School abandonment

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INTRODUCTION

Education is one of the most important factor in a person's career and life, but we all know that it is not mandatory and that for many countries abandoning education for gaining money faster is an easy way to survive due to their economic level. Do people abandon education for money, for an easy lifestyle with no pain in the brain? Many people get tricked by the idea that in a corrupt society you cannot have a good income just by having a high level of education. But is this true?

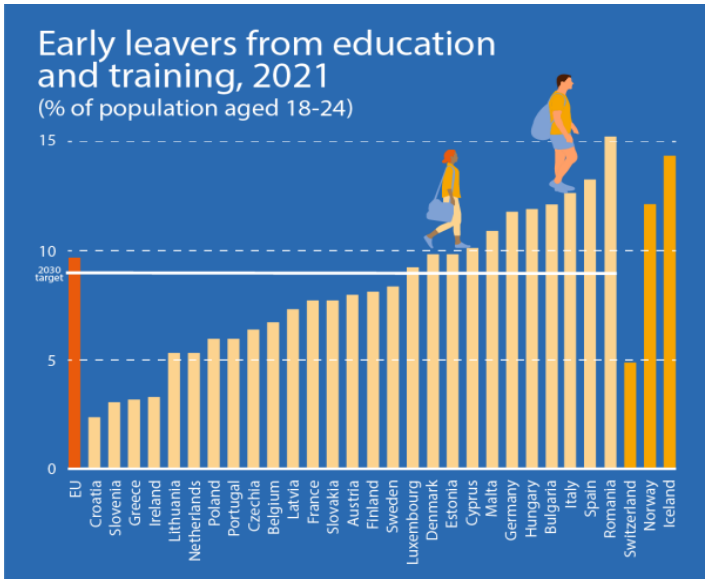
As we all know, early school dropout is a stumbling block to job creation and economic growth and it has a negative impact on productivity. It stifles competition and exacerbates poverty, as well as social marginalization. As it gets smaller, Europe must make full use of its workforce. Those who quit education and training early are likely to be lacking in skills and knowledge.

We chose to talk about this controversial theme in Europe, especially in the Eastern part of the european regions because we see it as a real problem in the today's society, which should be solved in order for the countries to have economic prosperity. The problem of young people not having a higher educational level and wanting to have a job is a serious problem which affects not only the economic level of the country, but it also affects all of us indirectly.

Throughout this detailed research that we made on our dear continent we wanted to see what is the cause of this prolonged problem. Is it an economic, geographic or cultural one? What actually makes young people dropout education from an early age in Europe?

What is the mathemathical result of this problem? Can statistics give us a solution on how to stop people that are choosing to leave education from an early age? If not, maybe it can give us some answers about why and how this phenomenon works and by what is it ifluenced.

We made an analysis to see how the European countries are facing this problem, as we see in the chart down below:



This analysis is based only on the countries belonging to European Union.

The situation is slightly different when we analyze most of the European countries that are not currently part of EU.

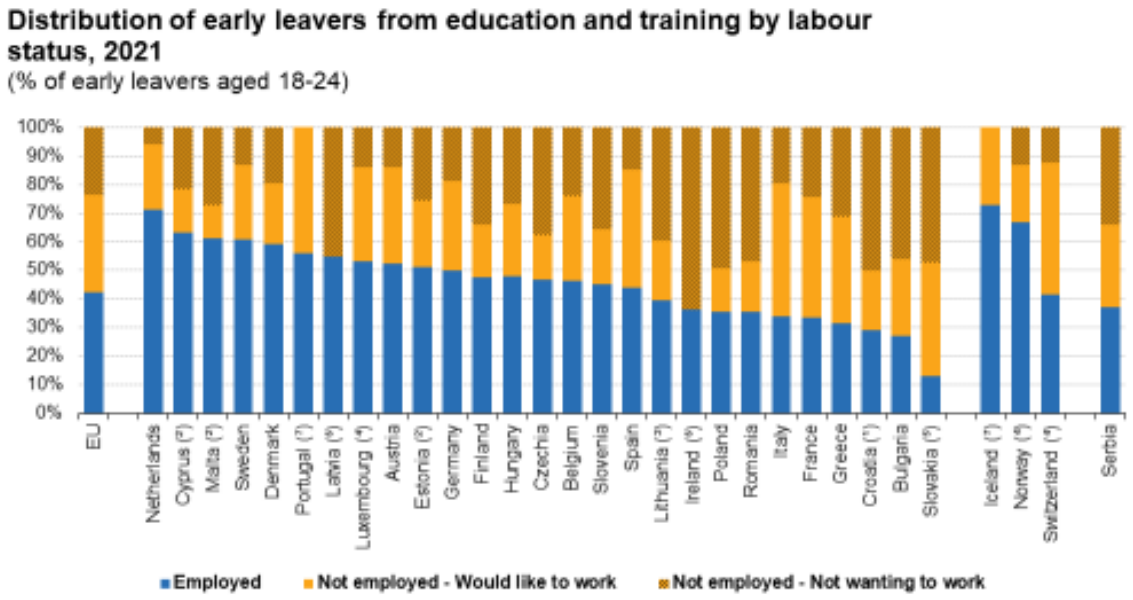
We can observe that, in the European Union, on an analysis made last year, Romania occuppies the first place in the early school dropout rate.

1. Theoretical part

1.1 Literature review

" Do early leavers have a job? Analysis by the individual's labour status "

When it comes to entering the labor market, early leavers from education and training may confront difficulties. The graph below shows an examination of whether or not early leavers are employed, with the EU Member States ranked by the percentage of employed early leavers. The following was the distribution of different labor market outcomes in 2021: 42.3 percent of the early leavers were employed, 34.0 percent were unemployed but wanted to work, and 23.7 percent were unemployed and did not want to work. In terms of the population aged 18-24, this equated to 4.1 percent of working early leavers, 3.3 percent of unemployed early leavers who wanted to work, and 2.3 percent of unemployed early leavers who did not want to work.



" Risk Factors for School Dropout in a Sample of Juvenile Offenders "

Education is a key determinant of person lifestyles probabilities throughout societies and is specially so in Europe. Young human beings with better degrees of instructional qualifications are much more likely to get admission to excessive nice employment and acquire better pay degrees withinside the instant length after leaving faculty, and those blessings persist into person lifestyles.

Furthermore, extra noticeably knowledgeable adults have broader social blessings, consisting of advanced fitness status (Smyth and McCoy, 2009). While the bulk of younger people now live on in schooling till the Leaving Certificate stage, a big minority nonetheless go away faculty earlier than the quit of senior cycle, with a smaller however continual percentage leaving in the course of the junior cycle or maybe in advance (Byrne et al., 2009).

The continual difficulty of early education leaving has acquired vast studies and coverage interest internationally. Since the mid-1990s, academic downside has featured prominently in coverage discourse in Europe, with the prevention of early faculty leaving forming a relevant purpose of coverage tasks throughout a few countries. To date, studies research have targeted at the traits of early faculty leavers or the traits in their colleges.

However, the phrases 'early faculty leaving' and 'drop-out' are used interchangeably on this report. It is recounted from the outset that early leavers incorporate wonderful corporations (pre- and post-Junior Certificate leavers) and each attempt is made to signify any variations among those corporations in discussing the have a look at findings. been highly few research which discover the strategies shaping early faculty leaving withinside the Irish context. This have a look at addresses this deficit and bureaucracy a part of the bigger Post-Primary Longitudinal Study (PPLS), which has accompanied a cohort of younger people in

twelve case-have a look at colleges from their access into second-stage schooling. In this have a look at, we complement Post-Primary Longitudinal Study (PPLS) records on younger people's studies earlier than they go away faculty with a particular followup of these younger those who left faculty earlier than the finishing touch of senior cycle. The goal of the Europe 2020 plan is to lessen the share of 18- to 24-yr-olds leaving faculty and education early to much less than 10%. There had been nonetheless over four million early faculty dropouts in Europe in 2016.

Only round forty five percentage of them have jobs. Young people from migrant households are much more likely to drop out of faculty. Roma and different marginalized groups are especially vulnerable. The contemporary surge in refugee and migrant inflows has exacerbated the issue of integrating migrant college students and supporting them in obtaining the vital abilities and competencies.

Backgrounds

Literature has advised that faculty dropout is probably defined through a couple of reasons at specific degrees (person, own circle of relatives, faculty, and neighborhood). The purpose of the contemporary have a look at is to study the relation among person (defiant mind-set, irresponsibility, alcohol abuse, and unlawful pills use), own circle of relatives (academic parent absent and parental tracking), faculty elements (truancy and faculty warfare) and faculty dropout. Method Judicial documents of all juvenile offenders (218 men and forty six females) with a judicial penal degree in Asturias (Spain) withinside the yr 2012 had been tested. Multivariate logistic regression analyses had been finished to estimate the relationships among faculty dropout and person, own circle of relatives and faculty variables.

Results

As for the person traits, effects confirmed that faculty dropouts had been extra irresponsible than non-dropouts. Also that they'd better costs of unlawful drug use and alcohol abuse. Moreover, loss of parental tracking emerged as a key predictive component of faculty dropout, past the sort of own circle of relatives shape in phrases of the presence of each or simplest one academic parent. Finally, faculty elements did now no longer display a big dating to highschool dropout.

A Worldwide Situation

School dropout has been described as leaving schooling with out acquiring a minimum credential, most customarily a better secondary schooling diploma (De Witte et al., 2013). Estimates of dropout costs appear to be better in South and West Asia (43%) and sub-Saharian Africa (36%), at the same time as different geopolitical regions inclusive of East Asia, and Europe display comparable decrease dropout costs (among four and 12%) (United Nations Educational, Scientific and Cultural Organization, 2012; European Commission Education Training, 2013). Of unique hobby a few of the person hazard elements is substance abuse. The relationship among substance abuse and faculty dropout is a few of the maximum studied in reputable statistics (Esch et al., 2014), suggesting that scholars who're concerned

in drug or alcohol abuse are much more likely to drop out from faculty (Battin-Pearson et al., 2000; Bradshaw et al., 2008; Patrick et al., 2016).

For instance, Esch et al. (2014) discovered that scholars who persisted their educational profession had decreased hazard of turning into contemporary drinkers than their friends who had dropped out from faculty. Likewise, the ones young people who started out to apply hashish earlier than the age of sixteen had been as much as 5 instances much more likely to drop out of secondary faculty than their friends who did now no longer devour any pills (see additionally Harford et al., 2006; Crosnoe and Riegle-Crumb, 2007).

However, viable mechanisms linking substance use with faculty dropout are unclear, starting from cognitive and neurobiological deficits to getting to know problems and occasional educational overall performance (Townsend et al., 2007; DuPont et al., 2013; Goldberg-Looney et al., 2016; Park and Kim, 2016). Among the own circle of relatives elements, socioeconomic status, own circle of relatives shape (De Witte et al., 2013), and the significance mother and father area on educational success (Bradshaw et al., 2008) had been associated to highschool dropout.

From a own circle of relatives socialization theoretical factor of view, faculty overall performance and domestic surroundings are carefully associated (Battin-Pearson et al., 2000). For instance, disturbing occasions inclusive of parental divorce or own circle of relatives warfare may impact how a pupil behaves in and out of doors the classroom (Bradshaw et al., 2008). Beyond the lifestyles of disturbing occasions, own circle of relatives shape may additionally impact faculty dropout (De Witte et al., 2013). The empirical proof display how youngsters from single-discern families are much more likely to dropout from faculty (Bridgeland et al., 2006; Román, 2013; Torres et al., 2015) and there's literature suggesting that own circle of relatives shape may impact socialization process (i.e., loss of policies) which in flip exacerbate its impact on faculty dropout. As Bridgeland et al. (2006) discovered, *38% of faculty dropouts believed that they did now no longer have sufficient policies, making too clean to pass magnificence or have interaction in sports out of doors of faculty.*

This loss of policies regarded to narrate each to loss of order and subject at faculty as to substance use and juvenile delinquent conduct (Cutrín et al., 2015). In this regard, Park and Kim (2016) discovered that residing with mother and father has a shielding impact in opposition to substance use, at the same time as low parental schooling stage turned into related to substance use, hence emphasizing the significance of own circle of relatives parental tracking to lessen additionally the probability of substance use. Likewise, Guillén et al. (2015), in a pattern of 1023 younger college students, discovered that parental tracking could be capable of toughen resistance to look stress and consequently it is able to be predicted to lessen alcohol consumption.

Regarding faculty elements, truancy has been recognized in numerous research as a hazard component for faculty dropout (Tramontina et al., 2001; Kearney, 2008; Ekstrand, 2015). According to Wilkins and Bost (2016), truancy may imply that scholars are doubtlessly disengaged from faculty and that a trajectory towards losing out is likely. Truancy has been

seemed as a resistance to the faculty culture (Zhang, 2007) which ends up in bad developmental consequences inclusive of deviant behaviors, crime and delinquency (Henry, 2007; Huck, 2011). Of unique hobby for the contemporary have a look at is the reality that the literature has empirically connected faculty dropout and involvement with the justice system (De Witte et al., 2013).

In this sense, literature has advised that the motives at the back of dropout are key to recognize in addition engagement to delinquency: folks that go away schooling early for private motives are in all likelihood extra liable to show offending conduct than the ones leaving for financial motives (Weerman, 2010). The literature has historically analyzed dropout and delinquency in person samples, basically jail samples, in which crime has been studied due to faculty dropout and different faculty elements, inclusive of faculty belonging (Lucero et al., 2015), getting to know-disabilities, attitudes towards faculty and scholastic studies (Einat and Einat, 2015), faculty expulsion (Jaggers et al., 2016) or faculty mobility (Ou and Reinolds, 2010). For instance, Dianda (2008) discovered that 41% of inmates in kingdom and federal prisons withinside the United States had much less than a excessive faculty schooling, indicating that inmates who had been dropouts had been much more likely to have served a previous sentence in jail and had been much more likely to had been sentenced once they had been younger.

Similarly, Herrero et al. (2016), in a pattern of a hundred and ten imprisoned men in Spain, discovered that maximum of them (60%) did now no longer have secondary research. Likewise, Einat and Einat (2015), in a pattern of 89 person inmates in Israel, discovered that folks that dropped out of faculty early started out their crook hobby at an in advance stage, suggesting that finishing excessive faculty reduces the possibility of incarceration (Lochner and Moretti, 2004). To date, few research have analyzed faculty dropout amongst juvenile offenders, regardless of its alarming costs of faculty dropout in comparison to the juvenile fashionable populace (Andrei et al., 2012; Kim, 2012; Korhonen et al., 2014). Drawing from the reviewed literature, the contemporary have a look at tested the relation among person (defiant mind-set, irresponsibility, alcohol abuse and unlawful pills use), own circle of relatives (academic parent absent and parental tracking), faculty elements (truancy and faculty warfare) and faculty dropout amongst juvenile offenders.

The studies query that stimulated the prevailing studies turned into: do faculty dropouts and non-dropouts vary of their traits withinside the person, own circle of relatives, and faculty contexts? Specifically, we examine the presence of faculty dropout (described as leaving faculty earlier than or in the course of their crook profession) amongst juvenile offenders contemplating person, own circle of relatives, and faculty correlates which have been empirically discovered to be associated to highschool dropout.

Methods

Participants

Participants of the have a look at had been 264 younger offenders drawn from the populace of convicted younger offenders 14–18 years-vintage with a judicial penal degree in Asturias (Spain). The populace consisted in 270 younger offenders (218 men and forty six

females). Six of them, however, did now no longer have facts approximately faculty dropout of their crook statistics so that they had been now no longer retained for in addition analyses. All individuals had devoted at the least one crook offense withinside the yr 2012.

Participants numerous appreciably in phrases of the sort of offense: 42.8% had been generalist offenders—specific sort of offenses on diverse occasions—and 57.2% had been professional offenders—tendency to copy the identical offense over time—. Offenses devoted maximum regularly had been belongings offenses (73.9%), injuries (forty five.5%), offenses in opposition to public security (17%), offenses in opposition to public order (12.9%), threats (11.four%), and infant to discern violence/bullying/relationship violence (11.four%). Procedure The researchers contacted the Juvenile Prosecutor of Asturias (Spain) and defined the goals of the have a look at. After get admission to for the reputable statistics turned into granted, confidentiality of individuals turned into guaranteed, in step with the Organic Law 15/1999 at the Protection of Personal Data in Spain in addition to the Declaration of Helsinki. The reputable statistics supplied now no longer simplest facts approximately the crook records of all individuals however, additionally, their forensic assessment. This assessment turned into carried out through fitness specialists. The psychological, own circle of relatives, and faculty correlates had been assessed via an in-intensity assessment of the multidisciplinary group of psychologists and counselors for every player. The gift paper is an empirical have a look at, which turned into carried out with a quantitative technique and a retrospective design.

Measures

Outcome Variable Participants had been divided into corporations: faculty dropouts (n = 128; 48.5%)—juvenile offenders who had left faculty earlier than or in the course of their crook profession—and non-dropouts (n = 136; 51.5%)—juvenile offenders who continue to be at faculty by the point they devoted their remaining offense in 2012—. Response classes had been zero for non-dropout, and 1 for dropout. Individual Variables Psychological traits of respondents had been retrieved from reputable statistics. For this have a look at, facts approximately person traits turned into used: defiant mind-set and irresponsibility. Defiant mind-set measures whether or not the player frequently rejected authority and confirmed problem in compliance with policies, limits, schedules and orders or now no longer (n = 120; forty five.5% of them). Irresponsibility measures whether or not the player turned into chargeable for his/her conduct or now no longer (n = 86; 32.6% of them turned into defined through specialists as irresponsible).

Substance use and abuse

Substance use and abuse (consisting of hashish, cocaine, heroin, inhalants, amphetamines, etc.) turned into assessed as gift if player mentioned having use materials four or extra instances a week. While 15.9% (n = 42; 12 lacking cases) of adlescent delinquents abuse alcohol, 61.four% (n = 162; 12 lacking cases) of them use unlawful pills.

Family Variables

Family shape and parental tracking had been own circle of relatives variables of the have a look at. Family shape turned into measured because the presence of each mother and father in infant-rearing or now no longer. In 183 cases (69.three%) the father/mom were absent. Parental tracking turned into measured because the presence of clean limits and policies approximately the conduct of individuals at domestic. In 112 cases (42.four%) there had been now no longer clean policies.

School Variables

Truancy and warfare at faculty had been the faculty variables of the have a look at. Truancy turned into measured because the tendency found for every player of lacking faculty. Truancy turned into taken into consideration to be gift if the pupil turned into absent from magnificence with out knowledgeable consent for three or extra days inside a four-week length, or for 10 or extra days inside a 6-month length. In 146 individuals (55.three%) it turned into discovered an inclination to overlook faculty frequently. School warfare measured whether or not there has been a records of warfare with teachers, friends or faculty system or now no longer. In a hundred and ten individuals (41.7%) it turned into found a records of warfare.

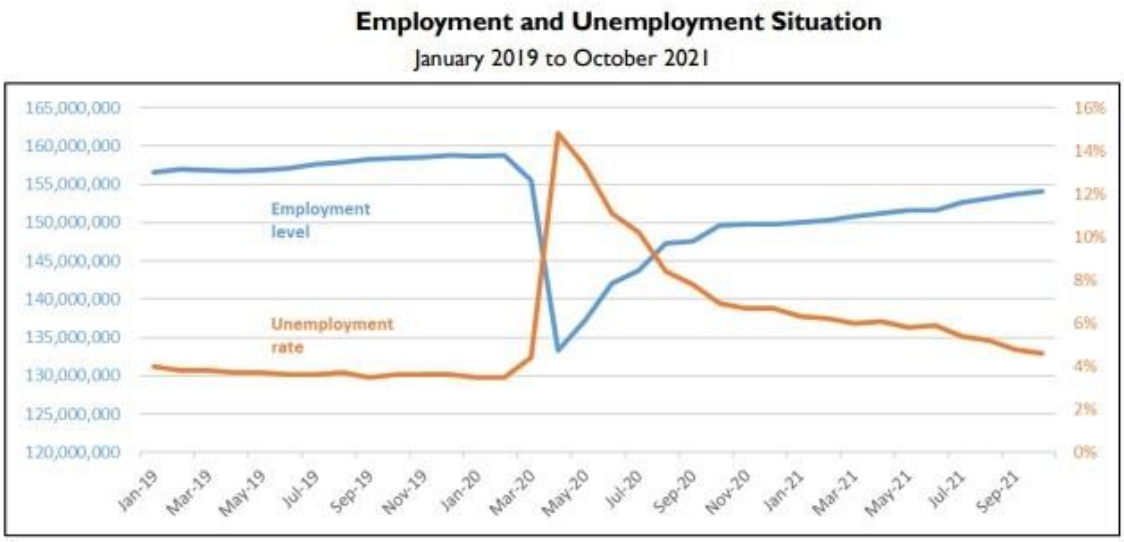
Inflation and the Labor Market

Inflation is typically attributed to any number of causes, one of which is increasing production costs. Put simply, if it costs businesses more to produce goods and services, they will, under most market conditions, charge more for the final products. There are several inputs in the production process, including land, labor, and capital, among others. If the price of labor—often measured in wages— increases, then producers are not able to produce their goods or services at the same price and quantity as profitably. Given this, and depending on market characteristics, producers may increase prices of final goods and services, often referred to as cost-push inflation.

In addition, increased wages leave workers with higher disposable income, which, all else equal, can lead to a rise in aggregate demand. Depending on the increase in demand relative to the productive capacity of the economy, a rise in prices may result, known as a wage-price spiral. The magnitude of the effect of increasing wages depends on several factors, including the uniformity of the increase in wages across all sectors and the state of the economy at the time of the increase in wages. The level of employment was relatively high and the unemployment rate relatively low prior to the COVID-19 pandemic. Following the start of the pandemic, the unemployment rate increased rapidly to levels not seen since the Great Depression.

Employment levels dropped over 82 million in April 2020 alone. While the employment situation has improved since April 2020, the unemployment rate as of October 2021 remains over a percentage point higher than in February 2020, before the pandemic

began, and the number of employed persons remains a little less than 5 million lower over the same period. All else equal, this would imply a "looser" labor market—that is, one featuring a high amount of available labor relative to job openings and less upward wage pressure—in 2021 than in 2019.



So, how does labor affects inflation?

If the price of labor increases, then producers are not able to produce their goods or services at the same price and quantity as profitably. Given this, and depending on market characteristics, producers may increase prices of final goods and services, often referred to as cost-push inflation.

1.2 Research methodology

Firstly, we consider the geographic area by European regions in our analysis of early school dropout for the stratified random sampling. We are going to take 5 strata and analyze each of them.

Then, we provide a complete analysis for the hypothesis testing. Here, we study the Europe as a whole entity and check if all europeans are on the same page in terms of school leaving rate by assuming we identify their mean.

Keeping this in mind, using ANOVA analysis we want to see if people from a specific region of Europe are liable to leave school earlier and compare this to another ANOVA analysis made on each country's predominant religion. In the last case, we take into consideration the mail religions that europeans have and the unaffiliated ones.

Moving on, we want to study the relationship between the labor force participation rate and the early school leaving rate using simple linear regression analysis because they seem to be different between them but correlated somehow to our dependent variable, the inflation rate.

Last but not least, for multiple regression, we combined some of the variables we mentioned above, the best ones for this particular study, with one dummy: the inflation rate. We considered it a high inflation rate if it is bigger than 3 and a low one if it is smaller than 3 and allocated the countries 1 for a high inflation rate and 0 for a small one.

2. Empirical chapter

2.1 Data used

At first, let's take a look at our data. We collected data about the Early school leaving rate of young people (between 18-24 years) in Europe in the past 5 years. As you may notice, our periodicity is in an yearly form. We also took into account some countries that are not in the European Union such as Moldova, Bosnia and Herzegovina or Albania. For the countries in the EU the analysis was quite easy to be found, but for those that are not a part of it we had to do an individual research to find the rate for each year. Our mission was successful and we managed to collect data from 39 countries from Europe and the table, as you can see in the Excel file looks like this:

Early school leavers rate in Europe in the past 5 years								
Nr crt	Country	Region	Years					Average
			2017	2018	2019	2020	2021	
1	Albania	Southern Europe	7.0	6.4	7.7	6.5	6.7	6.9
2	Austria	Western Europe	7.4	7.3	7.8	8.1	8.0	7.7
3	Belarus	Eastern Europe	13.2	13.3	12.0	12.5	9.9	12.2
4	Belgium	Western Europe	8.9	8.6	8.4	8.1	6.7	8.1
5	Bosnia and Herzegovina	Southern Europe	8.0	7.4	7.3	7.1	7.2	7.4
6	Bulgaria	Eastern Europe	12.7	12.7	13.9	12.8	12.2	12.9
7	Croatia	Southern Europe	3.1	3.3	3.0	2.2	2.4	2.8
8	Cyprus	Eastern Europe	8.5	7.8	9.2	11.5	10.2	9.4
9	Czech Republic (Czechia)	Eastern Europe	6.7	6.2	6.7	7.6	6.4	6.7
10	Denmark	Northern Europe	8.8	10.4	9.9	9.3	9.8	9.6
11	Estonia	Northern Europe	11.8	12.0	11.2	8.5	9.8	10.7
12	Finland	Northern Europe	8.2	8.3	7.3	8.2	8.2	8.0
13	France	Western Europe	8.8	8.7	8.2	8.0	7.8	8.3
14	Germany	Western Europe	10.1	10.3	10.3	10.1	11.8	10.5
15	Greece	Southern Europe	6.0	4.7	4.1	3.8	3.2	4.4
16	Hungary	Eastern Europe	12.5	12.5	11.8	12.1	12.0	12.2
17	Iceland	Northern Europe	17.8	21.5	17.9	14.8	14.4	17.3
18	Ireland	Northern Europe	5.0	5.0	5.1	5.0	3.3	4.7
19	Italy	Southern Europe	14.0	14.5	13.5	13.1	12.7	13.6
20	Latvia	Northern Europe	8.6	8.3	8.7	7.2	7.3	8.0
21	Lithuania	Northern Europe	5.4	4.6	4.0	5.6	5.3	5.0

22	Luxembourg	Western Europe	7.3	6.3	7.2	8.2	9.3	7.7
23	Malta	Southern Europe	14.0	14.0	13.9	12.6	11.0	13.1
24	Moldova	Eastern Europe	11.0	8.5	9.1	9.9	10.3	9.8
25	Montenegro	Southern Europe	5.4	4.6	5.0	3.6	3.6	4.4
26	Netherlands	Western Europe	7.1	7.3	7.5	7.0	5.3	6.8
27	North Macedonia	Southern Europe	8.5	7.1	7.1	5.7	5.7	6.8
28	Norway	Northern Europe	10.4	9.9	9.9	9.9	12.3	10.5
29	Poland	Eastern Europe	5.0	4.8	5.2	5.4	5.9	5.3
30	Portugal	Southern Europe	12.6	11.8	10.6	8.9	5.9	10.0
31	Romania	Eastern Europe	18.1	16.4	15.3	15.6	15.3	16.1
32	Serbia	Southern Europe	6.2	6.8	6.6	5.6	6.3	6.3
33	Slovakia	Eastern Europe	9.3	8.6	8.3	7.6	7.8	8.3
34	Slovenia	Southern Europe	4.3	4.2	4.6	4.1	3.1	4.1
35	Spain	Southern Europe	18.3	17.9	17.3	16.0	13.3	16.6
36	Sweden	Northern Europe	7.7	7.5	6.5	7.7	8.4	7.6
37	Switzerland	Western Europe	4.5	4.4	4.4	4.0	4.9	4.4
38	Turkey	Eastern Europe	32.5	31.0	28.7	26.7	26.7	29.1
39	United Kingdom	Northern Europe	10.6	10.7	10.9	10.9	10.9	10.8

However, we also computed the average for those 5 years, but for our statistics we used the index from 2020, according to our other data collected. Our project has around 4 other variables in use, including GDP per capita, the inflation rate, the labor force participation rate and religion. The first three of them are based on the economic environment from 2020 of each country and the last one is purely a qualitative variable which we used to see if the school abandonment is influence by people's beliefs or if it is only a economic matter. The result is seen in the numbers, we will not reveal that yet.

From our point of view, the most significant variables in our study that we used related to the early school leaving rate are the inflation rate and religion. In some cases, those variables play a huge role and influence a lot the ESL and in other cases, they are almost meaningless.

On a large scale, it was hard to determine the variables that are strongly in touch with the early school leaving rate, because we had to take into consideration not only the cause of this rate, but we also thought about why would people leave the school earlier? Is it because of money? Is it because of the environment? The infrastructure? Their strong beliefs?

In this manner, we carefully selected our variables by which we came up to some interesting interpretations which will be presented in the following part of our project.

We computed the following statistical techniques: Stratified random sampling with confidence intervals and margin of error, Hypothesis testing (one-tailed and two-tailed) , ANOVA analysis, Simple linear regression analysis and Multiple linear regression analysis.

2.2 The empirical results of this research

STRATIFIED RANDOM SAMPLING, CONFIDENCE INTERVALS

At first, we grouped the countries from Europe in european regions to have a clear image about what we have to analyze. There is a total of 39 countries, from which 31% are from Southern Europe, 26% are from Northern Europe, 26% are from Eastern Europe and 18% are from Western Europe.

Southern Europe		RAND	Northern Europe		RAND	Eastern Europe		RAND	Western Europe		RAND
Albania	6.5	0.9833	Denmark	9.3	0.6892509	Belarus	12.5	0.124615	Austria	8.1	0.69034293
Bosnia and Herzegovina	7.1	0.8555	Estonia	8.5	0.6552087	Bulgaria	12.8	0.46505	Belgium	8.1	0.62064512
Croatia	2.2	0.4052	Finland	8.2	0.3006174	Cyprus	11.5	0.844204	France	8.0	0.53838494
Greece	3.8	0.7788	Iceland	14.8	0.9193633	Czech Republic (Czechia)	7.6	0.118104	Germany	10.1	0.4573114
Italy	13.1	0.3471	Ireland	5.0	0.9410296	Hungary	12.1	0.770035	Luxembourg	8.2	0.41995396
Malta	12.6	0.3723	Latvia	7.2	0.7095036	Moldova	9.9	0.073954	Netherlands	7.0	0.37579565
Montenegro	3.6	0.2273	Lithuania	5.6	0.5764063	Poland	5.4	0.477805	Switzerland	4.0	0.53845662
North Macedonia	5.7	0.422	Norway	9.9	0.9723317	Romania	15.6	0.838065			
Portugal	8.9	0.7736	Sweden	7.7	0.2578239	Slovakia	7.6	0.367647			
Serbia	5.6	0.2339	United Kingdom	10.9	0.8740237	Turkey	26.7	0.353796			
Slovenia	4.1	0.5872									
Spain	16.0	0.0257									
12			10			10			7		
31%			26%			26%			18%		

Then, we decided to pick 5 strata samples of 20 countries by using the =RAND() function in Excel, followed by calculating the mean and standard deviation of each strat.

STRAT 1	
Finland	8.2
Turkey	26.7
Portugal	8.9
Ireland	5.0
Croatia	2.2
Sweden	7.7
Cyprus	11.5
Lithuania	5.6
Germany	10.1
Slovenia	4.1
Spain	16.0
Romania	15.6
Poland	5.4
Belgium	8.1
Belarus	12.5
North Macedonia	5.7
Denmark	9.3
Austria	8.1
France	8.0
Hungary	12.1
	9.5
	5.40904304

For STRAT 1 we obtained a mean of 9.5 and a standard deviation of 5.40904304.

For STRAT 2 we obtained a mean of 8.2 and standard deviation of 3.179308101.

STRAT 2	
Cyprus	11.5
France	8.0
Denmark	9.3
Hungary	12.1
Czech Republic (Czechia)	7.6
Slovenia	4.1
Estonia	8.5
Germany	10.1
Switzerland	4.0
Lithuania	5.6
Italy	13.1
Luxembourg	8.2
Austria	8.1
Sweden	7.7
Greece	3.8
Belgium	8.1
Serbia	5.6
Spain	16.0
Poland	5.4
Slovakia	7.6
	8.2
	3.179308101

STRAT 3	
Bosnia and Herzegovina	7.1
North Macedonia	5.7
Denmark	9.3
Bulgaria	12.8
Moldova	9.9
Poland	5.4
Cyprus	11.5
France	8.0
Slovakia	7.6
Portugal	8.9
Albania	6.5
Turkey	26.7
Iceland	14.8
Spain	16.0
Belarus	12.5
Italy	13.1
Netherlands	7.0
Germany	10.1
Croatia	2.2
Czech Republic (Czechia	7.6
	10.1
	5.18385956

For STRAT 3 we obtained a mean of 10.1 and standard deviation of 5.18385956.

STRAT 4	
Ireland	5.0
Denmark	9.3
Sweden	7.7
France	8.0
Moldova	9.9
Italy	13.1
Iceland	14.8
Cyprus	11.5
Latvia	7.2
Bosnia and Herzegovina	7.1
Hungary	12.1
Slovenia	4.1
Malta	12.6
Netherlands	7.0
Croatia	2.2
Romania	15.6
Estonia	8.5
Lithuania	5.6
Belgium	8.1
Switzerland	4.0
	8.7
	3.6904037

For STRAT 4 we obtained a mean of 8.7 and standard deviation of 3.6904037.

STRAT 5	
Belarus	12.5
Moldova	9.9
Spain	16.0
Belgium	8.1
Croatia	2.2
Hungary	12.1
Cyprus	11.5
Denmark	9.3
France	8.0
United Kingdom	10.9
Slovakia	7.6
Poland	5.4
Bulgaria	12.8
Bosnia and Herzegovina	7.1
Portugal	8.9
Sweden	7.7
Latvia	7.2
Austria	8.1
Malta	12.6
Germany	10.1
	9.4
	3.069352216

For STRAT 5 we obtained a mean of 9.4 and standard deviation of 3.069352216.

Our strata means and standard deviations are in connection to one another taking into account that we took samples of a little more than a half of our 39 countries.

Then, we considered two of our samples created grouped on European regions as below:

STRAT 1	
Hungary	12.1
Turkey	26.7
Romania	15.6
Poland	5.4
Belarus	12.5
Cyprus	11.5
Germany	10.1
Austria	8.1
France	8.0
Belgium	8.1
Croatia	2.2
Portugal	8.9
North Macedonia	5.7
Slovenia	4.1
Spain	16.0
Finland	8.2
Ireland	5.0
Sweden	7.7
Lithuania	5.6
Denmark	9.3

STRAT 2	
Cyprus	11.5
Hungary	12.1
Czech Republic (Czechia)	7.6
Poland	5.4
Slovakia	7.6
Belgium	8.1
France	8.0
Germany	10.1
Switzerland	4.0
Luxembourg	8.2
Austria	8.1
Italy	13.1
Slovenia	4.1
Greece	3.8
Serbia	5.6
Spain	16.0
Denmark	9.3
Estonia	8.5
Lithuania	5.6
Sweden	7.7

We distributed the countries on regions and counted the number of the country for each region and computed the mean and standard deviation for each European Region in both of our strata cases.

We can definitely see a significant difference when we compute each of these values for Eastern Europe.

Strat 1			
Region	Number of countries	Mean	Standard deviation
Eastern Europe	6	14.0	7.1
Western Europe	4	8.6	1.0
Southern Europe	5	7.4	5.4
Northern Europe	5	7.2	1.8
Total	20	9.5	5.4

Strat 2			
Region	Number of countries	Mean	Standard deviation
Eastern Europe	5	8.8	2.855345863
Western Europe	6	7.8	2.004744373
Southern Europe	5	8.5	5.64065599
Northern Europe	4	7.8	1.590335394
Total	20	8.2	3.179308101

For the confidence intervals we took the first sample of our five created. Then we took a look at our descriptive statistics based on that sample:

Early school leaving	
Mean	9.53872098
Median	8.15
Mode	8.1
Standard Deviation	5.40904304
Sample Variance	29.25774661
Kurtosis	4.472866295
Skewness	1.751451601
Range	24.5
Minimum	2.2
Maximum	26.7
Sum	190.7744196
Count	20
Largest(1)	26.7
Smallest(1)	2.2

Confidence Level(95.0%)	2.53151
Confidence Level(90.0%)	2.09138
Confidence Level(80.0%)	1.60589

Now, we calculate the confidence level for three cases: 80%, 90% and 95%.

In the first case, the case of 80% confidence level, we computed α, which is equal with 1 – the level of confidence, 80/100, and stands to 0.2. The margin of error is then calculated using the formula =CONFIDENCE.NORM(), which we apply according to our α, mean and sample size.

1) 80% confidence level	
$\alpha = 1 - 0.8$	0.2
Margin of error E:	1.550035072
Lower limit:	7.932835313
Upper limit:	11.14460665

The upper and lower limit are computed by adding the value corresponding to 80% confidence level to the mean, respectively substracting it.

The interpretation of our calculus says that we are 80% confident that the population mean is scored between 7.932835313 and 11.144460665.

In the second case, the case of 90% confidence, we also computed α, which is equal with 1 – the level of confidence, 90/100, and stands to 0.1. The margin of error is then calculated using the formula =CONFIDENCE.NORM(), which we apply according to our α, mean and sample size.

2) 90% confidence level	
$\alpha = 1 - 0.9$	0.1
Margin of error E:	1.989448477
Lower limit:	7.447336931
Upper limit:	11.63010503

The upper and lower limit are computed by adding the value corresponding to 90% confidence level to the mean, respectively substracting it.

The interpretation of our calculus says that we are 90% confident that the population mean is scored between 7.447336931 and 11.63010503.

In the third case, , the case of 95% confidence, we also computed α, which is equal with 1 – the level of confidence, 95/100, and stands to 0.05. The margin of error is then calculated using the formula =CONFIDENCE.NORM(), which we apply according to our α, mean and sample size.

3) 95% confidence level	
α = 1 - 0.95	0.05
Margin of error E:	2.370574074
Lower limit:	7.007210912
Upper limit:	12.07023105

The upper and lower limit are computed by adding the value corresponding to 95% confidence level to the mean, respectively substracting it.

The interpretation of our calculus says that we are 95% confident that the population mean is scored between 7.007210912 and 12.07023105.

HYPOTHESIS TESTING

Our population contains 39 countries from all over the world and we took into account their GDP per capita. We want to check if the population GDP per capita mean in Europe is significantly different than the average GDP per capita in the world taking into account our largest and smallest value. We state different situations for the null hypothesis and we are going to discuss all of them.

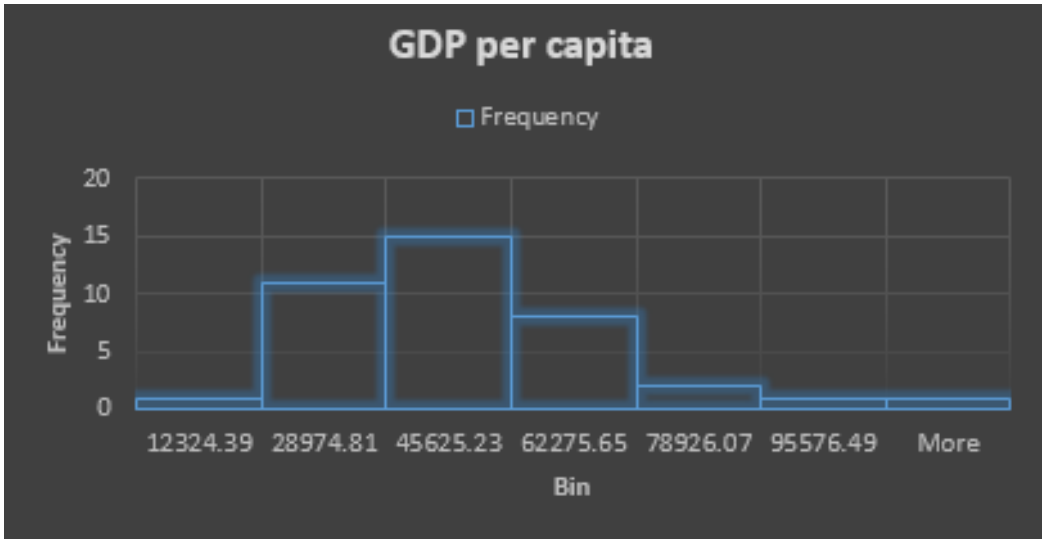
Before we start our discussion about this topic, let's take a look at the descriptive statistic of our population:

GDP per capita	
Mean	39364.20026
Standard Error	3258.070494
Median	37091
Mode	#N/A
Standard Deviation	20346.64371
Sample Variance	413985910.3
Kurtosis	3.731496252
Skewness	1.549737747
Range	99902.52
Minimum	12324.39
Maximum	112226.91
Sum	1535203.81
Count	39
Largest(1)	112226.91
Smallest(1)	12324.39
Confidence Level(95.0%)	6595.618893

We can clearly see our mean, which is 39364.20026, the standard error, which has a very high value, same goes to the standard deviation.

Our distribution is leptokurtic, being concentrated at the midpoint and it also have a positive skewness, the distribution having a longer tail towards -infinity. There is a wide amplitude because the largest GDP country is Luxembourg with a score of 112226.91 and at the opposite side we have Moldova as the lowest GDP country in Europe with a value of 12324.39. This description can be visualized in the histogram we provided below for a better understanding of the phenomenon and also for deciding which test to use afterwards.

Distribution of GDP on European countries:



We proceeded with the hypothesis analysis in two ways:

1. *One-tailed test*

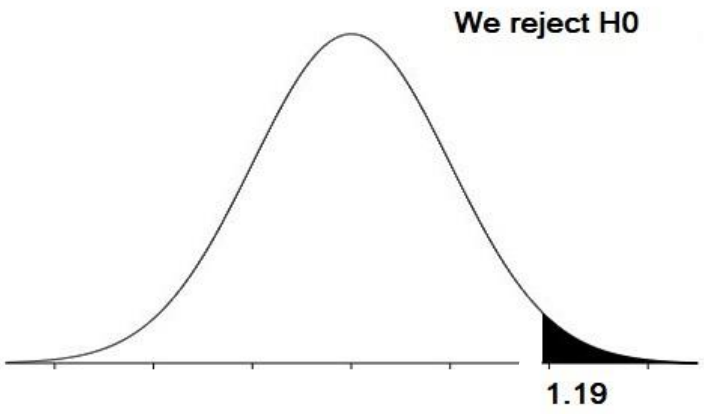
One-tailed test	
Sample size (n)	39
Average	39364.20026
H0:	μ <= 18918.72
H1:	μ > 18918.72
variance	413985910.3
a =	0.05

We computed the critical value for t, which is 1.68 and the value for t* which is 6.27.

We have a right-tail distribution, which means, as we know, that we should verify if t* is bigger than the t critical value.

We can clearly see that the value of t* bigger than t critical, so, in this case, we reject the null hypothesis, which states that the mean is less or equal to 18918.72, the average GDP per capita in the whole world. Having our α = 0.05 we can state as an interpretation that at 95% confidence, we can conclude that the mean value is bigger than 18918.72.

For a more visual idea, here is the chart output:



2. Two-tailed test

Two-tailed test	
H0:	μ = 18918.72
H1:	μ != 18918.72

Now, we want to verify if the mean is actually equal to 18918.72. So, we proceeded this way:

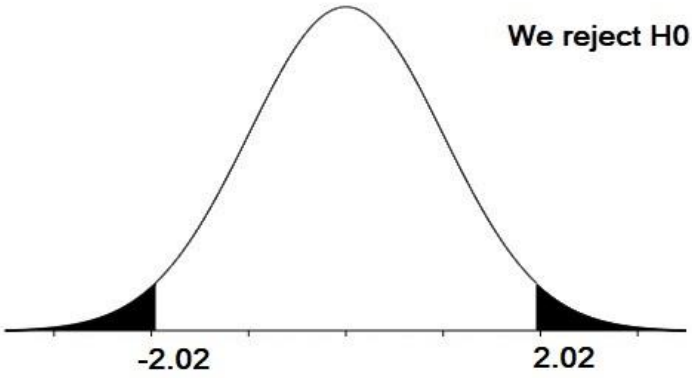
We computed the critical value for t, which is 2.02 and the value of t*, which is 6.27.

We already know that in order to compute a two-tailed test, we should see if t* > the critical value of t and also if – t*< - t critical. So, we verify if 6.27 > 2.02 and also if -6.27 < -2.02.

The statement is true, so that we reject the null hypothesis.

The interpretation of this analysis would sound like this: At 95% confidence we can conclude that the mean value is not equal to 18918.72.

Moreover, for a visual purpose, the chart output can be seen here:



ANOVA analysis

For the ANOVA analysis, we tried to do two different things: we distributed our countries based on regions and also on religions to see if the early school leaving rate is influenced by those two different factors: the geopolitical factor and the cultural factor. In this regard, we computed ANOVA analysis two times and we had seen some interesting results.

a. ANOVA analysis on regions from Europe

Southern Europe	Northern Europe	Eastern Europe	Western Europe
6.5	9.3	12.5	8.1
7.1	8.5	12.8	8.1
2.2	8.2	11.5	8.0
3.8	14.8	7.6	10.1
13.1	5.0	12.1	8.2
12.6	7.2	9.9	7.0
3.6	5.6	5.4	4.0
5.7	9.9	15.6	
8.9	7.7	7.6	
5.6	10.9	26.7	
4.1			
16.0			

For the first partition, we divided our population into four groups taking into account the early school leaving rate:

- Southern Europe consisting of Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Malta, Montenegro, North Macedonia, Portugal, Serbia, Slovenia and Spain;
- Northern Europe consisting of Denmark, Estonia, Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK;
- Eastern Europe consisting of Belarus, Bulgaria, Cyprus, Czechia, Hungary, Moldova, Poland, Romania, Slovakia, Turkey;
- Western Europe consisting of Austria, Belgium, France, Germany, Luxembourg, Netherlands, Switzerland.

Is the early school leaving rate affected by the geographical aspect?

SUMMARY				
Groups	*Count*	*Sum*	*Average*	*Variance*
Southern Europe	12	89.2376	7.43647	18.9148
Northern Europe	10	87.1	8.71	7.85433
Eastern Europe	10	121.64	12.164	35.1934
Western Europe	7	53.5	7.64286	3.42952

As we see here, in the SUMMARY table, we can conclude that the geographic region where a person is born really affects his/her education. Looking at the averages, we see a similarity between Southern, Northern and Western Europe, but the difference is made by the Eastern Europe, which has an average rate significantly bigger than the others with approximately 50%.

We made then a more ”in dept” analysis which we can see here:

ANOVA	α=0.05					
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	143.174274	3	47.72475801	2.711327	0.0597793	2.874187
Within Groups	616.0697127	35	17.60199179			
Total	759.2439867	38				

This analysis is made at a confidence level of 95%. With F being less than F critical we do not reject the null hypothesis. So that, we can state that at a confidence level of 95% the region definitely influence the early school leaving rate in Europe.

ANOVA	α=0.01					
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	143.174274	3	47.72475801	2.711327	0.0597793	4.395749
Within Groups	616.0697127	35	17.60199179			
Total	759.2439867	38				

This analysis is made at a confidence level of 99%. The difference between the one above is not significantly different. We still reject the null hypothesis but this time it is more clear, given that F critical is much more bigger than F.

ANOVA	α=0.10					
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	143.174274	3	47.72475801	2.711327	0.0597793	2.24735
Within Groups	616.0697127	35	17.60199179			
Total	759.2439867	38				

This time, making the analysis at a confidence level of 90% F critical slightly reduces and that is happening because Eastern Europe values only 26% from our population and the difference is seen in that area.

Keeping in mind all that we have observed, we can come up to the conclusion that the Early school leaving rate in Europe depends on the region, but mostly if we would consider Eastern Europe or not. For the other three regions, the rate goes around the same level.

b. ANOVA analysis based on religion / cultural background

Islam	Catholic	Orthodox	Lutheran	Uaffiliated	Protestant
6.5	8.1	12.5	9.3	7.6	10.1
7.1	8.1	12.8	8.2	8.5	
26.7	2.2	11.5	14.8		
	8.0	3.8	7.2		
	12.1	9.9	9.9		
	5.0	3.6	7.7		
	13.1	5.7			
	5.6	15.6			
	8.2	5.6			
	12.6				
	7.0				
	5.4				
	8.9				
	7.6				
	4.1				
	16.0				
	4.0				
	10.9				

For the second partition we divided the countries of our population on predominant religion in 6 groups according to the early school leaving rate:

- **Islam** consisting of Albania, Bosnia and Herzegovina and Turkey;
- **Catholic** consisting of Austria, Belgium, Croatia, France, Hungary, Ireland, Italy, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Slovakia, Spain, Switzerland, UK;
- **Orthodox** consisting of Belarus, Bulgaria, Cyprus, Greece, Moldova, Montenegro, North Macedonia, Romania, Serbia;
- **Lutheran** consisting of Denmark, Finland, Iceland, Latvia, Norway, Sweden;
- **Unaffiliated** consisting of Czechia and Estonia;
- **Protestant** consisting of Germany.

Now, we try to see if religion is affecting the early school rate using the ANOVA Single Factor technique.

SUMMARY				
Groups	*Count*	*Sum*	*Average*	*Variance*
Islam	3	40.3856899	13.4618966	131.52241
Catholic	18	146.9	8.16111111	13.19545752
Orthodox	9	80.9402596	8.99336217	19.46510923
Lutheran	6	57.1	9.51666667	7.701666667
Uaffiliated	2	16.1	8.05	0.405
Protestant	1	10.1	10.1	#DIV/0!

As we see in this SUMMARY table, the averages are slightly different and the difference is made by Islam even though we see a similarity between the others, which are also different but not as much as the average of Islam is. The Islam average early leaving rate is approximately 30% bigger than the other religions rate.

Now it is time to make a more ”in dept” analysis:

ANOVA	α=0.05					
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	77.00275747	5	15.40055149	0.745186003	0.595372808	2.502635
Within Groups	682.0018049	33	20.66672136			
Total	759.0045624	38				

This analysis is made at a confidence level of 95%. With F being less than F critical we do not reject the null hypothesis. So that, we can state that at a confidence level of 95% the religion definitely influence the early school leaving rate in Europe.

ANOVA	α=0.01					
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	77.00275747	5	15.40055149	0.745186003	0.595372808	2.030027
Within Groups	682.0018049	33	20.66672136			
Total	759.0045624	38				

This time we made the analysis at a confidence level of 99%. The results are slightly different but basically they do state the same supposition, by which religion influences the early school leaving rate at a confidence level of 99%.

ANOVA	α=0.10					
Source of Variation	*SS*	*df*	*MS*	*F*	*P-value*	*F crit*
Between Groups	77.00275747	5	15.40055149	0.745186003	0.595372808	2.030027
Within Groups	682.0018049	33	20.66672136			
Total	759.0045624	38				

The results are neither different in the last case, where we consider our α equal to 0.10 and the confidence level 90%.

We now came up to the conclusion that religion definitely matters when analysing the Early school leaving rate in Europe taking into account that Islam has the highest average mean and those unaffiliated states occupy the lowest Early school leaving rate in terms of average.

The output is clear and mathematics showed us throughout ANOVA that leaving education from a young age is very much affected not only by the geographic region, but also by religion looking up to the results.

SIMPLE LINEAR REGRESSION

This time, for this analysis, we checked the relationship between exactly 2 variables, a dependent one, namely **the inflation rate**, and an independent one. For the independent variable, we chose 2 different situations, explained below. Finally, we checked the multi-collinearity between the independent variables to choose the best ones for the next analysis. Throughout this analysis we wanted to see if the inflation rate is influenced differently firstly by **the labor force participation** and secondly by **the early school leaving rate** in Europe.

For all the analysis, we used a confidence interval of 95%. However, we took into account adjusted R squared for an accurate understanding because this indicator takes into consideration also the degrees of freedom.

1. *Labor force participation rate*

Here we will see how **the labor force participation rate** affects the **inflation rate** in Europe on a population size of *39 countries*. Therefore, the output is presented below:

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.134006304
R Square	0.01795769
Adjusted R Square	-0.008583994
Standard Error	2.331011274
Observations	39

ANOVA

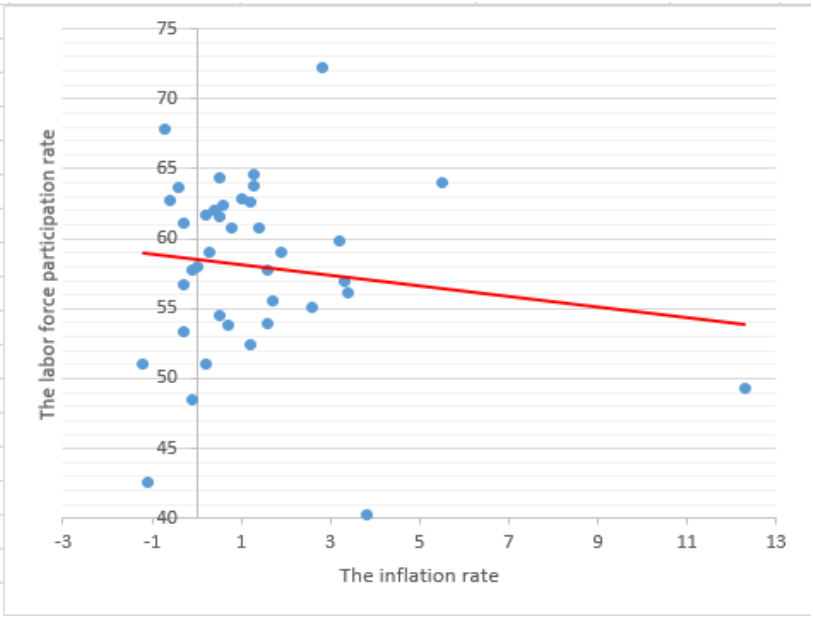
	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	3.676298217	3.676298	0.676584	0.416035102
Residual	37	201.0437018	5.433614		
Total	38	204.72			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	4.097749389	3.421742017	1.197562	0.238703	-2.835358497	11.0308573	-2.835358497	11.03085727
X Variable 1	-0.048246017	0.058654383	-0.82255	0.416035	-0.167091085	0.07059905	-0.167091085	0.070599052

The model is valid since the value of **significance F** is very low and also we can identify the same property for the **p-value** regarding the labor force participation rate. More than that, if we take a look at **R Square**, we can see that it translates to 1%, which means that there is a small correlation between the 2 variables and a negative one for sure.

This being said, <u>as the labor force rate increases, the inflation decreases</u>. On the other hand, taking a look at the adjusted ratio of determination is pretty low when we have a confidence interval of 95%.

*The **scatter plot** for this independent variable looks like this:*



2. *Early school leaving rate*

Here we will see how **the early school leaving rate** affects **the inflation rate** in Europe on a population size of *39 countries*. Therefore, the output is presented below:

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.663850804
R Square	0.44069789
Adjusted R Square	0.425581617
Standard Error	1.759148503
Observations	39

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	1	90.21967209	90.21967	29.15387	4.08426E-06
Residual	37	114.5003279	3.094603		
Total	38	204.72			

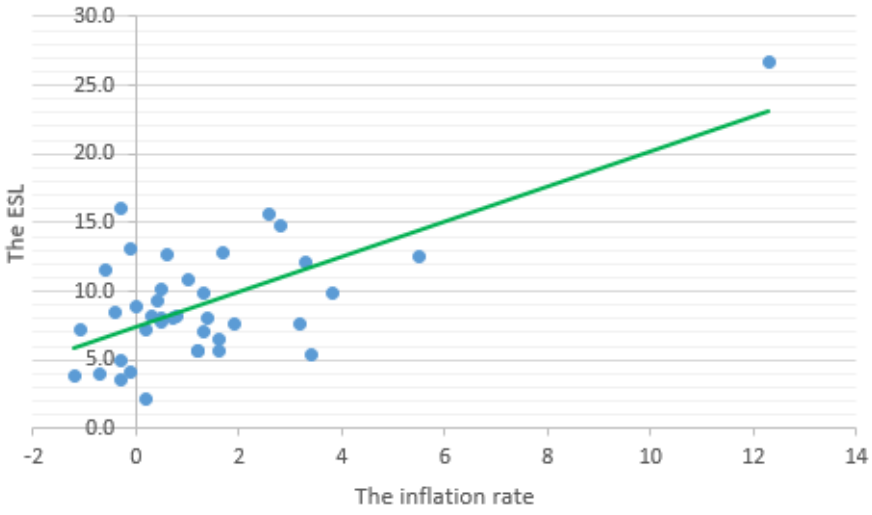
	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	-1.807572087	0.640774069	-2.82092	0.007655	-3.105903676	-0.5092405	-3.105903676	-0.509240498
ESL 2020	0.344769174	0.063852853	5.399435	4.08E-06	0.215391004	0.47414734	0.215391004	0.474147345

Same as in the previous case, the **significance F** has a small value and **p-values** are also in our range. There is an increase in the value of **adjusted R squared**, ESL explaining the inflation in 42.55% of the cases in our sample and this assumption is valid in 95% of our observations in this specific sample.

The R Square coefficient is 0.44 which represents a strong linear and positive relationship between the ESL and the inflation rate.

This being said, as the early school leaving rate increases, the inflation increases as well.

*For a better understanding, this relationship is represented by the following **scatter plot**:*



MULTIPLE REGRESSION ANALYSIS

For this specific analysis, we have decided to use the data we already have. We are going to use the **GDP per capita** and **the labor force participation rate** as the main

independent variables to see the overall impact on our main interest character: **the early school leaving rate**.

For our *dummy variable*, having a consistent sample, we decided to use **the inflation rate**, taking into account that a country that has a big inflation has 1 value and a country with a small inflation has the 0 value. Our population is formed of 39 observations: countries from all the regions from Europe. Below we can see the results:

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.677743447
R Square	0.45933618
Adjusted R Square	0.412993567
Standard Error	3.395588996
Observations	39

ANOVA

	df	*SS*	*MS*	*F*	*Significance F*
Regression	3	342.8480043	114.2826681	9.911745359	7.13883E-05
Residual	35	403.550862	11.53002463		
Total	38	746.3988662			

	Coefficients	*Standard Error*	*t Stat*	*P-value*	*Lower 95%*	*Upper 95%*	*Lower 95.0%*	*Upper 95.0%*
Intercept	5.8916	5.3474	1.1018	0.2781	-4.964297391	16.74746802	-4.964297391	16.74746802
GDP per capita 2020	0.00002	0.0000	0.7577	0.4537	-4.10526E-05	8.99437E-05	-4.10526E-05	8.99437E-05
Labor force participation rate	0.00307	0.1005	0.0305	0.9758	-0.200908967	0.207039334	-0.200908967	0.207039334
Inflation rate 2020	1.32229	0.2428	5.4460	0.0000	0.829383578	1.815196151	0.829383578	1.815196151

We can easily see an improvement in adjusted R squared compared to our first individual situation and a similarity with our second individual situation.

For more than 41% of observations in our sample, the school dropout is explained by all the GDP per capita, labor force participation rate (shadow economy) , if the inflation rate is taking into account. The output is not as expected, since we couldn't find such a big correlation between all the variables, but we found one interesting result regarding to the inflation rate. This variable is, as we see above, an influent one. It was indeed very hard to find some variables that could influence the ESL so much as the inflation rate. Moreover, the standard error value is significantly higher than in our previous cases, 3.39, whereas in all the individual observations this value was less. This shows us that about 95% of the observations fall, on average, within 3.39 units from the regression line. This value is stated for all our independent variables taken as a whole.

We can write the equation for multiple regression as following:

$$y = 5.8916 + 0.00002 * x_1 + 0.00307 * x_2 + 1.32229 * x_3$$

where:

- y is the dependent variable, namely the early school leaving rate
- x1 is the first independent variable: GDP per capita
- x2 is the second independent variable: Labor force participation rate
- x3 is a dummy variable: Inflation rate

All the coefficients were taken from the table inserted above are marked with green.

CONCLUSIONS

This project was a journey for all of us for various reasons. A reason would be the fact that we learned a lot about our continent, about the countries cultural and economic backgrounds, which made us see our country in a slightly different position than before. Most of the study that we made is showing some deep rooted problems of some of the countries from Europe and a good economic structure for the other ones. The main thing is, all of the countries have this problem, even if it is a concerning one, or an insignificant one.

Making an intensive research about the early school leaving rate in the European regions helped us see a bigger picture about the real situation that young people are facing nowadays. The fact that some variables, such as GDP per capita or labor force participation are not affecting at all this phenomenon and that the inflation rate does was a surprise even for us, but after we thought about it in perspective, it makes a lot of sense.

Also, this project helped us understand some statistical techniques better by practicing on real data after learning mechanically some theoretical terms that now have a meaning and obviously we will use it in the future.

The most important achievement that we got from this project is knowledge and understanding some patterns, some statistical measures, understanding the reasons why people in Europe are drawn to leaving higher education. After this research we can say that education is extremely important and the fact that some countries are not investing in this sector is really painful. We hope, though to see some changes in this rates in the following years, because we will definitely look up for it.

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