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Econometric Analysis of the LFS Micro-Data: Exploring the Risk of Unemployment in Three Southern Greek Regions During the CSF-1

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Title: “Econometric analysis of the LFS micro-data: Exploring the risk of unemployment in three Southern Greek Regions during the CSF-1”

Introduction

The basic target of this paper is to study the impact that education and training programmes (apprenticeship, intra-firm training, continuing vocational training, popular training) have on the labour market in three Southern Greek Regions (Attica, Southern Aegean and Crete) during the implementation of the first Community Support Framework (1988-1993). Namely, we try to see if the educational level itself and participation in training programmes increase the chances of finding a job.

Main questions to be answered

- (i) What are the social and demographic characteristics that increase the probability of someone in the examined population finding a job;
- (ii) how probabilities change (if they do) after the introduction of training courses;
- (iii) if the University graduates, in contrast to most of the rest of the EU member states, face greater difficulties in finding a job than the non-University graduates, as a series of studies (see Meghir *et al.*,1989; OECD,1990; Iliades,1995; IN.E./GSEE-ADEDY,1999; Katsikas, 2005) or statistics (Labour Force Survey) for Greece conclude.

We test the human capital theory, which underpins many of the important developments in modern economics and provides one of the main explanations for wage and salary differentials by age and occupation, and the uneven incidence of unemployment by

skill (education and training). Namely, we try to research whether the more educated and the more trained a person is, the higher the probability of him finding a job.

To the author's knowledge, such a study - based on individual anonymized records of the Labour Force Survey (LFS) - has never been undertaken for Attica, Southern Aegean or Crete.

1. The Region of Attica

The Region of Attica (NUTS-2 and Objective 1 status during the CSF-1) - which is geographically situated in Central Greece - is the county of Attica and consists of four prefectures (Attica or Athens, Eastern Attica, Western Attica and Piraeus). The above region is the one and only region-county in Greece, since according to 1991 census its population size was about 3.5 million inhabitants; namely, 3 out of 10 Greeks lived in Attica. The capital of the region is the city of Athens, which is by far the most important Greek city in economic, administrative and political terms. Also, the third biggest Greek municipality in terms of population, that of Piraeus, is found in Attica as well.

The following information on Attica come from the websites www.ypes.gr/attiki and www.choosegreece.com.

In 1988, Attica's GDP was equal to 61% of the EU average (58% for Greece as a whole), whereas in 1996 the Region improved its position since its GDP was 77% of the EU mean (68% for the country as a whole). For the period 1994-96 the average GDP per capita in Attica was 74.9% of the EU mean (Eurostat and DG XVI). Attica is ranked 3rd among the 13 Greek regions, based on that criterion (GDP), after Central Greece and the Southern Aegean, with 106% being the region's average in 2001 (a decline from 111% in 1999).

Attica is one of four of the Greek regions in which a natural rise in population can be noted from 1991 to 2001. Between the 1991 census and 2001 census the population rose by 6.8%, a rise almost equal to that of the national total (6.9%).

In 1994, the primary sector contributed 2.2% of the region's GDP, the industrial activity entailed 24.8% of the regional GDP (like the national one), whereas the tertiary sector contributed 73% (the respective national percentages for the primary and tertiary sector were 15% and 60% - ESYE). The Region of Attica produces 37.4% of the country's GDP (1994). The Region produces 2.7% of the country's agricultural produce, 35.5% of the manufacturing and 42% of services (2001).

In 1997, just 1% of people in employment were working in the primary sector, 25.3% in the secondary sector and 73.7% in the tertiary sector (the respective national percentages were 19.8%, 22.5% and 57.7% - ESYE). The Region of Attica has about 37% of jobs, whilst it collects about 44% of the country's unemployed. The period 1988-1995 is characterized by an impressive increase in the Region's manpower. According to the LFS, between this period the workforce increased by 15.6%, whilst jobs increased by 13.4%. From 1988 to 1995 there was an increase in the percentage of unemployed from 10% in

1988 to 11.7% of the workforce in 1995 (LFS)¹.

2. The Region of Southern Aegean

The following information on Southern Aegean come from the websites www.economics.gr and www.choosegreece.com.

The Region of Southern Aegean consists of the counties of the Cyclades and the Dodecanese. The main town of the Region is Ermoupolis, Syros. The region's population is 2.8% of the country's total and the trend is increasing. It is noteworthy that between the census of 1991 and 2001 the population rose 17.6%, the largest increase in the country.

In 2001, the Region's GDP was equal to 77% of the EU-15 average (69% for Greece as a whole), whereas in 2003 the Region's GDP was 94% of the EU-25 mean (80.9% for the country as a whole). Southern Aegean was ranked 2nd among the 13 Greek regions, based on that criterion (GDP), after Central Greece, with 113% being the region's average in 2001 (a decline from 120% in 1999). Its position relating to the above criterion is deteriorating, since the corresponding percentage in 1995 was 108% of the national mean.

It produces 3.1% of the country's GDP, 2.8% of the agricultural produce, 0.5% of manufacturing and 3.8% of services. The services' sector makes up 85% of the region's production, whereas tourism plays an important part, since 27% of the regional gross product stems from hotels and restaurants. The region has the second lowest percentage of cultivated land in the country (1.9% in 2001). It accounts for 34% of total overnight visitors at country level, which is the highest number of overnight visitors per inhabitant (60 in 1999).

Unemployment in Southern Aegean decreased by half a point in 2001 to 12%, the 5th highest unemployment rate in the country (national mean 10.5).

3. The Region of Crete

The following information on Crete come from the websites www.economics.gr and www.choosegreece.com.

The Region of Crete consists of the counties of Iraklio, Lasithi, Rethymno and Chania. The main town of the Region is Iraklio. The region's population is 5.5% of the country's total and the trend is increasing. It is worth mentioning that the region has the second highest rate of population increase after that of Southern Aegean (2001). There is a population rise of 11.3% from the 1991 to the 2001 census, which is the second largest increase in the country after that of the Southern Aegean.

In 2001, the Region's GDP was equal to 67% of the EU-15 average (69% for Greece as a whole), whereas in 2003 the Region's GDP was 78% of the EU-25 mean (80.9% for the country as a whole). Crete was ranked 6th among the 13 Greek regions, based on that criterion (GDP).

It produces 5.3% of the country's GDP, 7.9% of the agricultural produce, 1.3% of manufacturing and 5.9% of services. The services' sector makes up 75% of the region's production, whereas tourism plays an important part, since 15% of the regional gross product stems from hotels and restaurants. 7.5% of the country's cultivated land is in this Region, 35% of total olive oil production (first in the country in 2001).

¹ The percentage of unemployment is characterized by an augmentative tendency with the exception of the two year period 1989-1990, during which it shows a momentary decrease.

It accounts for 25% of the overnight visitors at country level (2nd largest contribution after the Southern Aegean in 2001) being the third highest (after the Southern Aegean and the Ionian Islands) percentage of overnight visitors per inhabitant (22 in 1999).

Unemployment in Crete decreased by 0.2 units in 2001 to 6.7% and this was for the third consecutive year (with 10.5% being the national total), and it was the 2nd lowest rate of unemployment in the country. Unemployment in Crete slightly increased in 2004 to 7.6% of the labour force, the 2nd lowest rate in the country (national average 10.5%).

4. The logistic regression based on the micro-data of the Greek LFS

The basic aim of the econometric analysis is to test the impact that the educational level and training programmes (apprenticeship, intra-firm training, CVT, popular training) have on people's job prospects in the Regions of Attica, Southern Aegean and Crete during the implementation of the CSF-1 (1988-93) accounting for demographic characteristics such as age, gender, area of residence and marital status. Namely, we try to see whether participation in training programmes and educational level increase the chances of finding a job.

We test the human capital theory, namely whether the more educated and the more trained a person is, the higher the probability of him of finding a job. As we have already mentioned, according to a series of studies in the case of Greece - unlike most of its EU counterparts - university graduates are having more difficulties finding a position in the labour market than the less educated.

The originality of this research is that we use individual anonymized records (micro-data) of the LFS for both employed and unemployed (about 53,000 records per year for Attica, 3,300 records per year for Southern Aegean and 6,300 records per year for Crete, namely 1.5% of the total population of each Region).

Since the dependent variable takes two possible values (employed versus unemployed) the analysis will be conducted using a logistic regression model. The models were fitted using SPSS version 13.0. The expected value of the dependent variable under the model is a conditional probability of a given individual being employed or unemployed *ceteris paribus*. The explanatory variables are the (four) types of training completed (as mentioned above), six levels of education, gender, age (four categories), marital status and residence location (Athens, the rest of urban areas, semi-urban areas and rural areas).

As already mentioned, our research questions are: what characteristics increase the chances of the various population groups of finding a job; how probabilities change (if they do) following the introduction of training courses; and whether the University graduates, in contrast to most of the rest of the EU member states, face greater difficulties in finding a job than the non-University graduates, as a series of studies or statistics for Greece conclude (see page 1).

4.1. Description of the variables

The next Tables show the numbers of employed, unemployed and non-active in the LFS samples (in spring, namely from the 14th to 26th week of the year) of all three Regions under examination in 1988 and 1992.

| 1988 | Employed | Unemployed | Non active | System missing | Total |
|-------------|-----------------|-------------------|-------------------|-----------------------|--------------|
| Attica | 18,166 | 2,023 | 23,580 | 9,886 | 53,655 |

| 1992 | Employed | Unemployed | Non active | System missing | Total |
|-------------|-----------------|-------------------|-------------------|-----------------------|--------------|
| Attica | 18,465 | 2,158 | 24,338 | 8,265 | 53,226 |

| 1988 | Employed | Unemployed | Non-active | System missing | Total |
|-----------------|-----------------|-------------------|-------------------|-----------------------|--------------|
| Southern Aegean | 1229 | 67 | 1366 | 683 | 3345 |

| 1992 | Employed | Unemployed | Non-active | System missing | Total |
|-----------------|-----------------|-------------------|-------------------|-----------------------|--------------|
| Southern Aegean | 1228 | 50 | 1389 | 603 | 3270 |

| 1988 | Employed | Unemployed | Non-active | System missing | Total |
|-------------|-----------------|-------------------|-------------------|-----------------------|--------------|
| Crete | 2898 | 104 | 2288 | 1292 | 6582 |

| 1992 | Employed | Unemployed | Non-active | System missing | Total |
|-------------|-----------------|-------------------|-------------------|-----------------------|--------------|
| Crete | 2659 | 102 | 2173 | 1064 | 5998 |

Following the limitation of age (15-64 years old) and removing the non-active population, we ended up with the following number of records eligible for analysis in each Region:

| Year | Region | No. of records |
|-------------|-----------------|-----------------------|
| 1988 | Attica | 19922 |
| 1988 | Southern Aegean | 1110 |
| 1988 | Crete | 2633 |
| 1992 | Attica | 20301 |
| 1992 | Southern Aegean | 986 |
| 1992 | Crete | 2274 |

Due to the categorical nature of the dependent variable, the logistic model is one of the most appropriate modes to be used. The logistic regression model is written as:

$$\text{logit } P(y = 1 | x_1, \dots, x_k) = \log \left[\frac{P(y = 1 | x_1, \dots, x_k)}{1 - P(y = 1 | x_1, \dots, x_k)} \right] = \beta_0 + \sum_{k=1}^K \beta_k x_k ,$$

where $P(y = 1 | x_1, \dots, x_k)$ and $1 - P(y = 1 | x_1, \dots, x_k)$ denote the conditional probability a randomly selected individual to be ‘unemployed’ and ‘employed’ respectively. The coefficient β_k denotes the effect of the explanatory variable x_k on the log odds of being ‘unemployed’ than ‘employed’ and β_0 is the intercept of the model and the value of the logit when all the explanatory variables take the value zero. More specifically, a unit increase in the x_k multiplies the odds by e^{β_k} .

Solving the above formula with respect to the conditional probability we have:

$$P(y = 1 | x_1, \dots, x_k) = \frac{e^{\beta_0 + \sum_{k=1}^K \beta_k x_k}}{1 + e^{\beta_0 + \sum_{k=1}^K \beta_k x_k}}$$

We define now the list of variables that we analyse.

Dependent and Explanatory Variables

Dependent variable

Employment status (STA1) (Unemployed= 1, Employed =0)

Explanatory variables (the base categories are underlined)

- 1) Gender (STA 2) (Female = 1, Male=0)
- 2) Marital status (STA 3) (Non-married =0, Married, divorced or widows =1)
- 3) Level of education (STA8A-STA8D)

STA 8A = University graduates

STA8A1= MSc or PhD holders

STA 8B = Polytechnic (TEI) graduates

STA 8C = Lyceum graduates (12 years of schooling) or not finished University

STA8C1= High-school graduates (9 years-compulsory education)

STA 8D = Primary school graduates or not finished primary school or never in school.

4) Urbanization level of settlement system (STA9A-STA9E)

STA 9A =Athens Area

STA 9B = Thessaloniki Area

STA 9C = Rest of urban areas

STA 9D = Semi-urban areas

STA 9E = Rural areas

5) Participation in the past in training course(s) (STA 26A-STA26D) (only for 1992)

STA 26A = apprenticeship

STA 26B = intra-firm training

STA 26C = CVT (Continuing Vocational Training)

STA 26D = popular training

6) Age groups (STA 40A-STA40E)

STA 40A =15-24 years old

STA 40D = 25-34 years old

STA 40E = 35-44 years old

STA 40C = 45-64 years old

The base (or reference) categories are those which do not appear in the output of the regression results and with which the rest of the corresponding variables are compared. The reference categories are chosen so that to match the needs of the research.

We have excluded the 14 and 65 year olds in order to avoid including in our analysis those who are younger than 14 and older than 65 years old.

The variable “participation in the past in training course(s)” is only available in the 1992 questionnaire. This is also an indicator of the attitude towards training in Greece at the end of the 1980s.

5. Results for Attica

5.1. Results for Attica, 1988

Logistic Regression

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|------------------------|----------|--------|------|---------|----|------|--------|
| Step 1 ^a | sta2 | ,806 | ,051 | 248,053 | 1 | ,000 | 2,238 |
| | sta3 | -,680 | ,063 | 115,389 | 1 | ,000 | ,507 |
| | sta40C | -1,623 | ,097 | 282,736 | 1 | ,000 | ,197 |
| | sta40D | -,933 | ,066 | 197,943 | 1 | ,000 | ,393 |
| | sta40E | -1,401 | ,086 | 262,722 | 1 | ,000 | ,246 |
| | sta8A1 | -,423 | ,297 | 2,034 | 1 | ,154 | ,655 |
| | sta8B | -,100 | ,093 | 1,171 | 1 | ,279 | ,905 |
| | sta8C | ,017 | ,072 | ,056 | 1 | ,813 | 1,017 |
| | sta8C1 | ,023 | ,091 | ,064 | 1 | ,801 | 1,023 |
| | sta8D | ,054 | ,079 | ,464 | 1 | ,496 | 1,055 |
| | sta9C | ,816 | ,329 | 6,154 | 1 | ,013 | 2,261 |
| | sta9D | ,285 | ,349 | ,668 | 1 | ,414 | 1,330 |
| | sta9A | ,885 | ,305 | 8,398 | 1 | ,004 | 2,423 |
| | Constant | -2,034 | ,313 | 42,131 | 1 | ,000 | ,131 |

a. Variable(s) entered on step 1: sta2, sta3, sta40C, sta40D, sta40E, sta8A1, sta8B, sta8C, sta8C1, sta8D, sta9C, sta9D, sta9A.

5.2. Results for Attica, 1992

Logistic Regression

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|------------------------|----------|--------|------|---------|----|------|--------|
| Step 1 ^a | sta2 | ,902 | ,049 | 337,149 | 1 | ,000 | 2,465 |
| | sta3 | -,549 | ,063 | 74,935 | 1 | ,000 | ,577 |
| | sta40C | -1,483 | ,093 | 256,464 | 1 | ,000 | ,227 |
| | sta40D | -,897 | ,067 | 179,444 | 1 | ,000 | ,408 |
| | sta40E | -1,369 | ,086 | 251,640 | 1 | ,000 | ,254 |
| | sta8A1 | ,496 | ,307 | 2,612 | 1 | ,106 | 1,643 |
| | sta8B | ,133 | ,106 | 1,577 | 1 | ,209 | 1,142 |
| | sta8C | ,301 | ,075 | 16,252 | 1 | ,000 | 1,351 |
| | sta8C1 | ,475 | ,098 | 23,407 | 1 | ,000 | 1,608 |
| | sta8D | ,646 | ,080 | 65,228 | 1 | ,000 | 1,908 |
| | sta9C | ,395 | ,257 | 2,365 | 1 | ,124 | 1,484 |
| | sta9D | ,238 | ,260 | ,838 | 1 | ,360 | 1,269 |
| | sta9A | ,187 | ,236 | ,629 | 1 | ,428 | 1,206 |
| | sta26A | -,203 | ,373 | ,296 | 1 | ,586 | ,816 |
| | sta26C | ,500 | ,460 | 1,182 | 1 | ,277 | 1,649 |
| | Constant | -1,833 | ,248 | 54,712 | 1 | ,000 | ,160 |

a. Variable(s) entered on step 1: sta2, sta3, sta40C, sta40D, sta40E, sta8A1, sta8B, sta8C, sta8C1, sta8D, sta9C, sta9D, sta9A, sta26A, sta26C.

5.3. Analysis of the results for Attica

1988

Gender (STA2): Women were more likely to be unemployed than men (because 1 is woman in the model).

Marital status (STA3): The married (including divorced and widows) were less likely to be unemployed than the non-married (because 1 is married in the model).

People who belong to the **three age groups (STA40C, STA40D, STA40E)** were less likely to be unemployed than the age group 15-24 years old (the base category). This seems reasonable, given the difficulties of young people to find a job.

All five educational variables (STA8A1, STA8B, STA8C, STA8C1, STA8D) are statistically non-significant, namely the fact that someone belongs to those levels of education does not have any effect on him/her finding a job. This result is probably related to the fact that the 1992 LFS questionnaire is more detailed concerning questions on education than the corresponding one of 1988.

Athens Area (STA9A): Someone who lived there was more likely to be unemployed than in rural areas (the base category). One reason may be the fact that in the Greek agrarian sector hidden unemployment does exist.

Rest of urban areas (STA9C): Someone who lived there was more likely to be unemployed than in rural areas (the base category). Again, one reason may be the fact that in the Greek agrarian sector hidden unemployment does exist.

Semi-urban areas (STA9D): It is statistically non-significant.

1992

Gender (STA2): Women were more likely to be unemployed than men (because 1 is woman in the model).

Marital status (STA3): The married (including divorced and widows) were less likely to be unemployed than the non-married (because 1 is married in the model).

People who belong to the **three age groups (STA40C, STA40D, STA40E)** were less likely to be unemployed than the age group 15-24 years old (the base category). This seems reasonable, given the difficulties of young people to find a job.

Three educational variables (STA8C, STA8C1 and STA8D) are statistically significant, namely someone who belongs to these educational levels was more likely to be unemployed than the University graduates (the base category). This confirms the common perception in Greece and is in contrast to some studies which assert the opposite (see page 1). However, the variables **STA8A1 and STA8B** are statistically non-significant, namely the fact that someone belongs to this level of education does not have any effect on him/her finding a job.

All three variables concerning the urbanization levels of settlement system (STA9A, STA9C, STA9D - see description of variables) are statistically non-significant. This seems reasonable for Attica, since - as we have already mentioned - Attica is the only county-region in Greece, so, in Attica, the meaning of semi-urban and rural areas is very relevant.

Apprenticeship (STA26A): It is statistically non-significant.

Continuing Vocational Training (STA26C): It is statistically non-significant.

6. Results for Southern Aegean

6.1. Results for Southern Aegean, 1988

Logistic Regression

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|-----------|----------|--------|-------|--------|----|------|--------|
| Step 1 | sta2 | 1,343 | ,371 | 13,083 | 1 | ,000 | 3,831 |
| | sta3 | -,883 | ,421 | 4,403 | 1 | ,036 | ,413 |
| | sta8B | 1,476 | 1,266 | 1,359 | 1 | ,244 | 4,376 |
| | sta8C | 1,885 | 1,068 | 3,113 | 1 | ,078 | 6,587 |
| | sta8C1 | ,788 | 1,256 | ,393 | 1 | ,531 | 2,198 |
| | sta8D | 1,418 | 1,062 | 1,784 | 1 | ,182 | 4,128 |
| | sta9C | 1,857 | ,639 | 8,453 | 1 | ,004 | 6,405 |
| | sta9D | 1,899 | ,681 | 7,772 | 1 | ,005 | 6,681 |
| | sta40D | -1,520 | 1,450 | 1,099 | 1 | ,295 | ,219 |
| | sta40E | -,701 | 1,168 | ,360 | 1 | ,548 | ,496 |
| | sta40C | ,218 | 1,079 | ,041 | 1 | ,840 | 1,243 |
| | Constant | -6,138 | 1,572 | 15,243 | 1 | ,000 | ,002 |

a. Variable(s) entered on step 1: sta2, sta3, sta8B, sta8C, sta8C1, sta8D, sta9C, sta9D, sta40D, sta40E, sta40C.

6.2. Results for Southern Aegean 1992

Logistic Regression

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|-----------|----------|--------|-------|--------|----|------|--------|
| Step 1 | sta2 | ,585 | ,461 | 1,613 | 1 | ,204 | 1,795 |
| | sta3 | -,963 | ,599 | 2,582 | 1 | ,108 | ,382 |
| | sta8B | ,523 | 1,073 | ,237 | 1 | ,626 | 1,687 |
| | sta8C | ,749 | ,507 | 2,181 | 1 | ,140 | 2,115 |
| | sta9C | ,944 | ,590 | 2,565 | 1 | ,109 | 2,571 |
| | sta9D | ,832 | ,721 | 1,330 | 1 | ,249 | 2,297 |
| | sta40D | -,906 | 1,097 | ,681 | 1 | ,409 | ,404 |
| | sta40C | -,617 | ,529 | 1,359 | 1 | ,244 | ,539 |
| | Constant | -3,598 | ,819 | 19,311 | 1 | ,000 | ,027 |

a. Variable(s) entered on step 1: sta2, sta3, sta8B, sta8C, sta9C, sta9D, sta40D, sta40C.

6.3. Analysis of the results for Southern Aegean

1988

Gender (STA2): Women were more likely to be unemployed than men (because 1 is woman in the model).

Marital status (STA3): The married (including divorced and widows) were less likely to be unemployed than the non-married (because 1 is married in the model).

All three age groups (STA40C, STA40D, STA40E) are statistically non-significant.

Four educational variables (STA8B, STA8C, STA8C1, STA8D) are statistically non-significant, namely the fact that someone belongs to those levels of education does not have any effect on him/her finding a job. This result is probably related to the fact that the 1992 LFS questionnaire is more detailed concerning questions on education than the corresponding one of 1988. There is no result for the variable **STA8A1**.

Urban areas (STA9C): Someone who lived there was more likely to be unemployed than in rural areas (the base category). One reason may be the fact that in the Greek agrarian sector hidden unemployment does exist.

Semi-urban areas (STA9D): Someone who lived there was more likely to be unemployed than in rural areas (the base category).

1992

All the variables in the Region of Southern Aegean in 1992 are statistically non-significant.

7. Results for Crete

7.1. Results for Crete, 1988

Logistic Regression

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|------------------------|----------|--------|-------|--------|----|------|--------|
| Step 1 ^a | sta2 | 1,146 | ,271 | 17,851 | 1 | ,000 | 3,144 |
| | sta3 | -,815 | ,292 | 7,812 | 1 | ,005 | ,443 |
| | sta8A1 | 1,576 | 1,170 | 1,814 | 1 | ,178 | 4,835 |
| | sta8B | 1,294 | ,465 | 7,736 | 1 | ,005 | 3,646 |
| | sta8C | ,704 | ,432 | 2,663 | 1 | ,103 | 2,023 |
| | sta8C1 | -,079 | ,635 | ,015 | 1 | ,901 | ,924 |
| | sta8D | -,144 | ,458 | ,099 | 1 | ,753 | ,866 |
| | sta9C | 2,421 | ,557 | 18,908 | 1 | ,000 | 11,254 |
| | sta9D | 1,956 | ,628 | 9,682 | 1 | ,002 | 7,068 |
| | sta40D | -,924 | 1,253 | ,543 | 1 | ,461 | ,397 |
| | sta40E | -,015 | 1,102 | ,000 | 1 | ,989 | ,985 |
| | sta40C | ,539 | 1,064 | ,257 | 1 | ,612 | 1,715 |
| | Constant | -5,853 | 1,198 | 23,887 | 1 | ,000 | ,003 |

a. Variable(s) entered on step 1: sta2, sta3, sta8A1, sta8B, sta8C, sta8C1, sta8D, sta9C, sta9D, sta40D, sta40E, sta40C.

7.2. Results for Crete, 1992

Logistic Regression

Variables in the Equation

| | | B | S.E. | Wald | df | Sig. | Exp(B) |
|------------------------|----------|--------|-------|--------|----|------|--------|
| Step 1 ^a | sta2 | 1,941 | ,422 | 21,158 | 1 | ,000 | 6,963 |
| | sta3 | -1,230 | ,452 | 7,395 | 1 | ,007 | ,292 |
| | sta8B | ,125 | ,908 | ,019 | 1 | ,890 | 1,133 |
| | sta8C | ,350 | ,652 | ,288 | 1 | ,592 | 1,419 |
| | sta8C1 | 2,012 | ,772 | 6,794 | 1 | ,009 | 7,479 |
| | sta8D | ,751 | ,596 | 1,589 | 1 | ,208 | 2,119 |
| | sta9C | 4,081 | 1,035 | 15,560 | 1 | ,000 | 59,219 |
| | sta9D | 2,131 | 1,239 | 2,960 | 1 | ,085 | 8,427 |
| | sta40D | -,603 | ,775 | ,606 | 1 | ,436 | ,547 |
| | sta40E | -,528 | ,563 | ,879 | 1 | ,349 | ,590 |
| | Constant | -7,825 | 1,237 | 40,024 | 1 | ,000 | ,000 |

a. Variable(s) entered on step 1: sta2, sta3, sta8B, sta8C, sta8C1, sta8D, sta9C, sta9D, sta40D, sta40E.

7.3. Analysis of the results for Crete

1988

Gender (STA2): Women were more likely to be unemployed than men (because 1 is woman in the model).

Marital status (STA3): The married (including divorced and widows) were less likely to be unemployed than the non-married (because 1 is married in the model).

All three age groups (STA40C, STA40D, STA40E) are statistically non-significant.

Four educational variables (STA8A1, STA8C, STA8C1, STA8D) are statistically non-significant, namely the fact that someone belongs to those levels of education does not have any effect on him/her finding a job. This result is probably related to the fact that the 1992 LFS questionnaire is more detailed concerning questions on education than the corresponding one of 1988. Only the variable **STA8B (Polytechnic graduates)** is statistically significant, namely someone who belongs to this educational level was more likely to be unemployed than the University graduates (the base category).

Urban areas (STA9C): Someone who lived there was more likely to be unemployed than in rural areas (the base category). One reason may be the fact that in the Greek agrarian sector hidden unemployment does exist.

Semi-urban areas (STA9D): Someone who lived there was more likely to be unemployed than in rural areas (the base category).

1992

Gender (STA2): Women were more likely to be unemployed than men (because 1 is woman in the model).

Marital status (STA3): The married (including divorced and widows) were less likely to be unemployed than the non-married (because 1 is married in the model).

The variables of the age groups **STA40D, STA40E** (there is no result for **STA40C**) are statistically non-significant.

The educational variable STA8C1 (9 years-compulsory education) is statistically significant, namely someone who belongs to this educational level was more likely to be unemployed than the University graduates (the base category). This confirms the common perception in Greece and is in contrast to some studies which assert the opposite (see page1). However, the variables **STA8B, STA8C and STA8D** are statistically non-significant, namely the fact that someone belongs to these levels of education does not have any effect on him/her finding a job.

Urban areas (STA9C): Someone who lived there was more likely to be unemployed than in rural areas (the base category). One reason may be the fact that in the Greek agrarian sector hidden unemployment does exist.

Semi-urban areas (STA9D): It is statistically non-significant.

8. Conclusions

Concluding remarks on the results for Attica

In 1988 and 1992, women, non-married and young people (15-24 years old) were more likely to be unemployed than married men and people in older age groups.

In 1988, education was not found to be statistically significant. On the contrary, in 1992 university graduates were more likely to be employed compared to Lyceum, high school and primary school graduates. This confirms the common perception in Greece and is in contrast to some studies which assert the opposite (see page 1).

Also in the Region of Attica, the variables apprenticeship and continuing vocational training are not significant.

In 1988, people who lived in the Athens Area or in the rest of urban areas were more likely to be unemployed than people in rural areas. One reason may be the fact that in the Greek agrarian sector hidden unemployment does exist, namely often the real level of unemployment cannot be measured accurately. Living in semi-urban areas was not found statistically significant. In 1992, all categories of the urbanization variables were found non-significant. This seems reasonable for Attica, since - as we have already mentioned - Attica is the only county-region in Greece, so, in Attica, the meaning of semi-urban and rural areas is very relevant.

Concluding remarks on the results for Crete and the Southern Aegean

The results for Crete and Southern Aegean are very similar in 1988.

As mentioned, all the variables for Southern Aegean in 1992 are non-significant, so we cannot compare this year of that region with Attica. Concerning the differences of these two Regions with Attica, the differences appear in the age groups in both 1988 and 1992 (Crete), in the urbanization level also in both years and in the educational level in 1992 in Crete. The only common results in educational variables in 1992 between Attica and Crete are that of high school graduates who were more likely to be unemployed than the University graduates and that of the Polytechnic graduates (statistically non-significant).

Finally, for both Crete and Southern Aegean there are no results for training.

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