

International Perspectives on the Youth Labor Market

Emerging Research and Opportunities



Samir Amine



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Emerging Research and Opportunities

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Table of Contents

Preface..... vii

Chapter 1

The Rise of Youth Unemployment and Youth NEETs in the CEECs After the 2008 Crisis 1

Selda Gorkey, Istanbul Kultur University, Turkey

Chapter 2

NEETs Trapped in the Vicious Circle of Labor Market: A Critical Overview of the European Union and Greece33

Olga Papadopoulou, Independent Researcher, Greece

Chapter 3

Active Labor Market Programs for Youth: The Numbers Tell the Tale?51

Wendy Ida Elisabeth Wesseling, Tilburg University, The Netherlands

Chapter 4

The Labor Market for Young Spanish University Graduates.....74

Manuel Salas-Velasco, University of Granada, Spain

Chapter 5

Youth Labor Underutilization in Australia Following the Global Financial Crisis 103

Scott Baum, Griffith University, Australia

Michael Flanagan, University of Newcastle, Australia

Bill Mitchell, University of Newcastle, Australia

Chapter 6

Youth and the Labor Market in Canada Since the Great Recession 122

Samir Amine, Université du Québec en Outaouais, Canada

Wilner Predelus, Université du Québec en Outaouais, Canada

Chapter 7

Higher Education and Employment: Highlights From the Economic History
of Mexico 132

Jose Ernesto Rangel Delgado, University of Colima, Mexico

*Antonina Ivanova Boncheva, Universidad Autonoma de Baja California
Sur, Mexico*

Chapter 8

Teleworking as a Form of Massive Recruitment in the Colombian Youth
Labor Market..... 153

*Cristian Camilo Vargas Miranda, Universidad La Gran Colombia,
Colombia*

Chapter 9

Youth Labour Market in India: Education, Employment, and Sustainable
Development Goals..... 172

*Nitin Bisht, Department of Humanities and Social Sciences, Indian
Institute of Technology, Roorkee, India*

*Falguni Pattanaik, Department of Humanities and Social Sciences,
Indian Institute of Technology, Roorkee, India*

Related Readings..... 197

About the Contributors 212

Index..... 215

Preface

Since the last crisis, the global economy has been recovering economically, leading to an upturn in labor markets and improved household incomes. However, according to several studies (Piketty 2013 and 2019, OECD 2016), income inequalities continue to show the same trend observed for several decades despite the drop in unemployment rates and the increase in job creation.

According to OECD data (2016), income disparities have remained at historical levels. Indeed, in 2014 the Gini coefficient reached 0.318 in the whole OECD area. This level has not been reached since the mid-1980s.

Another more alarming finding is related to real household disposable income. The OECD (2016) shows that real households disposable incomes are still below pre-crisis levels, especially for the least advantaged. In this sense, the wealthier households benefited more from the economic recovery than middle- and lower-income households. This uneven distribution of the fruits of economic growth and recovery is challenging the socio-fiscal systems used in most OECD countries.

In this context, young workers (especially the unskilled) remain the most affected by this accentuation of income inequalities. Indeed, young people in most OECD countries continue to face high rates of unemployment (especially long-term unemployment) and to be blocked in so-called inactivity traps.

Without forgetting that official statistics often tend not to take into account the quality of jobs created. In fact, young workers who are often unskilled find themselves in precarious jobs that are usually temporary (fixed-term contracts), part-time involuntary and remunerated at minimum wage.

In this perspective, the situation of young people on the labor market has become a social and political emergency. The absence of inclusive growth and the rise in income and jobs inequalities are worsening the situation of young people on the labor market and paralyzing the functioning of the social lift. This observation obviously concerns developed and developing countries. In these last, because of the size of the informal sector and the lack of social policies to assist the poorest, the situation of young people with fewer qualifications is even more serious.

Even if the institutional and legislative framework differs from one country to another, we study in this book the situation of young people on the labor market in countries such as Spain, Mexico and India. To better understand and analyze the issues discussed in this book, we have adopted a multidisciplinary approach.

We are very aware that in some cases the analysis may seem incomplete or shallow due to lack of data about young people in the labor market in developing countries. Nevertheless, we consider in this case, that even a descriptive approach can be useful to better account for the phenomenon studied in such countries.

We start the book with a first chapter that examines the impact of the 2008 economic crisis on youth unemployment and NEETs (Not in Employment, Education, or Training) in the Central and Eastern European Countries (CEECs). In the same context, the second chapter examines the evolution of NEET rates, shortly after the Great Recession and for a decade, in the European Union in total and then by gender and educational level. The third chapter complements the analysis of the first two on NEETs and provides an overview of the most important results with a specific focus on effectiveness. In the fourth chapter, the study will focus on Spain while the fifth chapter will analyze the case of Australia. The North American and South American labor markets will be illustrated in the sixth (Canada), seventh (Mexico) and eighth (Colombia) respectively. We finish this book with a study on the case of India in Chapter 9.

In the first chapter entitled “The Rise of Youth Unemployment and Youth NEETs in the CEECs after the 2008 Crisis,” the author Selda Gorkey examines the impact of the 2008 economic crisis on youth unemployment and NEETs in the Central and Eastern European Countries (CEECs). The chapter show that, youth unemployment and NEET rates were more sensitive to the crisis in the CEECs compared to those in the EU-28. The highest increases were experienced in Latvia, Lithuania, Estonia and Croatia for youth unemployment; and in Bulgaria, Latvia, Croatia and Romania for youth NEETs. NEET rates of 15-29 ages emerged as a more crucial issue than that of 15-24 ages.

The second chapter entitled “NEETs Trapped in the Vicious Circle of Labor Market: A Critical Overview of the European Union and Greece” is part of the same context and analyzes the same problem. Indeed, Olga Papadopoulou aims to provide an overview of the situation of the youth NEETs, for the years of 2008-2018. The chapter first examines the evolution of NEET rates, shortly after the Great Recession and for a decade, in the European Union in total and then by gender and educational level. A special focus is given to Greece, an ideal case study, since crisis transformed the national labor market, revealing signs of insecurity.

In the third chapter “Active Labor Market Programs for Youth: The Numbers tell the Tale?” Wendy Wesseling explains that scholars from different fields have studied youth unemployment, its causes, consequences, and ways to tackle it. The

Preface

author tries to provide an overview of the most important results with a specific focus on effectiveness. Among the topics reviewed are the need for research regarding effectiveness, different methods to study effectiveness, and how the results of these methods are appraised.

Manuel Salas-Velasco identified four situations of educational mismatch: appropriate match, horizontal mismatch, vertical mismatch, and vertical and horizontal mismatch in Spain. Indeed, by estimating a multinomial logistic regression, the fourth chapter “The Labor Market for Young Spanish University Graduates” categorized university degrees in each of those four categories. A significant percentage of them ended up in jobs that didn’t require a university degree. Only graduates in Medicine increased the probability of being well-matched in their first and current jobs. The results also indicated that a considerable percentage of graduates (30%) who were mismatched in their first job became well-matched in their current employment after moving to a different firm.

In an institutional framework different from the first four chapters, Scott Baum, Michael Flanagan and William Mitchell explore in the fifth chapter “Youth Labor Underutilization in Australia Following the Global Financial Crisis” the situation of young Australians in the labor market in the context of the latest financial crisis. The authors present an analysis of youth labor underutilization using pooled panel data, taking account of both individual level supply-side factors together with the strength of the local labor market (demand-side). The result is an analysis that accounts for the impact of changing macroeconomy, local labor market conditions and the employability assets of young individuals.

Concerning the sixth chapter entitled “Youth and the Labor Market in Canada Since the Great Recession,” Samir Amine and Wilner Predelus analyze the Canadian youth unemployment rate since the last recession. In the context of a historically low unemployment rate, this chapter aims to dig deeper into the data to understand how youth has fared in the labor market since the last recession compared to the older people, and mainly in the area of gender disparities. In this context, the authors analyze the unemployment and the participation rates by age and by sex. Furthermore, they provide an insight on the youth regional unemployment rates.

In the same North American context, José Ernesto Rangel Delgado and Antonina Ivanova Boncheva consider, in the framework of the seventh chapter, “Higher Education and Employment: Highlights From the Economic History of Mexico,” that some of the tendencies in the Mexican economy during the sixties and seventies and the beginning of the eighties till the 21st Century are the following: The expansion of educational coverage, the urbanization of development and labor market, as well as the middle-class consolidation and graduate exclusion of the labor market. The authors show that these factors oriented the higher education predominantly to human resources generation, firstly, for the industrial sector and, secondly, for the tertiary

sector of the knowledge society with a large unemployment and underemployment of graduates.

In this book, we are also interested in the South American context. Indeed, in the eighth chapter, “Teleworking as a Form of Massive Recruitment in the Colombian Youth Labor Market,” Cristian Camilo Vargas Miranda analyzes how the technological changes inherent in globalization, the expansion of the economy and the general market between States, and the subscription of Free Trade agreements have generated modernization in the face of the natural conception of the world of work, thus allowing the flexibility in the existing contractual modalities in labour law of Colombia. The author considers that telework as an alternative to mitigate the impacts of a precipitous rise in conditions is a good alternative, because the characteristics set out in this text show that, in terms of reducing operational costs is a constant win-win relationship between employer and teleworker.

We conclude this book by an analysis of the case of India. In this last chapter, “Youth Labour Market in India: Education, Employment, and Sustainable Development Goals,” Nitin Bisht and Falguni Pattanaik analyze National Sample Survey data on employment and unemployment from 50th round (1993/94) to 68th round (2011/12). The authors show that an overall decline in the employment status of youth despite the ongoing demographic dividend phase. Postgraduate and graduate youth witness the highest unemployment indicating a grim role of labor market in engaging the educated youth.

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Chapter 1

The Rise of Youth Unemployment and Youth NEETs in the CEECs After the 2008 Crisis

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ABSTRACT

This study examines the impact of the 2008 economic crisis on youth unemployment and NEETs in the Central and Eastern European Countries (CEECs). It also analyses structural labor market problems in these economies such as youth unemployment by duration and skill, labor underutilization, and mismatch. The findings show that youth unemployment and NEET rates were more sensitive to the crisis in the CEECs compared to those in the EU-28. The highest increases were experienced in Latvia, Lithuania, Estonia, and Croatia for youth unemployment; and in Bulgaria, Latvia, Croatia, and Romania for youth NEETs. The NEET rates of 15-29 ages emerged as a more crucial issue than that of 15-24 ages. The examination of labor market structural problems shows that most of the relevant proxies worsened after the crisis in the CEECs; however, the proxies for Croatia were higher than the others. Romania, Bulgaria, and Slovak Republic also signal some structural problems, to a lesser extent.

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INTRODUCTION

While the participation of youth, individuals 15-24 years-olds, in economic life has been considered as a growing matter since the 1990s, the issue has risen in greater importance after 2008 Global Economic Crisis. Labor market statistics, particularly for the youth, worsened in many economies following the recession (Zudina, 2017). One of the regions that experienced its impact the most severe was the European Union (EU). According to Eurostat (2019a), youth unemployment rate in EU-28 economies had risen to 11.6% in 2009 and reached its peak to 13.7% in 2013 from its pre-crisis rate of 8.9% in 2007. When labor market statistics and other indicators for the youth are examined, it becomes obvious that the problem is not limited only with unemployment, but it also includes non-participation of youth in education and labor market. The proportion of youth who are neither in employment nor in education or training - so called not in employment, education or training (NEETs) – in youth population has also grown into a critical issue in the region recently (OECD, 2019a). Since youth is expected to be active and productive, their exclusion from labor market and educational attainment is regarded as a crucial issue for economies. Such exclusions may result in lower production for the economy; and lower income level, and higher risk of poverty for the individual. Moreover, since those persons remain idle in the economy, they may feel stressed, face psychological problems, be financially dependent to others, and hence be prone to committing crime. Hence, high shares of youth unemployment and NEETs affect the individual, the economy, and the society. From this perspective, there is a need for designing appropriate social inclusion policies which aim at including the youth in labor market and educational attainment (Artner, 2014; Dama, 2017).

This study aims to examine the characteristics of youth labor market, and track the trend of youth unemployment and youth NEETs in the CEECs (Central and Eastern European Countries) after the 2008 Global Economic Crisis. The study also investigates the structural problems related with labor markets in these economies. The CEECs examined in this study are Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic, and Slovenia. Albania is excluded from the research due to lack of data. These economies are specifically chosen in this study as these are transition economies. Even though some of them are grouped in advanced economies today (IMF, 2018), some of them still lag behind others in terms of economic development. In addition to this, despite their differences, they are mostly analyzed as a region in various economic subjects due to their common past. From these points, their analysis as a group would contribute to the literature by presenting the current problems of youth in these economies, specifically for the post-2008 recession period. Although the literature is rich with the studies that focus on EU labor market for the relevant period (Bălan, 2014, 2015;

Choudhry, 2015; Dal Bianco & Bruno, 2015; Ghoshray et al., 2016; Gontkovičová et al., 2015; Lallement, 2011; O'Higgins, 2012; European Commission, 2009), it lacks sufficient number of studies that focus specifically on youth unemployment and youth NEETs in the CEECs as a region (Artner, 2014; Dunsch, 2017; Hutengs & Stadtmann, 2014; Signorelli, 2017).

The study aims to contribute to the relevant gap in the literature by examining the trend of youth unemployment and youth NEETs in the CEECs for the post-2008 crisis period. Youth unemployment by gender; and NEETs by gender, age-group and type are also analyzed in a detailed manner. Another purpose of this research is to determine how these economies are different from each other in labor market by means of structural problems. The structural problems examined in this study are: youth unemployment by duration, youth available to work but not seeking for a job, youth labor underutilization, youth unemployment by skill structure, and education and qualification mismatch. The study aims to seek answers to the following research questions by using descriptive research method as a methodology:

Research Question 1: Did the labor market dynamics worsen in the CEECs after the 2008 crisis, as it is evidenced in many European economies?

Research Question 2: How are the CEECs different from each other in terms of youth unemployment and youth NEETs?

Research Question 3: How different are the CEECs compared to each other by means of structural problems in their labor market?

The study is organized as follows: After presenting the conceptual background and the literature review about youth unemployment and NEETs, the research summarizes basic labor market indicators such as; employment rate, total unemployment rate, youth unemployment rate, and the ratio of youth unemployment to unemployment. After that, youth NEETs, NEETs by gender and age-group, unemployed NEETs, and inactive NEETs indicators are examined. Then, structural problems related with labor market are analyzed in a detailed manner. Some solutions and recommendations, and future research directions are also presented before the study concludes.

BACKGROUND

Youth Unemployment and NEETs: Conceptual Background

Youth unemployment is commonly accepted as one of the most important problems of economies recently. According to ILO, persons in unemployment are defined as *all those of working age who were not in employment, carried out activities to*

seek employment during a specified recent period and were currently available to take up employment given a job opportunity (ILO, 2013). Unemployment is calculated as the share of unemployed persons in the labor force, mathematically. The definition focuses on working age, whereas the youth refer to those between 15-24 ages (UNESCO, 2019). Accordingly, youth unemployed persons refer to 15-24 aged persons who are not working, available to work and actively seeking for a job. Hence, the youth unemployment rate is calculated as the share of youth unemployment in youth labor force (ILO, 2015).

Youth unemployment is considered as a more sensitive issue compared to total unemployment, and this consideration has been confirmed with several studies (Bell & Blanchflower, 2011; Bell & Blanchflower, 2015; OECD, 2008; Choudhry, Marelli, & Signorelli 2012; Dunsch, 2017). There are many reasons behind this issue. One of the reasons is that the corresponding age group consists of individuals who are newly graduates or still students. It is well-known fact that firms tend to hire experienced workers. Since newly graduate youths lack necessary skills and experience, they can remain unemployed for long periods (Bell & Blanchflower, 2015). Another reason is that, firms generally follow last-in-first-out (LIFO) policy. Firms apply this policy as the older and existing employees spend more time in the company, they are more experienced. From this perspective, rather than laying-off the experienced ones, they choose to lay off young workers, which are mostly newly-graduates or less experienced workers. Young people may also face underemployment by type of contracts or length of working hours. They are sometimes offered temporary contracts or part-time jobs, which again place them in disadvantageous position compared to experienced adult workers (Dunsch, 2017). All these facts point out the difficulty of and the challenge for the youth to be employed, especially during recessions. For these reasons, the impact of unemployment on youth results in long-lasting and permanent, and hence more severe, problems both in the economy and the society (Bell & Blanchflower, 2015). In addition to this, youth unemployment is more vulnerable to business cycles, compared to total unemployment. As a consequence, youth unemployment rate is higher than total unemployment, generally from two to three times of total unemployment (ILO, 2010).

The reasons that cause higher youth unemployment are lower education level, inexperience, inability to find job opportunities, education-labor mismatch, and rising levels of unhappiness and hopelessness to find a satisfying job (Artner, 2014).

Even though youth unemployment is regarded as one of the most crucial issues in economies, the problems related with the youth is not limited to that. The share of youth NEETs has grown into another important subject in many economies. The concept of youth NEETs refer to youth who are neither in employment nor in education or training. This definition points out two conditions to classify an individual as a NEET: to be not employed and not to take any education. In this

regard, the NEET concept brings together labor market position and educational attainment decisions of young individuals. Youth NEET rate is calculated as the share of youth neither in employment nor in education or training in corresponding age-group population (Elder, 2015).

The concepts of youth unemployment and youth NEETs may seem similar; however they are thoroughly different from each other. As mentioned before, youth unemployment rate is calculated as the share of unemployed in the labor force; whereas youth NEET rate is the proportion of youth neither in employment, nor education or training in youth population. Both the numerator and the denominator used are different to calculate two measures (Eurofound, 2012). Generally, number of youth NEETs are higher than number of unemployed persons; whereas unemployment rate is expected to be higher than youth NEET rate in economies (Artner, 2014).

Youth NEETs can be broken down into two groups: unemployed NEETs and inactive NEETs. The former group consists of youth who are willing to work, actively seeking for a job but can not find one. Hence, they are included in the labor force. Although unemployed NEETs may seem similar to youth unemployment as a concept, they are completely different from each other (Elder, 2015). Unemployed NEETs point out both the labor market and educational attainment situation of youth at once. However, unemployed youth considers only labor market position, and does not take into account educational attainment. The latter group of NEETs, inactive NEETs, constitutes young individuals who are neither in search for a job nor taking any education (Eurofound, 2012; OECD, 2015). Hence, they are not in the labor force. Since these individuals choose to remain idle in the society, this type of NEETs can be considered as a more important problem than unemployed NEETs both for the economy and the society.

There are several reasons for young individuals to be included in youth NEETs. Some of these reasons are; disability, lower education level, growing up in a poor family, having child at younger ages, being responsible for the care of a family member, the duration of unemployment, and being a discouraged worker (Erbaş and Dabagci, 2015; Driouchi and Harkat, 2017; Maguire, 2015; Carcillo et al., 2015). These reasons are also regarded as risk factors of becoming NEET, and their varieties signal the heterogeneity of the group. These risks make the group of individuals vulnerable to poverty, as becoming a NEET increases the risk of becoming not only socially, but also economically excluded from the society. From these perspectives, including youth in employment and education needs to be assured in order to reduce both the youth unemployment rate and youth NEET rate in economies. Social inclusion policies serve as necessary policy tools to overcome exclusion in an economy (Oxoby, 2009 Eurofound, 2012).

LITERATURE REVIEW

Regarding the post-2008 crisis period, the literature is rich with the studies that focus on youth unemployment and youth NEETs in the EU (Bălan, 2014, 2015; Choudhry, 2015; Dal Bianco & Bruno, 2015; Ghoshray et al., 2016; Gontkovičová et al., 2015; Lallement, 2011; O'Higgins, 2012; European Commission, 2009). However, the literature lacks sufficient number of studies that focus specifically on youth unemployment or the youth NEETs in the CEECs for the post-2008 crisis period. The existing literature for these economies commonly examine the issue by focusing on a single economy (Acedański, 2016; Barbulescu, 2012; Marginean, 2014; Spatarelu, 2015); or a group of few economies (Purfield and Rosenberg, 2010; Masso and Krillo, 2011; Kallaste and Woolfson, 2013) within the CEECs.

Since most of the CEECs are transition economies, it would be worthwhile to track their labor market performance and the situation of the youth after an economic downturn as a group. Yet, there are only a few studies that focus on youth unemployment and youth NEETs in the region (Artner, 2014; Dunsch, 2017; Hutengs & Stadtmann, 2014; Signorelli, 2017). This study aims to fill this gap in the literature.

Artner (2014) examines youth unemployment and NEETs in the CEEC region with a special focus on Hungary. After presenting conceptual background and definitions in detail, the study first presents the situation of youth unemployment, NEETs and labor market dynamics first in the CEECs and then in Hungary. The study also mentions policies that have been implemented to reduce youth unemployment and make discussion about the challenges related with the NEETs. Even though it does not directly focus on the post-crisis period, the study shows the impact of the crisis on these economies by examining the topic during a time period from the end of 1990s to 2013.

Dunsch (2017) analyses the impact of business cycles on youth unemployment with regards to Okun's Law in the CEECs. This study aims to find out whether the youth unemployment is more sensitive to business cycles, and hence the impact of the 2008 crisis is included in the analysis. EU-15 economies are also included in the dataset in order to compare their results for the CEECs. Findings confirm that, young persons are more sensitive to unemployment during recession in the CEECs. This study also aims at distinguishing changes in youth unemployment by gender, but the results do not reflect significantly different effects for males and females. Hutengs and Stadtmann (2014) also examine youth unemployment and Okun's Law, yet this study includes only five of the CEECs economies. The findings of the five CEECs economies are then compared to EU-15 economies. Hutengs and Stadtmann (2014) empirically finds out that youth in the CEECs are more vulnerable to macroeconomic shocks, compared to adults and EU-15.

Signorelli (2017) examines youth unemployment, and compares youth unemployment with total unemployment, not only in the CEECs but also in other transition economies. The study points out the negative impact of the crisis in the region. It also emphasizes that youth unemployment is regarded as a more important problem compared to total unemployment. This study has a similar scope; however the time interval, economies included and the topics covered are different than that of Signorelli (2017)

This study is different from the existing ones in the literature in that; it does not only examine youth unemployment, but it also focuses on youth NEET and structural problems related with youth labor market; such as youth unemployment by duration and skill, labor underutilization, youth available to work but not actively seeking for a job, and mismatch, for the post-2008 crisis period. This study also aims at making a comparison among the CEECs for the relevant proxies. The CEECs are known to have a common past, as they are transition economies. Moreover, most of these economies became a member of EU together with the 2004 Enlargement. Despite their common past and similarities, it is a well-known fact that they are different in terms of economic performance and development. From this perspective, presenting the current state of youth unemployment, youth NEETs, and structural labor market problems is crucial for the region, especially for the mentioned period. However, the literature lacks studies that focus on the CEECs on the matter, and this study aims to fill the relevant gap in the literature.

YOUTH UNEMPLOYMENT AND YOUTH NEETS IN THE CEECs

Methodology

This study aims to analyze the impact of 2008 crisis on youth unemployment and NEETs in the CEECs. The study also aims to examine structural labor market problems for these economies. The study seeks answers to the following research questions:

Research Question 1: Did the labor market dynamics worsen in the CEECs after the 2008 crisis, as it is evidenced in many European economies?

Research Question 2: How are the CEECs different from each other in terms of youth unemployment and youth NEETs?

Research Question 3: How different are the CEECs compared to each other by means of structural problems in their labor market?

The study answers these questions by using descriptive research method as a methodology. Various measures from ILO, Eurostat and OECD Statistics are used

for the analysis. Before directly focusing on youth unemployment and NEETS, some main indicators to describe the labor market in the CEECs are presented. After that, the main focus of the study: the rise of youth unemployment and youth NEETs are examined in detail. Then, proxies for structural problems related with labor market, such as: youth unemployment by duration, youth available to work but not seeking for a job, youth labor underutilization, youth unemployment by skill structure and education and qualification mismatch are presented and explained. In order to make comparisons with the CEECs, the EU-28 and/or OECD average statistics are also presented, if available in the datasets. In an effort to reflect the impact of the crisis; the years 2007 (or 2018), 2010 and 2017 (or 2018) are selected for comparison. Year 2007 (or 2008) is included to present the pre-crisis values, 2010 to show the impact of the crisis and 2017 (or 2018) to reflect the most recent situation. Time series from 2007 to 2017 are also used for some main indicators such as, unemployment and NEET rates.

Main Labor Market Indicators in the CEECs

Table 1 presents the share of the youth in total population, and the proportion of active youth population in corresponding age-group population. For all the countries examined, the share of youth has declined from 2008 to 2018. Poland, Latvia and Slovakia had the highest youth population share in 2008. According to the most recent statistics, the relevant shares for these three economies approached to the EU-28 value in 2018. Active youth population values show that Estonia, Slovenia and Latvia had the highest active youth population shares in both 2008 and 2018.

Table 2 presents employment rates for two different age groups: youth (15-24 ages) and total (15-64 ages) in 2008, 2011 and 2018. Both indicators clearly showed a severe decline in most of the CEECs in 2011, which indicate the impact of global economic crisis. The decline in youth employment rates were much remarkable for the youth in 2011, and the recovery afterwards was not as apparent as total. The proxies make it obvious that the effect of crisis on youth employment rate had been more significant compared to total age group in the CEECs.

Table 3 shows employment rates by gender in 2018, which is the most recent year in the dataset. Male employment rates are remarkably higher than that of females in all CEECs and the EU-28 both for the youth and total employment.

Figure 1 exhibits unemployment rates for 15+ age group in the CEECs between 2007 and 2017. The figure clearly shows the negative impact of the 2008 crisis on the CEECs; more remarkably in Latvia, Lithuania, Estonia, Bulgaria, Slovak Republic and Croatia. Relevant rate decreased in these countries after 2010, except for Croatia. The recovery was much more apparent after 2013. Statistics in 2017 signal that the falling trend was still going on in all the CEECs.

The Rise of Youth Unemployment and Youth NEETs in the CEECs After the 2008 Crisis

Table 1. Youth population and active youth population (%Population), 2008 and 2018

Countries	Youth Population (%Total Population)		Active Youth Population (%Youth Population)	
	2008	2018	2008	2018
EU-28	12.4	10.8	44.2	41.7
Bulgaria	12.8	9.1	30.1	23.7
Czechia	12.8	9.3	31.1	30.4
Estonia	14.4	9.6	40.8	47.3
Croatia	12.3	11.1	36.6	33.5
Latvia	15.4	9.3	42.8	37.7
Lithuania	14.9	11	30.0	36.5
Hungary	12.7	10.9	25.1	32.3
Poland	15.5	10.7	33.1	35.1
Romania	13.5	10.6	30.4	29.5
Slovenia	12.2	9.4	42.9	38.6
Slovak Rep.	15.2	10.8	32.4	32.3

Source: (Eurostat, 2018; Eurostat, 2019b)

Youth Unemployment in the CEECs

Table 2. Employment rates (%) by age groups, 2008, 2011 and 2018

Countries	Youth (15-24 ages)			Total (15-64 ages)		
	2008	2011	2018	2008	2011	2018
EU-28	37.2	33.3	35.4	65.7	64.2	68.6
Bulgaria	26.3	22.1	20.7	64.0	58.4	67.7
Czechia	28.1	24.5	28.4	66.6	65.7	74.8
Estonia	35.9	31.1	41.7	70.1	65.3	74.8
Croatia	28.0	20.6	25.6	60.0	55.2	60.6
Latvia	37.0	25.8	33.1	68.2	60.8	71.8
Lithuania	26.0	19.0	32.4	64.4	60.2	72.4
Hungary	20.2	18.0	29.0	56.4	55.4	69.2
Poland	27.3	24.9	31.0	59.2	59.3	67.4
Romania	24.8	23.4	24.7	59.0	59.3	64.8
Slovenia	38.4	31.5	35.2	68.6	64.4	71.1
Slovak Rep.	26.2	20.0	27.5	62.3	59.3	67.6

Source: (Eurostat, 2019c)

Table 3. Employment rates (%) by gender and age group, 2018

Countries	Gender, Age-Group			
	Males, 15-24	Females, 15-24	Males, 15-64	Females, 15-64
EU-28	37.3	33.3	73.8	63.3
Bulgaria	24.2	17.0	71.5	63.9
Czechia	32.2	24.3	81.8	67.6
Estonia	43.5	39.9	78.1	71.4
Croatia	30.5	20.3	65.4	55.9
Latvia	35.5	30.6	73.6	70.1
Lithuania	34.1	30.6	73.3	71.6
Hungary	33.4	24.3	76.3	62.3
Poland	34.7	27.0	74.0	60.8
Romania	28.9	20.3	73.2	56.2
Slovenia	38.9	31.1	74.5	67.5
Slovak Rep.	34.0	20.6	73.9	61.2

Source: (Eurostat, 2019c)

Figure 1. Unemployment rate (%), 15+ ages, 2007-2017

Source: (ILOSTAT, 2019a)

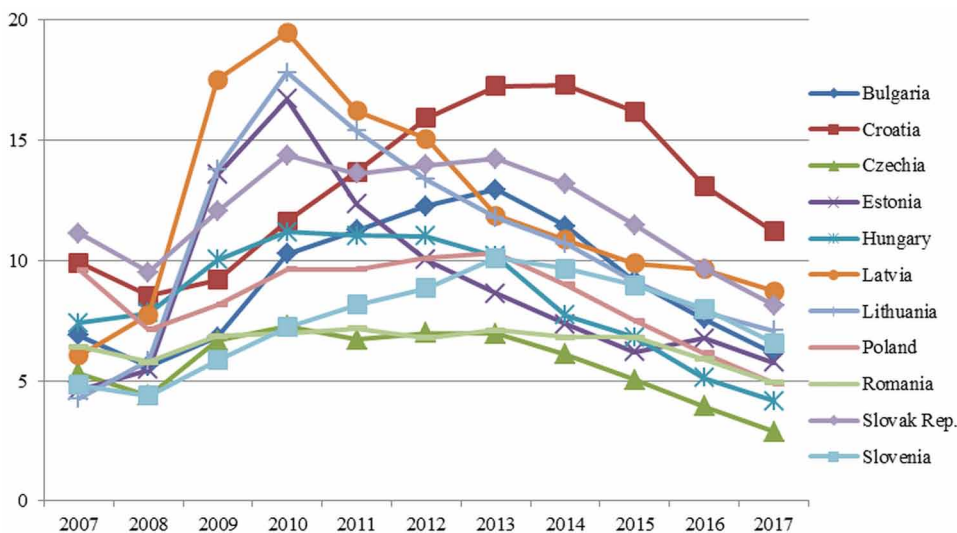
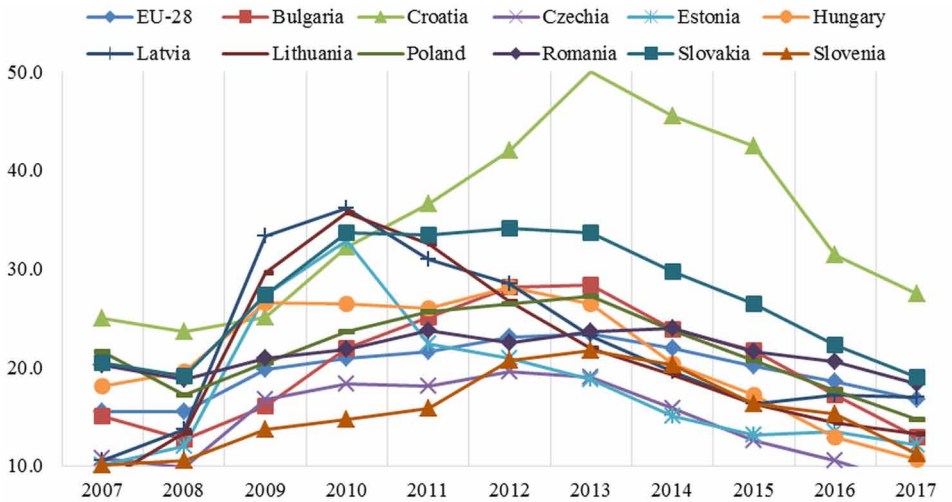


Figure 2 shows youth unemployment rates in the CEECs and the EU-28 from 2007 to 2017. Youth unemployment rate started to increase right after the 2008

The Rise of Youth Unemployment and Youth NEETs in the CEECs After the 2008 Crisis

Figure 2. Youth unemployment rate (%), 2007-2017

Source: (ILOSTAT, 2019a)



global economic crisis. The rates reached their peak in 2010 in Estonia, Latvia, and Lithuania; in 2012 in Czechia, Hungary and Slovak Republic; in 2013 in EU-28, Bulgaria, Croatia, Poland and Slovenia; and in 2014 in Romania. The recovery started by 2013 in most of the economies, and the rates approached back to their pre-crisis value as of 2017. According to the most recent value in 2017, the EU-28, Croatia, Estonia, Latvia and Lithuania still experienced higher youth unemployment than pre-crisis rate in 2007, whereas Bulgaria, Czechia, Hungary, Poland, Romania and Slovak Republic had lower rates compared to that of 2007.

Figure 2 clearly presents that, the highest unemployment rate among all the CEECs was experienced by Latvia from 2008 to 2010, by Lithuania in 2010 and 2011, and by Croatia from 2011 to 2017. The countries with remarkably higher rates than the EU-28 are Croatia, Poland, Romania and Slovak Republic. Among these economies, Croatia's unemployment rate was remarkably high than others after 2011, and reached to 50% in 2013.

Youth unemployment rate by gender in 2017 is presented in Figure 3. According to the figure, the economies with higher youth female unemployment are Croatia, Czechia, Hungary, Poland, Slovak Republic and Slovenia. For the rest of the CEECs, youth unemployment rates of males were higher than that of females. Estonia, Latvia, Lithuania and Slovenia had the highest gender gap by means of youth unemployment. Supporting the interpretations in Figure 2, Figure 3 clearly shows that Croatia had the highest youth unemployment rate among the CEECs in 2017.

The Rise of Youth Unemployment and Youth NEETs in the CEECs After the 2008 Crisis

Figure 3. Youth unemployment rate (%), 15-24 ages, by gender, 2017
 Source: (ILOSTAT, 2019a)

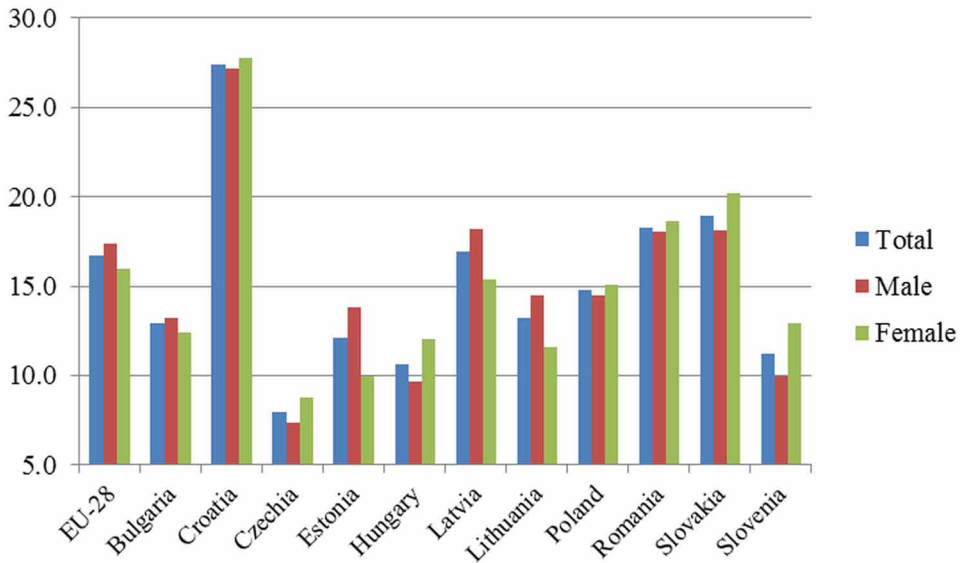
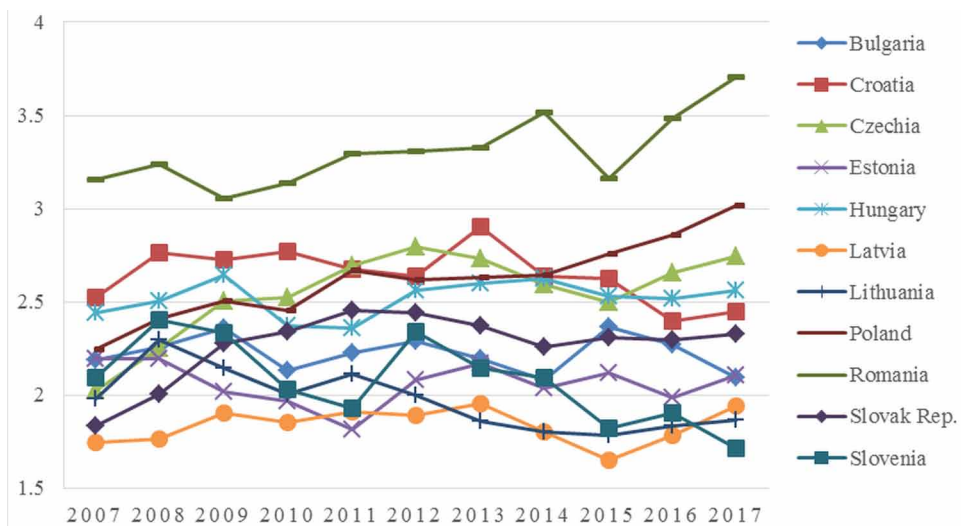


Figure 4 shows the proportion of youth unemployment to total unemployment. Since youth unemployment is more sensitive to business cycles than total unemployment,

Figure 4. Youth Unemployment to Total Unemployment Ratio (%), 2007-2017
 Source: (ILOSTAT, 2019a), own calculations.



the values in Figure 4 are larger than 1. According to ILO (2010), the relevant ratio is expected to be between two to three in general. The figure clearly shows that, youth unemployment was more vulnerable to 2008 economic recession in all CEECs. The sensitivity of youth unemployment was the least compared to total unemployment in Latvia, which had a ratio below 2 for the entire period. 2008 crisis resulted in more permanent impacts on youth unemployment sensitivity in Czechia, Poland, Slovak Republic and Romania compared to the other CEECs, as the ratio kept increasing during the years examined. The highest sensitivity was experienced in Romania, with a proportion above 3 for the entire period.

Youth NEETs in the CEECs

Figure 5 presents youth NEET rates in the CEECs from 2007 to 2017. The rates increased after 2008 in all of the CEECs, except for Slovenia. Slovenia experienced lower NEET rates in 2009 and in 2010 compared to its 2008 value, however the rate tend to increase afterwards and reached its peak in 2015. For most of the CEECs, the recovery started in 2013 and the values approached back to their pre-crisis values as of 2017. Among all the economies examined, NEET rates for Bulgaria, Croatia and Romania are obviously higher than the other CEECs. Since various aspects affect NEET rates in an economy, further analysis with detailed statistics is necessary to examine the issue. For this purpose; Figure 6, Figure 7 and Figure 8 are also included in the study to examine NEET rates by gender, different age groups, and labor market status, respectively.

Figure 6 presents youth NEET rates by gender in 2007, 2010 and 2017. In addition to the EU-28 data, OECD average is also included for comparison. The figure clearly shows a gender gap in Bulgaria and Czechia in all the years examined. For both economies, female NEET rates are higher than that of males. When the gender gap is analysed for the post-crisis period, it is obvious that, gender gap had started to become visible in Slovenia, Lithuania, Latvia, Estonia and Croatia in 2010. For all these economies, male NEET rates increased compared to the pre-crisis period, 2007. Male NEET rates were remarkably lower than that of females both in the EU-28 and OECD economies on average in 2007; however they increased after the 2008 crisis and narrowed the gender gap by approaching slightly to the female NEET rates. The gender gap remained narrower in the EU-28 but showed an increase in OECD average in 2017. When solely the impact of the crisis is examined; Figure 6 exhibits remarkably high NEET rates for females in Latvia, Estonia, Croatia and Bulgaria, and for males in Croatia, Bulgaria, Estonia and Latvia in 2010.

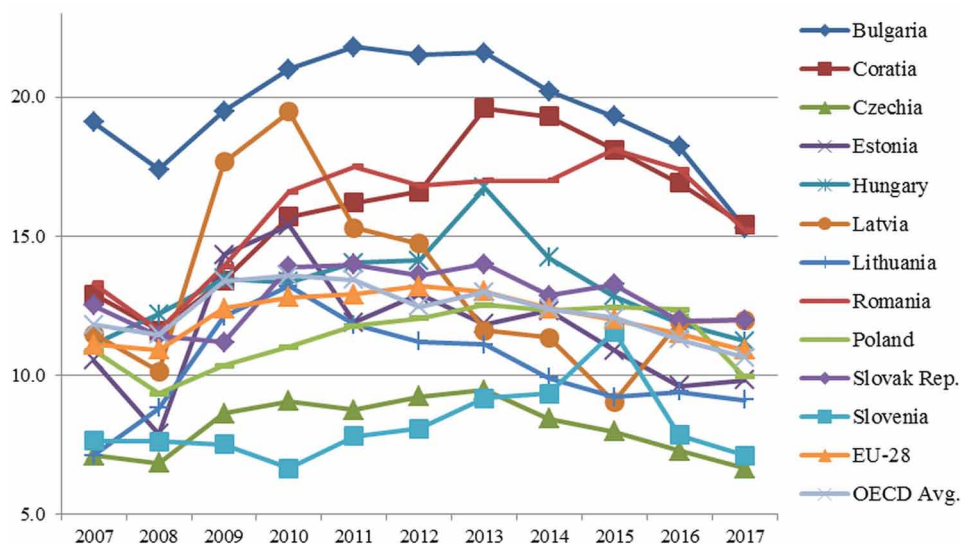
Figure 7 presents the NEET rates for the 15-24 and the 15-29 age groups in 2010 and 2017. It clearly shows that, NEET rates for 15-29 age groups are remarkably higher than that of 15-24 age group in all the CEECs examined both in 2010 and

The Rise of Youth Unemployment and Youth NEETs in the CEECs After the 2008 Crisis

Figure 5. Youth NEET rate – 15-24 ages (%), 2007-2017

Source: (OECD, 2019a)

Notes: Due to a lack of data in the OECD dataset, statistics for Croatia, Bulgaria, Romania, and EU-28 are collected from Eurostat (2019d)



2017. For all the economies, except for Slovenia, 2010 values are higher than 2017 values, emphasizing the negative impact of global economic recession on youth NEETs, and the recovery afterwards. The NEET rates can be regarded as critical in Slovak Republic, Lithuania, Latvia, Hungary and Estonia specifically for the 15-29 age group.

Figure 8 shows youth NEET rates of 15-24 age group depending on labor market status in 2010 and 2017. Since NEETs can be either inactive NEETs or unemployed NEETs, the figure exhibits the distribution of two kinds as %100 stacked bar charts. OECD average and OECD member European Union economies are also included for comparison. Figure 8 points out an important issue on the matter, as the share of unemployed NEETs obviously increased in 2010, following the global economic crisis in all the CEECs examined, except for Poland. The share of unemployed NEETs reached critical levels especially in Slovenia, Slovak Republic, and Latvia in 2010. The composition of NEET types had differed from 2010 to 2017 by lower unemployed NEET and higher inactive NEET rates. The most recent statistics in 2017 exhibit that; unemployed NEET rates are even lower than their pre-crisis value of 2007 all CEECs, except for Latvia and Slovenia. This change makes it obvious that, inactive NEETs constitute a more significant problem than unemployed NEETs in CEECs today.

The Rise of Youth Unemployment and Youth NEETs in the CEECs After the 2008 Crisis

Figure 6. Youth NEET rate by gender – 15-24 ages (%), 2007, 2010 and 2017

Source: (OECD, 2019a)

Notes: Due to a lack of data in the OECD dataset, statistics for Croatia, Bulgaria, Romania, and EU-28 are collected from Eurostat (2019d).

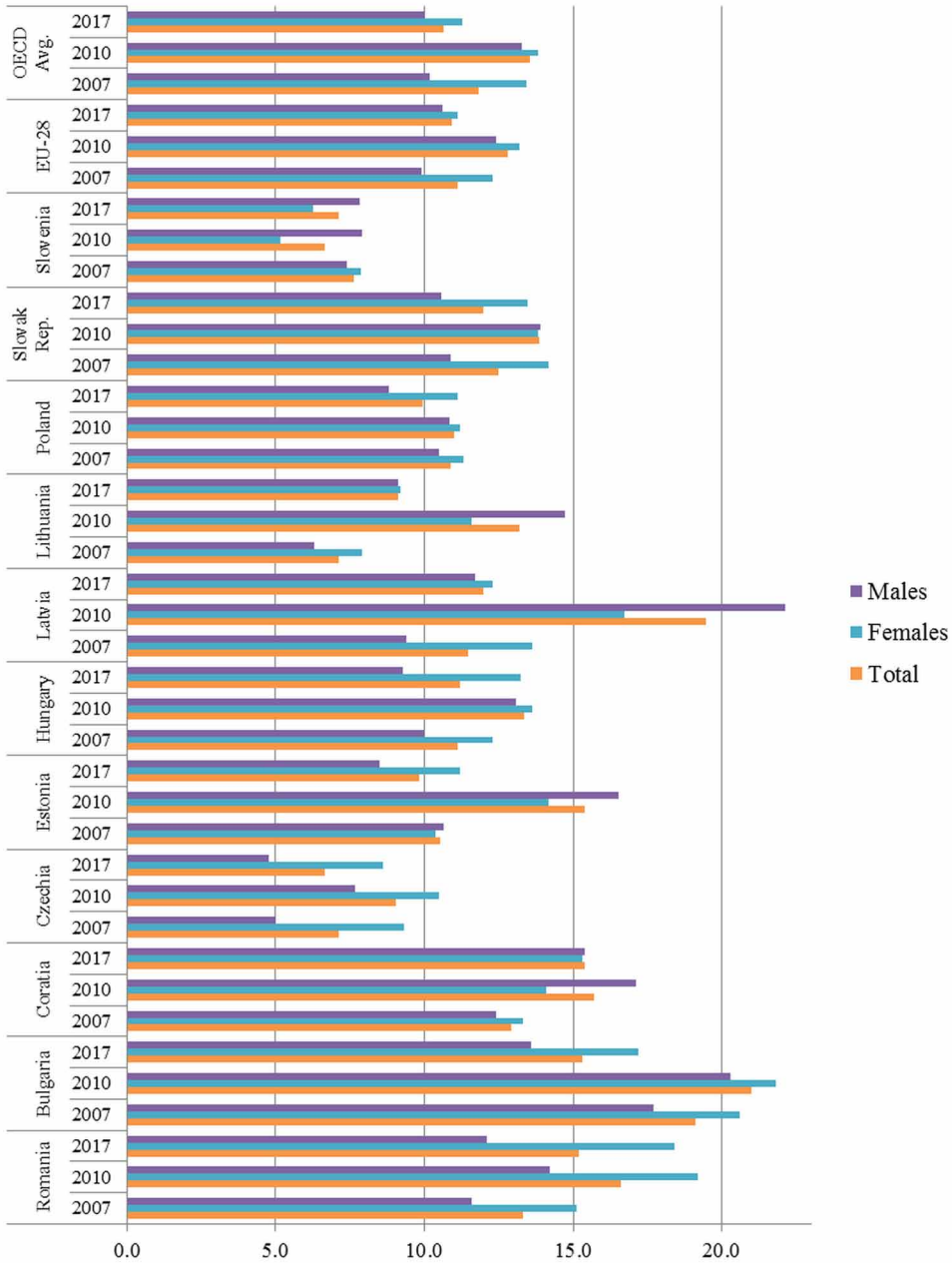
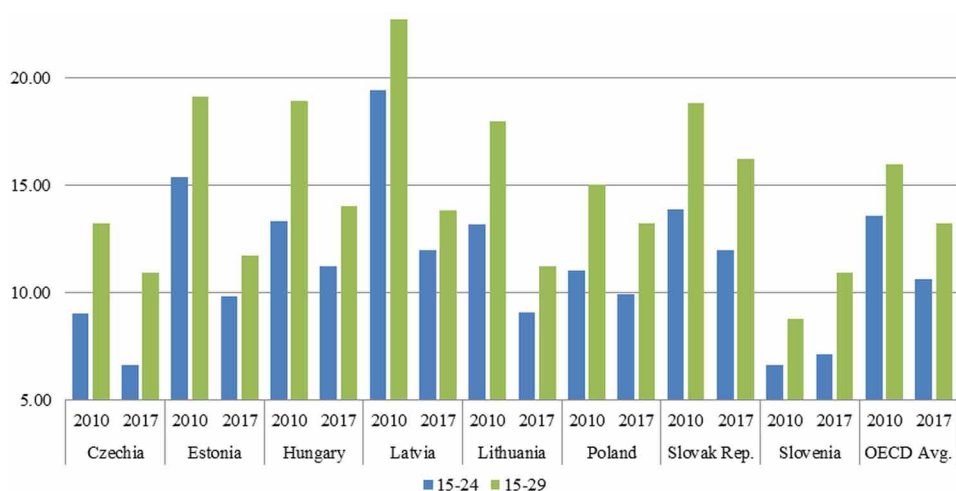


Figure 7. Youth NEET rate (%), by age groups 15-24 and 15-29, 2010 and 2017

Source: (OECD, 2019a)

Notes: Croatia, Bulgaria, Romania, and EU-28 are excluded since the data for the 15-29 age group is not available in the dataset.



Structural Problems of the Labor Market in the CEECs

Duration of Youth Unemployment

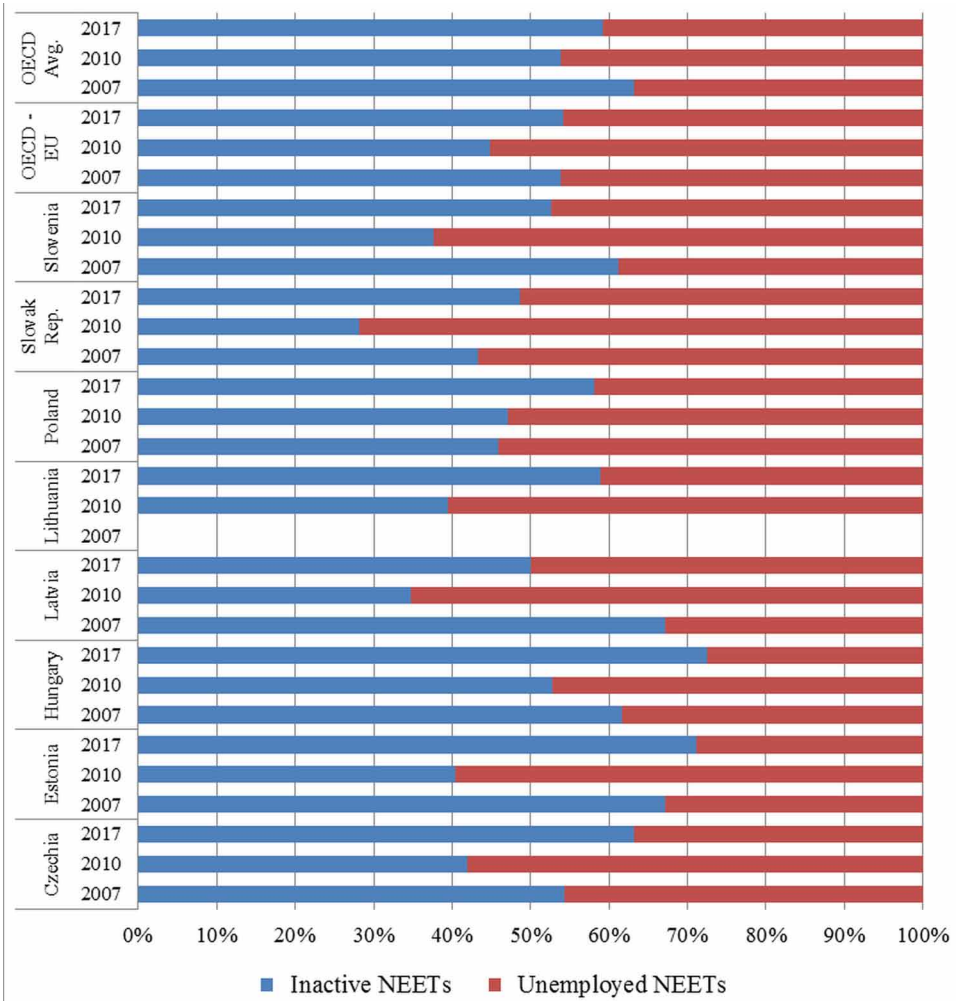
Table 4 presents long-term unemployment for the youth in 2007, 2010 and 2017 by gender. Long term refers to a longer time period than 12 months, and the high rates of unemployment duration can signal existence of structural problems related with labor market in an economy. In addition to this, since young individuals are not experienced, high levels of youth unemployment duration indicate that the youth faces more difficulty in entering labor market (Bell & Blanchflower, 2015). Moreover, since duration of unemployment refers to a change in labor market position, this proxy reflects transition in labor market (Eurostat, 2019e). From these perspectives, the relevant measure is crucial for the analysis of youth labor market.

2010 statistics in Table 4 clearly show that, all the CEECs, except for Poland and Slovenia, experienced longer duration of unemployment for males, females and total right after the crisis. The impact of the crisis was more visible in Estonia and Latvia. These two economies started to suffer from long-term youth unemployment after the crisis, reaching to high rates in 2010 from low levels in 2007. They were successful at reducing the relevant rate back to lower values up to 2017; especially Estonia experienced even a lower rate in 2017 compared to the pre-crisis value of 2007. Croatia and Slovak Republic experienced remarkably higher long-term

The Rise of Youth Unemployment and Youth NEETs in the CEECs After the 2008 Crisis

Figure 8. Youth NEET rates (%), 15-24 ages, breakdown by labor market status, 2010 and 2017

Source: (OECD, 2019a)



unemployment rate than the other CEECs for all the proxies in Table 4. Another important statistics are those of Bulgaria and Hungary. These economies had high levels of youth long-term unemployment rates both in 2007 and in 2010; however the relevant rate had fallen significantly from 2010 to 2017. Poland and Romania were exceptions of the general trend for youth long-term unemployment in the CEECs during the period examined. They both showed a falling trend from 2007 to 2010 and from 2010 to 2017, however the rate of Romania was still quite higher

Table 4. Youth long-term unemployment rate (more than 12 months), by gender, 2007, 2010 and 2017

	Total			Male			Female		
	2007	2010	2017	2007	2010	2017	2007	2010	2017
EU-28	4.10	6.00	4.70	4.20	6.70	5.10	3.90	5.10	4.10
Bulgaria	6.30	8.90	4.70	5.20	9.50	5.20	7.70	8.10	7.80*
Czechia	3.50	5.80	1.50	3.60	6.10	1.40	3.30	5.40	1.80
Estonia	3.10	12.20	2.70*	4.10	14.70	-	-	9.10	-
Croatia	11.60	16.00	7.90	10.40	16.60	8.00	13.20	15.20	7.80
Latvia	1.20	12.00	2.50	1.30	13.10	3.30	-	10.60	-
Hungary	6.50	10.30	2.30	6.50	11.40	2.70	6.50	8.80	3.10*
Poland	7.50	4.80	3.20	7.10	4.70	3.40	8.00	5.00	2.80
Romania	9.70	7.20	7.00	9.60	8.10	7.00	9.80	5.90	6.90
Slovenia	3.00	4.90	3.60	2.60	5.50	3.90	3.50	4.10	3.10
Slovak Rep.	11.60	18.40	8.60	12.30	20.30	9.40	10.50	15.40	7.30

Source: (Eurostat, 2019e)

Notes: Lithuania is excluded from the table due to a lack of data in the dataset.

* 2016 values.

than the EU-28 in 2017. The gender perspective shows similar interpretations with total values.

Another important proxy for labor market analysis is the proportion of individuals who are not looking for a job but are available to work. High levels of such proxy can signal a structural problem in an economy. Table 5 shows the share of youth available to work but not seeking a job as a percentage of inactive population in 2007, 2010, 2013 and 2017. Estonia and Croatia face high rates compared to the other CEECs and the EU-28 during the period examined. Bulgaria and Latvia experienced high rates; too, however there had been a progress after 2013. According to the most recent statistics in 2017, the rates in these economies fell below EU-28. All CEECs examined experienced increases in the relevant measure in 2010, except for Croatia and Poland. The issue became problematic in Croatia in 2013, and this problem had grown in magnitude since 2013. The most recent statistics of 2017 show that, approximately 10% of the inactive population is not searching for a job even though they are available to work in Croatia.

Table 5. Youth available to work but not seeking a job (% inactive population), 2007, 2010, 2013 and 2017

	2007	2010	2013	2017
EU-28	5.4	5.7	6.2	5.1
Bulgaria	8.0	9.0	8.0	4.0
Czechia	0.6	0.6	1.0	0.7
Estonia	7.4	10.1	7.1	6.1
Croatia	7.9	6.5	9.5	9.9
Latvia	7.9	10.7	8.4	4.9
Lithuania	1.8	2.1	:	:
Hungary	2.5	2.7	4.1	3.1
Poland	4.1	3.5	3.7	2.9
Romania	5.2	6.6	5.9	3.7
Slovenia	7.0	3.6	5.8	4.2
Slovak Rep.	1.8	1.5	2.0	3.1

Source: (Eurostat, 2019f)

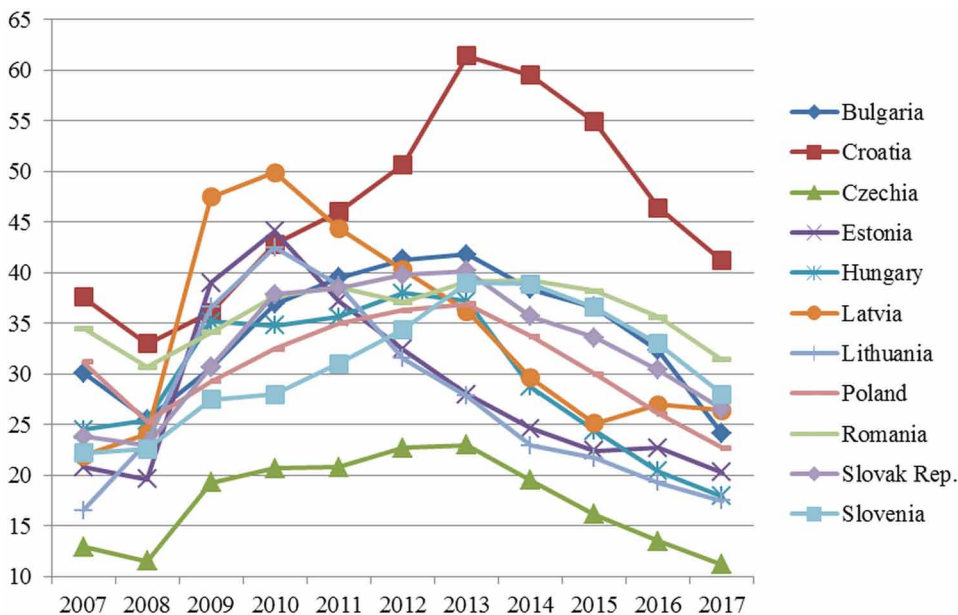
Youth Labor Underutilization

Announced by ILO, labor underutilization proxy combines three measures in the labor market: unemployment, time-related underemployment, and potential labor force. Time related underemployment refers to those who are currently working but are willing to work more hours. Potential labor force includes individuals who are not currently included but have intent to enter in the labor force (ILO, 2019).

Figure 9 presents time series for youth labor underutilization as percentages in the CEECs from 2007 to 2017. The figure clearly shows that Croatia and Latvia had the highest shares, whereas Latvia showed some progress after 2010 up to 2015. Trends of these economies may sign the existence of some structural problems especially for Croatia. Czechia had the lowest youth labor underutilization ratio among the countries examined. Most of the CEECs had followed a similar trend; increase by 2008 which marks the emerging of the 2008 economic recession, and recovery after 2010. The beginning of the recoveries varies from one economy to another. The recovery started in 2010 in Estonia, Latvia and Lithuania; in 2012 in Hungary, in 2013 in Bulgaria, Croatia, Czechia, Poland, Slovak Republic, and Slovenia; and in 2014 in Romania. The impact of the crisis was much more apparent in Estonia and Lithuania; as they had lower values in the pre-crisis period, but experienced substantial increases after the crisis. 2017 statistics show that youth labor underutilization ratios approached to their pre-crisis values in these economies.

Figure 9. Youth labor underutilization (%), 15-24 ages, 2007-2017

Source: ILOSTAT, 2019b



Youth Unemployment by Skill Structure

Table 6 presents unemployment rate for the youth with regard to skill structure in 2007, 2010 and 2014. Since it is the most recent year in the dataset, the time period is limited to 2014. Skill structure refers to educational attainment, and it is grouped into three: low-skill, medium-skill, and high-skill. Table 6 shows that, unemployment rate increased in most of the CEECs after the crisis – in 2010, except for low-skilled youth in Romania, and for high-skilled youth in Slovenia and Croatia. The magnitude of the increase was much apparent for low-skilled workers, reaching to quite high values in the same year. Youth unemployment rates decreased in Czechia, Estonia, Hungary, Latvia, and Lithuania from 2010 to 2014. It is remarkable that, unemployment rate for high-skilled youth increased substantially from 2007 to 2014 in the CEECs. Another issue that is worth to mention is the trend in Slovak Republic. Before the crisis, low-skilled youth unemployment rate was 66.2% and it has decreased to 55.7% in 2014. Despite the severe decline, the value was still too high. The rate for medium-skilled and high-skilled increased substantially in the same period. Croatia was another country experiencing high levels of unemployment for all skill structures. The statistics for these two economies signal the existence of structural problems with youth unemployment depending on skill structure. The

Table 6. Youth unemployment by skill structure (%), 2007, 2010 and 2014

	Low-skilled			Medium-skilled			High-skilled		
	2007	2010	2014	2007	2010	2014	2007	2010	2014
Czechia	31.2	43.3	32.4	8.6	15.7	13.9	8.8	15.1	13.3
Estonia	18.7	46.4	20.7	7.2	31.2	13.7	-	19.1	16.4*
Hungary	30.5	41.9	34.7	15.6	22.9	17.3	12.3	22.0	16.8
Latvia	16.3	47.4	29.4	9.0	35.2	18.4	7.3**	20.7	15.3
Lithuania	-	54.6	39.7	8.2	34.6	17.8	-	26.5	14.0
Poland	22.8	30.3	29.8	21.7	23.1	23.9	20.0	20.7	19.5
Slovak Rep.	66.2	67.3	55.7	15.3	30.6	26.4	19.0	27.5	30.0
Slovenia	13.2	19.7	23.5	9.4	12.9	19.2	17.2**	16.9	21.3
Bulgaria	29.5	39.5	45.1	12.3	21.2	21.2	-	18.9***	19.0*
Croatia	38.6	54.1	66.9	23.3	30.3	45.1	30.8	29.7	31.6
Romania	18.6	16.2	18.7	21.0	24.7	25.4	21.1	27.9	33.2

Source: (OECD, 2019b)

Notes: Skill structures are classified depending on educational attainment. Low-skilled refers to below upper-secondary (ISCED 0-2), medium-skilled refers to upper and post-secondary (ISCED 3-4) and high-skilled refers to tertiary education (ISCED 5-6) levels.

* 2013 value; ** 2008 value; *** 2011 value

reasons behind can not be solely limited with the impact of the crisis, hence there is a need for further analysis to clarify and distinguish the impact of crisis and the other factors in these economies.

Mismatch

Figure 10 shows education (field-of-study) and qualification mismatch in the CEECs as a percentage of total workers. Mismatch proxies are examined for 15-64 ages, due to lack of data for the youth. Since 2016 is the most recent value in the dataset, Figure 10 reflects measures for the relevant year. The EU-28 and OECD average values are included in the figure for comparison.

Figure 10 presents two different types of mismatch: education (field-of-study) and qualification mismatch. Education mismatch occurs when an individual is educated in a field, however (s)he is not working in the corresponding field. Qualification mismatch occurs when an individual is too or less qualified for the job (s)he is working for (Di Pietro & Urwin, 2006). In this regard, high mismatch proxies can refer to a structural problem in labor markets, as it reflects inappropriate assignment of tasks and workers.

Figure 10 shows that, both education and qualification mismatch can be considered as a crucial issue in the EU-28, OECD average, Lithuania, Latvia, Hungary, and Estonia; since both values for these economies were high in 2016. Although, qualification mismatch was also an important problem in Slovak Republic and Czechia, the rates of education mismatch were much higher. Hence, policy recommendations should be diverted towards this perspective in these economies.

Figure 10. Education and qualification mismatch (% of total workers, 15-64 ages), 2016

Source: (OECD, 2019c)

Notes: Bulgaria, Croatia, and Romania are not included in the figure due to a lack of data. Field-of-study mismatch data is not available for Poland and Slovenia in the dataset.

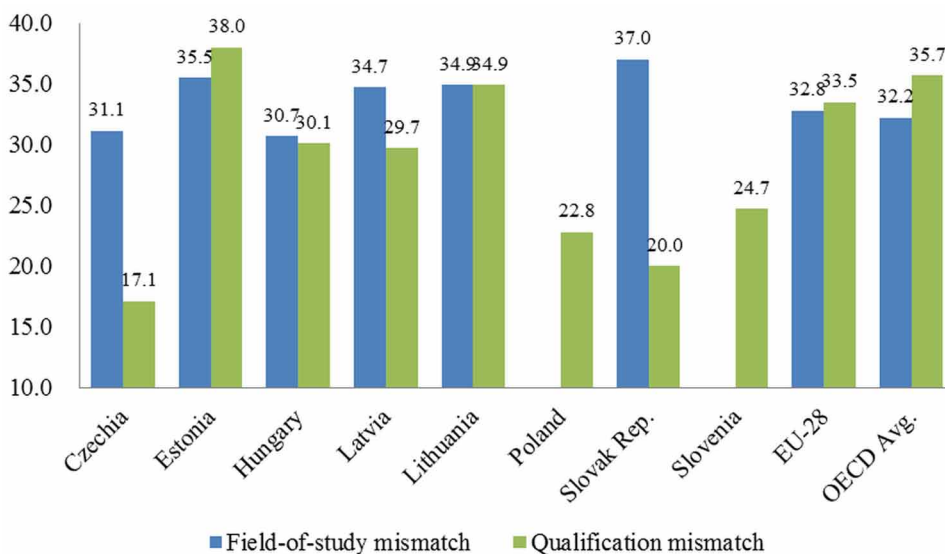
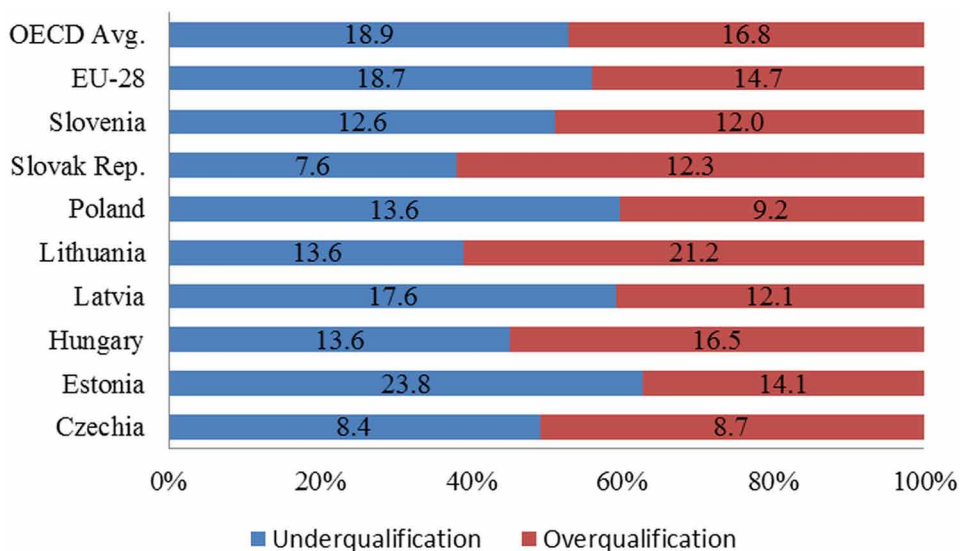


Figure 11 examines qualification mismatch, by distinguishing between underqualification and overqualification in 2016. Underqualifications mean the job requires higher skill or education level compared to the employee’s skill; and overqualification refers to a more qualified employee compared to the requirements of the job (Bell & Blanchflower, 2015). The numbers in the bars present percentages of total workers for the 15-64 age group. In order to show the distribution between the two, 100% stacked bar charts are used in the figure. The share of underqualification mismatch is slightly higher than that of overqualification in the EU-28, OECD average and Slovenia. Figure 11 also shows that underqualification mismatch is remarkably higher than that of overqualification in Poland, Latvia, and Estonia. The countries

Figure 11. Qualification mismatch breakdown: underqualification and overqualification, 2016

Source: (OECD, 2019c)

Notes: Bulgaria, Croatia, and Romania are not included in the figure due to a lack of data.



in which overqualification arose as a more important issue were Slovak Republic, Lithuania, Hungary, and Czechia in 2016.

SOLUTIONS AND RECOMMENDATIONS

The impact of the 2008 crisis was quite apparent in the CEECs; in fact the rise of youth unemployment and the NEETs were higher in these economies compared to that of the EU-28 and OECD average. The first recommendation is to distinguish the impact of the crisis in these economies, and analyze the pure effect of it. In other words, the impact of other factors needs to be eliminated, as many factors contribute to the youth unemployment and NEET rates. Some of the economies recovered rapidly after the crisis and the relevant rates decreased to their pre-crisis values. However some did not show that much progress. When the structural problems related with labor market examined, it became clear that the countries that did not recover rapidly are generally the same economies with the ones experiencing structural problems. From this perspective, the inclusion of youth in employment stands as one of the most important issue in those economies. Active labor market programs (ALMP) support and encourage employment in economies, and most economies that apply

such programs experience the positive impact in their labor market. ALMP include many types of labor policy, some of which directly concentrate on the youth (Caliendo & Schmidl, 2016). Such kind of programs should be applied, or increased in number to combat with youth unemployment, and unemployed youth NEETs.

It is not sufficient only to decrease unemployment in order to overcome problems related with the youth. Inactivity among them has become a significant problem in the last decades. Inactivity may result from many reasons; school drop-outs, being a discouraged worker, having responsibility of care of someone – an elderly or a child, etc. (Maguire, 2015). Social policies which focus on each separate aspect should be designed and implemented decisively, in order to decrease inactive population in the CEECs. The youth needs to be economically and socially included in the society. All these policies and EU's common policies should complement each other.

Further recommendations would require solid and certain reasons behind these issues. Hence, the need for a more detailed analysis for a smaller group of CEECs, or preferably country specific examinations is presented in “**FUTURE RESEARCH DIRECTIONS**” section.

FUTURE RESEARCH DIRECTIONS

Future research directions can be directed to country analysis with a longer time-period which covers both pre-crisis and post-crisis period. Since fluctuations in labor market dynamics can also result from other macroeconomic variables, the examination of the other factors on the increases would be worthwhile. It would contribute to the literature, if the impact of the 2008 crisis is distinguished from other factors empirically. Such kind of analysis can be applied for Latvia, Croatia, Lithuania and Estonia, as these economies experienced high levels of increases and they showed rapid recovery, except for Croatia. In addition to this, an analysis of the reasons behind structural labor market problems may also contribute to the literature. Household surveys, and micro surveys can be used to determine the reasons underneath. Such analysis can be applied for Croatia, Romania, and Bulgaria, as structural problems were more apparent in these economies. Examination of youth NEETs would also be beneficial, since the issue is one of the most important problems related with the youth in many economies. Especially, an analysis for youth NEETs at 15-29 ages can be significant, as the NEET rate for the corresponding age-group was higher than that of 15-24 ages. All these future directions can also be directed to different age-groups in youth, the gender perspective and smaller group of CEECs.

CONCLUSION

This study examines the change in youth unemployment and youth NEETs in the CEECs for the post-2008 crisis period. It also includes some proxies to present structure of labor market and determine structural problems in these economies, if any. The proxies used for labor market structure are: the duration of youth unemployment, those who are available to work but not actively seeking for a job, labor underutilization; skill structure of youth unemployment and mismatch. In order to make comparisons, the EU-28 and/or OECD average data are also used to reflect the labor market performance of the CEECs. The research questions of this study are as follows:

Research Question 1: Did the labor market dynamics worsen in the CEECs after the 2008 crisis, as it is evidenced in many European economies?

Research Question 2: How are the CEECs different from each other in terms of youth unemployment and youth NEETs?

Research Question 3: How different are the CEECs compared to each other by means of structural problems in their labor market?

The research findings show that the 2008 crisis affected youth unemployment and youth NEET rates in the CEECs in a negative way. In fact, the rate of increase and fluctuations were higher in the CEECs compared to those in EU-28. The study answers the first research question accordingly.

The comparisons of youth unemployment and total unemployment rates show that, youth unemployment rate was more vulnerable to business cycles than total unemployment, as youth unemployment to total unemployment ratio proxy reflects. Romania has the highest share, and hence youth is the most sensitive to economic downturns in Romania among the CEECs. The comparison of youth unemployment and NEET rates also confirm that, youth unemployment rates are higher than NEET rates during the time period examined.

The effect of the 2008 crisis also shows that Latvia, Lithuania, Croatia, and Estonia were the economies which experienced higher increases and fluctuations both in total and youth unemployment rates compared to the other CEECs. The relevant proxies recovered rapidly in Latvia, Lithuania and Estonia; whereas Croatia experienced higher levels for a longer period, and showed a recovery later than. The examination of youth NEET rates indicates that; Bulgaria had remarkably high NEET rates during the period examined. Croatia and Romania experienced high levels of NEET rates, and then recovered. Despite the recovery, Bulgaria, Croatia and Romania still had high NEET rates in 2017. The 2008 crisis created the highest increase in NEET rates in Latvia, Croatia and Romania, compared to their pre-crisis

value in 2007. The examination of the youth NEETs show that, the NEET rate for 15-29 ages were quite higher than that of 15-24 ages; and hence hence 15-29 age group can be regarded as a more vulnerable group compared to 15-24 ages. Another remarkable finding is the changing composition of NEET structure. The share of unemployed NEETs increased in 2010, and lowered back or approached to their pre-crisis value up to 2017 in most of the CEECs. According to the most recent statistics in 2017, inactive NEETs could be regarded as a more important issue than unemployed NEETs. The study answers the second research question accordingly.

The examination of labor market structure shows that; Estonia and Latvia experienced the highest fluctuations in duration of youth unemployment; Estonia, Latvia, Lithuania and Croatia had the highest increases in youth unemployment by skill structure after the-2008 crisis. When labor underutilization is examined, it was clear that Estonia and Lithuania had the highest increase after the crisis. Mismatch proxy show that, education mismatch arose as a more severe problem compared to qualification mismatch among the CEECs. Proxies for labor market structures obviously shows that, Latvia, Estonia, Lithuania experienced high increases after the crisis; and they showed a rapid recovery afterwards. Despite some recovery in Croatia, labor market proxies signal the existence of permanent structural problems, as the rates were higher than the other CEECs. Romania, Bulgaria and Slovak Republic are other economies that present high values for some of the labor market structure proxies; however they had lower rates than that of Croatia. The study answers the third and the last research question accordingly.

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KEY TERMS AND DEFINITIONS

Central and Eastern European Countries (CEECs): An OECD term used to refer a group of countries that include Albania, Bulgaria, Croatia, Czechia, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovenia, Slovak Republic. The term is also used to refer a group in transition economies.

Employment: A labor market status which emphasizes paid work.

Inactive NEETs: Individuals who are neither taking any education nor training or have any willingness to work. These individuals are not in the labor force.

Mismatch: A situation that refers to inappropriate assignment of labor supply and labor demand by means of skill structure, education or qualification.

NEETs: Youth who are neither working nor taking any education or training. This term combines labor market situation and educational attainment.

Unemployed NEETs: Individuals who are not taking any education or training, but are available and willing to work, seeking for a job, but cannot find one. These individuals are in the labor force.

Unemployment: A labor market status which occurs when an individual is available and willing to work, seeking for a job in the reference period, but cannot find one.

Unemployment Rate: The percentage of unemployed persons in labor force.

Youth: Individuals between 15-24 ages.

Chapter 2

NEETs Trapped in the Vicious Circle of Labor Market: A Critical Overview of the European Union and Greece

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ABSTRACT

This chapter provides an overview of the situation of those young individuals who are Not in Employment, Education, or Training (NEET) for the years of 2008-2018. The chapter examines the evolution of NEET rates, shortly after the Great Recession and for a decade, in the European Union in total and then by gender and educational level. A special focus is given to Greece, an ideal case study, since crisis transformed the national labor market, revealing signs of insecurity. Last but not least, special attention will be given toward measures of reformation of labor market policy as a means of responding to the emerging situation of NEETs.

INTRODUCTION ¹

Issues related with labor market are becoming poignant in an even integrated Europe and an ever globalizing world. Alongside the recent years, the situation is exacerbated because of the severe economic crisis and the ensuing recession, which is broadly known as Great Recession and it is the fourth major global crisis, after those of 1870, 1930 (the well - known Great Depression) and 1974.

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The Great Recession, which started during 2008, caused a dramatic economic downturn in economic activity, affected significantly national economies, in which fiscal policies turned to strict austerity policies. Although the crisis was developed outside the labor market, several disorders in the labor market have been created, within the framework of national economies that characterized of multiple economical transformations and social changes. The above happened, since labor is a source of wealth and without workers, resources cannot be transformed into finished goods and services cannot be delivered. Consequently, the economic downturn transformed the world of labor and labor market, because of austerity measures and its relevant austerity policies (Alesina, Favero, & Giavazzi, 2019; Theodoropoulou, 2018), along with job losses, which became major sources of economic instability (Hout, Levanon, & Cumberworth, 2011). The universality of the crisis, it will give the opportunity to evaluate differences in the way in which labor markets respond to such phenomena that may originated elsewhere.

Focusing on the labor market is of vital importance, because labor force constitutes an important factor, which influences the development prospects in changing economic and social environments. The most significant global social changes in the labor market, along with the welfare crisis, have essentially influenced the lives of youth, which is one of the main demographic groups that constitute the labor force. Besides that, non-participation in the labor market constitutes an important factor for high levels of low self-esteem, poverty and social exclusion.

It is of paramount importance to understand the situation of young individuals that are *Not in Employment, Education or Training* (NEET), especially at those labor markets, in which the economy is under of austerity terms. Representative examples are the advanced economies of the European Union and in particular recession-hit Southern European Union countries, like Greece. These are all issues that great attention is needed, as young individuals continue to feel the aftermath of the economic crisis, on their individual employment trajectories and lives in general. The growth of NEETs may present a more difficult policy challenge than unemployment, as it represents persistent disconnection from the labor market as well as the society in general (Bell & Blanchflower, 2015). NEET group members are strongly affected by exclusion and marginalization because problematic labor market entries have sustainable effects on later employment careers or life courses in general. Consequently, it is critical to understand that those individuals who belong to NEET group are considered as outsiders, facing a “double disadvantage”, first as youth and then as unemployed and inactive.

The main research question is the following:

What is the situation of young individuals, who are NEETs, in the European Union and Greece?

NEETs Trapped in the Vicious Circle of Labor Market

The above question is extremely crucial especially in the context of European Union, not only because of the crisis, but also because of its “Europe 2020” strategy for sustainable and inclusive growth that commits to fostering high levels of employment (in numerical terms the target is the achievement of 75% employment for individuals from 20 to 64 years old), in order to achieve a dynamic labor market, together with a high quality and productive workforce (Papadopoulou, 2017a).

Taking European Union and Greece as laboratories, the object of this chapter is to provide an overview of the situation of those young individuals, with a specific focus on the group categorized as NEETs. In other words, the aim is to provide a picture of NEETs and describe the major changes since the onset of the crisis, via the latest Eurostat data. Special attention is placed on changes in the relevant rate of NEETs arising from crisis. To better contextualize an integrated labor market analysis, we deemed useful to provide the evolution of rates from 2008 to 2018, with the focus on those individuals aged between 20 and 34 that have made the choice to enter the world of work. Given that in most European educational systems, these individuals can have concluded secondary and tertiary education and have entered the workforce, in contrast with those of young individuals between the ages of 15 and 19 that continue to participate in some form of education (secondary and tertiary) and training (either formal or non-formal). Moreover, the overall NEET population can be easily analyzed with breakdowns by country, gender and educational attainment. All these analyses provide important information on those individuals who are not in employment, education or training. Therefore, Greece is an ideal case study, since it was really “in the spotlight”, because of the crisis and the accompanied transformation of the labor market (Giannitsis & Zografakis, 2015; Papadopoulou, 2018), revealing signs of inequalities (Papadopoulou, 2017b) and early job insecurities (Symeonaki, Parsanoglou, & Stamatopoulou, 2019).

Last but not least, special attention will be given toward appropriate policy responses of active labor market policy and its effect regarding tackling the consequences on the NEETs and supporting them to gain a foothold in the labor market. All in all, NEETs will be discussed and tackled individually as a policy issue and this is an innovation of the current chapter, since NEETs are mostly positioned in an overall debate on youth unemployment. Consequently, the chapter is structured as follows. In section of *Definitions*, we briefly outline the context of labor market and NEETs. The next section deals with the *Trend and Development of NEETs in the European Union*, and then follows a relevant section, which deals with a *Closer look on NEETs in Greece*. Finally, a *Conclusion* is made.

MAIN FOCUS OF THE CHAPTER

Definitions of Labor Market and NEETs

It is useful to start with the relevant definitions that will be used henceforth and that are crucial to understand the issues analyzed.

More specifically, this section defines the concept of the labor market, in order to give an extensive description of its functions, the latter being fundamental to answer questions related to the formation of NEET group in diverse countries and to understand its position in the context of the European Union and specifically at the Greek labor market. Moreover, this section defines the concept of NEET and discusses its use and limitations, along with the examination of its characteristics.

Labor Market

A labor market, also known as the job market, is a market where a quantity of labor services L , corresponding to tasks specified in an unfilled assignment or job description (vacant job), is offered in exchange for a price or remuneration, called wage W . Specifically, the labor market refers to the supply and demand for labor in which employees provide the supply and employers the demand. Not all labor services offered by an individual are paid. For instance, the time we devote to performing personal tasks is not paid. It becomes market work only if someone hires a house cleaner. In order to be in the labor market, there must be an exchange of a labor service for a wage W (Boeri & van Ours, 2013, p. 5).

We should distinguish between two levels, namely macroeconomic and microeconomic levels. More specifically:

At the macroeconomic level, supply and demand are influenced by domestic and international market dynamics, as well as factors such as immigration, the age of the population and education levels. Relevant measures include unemployment, productivity, participation rates, total income and gross domestic product (GDP). The macroeconomic view of the labor market can be difficult to capture, but a few data points can give investors, economists and policymakers an idea of its health. The first is unemployment. During times of economic stress, the demand for labor lags behind supply, driving unemployment up.

At the microeconomic level, labor supply and demand is analyzed at the level of the individual worker or firm, along with their interaction. The relationship between supply and demand influences the hours the employee works and compensation in wages, salary and benefits. Supply, or the hours an employee is willing to work, initially increases as wage increases. No workers will work voluntarily for nothing

NEETs Trapped in the Vicious Circle of Labor Market

(theoretically, we have the cases of unpaid internships, in order trainees gain some experience).

All in all, labor market constitutes a major component of the economy and is intricately tied in with markets for capital, goods and services. In other words, the labor market can be characterized as a factor market, since it provides means by which employers find the labor they need, whilst individuals offer their labor services in different jobs. The economy, however, typically consists of many labor markets, even for workers who have similar skills. These labor markets might be differentiated by region or by industrial sector (Borjas, 2016, p. 147).

But at the same time, there are many terms, which are included to the labor market analysis. In order to have a concrete view of the labor market and NEET group, Table 1 maps out various categories used in labor market and its relevant analysis, comparable with one another (African Development Bank [AfDB], Organisation for Economic Co-operation and Development, United Nations Development Programme, & United Nations Economic Commission for Africa, 2012, p. 102). Moreover, through Table 1, the position of NEETs can be located, in relation with the other categories of the labor market.

As it is shown at Table 1, within a particular national labor market and its economy, the working age population can be characterized by its status (within or outside the labor market), the amount of time spent specifically for a specific job placement (full-time or part-time), the employment status of individuals, along with their job

Table 1. Main categories of the labor market

Labor Force Status	Time Use	Employment Status	Working	Level of Education	Job Quality	Formality
In the labor force	Full-time	Wage employed Self-employed Contributing family worker	Employed	Skilled Semi-skilled Unskilled Low Intermediate High Below upper secondary Upper secondary or post-secondary non-tertiary Tertiary education	Decent Precarious (fixed-term contracts)	Formal or informal
	Part-time	Voluntary Underemployed		Precarious (temporary)		
Out of the labor force	Job seeker	Unemployed	Unemployed NEET			
	Inactive	Discouraged Inactive (carers, sick/disabled)				
	Education	Student		Student		

Source: Adapted from AfDB et al., 2012

status (employed, unemployed, NEET or student), the educational attainment of the individuals and the quality of the work. In this point, it must be clarified the term of precarious employment. Specifically, precarious employment concerns people who work under precarious conditions (contributing to the family business or for personal benefit, without access to social benefits and social security schemes).

Last but not least, the formality of employment should be taken into account. In addition to formal forms of employment, there are informal forms of employment, often carried out under precarious employment conditions in the context of the informal economy.

NEETs

The term NEETs is not new (European Foundation for the Improvement of Living and Working Conditions [Eurofound], 2012, 2016). In current jargon, the term “NEET”, presents high popularity and it is associated with its assumed potential to address a broad array of vulnerabilities among youth, touching on issues of unemployment, underemployment, precarious employment, early school leaving and labor market discouragement (International Labour Organization [ILO], 2015). The term was first officially introduced in the United Kingdom in 1999. Before this, the phrase “Status Zer0” was used with a similar meaning. The term rapidly gained importance beyond United Kingdom, and at the beginning of the last decade, equivalent definitions were adopted in almost all EU Member States. However, countries outside the European Union (namely Japan or New Zealand), have developed different definitions for NEETs.

The definition of NEET agreed by the European Union includes those young individuals who are unemployed or inactive and they have not received any formal or non-formal education or training. The definition was applied by Eurostat in its statistical data and the indicator used in the context of the Europe 2020 strategy. The relevant NEET rate of youth is an indicator that measures the sum of young people that are not in employment, education or training as a proportion of the entire age category.

As we can understand, NEETs are a heterogeneous population.

Figure 1 presents the five main subgroups that consist the NEET population; the first two refer to vulnerable young individuals and the other to non-vulnerable individuals (Eurofound, 2012, p.24):

- The conventionally unemployed, the largest subgroup, which can be subdivided into long-term and short-term unemployed.
- The unavailable, which includes young carers, young individuals with family responsibilities, along with those who are sick or disabled.

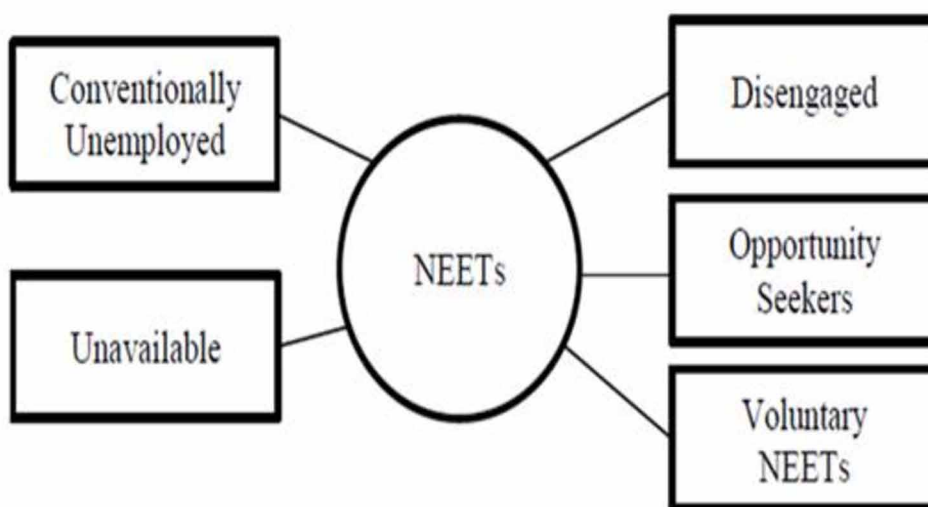
NEETs Trapped in the Vicious Circle of Labor Market

- The disengaged. Young people who are not seeking jobs or education and are not constrained from doing so by other obligations or incapacities.
- The opportunity-seekers. Young people who are actively seeking work or training, specific to their skills and status.
- The voluntary NEETs. Young people who are travelling and those constructively engaged in other activities such as art, music and self-directed learning.

TREND AND DEVELOPMENT OF NEETs IN THE EUROPEAN UNION

While the low level of labor market participation of young people is not new, what is new is its intensity during and shortly after the economic crisis. While the youth unemployment rate in the European Union is still double the overall unemployment rate, youth unemployment is decreasing faster than overall unemployment. Although, there has been significant improvement in the labor market participation of young individuals recently, the legacy of the crisis lives on individuals that remain unemployed.

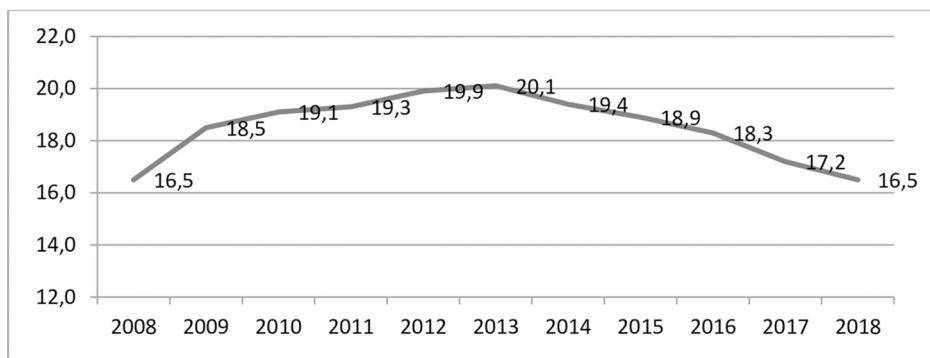
Figure 1. The categories of the NEET group
Source: Eurofound, 2012



According to the latest Eurostat data, Figure 2 provides an overview over time for individuals from 20 to 34 years old that are neither in employment nor in education and training (NEETs). Specifically, the rate of NEETs in the EU-28 (current composition) increased markedly in 2009 and 2010 in comparison with 2008, after the onset of the global financial and then economic crisis. This increase was consolidated over the course, until the year of 2013. By 2013, NEET rates had risen to their highest ever levels, when 20.1% of young individuals aged 20-34 were recorded as NEET. Then in 2014, a marked decrease (19.4%) in the size of the NEET population was finally recorded in most Member States. The rate then decreased at a more modest pace through to 2016, when it reached 18.3%. However, the NEET rate of 17.2%, recorded a year afterwards in 2017, revealed the highest difference of NEET rate, namely 1.1%, for two consecutive years, before decreasing to 16.5% in 2018. Interesting is the fact that in 2018, the NEET rate for young individuals in the EU reached the same level as in 2008.

Figure 2. NEET rate (%) for individuals 20 – 34 years old in the European Union, 2008 – 2018

Source: Data taken from Eurostat (edat_lfse_20)



All in all, the evolution of NEET rate in the EU shows how strongly the economic crisis and its recession affected individuals from 20 to 34 years old.

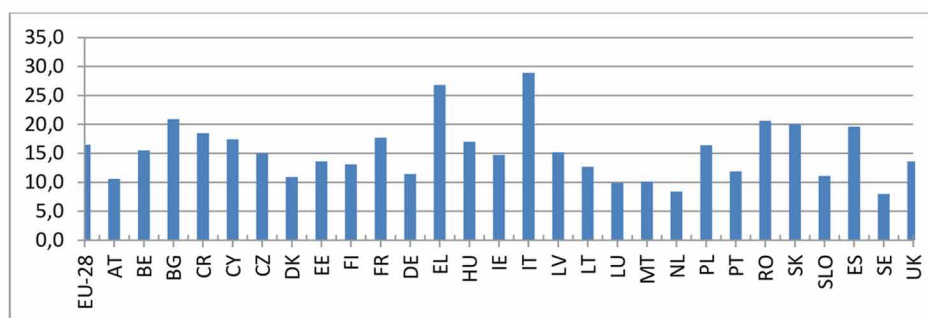
Although the overall rate of NEETs has returned to the levels of 2008, the situation is extremely diverse among national labor market performances within the common European labor market. Specifically, in many Mediterranean Member States the NEET rate remains high, since it has been doubled or tripled since the onset of the recession.

NEETs Trapped in the Vicious Circle of Labor Market

As presented in Figure 3, in the year of 2018 the percentage of young individuals neither in employment nor in education and training ranges from 8.0% in Sweden to 28.9% in Italy. More specifically, low rates below 10.0% are observed in Luxembourg (9.9%) and in the Netherlands (8.4%). Conversely, there are ten countries that recorded NEET rates above the EU-28 average of 16.5%, with the highest rates observed in Bulgaria (20.9%), Romania (20.6%), Greece (26.8%) and Italy (28.9%). This implies that at least one out of five young people in these Member States is not in employment, education or training. Thereby clear regional disparities are revealed between North and South of Europe, reflecting the severe and uneven impact of the crisis on the employment status of NEETs, with signs of a segmented labor market.

Figure 3. NEET rate (%) for individuals 20 - 34 years old in the European Union Member States², 2018

Source: Data taken from Eurostat (edat_lfse_20)

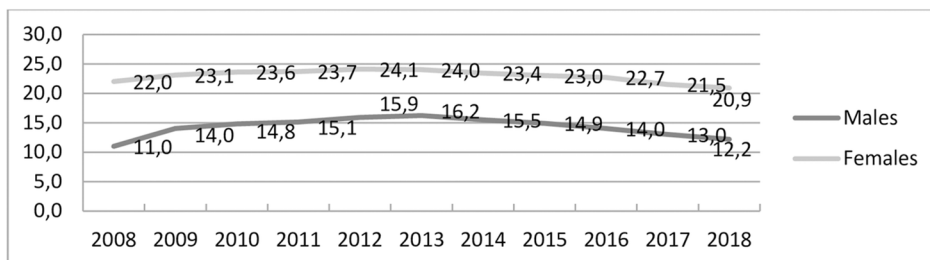


The impact of the recession and its aftermath has also varied widely in terms of its effects on different background characteristics, such as gender. Indeed, Figure 4 indicates more female than male NEETs in the EU-28. In 2008, among individuals aged 20 - 34, for example, the NEET rate for women was 22.0%, as against 11.0% for men. The share of female NEETs in the EU Member States jumped from 22% in 2008 to 23.1% in 2009, to 23.6% by 2010 and to 23.7% the following year, showing remarks of stabilization, after the onset of the global financial and economic crisis. The rate then reached its highest point at 24.1% in 2012. Then, the share of young females NEETs decreased slightly in 24% in 2013, 23.4% in 2014 and finally, it reached the lowest share at 20.9%. The latter means that young women are more likely to become NEET.

On the other hand, young males, who are neither in employment nor in education and training, present relatively lower percentages than that of young females.

Figure 4. NEET rate (%) for individuals 20–34 years old, by gender in the European Union, 2008–2018

Source: Data taken from Eurostat (edat_lfse_20)



Specifically, the share of male NEETs in the EU Member States jumped from 11% in 2008 to 14% in 2009, to 14.8% by 2010, to 15.1% the following year and to 15.9% in 2012. In 2013, its rate reached its highest point at 16.2%. Then, the share of young males NEETs decreased slightly in 15.5% in 2014, 14.9% in 2015, 14% in 2016 and 13% in 2017. Finally, it reached its lowest percentage at 12.2% in 2018. In this point, it should be highlighted that the gender gap reached its highest point in 2008 (11% difference between males and females), with the beginning of the economic crisis and its lowest point in 2013 (7.8% between males and females).

There are a range of factors that may explain gender gap on NEETs, among which are stereotypes or social norms, which tend to place a higher importance on men’s role in the labor market as “breadwinners” and on women’s role within the family as carers. Another explanation is the plausible preference of employers to hire young men, in order to avoid absences because of childbirths. However, despite hardships, women play a significant role in the labor market landscape.

For an integrated view of the situation of NEETs in the European Union, it should be highlighted the importance of education, as the main expression of human capital, and its connections for encountering economic crisis. Education constitutes a valuable factor in the process of global economic and social transformation, since it contributes to the increase of individual’s productivity and the reduction of poverty and inequality. All these have revealed a great need to focus more on the empowerment of education as key factor for the achievement of inclusive and sustained growth and development (Papadopoulou, 2015, 2017a, 2018). Consequently, educational levels can provide important information about the structure of the NEET population at the European Union as a whole and at Member State level. Table 2 shows the NEET rates for three different levels of educational attainment, namely low level, intermediate and high level. According to the International Standard Classification of Education (ISCED), at the low level of education are included individuals of less

NEETs Trapped in the Vicious Circle of Labor Market

Table 2. NEET rate (%) for individuals 20 – 34 years old, by ISCED levels for European Union, 2008 – 2018

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ISCED (0 - 2)	32.7	36.1	38.1	38.7	40.2	41.1	40.9	40.3	39.8	38.1	37.2
ISCED (3 & 4)	14.0	16.0	16.6	16.8	17.4	17.8	17.1	16.7	16.1	15.2	14.7
ISCED (5 - 8)	8.7	10.1	10.5	10.9	11.5	11.5	11.3	11.0	10.5	9.8	9.5

Source: Data taken from Eurostat (edat_ifse_20)

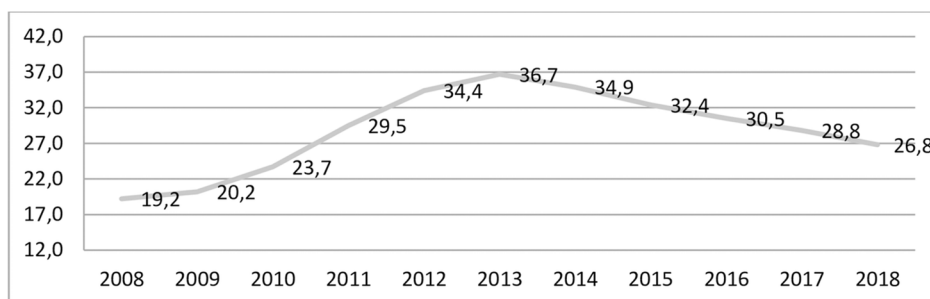
than primary, primary or lower secondary level of education (ISCED 0 - 2), at the intermediate level of education, individuals of upper secondary or post-secondary non-tertiary education (ISCED 3 and 4) and at high level of education, individuals of tertiary education (ISCED 5 - 8).

As Table 2 indicates, by focusing on the 20 - 34 years age group and for all educational levels, the NEET rate followed an increasing trend from 2008 to 2013, revealing the hardships that NEETs faced in order to enter the labor market, being in a situation of inactivity. From 2014 and afterwards, the NEET rate followed a decreasing trend, but still could be considered quite high. Throughout the period, the highest NEET rates were observed among those with up to a lower secondary level of education (ISCED 0 - 2) and the lowest NEET rates for those with a tertiary education (ISCED 5 - 8). Specifically in 2018, the highest NEET rate, for the EU-28 on average (37.2%), is observed among those with up to a lower secondary level of education (ISCED 0 - 2). The equivalent for those with an intermediate level of education (ISCED 3 and 4) is 14.7%, and for those with a tertiary education (for this age range, ISCED 5 - 8) it is 9.5%. Hence, those individuals with lower levels of educational attainment are still more at risk of becoming NEET in comparison with those with a tertiary education. However, beyond absolute numbers, the probability of becoming NEET still decreases as educational level increases: hence, education is confirmed as the best protection against unemployment and exclusion.

A CLOSER LOOK ON NEETs IN GREECE

With the growing importance of young individuals that are neither in employment nor in education and training (NEETs) in the public sphere, it is highly recommended to understand the structure and situation of NEETs not only in the European level, but also on the national level of Greece and its relevant labor market. The situation of NEETs is intricate especially in Greece, within the framework of a volatile national economy that characterized of worsening pay conditions, multiple economical

Figure 5. NEET rate (%) for individuals 20 – 34 years old in Greece, 2008 – 2018
 Source: Data taken from Eurostat (edat_lfse_20)



transformations and social changes, because of the crisis. All these developments have led to declining output and negative labor market dynamics in the country.

As it is stated earlier in 2018, the NEET rate in Greece is the second highest among the Member States of the European Union. Figure 5 provides an overview over time for Greek individuals from 20 to 34 years old that are neither in employment nor in education and training. Specifically, the share of NEETs in Greece jumped from 19.2% in 2008 to 20.2% in 2009, to 23.7% by 2010 and to 29.5% the following year, after the onset of the global financial and economic crisis. In fact, there was an increase of 5.8% on NEETs population in only one year. In 2013, the NEET rate reached its peak at 36.7% and then gradually decreased from 34.9% in 2014, to 32.4% in 2015, to 30.5% in 2016 and to 28.8% in 2017. Finally, the NEET rate reached 26.8% in 2018, which is a relatively high percentage that need to be considered.

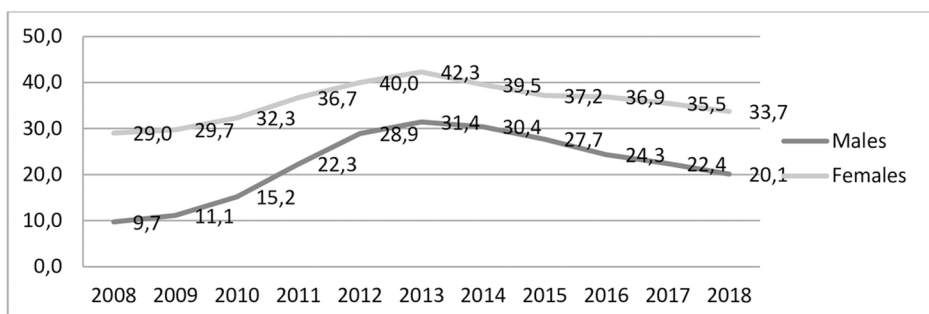
Similarly, the NEET rate by gender in Greece follows the overall European trend. The impact of the recession and its aftermath has been varied in terms of gender. Once again, there is a division between young males and females, who are neither in employment nor in education and training. Indeed, Figure 6 shows that in 2008, 29% of young women (aged 20 - 34) in the country were NEETs, while only 9.7% of young men were in the same group. Specifically, in Greece, the share of female NEETs jumped from 29% in 2008 to 29.7% in 2009, to 32.3% by 2010 and to 36.7% the following year, showing remarks of increase, after the onset of the global financial and economic crisis. The rate then reached its highest point at 42.3% in 2013, while in 2012 the NEET rate for females in Greece was 40.0%. Then, the share of young females NEETs decreased in 39.5% in 2014, 37.2% in 2015 and finally, it reached 33.7% in 2018.

On the other hand, young males, who are neither in employment nor in education and training, present relatively lower percentages than that of young females. Specifically, the share of male NEETs in Greece jumped from 9.7% in 2008 to 11.1%

NEETs Trapped in the Vicious Circle of Labor Market

Figure 6. NEET rate (%) for individuals 20 – 34 years old, by gender in Greece, 2008 – 2018

Source: Data taken from Eurostat (edat_lfse_20)



in 2009, to 15.2% by 2010, to 22.3% the following year and to 28.9% in 2012. In 2013, the rate reached its highest point at 31.4%. Then, the share of young males NEETs decreased slightly by one unit in 30.4% in 2014, 27.7% in 2015, 24.3% in 2016 and 22.4% in 2017. Finally, it reached 20.1% in 2018. In this point, it should be highlighted that the gender gap reached its highest point in 2008 (11% difference between males and females), with the beginning of the economic crisis and its lowest point in 2013 (7.8% between males and females). This is a clear signal that there is a need for more policy support for initiatives to encourage the labor market participation of young women in Greece.

Moreover in the Greek labor market, it should be investigated how far education can offer a robust shield against unemployment and especially, it should be investigated the role of tertiary education in shielding against the NEET status. Table 3 shows the NEET rates for three different levels of educational attainment, namely low level (ISCED 0 - 2), intermediate (ISCED 3 and 4) and high level (ISCED 5 - 8) of education.

As Table 3 indicates for all the educational levels in Greece, the NEET rate for young individuals aged 20 - 34 followed an increasing trend from 2008 to 2013, revealing the hardships that those individuals face in order to enter the labor market, being in a situation of inactivity. From 2014 and afterwards, the NEET rate followed a decreasing trend, but still can be considered quite high. In particular, in Greece, more than 46% of young individuals with low level of education (ISCED 0- 2) are NEETs in 2018, compared with 23.2% among those with an intermediate level of education (ISCED 3 and 4) and 26.6% among those with a high level of education (ISCED 5 - 8) (Table 3).

The crucial point in Greece is the fact that through the years the proportion of young individuals who completed tertiary education (ISCED 5 - 8) and ended up

Table 3. NEET rate (%) for individuals 20 – 34 years old, by ISCED levels for Greece, 2008 – 2018

Year	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
ISCED (0 - 2)	28.5	30.4	35.6	42.7	47.9	51.4	49.1	49.0	49.2	46.5	46.5
ISCED (3 & 4)	16.4	17.3	20.0	25.1	30.9	33.1	31.2	27.9	26.4	25.2	23.2
ISCED (5 - 8)	16.6	17.0	20.8	27.6	31.9	34.6	33.9	32.5	29.8	28.5	26.6

Source: Data taken from Eurostat (edat_ifse_20)

NEET has been the second highest behind the relevant rate of those individuals with low level of education (ISCED 0 - 2). As such, people with a low level of education in Greece were almost four times as likely to be neither in employment nor in education and training, compared with young individuals with a high level of education. Nevertheless, southern European and Mediterranean countries tend to have a large proportion of well-educated NEETs as a result of the crisis.

CONCLUSION: POLICY RECOMMENDATIONS

During the era of Great Recession and after that, the European labor market is changing. In this chapter, the situation and evolution of NEETs on the labor market, especially of those individuals from 20 to 34 year old, was approached based on the latest data from Eurostat, for the years 2008 - 2018. As it is stated, the non-participation of young individuals on the labor market is not new, what is new is its intensity during and shortly after the economic crisis. Although, there has been significant improvement in the participation rate of young individuals recently, the legacy of the crisis remains on individuals that are unemployed and inactive. On this account, we are absolutely convinced that understanding the evolution of NEETs on the labor market also by gender and by educational level is essential in response to the financial crisis and its accompanied austerity.

The question that arises is then what needs to be done?

First of all, the need from turning the page of the crisis to adapting to the continuous change world of labor market and work and investing in individuals and their skills must be recognized by governments, social partners and the public employment agencies.

However, it is important to take into account the different composition of NEET population when using this concept, in order to develop the relevant policies. While

NEETs Trapped in the Vicious Circle of Labor Market

governments and all the stakeholders involved set targets to reduce the number of NEETs, through initiatives such as the framework of the Youth Guarantee, the heterogeneity of the NEET population must be taken into account when designing such measures at European and national level. Effective interventions can only be designed if the population of NEETs has been disaggregated (such as by gender or by educational level), in order to identify the distinct needs that NEETs do have, in terms of training and activation actions.

More specifically, the initiatives should have as target the mission to unleashing all young individuals' potential and emphasizing the importance of focusing on NEETs, by providing pathways back into education or training and enabling contact with the labor market, through job-search assistance, counseling and job placements, by public employment centers. But while focusing on NEETs, it is important to recognize the necessity of the creation of not only just jobs, but also decent jobs. The implications for policymakers should lie in more even distributed labor market and further expansion of university education, together with enhancement of human capital, which may generate lasting effects on earnings and thus economic growth and development. Labor market programs that enhance human capital, such as training programs, can be an effective tool for increasing employment opportunities for disadvantaged individuals, such as NEETs, particularly in a long term basis.

However, in the case of Greece, a number of policy recommendations should be formulated, in order to improve the appeal of Vocational Education and Training (VET) that needs to be better adapted to labor market needs, together with a better match of individuals' skills. This can be done by an appropriate design and greater funding of the existent Active Labor Market Programs of the National Employment Services of the country, which still are at a primary stage. Last but not least, comprehending the determinants of NEET rate (e.g. gender or educational level) can help policy makers develop policy interventions for those who are at the highest risk of poverty and eventually put the public policy agenda on a path to increased growth and prosperity. However, having in mind that the highest rates of unemployed and inactive young individuals were recorded in the Mediterranean South, including Greece, this indicates that because of structural problems, and not because of issues related to the business cycle, there are challenges to the inclusion of young people in education or in the labor market. Then it is essential the use of a place-based approach, which expresses the power of *place* and *its people*, in order to format a policy that allows for geographically, differentiated interventions. Territoriality becomes important as labor needs to organize new forms of organization, especially in the context of transformed economy. All these will be part of a wider regional development strategy of the country, in order to enhance cohesion across regions, which is an important piece in the labor market jigsaw puzzle.

Moreover, the chapter addresses challenges that can promote development policies not only on European level, but also on national and regional level. Existence of NEETs and the question of how to effectively activate young individuals into the European labor market should be at the focus of the European policy agenda. This would lead for the years to come, to the social and ethical question as to whether it is better for a country to have many of young individuals as unemployed and inactive or a large number of young individuals as employed but poor. The above then will confirm or not that young individuals as NEETs are trapped in a vicious circle of the labor market.

All in all, the author hopes that the current chapter will help policymakers more precisely to design and implement interventions to ease NEETs' engagement and break the vicious circle NEETs face with the labor market, highlighting also the sustainability of actions taken.

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KEY TERMS AND DEFINITIONS

Crisis: A time of intense difficulty, especially in the field of economy.

Education: The process of receiving or giving systematic instruction, especially at a school or university.

Europe 2020: The Europe 2020 is a ten-year strategy of the European Union's agenda for growth and jobs for the current decade. It emphasizes smart, sustainable and inclusive growth.

Great Recession: A period of economic downturn, following the financial crisis of 2007-2008.

ISCED: The International Standard Classification of Education is the reference international classification for organizing education programmes and related qualifications by levels and fields.

Labor Force: All the members of a particular organization or country, who are able to work, viewed collectively.

Unemployment: The state of being unemployed, without working.


ENDNOTES

- ¹ The views and opinions expressed are those of the author and do not necessarily reflect official policies or positions.
- ² Country codes: AT Austria, BE Belgium, BG Bulgaria, CY Cyprus, CZ Czech Republic, DE Germany, DK Denmark, EE Estonia, EL Greece, ES Spain, FI Finland, FR France, HU Hungary, IE Ireland, IT Italy, LT Lithuania, LU Luxembourg, LV Latvia, MT Malta, NL Netherlands, PL Poland, PT Portugal, RO Romania, SE Sweden, SI Slovenia, SK Slovakia, UK United Kingdom.

Chapter 3

Active Labor Market Programs for Youth: The Numbers Tell the Tale?

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ABSTRACT

Scholars from different fields have studied youth unemployment: its causes, consequences, and ways to tackle it. This chapter provides an overview of the most important results with a specific focus on effectiveness. Among the topics reviewed are the need for research regarding effectiveness, different methods to study effectiveness, and how the results of these methods are appraised. Then other factors than the research design are described to assess the practical significance of ALMPs, followed by a description of the results of recent reviews and meta-analyses. Finally, some selected factors that impact ALMP effectiveness are discussed. This chapter ends with a discussion of current debates and identification of future research opportunities.

INTRODUCTION

Even in times of prosperity, lay-offs and unemployment are common. Unemployment is associated with a range of interconnected and severe negative effects on the individual, society and the economy as a whole, now as well as in the future (ACEVO, 2012). The most apparent consequence of unemployment, namely loss of income, is an important moderator of unemployment on psychological and health outcomes (Hanisch, 1999). If no other income is available, job loss can result in housing problems

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and changes in social activities, which are no longer fundable, resulting in social isolation. Unemployment, and thus NEET status (Not in Employment, Education, or Training), is mentally distressing (Paul & Moser, 2009). In fact, job loss is one of the most stressful life events (Holmes & Rahe, 1967). Common declines in mental health are increases of anxiety, substance abuse and decreases of self-esteem (Hanisch, 1999; McKee-Ryan, Song, Wanberg, & Kinicki, 2005; Paul & Moser, 2009; Wanberg, 2012). Due to increases of headaches and sleep problems, physical health also deteriorates following job loss (Hanisch, 1999; Wanberg, 2012). Although job loss is generally perceived as negative, the effects are not universal across and possibly within people (Wanberg, 2012). When an individual is unemployed, further human and social capital acquisition is hindered, which in turn restricts one's future chances on the labor market. Scarring effects and the extent of wage penalties are widely researched (e.g.). The negative impact of unemployment is greater for youth than for adults (McKee-Ryan, Song, Wanberg, & Kinicki, 2005). The sustainability and stability of societies can be negatively affected by the unemployed, due to decreased social cohesion and increased (family) conflict. The economic loss due to NEET status was estimated by Eurofound (2012) to be €153 billion in 2011, which is about 1.2% of European GDP. This immense loss is the result of expenditure on welfare, education (no return on investment, reschooling), health, and justice. Since the costs of helping youth integrate into the labor market are about 13 times smaller than the public finance costs, the potential benefits of these efforts can be tremendous (Eurofound, 2012). Active labor market policies (henceforth referred to as ALMPs) are therefore gaining renewed interest from policymakers.

However, due to societal pressure and economic necessities increasing attention is being paid to evidence-based practices (henceforth referred to as EBP). EBP is “the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients” (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996, p.71). It employs the judicious use of:

- The current best available external clinical evidence from systematic research;
- The knowledge and expertise of the individual clinician;
- The values, and preferences of the individual patient.

Neither of these elements is good enough on its own. Without current best evidence, treatments risks becoming rapidly out of date (Sackett et al., 1996), and risks being grounded on flawed or biased hunches about what might work. Without clinical expertise, treatment risks becoming tyrannized by evidence (Sackett et al., 1996), as clinical expertise is necessary to judge whether the research findings match the client's health status and preferences. Moreover, the clinician judges the validity, impact and applicability of research findings. Without the view of clients, treatment

risks becoming one-size fits all, and as such being detached from clients, which results in lower health-related goals, worse decisions, and eventually worse health outcomes (Siminoff, 2013). Integration of these three aspects thus ensures that the treatments and services will have the most optimal outcomes and quality of life.

Given the (inter)national attention yet scarcity of resources for ALMPs, evaluation research is particularly important and relevant. As such, this chapter contributes to the literature in two primary ways. First, it provides an overview of literature on evaluation research in general and for NEETs in particular. Second, it provides insight into the complexity of evaluation research, and the interpretation of its results. This chapter aims to bridge science and practice, by informing future researchers about consciously and explicitly reporting about research design and methodology in order to advance theory and practice. More insight into the dynamics of ALMPs can help improve ALMP effectiveness.

Chapter Objectives

- Understand the definition of evidence-based practice and the importance of all three elements.
- Have a basic understanding of how effectiveness of ALMPs is established.
- Be able to appraise an empirical evaluative study on its practical significance.
- Understand the complexity of evaluation research in general and for NEETs in particular.
- Understand why this field of research is still in its infancy.

This chapter begins with a brief introduction into evaluation research, in order to methodologically and statistically appraise the significance of research findings. Then other factors than the research design are described to assess the practical significance of ALMPs, followed by a description of the results of recent reviews and meta-analyses. Finally, some selected factors that impact ALMP effectiveness are discussed. This chapter ends with a discussion of current debates and identification of future research opportunities.

MEASURING EFFECTIVENESS

Governments and organizations are looking for more efficient and effective ways to fund ALMPs. In order to determine which ALMPs are effective, evaluation research is conducted. Through evaluation research, insight into an intervention and its operations is gained, effects of the intervention are assessed, and ultimately practice can be improved. In the next sections, the different types and methods of

evaluation research will be discussed. Then a brief overview of commonly used statistics will be given, followed by the presentation of two models that differently assess effectiveness, namely the pyramid of evidence and the impact ladder.

Evaluation research refers to “the systematic collection of information about the activities, characteristics, and outcomes of programs (which may include interventions, policies, and specific projects) to make judgments about that program, improve program effectiveness, and/or inform decisions about future program development” (CDC, 2012, p.4). As such, to the purpose of research instead of a specific methodology. It systematically assesses whether the resources (time, money, effort) were effective in order to achieve a goal. The road to an effective intervention is always under construction. The process of detection of negative elements and its improvement can be accelerated via evaluation research. As such, different types of evaluation research exist, which can be used in different phases (i.e. before/ after implementation, during/ after execution). Four broad types can be distinguished: formative, process, outcome and impact (Salabarría-Peña, Apt, & Walsh, 2007). Formative evaluations are carried out before a program is implemented to check whether an intervention is feasible, appropriate and acceptable for the target population. A process evaluation can start as soon as the intervention is implemented and checks whether the intervention is implemented as intended, and whether the intervention is accessible and acceptable to the target population. A process evaluation describes *how* an intervention leads to specific outcomes. It is about the operation and execution of an intervention. Movisie (2014) differentiates between instrumental and constructive process evaluations. The first variant focuses on the course of the intervention; which elements are (not yet) effective? Accordingly, an instrumental process evaluation concerns the approach and conditions under which the intervention should be effective. The second variant, the constructive process evaluation, deals with the experiences of the participants and professionals and how they value the intervention.

Although formative and process evaluations provide useful information, they are not suitable to proof that an intervention is (not)effective. Outcome and impact evaluation research does provide answers to questions like whether and by how much the intervention did achieve its intended outcomes. Both outcome and impact evaluations focus on the effects of an intervention. But whereas outcome evaluations focus on effects during the intervention, impact evaluations focus on (sustained) effects after the intervention. In other words, outcome evaluations focus on *progress* participants make, while impact evaluations focus on the achievement of the ultimate goal(s) of the intervention.

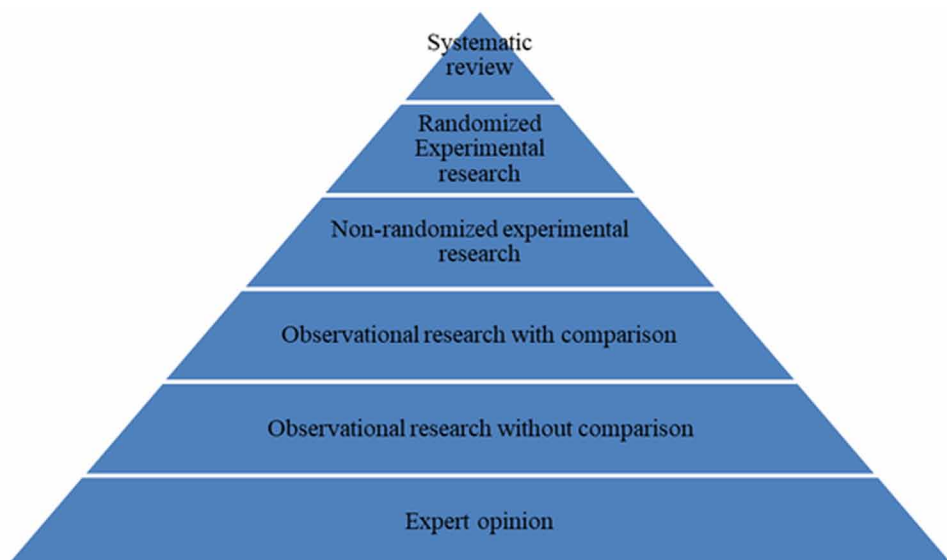
Pyramid of Evidence

In the introduction of this chapter it was noted that evidence-based practice is about the integration of the best available evidence, clinical expertise and client preferences. In this section, we will take a closer look at what “the best available evidence” entails.

Evaluation research can use different research methods. Both quantitative (i.e. surveys, questionnaires) and qualitative methods (i.e. observations, interviews, case studies, focus groups) can be used. Not all methods, and thus their corresponding results, are valued equally. In fact, multiple hierarchies of evidence exist. Hierarchies of evidence rank research evaluating interventions. Primary studies are graded according to their design, and so reflect the degree to which different study designs are susceptible to bias (National Health Service [NHS] Centre for Reviews and Dissemination, 1996). A pyramid appropriately represents the levels of evidence as with each higher level the quality of research designs increases and the risk of bias decreases. Although a universally accepted hierarchy of evidence does not exist, there is broad agreement on the relative strength of types of studies and thus follow a similar pattern; see figure 1. In the following sections, each level of the pyramid will be briefly discussed.

At the lowest level of the pyramid the ‘weakest’ evidence for an intervention can be found, which are opinions of respected authorities, based on clinical experience.

Figure 1. Pyramid of evidence



The expert does not provide empirical evidence to support the claims regarding effectiveness. Since it is thus impossible to validate the claim, expert opinions are valued the least.

Observational research is located on the second (without comparison group) and third level (with comparison group). Research on the second level can be about one or multiple people with a unique and interesting condition, which may or may not be followed over time (i.e. prospective). Examples of research design at this level are: single case study (i.e. $N=1$), before-after design, case-control study, cross-sectional research, case series and case reports (Higgins & Green, 2011). These designs are useful when little is known, only few clients are involved in an intervention, or when it is undesirable or unethical to withhold the intervention from any clients (Law et al., 1998). With no comparison, it is however, impossible to assess whether changes in the outcome variables are the result of the intervention. Alternative explanations for the results are for example lifestyle or environmental changes, or simply natural temporal trends.

On the third level, observational studies with a comparison group can be found. Research designs are very similar to the on level two, with the exception of single-case design, with the addition of a comparison group. The groups usually differ with respect to enrollment in an intervention; one group did enroll, while the other group was on a waiting list to enroll in the same intervention or receive treatment as usual. The major advantage of these designs over the design on the second level is that the comparison of groups does provide a first indication as to whether the intervention is effective. Yet, due to the lack of randomization, it is difficult to know whether the clients were similar on confounding variables (i.e. variables that are not-measured but could influence the results, such as motivation and personality), and it is thus uncertain that the intervention itself is responsible for the outcomes. Due to these possible biases, the results of observational studies are, by their nature, uncertain (Institute for Work & Health, 2016).

Experimental research is located on the fourth (non-randomized), and fifth level (randomized). It is always prospective in nature: participants are followed during and after an intervention. In an experimental research design, one or more experimental groups are compared to a control group. The people in the experimental group participate in an intervention, while the people in the control group do not participate in an intervention or receive care as usual. In experimental research the allocation of clients to the intervention or comparison group is under the control of the researcher. The difference between the fourth and fifth level concerns the method of allocation. On the fourth level the method is non-random, whereas on the fifth level, the allocation is done randomly. Examples of non-randomized experimental research designs include cohort studies, non-randomized control trials, and controlled before-after studies (Higgins & Green, 2011). These designs are useful when

“randomization is not possible because of (i) ethical considerations, (ii) the inability to randomize individual patients or locations, or (iii) a need to intervene quickly” (Mahajan, 2015, p.671). Although these research designs are quite strong, the lack of randomization allows for alternative explanations for the found differences between those who received the intervention and those who did not. In a randomized control trials (RCT), allocation to either the intervention or comparison group is random, which makes it very likely that participants are similar at the start of the experiment on confounding variables. Due to their similarity, differences after the intervention are thus very likely to be the result of the intervention. Consequently, RCTs are seen as the ‘golden standard’ in interventional research. A mayor disadvantage of randomized experimental research are the time and costs involved (Law et al., 1998). Moreover, many research questions cannot be answered using this design (Institute for Work & Health, 2016).

At the top of the pyramid the ‘best’ evidence for an intervention can be found, namely systematic reviews and meta-analysis. Both provide a synthesis and appraisal of relevant evidence of other level(s) over a given timeframe. Systematic review have great theoretical and practical significance, because they summarize the literature. “They make sense of a body of research and present an analysis of the available literature so that the reader does not have to access each individual research report included in the review” (Aveyard, 2014, p. 6). A systematic review thus provides a complete picture on a given topic and by re-analyzing all individual studies new insights can be gained.

The strengths and weaknesses of a study design should however always be seen in light of the *appropriateness* of the research design. To determine the appropriateness, the key issues to consider are: amount of knowledge about a topic, amount of knowledge about the outcomes, ethical issues, and the research question (Law et al., 1998). Some situations thus warrant a different study design than others. For example, with increasing knowledge about a subject, research designs have to become more rigorous.

Ladder of Impact

Besides the pyramid of evidence, some researchers and institutions (e.g. Mercer and Pignotti, 2007; Movisie, 2017; van Yperen, Veerman, & Bijl, 2017) classify interventions on other criteria than just the research design. They claim that evaluation research is not sufficient *on its own* to support the claim that an intervention is effective. What they have in common is the value of: a manual or similar description of the intervention, and an appropriate, accepted theoretical foundation. Both form the basis of an effective intervention, without them evaluation research does not make sense. Without a manual, an intervention cannot be replicate. Without a claim

with a basis in accepted theory and an acceptable rationale to use it, one cannot understand, explain or predict outcomes of an intervention. These researchers also underscore the importance of evaluation research. An intervention is assigned to a higher category or level when a more rigorous research design is applied; see Table 1.

Table 1. Ladder of impact. Adapted from van Yperen, Veerman, & Bijl (2017)

Level		Implicit knowledge about the effectiveness of the intervention	Description of the intervention, personnel, organization, material context, and preconditions	Description of a credible intervention theory	Demonstration that the goals have been achieved	Plausible demonstration that the results are caused by the intervention	Research that makes it very likely that the results are caused by the intervention
0	Implicit knowledge	✓					
1	Descriptive, no evidence	✓	✓				
2	Theoretical indications	✓	✓	✓			
3	First empirical indications	✓	✓	✓	✓		
4	Good empirical indications	✓	✓	✓	✓	✓	
5	Strong empirical indications	✓	✓	✓	✓	✓	✓

Effect Size

When a difference on an outcome measure between two or more groups is statistically found, this does not automatically imply also a *practical* significant difference. To establish how much one group differs from another and thus signal practical significance, a different statistic is necessary, namely the effect size (Lakens, 2013). Effect sizes can be grouped in three families (Rosnow & Rosenthal, 2003): correlation, ratio, and difference. Since evaluation research frequently is about differences between group, this section will focus on the difference family. Cohen's *d* is the most often used standardized effect size statistic. It ranges from zero to infinity. A negative value indicates a negative effect of the intervention, i.e. participants in the comparison group have more beneficial outcomes than those in the treatment group. A value of zero means that the treatment and comparison group have no differences

Active Labor Market Programs for Youth

in effect, i.e. the intervention does not result in either a negative or a positive effect compared to the comparison group. A value greater than zero indicates a positive effect of the intervention, i.e. participants in the treatment group have more beneficial outcomes than those in the comparison group. A Cohen's d of 1 indicates the two groups differ by 1 standard deviation, a value of 2 indicates they differ by 2 standard deviations, and so forth. A general guideline in behavioural sciences is that a value of 0.2 is considered small, 0.5 is medium, and .8 is large (Cohen, 1977; see Table 2). Yet, there is considerable critique on these arbitrary cut-off points, as the size of an effect is highly dependent on the specific field of study. A high value of Cohen's d does not mean that all participants in the treatment group are happier, healthier, or more active than those in the comparison group. In fact, a Cohen's d of 0.8 means a .71 probability that a person from treatment group will be higher than person from comparison, if both chosen at random (=CLES).

Another common effect size statistic is Hedges' g . Both Cohen's d and Hedges' g are positively biased estimators when sample sizes are small, but Hedges' g is known as the corrector of Cohen's d . Since the difference between Cohen's d and Hedges' g is very small, especially in sample sizes above 20 (Kline, 2004), Lakens (2013) recommends to report Hedges' g . Other statistics exist, for example in case standard deviations differ substantially between groups (i.e. Glass's Δ).

When the outcome measure is dichotomous, such as employed/unemployed, the odds ratio (OR) of the ratio family (Rosnow & Rosenthal, 2003) is the most widely used effect size statistic. OR and Cohen's d are not measured on the same scale. To use Cohen's guidelines on what constitutes a small, medium or big effect. An OR of 1.44 is comparable to a d value of 0.2, an OR of 2.48 comparable to a d of 0.5

Table 2. Interpretation of effect sizes

Effect size	Interpretation	CLES
0.0	Non or negligible effect	.50
0.2	Small effect	.56
0.4	Small effect	.61
0.5	Medium effect	.64
0.6	Medium effect	.66
0.8	Large effect	.71
1	Large effect	.76
1.3	Very large effect	.90
2	Very large effect	.92
3	Very large effect	.98

and an OR of 4.27 is comparable to a d of 0.8 (Borenstein, Hedges, Higgins, and Rothstein, 2009).

State-of-The-Art Evidence of ALMPs for NEETs

As the reader now has an understanding of what the best available evidence in evidence-based practice entails, the next section will describe strong evidence for effective ALMPs for NEETs, such as recent systematic reviews and meta-analysis. It should be noted that studies with an interventional approach regarding unemployment are relatively scarce compared to studies on the experience and impact of unemployment (Hammarström & Janlert, 2005). The interventional studies that do exist, do not all evaluate ALMPs. Some studies are concerned with improving the (mental) health of the unemployed through an intervention (.e.g. Harris, Rose, Ritchie & Harris, 2009). The interventional studies that do study ALMPs, use different definitions of youth. The lower age limit as well as the upper age limit is debated: Kluge et al (2017) include youth aged 15 and above. Card, Kluge and Weber (2017) and Nelson and O'Donnell (2012) have an upper age limit of 25, while Liu, Huang, and Wang (2014) and Kluge et al (2017) have an upper age limit of 35.

Card, Kluge and Weber (2017) conducted a comprehensive meta-analysis of 207 studies among different age groups and different types of programs (i.e. classroom or on-the-job training, job search assistance, sanctions for failing to search, subsidized private sector employment, and subsidized public sector employment). They found that the average effect size, across all age groups and programs, is 0.05 in the short run, and 0.12 and 0.19 in the medium and longer run respectively. Although these last effect sizes are significantly different from zero with a high degree of confidence, they are still considered to be small at best according to Cohen's guidelines. Interestingly, the pattern of the values of effect sizes is reversed for youths. For youths, ALMPs are the most effective in the short run (0.075) as opposed to the longer run (0.001). Also, ALMPs are in general less effective for youth than for adults. All the different program types have a negligible (negative or positive) effect on youth. Ranging from most negative to most positive are public sector employment (-0.155), training (-0.047), job search assistance (0.016), and private sector employment/ subsidy (0.100). Card, Kluge and Weber (2017) also make specific calculations for females, males, and people from a disadvantaged background, and the long-term unemployed. The interactions of these groups are, however, not tested. So it is unknown whether female youth, might have better outcomes than male youth, as females have in general higher effect sizes than males. This, nonetheless, supports the notion that certain types of programs work better for certain participants.

Mawn et al. (2017) conducted a systematic review of 18 studies specifically aimed at young people not in employment, education or training (NEETs). They

concluded that ‘there is some evidence that intensive multi-component interventions effectively decrease unemployment amongst NEETs. The quality of current evidence is limited, leaving policy makers under-served when designing and implementing new programmes, and a vulnerable population neglected.’

Kluve et al. (2017) conducted a systematic review of 113 impact evaluations of interventions to improve the labour market outcomes of youth. They found a positive overall effect of youth employment interventions ($d=0.04$). Entrepreneurship promotion improved employment outcomes the most ($d=0.16$). Skills training also had a positive effect ($d=0.05$). No significant effects were found for employment services and subsidised employment. Disadvantaged youth benefitted most from programs. Furthermore, substantial variation in the effect size magnitude was due to country context, intervention design, and profile and characteristics of programme beneficiaries.

Nelson and O’Donnell (2012) did a review of 31 items of literature focusing on (re-)engagement strategies for NEETs. They distilled two distinct reintegration approaches: informal learning programmes and alternative provision approaches. The review is nonetheless narrative in nature and fails to provide the effects and effect sizes in a systematic way.

Liu, Huang, and Wang (2014) did a meta-analytic review of 47 studies on job search interventions and concluded that these types of interventions were more effective in promoting employment among younger job seekers than among adults aged 35 to 50 ($OR = 4.05$), which constitutes a medium large effect. Moreover, they suggest ample research opportunities for youth, as much research has focused on other populations.

Audhoe, Hoving, Sluiter, and Frings-Dresen (2010) did a systematic review on vocational interventions for the unemployed. Given the small number of included studies (six), they did not present their results separately for youth.

Recently, several reviews have thus been conducted regarding interventions for the unemployed, which have provided quantitative estimates of the effects of ALMPs on youth participation. Yet, none of them took into account the whole spectrum of evidence regarding effectiveness of ALMPs for youth. All indicate that more research that is systematic is needed to address the complexity of ALMPs for unemployed youth. It is interesting to note here that systematic reviews and meta-analysis focus mainly on types of ALMPs, such as on-the-job training or job search assistance, rather than on a specific intervention, target population, or both.

FOUR FACTORS THAT IMPACT ALMPs' EFFECTIVENESS

In the following section, various factors that might affect the effectiveness of ALMPs will be described and discussed.

Factor 1: Defining Target Population

Evidence thus suggests an interaction effect between type of ALMP and specific target populations. Hence, the first issue that needs to be addressed is whether the NEET population is one specific target population or whether the NEET population consists of different target populations (i.e. are NEETs a homogenous or a heterogeneous group?). If the NEET population is a homogenous group with similar characteristics one approach would fit all NEETs. The ALMP would be tailored to the abilities of the group as a whole, rather than having to address the variety of abilities and needs of individual NEETs. On the other hand, if NEETs are a heterogeneous group, a variety of ALMPs needs to exist to meet their diverse needs. The diversity of NEETs has been widely discussed in the literature.

Some argue that it would be inappropriate to imagine that all young people who are NEET at any given time share the same issues and risks in their lives and are susceptible to the same sorts of professional interventions (Yates & Payne, 2006). Actually, NEET status has multiple and often intertwined causes. Since a myriad of potential reasons can result in NEET status, each individual classified as NEET will have a unique experience contributing to their NEET status (Seddon, Hazenberg & Denny, 2013). Consequently, “subsumed under the NEET label are often very different groups of young people exhibiting very different characteristics, facing very different challenges, risks and transitions, and with a very different potential need for intervention” (Nudzor, 2010, p.17). The diversity of the NEET population is also associated with the used age range; the broader the range, the greater the potential heterogeneity (Eurofound, 2016).

Although most researchers recognize the diversity of different groups making up the NEET population (e.g. Carcillo & Königs, 2015; Seddon, Hazenberg & Denny, 2013; Yates & Payne, 2006), a universal categorization of different types of NEETs cannot be agreed upon. The disentanglement of the heterogeneity of the NEET population is, however, an important first step towards tailoring ALMPs to the needs of NEETs (Eurofound, 2016). Based on the EU Labour Force Survey, Eurofound (2016) found seven subgroups of NEETs:

- re-entrants: young people who will soon re-enter employment, education or training

Active Labor Market Programs for Youth

- short-term unemployed: young people who are unemployed for less than a year, seeking work and available to start within two weeks
- long-term unemployed: young people who are unemployed for more than a year, seeking work and available to start within two weeks
- unavailable due to illness or disability: young people who are not seeking employment or are not available to start a job within two weeks due to illness or disability
- unavailable due to family responsibilities: young people who are not seeking work or are not available to start a new job because they are caring for children or incapacitated adults, or have other less specific family responsibilities.
- discouraged workers: young people who have stopped looking for work because they believe that there are no job opportunities for them.
- other inactive: all NEETs whose reasons for being NEET do not fall into any of the previous six categories. This group is likely to be an extremely heterogeneous mix that includes people at all extremes of the spectrum of vulnerability.

Nelson and O'Donnell (2012) distinguish between three discrete sub-categories of NEETs: those who are open to learning, undecided and 'sustained' NEETs. The first group has few barriers to employment and are likely to engage in the short to medium run. The second group is dissatisfied with available opportunities and their inability to access what they want to do. The last group is most likely to remain NEET in the medium term.

Williamson (2010) suggests the disaggregation of NEETs into three groups: 'essentially confused', 'temporarily side-tracked', and 'deeply alienated'. The youth described as 'essentially confused' are motivated and ready to re-engage with the right support and encouragement. 'Temporarily side-tracked' youth deal with what they consider to be more important matters in their lives right now. With some understanding and patience, they will re-engage. The youth described as 'deeply alienated' switched off, either completely or because they had switched on to something else. It would be hard to persuade them to re-engage Williamson (2010).

Based on 855 interviews, Yates and Payne (2006) identified three broad, but fairly distinct sub-groups of NEETs. The first group consists of youth who are in temporary transitional states that involve a period of being NEET. The second group are young parents who make a conscious decision to be NEET for a time to look after their children. The youth in third group 'exhibit a number of complications or 'risks' in their lives (such as being homeless or looked after, engaged in offending behaviour, having emotional and/or behavioural problems, resisting school, and so on)' (Yates & Payne, 2006, p.334).

Based on years of (inter)national research, Spies, Tan, and Davelaar (2016) combined six different typologies into one model. The resulting four types of NEETs are conformists, dependents, survivors, and entrepreneurs. Each type requires a different kind of intervention.

When it comes to policy, categorizations are mostly the result of demographic characteristics. Some widely used target populations of ALMPs are youth (general), single (teen)parents, immigrants, addicts, people with an intellectual disabilities, disabled people, ex-convicts, long-term unemployed, and those with multi-problems.

Different categorizations of the NEET population thus exist. While a complete account of all categorization of NEETs go beyond the scope of this chapter, it is important to understand the consequences. As each of these subgroups may require a different approach, and the number and type of ALMPs might thus differ from region to region depending on which categorization they apply. For example, discouraged NEETs, who believe that there are no job opportunities and have stopped looking, probably require a more intensive ALMP than NEETs with an illness or disability. What these categorizations have in common, is that they all implicitly or explicitly make a distinction between NEETs who are more, and less or even non-vulnerable. The vulnerable NEETs are at risk of marginalisation, and often lack social, cultural and human capital (Eurofound, 2012). Examples of vulnerable subgroups are: long-term unemployed (Eurofound, 2016), discouraged workers (Eurofound, 2016), 'sustained' NEETs (Nelson & O'Donnell, 2012), 'deeply alienated' (Williamson, 2010), and 'complications group' (Yates & Payne, 2006). The non-vulnerable NEETs, on the other hand, are at little risk of marginalization, and are rich in cultural, social and human capital. Examples of non-vulnerable subgroups of NEETs are: re-entrants (Eurofound, 2016), short-term unemployed (Eurofound, 2016), 'open to learning' (Nelson & O'Donnell, 2012), 'essentially confused' (Williamson, 2010) and 'transitional group' (Yates & Payne, 2006).

Even though a universal categorization of the NEET population cannot be agreed upon, it is clear that a one-size fits all approach for NEETs will not be effective. ALMPs need to be tailored to the characteristics and needs of NEETS. Although a fair amount of research on categorizations of NEETs exist, as well as a small body of literature on ALMP effectiveness, these subjects are rarely studied together. The literature acknowledges the heterogeneity of the NEET population, and consequently the complexity of providing effective interventions for NEETs, but research to date has failed to specify effective ALMPs at the level of different NEET subgroups (Nelson & O'Donnell, 2012). Given the limited effectiveness, one might think that reintegration is about hunches and random activities. To some extent, this might be true. Few interventions are proven effective (Kluve et al., 2017). Tailoring an ALMP requires a thorough analysis of the client's situation (Tijken, 2008). The ALMP should follow logically from this analysis, as opposed to randomly chosen

intervention. 'Re-integration is [however] not a technology' (Sol, et al., 2011, p.8). An intervention cannot be effective without the cooperation of multiple benevolent people: those who order, execute, and receive the intervention. 'It is not programmes which work, as such, but people co-operating and choosing to make them work'' (Pawson & Tilley, 1997, p.36). Unemployed youth might not be benevolent to an ALMP in advance.

Factor 2: Correctness of Assumptions

Whether an intervention is effective is determined by the extent to which the underlying assumptions of are correct. According to Sol et al. (2011) reintegration relies on two assumptions. First, the client of reintegration efforts has bad job prospects. Second, reintegration efforts will enhance the client's job prospects. Both conditions need to be met in order to legitimize reintegration efforts. If condition one is not met, people do not need reintegration and reintegration efforts are thus unnecessary. If condition two is not met, reintegration cannot be effective. In both instances, reintegration efforts are a waste of money, time, and resources. Whether the first condition can be met depends on the quality of the instruments to assess a client's job prospects. This goes beyond a hunch of a job coach; a client's job prospects need to be determined independently and objectively. The severity of the job prospects determines the type and intensity of reintegration efforts (Tijken, 2008). Whether the second condition can be met depends on the availability of effective tailor-made interventions.

Tijken (2008) adds two other assumptions to reintegration: clients need to be capable to participate in reintegration and clients should be able to search for, and find employment and to maintain employed within the foreseeable future after completion of the reintegration program. These two assumptions appear to overlap to some extent. However, participation in an ALMP does require some qualitatively different skills than searching, finding and keeping employment, such as presentational skills. Then again, in some cases it is a matter of quantity. Participation in an ALMP requires lower levels of certain criteria (e.g. motivation, positive attitude towards work) than maintaining employment, as working on these criteria can be a goal of the ALMP in itself. Some basic conditions need to be met to avert that clients start a non-realistic program, become discouraged, and create worse job prospects. Some widely used criteria are (Tijken, 2008):

- living situation: a permanent residence
- the absence of debts if the (consequences of) debts refrain the client from focusing on reintegration or employment
- motivation, aspirations, and a positive, active attitude
- a realistic future-time perspective

- sufficient knowledge of a nation's official language
- a positive attitude towards employment and some work rhythm
- manageable personal and social problems
- absence of addiction
- availability, with respect to hours and family responsibilities.

In case one or more of these criteria cannot be met, another type of care -other than reintegration- might be applied to obtain the missing skills or attitude, or to address the personal issues (Tijken, 2008). Especially with regard to psychological barriers (e.g. debt, personal and social problems) the extent to which the client can cope with these barriers is client-specific, and can vary greatly. It should be noted that the combination of barriers can have a greater impact than the sum of individual barriers. Consequently, not all unemployed people can participate in reintegration. Some clients have too many or serious personal issues, meaning that reintegration is not useful at that specific moment. It is important to recognize that an evaluation of a client's personal situation is time-dependent. The personal situation can get worse (e.g. increasing amounts of debts) or improve (e.g. client is relieved from family responsibilities). As such, the assessment of a client's personal issues and job prospects should be assessed regularly.

In sum, reasons for ineffective reintegration include:

- reintegration is unnecessary (clients do not have bad job prospects)
- reintegration is pointless (reintegration does not improve job prospects, or client is not able to participate in reintegration due to personal issues).

Factor 3: Perceived Cause of Unemployment

Essential to effective reintegration is knowledge of the reason why a client is unemployed, as the ALMP should follow logically from it. Sol et al. (2011) distinguished six possible causes of unemployment based on the literature. These six causes differ with respect to characteristics of the labor market and the unemployed, but are not mutually exclusive at the individual level. Table 3 provides an overview of the causes of unemployment, the corresponding strategy and whether reintegration efforts are deemed necessary.

Hence, each cause of unemployment leads to a different type of intervention. For example, if the cause of unemployment is merely a lack of jobs, ALMPs will not be effective. If, however, a lack of workers' skills caused unemployment, ALMPs could be effective.

Table 3. Causes and corresponding strategies for unemployment

Cause of unemployment	Corresponding strategy
lack of available jobs	create jobs
lack of motivation and effort by unemployed	Sanction unemployment & incentives for employment
information asymmetry between employers and the unemployed	match the unemployed with vacancies
lack of (workers') skills	train the unemployed and remove practical barriers
productivity shortage of the unemployed	Financial compensation of employers, either by adjusting the workplace, via a (long-term) wage subsidy, or a no-risk policy
insurmountable lack of abilities	Create sheltered employment

Factor 4: Goals of ALMPs

Reintegration is goal-orientated, as it is defined as all activities aimed at realizing or restoring the (optimal) participation of the unemployed. At the start of reintegration, it may be unknown what the exact end-goal of these efforts is. In theory, this could refer to all types of employment. In reality, however, reintegration of people with bad job prospects refer to poor quality, low paid, and dirty or insecure jobs (Sirovátka & Spies, 2017). Although the goal of reintegration thus seems clear, there is more to it than meets the eye.

When it comes to reintegration, a distinction should be made between intermediate and ultimate goals, also known as soft and hard goals respectively (Groothoff 2008). The attainment of intermediate goals, such as enhancement of motivation, removal of practical obstacles and improving human capital, is often a prerequisite for attainment of the ultimate goal (outcomes; Sol et al., 2011). The attainment of all intermediate goals will in turn lead to the attainment of the ultimate goal.

Ultimate goals are related to the outcome of ALMPs: the (durable) transition to paid work or education. Examples of soft goals are: enhancement of motivation, and the removal of practical barriers. Intermediate goals can be either specific or generic. Some goals are related to a specific aspect of searching for, gaining, or keeping employment. Examples include doing a job interview, and learning new skills. Specific goals have specific interventions. General goals, in contrast, do not have a specific intervention and can be attained in multiple ways. The attainment of general goals can also be a result of the attainment of specific goals. For example, due to a job search training, a client is more motivated and empowered to search for employment. Table 4 provides an overview of the main intermediate goals of reintegration.

Enhancing a client’s motivation is a special goal, as it is often a fundamental requirement for successful completion of the reintegration program. Naturally, these goals are related to how the effectiveness of an ALMP is measured. ALMPs that have soft goals, should not be evaluated based on hard criteria. An ALMP can be effective with regard to the intermediate goals and not to the ultimate goal. Is the intervention in that case not effective? Or might there be other reasons why the unemployed was not (yet) able to gain employment, such as a lack of information (see previous section)? This scenario underscores the previously made statement that causes for unemployment are not mutually exclusive at the individual level, and thus multiple interventions or a multi-component intervention is necessary.

Table 4. Intermediate goals of reintegration

Intermediate goal	Description of goal
Specific	
Job search	Ensuring that a client knows and uses of the ways to search for and gain employment.
Workers’ skills	Ensuring the client has the basic skills (e.g. presentation, discipline) and work rhythm in order to gain and maintain employed.
Health	Resolving or making mental and/ or physical health problems manageable
Practical barriers	Resolving or making personal or social problems manageable (e.g. daycare, transportation, debts)
(Re)orientation	Making clients aware of their wishes, goals, qualities, and possibilities, and broadening their scope
Knowledge	Ensuring that the client meet the knowledge requirements of the intended work (e.g. language, professional knowledge)
Vacancies	Ensuring that employers’ demand is known by acquiring vacancies
Matching	Matching clients to vacancies
Compensation and adjustments	Compensating employers for clients’ productivity shortages
Job coaching	Coaching the client into the workplace
General	
Motivation	Motivating the client to participate in the reintegration and to find employment.
Empowerment	Empowering clients to take matters in their own hands and making them confident that they can bring about positive change.
Purpose	Giving the client meaning by having something to do, having a goal, and get (social) appreciation for it.

Issues, Controversies, Problems

This chapter discussed several controversies regarding effectiveness of ALMPs for NEETs. The following questions are to help the reader reflect on these issues, as well as to appreciate the complexity of the matter at hand.

- **Evidence based practice and policy.** How should evidence, clinical expertise and client preferences be integrated? Is integration of all the elements even possible in the context of mandatory reintegration of NEETs into the labor market? How about interventions that work in one situation and fail in another? The ‘best available evidence’ implies that a rigorous appraisal of the full body of evidence has been completed. Is that feasible for all topics and situations? When is the appraisal out of date?
- **Evaluation research.** Evaluation studies are mainly, if not solely, outcome/ impact evaluations. What do we learn from this? Would you implement an intervention solely on these types of data? Why (not)?
- **Pyramid of evidence.** Since only hard evidence prevails in systematic reviews and meta-analysis, why should we even bother with research designs of the lower levels of the pyramid? How about interventions that cannot be tested with RCTs, are they useless? When is a pyramid of evidence useful? When not? What about qualitative research?
- **Target group.** As a policymaker, in which group would you invest, and why? What would you do if no evidence existed for the intervention for your target group? Can the execution of such an intervention be justified?
- **Tailoring ALMPs.** Are specific ALMPs with a specific methodology be possible if they need to be tailored to the specific needs and characteristics of youth? How much can an ALMP be tailored to the specific needs and characteristics of youth and still remain a specific ALMP with a specific methodology? What does a tailored ALMP even mean? And how should these ALMPs be evaluated? Can they be compared with other ALMPs?
- **Measurement.** Given all the complexities with NEETs, tailoring ALMPs, and evaluation research, is there a need for evaluating ALMPs? Are good evaluations possible? Does EBP makes people obsessed with measurement? Does evaluation research draw effort away from what is truly important (i.e. reintegrating unemployed youth into the labor market)?

CONCLUSION

This chapter began with a brief introduction into evaluation research, in order to methodologically and statistically appraise the significance of research findings. Then other factors than the research design were described to assess the practical significance of ALMPs, followed by a description of the results of recent reviews and meta-analyses. Finally, some selected factors that impact ALMP effectiveness were discussed. This chapter ends with a discussion of current debates and identification of future research opportunities.

Potential for future research projects is ample. A more systematic approach for effectiveness research, for both quantitative and qualitative research is urged. More research into the impact of timing of ALMPs on outcomes is warranted, as well as more focus on theoretically sound effectiveness research. The literature would benefit from more focus on transparency of ALMP attendance, (non-) participation, and drop-outs. Authors should also explicitly report on the factors discussed in this chapter, such as an explicit choice for a target group.

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KEY TERMS AND DEFINITIONS

Active Labor Market Policy (ALMP): Active labor market policy to help unemployed youth reintegrate into the labor market.

Evaluation Research: Research to establish whether and how an intervention works.

Evidence-Based Practice (EBP): The integration of evidence, clinical expertise and client preferences to make decisions about the care of individual.

Intervention: A set of related activities undertaken to achieve a goal (in this chapter: reintegration into the labor market).

NEETs: Youth Not in Employment, Education, or Training.


Reintegration: An intervention aimed at integrated the unemployed into the labor market.

(Systematic) Review: A summary and appraisal of all current literature on a specific topic.

Chapter 4

The Labor Market for Young Spanish University Graduates

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ABSTRACT

A sample of 30,379 Spanish university graduates from the class of 2010, surveyed four years after graduation, informed, on the one hand, if their positions needed a university degree and, on the other hand, what was the most appropriate study area for these positions. This chapter identified four situations of educational mismatch: appropriate match, horizontal mismatch, vertical mismatch, and vertical and horizontal mismatch. By estimating a multinomial logistic regression, this chapter categorized university degrees in each of those four categories. A significant percentage of them ended up in jobs that didn't require a university degree. Only graduates in Medicine increased the probability of being well-matched in their first and current jobs. The results also indicated that a considerable percentage of graduates (30%) who were mismatched in their first job became well-matched in their current employment after moving to a different firm.

INTRODUCTION

In most economies, there is a connection between the educational attainment of the labor force and the jobs performed by the workers. In general, job titles are defined in terms of educational requirements that coincide with the levels of formal education. Of particular interest is to analyze if the tasks assigned to different positions can be performed effectively with the qualifications provided by the education system

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or, on the contrary, there is no connection between the contents of the educational curriculum and the contents of the jobs.¹ The mismatch between education and employment has been the focus of substantial research, mainly on vertical mismatch or over-education (e.g., Groot & Maassen van den Brink, 2000; McGuinness, 2006). More attention has been paid recently to the so-called horizontal mismatch as well, that is, the mismatch between a worker's field of study and the content of his/her job (e.g., Robst, 2007; Verhaest et al., 2017). At the university level, a frequently suggested cause is an imbalance between demand and supply. The massive expansion of higher education that has occurred in many countries is often held responsible (Verhaest et al., 2017). Some research has shown that a combination of over-education and field-of-study mismatch is particularly harmful to wages and job satisfaction (e.g., Robst, 2008). However, how such imbalances vary across academic degrees largely remains to be investigated.

This chapter was framed in the existing literature on an educational mismatch, and its main objective was to determine which degree fields (narrow fields of education) were associated with being mismatched in the labor market for higher education graduates in Spain. The degree of fit between the qualifications obtained by graduates and their job characteristics can be considered one important performance indicators of the higher education institutions. More precisely, this chapter addressed the following research questions:

- 1) How appropriate was the first job that graduates obtained after leaving university?
- 2) How suitable was the current job performed four years after graduation?
- 3) Did external labor mobility improve job matching?

Graduate surveys are necessary to answer those questions. They are relatively scarce, but Spain joined other countries that have analyzed the labor insertion of their higher education graduates such as Italy, France, the United Kingdom, Sweden, or Canada. This chapter used the first survey of labor insertion of university graduates in Spain (hereafter EILU2014), a nationally representative random sample of Spanish universities and university graduates. A total of 30,379 graduates from the class of 2010 were surveyed four years after graduation.²

This chapter was divided into eight sections besides this introduction. In the second section, this chapter reviewed key aspects of the educational mismatch in the graduate labor market. Next, this chapter identified and defined four types of educational mismatch according to the most appropriate level of formal education and study area to perform a job. In the fourth section, this chapter described the mismatch of Spanish higher education graduates in quantitative terms. The fifth section introduced the econometric methodology for classifying Spanish university degrees in the different categories of matching. The sixth section showed the results

of the econometric analysis. Next, this chapter focused on education-job mismatch and external job turnover. Finally, a section of conclusion was presented.

BACKGROUND

Young people generally have faced increasing challenges in the transition to employment in recent years; however, fresh graduates (ISCED levels 5 and 6) have remained better-off than their peers who were educated at lower or intermediate levels (EU Skills Panorama, 2014). The highest difficulties that young university graduates have experienced in their incorporation into employment in the OECD countries in the last decade have been mainly due to the higher production of graduates, together with the economic recession in many advanced countries. In this regard, studies on labor market outcomes of recent university graduates have primarily focused on studying, on the one hand, the time that they needed to find their first job and, on the other hand, the education and employment mismatch (e.g., Zamfir et al., 2018).

The rapid expansion of educational enrolments at particular levels or in general was a phenomenon common to many OECD countries over the last decades. Credential or degree inflation was pervasive. With increasing numbers of higher education graduates entering the labor market each year, younger people were more likely to experience part-time and temporary or casual jobs. The greater participation in higher education also resulted in significant unemployment rates for graduates in countries such as Spain or Greece. In other countries such as Poland, the greater participation in higher education led to the youth to rapid transitions to the labor market but with a poor job-education match even though they displayed high stability in their first jobs (Zamfir et al., 2018). Poland exhibited a crowding-out effect of higher education graduates leading to over-qualification (Hadjivassiliou et al., 2016).

Labor market mismatches can result from either over-education or over-skilling (Sloane, 2014).³ The mismatch between the educational requirements for various occupations and the amount of education obtained by workers is large and growing significantly over time (Vedder et al., 2013). For example, in 2010, only 62 percent of U.S. college graduates had a job that required a college degree (Abel & Deitz, 2015). Countries that have a relative over-supply of highly skilled workers show higher levels of over-education for graduates (Verhaest & Van der Velden, 2012). There has also been evidence that many college graduates were employed in jobs for which a degree is not required and in which the skills they learned in college are not being fully used (Sloane, 2014). This phenomenon is known as “occupational filtering down.” By this is meant the movement of educated people into lesser jobs as education is expanded (Knight, 1979). The most straightforward interpretation of this development is that higher education is acting as a filtering device to identify the

ablest individuals and that these individuals are no more or less productive in such jobs than their mothers or fathers (Holmes & Mayhew, 2015). The economic theory of “market signaling” already admitted that education might not provide job skills but only was taken by employers as a signal that might be correlated with desirable employees (Spence, 1974). Insisting on a college degree for traditional non-degree jobs, therefore, appears to be an unnecessary and harmful screening mechanism.

Nevertheless, situations of educational mismatch and skill mismatch may have their origins on the demand side of the labor market as well. Employment growth is “polarizing” into relatively high-skill, high-wage jobs and low-skill, low-wage jobs—at the expense of “middle-skill” jobs (Autor, 2011).⁴ University graduates will take the first ones only if an economy is capable of creating highly qualified jobs in industries such as biomedicine, telecommunications, etc. Otherwise, university graduates will end up taking jobs from high school graduates. The claim that “college is worth it” because there are high economic returns associated with possession of a college degree often ignores the role of this phenomenon in determining employment and wages.⁵

THE TAXONOMY OF EDUCATIONAL MISMATCH IN THE LABOR MARKET FOR HIGHER EDUCATION GRADUATES

Job mismatch can be defined as the discrepancy between the qualifications that individuals possess and those that are wanted by the labor market. Qualifications can refer either to the formal qualification (formal education) or to skills or competencies (CEDEFOP, 2014). In the first case, formal qualification is “the formal outcome (certificate, diploma or title) of an assessment process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards and/or possesses the necessary competence to do a job in a specific area of work” (CEDEFOP, 2014, p. 202).⁶ In the second case, the term qualification refers to “knowledge, aptitudes, and skills required to perform specific tasks attached to a particular work position” (CEDEFOP, 2014, p. 202). Skill mismatch arises when workers have higher or lower skills proficiency than those required by their job. If their skills proficiency is higher than that required by their job, workers are classified as over-skilled; if the opposite is true, they are classified as under-skilled (Pellizzari & Fichen, 2013). Likewise, educational mismatch arises when workers’ levels of education are higher or lower than the required levels of education of their employment. This mismatch is also known as a vertical mismatch. Over-education (or over-qualification) and under-education (or under-qualification) are the two types of vertical mismatch.⁷ Over-education exists when a worker is employed in a job that requires a lower level of education than that possessed by the worker.

Under-education exists when a worker has a lower level of education than required for the job (e.g., Chevalier, 2003; Duncan & Hoffman, 1981; Hartog, 2000; Leuven & Oosterbeek, 2011; Mavromaras et al., 2013; Park, 2018; Sicherman, 1991). In this regard, it should be noted that educational mismatch can imply skill mismatch, but skill mismatch does not imply necessarily educational mismatch (Allen & Van der Velden, 2001). For example, when working in a position below one's level of study, skills learned in formal education may not be fully used; over-education would be synonymous with being over-skilled. But, if a medical doctor works in a hospital as a surgeon but s/he says that would perform the job better if s/he possessed additional skills, s/he would have a skills deficit, but s/he would not be under-educated.

Nonetheless, vertical mismatch of education (mismatch of the level of education and job) is not the only form of educational mismatch. This chapter suggested two other educational mismatches. On the one hand, the horizontal educational mismatch, when the own level of education matches the requirements of the job but the type of education is not appropriate for the job. For example, an economics major working as an engineer might be considered to be working in a job unrelated to the degree field (Robst, 2007; Tao & Hung, 2014). On the other hand, vertical and horizontal educational mismatch, when the highest level of education held by a worker does not match the required level of education for his or her job, and also the type/field of education is inappropriate for the job.

In the context of the graduate labor market, this chapter cross-tabulated the answers to a question about whether employers requested a university credential vs. a sub-degree level qualification for the job and the answers to another question about whether graduates hold positions of their area of specialization vs. unrelated to their field of study. This chapter identified four situations of educational mismatch in Figure 1: adequate match (no mismatch), horizontal mismatch,⁸ vertical mismatch,⁹ and vertical and horizontal mismatch (double mismatch).¹⁰

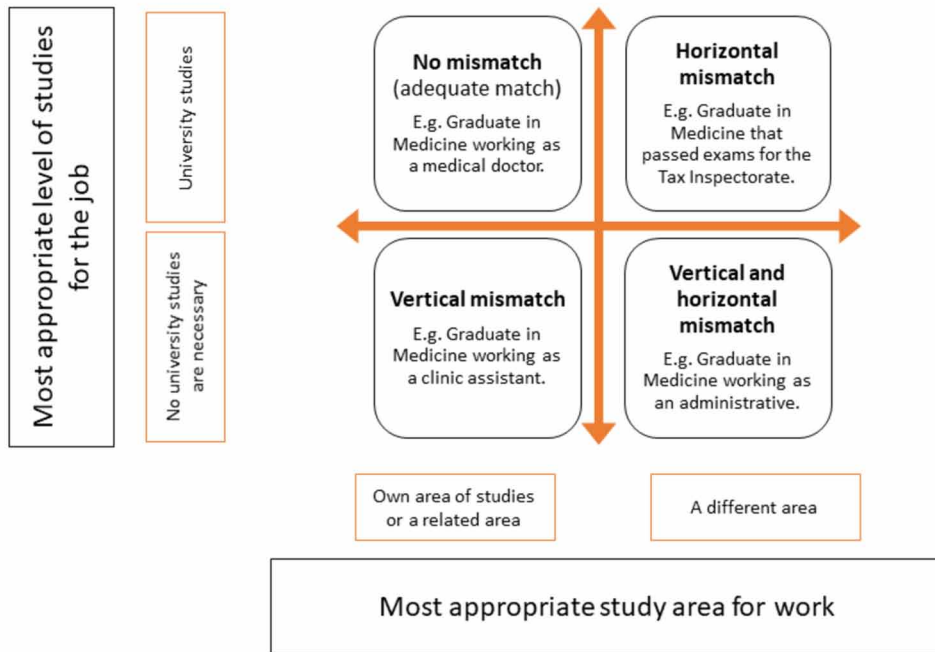
DESCRIPTION OF DATA AND MATCHING PROCEDURE

In Spain, universities follow a career system, which means that students begin their studies with their major already selected and take courses that are pre-assigned for their entire major, with only a few electives available each year. In the educational curriculum prior to the Bologna reform of 2010, there were two basic types of university programs: short-cycle programs called *diplomaturas*, which were more vocationally oriented and lasted 3 years (e.g., Nursing); and long-cycle programs called *licenciaturas*, which lasted 4, 5, or 6 years (e.g., Economics, Law, and Medicine, respectively). Besides, other degrees awarded were *engineering* (5 years on average) and *technical engineering* (3 years on average).¹¹ A nationally representative sample

The Labor Market for Young Spanish University Graduates

Figure 1. Higher education graduates' degrees and their jobs: the education-job match

Source: author's elaboration



of university graduates of these degrees was surveyed between September 2014 and February 2015 by the Spanish National Institute of Statistics (INE). Using a combined method of obtaining information—direct interviews (Web and telephone) and use of administrative data, approximately 30,000 university graduates of the 2009/2010 academic year were interviewed.¹² Specifically, 30,379 university graduates from Spanish universities were interviewed in EILU2014: 86% had studied at a public university and 14% at a private university. By gender, 40.3% of the graduates were men, and 59.7% were women. Table 1 showed the description of the sample according to wide groups of university degrees. And Table 2 displayed the description of the sample according to broad branches of knowledge.

Let us now focus on the study of educational mismatches in the employment of the university graduates surveyed. In this chapter, the authors used an employee self-assessment of the level and type of education most appropriate for the first job after graduation¹³ and the current job, that is, the job at the time of being surveyed (around four years¹⁴ after finishing the university studies).¹⁴

This chapter developed two measures of job matching among university graduates from the EILU2014 questionnaire. For our first measure, this chapter used the following question to determine whether an occupation required a degree:

Table 1. Description of the sample by broad groups of university degrees

	Freq.	Percent
Diplomatura	9,339	30.74
Technical Engineering	3,700	12.18
Licenciatura	14,053	46.26
Engineering	2,352	7.74
Grado	880	2.90
Other university degrees before Bologna	55	0.18
Total	30,379	100.00
<i>Source: author's calculations from EILU2014</i>		

Q1. What is, or was, the most appropriate level of education to carry out this work?

Respondents could select from the following education levels:¹⁵

A1. A university degree. A2. Tertiary vocational education. A3. High school. A4. Middle-high school.

Our second measure of job matching assessed the quality of an education-job match by determining if the field of study of the individual's degree was related to the job that the interviewee was performing. Subjects were asked to indicate:

Q2. What do you think is, or was, the most appropriate study area for this work?

They had several options:

Table 2. Description of the sample according to broad branches of knowledge

	Freq.	Percent
Arts and Humanities	3,231	10.64
Hard Sciences	2,955	9.73
Social and Legal Sciences	13,458	44.3
Engineering and Architecture	6,793	22.36
Health Sciences	3,942	12.98
Total	30,379	100.00
<i>Source: author's calculations from EILU2014</i>		

B1. Exclusively the area of studies of my degree. B2. Some related area. B3. A totally different area. B4. No particular area.

Taking into account the self-assessment of the graduates concerning the formal education and the area of studies required for their work, the authors were able to identify the four categories described in Figure 1, both for the first job and current job. First, graduates were considered well-matched (no mismatch) if they responded *A1*, and *B1* or *B2*. Second, this chapter identified the horizontal educational mismatch when the type of university education was not appropriate for the job, but the level of formal education matched the requirements of the job (if they responded *A1*, and *B3* or *B4*). Third, the educational mismatch was measured as vertical when the acquired level of education was higher than the level of education more suitable to perform the job, although the area of studies was related with the university degree (if they responded *A2* or *A3* or *A4*, and *B1* or *B2*. Finally, the vertical and horizontal mismatch was considered when the attained level of education was lower than the appropriate, and the type/field of education was inappropriate for the job (if they responded *A2* or *A3* or *A4*, and *B3* or *B4*).

To provide a better sense of our matching classification, Table 3 showed these measures of educational mismatch. This chapter found that about 57-66% of graduates were adequately matched in their jobs in terms of formal (and type of) university education. Around 6-7% were horizontally mismatched. But a considerable percentage of graduates (37% and 26%, first and current jobs, respectively) worked in jobs that didn't require a university degree.

Examination of the data in Table 3 revealed that educational mismatch is a worrying phenomenon in the labor market for higher education graduates in Spain. University graduates frequently accept jobs that do not require a university degree

Table 3. Distribution of educational mismatch in the labor market for university graduates in Spain

	First job		Current job	
	Freq.	Percent	Freq.	Percent
No mismatch	13,899	57.16	12,387	66.38
Horizontal mismatch	1,422	5.85	1,379	7.39
Vertical mismatch	3,166	13.02	1,725	9.24
Vertical and horizontal mismatch	5,827	23.97	3,169	16.98
Total	24,314	100.00	18,660	100.00
The subsamples analyzed include only wage-earners workers.				
<i>Source: author's calculations from EILU2014</i>				

and/or do not match their specialties. As a result, qualified human resources in Spain are severely misallocated. Although the survey data (EILU2014) appeared to indicate that there was a slight reallocation of university degrees in the labor market four years after leaving university, the reality is that the percentage of mismatched graduates in the labor market remains high and does not seem to have changed in the last ten years (Figure 2). This goes to point out that the educational mismatch is a structural problem in the Spanish labor market, with an ever-increasing number of graduates that is not able to absorb an economy with a high rate of youth unemployment and a business environment characterized by small firms where graduates cannot make full use of their university knowledge. However, the problem of educational mismatch not only affects the Spanish case. It is also relevant in countries around us, such as the United Kingdom (Figure 2). Some explanations: i) supply of educated labor exceeds demand (McGuinness, 2006); or ii) imbalances in composition (individuals studying in fields where there is little demand) (Ortiz & Kucel, 2008).

Nonetheless, an in-depth analysis of the reasons for education imbalances in the Spanish labor market was outside the scope of this chapter. Our objective was to identify, in the first and current jobs, which university degrees were more likely to fall in each of the four squares in Figure 1. To this end, this chapter estimated a multinomial logit model.

METHODOLOGY: A MULTINOMIAL LOGIT MODEL

A multinomial logit model (MLM hereafter), also known as multinomial logistic regression, is used in econometrics to model the relationship between a polytomous response variable and a set of regressors.¹⁶ The response variable (dependent variable) has several categorical outcomes that cannot be ordered. This model is suitable for our analysis of the educational (mis)match across Spanish university degrees. Our response variable had four categorical outcomes which did not have an ordered structure: appropriate match (no mismatch), horizontal mismatch, vertical mismatch, and vertical and horizontal mismatch ($j = 1,2,3,4$, respectively).

The MLM considers the probability of a certain event j as (McFadden, 1974)¹⁷

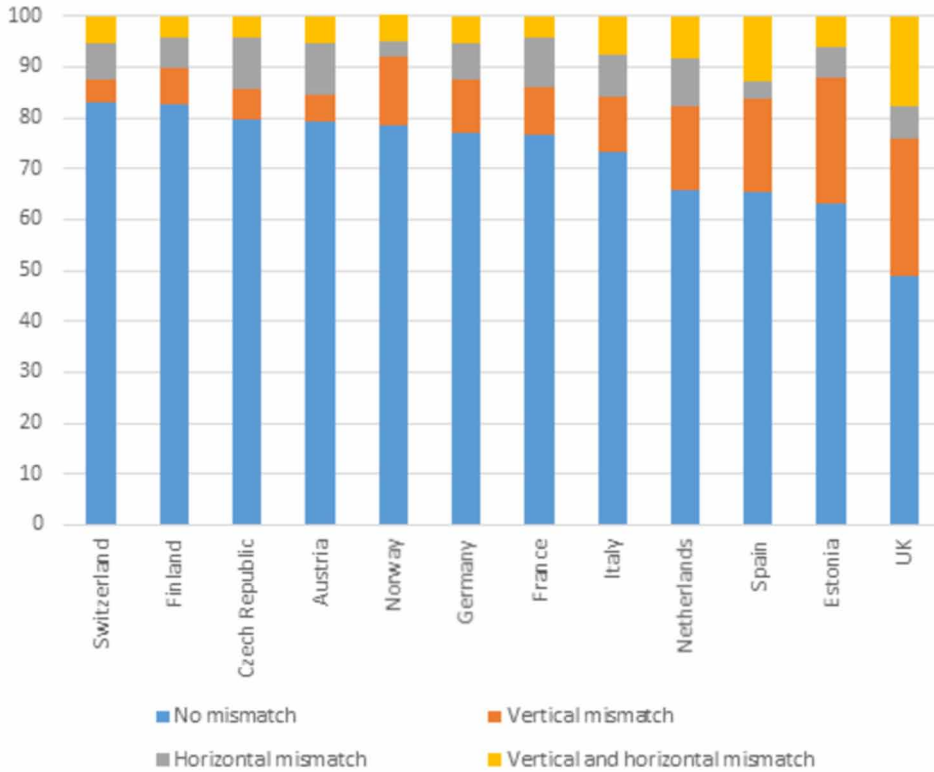
$$\text{prob}(Y = j) = \exp(x' \beta_j) / \sum_{k=1}^4 \exp(x' \beta_k) \quad (1)$$

This model provides the probability that an individual with specific characteristics x is in group j . In this chapter, the predictor variables used were university degrees

The Labor Market for Young Spanish University Graduates

Figure 2. Educational mismatch in Spain and Europe in 2005, five years after graduation. Percentages

Source: Eurostat (Reflex project) and author's elaboration



(narrow fields of education).¹⁸ And several control variables were also included in the regressions, such as gender, internship, etc.

The natural normalization in our case was $\beta_4 = 0$, with the probability to j^{th} outcome be defined as¹⁹

$$prob(Y = j) = \frac{\exp(x'\beta_j)}{1 + \sum_{k=1}^3 \exp(x'\beta_k)}, \text{ if } j = 1, 2, 3 \quad (2)$$

And for the baseline category (vertical and horizontal mismatch)

$$\text{prob}(Y = 4) = \frac{1}{1 + \sum_{k=1}^3 \exp(x' \beta_k)}, \text{ if } j = 4 \quad (3)$$

Authors argue that if one wishes to draw valid conclusions about the direction and magnitude of the relationship between an independent and dependent variable in an MLM, one must calculate marginal effects (Bowen & Wiersema, 2004). The marginal effects are defined as the slope of the prediction function at a given value of the explanatory variable and thus inform us about the change in predicted probabilities due to a change in a particular predictor.

This chapter used as the dependent variable in the MLM the four categories of educational mismatch already shown in Table 3, both in the first job (a variable labeled as *mismatchfisrtjob*) and in the current employment (labeled as *mismatchcurrentjob*). As predictor variables, this chapter introduced university degrees. In the survey, there were up to 123 different degrees, which were grouped into 27 categories (narrow fields of education) in the regressions. Besides, this chapter considered gender and internship while studying as control variables for the first job; for the current position, gender, having a Master's degree, and age.²⁰ Table 12 (Annex) showed the descriptive statistics.

RESULTS: EDUCATION-JOB MATCH AMONG SPANISH UNIVERSITY GRADUATES

This section shows the results of the estimation of the MLM.²¹ Two types of analysis have been carried out. The first one corresponds to graduates' initial job after leaving university. The second analysis corresponds to the educational mismatch in their employment at the moment of being surveyed. However, the sign of the estimated model coefficients does not determine the direction of the relationship between an independent variable and the probability of choosing a specific alternative (Bowen & Wiersema, 2004). "If we are interested in inferring the true nature of the relationship between a predictor and the dependent variable in an MLM, we must acknowledge that coefficients [...] are potentially misleading" (Wulff, 2015, p. 316). Instead, to be able to draw valid conclusions about relationships, scholars must rely on other interpretational devices such as predicted probabilities and marginal effects (Wulff, 2015).²² In this respect, Table 4 and Table 6 show the estimated marginal effects in the first job and current employment, respectively. And Table 5 and Table 7 show the predicted probabilities for some selected degrees.

Let's focus first on the educational mismatch in the first job. Table 4 shows the estimated marginal effects. A clear advantage of marginal effects is that they

provide us with rich and intuitively meaningful information not available through the interpretation of coefficients. For example, having finished Medical Studies increases the average probability of being well-matched in the first job by 0.5364. Or having finished Nursing Studies is associated with an increase of 0.1850 in the average probability of being well-matched in the first job after graduation.²³ Medicine and Nursing studies have become very popular degrees since the mid-1980s. But the number of applicants greatly exceeds the number of available places for new students supplied by each higher education institution. As a result, students enrolled in such disciplines are characterized by being brilliant high school graduates, although university entry marks are higher in Medicine, and in the last academic years, it has become an extremely competitive degree course in Spain. At the opposite pole, this chapter has university degrees with a high probability of being vertical and horizontally mismatched. For example, having finished Fine Arts is associated with an increase of 0.2007 in the average probability of being doubly mismatched.

In order not to tire the reader with the interpretation of all marginal effects, Figure 3 shows in the four quadrangles of education-job mismatch the university degrees for which the estimated marginal effects in Table 4 are positive and show statistical significance at 5%.

There are only three degrees which have the highest likelihood of obtaining an education-job match: Medicine, Nursing, and Veterinary (Figure 3). The vast majority of graduates occupy positions for which, according to them, a university degree was not necessary. Of these, some titles are related to the contents of their employment (e.g., Business Studies, Labor Relations, or Management and Economics Studies). But on other occasions, graduates end up in non-graduate positions which contents are not related to their field of education (e.g., Journalism or Social Work).

Table 5 shows the probabilities predicted of being mismatched in the first job after graduation for some selected degrees of Figure 3.²⁴ For example, the probability that a Spanish graduate is adequately educated in his first job is 67%, but that it increases to 83% for Nursing Studies and up to 96% for Medicine. The probability of being horizontally mismatched is 7%, but it rises to 27% for History and Philosophy. The probability of being vertically mismatched is 6%, but it increases to 27% for Business Studies. Finally, the probability of being vertical and horizontally mismatched is 20%, but it rises to 45% for Fine Arts.²⁵

Let's focus now on the current job. The correct way to interpret the effect of the explanatory variables on the probability of the different situations is to obtain the marginal effect of the regressors (Table 6). Figure 4 shows the map of degrees according to their educational (mis)match. It shows only degrees for which the estimated marginal effects in Table 6 are positive and show statistical significance at 5%. The vertical mismatch (over-education) is reduced, and many university

Table 4. Educational mismatches in the first job after graduation. Only wage-earners workers (excluding self-employment). Average marginal effects. Delta-method

	No mismatch		Horizontal mismatch		Vertical mismatch		Vertical and horizontal mismatch	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
Architecture	0.0377	0.0583	-0.0582	0.0382	0.0410	0.0490	-0.0206	0.0530
Biology	-0.1630	0.0468	0.0030	0.0239	0.0509	0.0416	<i>0.1091</i>	0.0418
Business Studies	-0.2663	0.0472	-0.0247	0.0251	<i>0.1848</i>	0.0407	<i>0.1062</i>	0.0421
Chemistry	-0.0607	0.0477	0.0044	0.0244	<i>0.0828</i>	0.0416	-0.0265	0.0435
Engineering	0.0629	0.0460	0.0114	0.0231	<i>0.1008</i>	0.0404	-0.1752	0.0424
Fine Arts	-0.3210	0.0549	-0.0349	0.0313	<i>0.1552</i>	0.0438	<i>0.2007</i>	0.0464
History and Philosophy	-0.2702	0.0469	<i>0.0910</i>	0.0227	-0.0323	0.0428	<i>0.2116</i>	0.0412
Journalism	-0.2000	0.0459	0.0328	0.0231	0.0606	0.0408	<i>0.1065</i>	0.0411
Labor Relations	-0.2700	0.0497	0.0146	0.0250	<i>0.1144</i>	0.0424	<i>0.1411</i>	0.0437
Languages and Literature	-0.0202	0.0473	0.0197	0.0234	-0.0615	0.0437	0.0620	0.0420
Law Studies	-0.0794	0.0467	-0.0010	0.0239	0.0386	0.0416	0.0419	0.0420
Management and Economics	-0.1397	0.0456	0.0030	0.0233	<i>0.1259</i>	0.0403	0.0107	0.0412
Mathematics	0.0185	0.0516	0.0322	0.0245	-0.0231	0.0472	-0.0276	0.0467
Medicine	<i>0.5364</i>	0.0623	-0.0686	0.0351	-0.1667	0.0602	-0.3012	0.0598
Nursing Studies	<i>0.1850</i>	0.0462	-0.0349	0.0244	-0.0052	0.0412	-0.1449	0.0422
Pharmacy	-0.0633	0.0486	0.0422	0.0240	0.0777	0.0422	-0.0566	0.0447
Physics	0.0872	0.0527	0.0159	0.0254	-0.0456	0.0490	-0.0575	0.0481
Political Science and Sociology	-0.2732	0.0515	<i>0.0533</i>	0.0241	0.0647	0.0445	<i>0.1551</i>	0.0447
Psychology	-0.1524	0.0467	0.0333	0.0236	0.0199	0.0418	<i>0.0992</i>	0.0417
Quantity Surveyors	-0.0108	0.0487	-0.0372	0.0261	-0.0048	0.0438	0.0528	0.0434
Social Work	-0.2353	0.0477	0.0085	0.0247	0.0475	0.0421	<i>0.1793</i>	0.0420
Sports Science	-0.2351	0.0492	0.0041	0.0256	<i>0.1905</i>	0.0412	0.0404	0.0443
Teacher Studies	-0.1937	0.0450	0.0075	0.0230	<i>0.1209</i>	0.0401	0.0652	0.0405
Technical Engineering	-0.1030	0.0450	-0.0037	0.0229	<i>0.1026</i>	0.0401	0.0042	0.0407
Tourism Studies	-0.3350	0.0477	0.0325	0.0240	<i>0.1671</i>	0.0409	<i>0.1354</i>	0.0423
Veterinary	<i>0.1734</i>	0.0570	-0.0619	0.0382	-0.0361	0.0505	-0.0753	0.0519
Other university degrees	Refer.		Refer.		Refer.		Refer.	
Female (= 1)	-0.0024	0.0068	-0.0108	0.0033	0.0043	0.0047	0.0088	0.0060
Internship (= 1 yes)	0.0200	0.0073	-0.0266	0.0036	0.0134	0.0052	-0.0069	0.0065

Dependent variable: mismatchfirstjob

In italics, marginal effects that have a positive and statistically significant contribution to the probability of being well-matched or mismatched in the first job at a significance level of 0.05 (5%).

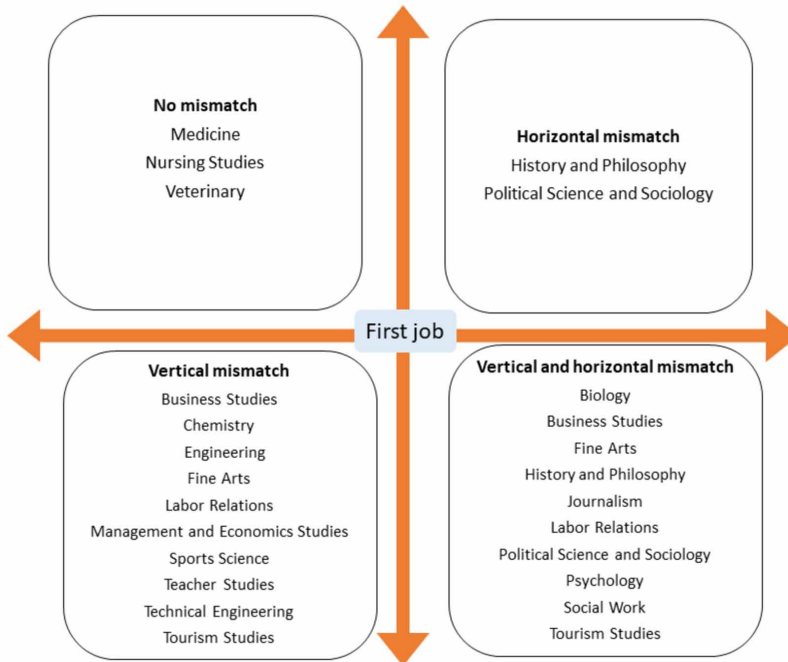
Model VCE: Robust

Number of obs. = 24,314

Source: author's estimates

Figure 3. Mapping the mismatch of university degrees for higher education graduates in Spain in their first job

Source: author's elaboration



graduates, four years after graduation, are horizontally mismatched—several degrees have gone from being cataloged as vertically mismatched to be cataloged as horizontally mismatched. Although there is still a resource misallocation of the human capital in terms of formal qualifications, however, this situation is not so bad. Graduates are now carrying out jobs which demand a degree, although without requiring specific university specialties. It is expected that these jobs will also have good salaries—at least better salaries than non-graduate positions, although salary information is not offered in the data available to researchers.²⁶ It is also noteworthy that engineers and technical engineers, who were vertically mismatched in their first job, are no longer in their current job.

Finally, Table 7 shows, for the current job, the probability of being well-matched (78%), horizontally mismatched (2%), vertically mismatched (6%), and vertically and horizontally mismatched (14%). It is remarkable the important increase in the probability of being well-matched and how the double mismatch has also been significantly reduced. There are university graduates who are still over-educated.

Table 5. Predicted probabilities of educational mismatch in the first job for selected degrees

	No mismatch		Horizontal
Individual of reference	67%		Individual of reference 7%
Veterinary	82%		Political Sc. and Sociology 17%
Nursing	83%		History and Philosophy 27%
Medicine	96%		
	Vertical		Vertical and horizontal
Individual of reference	6%		Individual of reference 20%
Labor Relations	16%		Journalism 33%
Business	27%		Biology 33%
			Tourism 35%
			Fine Arts 45%
The individual of reference is a man who did not do an internship during his studies and got a different qualification than those analyzed. The sum of the probabilities is equal to 1 (100%).			
Source: author's calculations			

This is the case, for example, of Business, and Management and Economics Studies. In the case of Social Work, graduates are still vertical and horizontally mismatched.

It is likely that many university graduates have changed jobs, and labor mobility has allowed them to match education and job. Since education and earnings are highly correlated, workers will seek jobs whose educational requirement match their educational attainment (Hersch, 1991). Thus, turnover patterns can be informative on the nature of the matching of workers to jobs.

AN ANALYSIS OF EDUCATIONAL MISMATCH AND EXTERNAL LABOR MOBILITY

Previous studies of the population of Spanish university graduates confirmed that being adequately educated—i.e., having a job at the university level—was associated with better labor achievements such as the access to the highest categories of the occupational hierarchy (professionals) and with the highest wage-levels (García-Espejo & Ibáñez, 2005). However, the educational mismatch can have other significant labor market consequences for the mismatched individual such as higher job dissatisfaction and search for better jobs. In this regard, it is essential to know if the phenomenon of over-education is only a temporary mismatch in the labor

The Labor Market for Young Spanish University Graduates

Table 6. Educational mismatches in the current job. Only wage-earners workers (excluding self-employment). Average marginal effects. Delta-method

	No mismatch		Horizontal mismatch		Vertical mismatch		Vertical and horizontal mismatch	
	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.	dy/dx	Std. Err.
Architecture	-0.0046	0.0811	-0.0624	0.0801	0.0140	0.0524	0.0530	0.0576
Biology	-0.2496	0.0610	<i>0.0971</i>	0.0480	0.0478	0.0435	<i>0.1047</i>	0.0472
Business Studies	-0.2766	0.0609	0.0549	0.0485	<i>0.1419</i>	0.0424	0.0798	0.0472
Chemistry	-0.1004	0.0620	<i>0.0963</i>	0.0482	0.0582	0.0434	-0.0541	0.0497
Engineering	0.0248	0.0603	0.0741	0.0475	0.0458	0.0423	-0.1448	0.0481
Fine Arts	-0.3855	0.0690	0.0815	0.0527	<i>0.1329</i>	0.0455	<i>0.1711</i>	0.0516
History and Philosophy	-0.3392	0.0610	<i>0.1822</i>	0.0472	-0.0401	0.0454	<i>0.1971</i>	0.0463
Journalism	-0.2792	0.0600	<i>0.1283</i>	0.0474	0.0429	0.0428	<i>0.1081</i>	0.0464
Labor Relations	-0.3321	0.0631	0.0848	0.0488	0.0757	0.0442	<i>0.1717</i>	0.0479
Languages and Literature	-0.1297	0.0614	<i>0.1083</i>	0.0477	-0.0433	0.0455	0.0648	0.0472
Law Studies	-0.1508	0.0606	0.0584	0.0481	0.0524	0.0430	0.0401	0.0472
Management and Economics	-0.1568	0.0598	0.0752	0.0476	<i>0.0991</i>	0.0421	-0.0175	0.0468
Mathematics	-0.1036	0.0645	<i>0.0959</i>	0.0490	-0.0028	0.0471	0.0105	0.0506
Medicine	<i>2.0203</i>	0.0841	0.1181	0.0801	0.1033	0.0632	-2.2417	0.0590
Nursing Studies	0.0964	0.0606	0.0080	0.0485	-0.0101	0.0431	-0.0943	0.0476
Pharmacy	-0.0907	0.0628	<i>0.1044</i>	0.0483	0.0452	0.0440	-0.0589	0.0503
Physics	-0.0195	0.0667	<i>0.0975</i>	0.0494	-0.0075	0.0485	-0.0704	0.0547
Political Science and Sociology	-0.3081	0.0642	<i>0.1314</i>	0.0483	0.0477	0.0458	<i>0.1290</i>	0.0492
Psychology	-0.1891	0.0606	0.0893	0.0477	0.0092	0.0436	0.0905	0.0468
Quantity Surveyors	-0.1492	0.0625	0.0528	0.0489	0.0058	0.0450	0.0907	0.0479
Social Work	-0.2775	0.0617	0.0504	0.0489	0.0339	0.0441	<i>0.1932</i>	0.0468
Sports Science	-0.2613	0.0627	<i>0.0964</i>	0.0487	<i>0.1369</i>	0.0429	0.0280	0.0496
Teacher Studies	-0.1665	0.0591	0.0540	0.0473	0.0699	0.0420	0.0426	0.0459
Technical Engineering	-0.1423	0.0593	0.0758	0.0473	0.0605	0.0420	0.0060	0.0462
Tourism Studies	-0.3774	0.0613	<i>0.1129</i>	0.0480	<i>0.1261</i>	0.0428	<i>0.1385</i>	0.0472
Veterinary	0.1795	0.0769	0.0179	0.0574	-0.0707	0.0585	-0.1268	0.0630
Other university degrees	Refer.		Refer.		Refer.		Refer.	
Female (= 1)	-0.0114	0.0074	-0.0073	0.0043	0.0021	0.0046	0.0166	0.0061
Master's degree (=1 yes)	0.0620	0.0075	-0.0006	0.0043	-0.0232	0.0050	-0.0381	0.0061
Age (under 30 years old)	0.0502	0.0080	-0.0124	0.0049	-0.0159	0.0049	-0.0219	0.0065
Age (from 30 to 34 years old)	Refer.		Refer.		Refer.		Refer.	
Age (35 years old or older)	-0.0147	0.0105	0.0439	0.0052	-0.0107	0.0067	-0.0186	0.0085

Dependent variable: mismatchcurrentjob

In italics, marginal effects that have a positive and statistically significant contribution to the probability of being well-matched or mismatched in the first job at a significance level of 0.05 (5%).

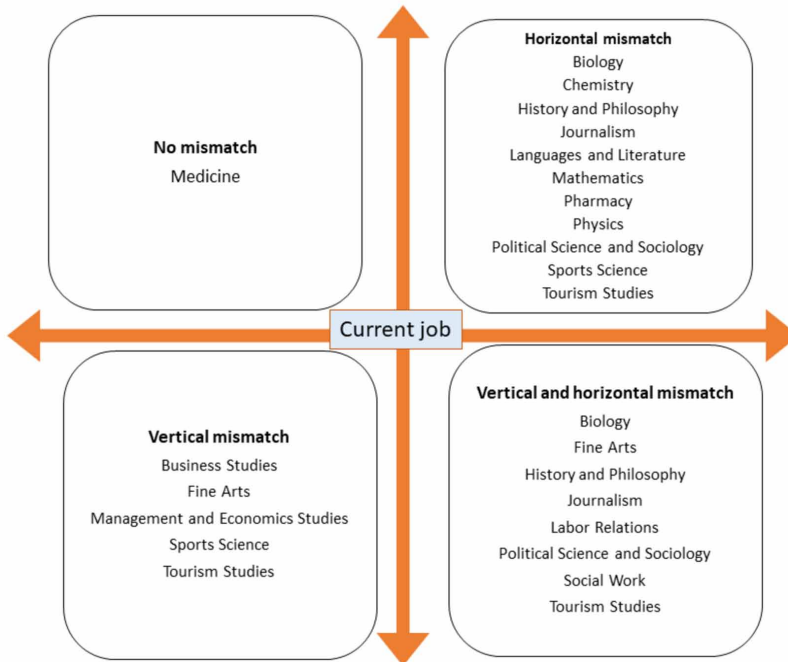
Model VCE: Robust

Number of obs. = 18,660

Source: author's estimates

Figure 4. Mapping the (mis)match of university degrees for higher education graduates in Spain in their current job

Source: author's elaboration



market, because over-educated workers quickly promote or move to higher-level positions, as the theory of occupational mobility defended (Rosen, 1972; Sicherman & Galor, 1990) or, on the contrary, it is a permanent phenomenon according to the credentialist perspective (Spence, 1973).

Our survey had no information on job satisfaction, but there were data on job turnover. The authors were able to identify whether or not graduates who were mismatched to their jobs after graduation achieved the education-job match after moving to other positions in other companies (external mobility). To examine the factors that explained the job matching, this chapter estimated a binomial logit model (or binary logistic regression). Our dependent variable was *gotmatching* which took a value of 1 if the graduate was mismatched in his/her first job and, after moving to another job (employer), s/he achieved the matching. It took the value of 0 otherwise, that is, if the graduate was mismatched in the first job and after moving to another company was still mismatched.²⁷ This chapter restricted the analysis to wage-earners—in both, first job and current job. About the explanatory variables,

Table 7. Predicted probabilities of educational mismatch in the current job for selected degrees

	No mismatch		Horizontal
Individual of reference	78%	Individual of reference	2%
Medicine	99%	Journalism	14%
		Political Science and Sociology	15%
		History and Philosophy	25%
	Vertical		Vertical and horizontal
Individual of reference	6%	Individual of reference	14%
Management and Economics Studies	19%	Labor Relations	40%
Business Studies	28%	Social Work	45%

The individual of reference is a 30-34 years old man with no Master's degree. The sum of the probabilities in the four situations is equal to 1 (100%).

The odds practically do not change when considering women graduates.

Source: author's calculations

and given that the sample for the analysis was reduced considerably, this chapter included university degrees according to broad fields of knowledge (Table 8), and also types of degrees (Table 10). Our explanatory variable of interest was the number of different employers for whom the university graduate had worked during his/her “short” working life. In addition, gender was included as a control variable.

The estimates are shown in Table 8 and Table 10. The results indicate that keeping everything else constant, the greater the number of employers for whom a higher graduate has worked, the higher the probability of achieving a job match. The coefficients associated with gender do not show statistical significance in both regressions. However, in comparison with Science degrees, graduates in Engineering and Architecture, also in Health Sciences, increase the probability of achieving the education-job match after mobility (Table 8). Conversely, graduates in Arts and Humanities—also in Social and Legal Sciences—reduce the likelihood of achieving the job match after mobility (Table 8).

Using the estimates shown in Table 8, Table 9 shows the probability of achieving the job match according to the number of times the graduate changes employer. For example, the likelihood of obtaining a job match if the individual changes only one time is 23.4%. But it would be necessary to “buy” ten jobs to have a high probability (68.4%) of achieving the job matching.²⁸ The latter may be possible in an economy such as the United States where the labor market is characterized by significant flexibility and mobility, but not in Europe, and less in Spain. It is unlikely that an

Table 8. Logistic regression of the likelihood of achieving an education-job match after external mobility (I)

	Coef.	Robust Std. Err.	p-value	Odds Ratio
Number of different employers since graduation	0.2176	0.0149	0.000	1.24
Female (= 1)	0.0442	0.0568	0.436	1.05
Arts and Humanities	-0.7578	0.1250	0.000	0.47
Hard Sciences	Refer.			
Social and Legal Sciences	-0.2339	0.0948	0.014	0.79
Engineering and Architecture	0.2177	0.1051	0.038	1.24
Health Sciences	0.9035	0.1403	0.000	2.47
Constant	-1.4039	0.1011	0.000	0.25
Number of obs.	7,471			
Wald chi2(6)	393.15			
Prob > chi2	0.0000			
Pseudo R2	0.0553			
Log pseudolikelihood	-4315.7636			

Dependent variable: gotmatching [= 1 (30%) = 0 (70%)]

Wage-earners both in the first job and in the current job.

Source: author's estimates

average Spanish university graduate can change employer ten times in four years. Among other things, because employment opportunities are limited and labor mobility is relatively low in the Spanish labor market. In fact, in the sample used in Table 8 and Table 10, the average job turnover is 2.85. Therefore, educational mismatch likely becomes a permanent phenomenon in the job market for Spanish graduates.

Focusing on the typology of university studies, Table 10 shows that engineering and technical engineering increase the probability of achieving a job match after job turnover, compared to a *licenciatura*. The higher the number of firm changes, the greater the likelihood of attaining a job match after external labor mobility. But, according to Table 11, a graduate needs several company changes to have a high probability of matching after job mobility.

CONCLUSION

Are recent university graduates finding good jobs? Many labor economists have struggled with this question because it is not easy to outline what is meant by a good

Table 9. Probability of getting an education-job match according to the number of company changes (I) ()*

	Margin	Std. Err.	p-value
Number of different employers since graduation			
1	0.2339	0.0174	0.000
2	0.2752	0.0189	0.000
3	0.3206	0.0208	0.000
4	0.3697	0.0228	0.000
5	0.4217	0.0251	0.000
6	0.4755	0.0273	0.000
7	0.5298	0.0293	0.000
8	0.5835	0.0309	0.000
9	0.6352	0.0318	0.000
10	0.6840	0.0321	0.000
(*) In comparison with the individual of reference: a man who studied a Science degree.			
Number of obs.	7,471		
Adjusted predictions. Delta-method			
Model VCE: Robust			
Wage-earners both in the first job and in the current job.			
<i>Source: author's estimates</i>			

job and what jobs should require a degree for a good performance of them. This chapter used a subjective self-evaluation of a sample of 30,379 Spanish university graduates from the class of 2010, surveyed four years after graduation. Graduates inform us, on the one hand, whether or not their current (initial) positions need (needed) a university degree and, on the other hand, what is (was) the most appropriate study area or field of education for these positions. Tabulating the answers to both questions, the authors identify four situations of educational mismatch: appropriate match, horizontal mismatch, vertical mismatch, and vertical and horizontal mismatch. By estimating a multinomial logistic regression, this chapter categorizes university degrees in each of these four categories. Only graduates in Medicine increase the probability of being adequately matched in their first and current jobs. Some degrees went from being vertically mismatched in the first job to horizontally mismatched in the current employment (e.g., Chemistry). However, other degrees (e.g., Business, and Management and Economics) increase the probability of being vertically mismatched (over-educated) in the first and current jobs. The situation is

Table 10. Logistic regression of the likelihood of achieving an education-job match after external mobility (II)

	Coef.	Robust Std. Err.	p-value	Odds Ratio
Number of different employers since graduation	0.2183	0.0148	0.000	1.24
Female (= 1)	0.0642	0.0563	0.254	1.07
Diplomatura	0.0693	0.0599	0.247	1.07
Technical Engineering	0.3471	0.0825	0.000	1.42
Licenciatura	Refer.			
Engineering	0.7289	0.1051	0.000	2.07
Grado	0.1950	0.2140	0.362	1.22
Other degrees before Bologna	-0.3812	0.6459	0.555	0.68
Constant	-1.6505	0.0649	0.000	0.19
Number of obs.	7,471			
Wald chi2(7)	265.35			
Prob > chi2	0.0000			
Pseudo R2	0.0408			
Log pseudolikelihood	-4382.39			
Dependent variable: <i>gotmatching</i> [= 1 (30%) = 0 (70%)]				
Wage-earners both in the first job and in the current job.				
<i>Source: author's estimates</i>				

even worse for workers in non-graduate positions and study areas unrelated to their studies (e.g., Social Work).

But it is likely that many university graduates change jobs, and labor mobility allows them to get an education-job match. Thus, turnover patterns can be informative on the nature of the matching of workers to jobs. The estimation of a binary logistic regression has allowed us to investigate this question. The results indicate that an important percentage of graduates (30%) who were mismatched in their first job become well-matched in their current employment after moving to a different firm. But the results also show that a recent graduate needs to buy a significant number of jobs to achieve an education-work match.

Table 11. Probability of getting an education-job match according to the number of company changes (II) ()*

	Margin	Std. Err.	p-value
Number of different employers since graduation			
1	0.1928	0.0090	0.000
2	0.2290	0.0095	0.000
3	0.2698	0.0106	0.000
4	0.3149	0.0124	0.000
5	0.3638	0.0150	0.000
6	0.4157	0.0180	0.000
7	0.4695	0.0212	0.000
8	0.5240	0.0243	0.000
9	0.5780	0.0268	0.000
10	0.6301	0.0287	0.000
(*) In comparison with the individual of reference: a man who studied a <i>licenciatura</i>			
Number of obs.	7,471		
Adjusted predictions. Delta-method			
Model VCE: Robust			
Wage-earners both in the first job and in the current job.			
<i>Source: author's estimates</i>			

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KEY TERM AND DEFINITIONS

External Labor Mobility: A permanent job separation which involves a change of employer for the worker.

Formal Qualification: The formal outcome (certificate, diploma or title) of an assessment process which is obtained when a competent body determines that an individual has achieved learning outcomes to given standards and/or possesses the necessary competence to do a job in a specific area of work.

Horizontal Educational Mismatch: When the own level of education matches the requirements of the job, but the type of education is not appropriate for the job.

Skills or Competencies: Knowledge, aptitudes, and skills required to perform specific tasks attached to a particular work position.

Vertical Mismatch: When the worker's level of education is higher or lower than the required level of education of his/her employment.

ENDNOTES

¹ In any case, it is not an easy duty to define which education is appropriate for each job since the educational requirements of the positions differ among companies and change over time.

² The sample in the EILU2014 was restricted to ISCED 5A level (Bachelors and Masters or equivalent) graduates.

³ Over-educated or over-qualified: an individual has completed more years of formal education than the current job requires. Over-skilled: an individual is unable to fully use acquired skills and abilities in the current job. See Quintini (2011).

⁴ Key contributors to job polarization are the automation of routine work and the international integration of labor markets (Autor, 2011).

⁵ This is serious in countries such as the United States, with high college tuition fees and significant debts of graduates who took loans to study their degrees.

⁶ Although education is often used as a proxy for skills, the two terms have a different meaning (ILO, 2014).

⁷ In practice, the terms over-qualification and over-education are used interchangeably. The same for under-education and under-qualification.

⁸ Many Spanish university graduates work in the public sector in high-level positions not related to their university studies.

⁹ A typical example would be a graduate employee who works in a job that is typically considered to be a non-graduate job, in which case the graduate is over-educated.

10 Our survey did not contain information on skills, so this chapter focused
exclusively on educational mismatch.

11 *Licenciatura* and *engineering* degrees were equivalent to the Master's degree
in the American system of higher education. With the reform of Bologna, all
the degrees (called *grados*) have a duration of four years, equivalent somehow
to the American Bachelor's degree. Some exceptions are Architecture (5 years)
and Medicine (6 years).

12 <https://www.ine.es/dynt3/inebase/es/index.htm?padre=2785&capsel=2876>

13 The interviewees were asked to exclude occasional/sporadic employment.

14 From the point of view of matching theory, the appropriate level is preferable
the often-used alternative of the required level. The latter measure may partly
measure formal selection requirements, whereas the former is more likely to
refer to actual job content (Allen & Van der Velden, 2001).

15 While responses to this question are subjective, the over-education literature
also uses subjective measures of required schooling.

16 Predictor, independent, or explanatory variables.

17 The multinomial logit model is also described in Greene (2012).

18 They would be our explanatory variables of interest.

19 The probability of mismatch is compared to the probability of mismatch in
the reference category.

20 Age was referred to December 31, 2014, and it was already in intervals in the
database. In relation to the Master's degree, the authors do not know when it
was awarded, so have chosen to use this information only in the current job.

21 The estimates were made using the statistical program Stata/SE 15.1.

22 The marginal effects in our research were calculated using the average marginal
effects (AME) approach, which relies on actual values of the independent
variables (the covariates were all dichotomous).

23 Always in comparison with the reference category.

24 These probabilities have been calculated using the command *margins* in Stata/
SE 15.1. The reader interested in some other probabilities can request them
from the author.

25 The probabilities estimated in Table 5 practically did not change when
considering women. Gender was not statistically significant in the estimates
of the first job.

26 In any case, the salary information was only asked in the survey in relation
to the first job.

27 A permanent job separation involves a change of employers for the worker
(Jovanovic, 1979).

28 "Job shopping refers to the period of experimentation with jobs and
accompanying high rates of mobility, which typically occurs at the beginning

The Labor Market for Young Spanish University Graduates

of the working life” (Johnson, 1978, p. 261). According to the theory of job shopping, workers search for a high-quality match (e.g., Anderson et al., 1994).

APPENDIX

See Table 12 with the descriptive statistics.

Table 12. Descriptive statistics of the explanatory variables included in the multinomial logistic regression


	First job		Current job	
	Frequency	Percent	Frequency	Percent
Architecture	176	0.72	120	0.6
Biology	813	3.34	537	2.9
Business Studies	748	3.08	588	3.2
Chemistry	635	2.61	503	2.7
Engineering	1761	7.24	1523	8.2
Fine Arts	221	0.91	128	0.7
History and Philosophy	1178	4.84	841	4.5
Journalism	1253	5.15	867	4.6
Labor Relations	384	1.58	297	1.6
Languages and Literature	932	3.83	701	3.8
Law Studies	870	3.58	668	3.6
Management and Economics	1511	6.21	1220	6.5
Mathematics	356	1.46	295	1.6
Medicine	708	2.91	696	3.7
Nursing Studies	2085	8.58	1506	8.1
Pharmacy	532	2.19	422	2.3
Physics	348	1.43	265	1.4
Political Science and Sociology	306	1.26	229	1.2
Psychology	928	3.82	710	3.8
Quantity Surveyors	567	2.33	402	2.2
Social Work	676	2.78	491	2.6
Sports Science	465	1.91	356	1.9
Teacher Studies	3054	12.56	2377	12.7
Technical Engineering	2727	11.22	2151	11.5
Tourism Studies	670	2.76	465	2.5
Veterinary	291	1.20	217	1.2
Other university degrees	119	0.49	85	0.5
Female (= 1)	14817	60.94	11275	60.4
Internship (= 1 yes)	15852	65.20		
Master's degree (= 1 yes)			6271	33.6
Age (under 30 years old)			11040	59.2
Age (from 30 to 34 years old)			4588	24.6
Age (35 years old or older)			3032	16.2
Observations	24314		18660	

Source: author's elaboration from EILU2014

Chapter 5

Youth Labor Underutilization in Australia Following the Global Financial Crisis

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ABSTRACT

In the wake of the Global Financial Crisis, although the Australian economy remained largely buoyant in aggregate terms, outcomes across different groups were not evenly shared. In labor market terms, different demographic groups appeared to more or less impacted by the post-GFC economic environment. One such group were young people, who witnessed a change in employment fortunes compared to others in the labor force. This chapter provides an investigation of these uneven labor market outcomes and presents an analysis of youth labor underutilization using pooled panel data, taking account of both individual level supply-side factors together with the strength of the local labor market (demand-side). The result is an analysis that accounts for the impact of changing macroeconomy, local labor market conditions, and the employability assets of young individuals. The result illustrates the impact of the post-GFC economy of the youth labor market.

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INTRODUCTION

In the period following the Global Financial Crisis (GFC), there was general agreement that the Australian economy had managed to deflect much of the negative impacts that had seen other international economies suffer from diminished levels of economic growth with serious flow-on effects to labor markets. This resilience was heralded by both the Australian government and international organizations, such as the IMF, as an example of good economic management. According to one Australian media outlet, ‘[I]luckily in Australia we avoided a long-term unemployment problem—in part due to China, but also because of the massive stimulus program put through by the Rudd Government’ (Pickering, 2014). While it is certainly true that the Australian economy managed to remain buoyant while others faltered, it is equally true that in the period following the GFC, changes in the performance and management of the macro-economy have resulted in a gradual diminishing of economic performance across many areas, not least the labor market. Labor market changes extended beyond simply shifts in unemployment and included increases in broader measures of joblessness including underemployment and underutilization, diminishing job security perceptions and changes to the very nature of work. What has been especially concerning has been the long-term impacts on joblessness and employment disadvantage. While all labor sub-markets have been impacted, the impact on the youth labor market has been heightened with significant impacts on the level of both unemployment and underemployment.

Understanding the post-GFC patterns of youth labor underutilization is the focus of this chapter. Its main purpose is to consider the factors associated with youth underutilization including the characteristics of at-risk individuals and the characteristics of the local labor markets and the macro-economy that individuals operate in. The analysis in the chapter provides a unique opportunity to consider the ways that these cross-cutting factors have impacted on labor market outcomes. By utilizing panel data regarding labor market outcomes for individuals aged between 15 and 24 years of age and linking the individual data to broader macro-level factors. The panel data, covering the years 2008 to 2015, is taken from the Household, Income and Labor Dynamics Australia (HILDA) survey and is combined with regional labor market statistics from the Australian Bureau of Statistics. This combined dataset allows the following research questions to be addressed:

1. What was the impact of supply side characteristics on the risk of an individual’s labour being underutilised?
2. What was the impact of aggregate/ spatial demand side characteristics on the risk of an individual’s labour being underutilised? and

3. What was the impact of macro-economic forces in the post-GFC period on an individual's labour being underutilised?

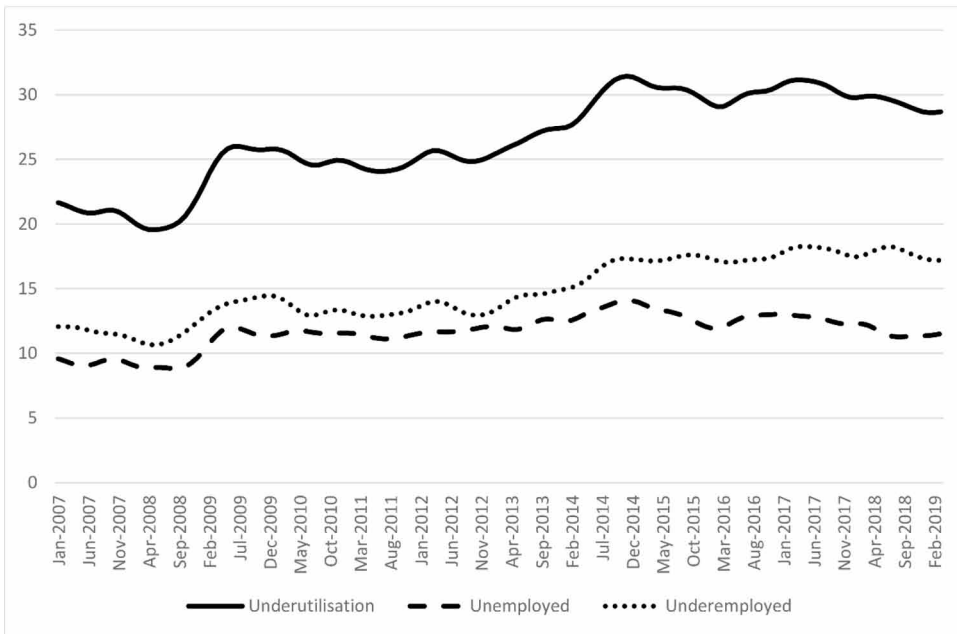
LABOR UNDERUTILIZATION AND YOUNG PEOPLE: PATTERNS AND PROBLEMS

It has been widely acknowledged that in Australia, as elsewhere, the labor market plight of young people aged between 15 and 24 has been increasingly bleak in the period following the Global Financial Crisis. In the period prior to the global downturn, both unemployment and underemployment (and hence underutilization) had been trending lower, a situation that had been in play since the last major downturn of the late 1990s. While there was a sharp increase in all measures in the immediate period of the GFC, the outcomes for young people have continued to deteriorate up until late 2014 and have yet to return to pre-GFC levels. This is despite an improvement in aggregate labor market figures over the same time. Moreover, the post GFC period has seen underemployment taking a larger share of the total underutilization rate than had previously been the case. In terms of magnitudes, the headline unemployment rate moved from 8.9% prior to the GFC to peak at 14.1% in November 2014, while underemployment moved from 11.6% to 17.3% over the same period. The combined underutilization rate moved from 20.5 per cent prior to the GFC, to a high of 31 per cent at the end of 2014 before declining to the current (Feb 2019) level of 28 per cent (figure 1).

In themselves, these figures provide significant context for exploring the patterns of youth labor market underutilization. However, beyond the actual magnitude of the problem is an acknowledgement that the economic, social and human costs of labor market disadvantage can be significant for individuals involved. While these costs are felt across the spectrum of underutilized labor, they hit young people in particularly significant ways. It is widely recognized that having adequate employment opportunities provide young people with a means of financial and social independence that help contribute to a strong self-identity and positive health and well-being outcomes. For young people not in employment, education or training (NEET) the available research indicates that they have less chances to develop technical and soft skills and tend to be more pessimistic about their futures in the labor market. Reflecting this is the 'scarring' effect of early labor market disadvantage where negative experiences result in lower life-time earnings, lower levels of human and social capital development and lower levels of job satisfaction (Schmillen & Umkehrer, 2017). The impact on wage loss has been shown by researchers including Mroz and Savage (2006) who find that prior spells of unemployment can result in a future wage reduction of between 3 and 5 per cent, with the impact tapering off

Youth Labor Underutilization in Australia Following the Global Financial Crisis

Figure 1. Youth unemployment, underemployment and underutilization, Australia, 2007-2019 (trend data) Source: Australian Bureau of Statistics, Labor Force Australia, cat no. 6202.0



after several years. Scarring is also associated with a higher risk of further labor market disadvantage in later life. While there are mixed findings within the literature, Schmillen and Umkehrer (2017) using data for Germany estimate that ‘every day of unemployment during the first eight years of the professional career induces an additional half-day of unemployment during the subsequent 16 years’ (p.466).

Early career disadvantage can also impact on health and well-being of young people. Unemployed or underutilized people tend to suffer from poorer health outcomes, report poorer self-rated health and are at a higher risk of mortality (Roelfs et al. 2011). They also tend to have higher incidence of psychiatric and substance abuse disorders than their working peers (Aguilar-Palacio, Carrera-Lasfuentes, & Rabanaque, 2015; Goldman-Mellor et al., 2016). Illustrating the link between early career disadvantage and health and wellbeing, Helgesson, Johansson, Nordqvist, Lundberg, and Vingård (2012) find that in a sample of young Swedes, being underutilized (unemployed) was linked to an increased risk of sickness, disability and mortality in later life. In a broader systematic review, Vancea and Utzet (2017) find evidence in the majority of studies reviewed that young people are vulnerable to negative health impacts when unemployed or working in precarious conditions. Underutilization can also

have significant impacts on social networks and social capital, which can in turn reduce feelings of wellbeing and act as a hindrance in finding work. Working with a matched database of German administrative and survey data, Pohlen (2018) provides an illustration showing that as a result of reduced financial resources and the associated psychosocial impacts of not working, unemployment is associated with a loss of social integration and social and cultural participation leading to a reduction in an individual's social networks and social capital. Similar findings are reported by Kunze and Suppa (2017) who, using German panel data, find a negative association between periods of underutilization and social participation in public activities and an associated retreat into private life. They argue that this reduction in social capital as a result of a period of joblessness has significant impacts on future economic outcomes for both the individual concerned and for the wider society.

DETERMINANTS OF YOUTH LABOR UNDERUTILIZATION

The analysis presented in this chapter is informed by the extensive literature that considers the determinants of labor underutilization. While it has often been the case that research has focused on the characteristics of the individual as they relate to employment, there has been increasing focus on more holistic analytical approaches that consider a wider range of determining factors. Importantly, these have included a focus not only on the characteristics of individuals, but also on the ways in which regional labor market factors may impact on employment outcomes. Taken as part of a broad 'employability' framework labor market outcomes are considered in terms of

the capability to move into and within labor markets and to realize potential through sustainable and accessible employment. For the individual, employability depends on: the knowledge and skills they possess and their attitudes; the way personal attributes are presented in the labor market; the environmental and social context within which work is sought; and the economic context within which work is sought (Department of Higher and Further Education, 2002)

In understanding the determinants of youth labor market outcomes, a range of studies have focused on the socio-economic background and characteristics of individuals as they apply to unemployment or underutilization more generally. Across the individual level, prominent factors have related to an individual's age, their gender, educational attainment, health and family circumstances and/or background. Contemporary work by researchers including Kelly and McGuinness (2015), Marelli and Vakulenko (2016) and Terzo and Giaconia (2019) situates labor market outcomes within the context of the period of the Global Financial Crisis.

Kelly and McGuinness (2015), considering the impact of the GFC on youth outcomes in Ireland identified that being male, and having post-school qualifications acted to reduce the risk an individual would be classified as being not in employment, education or training (NEET), while being aged 20-24 increased the risk, relative to younger cohorts. Marelli and Vakulenko (2016) looking only at unemployment and modelling data for Italy and Russia identify a positive association between poor health and the risk of being unemployed and inverse relationships between age, being male, being married and having higher education while Terzo and Giaconia (2019) focusing on Italy identify that females, foreigners, those aged less than 20 and those with low education had a much higher risk of labor market disadvantage than others. Other factors seen to be important include the extent of exposure to the paid labor market and the level of social capital an individual possesses. For instance Zwysen (2015) considering identifies the impact of father's employment history on young workers in the United Kingdom, suggesting that a young person's exposure (or lack thereof) to members of the family engaged in the labor market can have a direct link on their own employment outcomes. This intergenerational transfer of employment disadvantage was also identified in recent work by (Vauhkonen, Kallio, Kauppinen, & Erola, 2017) and the earlier work by (Baum, Bill, & Mitchell, 2008) in Australia and (O'Neill & Sweetman, 1998) in the United Kingdom. Social contacts are also likely to be important to overall employment outcomes. Linked to earlier work on social networks and social capital, Hällsten, Edling, and Rydgren (2017) identify the importance of two types of social contacts—the quality of occupational contacts and the extent to which close friends were unemployed—in determining youth labor market disadvantage. Similarly, Aguilera (2002) using the Social Capital Benchmark Survey in the United States showed that friendship networks were positively related to increased participation in the labor force.

Beyond these individual level factors, there has been an increasing awareness of the need to control for regional factors associated with local labor market strength or performance (Baum et al., 2008; Baum & Mitchell, 2010; Doran & Fingleton, 2016). In relation to this (Baum & Mitchell, 2010) argue that research into employment outcomes have often been undertaken either at the micro-level to understand the importance of individual level characteristics or has been undertaken at an aggregate macro or regional level resulting in only a partial understanding of the subject matter. In their research, Baum and Mitchell (2010) identify the importance of local labor market strength, whereby as the level of aggregate unemployment increases in a region (a measure of labor market performance) so to does the risk of individuals being impacted by underutilization. Similarly, the more recent work by (Doran & Fingleton, 2016), Kelly and McGuinness (2015) and Marelli and Vakulenko (2016) included variables that accounted for the regional variation in labor market performance, finding a positive association between adverse regional performance

and individual labor market outcomes. Interacting with these spatially differentiated local labor markets is the impact of macro-economic factors such as macroeconomic stability, business confidence and labor demand in the national economy (McQuaid & Lindsay, 2005). Negative shocks to the macro-economy, such as that witnessed during and immediately after the Global Financial Crisis will work in concert with other factors external to the individual to influence individual labor market outcomes.

ANALYZING THE DETERMINANTS OF YOUTH LABOR UNDERUTILIZATION METHODOLOGY

To consider the main questions posed in this chapter, we employ two main data sources: (a) the Household, Income and Labor Dynamics in Australia (HILDA) Survey, managed by the Melbourne Institute of Applied Economic and Social Research; and (b) Small Area Labor Markets data for Australia, published by the Australian Commonwealth Department of Employment. The HILDA Survey follows a large cohort of Australians across consecutive years, gathering responses on a variety of economic, social and labor questions. The HILDA Survey began in 2000-01 (Wave 1) and has since produced 16 consecutive waves of output, with a high rate of participant retention. This paper uses data from Waves 8 to 15 (2008-2015). Among the variables accessed through the HILDA data are a person's labor force status, their age, gender, health status, language command, education level, family status, their parents' employment as well as their social capital. Importantly, the data is accessed from the unconfidentialized release, which allows an individual to be followed through the various waves, and includes a spatial identifier for each individual, which allows placement into an appropriate labor market.

While the retention rate of respondents throughout the life of the survey has been high, some have dropped out along the way, others have missed a year or more along the way, while some do not fully answer all questions in the survey each year. To address this loss of respondents, the Melbourne Institute included a top-up sample in 2012, which increased the number of respondents from then on. However, over the eight years from 2008 to 2015, just over 3,000 respondents answered all questions in every year. Further, this cohort was found to be a biased cohort, with a much higher proportion fully employed and higher education levels than across all respondents over the life of the survey. Hence, we feel there is value in using an unbalanced dataset, where respondents need only to have completed all questions for a single year to remain in the dataset. This does require two consecutive years engagement with the survey at any stage as the social capital variable is sourced from questions from the previous year (see Table 1).

The Small Area Labor Markets Australia publication produces unemployment and labor force estimates at a small area level, specifically Statistical Areas Level 2 (SA2s) (ABS, 2010). These estimates are based on Australian Bureau of Statistics Labor Force Survey data, which are published at the SA4 level, and then apportioned to SA2s across each SA4 depending on the distribution of unemployment benefit (Newstart and Youth Allowance) recipients in those smaller regions.

LABOR MARKET REGIONS

The modelling that follows is aimed at evaluating the impact of a person's individual characteristics as well as the characteristics of the labor market they are a part of. We define an individual's labor market as the functional region they live in as per the CofFEE Functional Economic Regions (CFERs) (Stimson, Mitchell, Flanagan, Baum, & Shyy, 2016). These regions, which cover the whole of Australia, are specifically designed as labor markets, informed by the commuting patterns of workers throughout the country. The regions are unencumbered by administrative or political requirements and have been shown to produce better measures of labor market statistics. This is important as we use the unemployment rate of the region an individual is a resident in as the measure of a region's influence on an individual's labor force status. The CFERs are comprised of SA2s, so a region's unemployment rate is determined by the unemployment and labor force numbers of its constituent SA2s, as provided in the Small Area Labor Markets publication.

MODELLING

The model is set up to determine the influence a range of individual and regional level explanatory variables have on the response variable, employment status. Employment status for a respondent is divided into one of four categories:

- Fully employed (FE) – employed full-time, or employed part-time without wanting more work;
- Underemployed (UDE) – employed part-time and wanting more work;
- Unemployed (UNE) – not employed and actively looking for work; and
- Marginally attached to the labour force (MALF) – not employed and not actively looking for work but would work if a job became available.

With a categorical dependent variable, the appropriate model to use is a multinomial logit model, with the logit is run so that a base response variable state

is compared to the other response variable states. To account for the panel nature of the data, the multinomial logit model is altered to introduce individual-specific random effects. This then becomes a mixed logit model, where the parameters are assumed to vary between individuals, thus taking account of the heterogeneity of the population (Croissant, 2013).

The explanatory variables are listed in table 1 below. Most of the explanatory variables are categorical variables where, like the response variable, a baseline reference category is chosen to which all the other categories are compared.

YOUTH LABOR UNDERUTILISATION IN AUSTRALIA: EMPIRICAL FINDINGS

This section presents the findings from the regression analysis of the labor force status of young people across Australia. Table 2 presents the number and proportion of respondents that comprise the dataset for each wave across the 8 years. The proportion of fully employed young people decreases quite dramatically across the study period, from 66 per cent in 2008, down almost 10 percentage points to 56.7 per cent in 2015 (from 55 per cent in 2014). The drop in fully employed persons is spread evenly across the three measures of labor underutilization, with the largest increase occurring in underemployment among young people over the period.

Table 3 presents the unemployment and underemployment rates of the young people who comprise the dataset and compares them to the corresponding rates across Australia at the time. After the onset of the Global Financial Crisis, the unemployment rate of young people across Australia increased faster than that of the HILDA dataset, but was quite similar once the HILDA top-up sample began (since 2012). The HILDA dataset is over-represented by underemployed young people, but the proportional increase over the 8 years is almost identical to the national level, with the national rate rising 6.6 percentage points and the dataset rising 6.5 percentage points.

Table 4 presents the results of the mixed logit regressions performed for the 15 to 24-year-old cohort in the HILDA dataset and considers the likelihood that a young person is unemployed, underemployed or marginally attached to the labor force compared to being fully employed.

The characteristics that raised the probability of being underemployed relative to being fully employed are presented in the first results column of table 4. Given the existing literature it is not surprising that several individual level factors significantly increase the risk of underemployment for young people. Compared to males, young females are more likely to be underemployed than in any of the other labor force states. A long-term health condition among young people increases their chances of

Youth Labor Underutilization in Australia Following the Global Financial Crisis

Table 1. Independent variables

Variable	Description	Reference Variable
Sex	1 if person <i>i</i> is female at time <i>t</i> ; 0 otherwise	Person is male at time <i>t</i>
Poor Health	1 if person <i>i</i> reports a long-term health condition at time <i>t</i> ; 0 otherwise	No long-term health condition reported at time <i>t</i>
Non-English	1 if person <i>i</i> was born in a non-English speaking country; 0 otherwise	Person born in English speaking country
Post-secondary	1 if person <i>i</i> 's highest level of education at time <i>t</i> is post-secondary (inc certificate and diploma); 0 otherwise	Person has no post-school qualification at time <i>t</i>
Tertiary	1 if person <i>i</i> has completed tertiary level education at time <i>t</i> (bachelor degree and above); 0 otherwise	Person has no post-school qualification at time <i>t</i>
Couple relationship with children	1 if person <i>i</i> is part of a couple relationship with dependent children at time <i>t</i> ; 0 otherwise	Person is single at time <i>t</i>
Single parent family	1 if person <i>i</i> is a single parent at time <i>t</i> ; 0 otherwise	Person is single at time <i>t</i>
Couple no dependents	1 if person <i>i</i> is part of a couple with no dependent children at time <i>t</i> ; 0 otherwise	Person is single at time <i>t</i>
Parents unemployed	1 if both parents of person <i>i</i> were not in paid employment when person <i>i</i> was 14; 0 otherwise	At least one of person's parents were in paid employment when 14
Previous employment	1 if person <i>i</i> did not have a job anytime in the previous 12 months at time <i>t</i> ; 0 otherwise	Person had a job some time in last 12 months
Social Capital	Social capital/networks value for person <i>i</i> at time <i>t-1</i> . This was calculated through a Principal Components Analysis of responses to 9 questions from HILDA survey	N/A
Regional unemployment	Log of the unemployment rate of the region (CFER) person <i>i</i> is resident in at time <i>t</i>	N/A
Year2	1 if period is time 2 (2009), 0 otherwise	Year 1 (2008)
Year3	1 if period is time 3 (2010), 0 otherwise	Year 1 (2008)
Year4	1 if period is time 4 (2011), 0 otherwise	Year 1 (2008)
Year5	1 if period is time 5 (2012), 0 otherwise	Year 1 (2008)
Year6	1 if period is time 6 (2013), 0 otherwise	Year 1 (2008)
Year7	1 if period is time 7 (2014), 0 otherwise	Year 1 (2008)
Year8	1 if period is time 8 (2015), 0 otherwise	Year 1 (2008)

being underemployed as opposed to being fully employed, as does being born in a Non-English-speaking country. An individual's household or family characteristics also play a part in mediating the risk of unemployment. Whether a young person has children has a significant impact on their employment chances. A young person who is part of a couple with children or who is a single parent is more likely to

Youth Labor Underutilization in Australia Following the Global Financial Crisis

Table 2. Dataset labor force status statistics

Year		Fully employed	Under-employed	Unemployed	Marginally Attached LF	Total
2008	Number	911	210	113	146	1,380
	Proportion	66.0%	15.2%	8.2%	10.6%	100%
2009	Number	893	234	126	151	1,404
	Proportion	63.6%	16.7%	9.0%	10.8%	100%
2010	Number	921	233	133	187	1,474
	Proportion	62.5%	15.8%	9.0%	12.7%	100%
2011	Number	931	288	132	177	1,528
	Proportion	60.9%	18.8%	8.6%	11.6%	100%
2012	Number	1,103	312	188	218	1,821
	Proportion	60.6%	17.1%	10.3%	12.0%	100%
2013	Number	1,097	338	184	214	1,860
	Proportion	59.0%	18.2%	9.9%	13.0%	100%
2014	Number	1,021	371	206	250	1,848
	Proportion	55.2%	20.1%	11.1%	13.5%	100%
2015	Number	1,041	350	204	240	1,835
	Proportion	56.7%	19.1%	11.1%	13.1%	100%
All years	Number	7,918	2,336	1,286	1,610	13,150
	Proportion	60.2%	17.8%	9.8%	12.2%	100%

Source: HILDA Survey, authors' calculations

Table 3. Underutilization rates, the dataset and Australia compared

Year	Unemployment Rate		Underemployment Rate	
	Dataset	Australia	Dataset	Australia
2008	9.2%	9.3%	18.7%	13.4%
2009	10.1%	11.5%	20.8%	16.5%
2010	10.3%	11.5%	20.2%	15.5%
2011	9.8%	11.4%	23.6%	15.0%
2012	11.7%	11.5%	22.0%	14.7%
2013	11.4%	12.1%	23.6%	17.0%
2014	12.9%	14.2%	26.7%	20.1%
2015	12.8%	12.1%	25.2%	20.0%

Source: HILDA Survey, authors' calculations, ABS Labor Force Survey

Note: Underemployment rate is underemployed persons as a proportion of all employed persons

be underemployed than fully employed, compared to a single person. In contrast, a young person who is part of a couple without children is more likely to be fully employed than to be underemployed.

A young person's level of education has important impacts on the risk of underemployed. Having some form of post-secondary education, either an immediate post-school diploma or certificate or a tertiary degree or higher degree reduces the risk of being underemployed. A young person's social capital and networks has a large impact on their labor force status. The higher a person's social capital the more likely they are to be fully employed than to be underemployed.

For the risk of underemployment, the impact of geographical location is important. In particular, living in a labor market region with a higher unemployment rate increases the risk that a young person will be underemployed rather than fully employed. Finally, despite the increase in labor underutilization among young people as the effects of the Global Financial Crisis became embedded in the macroeconomy, the individual years after 2008 did not have much of an impact on a young person's risk of underemployment. In only two years (2011 and 2014) was a young person more likely to be underemployed than fully employed, compared to 2008.

Results column 2 of table 4 presents the results for the risk of being unemployed relative to being fully employed. Like the previous category, the results indicate that for young people, several individual level factors are associated with the risk of being unemployed relative to being fully employed. While the variables accounting for sex and country of birth are insignificant in explaining unemployment outcomes, having poor health is significant. The coefficient on the variable 'poor-health' indicates that a young person with a long-term health condition is significantly more likely to be unemployed than to be fully employed. As expected, education level is an important determinant in the likelihood of being unemployed. Having either a non-tertiary secondary education or a tertiary education significantly mediates the risk of being unemployed for young people., as does currently being in a couple relationship with no children.

The employment history of a young person's parents has a noteworthy impact on their own employment. If a young person's parents were not in employment when they were 14 years, they are more likely to be out of work themselves than employed, compared to someone who had at least one parent in employment when they 14 years. A young person's social capital and networks has a large impact on their labor force status. The higher a person's social capital the more likely they are to be fully employed than be unemployed. Like underemployment, the risk that a young person will be unemployed is impacted by geographical location. As the unemployment rate in the labor market region increases, so does the risk that a young person will be unemployed rather than fully employed.

The final set of results (column 3 table 4) compare marginal labor market attachment relative to being fully employed. While the sex of an individual does not significantly impact on the risk of being marginally attached, health status and country of birth is important. For young people, having a long-term health condition or being born in a non-English speaking country increases the risk of being marginally attached rather than being fully employed. As with previous categories, education level is important in the case of being marginally attached. Those with any post-school qualification, tertiary or otherwise, are more likely to be fully employed than marginally attached, compared to those without a post-school qualification. The presence of children, either in a couple relationship or a single parent is associated with an increased likelihood that a young person will be marginally attached, rather than fully employed. In contrast, the absence of children reduces the likelihood.

As with the previous results, the employment history of a young person's parents has a significant impact on their own employment outcomes. If a young person's parents were not in employment when they were 14 years, they are more likely to be marginally attached to the labor market than employed. A young person's social capital and networks also has an impact on their labor force status. The higher a person's social capital the more likely they are to be fully employed than be marginally attached. Unlike the previous categories of employment outcomes, being marginally attached rather than fully employed is not impacted by either the strength of the labor market region or the broader macro-economic conditions.

CONCLUSION

This chapter sets out an analysis of youth labor underutilization in Australia in the years following the Global Financial Crisis (GFC). The context for the chapter lies in the realization that while the Australian economy was resilient in the early phases of the GFC, deterioration in the macro-economy in later years has resulted in declining labor market performance, even as other economies were showing improvement. Considering youth labor underutilization as a function of individual characteristics, including social and family contexts, the strength of the local labor market region and the performance of the macro-economy the analysis considers three separate, but interrelated questions:

1. What was the impact of supply side characteristics on the risk of an individual's labour being underutilised?
2. What was the impact of aggregate/ spatial demand side characteristics on the risk of an individual's labour being underutilised? and

Youth Labor Underutilization in Australia Following the Global Financial Crisis

Table 4. Regression analysis results. Likelihood of being underemployed, unemployed or marginally attached compared to being fully employed

	Underemployed relative to fully employed	Unemployed relative to fully employed	Marginally attached relative to fully employed
Intercept	-2.539 ***	-3.202 ***	-3.102 ***
Sex (Female)	0.367 ***	-0.141	0.060
Poor Health	0.420 ***	0.716 ***	0.838 ***
Non-English	0.361 *	0.167	0.667 ***
Post-secondary	-0.335 ***	-0.359 **	-0.976 ***
Tertiary	-0.634 ***	-0.726 ***	-0.667 ***
Couple relationship with children	0.417 ***	-0.102	0.418 ***
Single parent family	0.555 ***	0.234	0.764 ***
Couple no dependents	-0.325 ***	-0.313 *	-0.744 ***
Parents unemployed	0.152	0.881 ***	1.089 ***
Previous employment	0.992	19.312	19.957
Social Capital	-0.045 ***	-0.088 ***	-0.073 ***
Regional unemployment	10.41 ***	8.251 **	0.904
Year2	0.063	0.023	-0.044
Year3	-0.005	-0.032	0.042
Year4	0.254 *	0.030	0.137
Year5	0.132	0.180	0.065
Year6	0.186	0.033	0.126
Year7	0.343 **	0.092	0.040
Year8	0.227	-0.003	-0.127

Source: HILDA Survey, DoE Small Area Labor Markets, authors' calculations

Note: ***p < 0.001; **p < 0.01; *p < 0.05

3. What was the impact of macro-economic forces in the post-GFC period on an individual's labour being underutilised?

It is not surprising, given the established literature dealing with youth labor underutilization, to find that individual characteristics such as formal education, gender, language proficiency and health status are implicated in the risk that a young person will be disadvantaged in the labor market. Capabilities, measured by formal education, physical capacity and health and language capacity, all impact on the likelihood of a young person being underutilized with low capabilities being

associated with increased disadvantage. Lastly, there is a significant gendered difference in the likelihood of underutilization, with females more likely to be underemployed by hours or marginally attached, a finding that reflects both choices around workforce participation and family and also about gendered constraints in labor markets ((Christensen, 2015; Périvier, 2018).

Over and above these individual employability characteristics, social and family context variables were also important. Reflecting the impacts of life cycle choices and constraints (Crompton & Harris, 1998; Steiber & Haas, 2012), individuals who were members of a couple only household were less likely to be underutilized across all outcomes, while those in couple households with children present had a higher likelihood of being underemployed or marginally attached to the labor market. Family relationships with work are also important. Individuals who grew up in job-poor families were more likely to be unemployed or have marginal labor force attachment reflecting the potential impacts of intergenerational transfers of disadvantage (Berloff et al., 2016). Beyond the family, broader social networks are also associated with labor underutilization with those with low measures of social capital being more likely to be in one of the underutilization categories.

The second question addressed in this chapter related to the role that spatial demand-side characteristics have on the likelihood that an individual would be classified as being underutilized. There is clear evidence presented here that regardless of other factors, a young person's labor market outcomes are influenced by the level of local labor demand. In areas with job deficiencies the risk of being underemployed or unemployed was significantly higher than in regions with stronger local labor markets.

The final question addressed in this chapter related to the impact of the macro-economy on labor underutilization outcomes, and the impact of the deteriorating post-GFC economy. If we take 2010 as the beginning of the broader international recovery macro-economic deterioration continued in the Australian economy resulting in worsening labor market outcomes. Interestingly, this deterioration in the Australian macro-economy coincided with the end of the Federal Government's fiscal assistance programs and the beginning of austerity politics. Despite this, there was only limited impact on youth labor market outcomes from these measured changes in the wider macro economy.

If one of the reasons for analyzing the drivers of individual labor underutilization is to contribute to policy debates, the findings of this paper provide a useful addition to the labor market evidence base. The impact of individual level characteristics on underutilization may be evidence of the need to improve an individual's employment capacity through place neutral policies such as skills training schemes. This has certainly been a focus of a significant amount of Australia labor market policy in the past. However, as has been pointed out elsewhere (Baum et al., 2008), a focus

on these people based or place neutral policies can only be seen as a necessary but not sufficient condition towards improving labor market outcomes. A focus on the strength and performance of local labor markets through place-based policies will provide demand side approaches that complement policies targeting things like skills improvement. The final take-home message from this paper relates to the Government's responsibility to act as an enabler for inclusion of individuals into all aspects of society including the paid labor market. While there is significant discussion in policy circles about individuals taking more responsibility for their own outcomes, as has been shown here and elsewhere (Baum et al., 2008), the government must actively pursue policies to ensure that broad economic and policy contexts are favorable towards positive labor market outcomes for all.

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KEY TERMS AND DEFINITIONS

Employment Scarring: The long-term social and economic impact of a period of joblessness on an individual.

Labor Demand Factors: Factors such as the strength of local labor markets or firms hiring practices that impact on the demand for labor.

Labor Supply Factors: Factors such as an individual's education, health, sex, ethnic background or age that impact on the supply of labor.

Labor Underutilization: The state of employment disadvantage associated with either unemployment, under-employment or marginal labor force attachment.

Marginal Labor Force Attachment: The characterization of a person who is not working and not actively looking for work but would take a job if one became available.

Social Capital: Networks of relationships among people who live in a society.

Underemployment: The characterization of a person who is working but employed part time and wanting more hours (underemployed by hours) or a worker who is not making full use of their skills and abilities (underemployment by skills).

Unemployment: The characterization of a person who is not working, but is actively looking for work. Does not include people who are characterized as marginally attached.

Chapter 6

Youth and the Labor Market in Canada Since the Great Recession

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ABSTRACT

In Canada, recent data show a marked improvement in the youth unemployment rate for the first time since the last recession, although their participation in the labor force remains below the expected thresholds. In the context of a historically low unemployment rate, this chapter aims to dig deeper into the data to understand how youth has fared in the labor market since the last recession compared to the older people, and mainly in the area of gender disparities. In this context, the authors analyze the unemployment and the participation rates by age and by sex. Furthermore, they provide an insight on the youth regional unemployment rates.

INTRODUCTION

Since the dawn of time, high unemployment among youth has constantly been a thorn in the side of policy makers whose one of the main objectives is to maintain a healthy and efficient labor market. In Canada, recent data indicate significant improvement in youth unemployment rate for the first time since the last recession, though their participation in the labor force remains a cause for concern for the Bank

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of Canada. In fact, in his last speech for the year 2017, the governor of the Bank of Canada identifies the “tough job market for young people” as one of the trio of things keeping him awake at night (Poloz, 2017). However, some commentators disagree with the Bank’s interpretation of youth’s low participation rate, citing increasing education levels, which, in the long run, is rather a positive sign for the economy (DePratto, 2018). While the interpretation of youth low participation rate is still open for debate, the participation rates of workers aged between 25 and over hovers also right below the pre-recession level at about 76%, whereas overall unemployment rate falls to its lowest level in four decades to stand at 5.7% in 2019 (Statistics Canada, 2019). In the context of a historically low unemployment rate, this chapter aims to dig deeper into the data to understand how youth has fared in the labor market since the last recession compared to the older people, and mainly in the area of gender disparities.

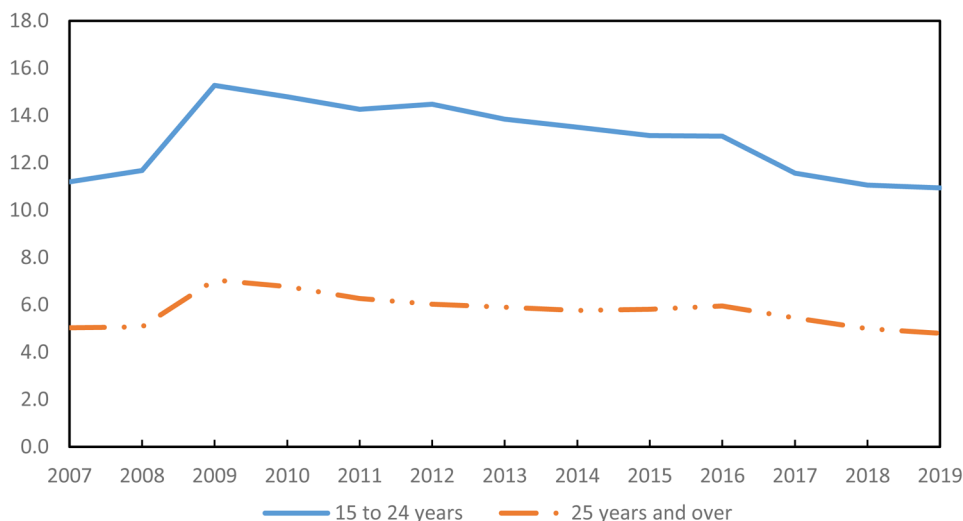
The rest of the paper is organized as follows. In section 2, we start by looking at the trends in unemployment rates between youth and the population of 25 years and over. In section 3, we analyze the unemployment rate by sex. Section 4 looks at youth employment and participation rates. For its part, section 5 provide an insight on the youth regional unemployment rates. Section 6 concludes.

THE TRENDS IN YOUTH UNEMPLOYMENT RATES

As is the case for Canadians aged 25 years and over, youth unemployment rate has consistently declined since the last recession, when it peaked at 15.3%, to stand at its lowest level in 2019 (10.9%). In terms of population looking for jobs, there were on average 328,000 younger workers in 2007 against 309,000 in 2019 (Statistics Canada, 2019). Furthermore, as it can be seen in *figure 1*, the great recession hit young Canadians harder than older Canadians.

In fact, while youth experienced a jump of 3.6 percentage points in the unemployment rate from 2008 to 2009, unemployment rate increased by only 2.0 percentage points among the population aged 25 years and older. This situation can be the result of a combination of factors playing against younger workers. Firstly, since young workers have generally less seniority on the job than older workers, they are more likely to be slacked than the latter. Secondly, some sectors, like retail, accommodation and food services that attract to younger workers more than to older workers, were more exposed to the recession, which may partly explain why unemployment rate skyrocketed among the former. Thirdly, younger workers often hold a job while studying, which sometimes may require accommodations from employers. In a sluggish economy, employers may have less incentive to provide accommodations to hire or keep younger workers on the job. Finally, there

Figure 1. Trends in unemployment rate (2007-2019)



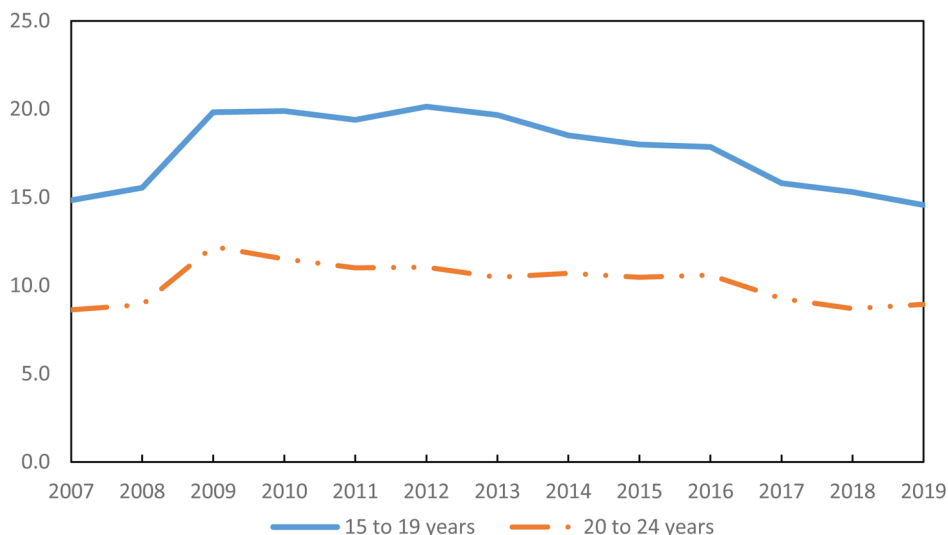
is the prejudice among some employers who believe that younger workers tend to have a sense of entitlement and being less loyal than older workers are. When the time comes to tighten the belt during a recession, employers might also feel more compelled to stick to older workers than to younger workers.

However, one can also observe in the *figure 1* that during the recovery and the growth periods, unemployment rate declined faster among younger workers than Canadians aged of 25 years and older. From a gap of 8.2 percentage points in 2009 at the height of the recession, unemployment among youth has significantly dropped to bring the gap to its lowest level at 6.1 percentage points in 2019; a level that remains steady since 2017.

Furthermore, when we look at the unemployment rate for young Canadians aged between 15 and 19 years, on the one hand, and for those aged between 20 and 24 years on the other hand (*figure 2*), we observe a similar pattern as for the one found for younger workers and those aged 25 years and over. The only exception is that the gap in the unemployment rate is wider within younger workers than between younger workers and Canadians aged of 25 years and over. In fact, we conclude that the younger the group, the higher the unemployment rate, which seems to indicate a strong correlation between age and unemployment.

In addition, as is the case for the other groups, Canadians aged between 15 and 19 years, experienced very high unemployment at the height of the recession in 2009, but their unemployment rate peaked only in 2012 (20.1%), a time during which overall unemployment rate started to decline (*figure 2*). Nevertheless, when it starts

Figure 2. Unemployment rate within youths



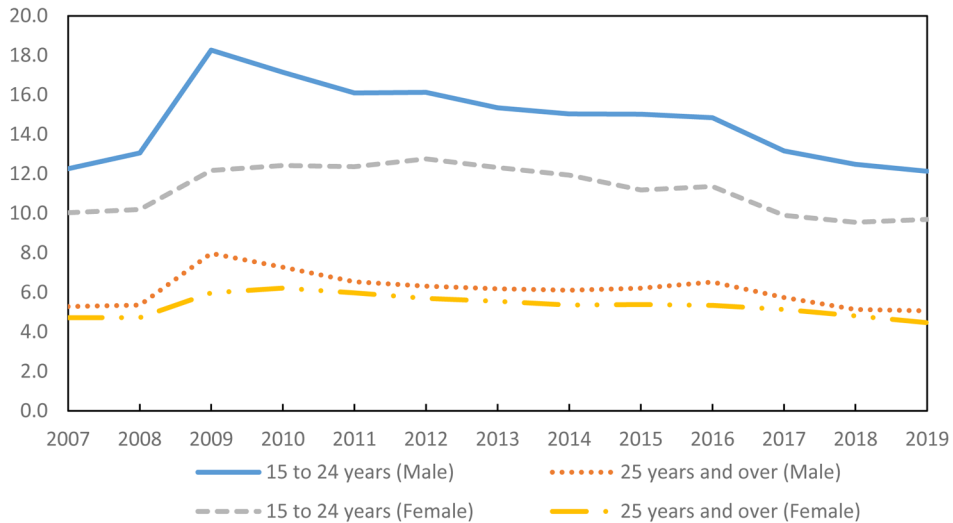
to decline, it went down at a faster pace than that of workers aged between 20 and 24 to bring their gap down to the pre-recession level of 5.2 percentage points in 2017.

UNEMPLOYMENT RATE BY SEX

Looking at the *figure 3*, our first observation yields that for each group taken separately, males generally carry higher unemployment rate than females, though the gap is wider for younger than older workers. In fact, while unemployment rate peaked in 2009 for males of all both age groups, it peaked only in 2010 for females. One way to explain this lag between the two categories is that male-dominated sectors were exposed earlier to effects of the recession than female dominated ones. Furthermore, we observe that the gap between females of the two age groups is smaller than males'. This indicates that not only youths fare badly in the labor market compared to older Canadians, but also young males fare even worse than their counterpart females, which can plainly be observable in *figure 4*.

Likewise, the great recession proved to be far more trying for male youths than any other group, as they saw their unemployment rates increased by 5 percentage points on average between 2008 and 2009. Again, the trends for this group were mainly driven by males aged between 15 and 19 years who experienced a six-percentage point jump in their unemployment in 2009. Males aged 25 years and older for their

Figure 3. Unemployment rate by age group and by sex



part came next, with their unemployment rate increased by 2.6 percentage points (see figure 5).

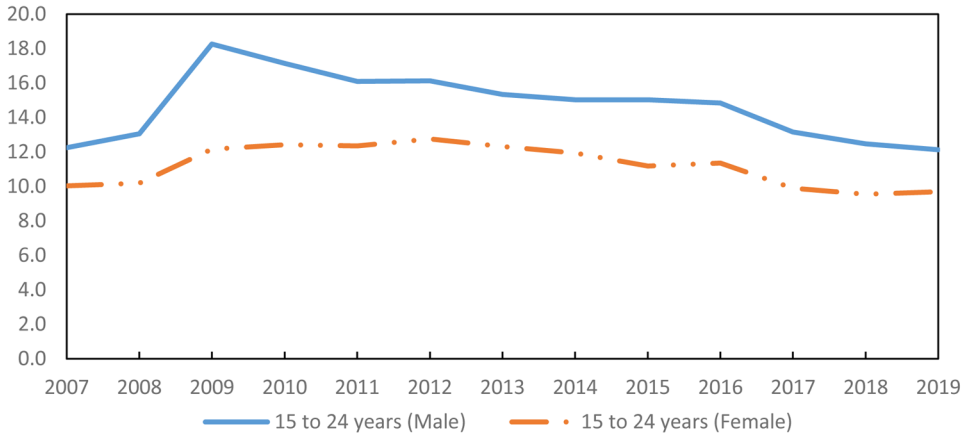
Within the group of Canadians aged between 15 and 24 years, as one can see in figure 5, both males and females aged between 15 and 19 experienced higher unemployment rates than their counterpart aged between 20 and 24. However, females aged between 15 and 19 fared far better than males of the same age group.

As it can be seen in figure 5, both males and females aged between 15 and 19 experienced higher unemployment rates than their counterpart aged between 20 and 24. However, females aged between 15 and 19 fared far better than males of the same age group.

Contrary to men of both age groups who experienced their highest unemployment rates in 2009, that is, at the height of the great recession, female’s unemployment rates groups peaked only in 2012. Nevertheless, by 2019, like the rest of the population, their unemployment rates fall to the pre-recession levels. It is important to note that the number of younger workers who were looking for jobs in 2008 stood at an average of 179,000 for those aged between 15 and 19 years, and 750,000 for those aged between 20 and 24 years. In 2019, there were on average 147,000 job seekers aged between 15 and 19 years, and 162,000 aged between 20 and 24 years for a change of respectively -8% and 8% in their population, and of -17% and 5% in the labour force over the same period (Statistics Canada, 2019). Therefore, it is reasonable to state that the drop in the unemployment rate of youths aged between 15 and 19 hides a far telling story that goes beyond the statistics on the unemployment rate.

Youth and the Labor Market in Canada Since the Great Recession

Figure 4. Youth unemployment rate by sex

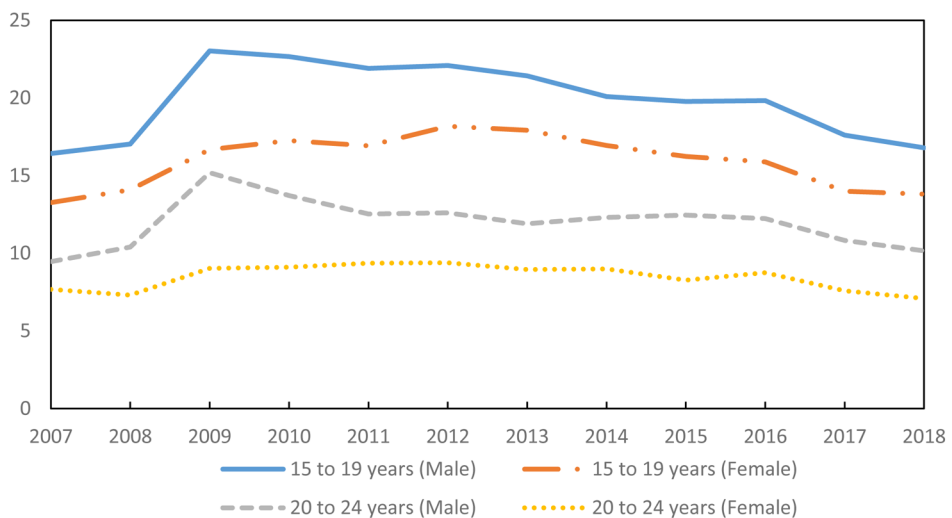


YOUTH EMPLOYMENT AND PARTICIPATION RATES

General Trends

In 2019, both employment and participation rates remain below the pre-recession levels as well for youths as for Canadians aged 25 years and older. While the younger workers had a higher employment rate, older workers had a higher participation rate,

Figure 5. Youth unemployment rate age group and by sex



which is reflexive of the latter being less available for work as they are more involved in school functions. Within the group of younger workers, those aged between 15 and 19 years had both lower employment and lower participation rates than those aged between 20 and 24 years. This probably is the result of more undergraduate students being committed entirely to school functions, on the one hand, and on the other hand, of post-secondary graduate workers having more issues finding job in their field. In 2019, an average of 1,242,000 youths had a job, including 433,000 aged between 15 and 19 years, and 809,000 aged between 20 and 24 years (Statistics Canada, 2019).

In the same vein, while employment and participation rates were lower for females than males aged between 15 and 24 years, females aged between 20 and 24 had a 2-percentage-point edge over males in both cases. Overall, female employment and participation rates have hovered closer to the pre-recession levels than male's, which indicates that not only the jump in unemployment rates during the recession was lower for females than males, but also female-dominated sectors has recovered faster than males'. In fact, as the knowledge-based economy becomes more and more sophisticated and the gap between female and male university participation rates widens, females are expected to fare far better than males, even in traditionally male-dominated sectors.

Table 1. Employment participation rates by sex and age group

	2019			2007 to 2019		
	Males	Females	Both sexes	Males	Females	Both sexes
	%			change in percentage point		
Employment rates						
15 to 24	71.2	60.9	65.9	-2.4	-0.9	-1.6
15 to 19	65.9	58.2	62.0	-2.0	-0.8	-1.4
20 to 24	56.3	58.5	57.4	-2.9	-1.3	-2.1
25 and over	41.3	44.6	42.9	-4.0	-4.4	-4.2
15 to 24	70.1	61.4	65.7	-2.5	-1.1	-1.8
15 to 19	64.1	64.8	64.4	-3.5	-1.6	-2.6
20 to 24	49.0	51.6	50.3	-5.3	-4.9	-5.1
25 and over	76.8	75.8	76.3	-3.9	-0.2	-2.1

Source: Labour Force Survey (Table 14-100287-01)

Youth Employment Status (Full time and Part time)

When compared with the population aged 25 years and over, the share of youth employment that is a part-time has been relatively high. In 2019, 48.4% of youth employment were part-time, compared to 14.4% for workers aged 25 years and over. Relatively to the pre-recession level, these numbers represent a rise of 8.3% for the former and 7.0% for the latter (*see table 2*).

Table 2. Share of part-time employment by sex and age group

	2019			2007 to 2019		
	Males	Females	Both Sexes	Males	Females	Both Sexes
	%			change in percentage point		
15 to 24	41.3	56.0	48.4	4.2	3.3	3.7
25 and over	8.7	20.8	14.4	2.1	-0.5	0.9

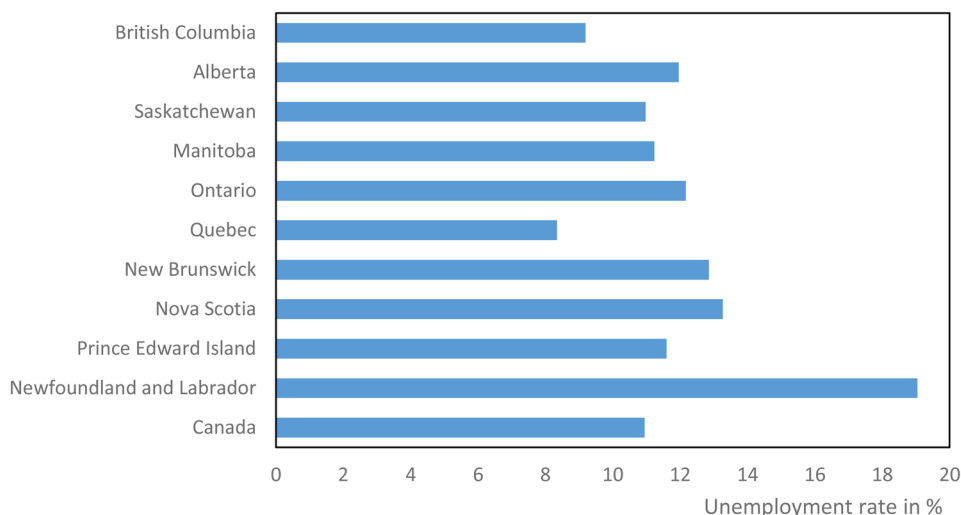
Source: Labour Force Survey (Table 14-100287-01)

If females of both groups enjoyed a lower unemployment rate than males, the former hold the biggest share of part-time employment. In 2019, the share of employments was 14.7 percentage points higher among females aged between 15 and 24 years than males of the same age group. As it can be seen in the *table 2*, the gap between the two groups has slightly narrowed in 2019 compared to the pre-recession level, as males experienced a higher increase in the share of part-time employment than girls did.

REGIONAL INSIGHT

In 2019, youth unemployment rates stood higher than the national average in no less than eight out of the ten Canadian provinces. Youths in Quebec and British Columbia who departed from the rest of the country displayed nonetheless an average unemployment rate of, respectively, 8.3% and 9.2%. Youths in the Maritime Provinces experienced the highest unemployment rates, except for Youths in the province of Prince Edward Island (11.6%) who came right after those in the provinces of Ontario (12.2%) and Alberta (12.0%). By the same measure, with an unemployment rate sitting at 19.0%, youths in the province of Newfoundland and Labrador experienced the highest unemployment rate in the country (*see figure 6*).

Figure 6. Youth unemployment rates by province



However, if the collapse of the oil price can be responsible for the high unemployment rate observed among youths in the province of Alberta, there is no easy explanation for youth high unemployment rate in Ontario. In fact, with a rate that stood on average at 12.2% in 2019, the province of Ontario had the fourth highest youth unemployment rate in the country, despite a relatively low unemployment rate among the general population. This situation can potentially be the result of the 20.7% minimum wage hike introduced in one shot by the Ontarian government in 2018. In a paper on the wage hike in Ontario, Lammam and MacIntyre (2018) argue that workers under the age of 25 represent no less than 59.2% of all minimum wage earners in Ontario.

CONCLUSION

If high unemployment rates have always reigned over younger workers in Canada, the recent expansion of the atypical forms of employment has provided it with the necessary legitimacy to be fully accepted among policy makers. While a double-digit unemployment rate in the economy would send policy makers in panic mode and ramp up the pressure to adopt urgent relief measures, the same situation does not receive half the consideration when it comes to youth unemployment. For instance, one of the trio of things that kept the governor of the Bank of Canada awake at night in 2017 was rather the employment rate among younger workers,

but not their 10.0% unemployment rate. One should not lose sight that the atypical forms of employment, so popular on the labor market, does not come into existence exclusively by the will of the employers. Atypical decisions that define workers' career path in a highly competitive world undoubtedly supply the labor market with the workforce it needs to lift the economy against the gravitational forces that generate poverty. Therefore, age should not be a deciding factor in the determination of the level of unemployment rate acceptable in the economy.

It is essential that the situation of younger workers on the labor market now be looked at through new perspectives that are reflexive of the recent technological, socioeconomic and cultural transformations registered in our postmodern society.

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KEY TERMS AND DEFINITIONS

Full-Time Employment: Consists of persons who usually work 30 hours or more per week at their main or only job.

Part-Time Employment: Consists of persons who usually work less than 30 hours per week at their main or only job.

Participation Rate: Is the number of employed and unemployed people as a percentage of the population.

Youth Unemployment Rate: Is the number of unemployed young people (aged 15 to 24) as a percentage of the labour force.

Chapter 7

Higher Education and Employment: Highlights From the Economic History of Mexico

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ABSTRACT

The articulation of higher education and employment acquires special relevance due to its impact to the youth labor market. Some of the tendencies in the Mexican economy during the sixties and seventies and the beginning of the eighties until the 21st century are the following: the expansion of educational coverage, the urbanization of development and labor market, as well as the middle-class consolidation and graduate exclusion of the labor market. These factors oriented the higher education predominantly to human resources generation, firstly, for the industrial sector and, secondly, for the tertiary sector of the knowledge society with a large unemployment and underemployment of graduates.

INTRODUCTION

At present, knowledge is the central element of the new productive paradigm. Unlike other times, competitive advantages are not only based on natural factors, but on aspects related to the generalization and application of knowledge.

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Higher Education and Employment

Thus, any development strategy depends, to a large extent, on the existence of a solid science and technology system, of trained managerial and administrative cadres and of educated manpower. And the former is based on an appropriate articulation between education and the productive sector. The education can't be restricted to a purely utilitarian dimension, being indisputable that education and capacity building are decisive factors for the development process responding with relevance and flexibility to changing conditions. Further, the graduates need a labor structure that takes advantage of their abilities, which implies a coherent and solid industrial and economic policy that channels with adequately the available human resources.

In the current environment of economic globalization and even global fragmentation of markets, it is important to understand from a historical perspective the main economic growth models that have characterized Mexico, and their relationship with higher education and employment in order to identify some factors that arise from the linking of public policies that support new strategies aimed at the youth labor market.

From 1930 to 1958, Mexico carried out industrialization process based on the imports' substitution with the active participation of national capital that was formed after 1930 and with a strong state that allowed the consolidation of the existing national businesses.

In economic terms, during this period the use of national resources by incipient national companies was fomented for the generation of productive chains. The economic policy of the period was based on the stimulus of public spending and investment and, to a lesser extent, on private investment. The government was interested in promoting full employment in the face of a protectionist policy.

The expropriation of oil in 1938 meant for Mexico a rupture with the technological source provided by the United States. This led to an economic disorder whose correction was subsequently reflected in the consolidation of Mexico's oil system. Likewise, the Keynesian policy of full employment allowed the continuity of the protectionist policy along with the contemporary nationalist discourse.

From 1946 to 1958 the process of industrialization was reorganized; this is the period when the oil, chemical, pharmaceutical, cosmetics, automotive, household appliances and light electrical machinery industries were established. There was also a more active participation of foreign capital, particularly in the form of direct foreign investment.

However, from 1958 to 1970, the presence of foreign capital began to decrease due to the stricter state control of the basic sectors owned by foreigners (the government acquires the two largest foreign companies generating electric power and new legislation on mining industry was issued). A new moment of industrialization was beginning to take shape in the economic history of Mexico, although doubts arose about the "contribution of foreign capital to the technological progress of

a society whose delay in this aspect is directly due to the inadequate educational system. This interpretation [...] of the problem was and still is defining the policy of industrialization including the education as an important factor “(Fonseca, 1994).

With the development of the capital goods industry, from 1970 to 1980 imports' substitution deepened. The exploitation of new oil fields and the sale of oil, as well as the opening of international credit, attracted a high flow of foreign capital that made viable the development of a national capital goods industry. However, bypassing the industrial discipline that implied imports' substitution and allocating a large amount of foreign currency to the imports of different kinds of products, affected the integration of the Mexican industry.

Indebtedness was the most serious consequence of the decade of the eighties. The orientation of economic policy to the solution of problems of a financial, monetary and commercial nature, turned into a strategy of greater openness to international trade. The application of trade balance and liberalization policies was promoted, inflation was combated, and the exchange policy was addressed. The opening of foreign investment and the reduction of tariffs on the imports of capital goods were also encouraged. In 1980 Mexico's public and private external debt amounted to 50,713 million dollars and in 1984 it reached 95,264 million dollars (Gurría, 1993). Also, the high trade deficits and the increasing technological dependence of the industry prevented the development of original technologies, thus affecting the long-term competitiveness

At the time, some sectors, such as glass, steel, cement, etc., had technological and economic conditions to overcome the crisis, although, until today it is not the case of most of the small and medium-sized companies that have been affected by the application of a neoliberal model that led to the dismantling of the productive structure formed in previous years.

All this marked the beginning of a new period linking the country to the external market, but without the development of industrial policy oriented to promote the international competition of the country. At present, the absence of an industrial policy clearly affects the links with the labor market, and particularly with the youth labor market. In the nineties, the government of the president Salinas de Gortari, was applying the lemma that “the best industrial policy is the one that does not exist”, thus distorting what once implied an effective articulation between the formation of human resources and employment. In this period the need of a State policy for planning of national employment within the international economic environment, becomes more evident.

However, to rescue some components of planning, in May 1996 the Industrial Policy and Foreign Trade Program were announced. The importance of creating and improving the physical infrastructure, the human and institutional base was stated, and was recognized that the competitiveness of the industry does not depend

exclusively on the abundance of cheap primary resources. Thus, it seeks to improve the physical infrastructure (transport and communications, water supply, energy and basic industrial inputs) and above all strengthen the training of human resources.

Therefore, the articulation of higher education-employment in Mexico was characterized by the periods of imports' substitution, the neoliberal model, and more recently with the knowledge society model that highlights the transition from industry to commerce, and further to knowledge as a generator of added value, in approximately half a century.

To interpret this economic policy associated with higher education and employment, and to answer the questions raised in this chapter, we rely on data for the period between 1960 and 2010, associated with the place of young people in the demographic transformation, according to the age pyramid of Mexico. The data used are: the number of graduates of higher education institutions; the number of employees/unemployed by age range (21-29 years), according to the most demanded professions per decade, as well as the number of researchers by age range.

YOUTH IN THE DEMOGRAPHIC TRANSFORMATION

Figure 1 shows that the increase of the Mexican population has been constant between 1960 and 2010 increasing from 34.5 million people in 1960 to 112.3 million in 2010. This increases the difficulties of allocation of young higher education graduates to jobs corresponding to their academic training.

According to the International Labor Organization (ILO), the youth years are from 21 to 29. The pyramids of ages throughout the period show, that the number of young people in Mexican society increased continually during the period, generating the so-called "demographic bonus" in the first decade of the 21st century (Figure 2, Figure 3, Figure 4). This situation requires the design of a specific employment policy, because the existent one doesn't allow the efficient *incorporation* of young graduates into the labor market. That's why it is common to find young graduates in jobs that do not correspond to their university education. This situation has notoriously affected young population whose expectation of finding a job doesn't correspond to the efforts invested into their training.

Highlight 1: Imports' Substitution

A period, which has been considered, is the decade of the 1920s when Mexico began the search for alternatives to articulate the country economically, socially and politically, attributing to education a fundamental role in shaping the new citizens. The post-revolutionary governments gave priority to primary education, especially

Figure 1. Census of the Mexican population by decades 1960-2010 (age pyramid)
 Source: Taken from INEGI. Total Population /Volume and Growth/ Federative Entity 1895-2010 and INEGI. Intercensal survey, 2015

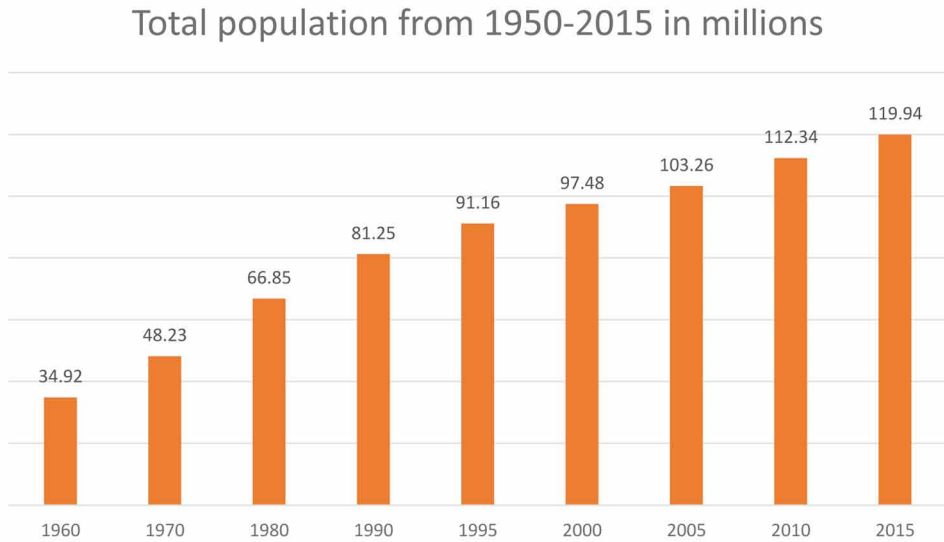
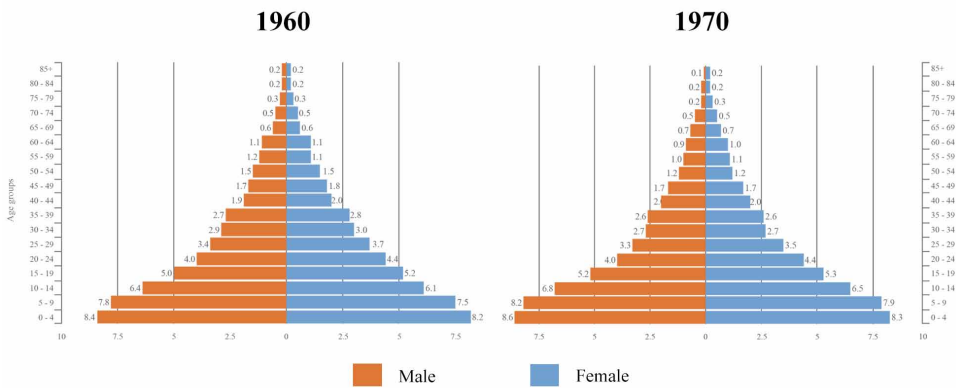


Figure 2. Pyramids of ages and gender corresponding to each population census in the period 1960 – 1970
 Source: Elaborated by the authors in base of the age-gender pyramids from INEGI (1960-1970)



oriented to peasants and workers, considering that there was a close relationship between economic and educational development, although important coverage was not achieved until later stages.

Higher Education and Employment

Figure 3. Pyramids of ages and gender corresponding to each population census in the period 1960 – 1970

Source: Elaborated by the authors in base of the age-gender pyramids from INEGI (1980-1990)

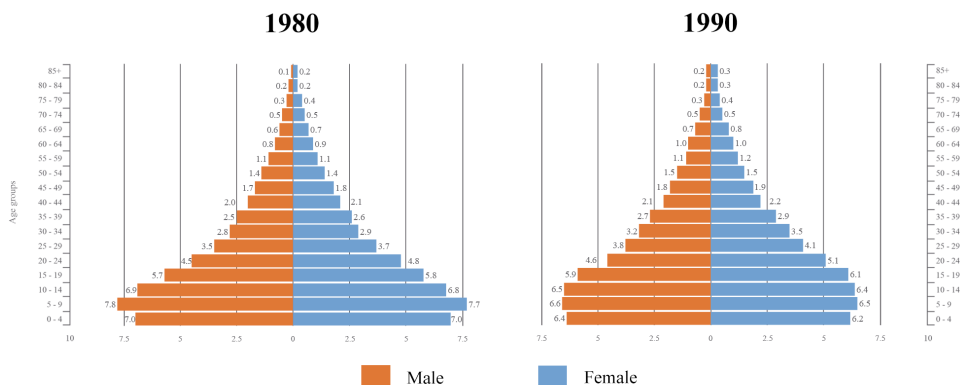
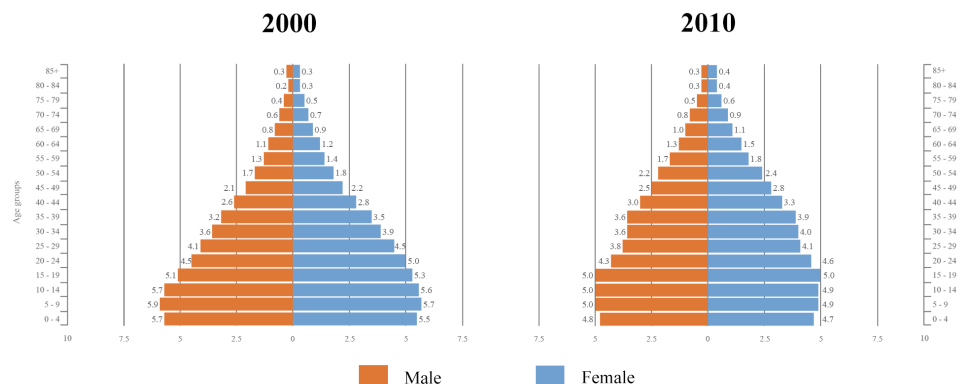


Figure 4. Pyramids of ages and gender corresponding to each population census in the period 1960 – 1970

Source: Elaborated by the authors in base of the age-gender pyramids from INEGI (2000-2010)



Another period is from 1930 to 1940, when the objective was to strengthen the conditions that made industrial development possible, and policies were oriented to the vindication of the interests of the popular sectors through technical and ideological capacity building. This was manifested fostering the technological and higher education, especially by the creation in 1937 of the National Polytechnic Institute (IPN, in Spanish words) in charge of training middle and higher technical cadres to support the industrialization process.

During the 1940s, the educational policy was oriented towards limiting the social character of education to the mere “technical” function, as a result of new political and economic priorities. Muñoz (in Tenti, 1980) points out that: “technical education ceased to be an instrument designed to prepare an intellectual proletariat - as the educational system of the 1930s tried to do - to be considered as an instrument to prepare the personnel that allows to establish bonds of functionality and complementarity between workers and capital owners”. However, the correspondence between education and work could not be established directly, especially because the State maintained the responsibility to define the functionality of the education system, despite pressures from business sectors.

At the end of the 1940s, as a result of the problems of concentration of enrollment in Mexico City, the Regional Technological Institutes (RTIs) were created, arising from the IPN initiative and being integrated into the structure of the Public Education Secretariat (SEP).

Some years later, during the period 1955-1970, training centers for capacity building were established throughout the country and the formation of technical cadres of the highest level was promoted with the creation of the Center for Research and Higher Studies (Cinvestav) of the IPN.

During the decade of the seventies, the technological education system was expanded. At the same time the higher and secondary education institutions were multiplied and diversified.

As the preamble of the labor market for youth in Mexico, and to position it as a substantial part of the higher education-employment relationship, we use data provided by the National Association of Universities and Institutions of Higher Education (ANUIES), throughout the period of particular interest in terms of the number of graduates (Figure 5).

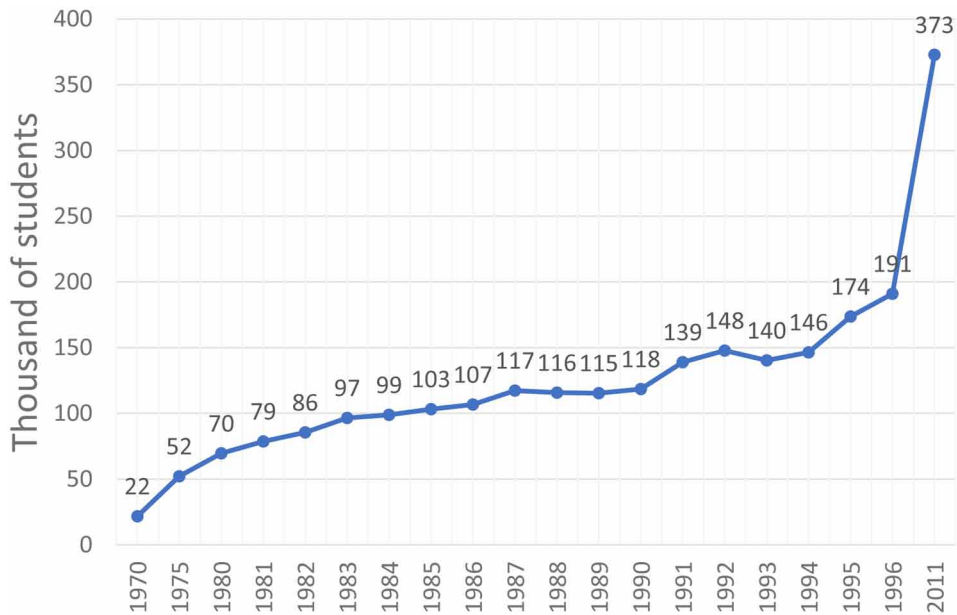
Highlight 2: Neoliberalism

For the eighties and on the eve of 2000, we detected multiple structural transformations in employment, both nationally and internationally. On the one hand, the age and the educational characteristics of the Economically Active Population (EAP) have been substantially modified, and thus the structure of their competences. On the other hand, the circumstances under which employment is exercised have been transformed by globalization, changes in economic development strategies, technological evolution and organizational progress. This coupled with specific, economic and social changes. In particular, the EAP is increasingly schooled and a growing number of students access to higher education, as well as the percentage of the age group between 20 and 29 years in relation to the total population, employed or unemployed, in each decade of the Figure 3 and Table 1 that, being economically

Higher Education and Employment

Figure 5. Number of higher education graduates (universities and technological institutes) in Mexico (1970-2011)

Source: Elaborated by the authors based on the statistic yearbook 1997. School population on undergraduate level in universities and technological institutes. ANUIES



active, found employment or not, or found a job that does not correspond to the efforts invested into their training. Added to this information, we use data of INEGI, related to employment and unemployment, and presented in the following figure:

It can be noted that in the period 1960-2010, the unemployment was proportionally increasing compared to employment (Figure, 4). While in 1960 the proportion of unemployment in relation to the employed population was 1.6%, in 2010 it represented 4.8%, with an important impact on young people due to their increasing proportion in the age pyramid. This is also associated, to the aggressive transition from a closed model to an open one, namely from imports' substitution to exports-based economy. In the later model the export-oriented industries became the engine of growth, propitiating a productive disarticulation that neglects the domestic market and the small enterprises supplying inputs for production. Additionally, the labor market is changing and therefore, the demand for young people modifies according to the new model.

In the period of import substitution, the greater number of graduates of higher education institutions was centered in the social sciences. So, the labor market became saturated with these professions, over time. Mean wise for the neoliberal

Figure 6. Population employed/unemployed by decades 1960-2010 (thousands and millions of persons)

Source: Produced by the authors and based on data on the economic characteristics of each population census of INEGI (1960-2010)

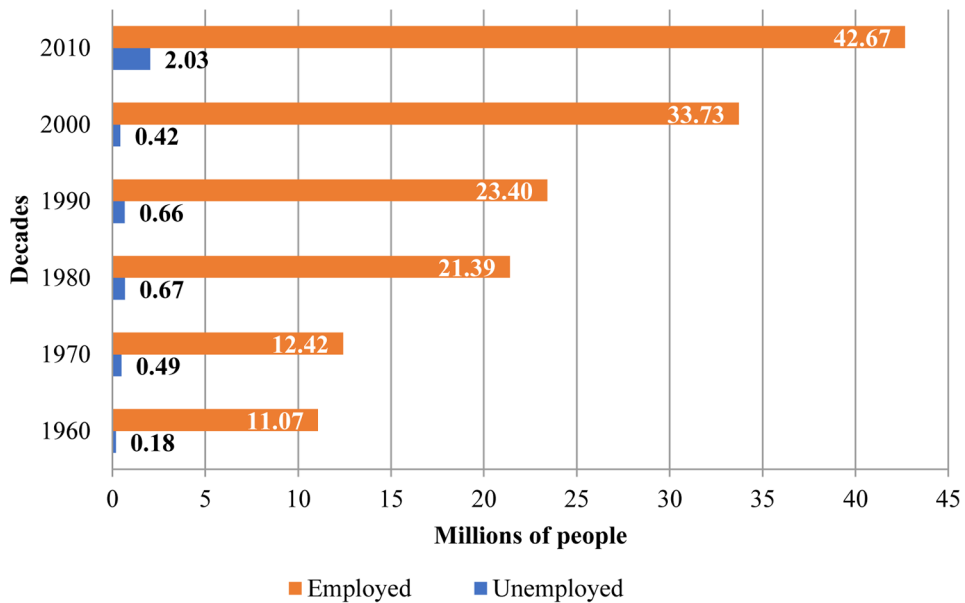


Table 1. Percentage of population aged 20-29 employed and unemployed

Year Decades	Population aged 20-29	
	% Employed	% Unemployed
1960	27.38%	-
1970	28.88%	29.15%
1980	30.59%	25.92%
1990	32.13%	34.72%
2000	29.92%	39.05%
2010	26.10%	32.17%

Source: Produced by the authors and based on data on the economic characteristics of each population census of INEGI (1960-2010)

Note: The percentage of the unemployed economically active population (age 20-29) for the decade of the sixties could not be found.

period professions linked to ICTs are beginning to have greater demand in a labor market that reflects the technological changes of the fourth industrial revolution (i4.0). This is linked to the transition from an economy based on manufacturing to

Higher Education and Employment

one based on innovation, but still far from it. We therefore find it recommendable to accelerate the transition from an industrial revolution i2.0 to another i4.0, but without neglecting the social and human sciences, a characteristic of a relationship between higher education and employment with a human face.

The table 2, shows seven main areas that concentrate the enrollment of professionals from the 1960s to 2010, that use to be connected depending of each highlight and argues in this paper. The order is shown from the bottom to the top, in increasing scale, indicating in the row to which decade belongs each group of professional areas. These are divided, by area of study highlighted by different colors, emphasizing that in some years, the information was found by specific sector or science as in the case of Medicine or Law belonging to Health Sciences and Social Sciences, respectively. (For more detailed information on the number of professionals within each study area per decade, see the appendix 1, 2).

Table 2. Professions with highest demand by decade

7°	Engineering in different branches	Architecture	Professional religious	Agronomy	Other professions	Services
6°	Chemical	Pedagogy	Exact sciences	Civil engineering	Natural and Exact sciences	Art and Humanities
5°	Administrative professions	Mechanical, electrical and electronic engineering	Engineering, Architectures	Mechanical and Industrial Engineering	Agricultural sciences	Natural, exacts and
						Computing sciences
4°	Law	Civil Engineering	Health sciences	Administrative	Health	Health
3°	Medicine	Law	Social sciences	Law	Education and	Education
					Humanities	
2°	General educations	Medicine	Education science	Medicine	Engineering and	Engineering, manufacturing and
					Technology	Construction
1°	Civil engineering	Accounting	Administrative sciences	Accounting	Social sciences and	Social sciences, Law and
					Administrative	Administrative sciences
	1960	1970	1980	1995	2000	2010

Table 3.

Social sciences	
Health sciences	
Education sciences (normal)	
Technology sciences	
Administrative sciences	
Exact and natural sciences	
Agricultural sciences	
Construction sciences (Civil engineering, architecture and related)	
Diverse engineering(no civil)	
Humanities and arts	

Source: Produced by the authors and based on data on Census of the Mexican Population 1960-2010 & Professions Atlas. 1995 INEGI

Highlight 3: Knowledge Society

Likewise, after 2000, during the first three five-year periods, the National System of Technological Education (SNET) changed. In 2014, by Presidential Decree was created the largest technological higher education institution in Mexico. The National Technological Institute of Mexico (TecNM) is a decentralized body of the Ministry of Public Education, which replaces the administrative unit that was in charge of coordinating the SNET. This was integrating the subsystem of higher education including training centers for capacity building; different types of higher secondary education institutions, with various modalities; technological institutes; the IPN; the Center of Technical-Industrial Education and several research centers.

The TecNM is constituted by 254 institutions, of which 126 are Federal Technological Institutes, 128 Decentralized Technological Institutes, four Regional Centers of Optimization and Development of Equipment (CRODE), an Interdisciplinary Center for Research and Teaching in Technical Education (CIIDET) and a National Center for Technological Research and Development (CENIDET). In these institutions, the TecNM serves a school population of more than 600,000 undergraduate and graduate students throughout the national territory, including Mexico City (gob.mx, 2019), jointly with graduates coming for Higher Educations, it is possible to understand the graduates' dimension facing to a labor market that used to be developing in Mexico (Figure, 3) .

After 2000, the necessity to consider knowledge as one of the economic factors in growth was already evident. UNESCO and other economies of the world began

Higher Education and Employment

to consider vocational training, higher education, research, development and technological innovation as decisive elements of transition from production based on manufactures to the ownership of knowledge. Such skills could propitiate a reconfiguration of the world by the transfer of production process that requires a greater quantity of cheap labor, to the big developed cities, where a concentration of information, knowledge and intellectual property exists.

One more indicator that gives context to the relationship between higher education and employment is the number of young researchers in the National Research System (SNI) patronized by the National Council of Science and Technology (CONACYT). In this regard, it is worth mentioning that research in Mexico is carried out in public universities and financed to great extent with resources provided by the universities and CONACYT. That's why the young researchers are employed in different forms offered by these institutions, as is the case of the CONACYT professorships, implying the beginning of a scientific employment trajectory, but often criticized because of the weak labor protection.

Figure 7 shows that since the establishment of the SNI of CONACYT the number of researchers in higher education has been increasing steadily, despite the difficulty of access. Thus, we see how in the beginning (1984) SNI started with 1396 researchers and tis number was gradually increasing continuously reaching 27186 in 2017. (For more information, as the exact number of SNI researchers per year, see Appendix 3)

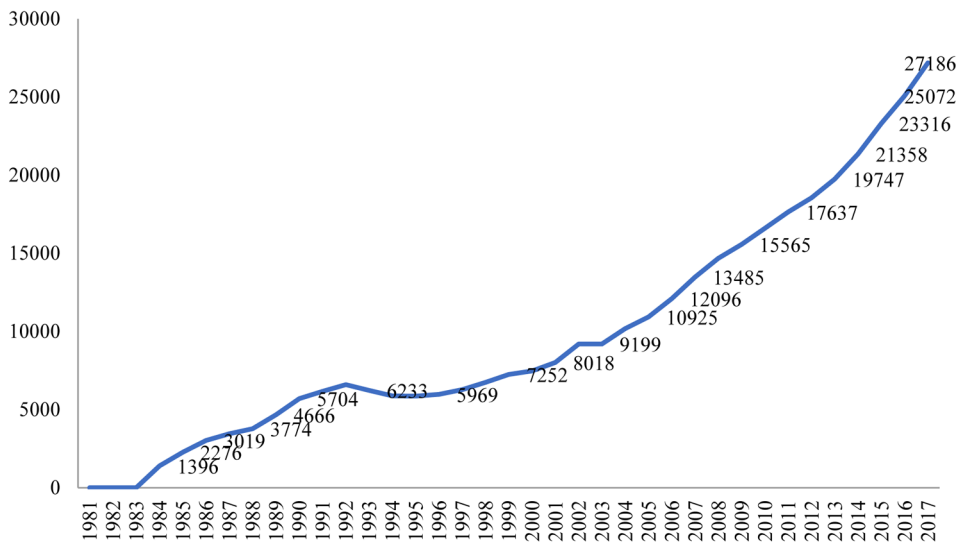
However, the new government of Mexico of Andrés Manuel Lopez Obrador has established a support for those young people considered as NINI's (neither study nor work), to whom he offers monthly scholarship type unemployment insurance, for a certain period but far still from the knowledge society. Hence the importance to nuance over time, public policies associated with the youth labor market, certainly in a period that does not offer still data. Variables and indicators are defined as we propose here, with the aim of contributing to a better knowledge of Mexico and the role of higher education for employment in general and of young people in particular.

CONCLUSION

A topic always relevant on the government agenda is that of employment and particularly of young people. Associated with its efficient and effective linkage with higher education, it provides a space for reflection, which from the academic perspective contributes to improving the conditions of an economically depressed Mexico, with ample opportunities for growth and development.

In the present research, it has been considered that in the face of the uncertainty that implies the transit from school to professional performance in the labor market

Figure 7. Number of researchers in the National System of Researchers of CONACYT
 Source: Produced by the authors with data from the historic archive and basic statistics of CONACYT (2017)



and the reality of lack of jobs coinciding with their aspirations, young people have been forced to accept jobs that do not correspond with their professional training, but also far from generating satisfactory income. This is a reality that affects the youth population in Mexico and serves as example for future generations of young people, shaping their career choice.

The foregoing is explained, largely by the global economic trends that influence the conformation of profiles that are demanded. This is the case of careers linked to ICTs and Mexico is not the exception. Nowadays, the economy/knowledge society places “ideas” as the main factor of production, substituting manufactures for mindfactures in the production processes of the fourth industrial revolution; where science and technological innovation take on a relevant role and therefore higher education institutions and research centers/institutes, in their relation to capital, give rise to an *ad hoc* interpretation of the relation between higher education and employment in the 21st century.

Thus, the relationship between vocational training and employment is a binomial that becomes increasingly complex, both from the perspective of the market and the public policy designed by the State. When distinguishing the unequal paths that each of them manifests and the different proposals in the different periods, it is necessary to develop proposals that foster their articulation, particularly for young

university graduates, considering both the capabilities of the educational system and their social and economic needs, and centered on their professional life.

It happens that within the policies based on the needs of the economic system, university graduates are trained under a professional profile that responds to a disciplinary area, developing specific and general skills, ideally put into practice in the workplace. However, the general conditions in the labor market present tendencies to the precariousness of the labor relations, generally affecting the labor stability. In Mexico this process has its manifestation in the increase of the occupation in smaller economic units that require great support to offer favorable labor conditions.

Under a different policy approach, vocational and university training produces not only general and specific competences, but transversal to various fields of knowledge, which favors adaptability to changing circumstances and modifies the characteristics of employment. That is, not only the demand for work of companies tends to modify the educational system, but this also modifies the contents of jobs in companies. Thus, the supply and demand of jobs of graduates, as well as the public policies aimed at solving the problems generated by a link between higher education institutions and different sectors of society is part of the same formula that aims to explain and provide a solution to this relationship.

The situation is even more complicated when models from abroad are inserted in economic and social conditions with special characteristics, which often do not understand the suggested formulas. Such is the case of the Bologna agreements in the design of the educational programs of the Universities, for example, the decrease of the study times in the university (from five to four years, from 10 to 8 semesters). These formulas have the objective to reinforce the technical aspects of the study programs, reinforcing the experience of Mexico in the previous years. But nevertheless, failing to consolidate the relationship with the productive sector and thus have put the higher education in accordance with the needs of the economic context.

Thus, the inclusion of young people in employment, in accordance with the nuances provided over more than fifty years, suggest that economic policies aimed at generating employment, as well as the supply and demand of professionals in the labor market, are fundamental axes to promote the development of Mexico. In other words, the collaboration of the state and the market, in search for virtuous circles between education and employment, contribute to successful solutions for the employment of university graduates for an optimal economic and social performance.

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KEY TERMS AND DEFINITIONS

Graduate Students: That sector of population that finished higher education.

Higher Education: Higher education is the last phase of the academic learning process after the high school stage, focused at universities, colleges or technical training academy at a professional level.

Import Substitution: Also called import substitution industrialization, is a commercial and economic policy that advocates replacing foreign imports with domestic production.

Knowledge Society: Engine of the economy and social development through science and technology advances.

Labor Market: Is the relationship of the demand (employers) with the job offer (employees) at a certain price that is the salary.

Neoliberalism: Movement to update liberalism, which limits State intervention in legal and economic matters.

Research: Activity oriented to the obtaining of new knowledge and its application for the solution to problems or questions of scientific character.

Youth: Is the age that immediately precedes adulthood and is situated after childhood, aged between 21-29.

APPENDIX 1

Table 4. Number of graduated from universities and technological institutions in Mexico (1970-2011)

Year	Graduated
1970	21740
1975	52185
1980	69572
1981	78644
1982	85505
1983	96572
1984	98788
1985	103280
1986	106693
1987	117378
1988	115670
1989	115407
1990	118457
1991	139031
1992	147729
1993	140256
1994	146420
1995	173693
1996	191024
1997	372728

Source: Statistic Yearbook 1997. Scholar population on undergraduate level in universities and technological institutions. ANUIES.

Table 5. Concentration of enrollment by areas of professional study and / or most demanded employment at national level 1960-2010: 1960

Study Area	Civil engineering	Education in general	Medicine	Law	Administrative professions	Chemistry	Engineering in different branches
University enrollment	16 938	16 781	12 755	9 731	6 972	3 771	2 820

Table 6. 1970

Study Area	Civil engineering	Education in general	Medicine	Law	Administrative professions	Chemistry	Engineering in different branches
University enrollment	16 938	16 781	12 755	9 731	6 972	3 771	2 820

Source: INEGI. IXth General Population Census 1970. General Directorate of Statistics

Table 7. 1980

Study Area	Administrative Sciences/ Administrative professions	Education sciences	Social sciences	Health sciences, Medicine	Engineering, Architecture	Exact Sciences	Religious professionals
University enrollment	227 690	468 181	134 531	110 409	102 904	28 581	9 379

Source: INEGI. Xth General Population Census 1980. General Directorate of Statistic

Table 8. 1995

Study Area	Accountancy	Medicine	Law	Administration	Mechanical and Industrial Engineering	Civil and construction engineering	Agronomy
University enrollment	201 765	165 185	141 539	131 310	102 835	74 430	68 259

Source: INEGI. Atlas of professionals in Mexico, 1995

Table 9. 2000

Study Area	Social and administrative sciences	Engineering and technology	Education and humanities	Health	Agricultural sciences	Natural and exact sciences	Other diverse
University enrollment	2 470 708	1 550 486	1 156 098	644 226	215 402	118 024	435 404

Source: INEGI. XIIth General Population and Housing Census 2000. General Directorate of Communication

The tables show the number of populations within each specific area of study per decade. The tables from 1960 - 2010 except for 1980, show the population enrollment of professional study, while the 1980 shows the population registration of professional employment. The population registration of professional study refers to the population with some modality of higher education: partial studies

Higher Education and Employment

Table 10. 2010

Study Area	Social sciences, administration and law.	Engineering, manufacturing and construction	Education	Health	Natural, exact and computer science	Arts and humanities	Services
University enrollment	5 328 839	2 442 784	1 584 379	1 032 292	936 938	557 100	334 420

Source: INEGI. General Population and Housing Census 2010. General Directorate of Communication

or finished (graduated), regardless of whether the person is working in the area of study. The population registration of professional employment shows the number of people who work in an area of professional employment, independently if they have any instruction.

Table 11. Number of researchers belonging to the National System of Researchers (SNI) of CONACYT per year from 1984 - 2017

Year	Researchers
1984	1396
1985	2276
1986	3019
1987	3458
1988	3774
1989	4666
1990	5704
1991	6165
1992	6602
1993	6233
1994	5879
1995	5868
1996	5969
1997	6278
1998	6742
1999	7252
2000	7466
2001	8018
2002	9199
2003	9199
2004	10189
2005	10925
2006	12096
2007	13485
2008	14681
2009	15565
2010	16598
2011	17637
2012	18555
2013	19747
2014	21358
2015	23316
2016	25072
2017	27186

Source: Produced by the authors with data from the historic archive and basic statistics of CONACYT

Chapter 8

Teleworking as a Form of Massive Recruitment in the Colombian Youth Labor Market

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ABSTRACT

The labour market has brought new mutations with the impact of globalization, the changes that have been taken internally in the face of the labour law, the recommendations and new conventions that have arisen within the International Labour Organization (ILO), and even with the environmental policies taken by states concerning the climatic phenomena that have been presented in recent times. The technological changes inherent in globalization, the expansion of the economy and the general market between states, and the subscription of free trade agreements have generated modernization in the face of the natural conception of the world of work, thus allowing the flexibility in the existing contractual modalities in labour law of Colombia.

INTRODUCTION

The labour market has brought new mutations with the impact of globalization, the changes that have been taken internally in the face of the Labour law, the recommendations and new conventions that have arisen within the International

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Labour Organization (ILO), and even with the policies Environmental taken by States concerning the climatic phenomenon that have been presented in recent times.

The technological changes inherent in globalization, the expansion of the economy and the general market between States, and the subscription of Free Trade agreements have generated modernization in the face of the natural conception of the world of work, thus allowing the flexibility in the existing contractual modalities in labour law of Colombia.

One of these modalities has been teleworking, understood under the natural conception of this, i.e. the possibility of transporting work to the worker and not as it operates under the linear production system; This measure goes back to the hydrocarbon crisis of the 1970s, where it became a need to avoid the displacement of workers to their work sites to avoid fuel consumption, taken as a pilot within the primitive development of computer science and new technologies, taking in the same way boom in terms of special conditions of the worker, and allowing In the same way, a contractual easing both in times of displacement of the workers, and in the forms of development of the work in front to work spaces on the part of the employers

Taking as reference the definition issued by the International Labor Organization in relation to teleworking, where it is established that it is “A form of work in which: a) is carried out in a location away from a central office or production facilities, thus separating the personal contact worker with working colleagues who are in that office and, b) The new technology makes this separation possible by facilitating the communication “is that this modality is spoken in Colombia until the year 2008, where following the incursion of the new communications technologies (ITC) and the need for the regularization of this contractual behavior, it gives rise to the Law 1221 of 2008, thus seeking to establish minimum patterns of regularization of this new contractual modality.

In the same way it is possible to talk about modalities derived from the form of teleworking to perform the functions for which it was subscribed the contract of employment, and likewise, without losing the essential characteristics of the contract of employment, and respecting in the same way, the conditions minimums of a working relationship.

However, the implementation of teleworking in Colombia has not been alien to intrinsic problems that entail a new working methodology, as with the emergence of new ITC's, it becomes a necessity for the national government to regulate this existing regulation, and that is why, through Decree 884 of 2012, it is pursued to seek a harmony between the teleworker-employer relationship, and likewise, to establish the field of application of teleworking, all this, without disregarding constitutional guarantees granted within of the 1991 Political Constitution.

The great advantage of the development of teleworking in the face of the working modalities existing in the legislation, and which makes a trend, it is in the benefit of both the employer and the worker, understanding the benefit to the employer in reducing operational costs and administrative in terms of locations, and for the worker, as to the disposition of their working time and the increase in productivity, which could be understood as a “win-win” relationship within the employment relationship.

As for the emergence of this contractual form, for the labour market of the young people has become one of the alternatives of search of employment, because, by increasing operational costs, poor implementation of public policies, and lack of job offers, it leads to the consideration of hiring young people, introducing them in the active labour market, however, in a way contrary to the law and the constitutional principles. And this is where, through the present writing, it is intended to demonstrate the irregularities in terms of the forms of application of teleworking, not so much as the original contractual modality, but, in turn, as it operates this figure favoring the Labor outsourcing and showing the reality in the application in the Colombian labor world since the entry into force of the Law 1221 of 2008 until the present day, showing in the same way, the consequences of outsourcing in the denaturation of contractual relations, and in violation of constitutional principles by employers.

The literature on the concepts of telework is small, since it is a relatively new topic, the application of the subject is confusing, like, perceptions have been implemented and explained in a contradictory way; in the same way, the importance of these new forms of hiring in the face of the legal system, together with the doctrine –which for the Colombian case – may exist for the guide in terms of implementation and regulation atypical procurement modalities in the global legal system.

The impact that these new forms of hiring have on labor habits, equally forces them to change together with the modernization of the rules of positive law; similarly, the importance of these academic writings as far as implementation at the academy dedicated to the study of the labour market, lies in the study of the new forms of recruitment in the face of traditional forms of recruitment, in the same way, becomes a guide to enlightenment as soon as to the new forms of hiring, trying in the same way, to clarify the matrix of telework at the Latin American level, together with the way of implementation in the different Latin American markets.

TELEWORK CONCEPT AND STORY

Throughout history, forms of subsistence and life in human development have undergone changes, not only in the insertion of new technologies into the development of common life and society, but also in the modalities of communication and forms of connections; is as a result of this that with the introduction of the new

Information and Communication Technologies, which enabled simplification in terms of production processes, new forms of work were introduced into the labour market without neglecting traditional production patterns. However, with the time and expansion stake in this ICT development and implementation, produced similar mutations in new forms of hiring and in terms of forms of production, either to simplify processes, or simply as an internal and external communication tool, but always, while preserving the nature of its use.

The changes inherently associated with the creation of new forms of connectivity immersed with the development of Information Technologies, have enabled social development to innovate in terms of forms of communication, and not just this, apart from the changes in the forms production and work, the inclusion of connection and connectivity tools are even capable of modifying the daily life of the uses of everyday life and the development of the workforce.

However, the development of new communication technologies led to changes in the world of work in terms of its traditional structure, to which market demands influence the structuring of the new modalities contractual and labour force emodalities; likewise, global openness and globalization have allowed these forms of recruitment to make alterations and violations in terms of the development of the governing regulations of the work in the legal order.

With regard to the concept of Telework, this could be understood in terms of definition established by the Royal Academy of the Spanish Language as the *Work done from a location outside the company using telecommunication networking networks to meet assigned workloads* (RAE, 2019), based on this, it is inferred that telecommunication networks are not in terms of the connection that exists via the internet, but as to the devices used for internet connection, as the main feature of telework is connectivity to the network for the execution of the natural functions of the employment contract.

The first time this term was used was initially in the United States, where Jack Nilles initially thought of a way for that, in terms of the optimization of work, there was the possibility of bringing the work to the worker and not the other way around (Uribe García, 2015); this first concept of Telework was addressed during the Hydrocarbons Crisis by which the United States went through in 1973, because of which, it was difficult to transport employees to companies to carry out tasks that did not require them to be in a way that in person for the implementation of the tasks that these usually performed, however, for the time of events, innovation in terms of communication was zero, which led to talk of telecommuting to indicate displacement of the day-to-day tasks carried out by the worker to his home, without the need for the workers to lose the essentials of the work executed.

The technological development that was presented with the time of time allowed the strengthening of Nilles' initial ideas, to the point that, around the 1980s, the

initial concept was being developed with a new inclusion option on the issues of connectivity and adequacy of digital infrastructure for the fulfillment of the initial functions of Telework, to the point that the novelty of this new contractual modality was appetising for undertakings.

This concept had its development as new communication technologies were developing, where initially in the United States these modalities were only for senior executives of the companies, however, as a result of the consequences that attracted innovation in connectivity during the beginning of the 21st century, as did the events of 9/11, forced employers to look for new alternatives so that their employees would not fail to do their jobs, without the need for dependence physical locations for the performance of their functions – with which at the date of the events were not counted; these situations enabled the consolidation of a new contractual modality for this Nation, to the extent that, benefits not only allowed conditions to improve for the worker in terms of the comfort of their workplace, but, for employers allowed, cost-cutting benefits for companies, in addition to that, the tax exemption states allowed for a solidification in terms of this procurement policy.

Adaptability to these new contractual modalities allowed the work to be transformed in a key way in terms of development implementation of normal work, to the point of creating new charges to enter into employment contracts, but, it is necessary to establish that the forms of recruitment and implementation of work depend primarily on in the forms of connectivity that have been developed, which, as a concept of De la Cámara (2000), creates that the concepts of telework collide between the reality that is evident in the forms of work, than in what is established in the literature on the subject.

Similarly, this adaptability allows new generations of employment to also foster new ways of implementing telework, these forms as he mentions them Coconubo Mendoza include work at the employee's home –such as the best known and recurring in terms of telework–, distribution system, satellite centre, mobile telework, offshore, telependularism, and other (2016); also, in order for this new mode of work to be shielded and strengthened, it became the need to have a solid intercommunication, advanced and effective in order to achieve a perfect flexibilization of work.

With regard to the latter, it should be recalled that, a reference for job stability and the flexibility of work for which the Employment Contract is born, Colombian law has not been alien in terms of the impacts of globalization, so, in labour legislation, the principle of labour stability –as a guiding and constitutional principle–, has suffered even mutations, not only from the area where with the rise of the flexibilization of labor has been involved figures in the ordering such as work outsourcing, which, in Rodríguez's concept (2012) the work outsourcing,

understood as the capacity of individuals in economics, and in particular in the labour market, to renounce their labor habits and to adapt to new circumstances (...) Making the labour market more flexible is more workers' supply and demand, facilitating recruitment and dismissal and individualizing forms of payment (...) (p.29-30) (Underline outside the text).

The options that the flexibility in terms of procurement modalities allow, new generations -as these are understood as the young labour market – they are not so reluctant to new forms of evolution of labour and work, which makes the labour market for young people appetising, not only because of the new modalities of implementation of the work in daily life, but also becomes the form of attraction to a little-explored sector and which, for reasons of global openness between States, generates high supply, with low demand. This can be demonstrated, because large companies – both American and European –, adapted new contractual modalities, and in adapting these new ones, they found in emerging economies possibilities of cost-cutting as well as the implementation of new spaces for the development of these work, without neglecting labour intermediation, creating equally outsourcing, as well as outsourcing in terms of employment contracts, in the terms explained above.

TELEWORK AS A JOB GENERATOR IN LATIN AMERICA

As has been repeatedly mentioned, it should be noted that the adaptation figure in Latin America of the ITC's, to talk about structured telework depend on the development of each country, and in the same way, work to improve network connectivity conditions, as well as with the implementation of public policies in terms of the development and implementation of ITC's and the modernization of existing forms of connectivity.

Not only would we be talking about the implementation of the forms of telework like those already mentioned, but in the same way, ways to mitigate the impact of domestic economic crises and employability crises, allowed the exploration of a new market in terms of the implementation of new forms of online employability; that's why, developing forms of job creation with the implementation of forms of telework as well as, the implementation of pilots and emphasis on Latin and American markets, specializing in certain areas in these markets, as well as, improvement in the regional application of these managements.

Initially, in Argentina as a *South American leader in technology* (Uribe García, 2016, p.171), there was an acceptance in terms of the development and implementation of Telework, where this option allowed to be an incentive for the employability crises presented in the after century, however, despite the boom in employability under this

modality, there is no regulation in terms of the subject matter, however, despite the fact that it tacitly infers respect for the minimum guarantees regarding the regulation of constitutional matters as well as in terms of conventions established by the ILO.

However, the phenomenon of the application of the forms of applicability of telework is not only a matter of Argentina because of the development in terms of technology, Chile is not left behind in terms of this figure, and likewise, the expansion of markets began by this part of the American continent, equally strengthening telework structures in terms of satellite work, giving birth to the form of operation of the telephone remote service or call center, where as with Brazil, they are the standard-bearers in the development of these forms of implementation.

The mode of contact centres in Latin America did not have any developments in a simple way, both in Brazil and in Chile the management of new forms of connectivity and the implementation of applications, generated an attractiveness for the implementation of remote telework. The openness in terms of employability to establish themselves in countries with self-management capabilities it has been provided to that, despite the incursion and possibilities offered for the implementation of these forms of work, who are employed in this way are a minority versus the classic forms of recruitment, although large service providers have focused the opening of their markets in these territories of the continent, equally providing them with elements necessary for the in-line execution of the work in accordance with the requirements of the user enterprise and/or contractor.

The companies that contributed to the growth of this way of working, among others, have as their main coincidence the specialization interaction and support services for Latin American countries, with the exception of the development of internal policies among operating companies, that allow for an expansion of care policies, for North America, as well as with parts of Europe.

The implementation of contact centres in Latin America is presented in Chile in 1997, with the direct investment of the State Bank for employability in light of the crisis generated by the closure of the Lota coal mine (owned by ENACAR), to which, the response to the labour demand deficit was positive, to the extent that, focal foreign investment the staging of scenarios conducive to job generability by outsourcing services, as in 2000 with the opening of operation of the Contact Center the airline Delta Airlines for care in Latin America, as well as with the outsourcing of Air France, TELECOMITALIA, among other multinationals that chose to employ these new labour outsourcing figures.

TELEWORK IN COLOMBIA

The first approach to telework in Colombian law is presented by Decree 2350 of 1944, where, the special regime for homeworkers, including them in the protection of rights, is initially mentioned in accordance with the provisions of this Decree. Subsequently, through the creation of the Substantive Labour Code, special forms of procurement are established, defining that with respect to Home Work if there is an employment contract, in accordance with Article 89 thereof, where the essential elements of the Employment Contract exist, as well as, it is recognized that the services that this type of contract demands generate remuneration, either for the individual work or for the work of the worker's family nucleus, to which, this remuneration will always be borne by the employer as responsible for the recruitment.

However, this approach opened up the possibility of establishing homework or satellite work, however, emphasis is on the ways of applying this work, since, by the time the topic was discussed, there was no connectivity of some kind, and which, if compared to the date you could talk about a process of applicability a little poor, but without neglecting the essence of this form of employability.

As regards the guarantees of teleworkers – as the type of workers recognized by the Substantive Labour Code – they also presented alterations, to the point where, these guarantees became of the higher order, taking root in the Political Constitution of 1991 and more precisely in the normative development of Article 53, having as its basis the main elements for the primacy of reality employment contracts together with stability in existing contractual relationships between employer and worker, just as, by Article 48 *ut supra*, the unenforceability of Social Security terms is equally established, thus establishing minimum guarantees in compliance with the constitutional guarantee character that outlines the minimum guidelines regarding labour relations refers.

Within this constitutional status, there are also minimum guarantees regarding the execution of the work of persons, equally granting teleworkers powers in ways of trade union association, in accordance with guidelines constitutional and ILO-established, as well as special guarantees for pregnancy conditions, protection of incapacitate employment – which he will discuss later–.

Based on this constitutional order, and consequently with the growth of these remote modalities for job creation, formal regulation for this mode of employment was discussed. Respecting the constitutional principles and general principles of The Substantive Code of Labour, through the Congress of the Republic, in 2008 established Law 1221, this being the matrix for this form of work, which, according to the ways of working and hiring for employability this is a atopic mode.

The Law on the Regulation of Telework, for the purposes of concepts, should be understood as teleworking

(...) a form of work organization, consisting of the performance of paid activities for the provision of services to third parties using as a medium information and communication technologies – ICT for the contact between the worker and the company, without requiring the physical presence of the worker at a specific job site, (L. 1221 art. 1, 2008)

the main motivation of the generation of employment for the Colombian sector as a result of the implementation of forms of connectivity mentioned, without neglecting the formalities and ritualism's generated by the Substantive Labour Code and the constitutional principles for the implementation of employment contracts.

However, with regard to the development of the same Law with regard to the new conceptions of the forms of Telework, and according to the definition already established for this mode of work, in Colombia the quality of Teleworker is acquired when activities for which he was hired are made with the help of ICT, as well as outside the company for which it provides its services; and similarly, it establishes modalities for which, in the eyes of the Law, it is possible establish that this figure acquires its modality, these being in legal terms autonomously, being addressed to the power of the worker the site for carrying out its work, whether it is at home – in accordance with the terms of Article 89 of the Substantive Labour Code – or somewhere of their choice and who come to the office sporadically; mobile teleworkers who don't have a established workplace and which, generate their work from mobile devices – but always retain internet connectivity; and in a supplementary way, when, in agreement with the employer, the work is performed at different times, that is, the working time is handled in two or three days a week autonomously or mobility, and the rest of the time the office work is done in person.

The openness that these new forms of recruitment in terms of the generation of jobs were greatly received, especially for the public sector –where this modality has taken on a lot of recognition and boom – however, I generate an openness to a new concept that to date it has not been possible to regulate it, and it is so-called self-employment. As a result of this new definition, the Legislation enters conflicting professions. It could be said that the contradiction in terms of concepts is presented given that labour legislation is insufficient in regulating the subject matter. With regard to this concept, it could be established as the intention to work in the development of work in a form of income that is your property, where the revenue that is received is the same development as these tasks. However, these concepts must be understood from the workplace where there is a legislative vacuum as regards the issue.

As for Teleworkers, and as a result of constitutional basic principles, guarantees are also provided for the execution of labours, union rights, along with rights inherent in social security, however, problems with traditional working arrangements work begins to show up in terms of working hours and their derivatives, i.e. payment of

additional working time, overtime night work, due to the easing of work and execution times. The overtime regime –as set out above – could not be applied to teleworkers, as mentioned above; among the forms of application figure is the autonomy in terms of the development of the work, without losing the subordination component that gives rise to employment contracts.

Although Law 1221 of 2008 opened the regulation of forms of procurement in terms of Telework, there were gaps in the application of this aspect, that is why, on the initiative of the Presidency of the Republic, Decree 884 of 2012 was issued as a form of regulation for the applicability of the Telework Act. In addition to this, it could be established that, the forms of regulation and granting rights became a necessity for implementation, as, despite the regulation of the contractual relationship.

In addition to these clarifications as to concepts and implementation of ways of promoting the functions of telework, it is necessary to establish as to the non-disclosure of Social Security rights – as regards affiliations and attention in the event of an accident at work – the responsibilities for the management of information networks are established used for the work to be carried out, as well as responsibility for the duty of care to the necessary elements for the exercise of the functions, which must be provided by the employer.

With regard to accidents at work, it is necessary to clarify that Occupational Accidents should be prevented in joint work between employer and teleworkers, however, Occupational Risk Managers are also encouraged to formulate the guidance to be followed employers and teleworkers for the prevention of workplace accidents, as well as identifying each of the risks that can be presented in the execution of the work – this is where the importance of the classification of telework necessary for the prevention of risks in the exercise of the profession–.

Also taking into account the regulatory development required by the conditions for the development of telework, employers are required to that manage rootiness in the development of their business activities within the national territory, which the only way for the recruitment of staff for telework must be done with workers domiciled in Colombia, this in order to avoid outsourced contracts, which in the same way, do not contribute to the main purposes of the Telework Act and its normative development in terms of the promotion of telework, not only in the public sector, but in terms of generation new jobs in the private sector, with a view to mitigating the employability crises that may occur in the National Territory.

SOCIAL RESPONSIBILITY OF TELEWORK

As mentioned above, the primary intention of Telework is the generation of employment to mitigate economic and employment crises in accordance with

traditional labour principles, without altering the relationship between the worker and his environment outside of the work you run normally in your work.

Implementing the new forms of hiring, they have the task - a little titanic - to maintain a balance between family relationships and the reconciliation of the professional environment, all within the development of constitutional regulations as far as life in society and family that belongs to nationals.

The forms of conciliation between these forms of work should maintain respect for the established times for the development of the work in work cycles, for, by the time, the best example for this conciliation is the development of linear work developed in eight-hour cycles, before which allows there to be eight hours for family recreation, and also counting on eight hours for rest.

The flexibility of hours of telework forms allow the teleworker the convenience of working as agreed in the employment contract, however, this flexibility plays an important role in the distribution of time loads that a teleworker must handle. Despite these circumstances, the telework modality remains attractive to the youth sector mainly, because the availability of communication tools, along with the distribution of time that can be obtained by handling this mode of work, and in the same way, autonomy in terms of the distribution of labour burdens.

Although apparently the figure of telework offers many possibilities for the reconciliation between personal and professional life the panorama is a little daunting on issues of reality. conciliation figures as to the possibility of between professional and personal life are quite poor despite the legislator's choice in the Colombian case, as explained Grueso y Antón (2011), the implementation of a conciliation is a utopian ideal in sofa as the procurement modality does not allow it, i.e., there are no contingency plans by companies within their telecom/workforce plant have not implemented strategies to keep the environment of their teleworkers in harmony.

Similarly, it is necessary to establish – in some way – that policies be established for the implementation of the reconciliation between personal and professional space, this conciliation should be made with a view to the protection of the human resource, since, it cannot be allowed that the consumption of time spent in the performance of labour functions weakens other areas of the teleworker's personal development; because, as he explains Ortiz Chaparro (1996), industrial society cannot, under any circumstances, be allowed to dehumanize the essence of the human being simply because to manage human resources, and to give it mere autonomy in terms of the development of work.

It is necessary in the same way as within responsibility to mitigate the negative impacts of telework on human development, traditions are contemplated. Taking into account these postulates, the Colombian population still manages the concept that those who work, despite interference in working time, it is more flexible in the social and family sphere, which is why, also to Moreno Orduz (2014), reconciliation

between work and family must be compatible, in order to maintain the constitutional family precept – for the Colombian State–.

YOUNG IN TELEWORK

In the Colombian case, the production generation has had to deal with the different economic and labour crisis, along with the reforms that have taken place in the domestic legal system, but certainly the reform that has marked the most the young market in the world of work is Law 789 of 2002, not only in terms of working hours, but on issues of openness to labour outsourcing and new forms of hiring in the terms mentioned above.

Teleworking in the young population has not been pleasantly perceived, however, it is the recurrent mode in recruitment, to be more specific about telephone contact centres. This form of telework has allowed the young labour market find a form of rapid employability through various social conflicts, as well as lack of job creation, to open new vacancies, generational respite, lack of experience, along with the lack of impulses for schooling, have led to this phenomenon of outsourcing for services booming between the population between about 18 and 30 years.

Contact centres could be defined as companies intended to provide telephone services through the implementation of and the use of ICTs for the development of tasks, whether to provide support and customer service services, as for sales, but always retaining the main feature of being shared spaces by several companies. (Ortiz Chaparro, 1996, p.61). The ease that these operational centres for the attraction of the young market is the availability of ICT tools for the execution of the work, However, and as they set it out Castaño y Álvarez (2016), the phenomenon of loss of social identity results in a comfort zone in terms of employability, which means that the aspirations of the young market in a new way of being used are minimal.

All of these socio-economic situations mentioned above, together with the youth employability crisis, generates growth in the forms without having to resort to informality as a form of economic livelihood – abnormal; however, the phenomenon of recruitment in this way generates new mutations under the mutations in the legislative order, equally generating the conditions of labour precarization, causing similar shock in the generation of outsourcing and labor outsourcing, which is a phenomenon that could be said, affecting labour markets globally.

Not only do these phenomena make the stability of work in contact centres by the young market a constant, not only because of the adaptability and the possibilities for young people to find in this modality a first job that can generate a feeling personal satisfaction on their part, but also prejudice and lack of opportunity will lead to this stability growing, and the options in terms of new generation of vacancies to meet

the generational relay do not evolve, allowing in the same way that new generations also find in this option a form of employability.

However, young teleworkers are not limited to spaces reduced to employability in contact centres, since, there are different forms of employability in telework for young people, which results in confidence in this figure, however, these are stakes and require a degree of expertise in the subject. These forms generate a growth in the choice of vacancies for a small sector with sufficient preparation to take on them, also taking into account the expertise in the use of ICT so as not to have any inconvenience when running the jobs remotely.

The tenacity in young people for the application to new challenges, generates young people to break schemes and paradigms in terms of exploring new professional fields, and this is where the experiences gained during the development of the work handled in the development of telework, allows them to assume with a sense of belonging to the procurement modalities, all with a view to the implementation of remote work or some of the modalities Law 1221 of 2008 for employability in the field of telework. Similarly, job creation is a social commitment to which there can be no evasiveness for the generation of these, together with the commitment that workers – in general – acquire freely and spontaneously, without putting pressure on the development of work, but always retaining the essentiality that corresponds to each of the citizens who are in the possibility of working and in the age to do so, that the social contribution to the development of the purposes of the State is this, the joint inclusion of labor forces to obtain the social prosperity professed by the Political Constitution.

TELEWORKING EMPLOYABILITY FOR DISABILITY SITUATIONS

The disability situation does not cause a person to lose their power for the development of their working life, as a result, companies have opted for different solutions the recruitment of staff in a state of incapacity to perform tasks that do not involve functions for which these people are limited.

One of these alternatives to the recruitment issue falls on the functions performed by teleworking, implementing this as an alternative to mitigating the unemployment figures of this population, for which, the National Government urged large companies to generate in this form of employability, to generate among its staff plant the contemplation of this figure for employability and also to reduce the unemployment rate.

The main intention of these options, as indicated by Coconubo Mendoza (2016) is to increase productivity, sustainable mobility, fostering innovation, and, among

others, in order to motivate both the public sector – and the main generator of telework – private sector for the generation of these workspaces. Similarly, the National Government is also responsible for to boost public policies so that hiring teleworkers is a win-win benefit, where the benefits of implementing the forms authorized by law allows the employer a tax exemption to make the hiring of disability employees more striking; and as far as the teleworker is concerned, it is beneficial in terms of being visible to the labour market again, just as, avoids inconvenience in travel issues, among others that can be generated by your health condition.

The development of this social inclusion is in compliance with the protection of the fundamental rights of persons in capacity, not only in terms of employability as a fundamental right, but also in ensuring access to social security and adapting work functions according to their limitations. The policies adopted by the State should be aimed at these protections in accordance with the provisions of the international treaties ratified and immersed in the constitutionality bloc, all with the formalities that domestic legislation also demands, but always, while keeping respect for human dignity and the harmonious development of the social rule of law.

It could be inferred from the state's normative inclusion in respect of persons with limitations in its workforce that, the alternatives offered in terms of employability solutions until before the enactment of the Telework Act were null and void, the fact that international treaties are binding, the main claim of this law – as has been repeatedly explained – was the regulation of this matter in its entirety. The difficulty of employability of people in capacitation demonstrates the lack of spaces conducive to the implementation of work – because of motor constraints or influencing their workforce – employer, however, the relief generated by media production as established by telework, generates that actions for each of the workers with physical limitations, generating in the same way, forms of training for employability in this way it manages to reduce unemployment rates in Colombia, and in the same way, contributes to the protection of fundamental rights that the Constituent grants to all citizens.

TELEWORK APPLICATION: PROS AND CONTRACTS OF THIS MODALITY

The experiences managed in line with the evolution of technological means have allowed an expansion in the areas of work where it is applied telework. These means allow work alternatives, as well as the efficiency of production processes involving rapprochement with the internet connection be flexible and the opportunities to implement them are successful; However, the benefits also bring problems in terms of the same connectivity, i.e. there comes a point where companies become

dependent on internet connections, which failure delays its processes, or is able to paralyze them due to lack of connection.

It is necessary to bear in mind that, workers will always be the first in terms of operational functioning, since, if you look at it from a patron-list point of view, the employer is always going to be the one who is pleased with these modalities of work, because, although it repays costs, it feels to be making social contributions in terms of the forms of recruitment in question. However, the rights inherent in workers also manage freedom in the development of the right of association granted by the Constituent workers, because the protections that cover the application of trade union law create confusion for employers –and even for the very rule of law – as the new form of hiring moves away from the concept of reality who is accustomed to seeing in terms of trade union activities; this phenomenon is possible to have it visible since the conditions of the regular worker make union pressure work for eventual negotiation, but by analyzing it from the perspective of the applicability of telework these pressures are impossible, since teleworkers when dispersed do not exercise the same role as the worker present.

Classic forms of trade unionism – in terms of lobbying the employer for extralegal benefits on the employment contract – indicate that pressure is exerted where it is noticeable to the employer, and in the same way, reporting that it is what is to be obtained the result of the negotiation, to which, in the face of pressure, the employer may give in to the negotiation for obtaining as described in the petition documents. As far as telework is in terms of, it is a modality that requires connection and little – or no - the employee's presence on his employer's premises, the exercise of union law would not have the same effects as the pressure as to the initiation of collective bargaining, to which it results in destabilization in the protection of constitutional rights.

Also, with regard to the implementation of functions in favour of employer costs in administrative locations, it generates a reduction in infrastructure costs, as long as the functions of the teleworkers do not require the presence in the facilities – autonomous telework-, Despite this, employers by law must provide the tools for the full performance of their duties, to which, cost-cutting options are lightened in terms of asset purchase or rental charges for spaces, but, are increasing in the adequacy of the minimum conditions for the development of contractual functions. These options generate that openings as soon as telework are rethought by companies, because the administration of human resources is also increased, because, the same Telework Act indicates this, the employer – or anyone wishing to implement this form of work – must propose for training in their employees for the positions they are going to hold in this modality.

The selection must be done in a thorough manner, in order to avoid problems with the organization of the teleworker, to have the sense of maturity, responsibility

for the performance of the work in the performance of the work that the employer must have for the employer, as well as, with the applicability of innovation in the ways of implementing work; in addition to these features, account should be taken of the organizational power for the implementation of work, together with the capabilities for the development of its potentials, along with their ease of expression and communication skills.

All these factors generate that, the possibility of being used under this contractual modality is something unattainable for the youth sector as a potential influence in this work environment, however, for teleworkers they also have advantages in the intention of working in this modality.

Being one of these advantages for the teleworker freedom in terms of time, this being understood as the possibility of the administration of time. This freedom in time management should be understood within the boundaries for forms of employability; to which, the teleworker's response with his employee must be considered in terms of productivity, also allowing the distribution of time spent in the performance of functions, such as free time which may be engaged in other activities that do not depend on or be derived from the employment contract.

Savings in travel are also one of these advantages, since the teleworker by not moving to the workplace –or to do so sporadically – will not spend money on your means of transport, together with avoiding wasted time on commuting, which will allow you to use that time saved in the development of work for the administration of free time, just as, as some degree of time-based independence is granted, it is equally allowed for the teleworker to access to the improvement of their skills, allowing equally the realization of training – of course that by the teleworker himself –,so that their skills and/or competencies are visible in the labour market of this type.

The solution to one of the most recurrent problems in the work environment, such as coexistence, is equally one of the advantages that the teleworker has in developing this, because, in the absence of physical contact with the company's other employees, it prevents their productivity from being affected by the environment and the driving climate exercise, which, like the pinnacle of benefits, allows others to function harmoniously, generating an increase in productivity, and in the same way both professional and personal growth, allowing that experience to serve in terms of the implementation of telework by other employers.

Having observed the benefits in terms of teleworkers, one of the main problems that this group of workers is isolation, the effect that teleworker interactions are poor – if not null and void – unlike plant workers and that their work calls for presence in their way of working; this phenomenon is presented by the management of connectivity tools in the execution of work, which demands the poor presence of the teleworker on the premises of his employer, in the same way, the isolation does

not work the same in the different modalities of telework as mentioned above and under the terms of the rule of law in the legal system.

CONCLUSION

Once studied in detail, telework as an alternative to mitigate the impacts of a precipitous rise in conditions is a good alternative, because the characteristics set out in this text show that, in terms of reducing operational costs is a constant win-win relationship between employer and teleworker.

The tenacity in young people for the application to new challenges, generates young people to break schemes and paradigms in terms of exploring new professional fields, and this is where the experiences gained during the development of the work handled in the development of telework, allows them to assume with a sense of belonging to the procurement modalities, all with a view to the implementation of remote work or some of the modalities Law 1221 of 2008 for employability in the field of telework. Similarly, job creation is a social commitment to which there can be no evasiveness for the generation of these, together with the commitment that workers – in general – acquire freely and spontaneously, without putting pressure on the development of work, but always retaining the essentiality that corresponds to each of the citizens who are in the possibility of working and in the age to do so, that the social contribution to the development of the purposes of the State is this, the joint inclusion of labor forces to obtain the social prosperity professed by the Political Constitution.

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KEY TERMS AND DEFINITIONS

Constituent: It refers to the union of ideologies that, on April 4, 1991, gave rise to the Political Constitution of Colombia, currently in force.

Doctrine: Understand as the academic writings that in Colombia are had as a concept source of law, as well as the writings of different authors on a same theme in academic development.

Juridical Ordering: It is the set of rules in the different areas of law (Civil, Labour, Criminal, Administrative, Procedural, among others) that regulates the perfect the operation of the Colombian State as an entity.

Jurisprudence: They are the pronouncements of the High Courts, which are also a source of law, in the same way, are the guidelines that are established in terms of the interpretation of existing rules in Colombian law. The competent in the production of these are the Supreme Court of Justice, State Council and the Constitutional Court.

Legislator: It refers to the Branch of Public Power responsible for the production of laws, a function exercised in Colombia by the Congress of the Republic in fulfillment of the mandate given to it by the Political Constitution of Colombia.

Positive Law: It is the whole set of rules that is in written form and duly codified by areas of law, and which must be implemented at the national level.

Superior Article: It refers to articles establishing fundamental, social or collective rights, of the environment and State functions in the Political Constitution of Colombia.

Chapter 9

Youth Labour Market in India: Education, Employment, and Sustainable Development Goals

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ABSTRACT

Sustainable Development Goals (SDGs) 2030 prioritizes active engagement of youth in achieving the targets. Aligning the pathway towards achieving youth specific SDGs (Target 4.4 and 8.5), the study examines the current situation of the youth labour market in India. For this purpose, the study analyzes National Sample Survey data on employment and unemployment from 50th round (1993/94) to 68th round (2011/12). The study engages trend analysis of key indicators of labour market. Logistic regression is applied to address the magnitude of socio-economic and demographic determinants on youth employment. The study finds an overall decline in the employment status of youth despite the ongoing demographic dividend phase. Postgraduate and graduate youth witness the highest unemployment indicating a grim role of labour market in engaging the educated youth. The findings raise concern for achieving the targets of SDGs, as a high share of educated youth strives for decent and gainful employment.

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INTRODUCTION

United Nation (UN) identifies youth as the key agents of change, serving as a guiding force in achieving the targets of Sustainable Development Goals (SDGs) by the year 2030. The targets of SDGs revolves around the active participation of youth and promote investment in youth human capital. The active participation is ensured through the youth specific target no. 4.4 and 8.5 of the SDGs respectively. These targets strictly focus on increasing the enrollment of youth in educational institutions, enhancement of technical skills and creating full-time employment opportunities. Although, these targets prioritizes youth role in development yet unemployment among the youth remains a major challenge for both the developed and developing countries. ILO (2017) highlights that, the youth faces major setback in the labour market despite of continuously improving economic scenario across the nations.

The instability of youth labour market is highlighted by its dual nature where on one side youth stay in education for a longer duration, depicting a decline in youth labour force participation. On the other side, youth in the labour market face substantial challenges in finding decent employment and results in high unemployment rate. The lower level of employment opportunities and stiff competition of labour market, force youth towards informal employment where regular wage, job stability, social security and quality of work remains an uphill task. The assumption of a significant relationship between the education level and employment does not hold valid in case of youth labour market in India. Despite of higher education youth lack work experience and are treated as newbies in the labour market. The increasing youth unemployment has become one of the primary challenges facing most countries of the world where India is not an exception. Aligning with the fast pace of population growth, India is experiencing an unprecedented demographic shift leading to a youth bulge. Youth aged 15-29 years represent highest (27.5 percent) share in the total population of India (Census of India, 2011) and highlights the ongoing 'Demographic Dividend' phase of the country. To reap from this dividend the country needs to empower, educate and employ their younger population. The increasing growth of GDP in the post liberalization period indicates the strengthening of Indian economy, witnessing a stable soaring figure of economic growth in the post-liberalization era for nearly three decades. However, the structural transformation of the country in the post-liberalization era does not seem to create ample employment opportunities for the younger population. The meager employment growth depicts the sluggishness in terms of job creation especially during the period 2004/05 to 2011/12. This indicates the limited capacity of Indian labour market to generate the employment opportunities. The picture becomes more awful in case of youth employment where due to lack of work experience younger people are forced to work on low wage rate remaining underemployed for most of the time. Unlike the economic growth,

youth labour market lags stability in terms of employment generation. The '*jobless growth*' of Indian economy contradicts the postulate that the functionality of labour market largely depends on the economic strength of the country. Moreover, the structural transformation of the country resulted in the evolution of dual labour market characterized by the poor working conditions. The existing scenario of youth labour market in India highlights the lower level of youth inclusivity in the economic growth process of the country.

Highlighting the significance of SDGs the originality of the study attempts to discuss the pivotal role of Indian youth in achieving the targets of SDGs. The key contributions of this study are to address the magnitude of youth vulnerability in the Indian labour market along with an exploration of possible demographic and socio-economic detrimental factors influencing the decision of youth to remain out of the workforce. The study attempts to conceptualize the confounding relationship of youth employment, education and labour market in the post-liberalization development, which has not been the focus of the existing literature. With this background, the present study attempts to test the hypothesis that educational attainment of youth shares a direct and significant relationship with their employment status. The objectives of this study are: (i) to examine the key indicators of youth labour market of India, labour force participation rate (LFPR), worker population ratio (WPR) and unemployment rate (UR). The study investigates the trend of youth work force status through the socio-economic and demographic characteristics; (ii) to analyse the determinants and magnitude of youth work force. Accordingly, the paper is divided into six sections. The next section, background deals with review of literature highlighting youth inclusivity in development along with the inter-relationship of education and employment. Third section represent conceptual framework developed from review of literature to achieve the youth specific SDGs. The fourth section discuss the data source and methodology of the study. The fifth section highlights the findings and discussions on the magnitude of youth employment through the socio-economic determinants. The last section is devoted to conclusion of the study.

BACKGROUND

The literature review is divided into two broad sections. First section highlights the role of youth in the process of development and discusses the aspect of youth (un) employment considering the demand and supply side of labour market. Second section discusses the confounding relationship of education and employment as issues and challenges of youth labour market in India towards achieving the targets of SDGs.

YOUTH AS CONTRIBUTOR IN DEVELOPMENT

The 'Neoclassical Growth Theory' talks about investment in human capital for the sustained growth of an economy or vice-versa. Strengthened educational institutions and higher rate of school enrollment among the youth are the key to human capital. Investment in quality education of younger population along with focus on labour market oriented skills results in higher rate of youth participation in the economic process of the country. The theory becomes relevant in Indian context due to the ongoing 'Demographic Dividend' phase matched with an improvising economic scenario. Over the period of study, youth witnessed a pragmatic shift towards higher education in the post-liberalization period especially in the early 2000s but the returns to education in terms of gainful employment goes missing. The probable reason being the issue of skill mismatch where on one side the employer complains of lack of relevant skills among the youth while on the other side youth calls for lack of employment opportunities. Shortage of skilled youth labour force not only effect the economic growth but also creates a pool of unproductive reservoir of labour for the country (Aggarwal and Gasskov, 2013).

The strengthened role of youth in the process of development largely depends on quality education and equitable employment opportunities marked with decent work conditions (Elder, Kapsos and Sparreboom, 2012). Moreover, large share of youth individually unemployed or outside the labour force, or both, directly indicates underutilization of the potential labour force. On the contrary, it has been argued that investing in the human capital especially on youth raises the productivity of an economy as the relation between gainful employment of youth and growth of an economy shares a positive relationship (Sianesi and Van Reenen, 2002; Levine, 1965). However, youth are three times more likely to be unemployed as compared to the adults resulting in the long-term deterioration of their skills (ILO, 2017). Connecting, the labour market alone cannot be held responsible for keeping the youth away from development. Study by O'Higgins (2003) highlighted that other factors such as demographic, social, economic and role of modern sector in the economy are equally responsible for keeping youth out of the work force. Further, Youth out of the work force act as an obstacle to economic well-being and poverty reduction. The countries encouraging the start-ups among the youth as a step towards active engagement of youth in the development process witnessed low rates of unemployment among the youth (ILO, 2013). Further, education plays key role in enhancing the active participation of youth in the process of development. Study conducted by Stiglitz (1975) indicate that the poor quality of education influences the youth largely and can be held responsible majorly for the higher rate of unemployment among the educated youth. On the contrary, the level of income along with the quality of

education marks an influential role in determining the school enrollment among the younger population (Sparreboom and Staneva, 2014).

The low quality of education here relates to the early move in the achievement of school-to-work transition phase in the labour market since skill mismatch among the youth is the growing issue faced by the economies of the developing countries. Accordingly, skill mismatch among the youth in labour market relates to under education, over education and lack of relevant skills as per the demand of the labour market. The lack of skill mismatch among youth forces them to opt for the informal jobs noted with lack of decent work standards. Informal jobs especially in the developing countries are major source of employment among the younger population and is on the continuous rise (Shehu and Nilsson, 2014). Subsequently, Wald (2015) argued that the lack of job satisfaction among the over educated youth makes them vulnerable in the labour market as they are noted with the quest for job search in most of their youth age. Concluding, to tap the youth as a potential resource and enhance their inclusivity in the process of growth and development, in order to achieve the targets of SDGs, the economies need to invest on the educational set-ups regarding induction of labour market oriented courses along with identification of new job avenues.

Youth in India: The Confounding Relationship of Education, Employment and the Labour Market

In Indian context, the National Youth Policy, 2014 identifies youth in the age group of 15-29 years. The youth represents 27.5 percent share in total population (Census of India, 2011). The growing share of youth population (15-29 years) in the total working age population (15-59 years), represent the 'demographic dividend' allowing India to enjoy an upper hand position in achieving the SDGs through active engagement of youth into the development process. However, OECD (2004) highlights that the countries who already passed the demographic dividend phase are not able to engage the present youth in the process of development. To enjoy the demographic dividend a large working-age population requires sufficient employment so that they can contribute in the growth and development of an economy. Engaging youth into the mainstream of development largely depends on the educational background and labour market dynamics. However, the informal nature of Indian economy acts as one of the major challenge in creating quality job opportunities for the youth. Considering the education variable, education and employment is believed to share a significant relationship with each other. However, the Indian labour market faces dual challenge while considering the employment issues of youth. On one side, labour market complains of skill mismatch among the youth and on the other side, due to lack of jobs youth stay for longer duration in the education system. Study

by Papola and Sahu (2012) highlight that due to complexity of inter-relationship between education and employment, the labour market in India is characterized by large pool of unskilled youth workers, who prefer to work in agriculture or petty sales. Further, ILO (2013) discuss that the shortage of skilled youth labour force not only effects the economic growth in a negative direction but also creates pool of unproductive reservoir of labours for the country. Despite higher literacy level among the youth, especially after the year 2000, disengagement of youth from employment remains major challenge for the labour market as well as for the stability of the economy. To the matter of fact, education plays centrifugal role in defining the entry of youth into the labour market as early school drop outs are forced to join as casual labours into the market. Their failure in meeting the requirements of the job profile in terms of education and skills forces them to opt for the casual work characterized by the lack of decent work environment. Moreover, Sanghi and Srija (2014) hold the view that one of the key issues of Indian youth labour market is skill mismatch—making youth unemployable for a longer duration. Studies have opined that the longer, youth remains out of work force higher are the chances of deterioration of their productivity and skills (ILO, 2013; Chadha, 2000; Mamgain and Tiwari, 2016). Relatively, Dev and Venkatanarayana (2011) argued that the high rate of unemployment among the educated youth of India marks the failure of a successful school-to-work transition phase.

Considering the demographic dividend aspect, the role of economy in capitalizing the demographic dividend becomes more important in India due to the ongoing demographic dividend phase. Further, Bloom and Canning (2004) found that, the flexibility of an economy and its ability to absorb a rapidly increasing labour force is the key determinant for a country to capitalize on its demographic opportunity. However, the economic growth of India represents, ‘jobless growth’ due to the wide gap between supply side and demand side of the Indian youth labour market. Chandrasekhar, Ghosh and Roychowdhury (2006) discussed that the wide gap between supply side and demand side of youth labour market is the result of skill mismatch, lack of work experience, lack of information, lack of social security, existence of informal economy and competition from adult labour market. The Indian youth are engaged more in low paid and insecure type of jobs, which are informal in nature. Moreover, the delayed school-to-work transition of youth in India highlight the inverse relationship of education with the employment. Studies have highlighted the constraints faced by youth while searching for job in the labour market and argues that other than educational constraint, youth face information gap, lack of financial capital, inadequate supply of skills and little or no work experience (Robalino, Margolis, Rother, Newhouse, and Lundberg, 2013; Kluge, Puerto, Robalino, Romero, Rother, Stoterau, Weidenkaff, and Witte, 2016). The constraints cause delay in the entry of youth in the labour market marking a scarring effect on the economic

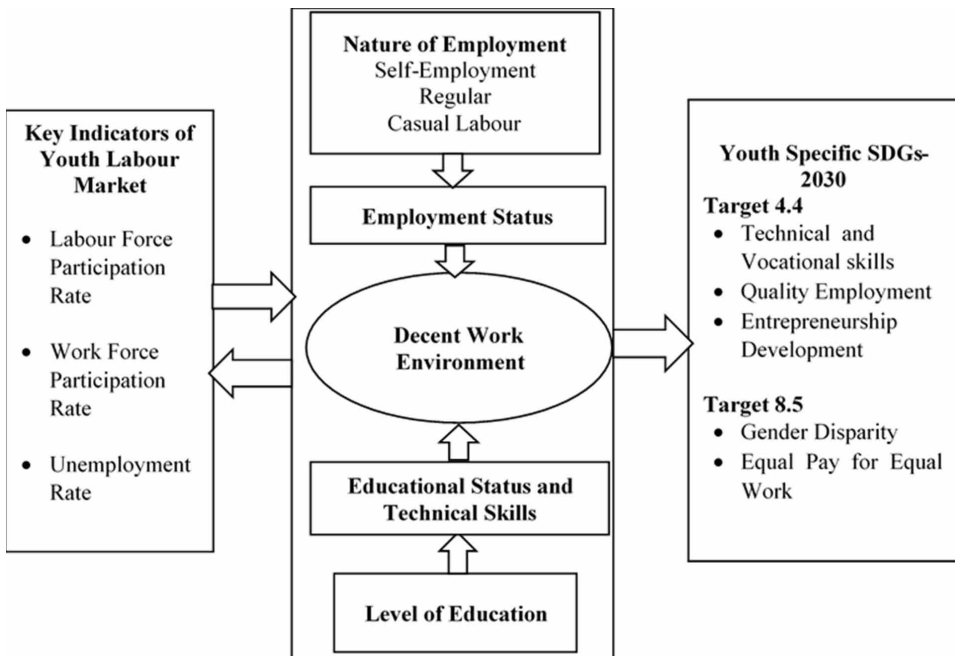
stability of the youth. The confounding relationship addressed through the review of literature calls for the investigation of the inter-relationship of education and employment for the youth in India.

CONCEPTUAL FRAMEWORK

Figure 1 highlights the inter-relationship of key indicators of labour market and education defining the pathway towards achieving the youth specific Target 4.4 and Target 8.5 of the SDGs. The framework is elaborated based on the conceptualization of discussed literature.

Figure 1. Conceptual framework defining the path of achieving the youth specific targets of SDGs

Source: Authors own elaboration



DATA BASE

To examine the hypothesis of higher the education level of a youth higher is the chance of getting an employment, this study firstly, adopts the age bracket of 15-29 years for the youth from National Youth Policy, 2014. Census of India data for the year 1991, 2001 and 2011 are taken for the computation of youth population over the period of study. Secondly, to analyze the dynamics of labour market the study relies on the National Sample Survey (NSSO) data on employment & unemployment situation in India from 1993/94 to 2011/12. The magnitude and determinants of youth (un)employment in India is collated and investigated from the 50th (1993/94), 55th (1999/00), 61st (2004/05) and 68th (2011/12) rounds of NSSO. For the analysis, the study relies on the usual status approach of employment. A person is considered employed in the usual status approach, if he or she has pursued a gainful and productive economic activity for a relatively longer period i.e. 365 days prior to the date of survey. This condition is known as “usual principal activity status” (NSSO, 2014). The study is based on secondary data.

METHODOLOGY

The limitations of Linear Probability Model (LPM) in terms of assumptions does not hold significant in case of a dichotomous dependent variable and thereby makes it an inappropriate model for analysis (Gujarati, 2011). Henceforth, the dichotomous nature of our dependent variable (WPR) allow us to implement the logistic regression. Equational representation of logistic regression is as follows:

$$Y_i = \beta_1 + \beta_2 \text{Age}_i + \beta_3 \text{Sex}_i + \beta_4 \text{Place of Residence}_i + \beta_5 \text{General Education}_i + \beta_6 \text{Tech. Education}_i + \beta_7 \text{Household Occupation}_i + \mu_i \quad (1)$$

Eq. 1 is rewritten as:

$$Y_i = \beta_1 + \sum_i \beta_i X_i + \mu_i \quad (2)$$

$$Y_i = 0 \text{ (Youth falls in WPR) ; } Y_i = 1 \text{ (Else)} \quad (3)$$

X_i Represents the right hand side variables of Eq.1

Finally, logit function is denoted as

$$\text{logit}(P_i) = [P_i / (1 - P_i)] \quad (4)$$

P_i = Probability of $Y_i = 0$ and represent the coefficients of explanatory variables X_i (Age, Sex, Place of Residence, General education, Tech. Education and Household Occupation); μ_i indicate the error term. The explanatory variables are both numeric and binary in nature; however, the dependent variable is only dichotomous in nature.

By applying logistic regression, the study investigate the magnitude of youth employment over the period 1993/94 to 2011/12. The individual as well as socio-economic and demographic indicators of the labour market are analyzed through the Odds Ratio (OR) and Robust Standard Error.

FINDINGS

Magnitude of Youth Inclusivity in the Labour Market of India

Demographic Dividend, Youth Labour Force and Youth Unemployment

The success of 'East Asian Tiger' countries owes largely to their demographic dividend phase. Increase in the working age ratio elevate the rate of economic growth, and hence convene a demographic dividend (Mody and Aiyar, 2011; Bloom and Canning, 2004). Moreover, to enjoy the demographic dividend a large number of working-age population requires matching demand for labour, which is closely related to the growth and development of an economy. Table 1 highlights the ongoing demographic transition of India compared to the counterpart economies. As evident, from the projected median age, India seems to remain younger until the year 2025. Compared to China and Indonesia, the two major economies that determine the demographic features of Asia, India witnesses a longer demographic dividend (United Nation World Population Prospects, 2015). By the year 2020, the average Indian would be 28 years of age compared to average age of 39 and 38 years in China and US respectively. Japan depicts growth in aging of their population projected to be 51.5 years of median age by the year 2030.

Figure 2 highlights that over the period of study, the total population of India has witnessed a decline of 6.3 percentage points in the decadal growth. On the contrary, the representation of youth share in total population has increased during the year 1991 and 2011. To engage the growing share of youth, Indian economy

Youth Labour Market in India

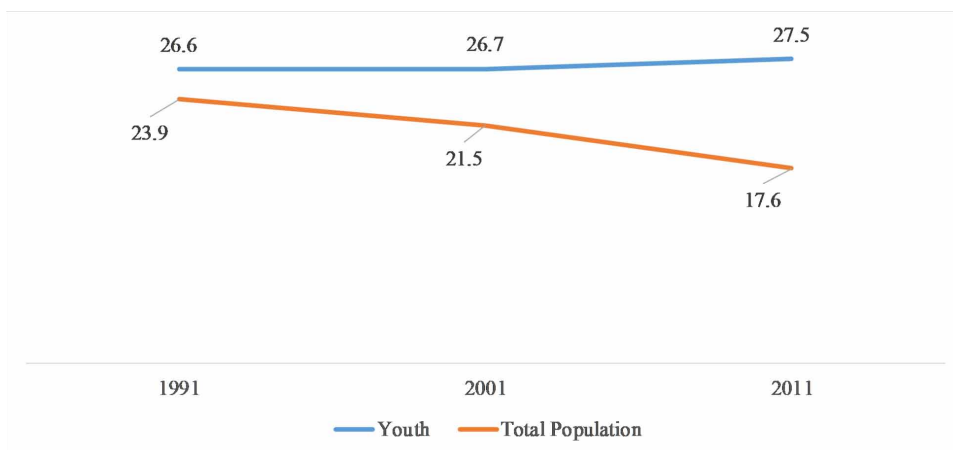
Table 1. Projected median age of selected countries

Countries	Years				
	2010	2015	2020	2025	2030
India	25.1	26.7	28.2	29.8	31.4
China	35.2	37.0	38.7	40.6	43.0
Indonesia	26.7	28.0	29.3	30.6	31.9
Japan	44.7	46.3	48.2	50.2	51.5
United Kingdom	39.6	40.2	40.8	41.5	42.4
France	40.0	41.2	42.0	42.6	43.3
Germany	44.3	45.9	46.6	47.1	47.6
Canada	39.7	40.5	41.4	42.4	43.3
United States of America	36.9	37.6	38.3	39.0	39.8

Source: From United Nations Department of Economic and Social Affairs, Population Division

Figure 2. Youth share in total population against decadal growth of total population (in percent)

Source: Computed from Census of India 1991, 2001 and 2011

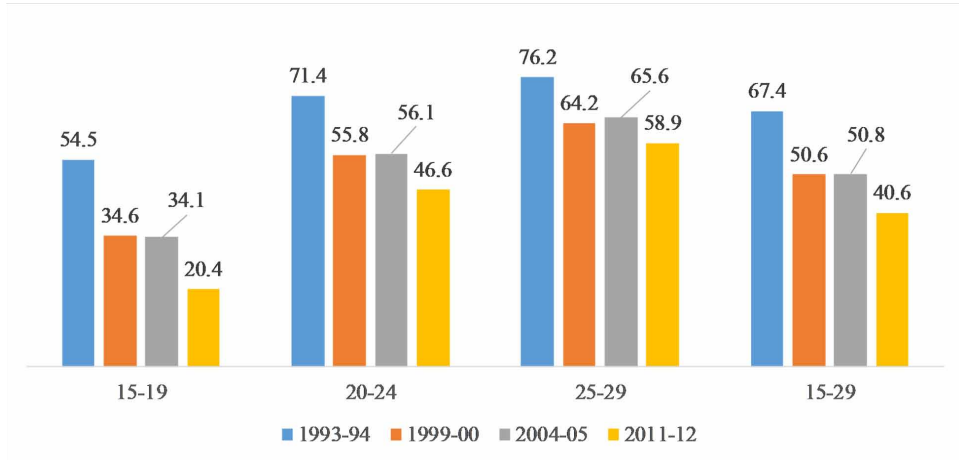


faces the substantial challenges of creating employment opportunities for them. The role of Indian labour market becomes crucial in tapping the demographic dividend of younger population for the economic development of the nation. Otherwise, the demographic dividend will transform into a ‘demographic nightmare’.

The labour force comprises of the employed and the unemployed youth in Figure 3. For the purpose, Youth age group is further decomposed into 15-19 years marked

Figure 3. Age group distribution of youth labour force participation rate, 1993/94 to 2011/12 (in percent)

Source: Authors' Calculation from National Sample Survey Employment and Unemployment Rounds



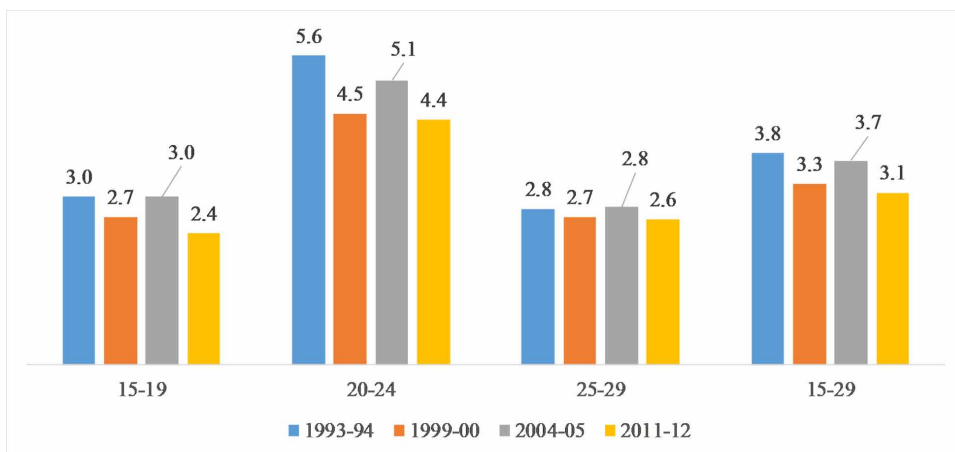
by the completion of schooling, 20-24 years representing the completion of college degree and 25-29 years symbolizing the completion of highest educational degree in India. As a result, the trend indicates highest share of LFPR in the 25-29 age group. However, over the period of study 26.8 percentage points decline has been observed in the overall LFPR of the youth. Study conducted by Thomas (2012) highlighted the fact that growth in number of educational institutions in the post-liberalization era witnessed an increase in the enrollment of youth in higher education causing a decline in the labour force. On the contrary, the sluggishness of Indian labour market to absorb the youth into gainful employment remains the deciding factor for the youth to remain longer in the education system. An overall decline in the LFPR for all age groups especially in the 15-19 age group portrays an increase in number of youth opting for enrollment in higher education. Previous studies have argued that full-time education depicts an eventual impact on the declining labour force participation among the youth especially in the European countries during the period of 1980-1990 (O'Higgins, 1997). Continuous decline in the LFPR over the period is may be due to the increase in number of schools, colleges, vocational training centers/courses, Industrial Training Centers (ITIs), Polytechnics and technical institutes in the post liberalization era. Moreover, certain government initiatives viz. Rashtriya Madhyamaik Siksha Abhiyan (RMSA), Rashtriya Uchcharat Siksha Abhiyan (RUSA) pertaining towards strengthening of educational system along with promotional activities worked in the direction of enhancing youth enrollment in higher education.

Youth Labour Market in India

Although youth unemployment in Figure 4 has declined over the period of study but quality and nature of job in lieu with the decent work indicators of ILO remains an unanswered question in the Indian context. The reason being the 93 percent representation of informal economy in the country. While considering age decomposition of youth, 25-29 age group represents lowest unemployment rate. As age, increases so, do the responsibilities of youth increases and hence decreases the risk bearing capacity of youth to remain unemployed. Abiding with the social and economic responsibilities as burden and having completed the highest education level in India during the age group 25-29, employment remains the top priority. However, the possible explanation for low unemployment rate among the 15-19 age group is the increase in school-to-college transition of the youth. Lack of major financial responsibility in the 15-19 age group also hold another possible explanation. A substantial part of the decline in India's agricultural work force since the mid- 2000s, which has marked among the younger age groups is associated with the increase in population of students (Thomas, 2012). However, highest unemployment among the 20-24 age group is noteworthy. Study by Neumark (2002) has argued that the longer spells of unemployment among the youth marks a precarious effect on the employment status of younger population in the later phase of their life.

Figure 4. Age group Distribution of Youth Unemployment Rate, 1993/94 to 2011/12 (in percent)

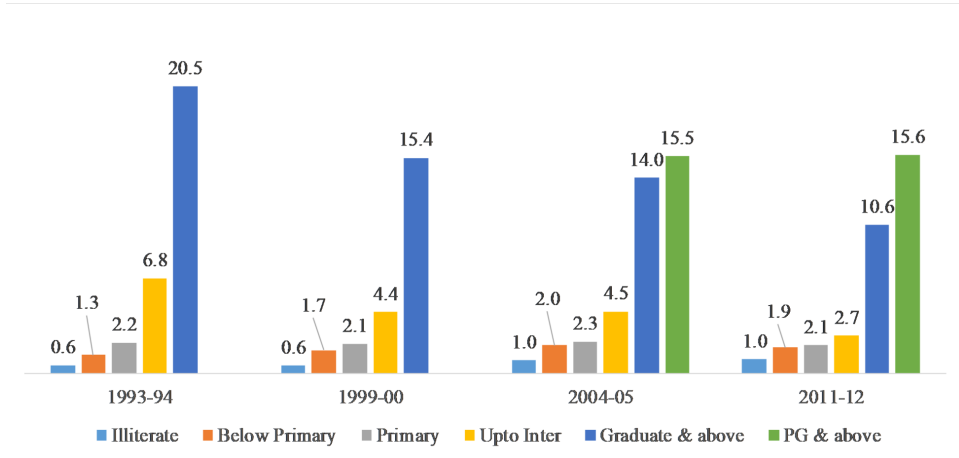
Source: Authors' Calculation from National Sample Survey Employment and Unemployment Rounds



An overview of Figure 5 results in the non-acceptance of the hypothesis that with an increase in education of youth the employment chances also increases. As evident, the trends clearly portray the negligence of labour market in creating employment

Figure 5. Youth unemployment rate according to education status, 1993/94 to 2011/12 (in percent)

Source: Authors' Calculation from National Sample Survey Employment and Unemployment Rounds



opportunities for the youth. Among educated youth, higher educational attainment increases the level of expectation from employment. On the contrary, illiterate youth represent the lowest unemployment compared to their educated counterparts. Due to lack of education, illiterate youth are forced to take the low paid jobs and hence portrays the lowest unemployment. The lower level of unemployment among the illiterate youth highlight the lower expectation level from the job due to lack of basic education or any technical skills. While entering the labour market, illiterate youth also face competition from their adult counterparts but due to lack of education they adapt easily with the fast pace of labour market dynamics. The trends depicted in Figure 5 indicate towards the inverse relationship of education and employment for the youth. The inverse relationship also point towards the prevailing issue of skill mismatch in the Indian youth labour market. Considering the younger generation, the employable skills should be demand driven as per the need of the labour market. The skill mismatch causes huge loss to the employer as well as to the youth. However, from the youth perspective such loss can be rendered by shifting the educational paradigm from the traditional courses to the market oriented courses imparting the technical skills necessary for sustainability in the labour market. No doubt, that during the last decade (2000-2010) education institutions have nourished in the country with the expansion of Indian economy but the concern regarding their educational content along with the shift in curriculum as per the requirement of the fast changing labour market still lags the transition.

The Discourse of Youth Employment

The debate of youth inclusivity in the course of economic development relies on their employment status. Causing a delay in finding an employment, influence the economic and social aftermath of youthhood. The period of study taken for consideration i.e. from 1993/94 to 2011/12 marked a relevance due to the government initiatives towards the liberalization of Indian economy in the year 1991. To capture how the distribution of youth employment status have moved in the post-liberalization era the results are presented in Table 2. The distribution of employment status of youth are assessed on certain socio-economic and demographic characteristics. The individual characteristics such as age, gender, educational background, etc. taken in the study highlights the influence of these aspects on youth as individual's decision to remain in the work force. The background characteristics are very well verses with the priority areas of the youth specific targets of SDGs. Analyzing the computed figures of Table 2, it reveals that, over the period of study the overall employment opportunities for youth witness a heavy fall of 26.1 percentage points. Individually, all the background characteristics undertaken for the study represent the declining share of youth in the work force. Considering the age, 15-19 age group youth represent the highest declining rate of employment. The possible reason being the shift towards the higher education. Moreover, the female youth represent the most vulnerable section of the Indian labour market. Over the period of study, the rate of decline in employment opportunity for the female youth has been observed to be approximately more than double. Despite of economic growth in the country, the labour market has failed to engage the female work force. However, the striking factor that marks an influential effect on the low employment status of the youth female is the early marriage and the responsibilities of their children. Studies on female employment depict that, female having child reduces their chances of employment (Angrist and Evans, 1998) however; on the other side there is no such impact on their male counterparts (Light and Ureta, 1995). The employment opportunities have declined for both the rural and urban youth over the period of study. The limited employment opportunity in the rural area serve the ground for higher declining rate of youth work force compared to the urban counterparts. The strengthening of services sector during the early 2000's seems to act as a platform to engage the urban youth. However, the decline of 18.8 percentage points in urban WPR of youth marks a question on the economic growth of the country. Subsequently, the employment of urban youth has declined at lower rate than the rural counterparts.

The hypothesis that higher a youth is educated higher are the chances of getting employed does not seems to withhold true in the case of Indian youth labour market. However, the only interesting thing to note in case of employment opportunities for the educated youth is the minimal increase of 1.1 percentage points in the category

of youth having general education attainment of PG & above between the year 2004/05 and 2011/12. Moreover, the employment rate of youth has declined in all the categories of educational status. Due to the limitation of National Sample Survey the Graduate and Post-Graduate & above youth are merged for the year 1993/94 and 1999/00. Devoid of inverse relationship between educational attainment and employment, education remains one of the key aspect to enter the labour market. However, to sustain in the labour market technical skills finds higher significance and relativity. Over the period of study, the employment rate has declined for the technical youth too. Comparatively, over the period of study, non-technical youth represent two times higher decline in their employment rate. The background characteristic household occupation categorized as regular wage, self-employed, casual labour and other are the most important factor to analyze the distribution of youth work force in India. The household occupation represents the occupational status of the head of household. Moreover, the background characteristics household occupation is not directly linked with the individual characteristic of a youth but it marks an influential effect on their employment status. Over the period of study, youth from household having other (seasonal worker, etc.) as their occupation have witnessed highest decline of 36.1 percentage points followed by the youth from household having regular wage 32.5 percentage points. Lowest decline of 19.9 percentage WPR has been observed among the youth hailing from household having self-employment as the occupation. The possibility of youth to engage in the self-employment activity due to informal transfer of knowledge and skills along with practical work experience from the head of the household finds the statistical significance in explaining the trend.

Surprisingly, rapid reduction in employment opportunities for the youth with respect to the growing economy of the country highlights the inverse relationship. Further, the growing share of youth in total population calls for the creation of new employment avenues in order to benefit the potentiality of the youth work force. The economy further need to focus on the educational front where the youth with highest education represent highest unemployment rate. Although the issue of quality employment among the youth is not discussed in the trend analysis, yet it needs a strict emphasis for the policy makers. The distribution of youth WPR discussed here contradicts the economic growth of the nation where despite of high share in total population only 37.5 percent of youth are in the work force. Subsequently, target 8.5 of the SDGs strictly emphasizes on creating gainful employment especially for the youth. Concluding, to meet the youth centric targets of SDGs the functionality of youth labour market needs to be strengthened with the growing economy of the country. No doubt, economic reforms in the country have opened the doors of employment but the nature of available jobs is more of informal, clearly challenging the decent job prospect mentioned as target no. 4.4 of the SDGs 2030.

Youth Labour Market in India

Table 2. Distribution of youth worker population ratio based on socio-economic and demographic background, 1993/94 to 2011/12.

Background Characteristics	1993-94	1999-00	2004-05	2011-12
Age				
15-19	51.5	31.9	31.1	18.1
20-24	65.5	51.3	51.0	42.2
25-29	73.4	61.5	62.8	56.3
Sex				
Male	80.4	68.2	68.1	57.8
Female	40.1	25.6	24.9	15.8
Place of Residence				
Rural	66.7	51.4	50.2	38.5
Urban	53.9	36.7	39.1	35.1
General Education				
Illiterate	69.5	55.7	54.3	46.2
Below Primary	75.9	59.0	60.6	53.4
Up to Primary	69.1	52.1	55.6	49.4
Up to Intermediate	52.1	38.6	39.1	30.7
Graduation & above*	55.5	41.1	41.2	37.8
PG & above	-	-	48.5	49.6
Technical Education				
Tech. Edu.	59.9	49.7	50.2	45.7
No Tech. Edu.	63.6	47.3	47.0	37.2
Household Occupation				
Regular Wage	68.9	53.6	51.1	36.4
Self Employed	57.3	38.3	44.0	37.4
Casual Labour	64.7	50.0	49.7	44.3
Other	41.0	26.3	23.5	4.9
Total	63.6	47.3	47.1	37.5

Source: Authors' Calculation from National Sample Survey Employment and Unemployment Rounds

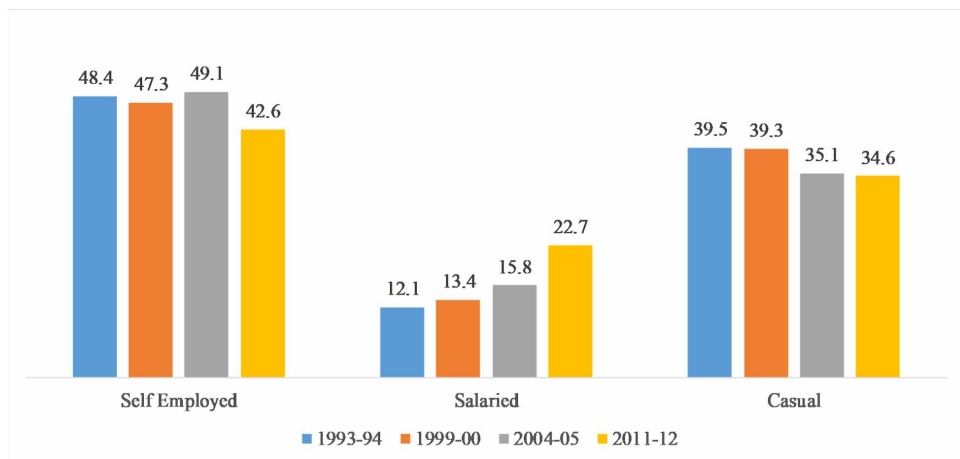
Note. * Graduate and PG & above are combined for the years 1993/94 and 1999/00

Having discussed the trend analysis of work participation of youth, further analysis of the nature and type of employment is required to witness the vulnerability of the working youth in India. Aligning with the decent work concept of ILO adapted by SDGs in its target, the study categorized youth employment status as self-employed, salaried and casual work. The decent work idea of ILO talks about minimizing the

employment risk forces and creating a suitable working environment for maximizing the potential of the youth work force. However, job security, retirement plans, medical insurance, social security, minimum wage, safe working environment, regular wage, lack of discrimination in terms of race, gender, caste, class etc. forms the part of decent work environment. Pertaining to the target 4.4 of SDGs the distribution of youth work force according to the nature and type of employment is presented in Figure 6. For the employed youth in India self-employment followed by the casual work serves as the major source of employment. However, salaried youth represent the lowest share among the employed youth in India, but over the period of study an interesting upward inclination of 10.6 percentage points has been observed only among the salaried youth. The improvisation in the figures of salaried jobs indicate the prevalence of job security aspect among the youth. Over the period of study, the share of youth engaged in self-employed and casual jobs have declined by 5.8 and 4.9 percentage points respectively. The stringent regulations of Indian labour market may be one of the possibility while explaining the declining trends of employment in the self-employed and casual category.

Figure 6. Youth work force status according to the type of employment, 1993/94 to 2011/12 (in percent)

Source: Authors' Calculation from National Sample Survey Employment and Unemployment Rounds



Determinants of Youth Employment

Mostly socio-economic factors along with macroeconomic environment determine the decision of youth in deciding the entry and exit into the labour market. The results of logistic regression presented in Table 3 reflects the likelihood of youth to remain in and out of the work force. Considering the demographic and socio-economic background characteristics, age represent individual characteristic of youth and defines the path of youth in the school-to-work transition. The likelihood of youth to be in the work force increases with increase in the age. For the year 2011/12, with reference to 15-19 age group 25-29 age group depict higher chances of being in the work force followed by the 20-24 age group. Gender disparity is the less talked invisible hurdle of the labour market. Compared with male counterparts female youth represent a very high and continuous increasing likelihood to remain out of the work force. The increase in likelihood of female youth to be out of the work force poignantly represent the gender disparity in the functioning of the labour market in India. The soaring figures indicate scanty employment opportunities for female youth in the labour market. Overall female are more vulnerable to find a decent employment. Further, youth labour market is not an exception to witness the sectoral disparity in terms of employment. With reference to the rural counterparts, the urban youth witness declining likelihood from 51 percent in the year 1993/94 to 13 percent in the year 2011/12 for the youth to remain out of the work force. The declining trend of youth likelihood to remain out of the work force witnessed sudden dip between 2004/05 and 2011/12. Strengthening of service sector in urban areas serves the purpose of engaging youth in gainful employment. The entry scenario of the Indian youth labour market represents a tough competition to the highly educated youth as they lack the practical experience.

Despite of higher general education degree, the illiterate youth, who join labour market at an earlier age, enjoys an upper hand of having a practical work experience of the labour market. Having a general graduate and higher degree does not ensure the achievement of skills required to sustain the stiff competition of the labour market. The labour market like other market also relies on the phenomenon of demand and supply where the educational achievement should meet the demand of the youth labour market. Education and likelihood of to be employed surprisingly represent enigmatic results. The results indicate that with an increase in the level of general education of youth, the likelihood to remain out of the work force increases with reference to the illiterate youth. The same pattern is witnessed throughout the period of study. For the year, 2011/12 youth with educational level of below primary represent higher chances of being in the work force followed by the youth having educational background of up to primary level. Youth hailing from up to intermediate and graduation & above level of educational attainment depicts more than two times

Table 3. Determinants of youth worker population ratio based on socio-economic and demographic background, 1993/94 to 2011/12.

WPR	1993-94		1999-00		2004-05		2011-12	
	Odds ratio	Robust standard error	Odds ratio	Robust standard error	Odds ratio	Robust standard error	Odds ratio	Robust standard error
Age								
15-19 (Ref.)								
20-24	0.38***	0.004	0.27***	0.004	0.25***	0.004	0.17***	0.003
25-29	0.23***	0.003	0.15***	0.003	0.13***	0.002	0.07***	0.002
Sex								
Male (Ref.)								
Female	12.21***	0.141	14.89***	0.243	11.78***	0.180	14.02***	0.278
Place of Residence								
Rural (Ref.)								
Urban	1.51***	0.017	1.67***	0.024	1.58***	0.022	1.13***	0.018
General Education								
Illiterate (Ref.)								
Below Primary	1.06***	0.020	1.15***	0.029	0.90***	0.023	0.75***	0.029
Up to Primary	1.65***	0.027	1.54***	0.034	1.23***	0.027	0.86***	0.028
Up to Intermediate	4.82***	0.064	3.91***	0.069	3.19***	0.058	2.50***	0.068
Graduation & above	4.70***	0.123	4.62***	0.147	4.01***	0.134	3.67***	0.141
PG & above	-	-	-	-	2.39***	0.153	1.88***	0.121
Technical Education								
Tech. Edu. (Ref.)								
No Tech. Edu.	1.23***	0.043	1.22***	0.052	1.30***	0.054	1.28***	0.060
Household Occupation								
Regular Wage (Ref.)								
Self Employed	0.76***	0.011	0.67***	0.012	0.85***	0.014	0.85***	0.016
Casual Labour	0.90***	0.014	0.79***	0.015	0.88***	0.016	0.67***	0.016
Other	2.25***	0.047	2.12***	0.054	2.38***	0.059	5.88***	0.331
Constant	0.16***	0.006	0.39***	0.019	0.43***	0.059	1.33***	0.331
Pseudo R2	0.26		0.29		0.27		0.31	

Source: Authors' Calculation from National Sample Survey Employment and Unemployment Rounds

Note.: Significance Level: ***p<1%, **p<5%, *p<10%; Ref.-Reference Category. * Graduate and PG & above are combined for the years 1993-94 and 1999-00

and almost four times respectively, higher chances of being out of the work force compared with the illiterate counterparts. However, youth from higher studies i.e.

post-graduation & above represent almost two times higher likelihood of being out of the work force, much lower than the youth hailing from educational background of graduation & above. Moreover, the likelihood of educated youth to be in the work force has been improvised from 1993/94 to 2011/12 yet the transition of educated youth from school-to-work seems to remain a white elephant. The sluggishness of labour market in utilizing the potentiality of youth through employment further raises a question on the gap between the demand side of the youth labour market of India and the supply side of the education system thereby creating the phenomenon of skill mismatch.

Moreover, SDGs target no. 4.4 duly focus on investment in enhancing the technical skills of youth. Improvising the technical skills enhances the likelihood of youth to be engaged in gainful employment. Over the period of study, with reference to youth having technical background the non-technical youth represent increasing likelihood to remain out of the work force. Investment in enhancing technical skills of youth through induction of market oriented vocational courses lead towards reduction in the demand and supply side gap. The household occupation holds a significant impact on the youth right from their school enrollment to higher education and transition into labour market. Subsequently, the status of household affects the risk bearing capacity of youth in the labour market. As evident from the results, for the year 2011/12 youth hailing from other household (such as seasonal worker) depicts five times higher likelihood of remaining out of the work force as compared to the youth hailing from regular wage household. Over the period of study the likelihood of youth from other household to remain out of the work force have worsened with respect to the youth from regular wage household. Youth from casual labour and self-employed household represent 67 percent and 85 percent likelihood of remaining out of the work force respectively for the year 2011/12. Accordingly, the severity of declining work force among the youth is a matter of concern for India, in order to reap the benefit of ongoing demographic dividend phase.

FUTURE RESEARCH DIRECTIONS

The key contributions of this study are to highlight the issue of low and declining participation of youth work force in India along with an insight on the role of determinants in affecting the employment status of youth. The study explores the changing work status of youth in the neo-liberal development framework in lieu with the target 4.4 of the SDGs-2030. Furthermore, this study explores the consequences of the increase in unemployment among educated youth and scenario of youth labour market in India as measure towards achievement of SDGs. Youth inclusivity in the growth process of the country, has not been the focus of previous studies. The

present study discussed the magnitude of youth engagement in the labour market in the post-liberalization era. As witnessed from the findings the employment prospects among the youth declined over the period of study. As a task forward, the future scope of this study is to address the target 8.5 of the SDGs-2030 by exploring the existence of missing youth from education, employment and training, better termed as NEET (Not in Employment, Education or Training). These youth represent the under-privileged and vulnerable section of youth population who goes missing from contributing productively in the growth process of an economy.

CONCLUSION

The study finds an inverse relationship of general education with the employment in case of Indian youth labour market. The finding does indicate relative significance in the favour of accepting the hypothesis posed by this study. Decline in work participation rate with increase in general education does not validate the hypothesis posed by this study that employment opportunities increases with an increase in education level of the youth. The interrelationship between education, employment and SDGs highlights the concept of investment in human capital through strengthened education system aligning with the demand of youth labour market. The increase in number of youth in higher education over the period represents reservoir of educated youth for India. On the other side, it also raises a question on the Indian economy, which does not suffice the potential of those educated youth through creating an equitable employment opportunity filled with decent work indicators as marked in the target 4.4 of the SDGs. The necessity of the hour is to look into the policy perspective that whether it is the sufficient number of institutions that fail to provide education or is it the quality of education, which does not meet the requirement of the youth labour market. A strengthened education system in lieu with the demand of youth labour market no doubt will open the doors of employment for the youth, which is one of the key target of the SDGs to be achieved by the year 2030. India being home to large share of youth needs to ponder on the issue of growing skill mismatch among the youth. This study attempts to analyze the magnitude of inter-relationship between education and employment in the youth labour market of India. Existing share of youth (27 percent) in total population seems an opportunity to Indian economy, however, to engage this demographic dividend into the mainstream of development regular and quality job opportunities needs to be created. Decrease in labour force and work force participation rates among the youth depicts the shift in paradigm towards higher educational attainment, which is helpful in the long-run to the economy. However, on other side, this raises a concern when the study finds the highest level of unemployment among the educated youth. With a view to meet,

the targets of SDGs by inclusion of youth into the mainstream of development the labour markets needs to come up with active labour market programmes for the youth. Secondly, to avoid the skill mismatch successful implementation of youth specific skill or capacity building programmes viz. Skill India Mission; Pradhan Mantri Kaushal Vikas Yojna (PMKVY), etc. with special focus on market oriented courses will ensure the active participation of youth into the mainstream of country's development and attainment of the youth specific targets of the SDGs-2030.

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KEY TERMS AND DEFINITIONS

Decent Work: Conceptualized by the International Labour Organization with a view to respect the human values and ethics of labour. Majorly represent equitability in employment opportunities.

Demographic Dividend: Phase of economy when the share of working age population is higher than the non-working population. The term was coined by David Bloom while owing the success of East Asian Tiger countries to their young work force.

Labour Force: Person currently employed or available for work or seeking employment.

Not in Education, Employment, or Training (NEET): The vulnerable section of youth who remains disengaged from the labour market.

Self-Employed: Person who work on his own or family run farm or an enterprise.

Unemployed: Person seeking for work through advertisements or employment exchange office but have not been able to do involve in the work force due to lack of employment opportunity.

Work Force: Person who contribute in the economic growth by remaining engaged in any gainful or productive activity of employment.

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Index

2008 Economic Crisis 1

A

Active Labor Market policy (ALMP) 35, 73

C

Central and Eastern European Countries (CEECs) 1, 32

Crisis 1-3, 6-8, 11, 13-14, 16, 19-21, 23-26, 33-35, 39-42, 44-46, 50, 103-105, 107, 109, 111, 114-115, 134, 154, 156, 159, 164

D

Decent Work 175-177, 183, 187-188, 192, 196

Demographic Dividend 172-173, 175-177, 180-181, 191-192, 196

Doctrine 155, 171

Duration of Youth Unemployment 16, 25-26

E

Economic Downturn 6, 34, 50

Educational Mismatch 74-75, 77-78, 81-84, 88, 92-93, 99

Effectiveness 51, 53-54, 56, 61-62, 64, 68-70

Employability 103, 107, 117, 158-160, 162, 164-166, 168-169

Employment Scarring 121

Europe 2020 35, 38, 50

European Union 2, 14, 33-36, 38-42, 44, 50

Evaluation Research 53-55, 57-58, 70, 73

Evidence-Based Practice (EBP) 73

External Labor Mobility 88, 92, 99

F

Formal Qualification 77, 99

Full-Time Employment 131, 173

G

Graduate Students 142, 148

Great Recession 33-34, 46, 50, 122-123, 125-126

H

Higher Education 75-77, 79, 81, 85, 87, 90, 108-109, 132-133, 135, 137-139, 141-145, 148, 150, 173, 175, 182, 185, 191-192

HILDA Survey 109

Horizontal Educational Mismatch 78, 81, 99

Horizontal Mismatch 74-75, 78, 81-83, 93

I

Import Substitution 139, 148

Inactive NEETs 3, 5, 14, 26, 32

Independence 105, 168

Innovation 35, 141, 143-144, 156-157, 165, 168

Intervention 53-62, 65-68, 73, 148
 ISCED 42-43, 45-46, 50, 76

J

Juridical Ordering 171
 Jurisprudence 171

K

Knowledge Society 132, 135, 142-144, 148

L

Labor Demand Factors 121
 Labor Force 4-5, 19, 32, 34, 50, 74, 103,
 106, 108-111, 114-115, 117, 121-122
 Labor Market Disadvantage 105-106, 108
 Labor Markets 2, 21, 34, 37, 104, 107,
 109-110, 117-118, 121
 Labor Supply Factors 121
 Labor Underutilization 1, 3, 7-8, 19-20,
 25-26, 103-105, 107, 109, 111, 114-
 117, 121
 Labour Force 62, 126, 131, 156, 173-175,
 177, 180-182, 192, 196
 Labour Force Participation Rate 174, 182
 Labour Law 153-154
 Legislator 163, 171
 Logistic Regression 74, 82, 90, 93-94, 172,
 179-180, 189

M

Marginal Labor Force Attachment 117, 121

N

National Sample Survey 172, 179, 182-
 184, 186, 188
 Neoliberalism 138, 148
 Not in Education, Employment, or Training
 (NEET) 196

O

Over-Education 75-78, 85, 88

P

Participation Rate 46, 123, 127, 131, 174,
 182, 192
 Part-Time Employment 129, 131
 Positive Law 155, 171
 Province 129-130

R

Recession 2, 6, 13-14, 19, 33-34, 40-41,
 44, 46, 50, 76, 122-126, 128
 Reintegration 61, 64-68, 73

S

Self-Employed 186-188, 191, 196
 Sex 114-115, 121-123, 125-127, 180
 Skill Mismatch 77-78, 175-177, 184,
 191-193
 Skill Structure 3, 8, 20, 25-26, 32
 Skills or Competencies 77, 99
 Social Capital 52, 105, 107-109, 114-115,
 117, 121
 Spanish Universities 75, 79
 Superior Article 171
 Systematic Review 57, 60-61, 106

T

Teleworker 161, 163, 166-169

U

Underemployment 4, 19, 38, 104-106, 111,
 114, 121, 132
 Unemployed NEETs 3, 5, 14, 26, 32
 Unemployment Rate 2-5, 10-12, 17, 20, 25,
 32, 39, 105, 110-111, 114, 122-127,
 129-131, 165, 173-174, 183-184, 186
 United Nation 173, 180

V

Vertical Mismatch 74-75, 77-78, 82, 85,
 93, 99

Index

W

Well-Matched 74, 81, 85, 87, 94
Work Force 174-175, 177, 183, 185-186,
188-192, 196
Worker Population Ratio 174

Y

Youth Unemployment Rate 2-5, 10-12,
20, 25, 39, 122-123, 127, 130-131,
183-184