1992; Ruiz Quintanilla and Claes, 1992).

This contribution deals with the part of the longitudinal study covering the first two years of labor market participation (from T1 through T2), hence the early career. The number of respondents per country (thus aggregated over target groups) are: Belgium 285, England 295, Italy 250, the Netherlands 117, Portugal 170, Spain 276 (total N= 1393).

### Measures

The variables, initial underemployment and underemployment, stem from labor market experiences that are recorded at T1 and T2 in a retrospective tracing procedure over 6 periods of three months (T1: initial underemployment) and another 4 periods of three month one year later (T2: underemployment). Experiences are categorized into ten alternatives: regular full-time work, regular part-time work, temporary work, vocational education, general education, combination education (dominant) and work, combination education and work (dominant), unemployed looking for work, unemployed not looking for work, and finally military or civil service. Considered as underemployed are respondents that are unemployed but looking for work, working with temporary employment contracts, and working part-time work. The dependent variable underemployment reflects the extent of either unemployment, temporary work, or part-time work experienced in the one-year period between the two interviews, thus gained at T2, thus its range is between 0 and 4.

While the dependent variable is based on data collected during the second interview (two-and a half years after leaving school), all independent variables are based on data from the first interview about one year earlier.

For the person-related characteristics the respondents' age and gender are included as demographic/biological variables. For gender a dummy variable was calculated with 0 for man, and 1 for woman.

Within the factors 'consequences of personal choices', the educational background is operationalized by a single item on the highest grade of regular education a respondent had

completed. The four alternatives are primary school, secondary school, some college, and a university degree. Three dummy variables are calculated to include the variable in the analyses.

As mentioned two occupational groups (the office technology group and the machine operators in production /manufacturing) are studied. A dummy variable was calculated with 0 for the office technology group and 1 for the machine operator group.

Search practice is assessed by four items estimating the effort the respondents placed in finding a job when leaving school. The items ask about the amount of planning, gathering information, preparation for interviews, and systematically investigating employers (Stumpf, Colarelli and Hartman, 1983). The response scale is a five-point scale reaching from 1 "not at all" to 5 "a great deal". The alpha coefficient for the search practice variable is .80.

Under the heading 'initial labor market experience', first of all the initial underemployment after school leaving is measured by calculating the amount of underemployment during the one and a half year period before the T1 interview (the period between leaving school and the first interview) in the same way as for the dependent variable. Information is gathered for each of the six trimesters in this one and a half-year period. Having no employment, a temporary or a part-time job is taken as being underemployed. Therefore, the theoretical range of the underemployment variable is from 0 for no underemployment during the one and a half years to 6 for being underemployed all the time (for one and a half years). The respondents' evaluation of the quality of the organization in terms of job sequencing and training/socialization practices is assessed with two indices, disjunctive (based on three items; alpha = .60) versus fixed (based on three items; alpha = .58) socialization tactics (Jones, 1986).

Finally, for the socio-economic and socio-political factors, the labor market outlook during the search for an initial job is assessed with three items asking about the prospect to find an interesting job, one with a preferred company, and one in line with the received training (Stumpf, Colarelli and Hartman, 1993). The items use a five-point response scale reaching from 1 for "very poor" to 5 "very good". The alpha coefficient of this variable is .72. Five dummy variables are calculated using 1 and 0 codes to include country into the calculation.

### Analysis

Multiple regression analysis using the statistical package SPSSPC is performed to test the hypotheses. To estimate the direct effects of the independent variables, we examine the beta weights. In addition, the independent variables are organized in sets (personal data, education and occupation, search practice, experience, labor market outlook, and country) to estimate the relative importance (Cohen and Cohen 1983, 133ff). In absence of a hypothesis of hierarchical order for the sets, we use a simultaneous approach and the test function to

estimate the effects of each set on the dependent variable. This has the advantage that the effects of each set are based on all other variables (sets) being partialled out. Thus the variables included in the regression remains the same for all sets (Cohen and Cohen 1983, 148ff).

### Results

Table 2 presents the means, standard deviations, and the full correlation matrix. Correlations among the variables range from -.64 to .34. The higher correlations are found among the education dummy variables, between one of the country dummies and age - as was also found when studying the country specific trajectories into work (Claes and Ruiz Quintanilla, 1992), English youngsters leave secondary school at the age of 16 and then enter the structured Youth Training Scheme, leading to the work entry, which explains the younger respondents in England - and between the occupational group and gender (see remark about gender bias for occupational groups during sampling). Thus for the other variables no evidence of multicollinearity exist.

**Table 2: Summary Statistics of and Correlations Between All Measures**

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
<i>Personal data</i>																				
1. Age	20.04	2.77																		
2. Gender	.38	.49	11																	
<i>Education</i>																				
3. ED1	.03	.17	.06	-.08																
4. ED2	.79	.41	-.41	-.19	-.35															
5. ED3	.14	.35	.25	.20	-.07	-.78														
6. ED4	.04	.20	.36	.10	-.04	-.40	-.09													
<i>Occupational group</i>																				
7. TG	.45	.50	-.26	-.64	.14	.23	-.23	-.19												
<i>Search Practice</i>																				
8. SPTI	2.40	.92	-.06	.02	-.04	.04	-.02	-.00	-.06											
<i>Initial experience</i>																				
9. Disjunctive tactics	2.14	.92	.14	-.02	.06	-.09	.05	.03	.04	.01										
10. Fixed tactics	2.73	.91	-.34	-.16	-.02	.22	-.16	-.15	.21	.20	-.05									
11. Initial under-employment	1.32	1.78	.34	.14	.09	-.18	.13	.06	-.17	.04	.09	-.18								
12. Labor market outlook	2.84	.94	-.28	-.14	-.03	.15	-.11	-.09	.13	.10	-.09	.21	-.27							
<i>Country</i>																				
13. Belgium	.20	.40	.16	.03	-.09	-.29	.37	.06	-.02	-.10	.03	-.10	.08	.03						
14. Italy	.18	.38	.13	-.03	-.09	.25	-.19	-.10	-.07	.05	-.12	.03	.05	-.02	-.24					
15. Netherland	.08	.28	-.07	-.09	-.06	.16	-.12	-.06	-.07	-.10	.10	-.01	-.10	.12	-.15	-.14				
16. Portugal	.12	.33	.08	.02	.07	-.28	.24	.09	.04	-.08	.16	-.12	.16	-.23	-.19	-.17	-.11			
17. Spain	.20	.40	.33	.07	.25	-.10	-.08	.12	-.06	-.06	.04	-.19	.07	-.13	-.25	-.23	-.15	-.19		
18. England	.21	.41	-.63	-.03	-.09	.27	-.21	-.11	.06	.24	-.16	.36	-.25	.23	-.26	-.24	-.16	-.19	-.26	
19. Underemployment	.73	1.41	.16	.11	.17	-.21	.16	-.01	-.04	-.04	.14	-.16	.31	-.22	.02	-.17	-.01	.36	.11	-.25

N = 1393      r's  $\geq$  .06 are significant at  $p \leq$  .01; r's  $\geq$  .08 are significant at  $p \leq$  .001



**Table 3**  
**Results of regression analysis for underemployment**

<u>Test</u>		<u>Underemployment</u>		
Variables		B	$\beta$	t
<b>R<sup>2</sup>-Change</b>	<b>F</b>			
<b>Personal data</b>				
				.00
4.11*				
Age		-.03	-.06	-1.55
Gender (1=female)		.19	.09	2.19'
<b>Education and Occupation</b>				
				.01
6.41***				
ED1 (primary)		1.31	.16	4.98***
ED2 (secondary)		.56	.16	2.95**
ED3 (college)		.53	.13	2.82**
ED4 (university)				reference
TG (1=machine operator)		-.02	-.01	-.17
<b>Search practice</b>				
				.00
3.31				
SPT1		.07	.05	1.82
<b>Initial experience</b>				
				.04
23.17***				
Disjunctive tactics		.05	.03	1.25
Fixed tactics		-.03	-.02	-.69
Initial Underemployment		.17	.21	8.14***
<b>Labor market Outlook</b>				
				.00
7.49**				
LMO		-.10	-.07	-2.74**
Country				.10
38.65***				
Belgium		.69	.20	5.21***
Italy		.07	.02	.57
Netherlands		.69	.14	4.71***
Portugal		1.79	.42	12.00***
Spain		.82	.23	5.84***
England				reference
<b>TOTAL</b>				
				.27
32.64***				

\*  $p \leq .05$  \*\*  $p \leq .01$  \*\*\*  $p \leq .001$

Table 3 reports the results of the multiple regression analysis. All variables included, 27 percent of the total variance in underemployment is explained.

Results confirm the impact of gender on underemployment: as expected females do have a higher probability to experience underemployment during their early career (significant at the .01 level). The amount of underemployment which can be attributed to gender is approximately half-a-month. Thus, independent of the other variables in the equation females experience about half-a-month more of underemployment during the one year period between t1 and t2 as compared to male respondents.

As expected for our sample of young career starters in two occupational groups, age does not contribute to underemployment and the same is true for the choice among the two occupational groups.

Further, the results indicate that educational level does have a significant influence: individuals having completed less formal education are more likely to become underemployed during their early career. The maximum difference is found between the career starters who completed only primary education (ED1) and those with some university experience (our reference group). If we compare these two, then the group with the fewest formal education experiences approximately 4 month more of underemployment within the one-year-period between t1 and t2 compared to the group with the most formal education. As most of the youngsters starting a career in our two occupational groups have completed either secondary school or have some college education (93 percent of the total sample), this educational choices can be seen as in line with their occupational choice. Thus, we would argue that for our occupational groups (and the included European countries), having passed only primary school is an under-qualification and having university experience is an over-qualification. What remains is the variance between secondary education (ED2) and some college (ED3). If we focus our attention on the differences in underemployment between these two groups having an education in line with the occupational choice, the non significant difference in underemployment ( $t=.205$ ;  $p=.84$ ) shrinks to an approximately three days advantage on the side of the better educated during the one year period at issue.

Divergent from our hypotheses more elaborate search practices do not have a significant impact on later underemployment. The same is true for both organizational quality measures (disjunctive and fixed socialization tactics) which are not significantly related to later underemployment. However, the results support that initial underemployment has a significant (at the .001 level) positive effect on later underemployment.

In addition, labor market outlook as perceived by the career starter has a significant (at the .01 level) impact on later underemployment. Finally the results reflect great differences in underemployment between the countries independent of the other variables in the equation. The highest danger for career starters early underemployment exist in Portugal, followed by Spain, Belgium and the Netherlands (all significant at the .001 level). A relatively lower likelihood for career starters experiencing early underemployment exists in Italy and England.

When comparing the  $R^2$ -Changes which the different sets of variables explain, we find that the variance explained by the country dummies is about 10 percent of the total variance or 37 percent of the explained variance. This is about 2.5 times as much as is contributed by the set next in importance, concerned with initial labor market experience, and 10 times as large as the variance explained by educational level. Thus in explaining underemployment in early careers macro level (country) factors are much more powerful as compared to individual and organizational level factors.

### **Discussion, Limitations, and Implications**

Quantitative underemployment, defined as periods of unemployment, temporary employment, and part-time employment is of psychological importance, because it delays or hinders the integration of career starters into the world of work by excluding them from the experience needed to develop competencies and knowledge essential for functional participation in the labor force. A first step to decrease the occurrence of underemployment for career starters lies with a better understanding of the relative importance of contributing factors. This paper used a longitudinal multi-country study to explore the relative importance of individual, organizational, and macro level factors on the occurrence of underemployment.

Given that we sampled two occupational groups with similar favorable labor market prospects and age distribution, the rejection of the age and occupational group related hypotheses can be taken as confirmation of our research design.

Starting with individual level variables, the results confirmed that females still have a higher probability in European countries to experience underemployment in their early careers. This result is even more remarkable, because we had to give up our attempt to balance gender within the two occupational groups. For most of the countries we were not able to find enough female machine operators. This reflects that in the included countries the machine operator occupation is still a mainly male dominated domain. For the reported gender effect it means that the figure underestimates the likelihood of females in general to become underemployed. A

higher probability can be expected if those females would be included, who happen to be among the few, being educated in a male dominated occupation and trying to find employment.

As expected, underemployment is more likely among career starters with less formal education. Still, this influence is rather moderate if we focus our attention on the formal education generally in line with the occupational choice and not to a comparison with an extremely under- or overqualified group.

We could not confirm that the quality of the initial organization, the career starters are exposed to has an effect on later underemployment. This result should be taken with care for at least two reasons. As mentioned the reliabilities of the scales assessing disjunctive and fixed socialization tactics of the organization were rather low. Secondly, as with most of our measures, we rely on the subjective retrospective information of the respondent.

Better search practices, at least as reported by the career starters did not help to avoid underemployment. A tentative explanation for this finding can lie in the longitudinal effect of job search behavior and our moment of measuring it. The search practices as reported by our respondents at T1 reflect the search behavior the youngsters performed to get their first full-time job. Thus the short-term effect of search practices is the work entry into full-time employment. Then, the person-situation (mis)fit in this first job - and especially gender, education, initial experience, and above all the country specific context - affect the probability of the youngster to future underemployment. Study of the search practices performed with each change in the employment situation, may reveal it's long-term effect on the career development as a whole.

The most powerful individual level variable explaining later underemployment of career starters turned out to be initial underemployment. Career starters who experience underemployment immediately after leaving school have a higher likelihood to become again underemployed one year later. The result can be taken as a confirmation of our main thesis that early underemployment of career starters harms the smooth integration of these into the labor market at least in the following year. The career starter seems to end up in a kind of catch 22 situation, where lack of initial experience in the labor market makes it even more difficult to get access to any initial experience.

Finally, the results show that underemployment is in the first place related to country specific macro influences. Most of the variance explaining underemployment is related to country.

A major limitation of these study is that country was used as nominal variable in the analysis, thus the contents of the real sources of the variance could not be tested. A careful interpretation of the results allows only to state that macro variables related to country explain

more of the variance of career starters underemployment as compared to any other individual or organizational level variable included in the equation, but it leaves it to future research to specify and test the dimensions responsible for this. Still, it seems reasonable, that most of the explained variance can be attributed to the countries' condition of the labor market, it's educational and training institutions, and variables like age and skill distribution in the population as much of the economic oriented labor market research has shown. Other country related dimension can be excluded on theoretical grounds. For example, we do not know of any theory, which claims a relationship between languages, which also varies among the countries studied, and underemployment and suggests a procedure to transfer the languages in an ordinal scale which would reflect the (country specific) beta weights of the analysis. Thus, substituting nominal (black-box) country variable in the analysis with "real" macro variables remains to be done in another study.

Finally, the confirmed relationship between the respondents subjective perceived labor market outlook and later experience of underemployment can be taken as an additional confirmation of the importance of labor market related factors.

What are implications of the findings? Our results reflect the importance of socio-economical and socio-political strategies if it comes to avoid underemployment of career starters. Strategies aiming at the individual level, like improving the quality of the initial experience a career starter, does - if at all - only help those individuals who are lucky enough to be hired by organizations in the first place. Similar, the suggestion to aim for a higher education, helps the ones who follow that advice, by giving them some advantage, but leaves the remaining in an unchanged situation. Thus, individual level improvements assume that the labor market offers enough open positions to absorb a high percentage or all members of an age cohort. If this is not the case, individual variables mainly contribute to the distribution of the available work among the age cohort, but do not help to lower the percentage of those career starters left with no or limited access to the labor market. Thus, our results show that individual level variables regulate the distribution, but do not make a notable contribution to avoid underemployment among career starters in general.

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