



Russell Iwhiwhu

**The Relationship Between Ethnic Diversity, Entrepreneurship and Top 1 percent Income
Inequality Between the United States of America and Finland.**

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ABSTRACT OF THE MASTER'S THESIS

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| <p>Abstract</p> <p>The thesis studied ethnic diversity's relationships with the three variables: entrepreneurship, income inequality and interest rate. This research has been carried out using a benchmark for 18 other selected OECD countries by comparing Finland with the United States of America. This paper's primary aim is to analyse empirically the relation between ethnic diversity of entrepreneurship and income inequality. For two countries on the OECD list of high-income (United States of America and Finland) over a period of 16 years, we use a random-effects panel data analysis. The results of estimates and diagnostic analyses suggest that: (1) the existence of a combined relationship between entrepreneurship, ethnic diversity and income inequality supported by the hypothesis of the Kuznets curve is strongly supported. (II) Increased by economic development levels of the country, but positive for revenues held by the top 1 percent of people, the relation between entrepreneurship and income inequality is negative; (iii) regardless of income inequality levels, entrepreneurship has a combined linear relationship on the control parameters. For example, while the impact of unemployment on entrepreneurship is significantly negative, GDP is positive and significant. (iv) the gross proxy on investment capital formation has considerable positive effects on the entrepreneurial sector; (v) significant mixed impacts of governance, accountability, education quality of education, the expected lifetime and other competitive variables on the likelihood of enterprise activity are respected.</p> | | | |
| Keywords Ethnic Diversity, Income inequality, Entrepreneurship, Macroeconomic variables, panel data model. | | | |
| Additional information | | | |

Content.

| | |
|---|--------|
| Title Page..... | i |
| Abstract..... | li |
| Table of Contents | iii-iv |
| Chapter One: Background of The Study..... | 1-8 |
| 1.0 Introduction..... | 1-4 |
| 1.1 Problem Statement..... | 4 |
| 1.2 Objectives of the Study..... | 4-5 |
| 1.3 Research Questions..... | 5 |
| 1.4 Significance of the Study..... | 5-6 |
| 1.5 Limitations of the Study..... | 6-7 |
| 1.6 Contribution To Existing Knowledge..... | 7-8 |
| 1.7 Organization of The Study..... | 8 |
| Chapter Two: Literature Review | 9-40 |
| 2.1 Theoretical Framework..... | 9-12 |
| 2.2 Conceptual Review..... | 12 |
| 2.2.1 Ethnic Diversity..... | 12-13 |
| 2.2.1 Income Inequality at Top One Percent..... | 13-14 |
| 2.2.3 Entrepreneurship..... | 14-16 |
| 2.2.3.1 Entrepreneurship Activities in Finland..... | 16-17 |
| 2.2.4 Ethnic Diversity and Interest Rate..... | 17-21 |
| 2.2.4.1 Finland's Interest Rate..... | 21-24 |
| 2.2.5 Ethnic Diversity and Income Inequality..... | 24-25 |
| 2.2.5.1 Income Inequality in Finland..... | 25-26 |
| 2.2.5.2 Discussing Inequality within Finland..... | 26-29 |
| 2.2.6 Relationship Between Ethnic Diversity, Entrepreneurship and Inequality..... | 29-33 |
| 2.3 Literature Review..... | 33-40 |
| Chapter Three: Research Methodology..... | 41-51 |
| 3.0 Introduction..... | 41 |
| 3.1 Research Method..... | 41-42 |
| 3.2 Research Design..... | 42 |
| 3.2.1 Source of Data Collection..... | 42-43 |
| 3.2.2 Hypothesis Testing..... | 43-44 |
| 3.3 Methods and Specification..... | 44 |
| 3.3.1 Definition of Variables..... | 45 |
| 3.3.1.1 Dependent Variable..... | 45 |
| 3.3.1.2 Independent Variable..... | 45 |
| 3.3.1.2.1 Income Inequality..... | 45-46 |
| 3.3.1.2.2 Ethnic Diversity Index..... | 46 |
| 3.3.1.2.3 Control Variables..... | 47-49 |
| 3.4 Model Estimation Technique. | 49-51 |
| Chapter Four: Data Presentation, Analysis and Results..... | 52-68 |
| 4.0 Introduction..... | 52 |
| 4.1 Presentation of Result..... | 52 |
| 4.1.1 Relationship Between Key Variables..... | 52-53 |
| 4.1.2 Cross-interaction of Variables. | 54 |
| 4.1.3 Descriptive Statistics of Variables..... | 54 |
| 4.2 Panel Unit Root Test..... | 54-55 |
| 4.2.1 Models Estimations..... | 55-56 |
| 4.2.1.1 Model 1: POOL OLS Result..... | 56-57 |

| | | |
|--|---|-------|
| 4.2.2 | Redundant Test for Fixed/Random Effect Choice..... | 57-58 |
| 4.2.2.1 | Model 2: One Way Fixed Effect Model Result..... | 58-59 |
| 3.1.1.1 | Model 3: Random Effect Model Result..... | 60-61 |
| 4.2.3 | Correlated Random Effect-Hausman Test..... | 61 |
| 4.3 | Residual Diagnosis Check..... | 62 |
| 4.3.1 | Cross-Sectional Dependency Test..... | 62-63 |
| 4.4 | Empirical Findings and Hypothesis Testing..... | 63-65 |
| 4.5 | Economic Interpretation and Hypothesis Result..... | 65 |
| 4.5.1 | Hypothesis Test..... | 65 |
| 4.5.1.1 | Hypothesis One..... | 65 |
| 4.5.1.2 | Hypothesis Two..... | 65-66 |
| 4.5.1.3 | Hypothesis Three..... | 66 |
| 4.5.2 | Economic Interpretation of Result..... | 66-68 |
| Chapter Five: Summary, Conclusion and policy implications..... | | 69-71 |
| 5.0 | Introduction..... | 69 |
| 5.1 | Summary and Conclusion..... | 69 |
| 5.2 | Policy Implication..... | 70-71 |
| | References..... | 72-85 |
| | Appendix 1: Table of Tables..... | 86 |
| | Correlation between Macroeconomics Indicators..... | 86 |
| | Correlation between Institutional Indicators..... | 86 |
| | Correlation between Dependent Variables Indicators..... | 87 |
| | Correlation between Dependent and Independent Variables Indicators..... | 87 |
| | Panel Unit Root Test..... | 88-89 |
| | Table of Descriptive Statistics..... | 90 |
| | Appendix 2: Figure of Figures..... | 91 |
| | Histogram of Interaction of Variables..... | 91 |
| | Cross-Interaction of Variables..... | 92 |

Chapter One

1.0. Introduction

Ethnic diversity is an ongoing topic of economic research that has been researched both macroeconomically and microeconomic and is an important topic among policymakers. There is still a mixture of published findings on the economic impacts of ethnic diversity, indicating the need for further empirical research into the possible benefits of ethnic diversity. Ethnic diversity refers to a place or an environment that comprises people with ethnic backgrounds that are different. Finland as a country possesses a population estimated to be 5.53 million people, and the population density on average is 19 inhabitants within one square kilometer (Bauer, 2019). The population density makes Finland the third country within Europe, sparsely populated after Iceland, with Norway in second place. The population distribution across this country is uneven, implying that its concentration is along the small coastal plain in the southwestern part. The percentage of 85% dwells in towns and cities with a population of 1.5 million people living in Greater Helsinki place (Bauer, 2019). When it comes to the area of Arctic Lapland, it is estimated that on every square km, there live two people on only.

Generally, we consider the company to be strongly related to the entrepreneur's character. Researchers view an entrepreneur as a person with different skills: risk-taker, innovative, good manager, dealer, and so on. Therefore, when people are all different by gender, social-cultural background, or education, a difference in entrepreneurial motivations or/and in skills or behaviors. In general, the various social and cultural groups make up each society. Some authors then discuss diversity as a range that can be assessed according to racial, ethnic, gender, sexual orientation, social and economic conditions, age, physical ability, religious beliefs, political beliefs or other ideology (Baycan-Levent et al., 2003). Diversity also includes visible features, including nationality, ethnicity, gender and age, as well as unseen features such as creativity, beliefs and tastes (Hampen-Turner et al., 2010). Finally, we can add

disability as a diversity factor if this population can be discriminated against in certain societies.

The role of diversity in boosting innovation is highlighted by Eraydin et al. (2010). They quote Fainstein (2005) for stating that 'forms of human capital' are attracted by multiple forms of social, cultural, ethnic and spatial diversity and, of course, promote cultural and artistic creation and technological and scientific innovation.' But some authors regard diversity as a competitive factor. Amin and Graham (1997) say that the city never was a homogenous organization, and social, cultural and ethnic forms of diversity always play an important part in urban research. The processes of globalization, neo liberalization and economic restructuring have led to considerable increases in migration in many urban centers in the advanced economies (Eraydin et al., 2010).

Efendic et al. (2015) found that ethnic diversity is benefit for young companies. Young companies (entrepreneurs) are systematically more likely than in ethnically homogenous areas to grow in local and ethnically diverse areas. These findings are of great importance in cross-country economic literature, as this latter suggests that ethnic heterogeneity can be linked to adverse economic consequences (e.g., Easterly and Levine 1997, Collier 1998, Easterly 2001, Patsiurko et al. 2012). However, Finland is an ethnically homogeneous country, and the dominant ethnicity is Finnish. It is also dominated by some Roma, Sami, and the Finish-Swedes people who the minority groups within the country. Due to the impact of the recent immigration, there is the presence of large ethnic groups, and these are Russians, Somalis, Kurds, and Estonians. In the study carried out on this population, 7.9% is born from abroad, and foreign citizens comprise 5.2% (Bauer, 2019). Two languages are official within this country, and these are the Finn alongside the Swedish. However, the Finn is the native and spoken by over 5.2% of the population in Finland. In the period between the thirteenth and nineteenth centuries, the country was counted on Sweden.

In most advanced economies since around 1970 (Alderson and Nielsen 2002; Atkinson 2004), interest in determinants of income inequity, mostly measured as the Gini index was driven by the trend towards greater inequality. There are still no reasons for this trend. One option is that rising income inequality can be linked to the increasing cultural or racial heterogeneity of numerous national populations. A recent transversal study showed population diversity as a determinant of the Gini index.

Finland's Gini ratio as of 2021 is 0.274 and between 0.25 0.26 in the past 15 years has remained stable. In 1999, the Gini ratio in Finland reached 0.25 and remained higher than 0.25 until. The World Bank says that the Gini ratio between Asian countries is very high at 0.4, which is alarming. For example, one of Indonesia's key policy issues is how to reduce inequality. Higher inequality affects economically both positively and negatively (Alesina, Michalopoulos and Papaioannou, 2016). The negative aspect of increased inequality is that it increases conflicts and crimes, prevents the poor from receiving education, and raises tax rates for groups with higher rates of income so that it can lead to lower levels of investment in the case of developing nations. On the other hand, country such as the United States with a GINI ratio of over 0.4 implies a higher inequality may create an economic environment that promotes innovation and entrepreneurship, and in turn encourages economic development.

In addition to the inequality between income and expenditure, Easterly and Levine (1997) argued that a different factor affected economic performance, namely ethnic diversity. They found that there is a significant negative relationship between ethnic diversity and economic output in Africa, which is linked to the poorer economic performance of a greater level of ethnic diversity. This study led to research into the interaction between ethnic diversity, inequality at the upper-bound, and Entrepreneurial Activities in Finland in comparison to his counterpart developed nation as the United States of America.

Motivated by those findings, the researcher explores the relationship between ethnic diversity, entrepreneurship, and the selected macroeconomic variables that include interest rate and income inequality. Their research shall fully explore the topic by comparing Finland and the US. This study contributes to existing knowledge by investigating the effect of ethnic diversity GINI index and inequality at the top-end distribution of Finland economy and its relationship with entrepreneurial activities. The study proxy entrepreneurship using the total entrepreneurship index data from the world bank database. The choice of proxying the Total Entrepreneurial Activities is that the TEA is function of both Innovation and operations from all groups of the population.

1.1. Problem Statement

Finland is one of the European countries with a small population of 5.518 million, according to statistics released in the year 2019. The country consists of various groups of people, which considers the immigrants and the natives. The research carried out by different authors, and government reports indicate that entrepreneurship within this country is practiced at a higher level. In this, three different types of business are operated by entrepreneurs, and these include small scale, middle-sized, and large-scale enterprises. For this reason, the research wants to find out whether ethnicity has something to do with the entrepreneurship level in this country and the extent of this influence. Finland is counted among European countries that are characterized by income inequality. The research aims to determine the effect of ethnic diversity on this variable and its influence on other economic variables like the interest rate.

1.2. Objectives of the Study

The research aims at fulfilling some specific objectives, and these include the following.

- To determine the relationship between Income inequality at the Upper-Bound (Top 1 percent), Ethnic Diversity and Entrepreneurship.

- To measure the trends of Ethnic diversity on Income Inequality in other to determine if it promotes Entrepreneurship Activities.
- To investigate the factors accounting for increasing disparities in inequality levels of Finland and the United States despite the huge level of industrialization in both countries.

1.3. Research Questions

- What is the relationship between Inequality, Ethnic Diversity and Entrepreneurial Activities?
- To what extent does Ethnic diversity and Inequality at Upper/Bound promote entrepreneurship?
- What variables accounts for the disparities in Entrepreneurship Activities between the two countries (United States and Finland)?

1.4. Significance of the Study

The study is a variety of importance, and some of them include the following.

Through the study, we shall be able to discover the influence of ethnic diversity on entrepreneurship within Finland. As seen in the introduction, different groups of people come from different origins within this country. Some of these, as earlier mentioned, include the Swedish, Russians, among others, alongside the natives of this country. Since the level of entrepreneurship is observed to be high in this nation, the research shall enable us to find out the role of ethnic diversity in the development of entrepreneurship in this country.

Secondly, the research will help us to discover how entrepreneurial activities influence ethnic diversity within the Finnish economy. There can be no question of the presence of different groups of people with various backgrounds in Finland having significant effects on entrepreneurial development. However, it may be high, moderate, or even lower but this rate is not clear and so research

will allow us to detect the extent of this impact. This influence can be significantly reduced.

Other economies are so important for Finland's economy, and the researchers have decided to look at just two. These include inequality, the upper limits and the rate of interest. As the introduction states, the country is known to be among the countries with upper inequality and this inequality has been going on for a long time. Research will help us to fully understand whether the prevalence of this inequality is related to ethnic diversity, as the country has various backgrounds. In addition, there has been an unstable interest rate in the country. The research will enable us to understand the relationship between Income inequality, GINI and ethnic diversity. The study also allows us to make important policy recommendations. These recommendations are made based on the results and analysis of the data collected for the study. Therefore, we shall make the relevant recommendations by identifying the relationship and impacts that exists between ethnic diversity, inequality at upper-bound (top 1%), GINI and entrepreneurship.

1.5 Limitations of the Study

One important limitation of this study is that a relation can never create a causal connection. The theory behind the empirically tested phenomenon must demonstrate or deduce causality (Kendal & Stuart, 1961). Although all measures to mitigate (but not remove) the potentially endogenous nature between those variables and the Gini index are postponed over a year, it is important to recall that this survey aims to test the relationship between income inequality and enterprise, rather than eliminate it.

Additional limitations of the study are the research period, as the new rules of COVID-19 still apply. The outbreak of the pandemic around the world has led to new laws including limiting group reunification, social distance and masks. The situation is the same in Finland as it is worldwide. Because these laws excluded

the opportunity of adding a qualitative technique, using one-on-one interviews and focused groups to the study.

1.6 Contribution To Existing Knowledge

Ethnic diversity was previously studied primarily within ethnic heterogeneity due to immigration and the influx of people into previously homogenous areas of various cultures and traditions. This research addresses the effects of economic change in the opposite direction: shifting to a new characteristic of much homogenisation, largely exogenous by violence (Malcolm 1996). Therefore, the results of this study affect societies faced with similar changes. Our study supports some authors' opinions about the possible connections between business and income inequality (Reynolds, Hay, and Bygrave 2002; Lippmann, Davis, and Aldrich 2005; Stiglitz 2012). It also offers an insight into the mechanisms by which ethnic diversity and inequality govern the role of economic development in entrepreneurial activity. Furthermore, empirical models apply to two groups of high-income countries. This indicates that the different levels of entrepreneurship in the various income groups in countries vary.

The study also helps to examine the link between ethnic diversity, entrepreneurship activities and inequality in both countries as a first study in existing literature. We are documenting the impact on a wide range of ethnic diversity, macroeconomics, formal institutions and business indicators. Understanding this relationship is important as it adds to the literature on how the country's diversion is understood and addressed. The researcher points out that socio-political factors such as ethnic diversity play a key role, not only in explaining inequity differences across countries, but also in economic factors such as economic and institutional growth.

We also contribute to this literature by extending the Finnish Entrepreneurship Study on Inequality, which resembles the United States, but is more stable during the period considered here. We think that studying the case of Finland gives an interesting insight into the effect of ethnic diversity on entrepreneurship. This

finding has major political consequences. The World Bank and the International Monetary Fund, to alleviate poverty, encouraged countries to implement economic policy reforms, including privatization and price and trade liberalisation. The findings of this study show that in addition to these economic factors ethnic diversity, which has not been a primary consideration in poverty reduction policies, should be taken into consideration. As Miguel (2006) states, "The bottom line is that in countries with deep social divisions, good economic policy alone may not be sufficient to reduce poverty." As well as the usual requirement for good economic policies, "national development" policies that promote the development of a common national identity could also be necessary to reduce the effects of fractionalization on poverty (Miguel, 2006)

1.7 Organization of The Study

The thesis structure is divided into five chapters. In the next section of this first chapter the main concepts of this study are presented: ethnic business, growth orientation, ethnic views, growth strategies and obstacles. Chapter two discusses a theoretical framework and literature for this study on ethnic diversity, Inequality and entrepreneurship. The methodological approach, the data collection and analysis methods for that study are described in Chapter Three. The empirical results of this study are presented in Chapter Four and the summary conclusion work and Policy Recommendations is provided in chapter Five.

Chapter Two

Literature Review

2.0. Introduction

This section of the paper examines the subject under study by examining other literature. The search was made in various academic databases for this literature, with a variety of literature. ResearchGate, Google Scholar, JSTOR, Scopus, NBER, and BASE were the sources of the research. A total of 120 items were obtained in this document. We received 20 pieces from ResearchGate, 15 from the Google scholar, 15 from the JSTOR, 15 from the Scopus 10, 50 from NBER, and 10 from BASE. The number of 90 pieces remained and the remaining 30 were eliminated according to the criteria of inclusion and exclusion. The articles excluded from the study wandered away from the topic being studied and the research lacks reliability and validity, if such articles are included in the research. The articles included in the survey are studies recently conducted by the different researchers and continue to flow completely according to the topic.

2.1 Theoretical Framework

The following contradiction has been formulated by Kreutzmann (2008) in connection with the widening inequality gap: the impossible to catch-up among underdeveloped nations has become so fixed that it is acceptable for new exclusions and dependencies to occur. The contravention of Kreutzmann (2008) is based on the rich and richer theory (RGR), which is based in turn on the design model. The designalizing model argues according to Ljungqvist (1993) that, while all households are initially equal, inequalities will occur in the long run, as these households must choose occupations with different entry cost. With increasing inequalities, the accumulation of wealth results in further company creation (Ragoubi & El Harbi, 2017). This relationship becomes negative (a reverse U-shaped relationship between entrepreneurship and income inequality) after reaching a certain threshold of inequality (Kuznets, 1995).

The relations between entrepreneurship and income inequalities were also good for Atems and Shand (2018). Their results suggest that policies aimed at

promoting entrepreneurship increase inequality and could damage Shane's growth (2009). Business entrepreneurship may well, for many reasons, amplify wealth inequalities in societies. Lippmann, Davis & Aldrich (2005), for example, explained that the highest rates of entrepreneurial activity are for countries with increased income inequality because 'those at the top of the income distribution have surplus capital to invest in new companies. By contrast, self-employment is the only viable form of employment for many in societies in which large segments of the population do not have enough financial resources.

Meh, (2005) argues further those employers have higher savings rates than workers, particularly because businessmen have to save more because their income is irregular (Carter, 2011). The various savings patterns between employers and employees, in turn, lead to increased assets and an increased concentration of riches among the companies throughout the distribution process. To support wealth accumulation, Quadrini (1999) proposes that former generations of wealthier families are more likely than previous generations to be characterized by people engaged in entrepreneurial activities. As the wealth accumulated in the periods of business is normally not depleted immediately, these entrepreneurial families have more resources for starting or restarting companies. These characteristics of entrepreneurial family dynamics strengthen the idea that a person has inherited wealth because initial capital is necessary for new enterprises to develop Holtz-Eakin et al., (1994 and 1994).

The argument for inheritance is important because wealthy individuals have more substantial financial resources that increase the likelihood of self-employment Fairlie & Krashinsky, (2012). They have the resources to engage in bigger undertakings before using external funding sources to overcome liquidity constraints Bhide, (2000). These characteristics of entrepreneurial family dynamics strengthen the idea that a person has inherited wealth because initial capital is necessary for new enterprises to develop Holtz-Eakin et al., (1994 and 1994).

The argument for inheritance is important because wealthy individuals have more substantial financial resources that increase the likelihood of self-employment Fairlie & Krashinsky, (2012). They have the resources to engage in bigger undertakings before using external funding sources to overcome liquidity constraints Bhide, (2000). Reduced liquidity restrictions in turn allow rich businesses to be more affordable Cassar, (2006). Tamvada (2010) also found patterns of unequal income distribution among entrepreneurs, since the highest rates in terms of consumption are those people who hire others. Thus, increasing growth can be a better way to reduce inequality than encouraging entrepreneurship, as most self-employed and small entrepreneurs earn lower profits than average workforce (Hamilton, 2000).

Likewise, Frid, Wyman and Coffey (2016) demonstrate that theory of liquidity restrictions shows that low-income entrepreneurs and moderately wealthy entrepreneurs face liquidity constraints and are much more likely to breaking away during gestation from the startup process. But once the process of gestation is over, a new undertaking has no influence on its success. These authors therefore show that, while the opportunity is not, talent is evenly distributed. In the face of rising income disparities, according to Xavier-Oliveira, Laplume and Pathak (2015), 'more people pursue entrepreneurship whatever the nature of motivations, though the majority should be driven by push factors that will improve their economy' Reynolds et al. (2005)). This argument supports further the use of different measures of entrepreneurship as the formal, informal and highly aspiring entrepreneurs are expected to achieve different results.

Cultural theory suggests that ethnic groups and immigrants have a culture-driven approach, such as a strong ethnic community membership, economic life, accepting risk, compliance with social value patterns, solidarity and loyalty, and self-employment orientation Masurel et al. (2004). These features provide an ethnic resource that can support entrepreneurship and support

ethnic self-employed people Fregetto, (2004). Ethnics often come to know the benefits of their own culture only after they arrive in the new environment: "Whether English, Suomi or Sweedish, it is an act in itself which is likely to increase a sense of cultural and national identity to a new society with alien customs and incomprehensible language" Jones and McEvoy, (1986: 199).

The differences in ethnic resources also explain different self-employment rates among equally deprived ethnic groups Waldinger et al., (1990). Cultural aspects, for instance, are especially popular in order to explain Asians' tendency to become self-employed. Many observers believe that the strong presence of Asian people in the food industry determines their participation in these economic sectors due to a predisposition of their culture Leung, (2002). However, new studies have tried to show that such hypothesis has not considered other crucial aspects of a complex phenomenon, such as job alternatives, immigration policies, market conditions and capital availability.

2.2 Conceptual Review

2.2.1 Ethnic Diversity

Economics has often proxied the Ethnic Diversity of a country using the Ethnic Fragmentation indexes that usually measure diversity as the constantly growing number of groups in a given country. They are based on the likelihood that two persons from a country belong to two distinct groups. In theory, the fractions range between 0 (all people are members of the same group) and 1 (when everyone belongs to his or her own group). Polarization indices, by contrast, measure the probability of a potential conflict between two equal groups. There were also initiatives to overcome simple disunion measures, focusing on the intersection of ethnic diversity and economic inequity or the combination of five cleavages, that is the race, language, religion, region and income. This index combines the intersection between the ethnic diversities and economic inequalities. Additional indices attempt to take account of the distance between

groups, the historical depth of ethnic divisions or consider individuals rather than groups' heterogeneity.

2.2.2 Income Inequality at Top One Percent

In defining Income, we include revenues from wages, saving-account interest, stock dividends, rent, and earnings from something for more than you have been paying for it. In contrast to weight statistics, the value of homes, inventory or other holdings does not include income figures. Inequality of income refers to the extent to which revenues in a population are distributed unevenly. Economic inequality, significant disparity in income distribution among individuals, groups, populations, social classes or countries. Understanding the Income inequality at top 1% as the inequality between income and social class is a key aspect of social stratification. Many other inequalities, such as wealth inequalities, political authority and social status affect them and are affected. Taking Income as a key determinant of the quality of life, affecting people and families' health and well-being and varies according to social factors such as gender, age, race and ethnicity.

Revenue is defined as disposable household revenue each year. This includes income, self-employment, equity income, and public money transfers, household payments in respect of income taxes and social security contributions. The household's earnings are attributable to each member, adapting the needs of different sizes of households to reflect differences.

Given the continued increase in income inequality globally over the past few decades, this issue is increasingly prominent in current public discourse and academic studies. The increasing inequality of revenues is partly due to higher top incomes between the 1970s and the 1990s Piketty Saez, (2006) and has proved to have an impact on economic growth, social capital and social cohesion Kuznets, (1955). Kennedy et al., (1998). Entrepreneurship and Ethnic Diversity, which is the focus of the paper, can also be affected by income inequality. The inequality of income between individuals is measured by five indicators. In

comparison with the cumulative proportions of income they receive in the population, the Gini coefficient varies from zero in the event of perfect equality to 1 in the case of perfect inequality.

2.2.3 Entrepreneurship

Entrepreneurship refers to the process that involves the creation of value. In this definition, the concept is observed as a change that considers the entailing of above the normal circumstance which is encountered in the process of starting up a business, and this may take into consideration other values instead of the economic ones that are known Suomalainen et al., (2016). In economics, an entrepreneur involves the ability to translate inventions into goods or services, which further describes activities carried out by the new businesses and those already in existence Suomalainen et al., (2016). The principal difficulty of the analysis of entrepreneurship is its definition of restriction. This concept is not broadly defined. Wennekers and Thurik (1999) define business enterprises as following ‘the concepts put forward by certain authors (Hebert and Link 1989; Bull and Willard 1993; Lumpkin and Dess 1996): the manifest capacities of individuals to create new business opportunities - new products, new forms of organization, new methods of production... and to bring their ideas to markets faced with uncertainty’.

Modern thinking about innovation and entrepreneurship owes what Schumpeter proposed in the beginning of the 20th Century to the theoretical perspectives and evolution. Schumpeter's thoughts on innovation and entrepreneurship influenced modern economy while being world-renowned for analysing the business cycle during capitalist change. The starting point for Schumpeter is an economy that is not expected to change (though not growth) Sweezy (1943). The capitalist economy is a "circular flow," conceived as an abstract construction that aims to illustrate the effects of a limited number of actual economic forces Sweezy, (1943). There are however suggestions that the Schumpeterian idea of innovation could result in inequality. According to the

OECD report, Innovation will increase inequality in the traditional Schumpeterian environment, as benefits only benefit innovators and possibly their customers. " (OECD, 2012). Consequently, this section defines innovation and entrepreneurship inclusive and how these relate to discussions about innovation in the South.

The decisions could be taken separately or in networks that are or are not part of the institutions. Further, Ahmad and Hoffman (2008) describe enterprise as the entrepreneurial phenomenon that is the entrepreneurial human action in pursuance of value generation, the creation or expansion of economic activity, the identification and exploitation of new products, processes or markets. Government analysts and policy makers need sound, rather comparable, country-specific statistical indicators in order to understand the entrepreneurship. In order to establish a solid basis for policy formulation and monitoring, some enterprise measures are developed by the OECD Eurostat Entrepreneurship Indicators Programme (Ahmad and Seymour 2008; Lunati, zu Schlochtern, and Sargsyan 2010).

Furthermore, GEM offers harmonized data on entrepreneurial activity, comparable internationally, and includes various undertakings based on a study, known as the Adult Population Survey. The GEM project is an important research tool that enables entrepreneurship scholars to tackle the problems of entrepreneurship measurement throughout countries. However, the operation and implementation of these measures is not ideal and can be improved, as is any other measure.

The World Bank's Doing Business Report, which contains Total Business Density, Entry Density, and Entry Rates (Klapper, Guillén and Quesada 2007; Klapper, Amit and Guillén 2010), proposes a further set of business-leverage indicators. The total business density reflects the level of business formation and is calculated as a percentage of the active population (ages 15-64) in this year as the number of registered businesses. For 101 countries, data is available. Entry

density rates are calculated as a percentage of working-age new enterprises (which have been registered during the current year). As a new registration of companies, new entry rates shall be calculated as a percentage of total registered companies (last year).

2.2.3.1 Entrepreneurship Activities in Finland

Entrepreneurship is regarded in Finland as the cornerstone of their economy, and statistics show that over 292,377 enterprises do not consider fishing, forestry or agriculture. These firms employ over 1,5 million people, and they also pay taxes to increase the financing of services every single person in this country uses (Statistics Finland, 2017). Small and medium-sized enterprises have provided Finnish people with many job opportunities throughout the 21st century. Over 160,646 jobs were created by small enterprises alone and between 2001 and 2019. In relation to these jobs, companies with a population of less than 50 employees created 81,095 opportunities.

In the total turnover of the companies within the Finnish economy, small and medium-sized enterprises account for over 57,5% of the 445 BN euros. Their GPD share is generally 40% higher than (Statistics Finland, 2017). In Finland, companies with fewer than 10 employees are known as micro-businesses, and companies with fewer than 50 employees are called small businesses. In contrast, medium-sized companies are those who employ between 50 and 249. Companies with more than 250 employees are called large companies (PwC, 2017). Overall, the proportionate figure of 93%, representing a total of 271,851 companies with fewer than ten employees, is 16,630 small businesses, a 5,7%, medium-sized businesses, which comprises 1.1% and a total of 3,214 and 0.2%, and a total of 672 firms (PwC, 2017).

Finland's government's political priority is to promote entrepreneurship. The policy is designed to guarantee "a competitive country in Finland by the year 2025, where entrepreneurship, ownership and investments are more profitable

and where work and employment in Finland are always more profitable" (Statistics Finland, 2017). In support of the policy, the government launched a program called the "Entrepreneurship Pact," which provides integrated support alongside the removal of entrepreneurial barriers (Statistics Finland, 2017).

This package, which focuses on new forms of entrepreneurship and working methods, such as a platform economy, a collaborational economy, self-employment alongside various business combinations and paid employment, was updated by the government and released in 2017. (2017). In 2012, the European Commission drafted an Entrepreneurship Action Plan in 2020 calling on Member States to pay particular attention to groups which are disadvantaged on the labor market. Such groups include young people, the unemployed, women, elderly people, immigrants and disabled people. Despite this, Finland's entrepreneurial policies have not been defined, but rather are more generic in their nature than constructed activities for these groups. Okzane (2017).

In line with the EU's 2020 targets, the Government of Finland identified national targets. Finland as a country aims to achieve a rate of employment of between 20 and 64 years with a national level of 78 percent, which goes beyond the European Union's 75 percent target (Statistics Finland, 2017). In addition, the Government of Finland is aiming at reducing by 150,000 the population of people living at risk of poverty. The promotion of entrepreneurship within disadvantaged groups and groups contributes to the attainment of these objectives.

2.2.4 Ethnic Diversity and Interest Rate

The research that aims to determine the existing relationship between economic and ethnic fractionalisation has been increasing in recent years. The study found that GDP per capita growth has a reverse relation to the degree of ethnic breakup using Narodov Mira Alas ethnic measures (Yusuf, Sumner, & Rum, 2014). The investigators argued that most African countries' economies are

poor because of the large ethnic groups who live in the same country. Some, on the other hand, live along the borders drawn by their former colonial rulers.

Ethnic fragmentation is found to be weaker when it comes to controlling other factors such as economic indicators, political stability and human capital. This is because the variables in standard growth in the regression were the transmission channels for the indirect impact of ethnic division on economic growth (Yusuf, Sumner, & Rum, 2014). It states whether the highly fractionalized societies are indirectly affected by the government's unsatisfactory performance. Although the researchers tackled this major problem with ethnic splitting and government performance indicators, they also provided the only independent variable for the regression of these indicators of ethnic splitting.

The research concluded that ethnic spread is the result of poor school achievement, quality of infrastructure and financial depth. Moreover, they have revealed that ethnic division causes higher market distortions, resulting from the black-market premium (Savelkoul, Gesthuizen, & Scheepers, 2011). A more extensive analysis has been carried out regarding the ethnic breakdown along with the quality of the government. In this research, researchers have investigated the effect of the wider range of factors on sound government performance. The researchers said that economic institutions, particularly in the public sector, encourage GDP per capita growth when good. The trial can be made possible by controlling and reducing the private influence of the government and by establishing an uncorrupted bureaucracy and the legal system to defend and enforce property rights. The scientists also noted that the government's inferior performance is demonstrated in fractional ethnic societies.

The findings also show that ethnically fractionated societies are affected by unfavorable public sector performance and in turn, economic performance is decreasing (Schündeln, 2013). The updated analysis of the above results was conducted to provide new ethnic measures, linguistic level, divided levels and religious divisions across 190 countries. The latest results are widely criticized

for not distinguishing ethnic from linguistic difference, using ethnolinguist measurements derived from the Narodov Mira Atlas. This may seem unproblematic in Africa and in Europe where ethnicity and language identify people (Schündeln, 2013). This is not true, however, for countries in South America where language terms are increasingly uniform. They speak, for example, Portuguese or Spanish, but differently in terms of ethnicity.

There has also been another investigator who repeated the regression based on their ethnic fractionality, which depends rather than linguistic differences on ethnic distinctions. They exerted complete control of the variable, which is interpreted as the means by which growth such as infrastructure quality, government consumption, education quality, and others are influenced by ethnical fractionalisation. Due to this control, the magnitude of the ethnic effect was lost and statistically insignificant, which implies that ethnic breakup again might have an indirect impact on economic performance via the channels. Leaving the distortions of the market variable, the authors discovered the existing relationship that is statistically significant, using the similar econometric specification used by Levine in 1997, between ethnic fractions along with training, depth, political stability, infrastructure quality and fiscal surpluses towards GDP. The specific narrow transmission channels, however, lead to guessing. The conjecture is the estimated effect of ethnic fractionalisation when every specific open channel of transmission suffers from the prejudices of omitted variables (Ratna, Grafton, & To, 2017).

When the channels of transmission are not well specified, the researchers did not clearly indicate the elements captured through a fractionalization measure. Moreover, the researchers could not clarify the importance of every communication channel to the development of ethnically divided countries. In addition to its severe effect on economic performance, another piece of literature investigates ethnic violence in particular civil wars. Ratna, Grafton, and To (2017) Research refers to the importance of political instability for economic

development when nations are highly ethnic wars. The authors found that the exchange of thoughts is delayed in heterogeneous societies, especially if different groups conflict. Companies cannot operate where ethnic violence prevails, as all economic activity at each level has repercussions.

Empirical research carried out by different researchers on this problem found no positive link between the incidence of civil war and ethnic division (Vermeulen, Tillie, & Van de Walle, 2012). Rather, these authors found that the high ethnic fractionalization creates security in society as the cost of coordination increases. No ethnic group is sufficiently large and strong to dominate others. Another study disregarded ethnic fractionalization and pointed to polarization among the major factors affecting the civil war. Sadly, the measure of ethnic division cannot contain ethnic polarization between the various countries. The authors based on their research indicated that the violence is less prevalent in highly fractionalized and uniform societies and the civil war impacts in cultures where the non-denied group is dominated by the ruling ethnic group (Smallbone et al., 2010). Instead of fractionalization, such cases must be measured through polarization to capture the latent danger of the ethnic conflict.

In 1997 Levine and Easterly applied the ethnic fractionation measures to the same problem, although they mentioned the potentially ethnic polarization-related effects on growth policy (Sluiter, Tolsma, & Scheepers, 2015). Easterly and Levine addressed its empirical qualifications directly, though ethnicity is known to directly impact economic growth. In 2005, Garcia-Montalvo & Reynal-Querol took the first step to assess the quantitative performance of transmission channels in which change is indirectly affecting ethnicity (Chaston, 2012). The researchers specified and estimated a comprehensive system of equations to determine the growth alongside the transmission channels, which could affect ethnic polarization and fractionalization (Vermeulen, Tillie, & Van de Walle, 2012). The researchers argued that change has a negative impact on ethnic

polarization. It leads to lower investment rates and higher consumption and the incidence of civil war.

On the other hand, the researchers' findings suggested that the ethnic fractionalisation via such channels does not indirectly affect growth. Instead, for example, the company does this directly through reducing the economic exchange of ideas. These researchers discovered that the researchers opposed the Easter and Levine estimates in 1997, which established a negative relationship between political stability and fiscal position, on the one hand, and ethnic division.

2.2.4.1 Finland's Interest Rate

The present exceptionally low interest rates encourage price stability in conjunction with economic growth in different European countries, but they also undermine retail banking profitability. In Finland's economy, the main source of bank income and net interest on payment are now under pressures from different directions which are simultaneously different. Low interest rates have resulted in the spread of credit rates alongside credit (Blinder, 2012). At the same time, the loan stocks and deposit rose at a lower rate. The low interest rates have reduced customers' debt maintenance expenditure, but this can also mask risks.

The European Central Bank has launched several measures to pursue its price stability objectives and to support economic recovery across different European countries. The fall in the key ECB interest rates forced the market's short-term interest rates to fall exceptionally below zero (Goodhart, 2013). The example is that Euribors remained in negative territory for the three months following the spring of 2015. In February 2016, the preferred rate for Finnish housing loans and in February 2016 was best known.

The interest rate cut was quickly and strongly greater than on average across other European countries than the interest paid and received by bank customers in Finland. This is because the bulk of loans to domestic and non-financial corporations is linked to the Euribor rates and bank reference rates,

which usually follow the market interest rates; however, this may be short-term (Bauer, 2019). The variable rates are inherent to half and more deposits that come from the public hands.

The profitability of financial intermediation is based primarily on the interest rate spread between loans and expenditures. The spread of interest rate between the loan stocks and the deposit as the general margin typically increases because of different relationships between the interest rate and reduces in response to the fall in interest rates. the interim rate increases (Bauer, 2019). The interest spread has historically been small for a long period regarding Finland's economy; however, since autumn 2012 it has not been significantly reduced. While this spread is expected to continue if the average interest rate on the loan stock remains lower when we look to the times to come, the banks still retain the retail interest rates along with the minimum zero level (PwC, 2017).

In this country, market-based funding from banks has recently declined, providing aid to mitigate the severe effects on the profitability of banking resulting from low interest rates. The lower return on the bonds issued by the Finnish bank reflects both the financial situation and the excellent credibility within the international investor perspective of Finland's banks (Bauer, 2019). In recent years, the share of long-term debt tools in bank funding has increased, while that of short-term debt instruments decreased, whereas the share of deposits remained virtually unchanged.

In Finland, retail bank accounts constitute a large part of the operations of the banks. The existence of such a reason has an impact on the profitability of banking on the existing margin between interest expenditure and interest income (PwC, 2017). In recent years, net revenues earned by interest were subject to various pressures. During this same period, the loan stock experienced growth at a lower rate, irrespective of extremely low interest rates. There is evidence that growth within the deposit stock remains subdued and in practice. For instance,

the household's deposit stock remained standing for four years. The interest income generated on bank liquidity buffers recently decreased when banks increased their shares in liquid assets that contain high-quality in their coatings according to the requirements of the LCR "Liquidity Coverage Ratio" (PwC, 2017).

Since the autumn of 2014, net interest income for the banking sector has been falling steadily and continuously and contracting at 5.4 percent in 2015. (Oksanen, 2017). In 2008, net interest income reached a peak of 4,5 BN Euros, with interest rates considered to be higher than the current situation during that period. In 2015, interest revenues were recorded at only EUR 2.8 BN (Oksanen, 2017). Net income was reduced on interest compared to the size of the balance sheet in the banking sector. The substantial change reflects the reduction in loans and deposits in the balance of the banking sector and the increase in derivatives that generate other revenues.

However, in spite of its operation under the challenging environment and the other European banks, the profitability of Finnish banks is generally good. The banks in Finland compensated for the lower net interest earnings by increasing other earnings that allowed the industry to increase its income by a 3.9% in 2015. (Oksanen, 2017). The growth of profits has been strongly supported by the high net income from trade, investment and net income. The net income derived from the financial and insurance conglomerates in the insurance business also provides a further boost to other income.

The lower interest rates contributed significantly to the sustained small amount of assets and non-performing credit losses. This has given the bank exceptional benefit support, but this involves a certain amount of risk (PwC, 2017). The low interest rates and the interest-only periods given by the banks to borrowers can lead to a situation in which the customers' ability to pay their debt

is weakened. Potential payment defaults will not take place until interest rates increase along with periods ending at interest only.

2.2.5 Ethnic Diversity and Income Inequality

During early antiquities, a Greek Socrates, in his words, said that "nothing is to be preferred before justice"(Chaganti & Greene, 2002). The equal distribution of income is the true dream in the heart of humanity, and it was the main reason for the outbreak of various revolutions alongside uprisings where populations lost lives while insisting on one because it was the equal distribution of wealth and also, this was seen as a sign for liberty and human respect. Basing on the formation of enterprise, the capitalist system dominating the world is generally accused of creating inequality. At the same time, there is general support and a positive mind towards entrepreneurship in the current situation.

The governments across different parts of the world in the current situation focus on the promotion of enterprise created to achieve profitable growth. In this perspective, the entrepreneurs are taken to be changing agents due to their ability to introduce new activities within the market and form businesses that, in the long run, create job opportunities and intensify competition (Chaganti & Greene, 2002). In the time when all this happens, a significant question that concerns income inequality also comes in. The situation appears like the increase in the growth of entrepreneurship facilitates the rise in income inequality.

One has to note that the act of pursuing and engaging in entrepreneurship activities can easily be affected by the nearby demography and the socioeconomic circumstances taking into account a variety of factors that are capable of promoting the motivations, actions, and intentions of entrepreneurship by individuals that are dwelling in a particular country (Ratna, Grafton, & To, 2017). Socially, the country's structure and social development are crucial factors in influencing its entrepreneurial activity. Such a condition is known as Schumpeter's "social climate." Schumpeter's concept considers the institutional,

sociological, and economic climate that characterizes a particular society in which entrepreneurs have the liberty to carry out their activity.

2.2.5.1 Income Inequality in Finland

In Finland, there has been a 4.5 growth rate of wealth among the top 1 percent group, but in practice, there are no changes in the bottom of the same country, Blinder, at 90 percent between 1987 and 2016. (2012). Statistics show that, after the outbreak of the financial crisis in 2008, inequality within wealth had continuing growth in the country. In recent years, income disparities have been seen in order to increase Bauer substantially (2019). The results of "State of Unqualities" in 2020 within Finland were presented, and the report was published by the KaleviSorsa organization in August 2020. Based on the latest statistics, this report offers an overview of racism, socioeconomic inequalities and gender discrimination in Finland. It is important to talk about these inequality dimensions together since many are interrelated. The information is provided to diversify and improve social debate about inequalities. Racism, for example, cannot be distinguished from inequality in income, training or wealth.

A senior economics researcher known as Marja Riihela compared revenue development between 1966 and 1990 and between 1990 in his Telford report (2019). In the period between 1966 and 1990, incomes disparities have decreased, according to the report. As the payment increased significantly, the revenue was reduced to smaller parts. The level of development was different from 1990 to 2017 because the higher income helped increase the income level more significantly. From 1966 to 1990, the revenues of those on the lower decile increased 4.9%, and the growth in the top-level income increased by 1.9%, Kristof, respectively (2014). During the period from 1990 to 2017, there was an increase of 0.8% in the bottom part; however, the 3.6% increase in revenue was generated by the top decile.

Since the 1990's and beyond, growth has largely been the high decile, indicating an unfair earnings distribution as reported by the journalists. In wealth, the problem is seen as the same and, following the outbreak of the financial crises of 2008, the rate of wealth inequality continued to grow. In this research, it was observed that shareholdings of the richest 1% increased from 8% to a 13.5% share between 1987 and 2015. In this same time period, the share belonging to the lowest 90% fell from the 65% to the lowest 55% Kristof (2014).

The tax system that supported the increase in income and wealth inequality in the 1990s is still a similar system in the research carried out. The tax system structure in Finland therefore continues to provide strong income and wealth growth support. It is recommended that income and wealth disparities be reduced, and separate income and capital taxes be stopped. The action will also involve making progress in the tax system in line with revenue growth.

2.2.5.2 Discussing Inequality within Finland

The rate of revenue inequality is low, while social mobility within Finland is respected to be high, in comparison with other countries worldwide. However, this involves disadvantages and individuals and observes the persistence of intergenerational inequalities in families with accrued disadvantages. Blind, Blind (2012). The reports show that the inequalities between wealth in Finland have grown since the beginning of the 1980s just in different parts of the world. An experience of economic inequality in Finland appeared at the start of the 1990s. From the 1960s to the end of the 80s, Finland's economy encountered a rise in benefits that led to a significant decrease in income inequalities, leading to significant growth of the Finnish economy.

The recession outbreak in the early 1990's provided an important turning point in Finland's economic development. Mass unemployment has been a manifestation of a lot of pressure on the social security system in the country, resulting in the social benefits deductions that are fundamental during the

recession outbreak and following its end in the mid-nineties of Goodhart (2013). During 1993, the separation of the taxation of earned and capital income also flattered, and this period was in contradiction with the progressive tax on income levied on capital ads. The decrease was also flattered.

The introduction of this reform meant that owners of capital were able to benefit from rapid economic growth in the late 1990s. However, there was a relative and absolute loss for those who are dependent on social benefits. Finally, income inequality grew fast, and at the end of the 1990s the Goodhart rates fell dramatically (2013). During this time, it was replaced by the new ideology that created competitiveness in the global market to build a better welfare state.

The steep increase in income inequality in the 2000s decreased and inequality within income during the 2000s was found to be intermediate. However, since the 2008 Goodhart financial crisis, this status has never returned to the level that caused the growth of the inequalities in wealth (2013). The main reason was because the capital income tax and revenues were separated, thus allowing the accumulation of wealth together with different taxation, based on the income type, to be accumulated rather than the amount. Finland's taxation system is progressive only in terms of income taxation, which only accounts for 7% of all state tax revenues. Considering other taxes such as social insurance tax and consumption tax, it is strangely that Finland's economic tax system, which is the richest Kristof, is regressive in 1% of its population (2014).

The Finnish tax system is being constantly debated and is considered extraordinarily hard in taxing the rich and in income distribution. The position is actively promoted by the influential Finnish Business and Policy Forum and Finland's tax policies are called "tax-pleasing" by its leaders The (Statistics Finland, 2017). This kind of highly voiced exaggeration has formed a constant, controversial debate about wealth inequalities and income. The reason is that any suggestion aimed at reforming the tax system to become redistributive finds

strong opposition, abruptly represented by different groups of interest representing the rich. There is no difference between Finland and other countries. In certain countries, these trends are also evident.

Moreover, income and wealth inequalities correspond to other types of inequality, for example education and the health sector. The levels of education and income relate to different aspects of health. It is found that the difference in the life expectancy among Finland's richest and poorest people is almost ten years old (Finland, 2017). This difference is estimated to be 5 years when it comes to women. In the middle of the 1990s, life expectancy increased in all groups. The disparities, however, have persisted and have grown slightly. Although there is political will to reduce socio-economic richness inequalities, these have persisted in Finland and have remained stagnant since the 1970s.

The universal measures designed to improve public health have been successful. However, those who are richer, and others with high education, have greatly benefited. Employees can access their employers' private healthcare, while retired employees, unemployed people and children depend on public health care. Nevertheless, the main reason behind health inequalities is the general social inequities concerning unemployment, living standards, homes and poverty, rather than a result of Finland's health care system. However, municipalities play a key role in the development of policies on the above-mentioned issues that consider health and social services. The current national health and social reform was intended to transform the social organizations of all 300 communities, 21 regional governments and the town of Helsinki by the year 2023, along with the medical services. The main objective of the reform is to improve equality within access to services because now, although national laws are binding, the level of services in access and quality is different amongst municipalities. If the reform is possible and if it has occurred, its fixed objectives on the prevailing equality can be fulfilled.

As far as education is concerned, the general level of education has continuously increased over decades, and it is reported during the 1970s que only three quarters of Finland's population have primary school level until 2018. The overall rise in education involves a higher level of social mobility. In the 1990s, universities were created that primarily taught applied science, enabling secondary-school students to graduate. The universities of applied sciences have helped to narrow the educational gap between parent children and university (PwC, 2017). The regional perspective is so interested as FSUs have a network throughout Finland, which includes medium-sized cities. The higher learning facilities are so vital to cities and neighboring regions as this ensures that young people have a particular level of attraction and offers skilled people to the internal labor market. However, one must understand that those challenges do not stop in higher education only, and the lower levels of primary and secondary education are responsible for the municipalities. The dropping out risk in upper secondary education generally affects those that started in the vocational education, training, and the young people who speak foreign languages. More so, the student's risk of not completing their upper secondary education level is observed to progressively increase for the young immigrants compared to Finland's general population (PwC, 2017). In education, male students want to take part in vocational training while young women want to go to high school. Therefore, socioeconomic disparities and the disparities arising from different ethnic, language and gender must be balanced by municipal education systems.

2.2.6 Relationship Between Ethnic Diversity, Entrepreneurship and Inequality

Inequality in income has political and financial consequences such as slower GDP growth, reduced mobility of income, greater domestic indebtedness, polarizing policies and increasing poverty rates. A statistical measure of distribution intended to represent income or wealth distribution is the Gini coefficient, also called Gini index or Gini ratio. The Gini coefficient was

developed in 1912 and is the most widely used measuring for wealth or income inequality, by Italian statistical scientist Corrado Gini. With 0 being the perfect equality and one representing perfect inequality, Gini coefficients range from 0 (0 per cent) to 1 (100 per cent). A higher Gini coefficient is more unequal. The Gini coefficient would be zero if every citizen in a nation had the same income. The Gini coefficient would be 1 if one resident earned all revenues in a country and the rest earned zero. Ethnic diversity may be related to inequality levels positively or negatively.

A positive relationship between income and ethnic diversity has various possible explanations. A theoretical framework that explains how ethnic prejudice and discrimination are associated with Becker (1957). Becker (1957) argues that non-discriminatory firms that are more open-minded could force discriminators to leave business. Closing of businesses may in turn lead to a loss of income and unemployment, which in turn increases the prevalence of the incidence of poverty among certain categories of ethnics. Ethnic and linguistic fragmentation can specifically lead to discrimination in the workforce and occupational separation, leading to a direct loss of income (Gradín et al., 2010; Sawhill, 1976).

Ethnic fragmentation is associated to slower economic growth and poorer government policy performance. It is expected to contribute to poverty or to prevent attempts to tackle poverty, including poor schooling, slower financial development, less physical infrastructure investment and greater distortion of foreign exchange rates (Easterly and Levine, 1997). Ethnic diversity is likewise linked to poorer governance and institutional quality (Alesina & Zhuravskaya, 2011). The prevalence of poverty is higher for poorer institutions (Chong & Calderón, 2000; Perera & Lee, 2013). There is also evidence of ethnic diversity having a negative effect on public goods provision (see, e.g., Alesina et al., 1999; Miguel & Gugerty, 2005). The mechanism is that the appropriate types of public goods are often impossible for different ethnic groups to agree on, resulting in

fewer funds for public goods (see Miguel, 2006). Inadequate public goods could lead to increased inequality, leading to greater poverty in turn.

Moreover, an inherent hierarchical system characterizes ethnic diversity, which labels certain groups (e.g., ethnic minorities) as less than other groups (Awaworyi Churchill et al., 2015). These labels also promote economic and social inequality and contribute to increased poverty.

A broad range of literature suggests that ethnic diversity, especially trust and social networking, is negative for social capital (Alesina & Zhuravskaya, 2011; Dincer, 2011; Leigh, 2006; Sturgis et al., 2011). Social networks play an important role in promoting collective action and reducing poverty. One chance is that different ethnic groups don't want to cross ethnic lines and that this leads to weaker collective action, including collective action to reduce poverty (Miguel, 2006). Another possibility is that Community social penalties stimulate collective action, but they are less common in ethnically diverse communities where social interaction is less common between ethnic groups (Miguel & Gugerty, 2005).

Otherwise, microfinance loans are often administered through group lending schemes to reduce costs and mitigate problems of asymmetric information and adverse selection (Stiglitz, 1990; Stiglitz & Weiss, 1990). Karlan (2005) suggests that cultural similarity attracts the members of the group. Due to the socio-economic status of the poor, formal guarantees are often not practical, and thus credit allocation is based on confidence (Fafchamps, 1996). In fractional communities' confidence is eroded. As a result, financial exclude occurs with lower confidence in fractionalized societies because potential buyers cannot build potential borrowing networks. The poor's failure to earn loans contributes to increased poverty.

Likewise, confidence is a major factor in networking and offers diverse opportunities for labour markets (Fafchamps, 1998). Existing literature has shown that social networks can offer better-connected actors' economic benefits

by providing imperfect information (Fafchamps, 1998; Kranton, 1996). This information circulates more effectively among social networks when there is privileged information about opportunities. Because social networks depend on trust and confidence in more fractionalized societies is reduced, the workforce's opportunities are likely to decrease, contributing to higher poverty.

However, the economic results of ethnic diversity should not always be poorer. Diversity of ethnic groups can lead to higher standards of innovation. For example, Fafchamps (2000) argues that ethnic diversity could increase local entrepreneurs' talent pool and thus improve their quality. If this happens, ethnic diversity could increase individual income and thus the effects of ethnic heterogeneity on poverty could be expected. Ethnic diversity, however, is linked to higher income and societal inequality (Dincer & Lambert, 2012; Milanovic, 2003), which is argued to exacerbate poverty (see, e.g., Janvry & Sadoulet, 2000; Ravallion, 2001).

Entrepreneurial theories connecting ethnicity with enterprise also concern the link between ethnic diversity and poverty. The theory of ethnic enclaves suggests that co-ethnic groups are often concentrated in geographical areas and related to specific economic activities for which they are known (Wilson & Portes, 1980). Consequently, various ethnic groups dominate certain companies and businesses. The Ewes and Fantes in Africa, for example, are the fishing partners in Ghana's Volta and Central Regions, in Kenya, who dominate the industry and in Kenya, as well as the Kenyan Asian fishermen who dominate textile industries. Each ethnic group has different cultural values which may influence productivity and others in different locations; (Hofstede, 1984; Sowell, 1981). In particular, the ethnic groups, as well as social institutions, have different cultural values and can promote entrepreneurship and innovation on several levels (Ibrahim & Galt, 2011; Wilson & Portes, 1980).

Therefore, inequality can affect result in the link between entrepreneurialism and ethnic diversity. If people are bound by their ethnicity in

particular occupations, and failure to work with people from other ethnic groups, ethnic diversity can exacerbate poverty, especially in cases where economic activity is not productive. On the other hand, it may increase productivity if individuals of different ethnic groups agree to work together, as entrepreneurial skills from different ethnic groups are harnessed. Potential cooperation innovation and productivity resulting in poverty reduction and increased income can generate higher productivity.

2.3 Literature Review

Earnings inequality reflects the unequal distribution of national income among citizens. In the face of too much inequality, socioeconomic conditions such as infant death, crime and opportunities for social mobility are deteriorated (Wilkinson and Pickett 2009; Stiglitz 2012). Moreover, too little inequality exacerbates the problems of free riders and workers, both of which can have adverse socio-economic effects (Cornia, Addison, and Kiiski 2004). In the case of countries which are still industrialized due to the prevalence of unproductive labor, income inequality is usually low according to Milanovic, (2011). Then inequality rises as production work comes, and afterwards drops again as countries become richer and part of the wealth is redistributed by means of taxes and social transfers, during the beginning of the industrialisation (Milanovic 2011).

The curve of the Kuznets (Kuznets 1955, 1963) usually suggests that inequality in revenues is good for growth (Aghion, Caroli, and Garcia-Penalosa 1999). The first to suggest a non-linear relationship between income inequality and revenue per capita was Kuznets (1955). He suggested that income inequality coincides with economic and industrial development along an inverted U-shaped Road. His hypothesis therefore says that income inequality increases with economic development initially, but then it falls into advanced phases of

economic development after reaching its peak. Note that there is no common agreement between economic growth and income inequalities regarding potential causality (direct or reverse) (Kuznets 1955; Okun 1975; Mankiw 2013).

Another strand of literature is that the lack of inequalities induces lack of economic stimulus (Mirrlees 1971; Okun 1975). On the other hand, too much inequality (crime, tension, social unrest), which exacerbated poverty and stalled growth, had a detrimental effect on economy and society (Persson and Tabellini 1994; Deininger and Squire 1998; Aghion and Garcia-Penalosa 1999). Persson and Tabellini (1994) argue, for example, that inequality in income harms growth because it means greater redistribution and fewer production and economic growth incentives. Although there are different circumstances and incentives, people may wish to achieve higher standards of living.

Carsrud and Brannback (2011) argued that, beside individual motivations and cognitive factors, achieving higher standard of living is often constrained by contextual conditions. A growing body of research has considered the prevalence of income inequality to be a contextual barrier. As it contributes to a relatively low level of trust, ability, social mobility, physical health (Benabou 1996; Mo 2000; Stiglitz 2012; Corak 2013; Seery and Arendar 2014; Van Zanden, Baten, and Ercole 2014) it is regarded as disincentive for human development and other social challenges (Wilkinson and Pickett 2009). Countries with relatively high-income injustices, insider privileges and unequal opportunities are also more frequent (Birdsall 2006; Stiglitz 2012; Corak 2013; Seery and Arendar 2014).

Nel (2006) has shown that the less fortunate at the extreme level 'persistently deny opportunities for economic improvement throughout generations.' These arguments also coincide with Smith's view of the eighteenth century (1790): differences in socioeconomic rank not because of differences between individual competences and abilities but because of "bornins and wealth." Instead, entrepreneurship has been suggested to be a potential path

towards social and economic growth (Quadrini 1999; Bruton, Ketchen, and Ireland 2013; MANKIW 2013; Tobias, Mair and Barbosa-Leiker 2013). In a relatively high level of income inequality, rich individuals have strong incentives to maintain inequalities. They promote mechanisms to reduce access to education and redevelopment (Acemoglu and Johnson in 2005) or promote regressive taxation and rent.

Ragoubi and S. El harbi in 2014 (Bourguignon and Verdier in 2000; Corak in 2013; Seery and Arendar; Van Zanden in 2014, Baten and Ercole) (Stiglitz 2012; Seery and Arendar 2014). Otherwise, the advantages of social mobility can be found by poorer people because of significant obstacles to achieving their will (Fujiwara-Greve and Greve 2000; Corak 2013). Several people are dismayed and wonder if a lack of 'equality of opportunity' (Corak 2013), genetic heritage (Sacerdote in 2007; Benjamin, Cesarini, and Chabris in 2012), or 'born and fortune' have dictated their fate (Smith 1790).

However, Mankiw (2013) argued that, together to successful experiences from others, the growing spread of knowledge throughout the world leads to 'animal spirits,' not as a result of weighted average quantitative benefit multiplied by the quantitative probabilities' Their results are spontaneous urgency for action (Keynes 1936). To become a contractor can be a way to pursue these animal spirits (XavierOliveira, Laplume, and Pathak 2015). The relatively high level of income inequality could cause a social turmoil (Xavier-Oliveira, Laplume, and Pathak 2015). This turmoil can lead people to do everything they can to move up the socioeconomic ladder, especially from the poorer households (Quadrini 1999; Sachs 2003, 2005; Bruton, Ketchen, and Ireland 2013; Pathak, Laplume, and Xavier-Oliveira 2013, 2014; Laplume, Pathak, and Xavier-Oliveira 2014).

Although Locke (2000) and Shane, Locke, and Collins (2003), acknowledged the relevance of contextual factors, argued that the combination or integration of motivation and cognition ultimately results to any human action.

He claimed that individuals tend to become entrepreneurs due to the need for self-employment, or to identify an attractive business opportunity, and to act on it. Reynolds, Hay, and Bygraved (2002) and Lippmann, Davis, and Aldrich (2005) argued Carsrud and Brannback (11), who suggested that those who needed businessmen should be driven by survival needs and those who wanted to survive, should be distinguished from opportunist entrepreneurs. Need businessmen are driven mainly by tangible external motives such as food and shelter revenues and entrepreneurs tend to get motivated by inherent motivation, such as a personal interest in entrepreneurship, a need to achieve or stimulate their activities (Carsrud and Brannback 2011). Lippmann,

Davis and Aldrich (2005) report that, while having a greater impact on need rather than opportunities, every form of entrepreneurship is likely to be spurred to greater income inequalities. These authors focused on how inequalities in distribution of resources affect entrepreneurship. Interestingly, countries with higher incomes inequalities have higher business activity levels. In addition, they submitted that high inequalities could demonstrate that countries with surpassing capital investments in new enterprises in the top end of the revenue distribution. In contrast, they claimed that self-employment could be the only viable job form for many in countries in which large segments of the population have few financial resources. Based on a multi-level analysis of income inequality, Xavier-Oliveira, Laplume and Pathak (2015) provided a new insight into the different roles of human and financial capital in different kinds of entrepreneurship. The analysis provided a new insight. They showed that as inequality increased, both forms of capital became weaker impediments to the enterprise of necessity, while only financial capital became a stronger predictor for the enterprise of opportunity.

Such studies are primarily used in a national survey for socioeconomic on the expenditure of households to measure inequality within the per-capita spending. The reason why consumption data is used rather than income data

includes the household expenditure predicts better the welfare status than income since the cost of household does not fluctuate much during the short-run period than income for families. The second factor is that the consumption expenditure of households in countries like Indonesia that are still developing can rely upon more than income.

Some research was carried out to discover the existing correlation between ethnic diversity alongside inequality. The results obtained show that demographic factors influenced ethnic minorities to have living standards that are lower than the ethnic minorities living within the nation of Vietnam. Whereas, Gradin (2015), in his research about the government of China, found out that ethnic minorities possess a higher poverty incidence than the other groups since they prefer living in mountainous areas and places with lower rates of development. Therefore, these receive no benefits associated with economic growth. In the nation of Vietnam, the ethnic minorities are encompassed with high poverty rates because their household attributes are unfavorable, so their education, dwelling places, etc. All these happen because returns obtained by ethnic minorities are lower when compared with other groups.

The survey was conducted by Alesina and La Ferrara (2015) to find out the correlation between the concepts of ethnic diversity alongside economic performance. During this study, the researchers assessed the effects of ethnic diversity on financial performance based on policy alternatives. The researchers said that ethnicity highly affects the willingness to interact because of limited information alongside different productivities. These also argued further that heterogeneity result in a reduction in public goods' provision since groups that compete have no thought of collaborating. Empirical evidence reveals that the existence of these effects is intentional. Heterogeneity is, however, thought to possess the impact that is different within countries with the democratic nature of the rule.

Dincer and Hotard (2011) assessed using data collected for 10 years in 58 countries concerning the relationship between ethnicity and religious diversity alongside income inequality. The researchers mentioned they agreed about a strong relationship between ethnic diversity and religion and the resultant social misunderstanding which causes inequality in income. These further discovered that religious diversity and ethnicity are observed to possess a U-shaped inverted relationship with inequality in pay. The explanation is that religious diversity and ethnicity explain the percentage of 80% variation of the Gini coefficient in controlling the included variables.

Chadha and Nandwani (2018) assessed the correlation between inequality and ethnic fragmentation by providing public goods within India by using data from the national survey sample, which they collected on the expenditure on income. By considering different factors, for example, ethnic groups, the researchers discovered that horizontal inequality within ethnic groups poorly influenced the general expenditure inequality. In contrast, inequality was mentioned to be higher across the fragmented districts.

Arifin et al. (2015) carried out research that was the first to measure ethnic diversity and province and the district level within Indonesia while using data collected during the population census of 2010. The researchers discovered that the country is ethnically fractionalized relatively as the index of ethnic fractionalization is 0.81, and the index for ethnic polarization was also measured and was 0.52. Muller (2016) basing on a life survey for families in Indonesia, discovered that ethnic diversity levels are smaller than the economic inequality, which remains the same whether they use fractionalization, horizontal inequality, or polarization.

Muttaqien et al. (2018) used the IFLS of 2014 to 2015 and analyzed the effect imposed by ethnicity on income polarization within Indonesia. They found out that their race affects income polarization in the case of independent variables formed part of the estimation. In contrary to the findings, the effect can be

reduced by including more covariates and turn out to be less significant when regional characteristics are controlled.

Most studies conducted on ethnic diversity alongside economic inequality involve the use of cross-country data. However, these studies have weaknesses because each country possesses its ethnic characteristics and financial condition. The literature has revealed studies that examine fully the effects imposed by ethnic diversity on expenditure inequality in Indonesia. The country has much data concerning economic and demographic and uses the same ethnic classification across the regions.

Empirical studies that were carried out on this problem by various researchers discovered no positive correlation between the civil war incidence and ethnic fractionalization (Vermeulen, Tillie, & Van de Walle, 2012). Instead, these authors found that ethnic fractionalization, which is high, creates safety in the society as coordination costs are more heightened. No ethnic group is large and strong enough to exercise dominance over others. Another study despised ethnic fractionalization and mentioned polarization among the significant factors that influence the civil war incidences. Unfortunately, the ethnic fractionalization measure cannot capture the ethnic polarization among different countries. The authors basing on their research mentioned that in highly fractionalized and homogeneous societies, the violence is less, and civil war incidences are high across cultures where the non-negligible group is dominated by the ethnic group that is ruling (Smallbone et al., 2010).

Such cases need to be measured by polarization instead of fractionalization to capture the ethnic conflict's latent danger. In the year 1997, Easterly and Levine applied the ethnic fractionalization measure to study this same issue, despite mentioning the potential effects associated with ethnic polarization unto policies that affect growth (Sluiter, Tolsma, & Scheepers, 2015). Although ethnicity is known to directly impact economic growth, Easterly and Levine dealt with its empirical qualification directly. The first move in assessing

the quantitative relevance of transmission channels in which change is affected indirectly by ethnicity was carried out by Garcia-Montalvo&Reynal-Querol in the year 2005 (Chaston, 2012). The researchers specified and also estimated the comprehensive equations' system that aimed to determine the growth alongside the transmission channels by which ethnic polarization and fractionalization can affect change (Vermeulen, Tillie, & Van de Walle, 2012). The researchers made an argument and said that change is negatively affected by ethnic polarization. It causes a decrease in the investment rate and increases public consumption and civil war incidence.

In contrast, the findings of these researchers suggested that growth is not indirectly affected by ethnic fractionalization via such channels. Still, instead, it does this directly, for example, through reducing the exchange of ideas within the economy. These researchers found out that these researchers contrast with the Easterly and Levine estimates that were carried out in the year 1997 as these provided a negative relationship between political stability and fiscal stance on one hand and ethnic fractionalization.

Chapter Three

Research Methodology

3.0 Introduction

In this part, the research reveals the methodology that is to be used to explore the topic and its objectives. The section involves various factors, including the research method, research sample, general information needed, data collection methods, methods and procedures for estimating the analysis.

3.1 Research Method

A panel data is used for the research. The panel data includes observations of multiple events over multiple periods obtained for various entities. We can examine the data over time across countries using panel data. There are many advantages to panel data. One can control individual heterogeneity by using panel data, for example. Transversal and time series studies do not control heterogeneity, which may prejudicially affect results. In our case it could also be other variables that are country-invariant or time-invariant in a country to analyse the effects of income inequity on ethnic diversity and entrepreneurship.

Panel data can manage invariant variables for this country or time. By combining time series and cross-section observations, the panel data displays more detailed data. Our study will benefit from the fact that the selected countries will have information over time on economic growth, income inequality, and other economic growth determinants. In addition, panel data have the advantage of giving a better picture of dynamic adjustment as distinct from cross-section and time series. In other words, panel data are better for identifying and assessing effects that cannot be detected in pure cross-sectional data or in pure time series. Finally, data models can be designed and tested for more complex behavioural models than just cross-section or time-series information (Baltagi, 2008.)

Data from the panel also have some design and data collection constraints that could be problems. Selectivity issues and measurement error distortions may also occur. In addition, a further limitation of panel data could be short time series

dimensions. The empirical study is based on panel data from 2001 to 2016. The used dataset is highly balanced. In other words, for all the variables used in the study every country contains data for all years. The database and other sources are collected from Finnish statistics. Some years, however, do not contain enough data, otherwise their cause from the sample size will be excluded. Therefore, we dropped these years to get robust results, and we ended up with the 17 Years (2001-2016) of Data for both the United States and Finland.

3.2 Research Design

The research uses panel data for the time period 2001-2016 to investigate the relationship between Ethnic diversity, Entrepreneurship income inequality alongside some control variables at the macro and microeconomic level. At the beginning we start with the simple main model:

$$TEA_{it} = \alpha + \beta_1 X_{it} + \beta_2 TEA_{it} + \gamma Z_{it} + \mu_i + \epsilon_{it}$$

Where, the subscript I (=1..., n) represents country and t (= 1,...,T) the period (years). X symbolizes the Gini coefficient, Z_{it} denotes set of control variables in their stationary form such as the first difference of real GDP, human capital, Education Quality, inflation rate, fertility rate, market distortions; μ_i represents the unobserved country-specific fixed-effects such as country's location, demography, culture that needs to be controlled before we explore the impact of explanatory variables on Total Entrepreneurial Activities to avoid misspecification of the model; and ϵ_i stands for the error term.

3.2.1 Source of Data Collection

The sample dimensions include the USA, Finland and based lined with the twenty-one other developed countries choosing randomly among OECD states and covered a period of 2001 to 2016. The data sets were obtained from the World Bank's annual Doing Business Report and the World Enterprise Monitor (GEM) as well as from other consolidated dataset as the Finnish Statistical

(tietokannat.fi) Database, World Income Inequality Database – WIID, OECD’s i-Librarys and the World Bank.

The objective is to locate, evaluate and interpret evidence from the past from which the present can be explained and the future visualized. A full balanced panel dataset from 2001 to 2016 has been obtained. Sample data on ethnic diversity for the period was extracted from the Historical Index of Ethnic Fractionalization (HIEF), which provides an estimated annual ethnic fractionalisation from 1945 to 2013.

The statistical limitation of the sample is considerable and is a natural effect of the use of GEM data. Given that GEM countries are expensive, developed countries will be able to afford the cost of conducting these surveys more likely (Aidis, Estrin, & Mickiewicz, 2012).

3.2.2 Hypothesis Testing

Based on the conceptual framework that entrepreneurship leads to greater income inequality, and in brief, on the RGR theory, the decalcification model and mainly on the above-mentioned argument, three hypotheses are dealt with:

H₁: There exist a positive relationship between ethnic diversity, income held by top 10% and Entrepreneurial Activities in both countries.

H₂: Income held by the top 1% of population in the country has a positive effect on entrepreneurial activities in both countries.

H₃: Ethnic diversity has a positive effect on Entrepreneurial Activities in both countries.

These hypothesis ere adopted from the assumptions that extend the findings of Lecunás (2014), which suggest that the extent of entrepreneurship is moderately unequal. However, the three hypotheses, which differs from Lecuna (2014), explain income inequalities by using three distinct measures enabling business activities (Macroeconomics, Institutional and Social)., instead of separate variables. The results presented here are also based on a more comprehensive

database, including a Quality Measure of Business (high-aspiration entrepreneurs). The three measures of entrepreneurship are employed because the results observed may vary between various types of enterprise activities, according to the literature.

Furthermore, hypotheses serve as a counterpoint to Choi's 'optimistic' criticism, in 1999, of Kuznets's (1955) inverted U-shape Theory that 'income inequality rises until a critical level of income is reached, following which inequality starts diminished' (Dobson & Ramlogan, 2009, p. 226). This study also reviews old views about entrepreneurs. The 'merchants' were entrepreneurs who made the archaic trade possible according to the Kontošić Pamić and to Belullo (2018, page 1592). In Babylon, for example, entrepreneurs have managed the palace and its armed forces, and entrepreneurs controlled the manufacture, trade and credit of handicraft in ancient Greece and Rome entrepreneur's have historically been deemed weak and corrupt, that results in wealth acquisition intended to constantly keep up propagates them to the top percent income holders.

3.3 Methods and Specification

This study observes the effect of ethnic diversity and inequality at the upper-bound on entrepreneurial activities using a multiple regression analysis over a period of 18years. The regression model that we estimate is provided by:

$$TEA_{it} = \alpha + \beta_1 X_{it} + \beta_2 Y_{it} + \beta_3 \gamma_{it} + \gamma Z_{it} + \mu_i + \epsilon_{it} \dots \dots \dots (1)$$

where i and t refers to country and time variant respectively, γ_{it} is the independent variable proxy by Income inequality at the upper-bound, α is the constant term, X_{it} is a variable of ethnic diversity measured by index of fractionalization, and Y_{it} is the global inequality index (GINI).

The dependent variable TEA_{it} represent annual entrepreneurship activities proxy by Total Entrepreneurship Activity (TEA) and Z_i refers to a set of control variables.

3.3.1 Definition of Variables

3.3.1.1 Dependent Variable

The TEA shows the percentage of adults engaged in entrepreneurship who are either entrepreneurs or new business owners. The TEA calculates the proportion of entrepreneurship driven by both opportunities and necessities. Although certain scholars sought to distinguish these measures by examining entrepreneurship rates, other scholars argued that the distinction is mainly irrelevant, as 'people can build high-growth, job-creating, wealth generating firms even if their motivation to start a company is a necessity'; Shane, (2009).

The TEA offers benefits since the TEA focuses on personal and formal as well as informal work. GEM studies examine grassroots behaviours, like the Entrepreneurship Eurobarometer, which was developed by the Gallup organisation; but GEM studies cover more countries over a more extended period. This approach provides the entrepreneurial activity with a more detailed picture of the activities of other firms, including the ability to explain the different behaviour patterns that exist between formal and informal entrepreneurs and, hence, accounts for the non-significant pairwise correlations with high-growth tax-declaring start-ups (the correlation coefficients are overall relatively weak, which is a good indication that the three independent variables do not present multicollinearity issues).

3.3.1.2 Independent Variable

As the dependent variable, Inequality proxy by the Gini coefficient (Gini) Ethnic Fractionalization Index HEFI, Income held by top 10% of the country and other control variables as described thus:

3.3.1.2.1 Income Inequality

In many studies and contexts, the Gini index has been used and validated. The Gini index is used to study gross insurance premiums in Croatia, for example by Jakovcevic, Dumičić and Ankalirovic (2017). Gini coefficient Income inequality

is presented as the Gini coefficient, which measures the degree of inequality in the distribution of the income within a country. A Gini coefficient that is equal to zero expresses perfect equality and a Gini coefficient that is equal to 100 expresses maximal inequality. The Gini coefficient data represents a compilation and adaptation of Gini coefficients retrieved from nine different sources in order to create a single “standardized” Gini variable (WB). Gini coefficient is widely used in the literature (Barro, 2000 and others)

3.3.1.2.2 Ethnic Diversity Index

As a variable for ethnic diversity, this study uses ethnic fractionalization index (efi) or ethnic polarization. Values of these indices are obtained from Arifin et al. (2015). The choice of chosen the HIEF dataset is because its largely based on an ethnic, rather than linguistic, distinction between groups. In the HIEF dataset, the degree of ethnic fractionalization has been calculated based on the annual percentage of ethnic groups in each country using the most universally applied formula in the empirical literature which is a decreasing transformation of the Herfindahl concentration index measured by:

$$EF_{ct} = 1 - \sum_{i=1}^n S_i^2$$

where EF_{ct} is the level of ethnic fractionalization in country c at time t , i indexes ethnic groups, and S_i is the proportion of the population in unit c belonging to ethnic group i ($i = 1, \dots, n$) at time t .

As described above, the ethnic fractionalization index for a country at any given year ranges from 0, where there is no ethnic fractionalization in the country and all individuals are members of the same ethnic group, to 1, where everyone in the country belongs to his or her own ethnic group.

Meanwhile, the following variables are included as control variables in their difference form.

3.3.1.2.3 Control Variables

In terms of the macroeconomic environment, our specifications used the following five variables: income, unemployment, poverty, inflation and investment. The GDP logarithm is used to measure revenues. PIB (current prices in U.S. dollars). The market exchange rate in national currency is used to convert the GDP values into USD (yearly average). Unemployment refers to the overall percentage of unemployed people. The unemployment rate can be defined by national definitions, harmonized ILOs or harmonized OECD definitions. Poverty is a percentage of households who eat or earn less than the level of poverty per person. The default poverty rate is \$1.9 per day in 2011.

Investments are expressed as a ratio of total investments in local currencies and GDP in current local currencies. The total value and change in the inventory and acquisition of a gross fixed capital formation and of the less valuable disposal of one unit or industry measure investment. Investment

According to Berg and Sachs (1988) and Sachs, those countries with extreme income inequality, *ceteris paribus*, may be subject to "bad" macroeconomic policies (1989). Of the five macroeconomic controls tested, poverty is likely the most important. Poverty. The strong and intimate relationship between poverty and inequality between Mookherjee and Ray (2010). Faches' pay against poverty is high in comparison to unqualified salaries. Therefore, in a society which is poor enough (but equal) in a single generation, a high degree of inequality could suffer, which would then be strengthened by Mookherjee & Rad (2010). Another scholar's previous poverty analysis can be extended to cover Mookherjee & Ray's initial inequality (2010), with the Gini variable being twice overdue for one and two periods.

Following Lecuna and Chávez, in 2018, World Bank global governance, in addition to macroeconomic controls and initial inequalities In addition to macroeconomic controls and initial inequality, following Lecuna and Chavez (2018), five government (form) institutional controls have been included in

Global Bank Indicators of Governance (WGI). These indicators include corruption, the rule of law, political stability and nonviolence and property rights.

Controlling corruption reflects perceptions of the extent to which public power is used for private profit, including both small and large-scale corruption. The rule of law reflects the extent to which officers have confidence and comply with societal rules and the chance of crime or violence, especially the quality of enforcement of contracts, rights to property, police and courts.

The extent of national participation, freedom of speech, freedom of association and free media, reflects voice and accountability. Political stability reflects the likelihood that the government may be destabilized or overthrown by controlling or violence, including politically motivated violence and terrorism. Property rights shall be treated as follows: to what extent are property rights, including financial assets, protected?

Naudé (2010) states that the two disciplines, i.e; economic development and business entrepreneurship, converged on the knowledge that the institutional framework is important in order to understand the outcomes observed for each area, although few studies specifically examine relation between the regions (Soriano and Dobon, 2009, p. 236). The average probability that weak institutions will exist in highly unequal countries (Alesina and Tabellini, 1988; Sachs, 1989). Naudé (2010) adds that in turn institutional failures result in income inequalities in the revenue and rent economy (see Table 2 for a description of the control variables).

The Global Competitiveness Report, which describes "basic and business factors," also included the following five controls: education quality, life expectancy, easy access to loans, the flexibility of wage determination as well as the overall fiscal rate. The representative of education asks: how does the educational system meet the needs of your country's competitive economy? The healthcare provider refers to life expectancy (in years). The personal finance representative asks how easy it is to get a bank loan from your country without a

sound business plan and collateral. The variables of unemployment address unemployment and entrepreneurship. As unemployment can take any form from that standpoint, the study has determined the total unemployment in accordance with the world bank index as a percentage of the working age in each country.

The overall proxy for fiscal rates is particularly important because the economic elites increase their ability to resist fiscal policies Goods (1989). The sum of five distinct types of taxes and taxes to be paid following deduction accounts and exemption: profit or corporate income tax, social taxes and labor income taxes paid by the employer. The following are two types of taxes.

Apriorially, the following three institutional indicators are identified as potential multi-linearity sources: the rule of law, control of corruption and the simple interconnection of voice and accountability that is often unreliable and misleading.

3.4 Model Estimation Technique.

The research model was estimated using a panel data technique on E-views statistical package. Panel data was admitted due group wise and regional analysis required rather than individual bases. Subsequently, we tested for serial correlation problem in the data set before proceeding to further estimating techniques.

Different methods, such as Pooled ordinary least square (POLS) or Panel Least Square, Fixed effect Model and Random Effect Model was used to run regression the analysis. However, a country-specific effect that affects Inequality are difficult to be explored. If the unobserved country specific variables are correlated with the regressors, our models will produce biased results which contradicts the OLS assumptions.

To solve this problem, the researcher has adopted a Least Square Dummy Variable (LSDV) to capture any differences on the intercepts using the fixed effect model. Thus, our model transformation becomes:

$$TEA_{it} = \beta_1 Gini_{it} + \beta_2 \Delta Ethnic_Dvc_{it} + \beta_3 \Delta ZINCOME_10_it + \gamma Z_{it} + \gamma DA_{it} + \delta DF_{it} + \epsilon_{it} \dots \dots \dots (2)$$

Where DA represents (DA1 to DA17), and DF represent (DF1 to DF17) for the dummy variables for the United States and Finland respectively. The intercept is captured by the factor γ and δ respectively, all measured.

Similarly, we implore the random effects technique with a slight modification to the error term in our original model and test for redundancy afterwards. We obtain:

$$TEA_{it} = \alpha + \beta_1 Gini_{it} + \beta_2 \Delta Ethnic_Dvc_{it} + \beta_3 \Delta ZINCOME_10_it + \gamma Z_{it} + (\delta_{it} + \mu_{it}) \dots \dots \dots (3)$$

Where μ_{it} captured the OLS part of no trend in the equation, δ_{it} Is the difference for all cross sections to get individual intercept with α .

Giving an unrealistic appearance, especially if α varies over time, it is better to test all the previously mentioned variables in order to see which are the most suited model since random effects necessitate the unconnected nature of omitted variables with the regressors, which focus on the Randomness of the sample sizes. In order to choose the right model, we use economic rationality and statistical insights using the Hausman test.

Our study then found a problem in the dataset with a serial correlation. We therefore estimate our models using the first differences. By doing that, we do not only address the serial correlation problem but also produce consistent results. In summary, the study estimates its finding using the following three equations:

- **Model 1: Pooled Panel Model**

$$\begin{aligned} \Delta TEA_{it} = & \beta_1 \Delta Gini_{it} + \beta_2 \Delta Ethnic_Dvc_{it} + \beta_3 \Delta ZINCOME_10_it + \beta_4 \Delta GDP_{it} + \\ & \beta_5 \Delta Unemloy_{it} + \beta_6 \Delta TAX_{it} + \beta_7 \Delta Pov_{it} + \beta_7 \Delta Inv_{it} + \beta_8 \Delta CONTROL_OF_CORRUPTION_{it} + \\ & \beta_9 \Delta ZGOVT_EFFECTIVNESS_{it} + \beta_{10} \Delta POLIICAL_STABILITY_AND_NO_VIOLENCE_{it} + \\ & \beta_{11} \Delta REGULATION_QUALITY_it + \beta_{13} \Delta life_Exp_{it} + \beta_{13} \Delta Q_Edu_{it} + \beta_{14} \Delta voice_Acct_{it} + \\ & \beta_{15} \Delta rule_Law_{it} + \beta_{16} \Delta ease_Loan_{it} + \epsilon_{it} \dots \dots \dots (1) \end{aligned}$$

- **Model 2: Fixed Effect Model**

$$\begin{aligned} \Delta TEA_{it} = & \beta_1 \Delta Gini_{it} + \beta_2 \Delta Ethnic_Dvc_{it} + \beta_3 \Delta ZINCOME_10_it + \beta_4 \Delta GDP_{it} + \\ & \beta_5 \Delta Unemloy_{it} + \beta_6 \Delta TAX_{it} + \beta_7 \Delta Pov_{it} + \beta_7 \Delta Inv_{it} + \beta_8 \Delta CONTROL_OF_CORRUPTION_{it} + \\ & \beta_9 \Delta ZGOVT_EFFECTIVNESS_{it} + \beta_{10} \Delta POLIICAL_STABILITY_AND_NO_VIOLENCE_{it} + \\ & \beta_{11} \Delta REGULATION_QUALITY_it + \beta_{13} \Delta life_Exp_{it} + \beta_{13} \Delta Q_Edu_{it} + \beta_{14} \Delta voice_Acct_{it} + \\ & \beta_{15} \Delta rule_Law_{it} + \beta_{16} \Delta ease_Loan_{it} + \varepsilon_{it} + C(18) + [CX=F].....Model (2) \end{aligned}$$

- **Model 3: Random-Effect Model**

$$\begin{aligned} \Delta TEA_{it} = & \beta_1 \Delta Gini_{it} + \beta_2 \Delta Ethnic_Dvc_{it} + \beta_3 \Delta ZINCOME_10_it + \beta_4 \Delta GDP_{it} + \\ & \beta_5 \Delta Unemloy_{it} + \beta_6 \Delta TAX_{it} + \beta_7 \Delta Pov_{it} + \beta_7 \Delta Inv_{it} + \beta_8 \Delta CONTROL_OF_CORRUPTION_{it} + \\ & \beta_9 \Delta ZGOVT_EFFECTIVNESS_{it} + \beta_{10} \Delta POLIICAL_STABILITY_AND_NO_VIOLENCE_{it} + \\ & \beta_{11} \Delta REGULATION_QUALITY_it + \beta_{13} \Delta life_Exp_{it} + \beta_{13} \Delta Q_Edu_{it} + \beta_{14} \Delta voice_Acct_{it} + \\ & \beta_{15} \Delta rule_Law_{it} + \beta_{16} \Delta ease_Loan_{it} + \varepsilon_{it} + [CX=R].....Model (3) \end{aligned}$$

Chapter Four

Data Presentation, Analysis and Results

4.0 Introduction

In this chapter, we perform all necessary statistical and econometric analysis in line with economic theories, using E-Views 11 statistical package.

4.1 Presentation of Result

Figures 1 to 18 in appendix 2 provide suggestive evidence of the relationship between ethnic diversity, our measures of entrepreneurship activities and income inequality at top 10%. While the scatter plots suggest a positive association between ethnic diversity, and entrepreneurship activities. Figures 19 to 23 show the relationship between the global inequality index, and entrepreneurship activities both countries.

4.1.1 Relationship Between Key Variables

First, we examine the data variables in order to show the relationship between our variables of interest, which are ethnic diversity, Entrepreneurial activities and Top 1 percent inequality. We observed from figure 1 below, that as growth in ethnic diversity increases, entrepreneurship activities also increase in the United States while it is almost constant in Finland. We can juxtapose that the growth in entrepreneurial activities has been kept constant for two periods at (.133 and .137) compared to the United States as shown in figure 2, where ethnic diversity has constantly been on the increase from its period of declination. Thus, exhibiting a sparse difference in growth between both countries' entrepreneurial activities.

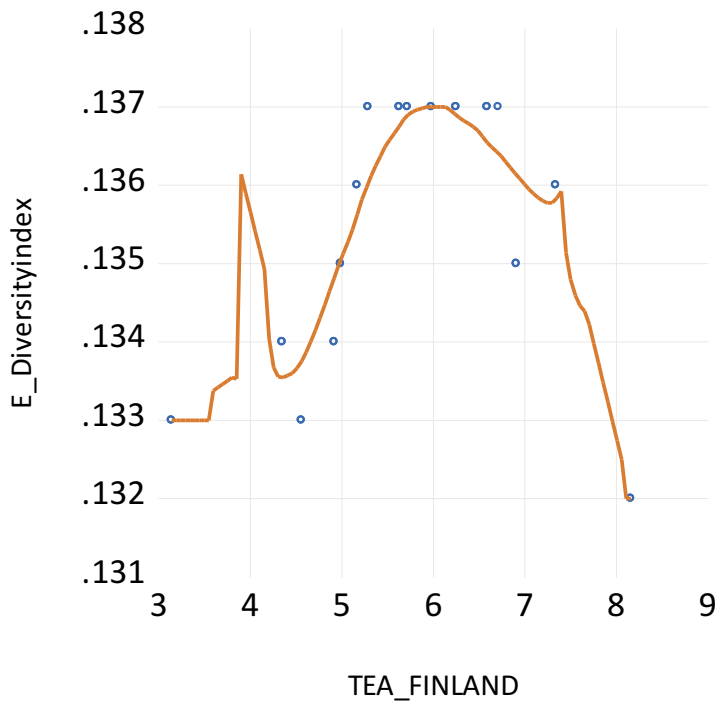


Figure 1 Interaction between Ethnic Diversity and TEA in Finland

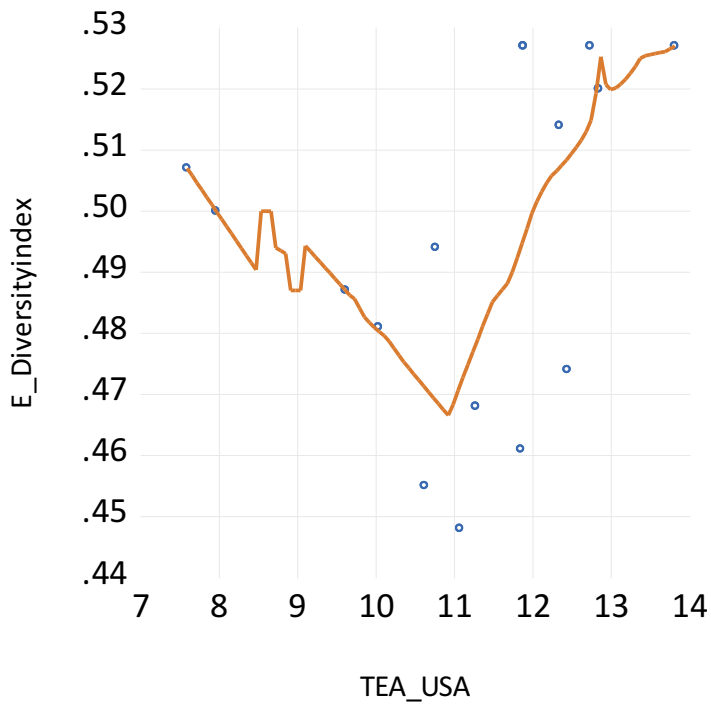


Figure 2: Interaction between Ethnic Diversity and TEA in the US

4.1.2 Cross-interaction of Variables.

Appendix 4-6 shows the table of correlation among the three classified independent variables (macroeconomics, institutional and social) and the correlation between the dependent variables and the independent variables.

The table shows that from the graph, we observe that there is a linear but negative relationship in the diversity of ethnic groups in both countries, however, this diversity has showed no correlation between the growth of entrepreneurial activities, income inequality at the 10% as well as the world global inequality index. Hence, it is noteworthy to analyse the reasons for such disparity.

4.1.3 Descriptive Statistics of Variables

The descriptive statistic was conducted on the raw series of the data and not its transformed form. Due to the large number of observation (315 observations) of the study, we have presented the result in appendix 1. The summary distribution shows that our data is highly biased and highly skewed with large kurtosis. This shows that mean value is highly influenced by sample outlier's, hence our dataset is nor symmetrical. Similarly, the standard deviation is also high, indicating a large deviation of individual sample set from the mean. Hence, from a statistical perspective we conclude that our data is not stationary and proceed to run a further diagnosis test of stationarity on our dataset.

4.2 Panel Unit Root Test

All the samples in data presented a unit root at level according to the Levin, Lin and Chul, Augumented Dikki and fuller Fisher Chi Square but becomes stationary at first difference. While we have shown in Figure 1 below, the graph of stationarity test of the variables, the empirical result has been moved to appendix 1.

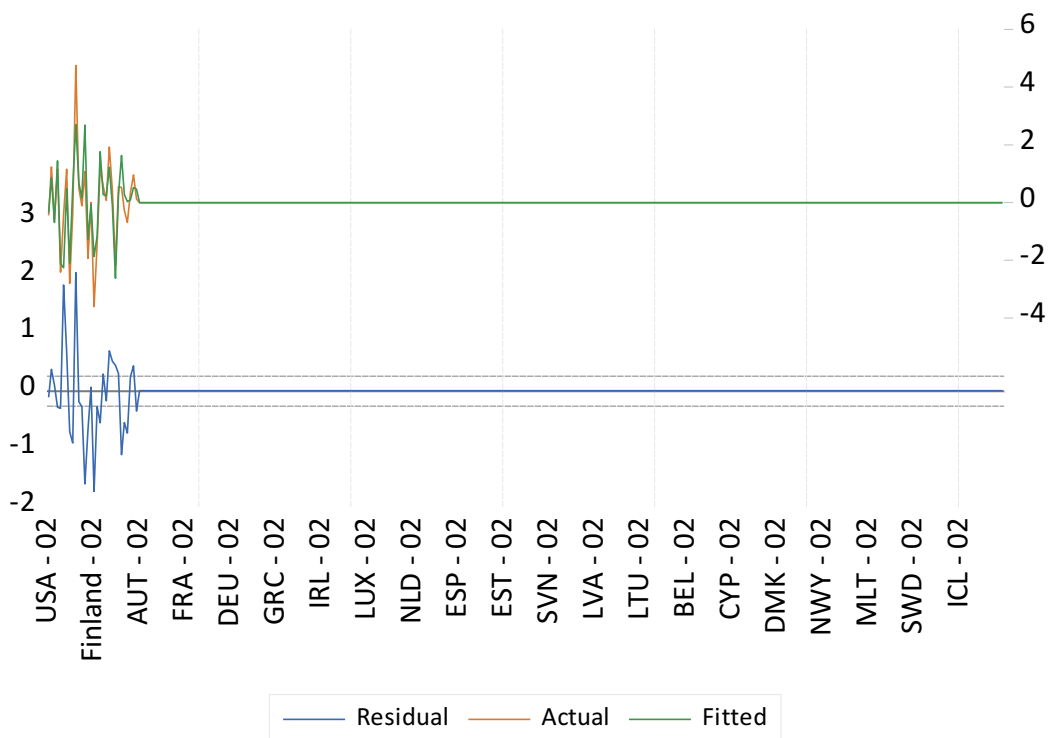


Figure 1: Graph of stationarity test

4.2.1 Models Estimations

Table 1, 3 and 4 reports the estimation results when adopting a panel data model and test results to determine whether thee which panel model is more appropriate. Regressions (1) (2) and (3) are those for the pooled OLS (no fixed nor time-period effects), one-way (individual) fixed-effects models and the random-fixed effect model, respectively. We perform a LR test to choose between the fixed effect and the pooled OLS models. The results reported in Table 2 suggest that the one-way (individual) fixed or random effect specification is the preferred panel data model. For both specifications, all the panel data models may suffer from misspecification if dependence exists within the data. Thus, to test for the presence of such dependence, we begin by conducting the classical Lagrange Multiplier (LM) tests (Burrige 1980; Anselin, Le Gallo, and Jayet 2008).

When using the classical LM tests both the hypothesis of no lagged dependent variable and the hypothesis of no autocorrelated error term must be rejected at one percent significance level for pooled OLS and fixed-effects specification.

When examining these tests' robust counterparts (Debarsy and Ertur 2010), the hypothesis of no autocorrelated error term must still be rejected at one percent significance level. However, the hypothesis of no lagged dependent variable can be rejected at five percent as well as one percent significance, provided that fixed effects are included. These results imply that a model specification with an autocorrelated error terms variable may be favored over a pooled panel model since we find consistent rejection of the hypothesis of no autocorrelated error.

To further test which panel model specification is appropriate, we conduct a Hausman specification test in order to test the assumption of whether fixed effects provide a better fit to the data than random effects. The results of the Hausman test are listed in Tables 5 This test suggests that the random effects are accepted at five percent as well as one percent significance levels.

4.2.1.1 Model 1: POOL OLS Result

First, we examine the regression using a pooled OLS on the assumption of equal intercept and the result shows a highly statistically significant P-Value for most of the variables. While the result shows a negative but statistically significant relationship between global inequality index and entrepreneurship growth, there exist a positive relationship between income held by the top 10 percent and entrepreneurship growth. Our variable ethnic diversity is not statistically significant at this point, though it exhibits a negative relationship with the dependent variable showing that ethnic diversity increases competition, from developmental economics theory perspective.

Although, the R Squared and adjusted R Squared values are high, the pooled ols does not distinguish between the countries individual heterogeneity and neglects the cross-section and time series of the data. As such, we proceed to examine the justification of this model by conducting a residual diagnosis using the Brush Biggen test.

Table 1

Dependent Variable: ZTEA
 Method: Panel Least Squares
 Date: 06/06/21 Time: 06:52
 Sample (adjusted): 2002 2016
 Periods included: 15
 Cross-sections included: 21
 Total panel (balanced) observations: 315

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-------------------------------------|-------------|-----------------------|----------------------|------------|
| ZGINI | -2.08391... | 0.1864268... | -11.17820... | 1.90021... |
| ZE_DIVERSITYINDEX | -0.05333... | 0.0669660... | -0.796500... | 0.42637... |
| ZINCOME_10_ | 0.592298... | 0.1790253... | 3.3084637... | 0.00105... |
| ZGDP | 5.511931... | 1.5048924... | 3.6626745... | 0.00029... |
| ZUNEMPLOYMENT | -0.27452... | 0.1107377... | -2.479061... | 0.01372... |
| ZTAX | 0.029904... | 0.0464511... | 0.6437777... | 0.52021... |
| ZPOVERTY | 77.70407... | 12.921579... | 6.0135126... | 5.32255... |
| ZINVESTMENT | 0.633096... | 0.1101163... | 5.7493443... | 2.22303... |
| ZCONTROL_OF_CORRUPTION | 4.282492... | 0.7016257... | 6.1036700... | 3.23258... |
| ZGOVT_EFFECTIVNESS | -0.44648... | 0.9777920... | -0.456620... | 0.64827... |
| ZPOLIICAL_STABILITY_AND_NO_VIOLE... | 0.351081... | 0.3986393... | 0.8806997... | 0.37919... |
| ZREGULATION_QUALITY | -2.21371... | 0.9652544... | -2.293395... | 0.02252... |
| ZLIFE_EXPECTANCY | 0.012387... | 0.2058600... | 0.0601737... | 0.95205... |
| ZQ_EDUCATION | 0.166091... | 0.3895022... | 0.4264203... | 0.67011... |
| ZVOA | 4.725657... | 0.8562635... | 5.5189294... | 7.43641... |
| ZRULE_OF_LAW | 1.545352... | 1.2738308... | 1.2131537... | 0.22603... |
| ZEASE_LOAN | -6.07056... | 1.9337526... | -3.139264... | 0.00186... |
| C | -0.00823... | 0.0151771... | -0.542508... | 0.58787... |
| Root MSE | 0.250533... | R-squared | 0.7326493313141649 | |
| Mean dependent var | -0.00203... | Adjusted R-squared | 0.71773464310863561 | |
| S.D. dependent var | 0.485305... | S.E. of regression | 0.2580134615411094 | |
| Akaike info criterion | 0.183835... | Sum squared residuals | 0.077157106191839 | |
| Schwarz criterion | 0.398267... | Log likelihood | -10.95405075055226 | |
| Hannan-Quinn criter. | 0.269509... | F-statistic | 47.87650186614821 | |
| Durbin-Watson stat | 1.787350... | Prob(F-statistic) | 0.08112335585006e-74 | |

Results estimate with coefficients.

$$\begin{aligned}
 ZTEA = & -2.08391753577 * ZGINI - 0.0533384311961 * ZE_DIVERSITYINDEX + \\
 & 0.59229894348 * ZINCOME_10_ + 5.51193123252e-13 * ZGDP - 0.274525652147 * ZUNEMPLOYMENT \\
 & + 0.0299042355192 * ZTAX + 77.7040793746 * ZPOVERTY + 0.633096671047 * ZINVESTMENT + \\
 & 4.28249216843 * ZCONTROL_OF_CORRUPTION - 0.446480096741 * ZGOVT_EFFECTIVNESS + \\
 & 0.351081550514 * ZPOLIICAL_STABILITY_AND_NO_VIOLENCE - \\
 & 2.21371007401 * ZREGULATION_QUALITY + 0.0123873780475 * ZLIFE_EXPECTANCY + \\
 & 0.166091660512 * ZQ_EDUCATION + 4.72565790064 * ZVOA + 1.54535276256 * ZRULE_OF_LAW - \\
 & 6.07056160624 * ZEASE_LOAN - 0.00823370566045
 \end{aligned}$$

4.2.2 Redundant Test for Fixed/Random Effect Choice

Following the output of result, the researcher has chosen to follow the guidelines and should use a one period fixed or random effect as the p-value for the cross-section is Significant as well as both. However, the period effect is insignificant,

hence the estimation will not take into consideration, the randomization of the period effects in estimating.

Table 2: Redundancy Test

Lagrange Multiplier Tests for Random Effects
 Null hypotheses: No effects
 Alternative hypotheses: Two-sided (Breusch-Pagan) and one-sided
 (all others) alternatives

| | Test Hypothesis | | |
|----------------------|---------------------------|---------------------------|---------------------------|
| | Cross-section | Time | Both |
| Breusch-Pagan | 5.13333231... (0.0235) | 0.26938670... (0.6037) | 5.40271902... (0.0201) |
| Honda | -2.2656858... (0.9883) | -0.5190247... (0.6981) | -1.9690877... (0.9755) |
| King-Wu | -2.2656858... (0.9883) | -0.5190247... (0.6981) | -1.8519393... (0.9680) |
| Standardized Honda | -2.0398409... (0.9793) | -0.3527495... (0.6379) | -6.3523055... (1.0000) |
| Standardized King-Wu | -2.0398409... (0.9793) | -0.3527495... (0.6379) | -6.1872757... (1.0000) |
| Gourieroux, et al. | -- | -- | 0 (1.0000) |

4.2.2.1 Model 2: One Way Fixed Effect Model Result

Considering the individual countries heterogeneity across the series to have its own intercept with constant time variant, the result obtained is similar to the POOLED OLS, except for the increased R Squared which accounts for the inclusion of variables that could have otherwise been excluded from our model. In other to capture some unique attributes of the individual countries that varies over a time and might be correlated with the other independent variables, we proceed to the third model of estimating a Random effect model.

Dependent Variable: ZTEA
 Method: Panel Least Squares
 Date: 06/06/21 Time: 06:56
 Sample (adjusted): 2002 2016
 Periods included: 15
 Cross-sections included: 21
 Total panel (balanced) observations: 315

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|--------------------------------------|-------------|------------|-------------|--------|
| ZGINI | -1.386522 | 0.238648 | -5.809913 | 0.0000 |
| ZE_DIVERSITYINDEX | 0.102976 | 0.082978 | 1.241011 | 0.2157 |
| ZINCOME_10_ | 0.510361 | 0.197521 | 2.583827 | 0.0103 |
| ZGDP | -8.38E-13 | 7.45E-13 | -1.125062 | 0.2615 |
| ZUNEMPLOYMENT | -0.417039 | 0.117747 | -3.541834 | 0.0005 |
| ZTAX | -0.343075 | 0.080315 | -4.271631 | 0.0000 |
| ZPOVERTY | 95.93939 | 13.19406 | 7.271409 | 0.0000 |
| ZINVESTMENT | 0.973642 | 0.129616 | 7.511755 | 0.0000 |
| ZCONTROL_OF_CORRUPTION | 5.730986 | 0.740673 | 7.737539 | 0.0000 |
| ZGOVT_EFFECTIVENESS | -4.981254 | 1.271420 | -3.917868 | 0.0001 |
| ZPOLITICAL_STABILITY_AND_NO_VIOLE... | 1.613504 | 0.451379 | 3.574611 | 0.0004 |
| ZREGULATION_QUALITY | 1.415996 | 1.166135 | 1.214265 | 0.2257 |
| ZLIFE_EXPECTANCY | 0.281552 | 0.214374 | 1.313367 | 0.1901 |
| ZQ_EDUCATION | 2.579008 | 0.572875 | 4.501871 | 0.0000 |
| ZVOA | 2.036410 | 0.971811 | 2.095479 | 0.0370 |
| ZRULE_OF_LAW | 0.238338 | 1.496318 | 0.159283 | 0.8736 |
| ZEASE_LOAN | -18.02206 | 2.844867 | -6.334941 | 0.0000 |
| C | -0.005381 | 0.024198 | -0.222385 | 0.8242 |

Effects Specification

Cross-section fixed (dummy variables)

| | | | |
|-----------------------|-----------|--------------------|----------|
| Root MSE | 0.237211 | R-squared | 0.760326 |
| Mean dependent var | -0.002032 | Adjusted R-squared | 0.728312 |
| S.D. dependent var | 0.485305 | S.E. of regression | 0.252959 |
| Akaike info criterion | 0.201539 | Sum squared resid | 17.72479 |
| Schwarz criterion | 0.654230 | Log likelihood | 6.257682 |
| Hannan-Quinn criter. | 0.382406 | F-statistic | 23.74962 |
| Durbin-Watson stat | 1.898401 | Prob(F-statistic) | 0.000000 |

Table 3: One Way Fixed-Model Estimate

Results estimate with coefficients.

$$\begin{aligned}
 ZTEA = & -1.38652183554 * ZGINI + 0.102976104006 * ZE_DIVERSITYINDEX + \\
 & 0.510361179485 * ZINCOME_10_ - 8.37692916647e-13 * ZGDP - 0.417038928295 * ZUNEMPLOYMENT - \\
 & 0.34307481197 * ZTAX + 95.9393893274 * ZPOVERTY + 0.97364160297 * ZINVESTMENT + \\
 & 5.73098615273 * ZCONTROL_OF_CORRUPTION - 4.98125447914 * ZGOVT_EFFECTIVENESS + \\
 & 1.61350365741 * ZPOLITICAL_STABILITY_AND_NO_VIOLENCE + \\
 & 1.41599607015 * ZREGULATION_QUALITY + 0.281551852689 * ZLIFE_EXPECTANCY + \\
 & 2.57900782267 * ZQ_EDUCATION + 2.03640978913 * ZVOA + 0.238337911662 * ZRULE_OF_LAW - \\
 & 18.0220631341 * ZEASE_LOAN - 0.00538119501493 + [CX=F]
 \end{aligned}$$

4.2.2.2 Model 3: Random Effect Model Result

Since the Random effect uses the Generalized Lease Square (GLS) technique, it accounts for both individual heterogeneities, and its time invariant but the individual specific effect is uncorrelated with the independent variables. Thus, like the POOLED OLS estimate, the results are technically the same with the exclusions of the control variables.

Dependent Variable: ZTEA
 Method: Panel EGLS (Cross-section random effects)
 Date: 06/06/21 Time: 06:58
 Sample (adjusted): 2002 2016
 Periods included: 15
 Cross-sections included: 21
 Total panel (balanced) observations: 315
 Swamy and Arora estimator of component variances

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-------------------------------------|-------------|--------------------|-------------|--------|
| ZGINI | -2.083918 | 0.182775 | -11.40155 | 0.0000 |
| ZE DIVERSITYINDEX | -0.053338 | 0.065654 | -0.812414 | 0.4172 |
| ZINCOME_10_ | 0.592299 | 0.175518 | 3.374567 | 0.0008 |
| ZGDP | 5.51E-13 | 1.48E-13 | 3.735855 | 0.0002 |
| ZUNEMPLOYMENT | -0.274526 | 0.108569 | -2.528594 | 0.0120 |
| ZTAX | 0.029904 | 0.045541 | 0.656641 | 0.5119 |
| ZPOVERTY | 77.70408 | 12.66846 | 6.133663 | 0.0000 |
| ZINVESTMENT | 0.633097 | 0.107959 | 5.864217 | 0.0000 |
| ZCONTROL_OF_CORRUPTION | 4.282492 | 0.687882 | 6.225622 | 0.0000 |
| ZGOVT EFFECTIVNESS | -0.446480 | 0.958638 | -0.465744 | 0.6417 |
| ZPOLIICAL STABILITY AND NO VIOLE... | 0.351082 | 0.390830 | 0.898296 | 0.3698 |
| ZREGULATION QUALITY | -2.213710 | 0.946346 | -2.339218 | 0.0200 |
| ZLIFE_EXPECTANCY | 0.012387 | 0.201827 | 0.061376 | 0.9511 |
| ZQ_EDUCATION | 0.166092 | 0.381872 | 0.434940 | 0.6639 |
| ZVOA | 4.725658 | 0.839490 | 5.629198 | 0.0000 |
| ZRULE_OF_LAW | 1.545353 | 1.248878 | 1.237393 | 0.2169 |
| ZEASE_LOAN | -6.070562 | 1.895873 | -3.201988 | 0.0015 |
| C | -0.008234 | 0.014880 | -0.553348 | 0.5804 |
| Effects Specification | | | | |
| | | | S.D. | Rho |
| Cross-section random | | | 0.000000 | 0.0000 |
| Idiosyncratic random | | | 0.252959 | 1.0000 |
| Weighted Statistics | | | | |
| Root MSE | 0.250533 | R-squared | 0.732649 | |
| Mean dependent var | -0.002032 | Adjusted R-squared | 0.717346 | |
| S.D. dependent var | 0.485305 | S.E. of regression | 0.258013 | |
| Sum squared resid | 19.77157 | F-statistic | 47.87650 | |
| Durbin-Watson stat | 1.787351 | Prob(F-statistic) | 0.000000 | |
| Unweighted Statistics | | | | |
| R-squared | 0.732649 | Mean dependent var | -0.002032 | |
| Sum squared resid | 19.77157 | Durbin-Watson stat | 1.787351 | |

Table 4: Random-Effect Model Analysis

In order to choose the exact model specification that matches our study among the three listed above, we will need to conduct a Hausman test.

Results estimate with coefficients.

$$\begin{aligned}
 ZTEA = & -2.08391753577 * ZGINI - 0.0533384311961 * ZE_DIVERSITYINDEX + \\
 & 0.59229894348 * ZINCOME_10_ + 5.51193123252e-13 * ZGDP - 0.274525652147 * ZUNEMPLOYMENT \\
 & + 0.0299042355192 * ZTAX + 77.7040793746 * ZPOVERTY + 0.633096671047 * ZINVESTMENT + \\
 & 4.28249216843 * ZCONTROL_OF_CORRUPTION - 0.446480096741 * ZGOVT_EFFECTIVNESS + \\
 & 0.351081550514 * ZPOLIICAL_STABILITY_AND_NO_VIOLENCE - \\
 & 2.21371007401 * ZREGULATION_QUALITY + 0.0123873780475 * ZLIFE_EXPECTANCY + \\
 & 0.166091660512 * ZQ_EDUCATION + 4.72565790064 * ZVOA + 1.54535276256 * ZRULE_OF_LAW - \\
 & 6.07056160624 * ZEASE_LOAN - 0.00823370566045 + [CX=R]
 \end{aligned}$$

4.2.3 Correlated Random Effect-Hausman Test

The result of the Hausman test shows a non-significant p-value of approximately 1. Thus, we reject null hypothesis that random effects model is not efficient and thus proceed with analysing of series using a one-way random effect.

Correlated Random Effects - Hausman Test
Equation: POOLEQ
Test cross-section random effects

| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
|----------------------|-------------------|--------------|--------|
| Cross-section random | 0.000000 | 17 | 1.0000 |

* Cross-section test variance is invalid. Hausman statistic set to zero.
** WARNING: estimated cross-section random effects variance is zero.

Cross-section random effects test comparisons:

| Variable | Fixed | Random | Var(Diff.) | Prob. |
|-------------------------------------|------------|-----------|------------|--------|
| ZGINI | -1.386522 | -2.083918 | 0.023546 | 0.0000 |
| ZE_DIVERSITYINDEX | 0.102976 | -0.053338 | 0.002575 | 0.0021 |
| ZINCOME_10_ | 0.510361 | 0.592299 | 0.008208 | 0.3658 |
| ZGDP | -0.000000 | 0.000000 | 0.000000 | 0.0570 |
| ZUNEMPLOYMENT | -0.417039 | -0.274526 | 0.002077 | 0.0018 |
| ZTAX | -0.343075 | 0.029904 | 0.004376 | 0.0000 |
| ZPOVERTY | 95.939389 | 77.704079 | 13.593234 | 0.0000 |
| ZINVESTMENT | 0.973642 | 0.633097 | 0.005145 | 0.0000 |
| ZCONTROL_OF_CORRUPTION | 5.730986 | 4.282492 | 0.075415 | 0.0000 |
| ZGOVT_EFFECTIVNESS | -4.981254 | -0.446480 | 0.697521 | 0.0000 |
| ZPOLIICAL_STABILITY_AND_NO_VIOLE... | 1.613504 | 0.351082 | 0.050994 | 0.0000 |
| ZREGULATION_QUALITY | 1.415996 | -2.213710 | 0.464299 | 0.0000 |
| ZLIFE_EXPECTANCY | 0.281552 | 0.012387 | 0.005222 | 0.0002 |
| ZQ_EDUCATION | 2.579008 | 0.166092 | 0.182359 | 0.0000 |
| ZVOA | 2.036410 | 4.725658 | 0.239672 | 0.0000 |
| ZRULE_OF_LAW | 0.238338 | 1.545353 | 0.679272 | 0.1128 |
| ZEASE_LOAN | -18.022063 | -6.070562 | 4.498931 | 0.0000 |

Cross-section random effects test equation:

Dependent Variable: ZTEA
Method: Panel Least Squares
Date: 06/06/21 Time: 07:03
Sample (adjusted): 2002 2016
Periods included: 15
Cross-sections included: 21
Total panel (balanced) observations: 315

| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
|-------------------------------------|-------------|------------|-------------|--------|
| C | -0.005381 | 0.024198 | -0.222385 | 0.8242 |
| ZGINI | -1.386522 | 0.238648 | -5.809913 | 0.0000 |
| ZE_DIVERSITYINDEX | 0.102976 | 0.129978 | 1.241011 | 0.2157 |
| ZINCOME_10_ | 0.510361 | 0.197521 | 2.583827 | 0.0103 |
| ZGDP | -8.38E-13 | 7.45E-13 | -1.125062 | 0.2615 |
| ZUNEMPLOYMENT | -0.417039 | 0.117747 | -3.541834 | 0.0005 |
| ZTAX | -0.343075 | 0.080315 | -4.271631 | 0.0000 |
| ZPOVERTY | 95.939389 | 13.19406 | 7.271409 | 0.0000 |
| ZINVESTMENT | 0.973642 | 0.129916 | 7.511755 | 0.0000 |
| ZCONTROL_OF_CORRUPTION | 5.730986 | 0.740673 | 7.737539 | 0.0000 |
| ZGOVT_EFFECTIVNESS | -4.981254 | 1.271420 | -3.917868 | 0.0001 |
| ZPOLIICAL_STABILITY_AND_NO_VIOLE... | 1.613504 | 0.451379 | 3.574611 | 0.0004 |
| ZREGULATION_QUALITY | 1.415996 | 1.166135 | 1.214265 | 0.2257 |
| ZLIFE_EXPECTANCY | 0.281552 | 0.214374 | 1.313367 | 0.1901 |
| ZQ_EDUCATION | 2.579008 | 0.572875 | 4.501871 | 0.0000 |
| ZVOA | 2.036410 | 0.971811 | 2.095479 | 0.0370 |
| ZRULE_OF_LAW | 0.238338 | 1.496318 | 0.159283 | 0.8736 |
| ZEASE_LOAN | -18.02206 | 2.844867 | -6.334941 | 0.0000 |

Effects Specification

Cross-section fixed (dummy variables)

| | | | |
|-----------------------|-----------|--------------------|----------|
| Root MSE | 0.237211 | R-squared | 0.760326 |
| Mean dependent var | -0.002032 | Adjusted R-squared | 0.728312 |
| S.D. dependent var | 0.485305 | S.E. of regression | 0.252959 |
| Akaike info criterion | 0.201539 | Sum squared resid | 17.72479 |
| Schwarz criterion | 0.654230 | Log likelihood | 6.257682 |
| Hannan-Quinn criter. | 0.382406 | F-statistic | 23.74962 |
| Durbin-Watson stat | 1.898401 | Prob(F-statistic) | 0.000000 |

Table 5: Hausman Test

4.3 Residual Diagnosis Check

Test of Normality

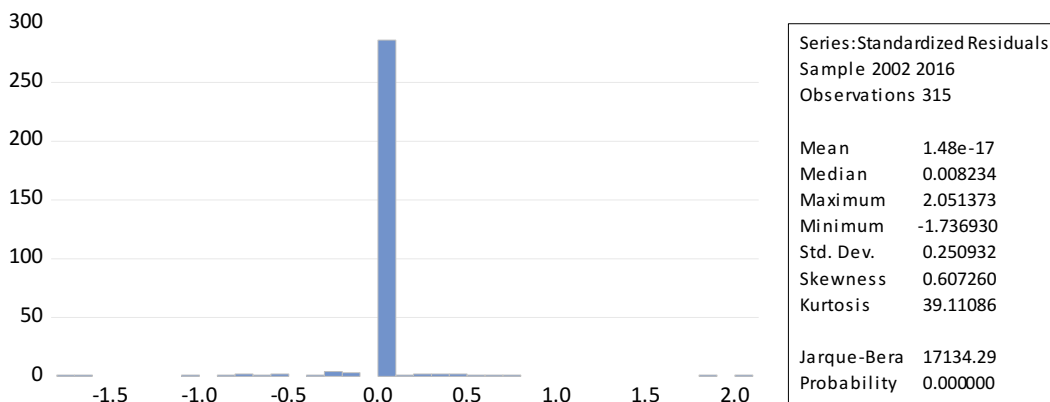


Figure2: Normality Test

By applying the Histogram Normality Test, we identified that the variables are not normally distributed as the P-Value is generally zero. Thus, we reject the null hypothesis that the variables are normally distributed. The reason for this accounted for due to the randomness of the sample data.

4.3.1 Cross-Sectional Dependency Test

The obtained results show the presence of cross-sectional dependency among the residuals of individual countries at less than the one percent significant value, in all test cases. Thus, the null hypothesis is rejected in favour of the alternate hypothesis. While it is easy to remedy this problem if our redundancy test has proposed a fixed-effect analysis. But this option is not available for a random effect model except, otherwise estimated using a different model structure such as the two-stage least square method or GMM. Thus, we keep our regression result as it for evidence of this study.

Residual Cross-Section Dependence Test

Null hypothesis: No cross-section dependence (correlation) in residuals

Equation: POOLEQ

Periods included: 15

Cross-sections included: 21

Total panel observations: 315

Note: non-zero cross-section means detected in data

Cross-section means were removed during computation of correlations

| Test | Statistic | d.f. | Prob. |
|-------------------|-----------|------|--------|
| Breusch-Pagan LM | 2565.466 | 210 | 0.0000 |
| Pesaran scaled LM | 114.9350 | | 0.0000 |
| Pesaran CD | -45.74880 | | 0.0000 |

Table 6: Test for Cross-sectional Dependency

4.4 Empirical Findings and Hypothesis Testing

Focusing on the main variable of interest, given by the output of the empirical model Equation, the results from the random-effects model test indicate that the R -squared value (0.73) with a common intercept coefficient which is negative and statistically insignificant at p -value (0.5804). This R -squared is the same for the pooled OLS (0.73) and lesser than the fixed-effect model (0.76).

Furthermore, the expected signs on GINI coefficients and the highest income inequality of one percent are statistically significant in all three models and on their respective apriori bases following Lippmann, Davis and Aldrich (2005) are $\beta_3 > 0$ and $\beta_2 < 0$. These coefficients measure the direct impact on entrepreneurial activities of both inequalities. The GINI coefficient is negative at (-2.083918) which implies that a fall in the global inequality index, increases the level of entrepreneurship activities *ceteris paribus*. Similarly, the income held by top 1 percent of the population has a positive coefficient implying that an increase income of this group increases entrepreneurial activities.

Ethnic diversity has a is statistically insignificant to explain the growth in entrepreneurial activities as p -value is less than 0.05. We regard the insufficiently significant and negative relationship between entrepreneurship and ethnical diversity as the Wenekers et al. (2005, 2010), Carree et al. (2007), Amorós and Cristi (2008) and Acs and Amorós (2008). Therefore, we believe that β_2 ($\beta_2 < 0$)

is negative and that the GDP β_4 ($\beta_4 > 0$) is positive. This finding is interesting for itself for the direct effect of ethnic diversity on entrepreneurial activities. We further this line of analysis and suggest that the relationship between entrepreneurship and ethnic diversity depends on the level of distribution of income.

Turning to the point of macroeconomic variables in the model, there exist a positive and significant relationship between entrepreneurship and GDP. The result shows that increased GDP significantly increases entrepreneurial activities as expected, per Deeds (2001) ($\beta_4 > 0$). Unemployment, although statistically significant to explaining the growth in entrepreneurial activities, it has a negative coefficient which implies that a decrease in unemployment increases entrepreneurship activities. This is expected to have a positive effect on business growth as ($\beta_5 > 0$) in the aftermath of Armington and Acs (2002) and Wenekers et al. (2005).

While the tax rate ($\beta_6 > 0$) is statistically insignificant. Poverty and Investment ($\beta_7 > 0$ and $\beta_8 < 0$) is significant with positive coefficients. Thus, the quest to break-out of the poverty gap as well as the capital formation is assuming a motivation for entrepreneurship. Moreover, the sign of β_7 is expected to be positive in accordance with the terms of Méndez-Picazo, Galindo-Martin, Ribeiro-Sorianoc (2012) and Herrera-Echeverri, Haar, and Estévez-Bretón (2014).

From the point of institutional variables, government effectiveness and political stability without violence ($\beta_{10} > 0$ and $\beta_{11} > 0$) is insignificant to explaining entrepreneurship activates but the significant positive and negative impact on entrepreneurship of the control of corruption and regulatory quality ($\beta_9 > 0$ and $\beta_{12} < 0$) respectively can be due to institutional changes which are slow, progressive, ongoing and show patterns of dependency (DiMaggio and Powell 1983; North 1990). As a result, Finland has continuously harmonized since 2006, for example, while its income inequality continues to grow in the US. This result

differs inconsideration to for voice of accountability and Rule of law ($\beta_{15} > 0$ and $\beta_{16} > 0$) which is significantly positive and shows a stronger tendency to influence entrepreneurship activities from an institutional perspective. We assume a negative relation between entrepreneurship and the rule of law, i.e., β_{16} is expected to be negative following the Acs and Amorós (2008), Amorós and Cristi (2008), Amorós, Fernández and Tapia (2012).

In the social institution categories, life expectancy and quality of education an individual is not ($\beta_{13} > 0$ and $\beta_{14} > 0$) is not significant to explaining the growth of entrepreneurial activities. But access to loan ($\beta_{17} > 0$) is significant but negative coefficients poses a contrary theory. According to Petrova (2013), the level of enterprise activity is decreasing due to increased goods flow between countries, which leads to increased product and service demand and, therefore, to increased labor market opportunities. Therefore, we assume that the easy access of loans to businesses, i.e., β_{17} , will have an overall negative but significant impact.

4.5 Economic Interpretation and Hypothesis Result

4.5.1 Hypothesis Test

4.5.1.1 Hypothesis One

Following the result of the correlation table in appendix 1, GINI and Ethnic diversity are negatively related with Entrepreneurship with a statistically significant p-value of (0.0000) and (0.0178) respectively. But the income held by 10% of the population is positively correlated with Entrepreneurship and significant with a p-value of (0.0000). Thus, we reject the null hypothesis in favour of the alternative hypothesis.

4.5.1.2 Hypothesis Two

According to the findings, income held by top 1 percent has a positive coefficient of 0.592299, which is statistically significant with a p-value of (0.0008). This implies that a dollar increases in the amount of income held by the top 1%

increases the growth rate of entrepreneurial activities by 5.9%. So, we fail to accept the null hypothesis as higher income held by top 1 percent can promote entrepreneurship through wealth distributive mechanism.

4.5.1.3 Hypothesis Three

This hypothesis assumes there exist a positive effect of ethnic diversity on entrepreneurship, but the result obtained has proved contrary by assuming a negative coefficient and insignificant p-value of (-0.053338) and (0.4172) respectively. This, we accept the null hypothesis in favour of the alternative hypothesis and conclude that; ethnic diversity has a negative effect on entrepreneurial activities. While this result goes in contracts with economics assumptions from a Schumpeter's viewpoint, the result could have been influence by other uncaptured or unobservable effects between both countries. i.e., Population.

4.5.2 Economic Interpretation of Result

We are now turning to a random effect model economic interpretation of the results. Since the results of diagnostic tests show that a random effect model fits best, we restrict our analysis to those estimates. The estimated (β_3) coefficient in global terms is highly statistically important at the 1% rate for the laggard dependent varying income inequality of the Top 1%. The positive and statistically important it shows the positive impact on entrepreneurship on the income of the top 1 per cent of the population in the countries.

Each model has a negative, but statistically not significant, ethnic diversity coefficient (β_2). In those countries, therefore, there is no dependence on entrepreneurship or ethnic diversity. These results show that entrepreneurship is consistently linked to more inequalities in income. The estimate (β_1 and β_3) coefficient is significantly negative and positive respectively for the revenue inequality regressor. The positive sign of the index of income inequality shows that greater inequality would promote entrepreneurship. The results corroborate the perception that income inequality has a positive and statistically significant

impact on enterprise by other writers (Reynolds, Hay, Bygrave 2002; Lippmann, Davis, and Aldrich 2005; Xavier-Oliveira, Laplume, and Pathak 2015).

In addition, in existing literature, our results provide statistical support for non-empirical claims that increase income inequality promotes entrepreneurship (Lippmann, Davis, and Aldrich 2005). One possible explanation is that more people are pursuing entrepreneurship, regardless of the nature of their motivations, given increasing income disparities, although the majority are expectedly driven by factors to improve their own economic conditions (Xavier-Oliveira, Laplume, and Pathak 2015). Those who advocate greater inequality of earnings only by mentioning their positive impact on entrepreneurship should therefore bear in mind.

A further explanation is the need to transfer the funding towards economic agents who have better possibilities or have more incentives to save, i.e., individuals and/or institutions with higher income, if saving is increased in order to promote investment activity (Mendez-Picazo, Galindo-Martin, and Ribeiro-Sorianoc 2012). It was suggested by Mendez-Picazo, Galindo-Martin and Ribeiro-Sorianoc (2012) that greater savings to boost innovations could raise social challenges. Furthermore, these authors reported that a shift from rich to poor could lead to social strains, which could adversely influence the process of innovation and economic growth. They also argued that the entrepreneurial reaction of innovation reduction might have adverse effects on small and medium-sized businesses. Mendez-Picazo, Galindo-Martin and Ribeiro-Sorianoc (2012) therefore suggested that this negative effect be considered and that efforts should be made to compensate the damaged economic agents.

Governance or quality of institutions is a controversial concept and is not understood because the notion is not defined uniquely and sometimes linked to concepts such as democracy, corruption and institutions. The existence of a proper set of institutions in a country can be considered as good government. The empirical results are not yet complete or conclusive, making it difficult to

evaluate the relationship between institutions and entrepreneurship. The panel result for countries shows a coefficient (β_{10}) of governance efficiency measures is negative and meaningful. This result could be interpreted as follows unlike Mendez-Picazo, Galindo-Martin, and Ribeiro-Soriano (2012) and Herrera-Echeverri, Haar, and Estévez-Bretón (2014), who have significant positive relationships between business enterprise and management.

One possible first explanation is the less opportunities for entrepreneurs in developed countries with greater GDP. That is, in developed countries, like Finland, the market for new companies is saturated compared with that of the US. This saturation would diminish the motivation for emerging business, and then business in general.

A second possible explanation is the specific policies and guidelines of country leadership that either encourage or impede entrepreneurship. A country like China, for example, has over the last decade managed a transition to a free market economy in some sectors of its economy, which could have increased the entrepreneurship in their policies. A third reason is that there are more entry barriers for new companies in some countries. Such entry barriers can involve higher rules and higher taxes.

Chapter Five

Summary, Conclusion and policy implications

5.0 Introduction

The chapter presents a conclusive summary of the findings study in line with economics theory and policy implications.

5.1 Summary and Conclusion

This paper analysed the relationship between entrepreneurship, ethnic diversity and income inequality. We employed a random-effect panel estimation models to examine the relationship using data from both 21 OECD states over the period from 2001 to 2016. In this study, the income of the top 1 per cent and ethnic diversity heterogeneity are considered through the control of random effects in each country and interdependence through the incorporation of a lagged dependent variable. This study shows that entrepreneurial activities have an important interdependency based on standard tests in panel data econometrics. Our analysis also shows that the relationship between GINI and enterprise is highly negative, but highly significant in terms the level of economic development, with the income of the top 1% of the population.

Previous studies do not show that these factors are important or have an impact on creation of enterprises. We also show that the relationship between enterprise and ethnic diversity is negative, and that the income inequality is positive. Moreover, we demonstrate the significant impact of investment and unemployment on entrepreneurship and the negative connection of unemployment with entrepreneurship. Lastly, the findings show that the level of entrepreneurship has significant mixed effects on access to loans, effective management, education qualities and corruption controls.

5.2 Policy Implication

This econometric analysis can provide new insights for scientists, practitioners, contractors, policy makers and other stakeholders. Our empirical results could have some political implications.

Firstly, the ability of a social group to engage in entrepreneurship can impede uneven ownership of resources.

Second, enterprise can upset income inequality patterns and can be a possible source of individual upward mobility.

Thirdly, income inequality in the United States seems widespread in comparison to Finland. There is an important role to play in overcoming structured and lasting forms of income inequality through enterprise-based activities.

Fourthly, entrepreneurship can play a major role in introducing variations in the population and societies of these organizations which represent a potential source of diversity.

Fifthly, the positive relationship between enterprise and income inequality offers a disturbing message to high-income countries with highly equal standards that aim to increase start-up rates of enterprise.

Sixthly, policies promoting the equality of income like Finland can suppress business activity compared to the US and, unintentionally, income inequality can be higher by those favouring entrepreneurship.

Sixth, the mechanisms for addressing how incomes in inequality interact with the business-oriented motivation of individuals and the role of their per capita income endowments as well as others, such as human and financial capital, could make public policy and private efforts to foster entrepreneurship more effective.

In addition, because we empirically demonstrate that increases in income inequality can influence business creation positively and substantially at some

stages, reviewing a country's economic and social situation before encouraging entrepreneurship would be judicious.

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Appendix 1: Table of Tables

Correlation between Macroeconomic Indicators

Covariance Analysis: Ordinary
Date: 06/07/21 Time: 17:49
Sample: 2001 2016
Included observations: 336

| Correlation Probability | GDP | INCOME_10 | INVESTMENT | POVERTY | TAX | UNEMPLOY... |
|-------------------------|---------------------|---------------------|---------------------|---------------------|--------------------|-------------------|
| GDP | 1.000000 ----- | | | | | |
| INCOME_10_ | 0.790493 0.0000 | 1.000000 ----- | | | | |
| INVESTMENT | 0.657988 0.0000 | 0.979881 0.0000 | 1.000000 ----- | | | |
| POVERTY | -0.655461 0.0000 | -0.979281 0.0000 | -0.997836 0.0000 | 1.000000 ----- | | |
| TAX | 0.933782 0.0000 | 0.950286 0.0000 | 0.871990 0.0000 | -0.868185 0.0000 | 1.000000 ----- | |
| UNEMPLOYMENT | 0.543276 0.0000 | 0.917752 0.0000 | 0.949541 0.0000 | -0.965512 0.0000 | 0.775286 0.0000 | 1.000000 ----- |

Correlation between Institutional Indicators.

Covariance Analysis: Ordinary
Date: 06/07/21 Time: 17:51
Sample: 2001 2016
Included observations: 336

| Correlation Probability | EASE LOAN | GOVT EFF... | LIFE EXPE... | POLIICAL S... | Q EDUCAT... | REGULATI... | RULE OF ... | VOA CONTROL ... |
|-------------------------|---------------------|--------------------|--------------------|---------------------|--------------------|--------------------|--------------------|--------------------|
| EASE LOAN | 1.000000 ----- | | | | | | | |
| GOVT_EFFECTIV... | 0.506980 0.0000 | 1.000000 ----- | | | | | | |
| LIFE_EXPECTANCY | 0.096553 0.0772 | 0.897005 0.0000 | 1.000000 ----- | | | | | |
| POLIICAL_STABIL... | -0.656364 0.0000 | 0.205223 0.0002 | 0.539679 0.0000 | 1.000000 ----- | | | | |
| Q_EDUCATION | 0.996033 0.0000 | 0.476188 0.0000 | 0.066738 0.2224 | -0.671910 0.0000 | 1.000000 ----- | | | |
| REGULATION_QU... | 0.565931 0.0000 | 0.979294 0.0000 | 0.854061 0.0000 | 0.106010 0.0522 | 0.533377 0.0000 | 1.000000 ----- | | |
| RULE_OF_LAW | 0.558323 0.0000 | 0.982405 0.0000 | 0.876160 0.0000 | 0.138219 0.0112 | 0.535555 0.0000 | 0.978369 0.0000 | 1.000000 ----- | |
| VOA | 0.349639 0.0000 | 0.962733 0.0000 | 0.940122 0.0000 | 0.309878 0.0000 | 0.314765 0.0000 | 0.947696 0.0000 | 0.940962 0.0000 | 1.000000 ----- |
| CONTROL_OF_C... | 0.383214 0.0000 | 0.976270 0.0000 | 0.942347 0.0000 | 0.292185 0.0000 | 0.349897 0.0000 | 0.953786 0.0000 | 0.958652 0.0000 | 0.986487 0.0000 |

Correlation between Dependent Variables Indicators

Covariance Analysis: Ordinary

Date: 06/07/21 Time: 17:46

Sample: 2001 2016

Included observations: 336

| Correlation Probability | E_DIVERSI... | GINI INCOME 10 | |
|----------------------------|---------------------|--------------------|-------------------|
| E_DIVERSITYINDEX | 1.000000 ----- | | |
| GINI | -0.889657 0.0000 | 1.000000 ----- | |
| INCOME 10 | -0.911016 0.0000 | 0.998657 0.0000 | 1.000000 ----- |

Correlation between Dependent and Independent Variables Indicators

Covariance Analysis: Ordinary

Date: 06/07/21 Time: 17:57

Sample: 2002 2016

Included observations: 315

Balanced sample (listwise missing value deletion)

| Correlation Probability | ZTEA | ZGINI | ZE_DIVERS... | ZINCOME 1... |
|----------------------------|---------------------|---------------------|---------------------|-------------------|
| ZTEA | 1.000000 ----- | | | |
| ZGINI | -0.380298 0.0000 | 1.000000 ----- | | |
| ZE_DIVERSITYIN... | -0.133492 0.0178 | 0.231037 0.0000 | 1.000000 ----- | |
| ZINCOME_10_ | 0.401907 0.0000 | -0.310922 0.0000 | -0.177494 0.0016 | 1.000000 ----- |

Panel Unit Root Test

| | Summary Panel Root Test | | |
|---|-------------------------|---------|-------|
| Variable | T-Stat | Prob. | Order |
| TEA | -2.10002 | 0.0179 | I (1) |
| Δ (TEA _{it}) | -6.79746 | 0.0000* | |
| Gini | -0.39332 | 0.5372 | I (1) |
| Δ (Gini _{it}) | -2.38888 | 0.0084* | |
| Ethnic_Dvc _{it} | -2.19123 | 0.0142* | I (1) |
| Δ (Ethnic_Dvc _{it}) | 1.61857 | 0.9472 | |
| INCOME_10_ it | -2.00368 | 0.0226 | I (1) |
| Δ (INCOME_10_ it) | -6.66003 | 0.0002* | |
| GDP _{it} | -0.22761 | 0.4100 | I (1) |
| Δ (GDP _{it}) | -5.34472 | 0.0000* | |
| (Unemploy _{it}) | -0.87867 | 0.1898 | I (1) |
| Δ (Unemploy _{it}) | -2.18711 | 0.0144* | |
| TAX _{it} | -0.92194 | 0.1783 | I (1) |
| Δ (TAX _{it}) | -3.76929 | 0.0001* | |
| Pov _{it} | -0.39254 | 0.3473 | I (1) |
| Δ (Pov _{it}) | -3.42963 | 0.0003* | |
| Inv _{it} | -1.29522 | 0.0976 | I (1) |
| Δ (Inv _{it}) | -3.42963 | 0.0003* | |
| CONTROL_OF_CORRUPTION _{it} | -1.29522 | 0.2229 | I (1) |
| Δ (CONTROL_OF_CORRUPTION _{it}) | -6.13111 | 0.0000* | |
| GOVT_EFFECTIVNES _{it} | 1.14212 | 0.8733 | I (1) |
| Δ (GOVT_EFFECTIVNES _{it}) | -5.46188 | 0.0000* | |
| POLITICAL_STABILITY_AND_NO_VIOLENCE _{it} | 1.02014 | 0.8462 | I (1) |
| Δ (POLITICAL_STABILITY_AND_NO_VIOLENCE _{it}) | -4.03565 | 0.0000* | |

| | | | |
|--|----------|---------|-------|
| <i>REGULATION_QUALITY</i> _{<i>i</i>} | 1.11650 | 0.0172 | I (1) |
| Δ (<i>REGULATION_QUALITY</i> _{<i>i</i>}) | -2.94140 | 0.0016* | |
| <i>life_Exp</i> _{<i>i</i>} | 2.13334 | 0.9836 | I (1) |
| $\Delta\Delta$ (<i>life_Exp</i> _{<i>i</i>}) | -12.9323 | 0.0000* | |
| <i>Q_Edu</i> _{<i>i</i>} | -1.51338 | 0.0651 | I (1) |
| Δ (<i>Q_Edu</i> _{<i>i</i>}) | -336549 | 0.0004* | |
| <i>voice_Acct</i> _{<i>i</i>} | -1.55249 | 0.0603 | I (1) |
| Δ (<i>voice_Acct</i> _{<i>i</i>}) | -4.65751 | 0.0000* | |
| <i>rule_Law</i> _{<i>i</i>} | -1.53174 | 0.0628 | I (1) |
| Δ (<i>rule_Law</i> _{<i>i</i>}) | -6.67324 | 0.0000* | |
| <i>lnease_Loan</i> _{<i>i</i>} | 2.05691 | 0.9802 | I (1) |
| Δ (<i>lnease_Loan</i> _{<i>i</i>}) | -4.58058 | 0.0000* | |

Source: Authors Compilation (2021)

Appendix 2: Figure of Figures

Histogram of Interaction of Variables

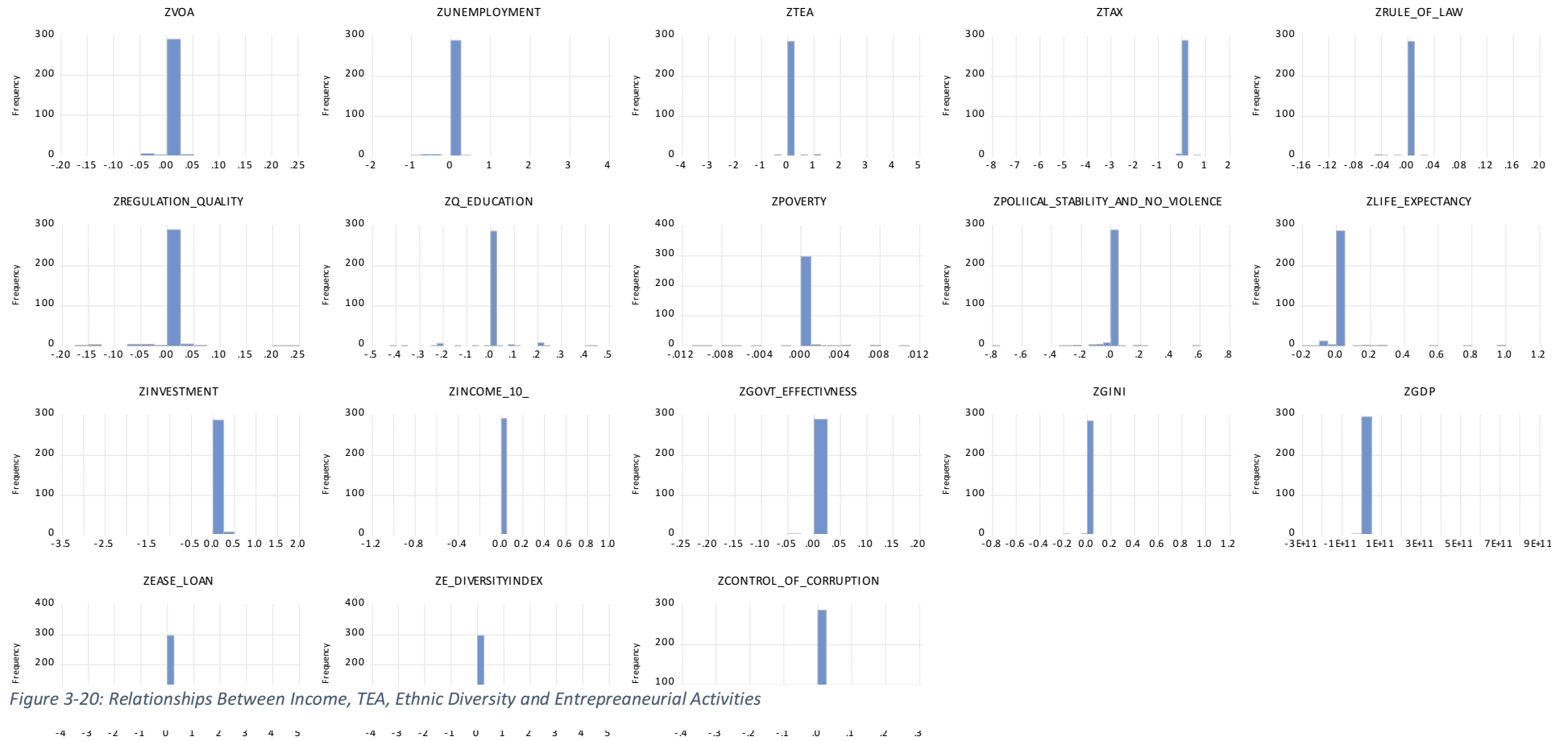


Figure 3-20: Relationships Between Income, TEA, Ethnic Diversity and Entrepreneurial Activities

Cross-Intercation among variables of Interest.

