CENTRE INTERNATIONAL DE FORMATION EUROPEENNE
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# The Relationship between Health, Education, and Quality of Life in Chile

BY

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**A thesis submitted for the Joint Master degree in**

**Global Economic Governance & Public Affairs (GEGPA)**

Academic year 2021-2022

June 2022

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## Acknowledgments

Una vez en un parque alguien me dijo que no valía la pena estar donde estaba, y de las devastadoras consecuencias de quedarme. Así no me quedé, y cambié.

Una volta in un parco qualcuno mi disse che rimanere dov'ero non ne sarebbe valsa la pena, che ci sarebbero state conseguenze catastrofiche. E quindi non sono rimasta, e sono cambiata.

Some time ago someone in a park told me it wasn't worth it to stay where I was, and also told me about the terrible consequences of remaining there. So I didn't stay, and I have changed

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**List of abbreviations**

ACHS - Asociación Chilena de Seguridad (Chilean Association of Security)

CESFAM- Centro de Salud Familiar (Family Health Centre)

CIF - Cámara de la Innovación Farmacéutica (Pharmaceutical Innovation Association)

DEMRE - Departamento de Evaluación, Medición y Registro Educacional (Department of evaluation, Measurement and Educational Registration)

EMP - Examen de Medicina Preventiva (Exam for the Prevention of Diseases)

GDP - Gross Domestic Product

GES - Garantías Explícitas en Salud (Explicit Health Guarantees)

HC - Humanista Científico (Humanist and Scientific School)

ISL - Instituto de Seguridad Laboral (Institute of Labour Security)

ISQOLS - International Society for Quality of Life Studies

JUNJI - Junta Nacional de Jardines Infantiles (Association of National Kindergartens)

MINEDUC - Ministerio de Educación (Ministry of Education)

OECD - Organisation for Economic Co-operation and Development

PAES - Prueba de Acceso a la Educación Superior (Higher education Test)

PAHO - Pan American Health Organization

PDT - Prueba de Transición (Transition Test)

PROLMED - Productores Locales de Medicamentos (Local Producers of Medicines)

PSU - Prueba de Selección Universitaria (Universitary Selection Test)

QOL - Quality of Life

SAC LAW - Ley de Sistema de Aseguramiento de la Calidad Educativa (Educational Quality Law)

SENADIS - Servicio Nacional de la Discapacidad

SERNAC - Servicio Nacional al Consumidor (national Service for the Consumer)

SIMCE - Sistema de Medición de la Calidad de la Educación (Education Quality Measurement System)

SLEP - Servicios Locales de Educación Pública (Local Services for Public Education)

TP - Técnico Profesional (Technical school)

VTF - Vía Transferencia de Fondos (Direct Transferable Funds)

WHO - World Health Organisation

WHOQLO - World Health Organisation Quality of Life

## Introduction

Quality and access to education and health are both part of the components of human capital that at the same time constitute the basis for a good quality of life. This thesis evaluates the conditions in which these two factors interact with the quality of life in a specific country in the world: Chile. The author considers that the case of Chile has certain features to consider in order to analyse the quality of life in the region. First, Chile has had a positive improvement in their economy since the 80s, making the country one of the major players in the economy of Latin America and the Caribbean. Second, the economic advance has brought about betterments in the systems of education and healthcare, transforming the country into a productive state. Third, the particularity of this development carries challenges that should not be ignored such as the quality of the services that it provides, the inequalities in the population and the reproduction of these inequalities during the life of the citizens.

The development of this thesis collects definitions of human capital that should not be ignored when speaking of the quality of life. The term quality of life has suffered changes over the years in order to adjust to the field in which is being used and there is a section in which it is explained historically the changes that have been introduced to have a deep understanding of the term, definitions that are multifactorial that could better explain the purpose of the use of the concept. It is said that it appeared as a response to economic indexes that no longer were useful to represent the true values of the quality of life of the population. The OECD and the UN definitions were analysed in order to arrive at a consensus on the meaning of the term for this thesis. For a series of reasons that go from the economic to the political sphere, the term has arisen as a mixture of the health and education factors and in this thesis the terms have been taken into a deep revision to continue with the lecture, trying to find consistency in the different definitions of the term.

Human capital instead is related to education and health and how an improvement in these aspects can develop the productivity of a country, using GDP as one of the principal characteristics of economic development, which is a traditional method that turns useful to do cross-country comparisons. It is noticeable how some authors have developed a definition, such as could be the characteristics of a population that make a contribution to economic productivity, where an investment in these characteristics could increase their capacity to produce. The World Bank took the definition and used it as a motor to accelerate the investment in people for greater equity, economic growth and an attempt to end poverty, trying to make the government allocate economic resources to human capital. However, there are still problems with monitoring how the investment in this aspect could increase the productivity or other benefits that arise from this investment.

The composition of this term makes the research more specific as the evaluation of its parts designs a more deep understanding of how the society can improve its performance in a community and which are the factors that a country has to take into consideration when allocating its resources to bettering its overall position domestically and internationally.

This thesis explores education in its factors of quality and the participation of the population in acquiring knowledge to improve their existence. The chapter about education contains highlights on the educational system in Chile, how it is structured and which are the opportunities that people have for social mobility. Another section speaks about measures of education that could be relevant to the position the country in the international sphere, having topics also related to the domestic situation and the circumstances in which the population finds itself in order to gain knowledge, with specific points related to the access to higher education and how difficult it is for Chilean families to afford the education for their children, giving lights on a system that reproduces patterns of inequalities for the low-income families. A section has as a protagonist the expenditure of

Chile on education as a percentage of the GDP and further comparisons of this expenditure with averages of countries belonging to the OECD, giving perspective to the research and contextualising the Chilean economic situation. Lastly, a paragraph is dedicated to the relationship between education and quality of life that emphasise the different factors of education that contribute to the quality of life of the population

On the other hand, the chapter about health is divided into the same aspects as in education. The first section describes the health in Chile, how the system is disposed to confront the various health problems of the citizens, different programs that help the population to go through maladies and prevention programs that limit the presence of diseases in the country. In a second section, it is found the measurements of health such as life expectancy and the presence of morbidity and comorbidity of some illnesses, how this affects the country and how has the state has undertaken these challenges. After this section, there is an explanation of how the economic resources are allocated in the country in matters of health, which are the problems that the state faces from the economic point of view and if this conditions the way in which the health system works. Finally, there is a paragraph focusing on the relationship between health and quality of life that could seem obvious: healthy people present a better quality of life, however, there are other factors that interact in this relationship.

The aim of this thesis is to have a collection of information that would be useful to understand the current situation of a country and to connect it with quality of life, with the objective to allocate the correct weights to the factors that constitute human capital in order to promote development in Chile. The author meets the idea that it is possible to observe the benefits of quality of life in development with the increment of investment in education and health, as they comprise the basis for human capital, and by an increase of this element, development is found in the form of quality of life.

## Literature Review

When targeting quality of life and human capital as research points, the amount of information found on the internet is broad, and it could be attributed to the vast factors that affect these two approaches. Several literature reviews have been made on these topics which means that it is not new to bring it to study, although quality of life is found to be associated with specific diseases and little about the impact it could have on the development of a nation, thus it could be said that it is more health-related. Back in the late ’70s, there was an attempt by Zautra and Goodhart to review the existent literature based on the indicators present in those times, reminding the interest posed on the topic because of the availability of measurements and data processing, the impact of the social environment on people’s lives and the better understanding of experiences in order to make better decisions to engage in a satisfactory life. This is, however, a social approach that finds itself far from the scope of this thesis. In the same review, Bloom who in 1978 wrote about social indicators and health care policy adding health and education as potential factors for quality of life, is one of the few that reasoned on the impact that these two factors could have on quality of life. The author recognises the efforts that Alex Michalos did for the development of the term quality of life, as it was fundamental to analyse his works in order to have a better overview of the definitions that could turn useful for this thesis.

The Stiglitz et al. report was made in 2009 that included quality of life in its pages. It is one of the most complete works that was evaluated in this thesis because of the inclusion of various factors, other than health and education, that constituted quality of life. It considered some aspects as consequences of human capital that were not found in other sources, and the author considers it a useful starting point. The topic that has been studied nowadays is related to the economy, climate and social development but little is to be found for a case study like Chile which represents a gap in the literature.

Quality of life has long been associated with the health sphere by evaluating it in regards to a chronic illness and possible side effects of treatments that could affect the patients during the recovery period and their overall life. It was difficult to find other factors regarding health in the literature as they normally were implications of maladies that do not come the case in this thesis. The author was looking for further explanations on the health-related factors that could affect the quality of life such as work performance, relationships with economic growth and, although some of the articles and papers discussed in this thesis do relate to the topics the author was looking for, they do not constitute a reliable base for the study since there is a clear lack of information on this regard. Health is a topic that has been concerned with the patients' experiences that could be useful for further research in the medical field but not for the purpose of this thesis.

From the education point of view, the amount of information found was vast as the human capital has long been associated with the achieved skills of the worker. Much information had to do with the investment that enterprises could make in human capital to improve their production and of countries that have invested in better quality and participation of the citizens in school programs. Much has been said about the strategies adopted by countries in order to overcome illiteracy and programs that give the opportunity for adults to finish their school years: in conclusion, the education factor is well covered by the literature. One of the problems found when searching for literature regarding the Chilean situation was that in the last years, little has been made to analyse the data issued by the departments of education of the country. For example, the author found data concerning the outcomes of the domestic standardised tests that children and adolescents do during their school period but no information about the socioeconomic factors and the relationships between the results and these aspects, even though the standardised test come with a questionnaire provided for the families to complete in order to contextualise the results of the test. It could be because in the last years the pandemic was the central character of the situation of

the country and there was no time or desire to do further exploration of the schooling circumstances. However, these are only hypotheses on the reasons the government had to not explore in a deeper way these tests, as they could donate a broad explanation of the educational and socioeconomic landscape that the country has regarding this topic and have the opportunity to deploy better decision making on this feature.

## Chapter 1. Quality of life as a sign of development

The term quality of life (QOL) has been looking for a definitive form in several studies that try to explain its origins and definitions. Most of the literature relates QOL to the health sphere, understanding QOL as a factor for certain diseases in the phase of recovery or perpetuity of the condition; these are medical views of the concept that have little to do with the purpose of this thesis. However, it can be found in earlier definitions that include multidimensional factors in order to broaden the term and study it in diverse spheres of research. Some of the discourses explain the relationship between growth and development of a country when the quality of life is improved, finding the purpose of cultivating prosperous countries and communities.

### 1.1 What is quality of life

The term quality of life (QOL) has found definitions in different domains of research and it rather changes along with these domains. For the purpose of this thesis, the definition used will be one that includes social factors that give a multidimensional interpretation of QOL and that can be adjusted in order to have a relationship with a country's development; first, it is important to give a historical approach to the creation of the term.

The term QOL is found in the health literature in a vast manner, but it has nowadays extended to the social science realm by adding social factors that complement medical definitions of well-being and QOL, not to mention psychological literature that is added every day to the health area. QOL is also a subject of study in the field of economics, in particular for happiness studies (Galloway et al, 2005 p.7), but back in the 60s, appeared as a matter of study for the social index movement as a response to economic indexes that alone did not represent the true values of QOL of the population (Rapley, 2003 pp 5-7). Nowadays QOL is a term coined by several fields of studies, has changed in its definitions, and it is applied in a wide range of situations to be analysed (Galloway et al., 2003 p.7). In the attempt to find more official explanations for QOL, we count on definitions given by organisations: the OECD for example includes not only health but also well-balanced work and life, education and skills, social connections, civic engagement and governance, environmental quality, personal security, and subjective well being (OECD, 2011) whereas the World Health Organisation (WHO) formed a group of fifteen international field centres to develop a QOL assessment to be applicable to all countries and they arrived at the conclusion that QOL is conformed by "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (WHO, 2012). The UN had a Quality of Life index that is now called Human Development Index that includes health, education and economy that gives a numerical value between 0 to 1 to assess the quality of life of a certain population. But following history, it is to be mentioned the academics that have developed a more detailed definition such as Alex Michalos who introduced QOL as an academic discipline in the '70s, and the International Society of Quality of Life Studies (ISQOLS) that acts as a forum for research in the area which is developing debate and inter-disciplinary approaches for the development of the term (Galloway et al 2003). Schalok in 2004 made an analysis of QOL for intellectual disability which nominates the allocation of economic resources as a factor for the quality of life of the subjects with intellectual

disability which gives light on how a more inclusive definition of the term can be applied to medicine, talking also about a more supportive society that could enhance well being. For a series of reasons, from economic to social and political, the term QOL has arisen as a compound of factors that include health, education and social services to develop better policies for the population and because of this, Rapley explains that the definition used to be studied must be taken seriously in order to proceed with further examinations of a certain topic. But the problem is that there is a lack of consistency for the term that in this case should be addressed. QOL has the potential to be changed according to the research category in which one wants to apply it, but this thesis will use a definition that has to do with education and health, which aligns with a more objective path for the analysis of the term, something that is closer to UN definitions and OECD definitions of QOL. We must consider, however, if the definitions come from a contribution to QOL or an outcome of it, a difference that could bring confusion to the reader if not addressed. In this case, QOL is seen as an outcome of the changes in the factors that compound it i.e. education and health, even if these concepts reside on the inside and on the outside of QOL as Taillefer et al recognise (2003 p. 295). Some other concepts are used interchangeably with QOL such as life satisfaction and happiness or in medicine, which are more subjective measures to QOL. In academic research, it can be found different typologies of quality of life, such as Farquhar identifies one that could serve the purpose of this thesis that is definitions that put the focus on one or two factors of QOL, such as health and education, excluding social factors and psychological ones, which at the same time could be called “research-specific”, which goes far from the definition given by the WHOQLO that gives a subjective input to the definition.

In conclusion, the definition used in the scope of this thesis is focused on health and education as part of the factors that affect QOL, and QOL is used as a term that includes these factors but also the ones defined by the OECD that are balanced work and life, social

connections, civic engagement and governance, environmental quality, personal security, and personal well being. For the purpose of this thesis, subjective assessments will be excluded as the author has limitations in this field. At the same time, although a further explanation could be made, the simplicity of the term could help the reader follow an easier analysis of how health and education affect QOL and avoid confusion with other subjective definitions that do not come to the case.

### 1.2 What is human capital?

A lot has been written about human capital and, differently from QOL, it can be defined as the characteristics of a population that make a contribution to economic productivity (Becker 1964). Another definition, older than Becker, can be found by Goode 1959 as "knowledge, skills, aptitudes and other acquired traits contributing to production" It has to do with education, skills and health levels of the population according to Schultz in 1961. But still, before there was Adam Smith who in 1776 used the human capital in its definition of capital as the number of inhabitants that could be useful with their talents and skills that could increase the wealth of society and for the individual. It could be said that investment in these features of human capital would increase productivity, (Goldin, 2014) as some companies do when investing in the education and set of skills of their workers. The aim of some researchers is to understand how investment in human capital could affect economic growth. This is a rather simple definition but it has more to do with indexes that currently do not exist to be applied to the entirety of the countries. This is why there have been attempts to objectively measure human capital and this is the reason behind the World Bank createing the Human Capital Project (HCP) which in its own words described the project as "a global effort to accelerate more and better investments in people for greater equity and economic growth" and the human capital definition they use has to do with a set of knowledge and health that people acquire through their lives that help them to reach their

potential as productive members of the society, speaking about the investment that could be made through quality education, skills, nutrition and health care in order to achieve more inclusive societies and end extreme poverty (World Bank). The World Bank in their project find that the investment done in human capital in low-income or middle-income countries is rather low (Kim, 2018) and their objective remains in trying to get the governments to invest in human capital as they do it in physical capital (bridges, roads, and other infrastructures) (World Bank, 2018), but one of the problems in the investment is the lack of resources that concern the benefits of this expenditure (Kim, 2018). There is also a lack of monitoring of the formation of human capital in order to see short-term progress resulting from an investment in education and health (íbid). In a paper written for The Lancet, there was an attempt to construct an index like the one of the World Bank of 195 countries during the period of 1990-2016 which found that Finland had the highest level of expected human capital whereas Niger had the lowest one. Chile was in the rank 50/195, a measure that considered expected years lived, functional health status, educational attainment and learning, finding also that there is a positive correlation between human capital and gross domestic product, saying that countries that have an improvement in the production of human capital have the tendency to be more successful in economic growth. Other articles talk about this relationship, such as Akpolat in 2014, in a long-term trend (Chile was included among the developing countries), where the human capital factors evaluated were life expectancy at birth and education expenditures, arriving to the conclusion that education expenditures were more valuable for developed countries and that GDP increased when giving more expenditure on life expectancy at birth in developing countries, as it has longer time employment of the labour force rather than the expenditure on diseases of older people or the burden of retirement. Another study by Ali et al. analyses the relationship between human capital and GDP, concluding that there is a specific set of conditions in which human capital can be positively associated with economic growth; these are strong institutions and the opportunities that citizens have in the economic sphere.

These factors can get a better utility of human capital. They mean that whatever the level of human capital accumulation, the educated labour force will underperform if there are no economic opportunities. The importance of human capital for public policy arises with the technological changes and globalisation that have transformed the countries into knowledge-driven economies (Laroche, Mérette and Ruggeri, 1999). Human capital can have different characteristics and Laroche et al gave the definition of five aspects to be considered: the non-tradable nature of human capital, the individuals do not always have control over the acquisition of human capital, human capital has qualitative and also quantitative aspects (quantify is rather an easy task by analysing the years of schooling or the nurturing one can get, but cannot assume the homogeneity of the investment), human capital can be general (knowledge and abilities that are transferable) or specific (non-transferable, limited in activities) and human capital contains external effects that are the effects of individuals on the productivity of others. It must be accounted for the measurements issues that human capital has: it is restrained by the inefficacy of the governments to correctly measure the expenditure on human capital since expenditures on human capital are treated as consumption when machinery for production is counted as physical capital in the national accounts and investment (íbid), so national accounts as they are nowadays, lack of understanding of the benefits of adding human capital and to evaluate its output. The problem of quantifying human capital relies on its quantity over quality of it. Laroche et al. conclude that in knowledge-based economies it is necessary to have a different look at human capital with accurate measurement instruments, analyse the expenditure on health and education and understand it as expenditure in the acquisition and maintenance of human capital.

In simple words, this thesis is about how human capital could affect the quality of life, how an investment in it can be the motor for future progress and how this progress can be translated into development through the quality of life. There are still problems regarding

the validity of these allocations of economic resources into human capital and the future consequences that this could bring, however, based on this brief section, it seems that further attention to it could signify progress for the country.

### 1.3 Relationship with development

The analysis has been on definitions and explanations of terms that will help the reader to follow the coming reasoning in this thesis. Romer and Lucas in 1986 and 1988 respectively included human capital in their growth models and proved its relationship with growth, however, creating human capital is difficult in terms of expenditure because in terms of health and education result in “decreased consumption levels” as people from the low-income category have low possibilities to invest in their human capital. The redistribution of resources that the society produces can decrease income inequality and, as a consequence, it increases social cohesion and therefore economic development (Kaldaru and Parts, 2008), so in order to create and maintain human capital, further investment in health and education is necessary to improve economic development. Human capital and quality of life can have a relationship with development too. As human capital increases, Poças shows that there is a positive relationship with GDP. Gross Domestic Product (GDP) is a traditional indicator of the standards of living of a country. so the main objective of a state is to better it through different strategies. The human capital term, mostly associated with education, has been developed to also include the health factor as it explains the worker's productivity and in consequence the economic performance. But the lack of adequate data frustrates the attempts to have a clear view of the effects that this can have on development. Grossman in 1972 was one of the first in including health as a capital good as the creation of health can determine the amount of time spent in labour, at the same time, healthy people are less likely to present absenteeism at work because of illness and so they present high levels of productivity. In some studies, we can notice the conclusions that

health conditions could have a predictor significance for economic growth than the level of education as Barro announced in 1996 as well as Knowles and Owen in 1997. In OECD countries it is seen that the high life expectancy is counterbalanced by low fertility rates and that there is a pervasiveness of chronic diseases in OECD countries. Howitt in 2005 identified a variety of reasons for which the health status could influence economic growth that will be discussed in later chapters. Poças suggests models where education is the driving force of economic growth and this too will be discussed in the next chapter. The OECD has found that Chile has improved in health and education and that this has increased life expectancy for example, which counts as development in the quality of life, however, it is not enough to obtain sustainable development in time. The problems related to human capital have given Chile issues with its productivity growth as the report says. Chile has problems with equity of access to basic public services and they are not considered to be quality ones, which hampers the development we want to see in the country. Access to health and education is limited, as they are opportunities and this causes productivity growth. The continuous discontent of the population with the current system has left the country “disconnected from development” as social mobility remains stagnated and below the OECD countries. The issues concerning stagnation are productivity and social cohesion, which gave the floor to several protests in 2019 causing multiple people to lose their eyes during the social unrest due to police repression. Citizens' satisfaction with the health en education system is low when compared with other OECD countries after the Gallup World Poll in 2020. Out of the same report, it is noticeable that institutions do not help much to improve the quality of public services in the field of health and education. In order to reach the OECD country's levels, the education system should improve by a lot since the access to higher education remains unequal for Chileans, giving low economic development to come, unleashing frustration among the citizens in terms of quality of life and income. There is also inequality in the health care system between Chileans with private and public insurance. The Covid-19 pandemic made the differences more noticeable

and pointed out the deep structural gaps that the country has that disproportionately affected the poor part of the population, because of less access to education and health among other factors. The OECD (2021) report suggests the improvement of the equality of opportunity through the investment in human capital i.e. making bridges to access the services of health and education. For the former, there is a suggestion about the equity of access and quality of the educational system to ensure economic mobility. The socioeconomic level in Chile dictates the level of education received where, according to the report, only 32% of people between 18 and 24 years from the low-income category were enrolled in higher education, compared to the 58% from the high-income part of the population. This is because the access to higher education in Chile is tightly connected to the preparation obtained in schools and this is connected to the socioeconomic level of the families, so it would be better to focus on the lower part of the income of the population, to help the vulnerable student to reach higher education. It is also important to invest in health as the Chilean healthcare system needs reforms to comply with the principles of equity and quality. There is an important expenditure made by households on health, that instead could be provided by the public services if they were adequately prepared for the population to use, and to protect the economies of the families. Policies could help to address health-related issues which could have a positive impact on the Chilean economy.

After this explanation, it can be said that there is knowledge that human capital is an important factor when talking about development for OECD countries where Chile belongs to. Human capital improves productivity not only through education enhancement but also through the incentive of better health status; human capital should be noticed as a factor that has a positive relationship with economic growth as it is with quality of life, which is part of economic growth and economic performance. With better strategies concerning health and education, it can be seen betterment in quality of life and therefore economic development.

## Chapter 2. Education

In this chapter, education is explored as a part of human capital that, when improved, can bring multiple benefits to the citizens. It is divided into four sections in which the first one targets the educational system in Chile, with an emphasis on higher education and the difficulties that higher education students have in order to finance their universities studies; a section on the measures of education that relates to the position of Chile compared with international standards and an explanation of the domestic situation, which encounters problematics such as low performance in international tests; a part on the expenditure analysing the importance that education has for the country in economic matters, which is rather low compared with the economic potential that the country has due to its major economic development in the last decades, and finally the effects of education on quality of life, where it is recognised that there is an important impact of this factor in the development, not only for the country for the communities that conform Chile.

### 2.1 Education in Chile

In Chile there exist almost thirteen thousand schools that are dedicated to the kindergarten field, where almost six thousand are specifically kindergartens while the rest corresponds to schools that also offer preschool education other than elementary school and other levels. The kindergarten schools have children between zero and six years old and it is managed by JUNJI (Junta Nacional de Jardines Infantiles (national preschools)). The JUNJI used to supervise the kindergartens and have kindergartens itself; a kindergarten can apply with state grants and become JUNJI. The JUNJI is one administrator that is property of the state and another administrator is Integra which receives grants from the state and from privates. VTF (Vía Transferencia de Fondos) kindergartens are institutions for education for

children, non-profit, that apply to JUNJI to open new kindergartens with a convention of direct fund transfers from the state. SLEP is the Servicio Local de Educación Pública which are all the other kindergartens that belong to the state where the JUNJI transfers the funds. The difference between a JUNJI kindergarten and a VTF is that the former receives money from enrollment while the latter receives the funds for assistance. This means that if a child is not coming to school, the school is not receiving funds for that specific child. The SLEP is a public entity that is at a regional level, not at a municipal one, and the Secretary of Education is responsible for the funding and management. The SLEP cares not only about kindergarten but also schools and high schools.

The “educación escolar" (school education) contemplates elementary school and high school, considering children and adolescents and adults. It is also considered the students enrolled in special education, in levels that are associated with those school categories (Cuenta Pública, 2021). In the last two years of high school education, Chilean adolescents have to choose between having a specific education that will help them reach the future they want. These choices are Scientific Humanistic (HC) or belonging to a professional school (TP) that gives them tools to directly work after their high school years. Higher education is divided in university, institutos profesionales and centro de formación técnica. The difference between them is the typology of career, the years of study and the academic degree they receive at the end of their studies. Universities give education for 4 or more years and give the title of the profession and a university degree called “Licenciatura”. In the case of the Instituto Profesional, we can find professional careers and technical careers but do not give the academic title of “Licenciado”, whereas at the Centro de Formacion Tecnica we only find technical careers that have a duration of 5 semesters and do not have the Licenciatura.

During the pandemic, the Chilean ministry of education implemented different measures in order to maintain assistance and learning. For the children, there are platforms still active called “Contigo Juego y Aprendo" that connected the families with the schools to make a more fluid development and learning for children, moreover, the program “Dame esos 5” was created in order to give space to the learning activities that children can do with their parents, adding to the list of activities Mi Primer Bartolo, which is a software that is dedicated to the curricular basis of each level, with an autonomous use by children. For children in rural areas, there was a rural kit that was composed of books and notebooks in order to promote reading and dialogue. There was also pedagogical support for students with the “Aprendo en línea” program as a response to the suspension of on-site lectures. The focus was that each student could develop their learning autonomously and minimise the impact of the circumstances in their development, also the implementation of scholarly texts online, other than TIC Scholarships that are about giving more than 125.000 computers with internet connection for 11 months. In preparation for the test to enter the university, there were also free courses for the preparation of the test.

To enter the university it is necessary to take a test called PAES, with the name of PSU until 2017 and then PTU. The Department of Evaluation, Measurement and Educational Registry (DEMRE) is the technical department to develops the tools of evaluation for the admission process of universities and elaborates the curriculum for the PAES. This job was done along with the disciplinary teams of the Unity of Curriculum and Evaluation of the Ministry of Education in order to establish the pieces of knowledge that the applicants need to know after their years at school in order to enter the university. The PAES test also gives information about the gap in the socio-economic sphere of the students. The current system of admission to higher education gives too much space to the PAES, a test that presents gender inequalities, and socio-economic inequalities, and it is made to measure HC education, excluding the students from technical schools who gain fewer points on the test,

discouraging their access to university careers. Also, there is the segregator factor: higher education is related to school education. There are so many inequalities that come from scholarly education. 83% of CEOs will go to the same universities, reproducing an economic elite and politics, which attempts against a true meritocracy (Educacion2020, 2016).

Education in Chile is composed of a system that replicates inequalities among its citizens. This is a topic that should be addressed by the state in order to avoid further economic discrimination and to search for prosperity for all the population by encouraging social mobility and equity among the people. The segregation made by the PAES test is important to notice as this is the kind of tool that should be inclusive, not programmed for only a few to pass it and reproduce the usual inequity standards that the country is used to.

### 2.2 Measures for education

Measuring education is a task that requires objective elements and it cannot work without talking about quantity and quality. This section explores the situation of the Chilean education in matters of performance of the students, participation, what are the tools that the Chilean government has to evaluate children and adolescents, and the circumstances in which the higher education students find themselves within the country, mentioning also comparisons with international tools that allow positioning of the country in the international sphere.

In the year 2020, there were 780.909 children enrolled in preschool, where most of them, 44%, are enrolled in mixed subsidy schools. This explains also the greater participation in transition levels, called pre-kinder and kinder. It is to be noticed that there is a relationship

between the age of the children and their participation in preschool where greater participation is to be found in the older sections of age. Based on the Cuenta Pública 2021, until 2020 the scholar system has 3.698.158 students both in elementary school, high school, and special needs schools (Cuenta Pública). 54% are in mixed subsidy schools, 36% in municipal schools or SLEP and 9% in private schools. 92% are in urban areas and 8% are in rural areas. 63% of students in the last two years of school are in an HC school while 37% are in a TP school. Also, when differentiating by sex, it is more common for women to participate in HC schools (66%) than men do in 61%. One of the challenges for Chile is to face the scholar dropout, In 2020 according with the Cuenta Pública, 1,5% of students enrolled in 2019 are not enrolled the next year, mostly because of the pandemic. in higher education exist 140 institutions with a total enrollment of 1.221.017 people: 60% is in universities when 30% is in Institutos Profesionales and 11% in Centro de Formación Técnica. The pandemic brought several problems for students, such as the learning objectives that were lost in an amount of one-fifth of what it was supposed to be learnt, not to mention the difficulties for more disadvantaged students and bigger losses for countries that were not prepared for online learning (Ergzell, Frey and Verhagen, 2020). At the same time, there are studies that highlight the prejudicial results that non-attendance has on academic results such as the difficulties to get to higher education (Liu, Lee and Gershenson, 2020). In the Chilean case, 70.9% of students from 6 to 18 years old participated in class 4 to more days in 2020, being the students of private schools the ones that had more participation and while the interviewees from 6 to 18 years old, 18.8% declared having many difficulties to go along the scholar activities and 40.5% declared shortcomings of hardware adequate for educational means (Cuenta Pública, 2021). Moreover, according to the Cuenta Pública, the Covid pandemic increases the risk of dropout because of the economic precariousness of the families and the physical absence from school that not only influences the learning but also social relationships. The MINEDUC estimates that nearly 81.099 more students will drop out because of the absence

of class. To put it into perspective, in 2019 there were 186.723 dropouts according to the dropout numbers in Chile. which signifies a 43% increase in only one year.

In order to measure the learning of children and teenagers in Chile, there is a test called SIMCE that applies to all schools in the country. The main purpose is to contribute to the betterment of the quality and equity of the education, giving also information about the achievements of learning of students in different areas of learning on the national curriculum base and also a relationship between the achievements and the scholar and social context in which the students learn. Since 2012, the SIMCE became the system of evaluation that the Agenda of Quality of Education uses to evaluate the results of learning in schools, evaluating the achievements of content and abilities of the current curriculum in different fields of learning through a measure that is applicable to all the students in the country that are in the evaluated level. Other than giving information about the curriculum, it gives information about the teachers, students and parents through questionnaires. This information is used to contextualise and analyse the results of the students of the SIMCE test. The results of the test give information on the learning standards achieved by the students in different learning levels and complement the analysis that each school makes comparing it with their own system of evaluation since the SIMCE test positions the learning in a national context. In this way, the SIMCE tests help get key information from each educational community to reflect on the achieved learning by their students and identify challenges and strengths that contribute to the elaboration or reformulation of strategies of teaching orientated to better the learning (Ayuda MINEDUC).

The PISA test is a measure of education created by the OECD in 1997 for more than 80 countries. The PISA test evaluates the performance of 15 years olds in reading, mathematics and science. The results donate information that is useful for policy-making and opens debate in the domestic and international sphere. Chile performs relatively badly

in those tests as in reading literacy 2018 scored 452 points, compared to the OECD average of 487 points where girls perform better than boys with a difference of 20 points. In mathematics, we can find 417 points for Chile instead of the OECD average of 489 points where boys perform better than girls by 7 points whereas in science Chile scores 444 points, a lower score than the OECD average of 489 points where girls have 3 points less than boys. The socioeconomic status can explain the 13% of the variance in reading tests, and the difference between advantaged and disadvantaged students is 87 points, finding academic resilience of 11%, like the OECD average (Test Pisa, Chile 2018). According to the CASEN 2017, illiteracy reaches 3,7% of the population which can suggest a betterment in the coverage of education in the country in the last years. The average of scholarly, which is calculated in people with 15 and more years, is of 11.8 years of school at a national level according to INE.

As seen, Chile has positive inputs in education, however, when compared in the international sphere, the domestic efforts to better the education systems fail to produce the expected results. More has to be done in order to bring light to the dark path that Chilean students face, especially in higher education as we have seen to be the most negatively impacted of the three levels of education.

### 2.3 Expenditure in education

The principal axis for development in education is the expenditure that a country does in order to cover the expenses for teachers, professors, infrastructure and availability for students.

For children's schooling, the aim of the Chilean government is to reach quality, equity and availability to avoid further inequalities in the future (Cuenta Pública, 2021). In legislative matters, there were presented two laws that establish a system of grants for the medium levels of nursery education (Boletin N. 12436-04) and on the other hand a modification of the general law of education with the objective of establishing obligatory second-level transition courses for children (Cuenta Pública, 2021), it was approved in the first chamber the Ley de Subvenciones a Niveles Medios that establishes a grant in middle levels in schools VTF and another three complementary grants to support in a concrete way the learning of children with special needs, another one for schools in rural areas and another for school with a majority of children in a vulnerable situation. This will help to end the discrimination within the distribution of resources. The law N. 20.529/2011 created a system of insurance for the quality of nursery education, elementary school and high school (SAC law).

For schools, it is present a budget for infrastructure that increased in 2021 a 62% respecting the last year, during 2020 there were advancements in the availability of more than 3.000 classrooms with the internet caused by the pandemic, which means a transfer of nearly 5.000 euros to 84 schools, and during 2021 the availability of internet in the classrooms will increase in another 10.000 classrooms with the internet. Even with all the programs and efforts focused on education, the expenditure on education remains at 4.92% of GDP (Aprender es más, 2018) despite the country having the highest expenditure on education in the region (Aprender es más, 2018).

As said before, higher education in Chile is not free, so there are benefits for students such as giving the opportunity to update their economic situation because of the pandemic and maybe gain access to further economic help. One of the biggest problems of Chilean higher education is that a number of students do not have access to it without paying large

amounts of money. According to Educación 2020. In Chile, higher education is mostly paid for by families; even if there are talented students from low-income families, they still have to get loans to get an education or they simply do not have access to higher education because they cannot pay for it. It is necessary to broaden the gratuity for the students and to broaden the help for low-income families in these cases. Programs for free education exist in the higher education field in Chile but going towards full gratuity in education is a way of inclusion. However, it does not change the bigger problem that is the logic of financing the privatisation of higher education. A new structure is required that includes higher expenditure by the government. Higher education in Chile is paid for by the families thus students have to apply for scholarships that are public or public lending of resources (Crédito con Aval del Estado or CAE) or private lending of economic resources. According to Basso (2016), the price of higher education is over the price of the professorship: the demand for enrollment has been inelastic to the price of the university education so the market has problems regulating it. Universities have taken advantage of this situation, and some private ones have profited enormously and have increased their patrimony enormously over the capital invested. The cost for families is one of the highest in the world and the state is losing money by financing fees that are above the real costs (Aprender es más, 2018).

The Constitutional Tribunal declared unconstitutional the article that prohibited making a profit from education. The law has since 1981 directed universities to declare themselves as non-profit institutions; however, in recent years, universities have failed to follow these rules. The new law prohibits profit from universities and establishes that the profit made should be reinvested in the educational field, and likewise prohibits related businesses in order to break the law. The Constitutional Tribunal declared unconstitutional the article that prohibited companies to be the support and controller of the universities. The law was made in order to avoid profit being invested outside the university sphere. Being a controller of

the university means that a company, though its representatives are part of the government of a university, has the power to make decisions regarding the destiny of the institution, and so forth the quality of education could be affected if the resources that come from public sources go to the profit of the owners of the institution and are not reinvested for education. The prohibition of profit with education is not cancelled by the constitutional tribunal, in such manner sanctions can be posed to the offender (Educación2020, 2018).

Heretofore it is displayed how education works in Chile and which are the challenges that Chilean education faces. Problems with quality are the most noticeable along with problems with funding. The Chilean government has not taken into consideration greater economic support for public education and this will challenge the productivity of its citizens. Problems of access and inequalities are on the basis of the Chilean education system. The issues regarding quality could be also related to the education market that has been established as seen above, giving access to education but the lowest quality. It is to be mentioned the high rate of dropout from university, nearly 45% according to Barros, which also notices the loans to be paid and, as a consequence, having frustrated people with student debt, which hits in a greater way the student of the low-income families.

The principal objectives of the Ministry of Education in Chile are to reach quality, equity and availability in early education, starting with children, and helping with the reallocation of resources that could help to end discrimination against low-income families. However, the system is not increasing the level of expenditure as it should, since the disbursement of economic resources remains stagnated, even considering that has the highest level of expenditure on education within the region. Indebtedness in the higher education system should be of concern for the Chilean state as the students should be the basis for the growth of the country. It is recommended a more inclusive system that includes the low-income population in order to better the productivity of the country.

## 2.4 Relationship with quality of life

Formerly it is understood the complicated Chilean situation and how difficult it is for students to gain quality and free educational paths. Education is part of human capital and the country lacks investment in this aspect as seen above. People are workforce or, as Becker (1993) called them, human capital, and its role is to generate and maintain economic growth and social advancement through two functions: the investment of time and capital in education, and the connection between the skills, the people and the jobs that require these skilled people (Ichim, 2020). According to the Stiglitz, Sen, and Fitoussi report of 2009, it is emphasised that education matters for the QOL independently of the income and the productivity of people, since it is related to the people's life perspective and evaluations, considering that better-educated people have a better health status, low unemployment, higher social connections and a better engagement in the political sphere. Education gives place to literacy, better reasoning and better capabilities to learn, as a wide mind helps expand the opportunities that people can have, independent of the population's income (Stiglitz et al., 2009). But first, it is to be noticed the direct impact that education can give to QOL which is a higher income, increasing their wealth; although non-monetary outcomes can help the people and the overall society and as consequence the QOL of a whole community. According to research done by the Stiglitz et al. report, individuals with higher education report better subjective well-being, participate more in society and have better health. Hellwell (2008), as cited in the report, recognises that people with higher education are considered to have a better quality of life, and this remains even after controlling income. Health is also better with higher education, and the population has better access to healthcare (Van Doorlaer et al., 2004 cited by Stiglitz, 2009). Educated people have more probabilities to engage in civic and social spheres, which is the participation in social activities and politics, considering also the level of trust and the attitudes towards other people. Cited by the report, recognises that in all OECD countries

(where Chile is a member), more educated people have more probabilities to vote, even if the overall outcome in the last years has been a decline in participation of the citizens in politics. For greater access to education, it follows, being this because more people can access to education or by facilitating the access when the investment is higher in that field, the future possibility of access to better jobs (Ionescu et al., 2013). According to Stiglitz et al., investing in education makes QOL sustainable as it constitutes and develops human capital that can augment the QOL of future generations. This investment in human capital can produce considerable social outcomes such as greater life expectancy and greater participation in social and political life. Some studies (Ionescu et al., 2013) support the idea that higher investment in education could develop constructive economic and social consequences which can improve QOL. In Edgerton et al. (2012) it is noticeable the number of positive outcomes that result from education in bettering QOL: socialisation comprises training and preparedness for productivity in this globalised knowledge economy; allocation in different positions of the society of the individual by sorting them according to the society's needs and promoting social mobility, but it can also promote inequalities if the educational system is not available for everybody as children already can be unequal depending on their family context; it brings about employment and economic development as it increases human capital so the productivity of the individual. Education then is highly related to life opportunities and by considering this, it can affect QOL. Investment in it can be crucial for the population and this could explain why social mobility in Chile is a hard task (Muñoz and Redondo, 2013). The agent for social mobility that works best is education, where the one that makes the difference is tertiary education (Sanhueza et al., 2015), where Behrman (2011) says that is the most effective tool to get over poverty and face inequality as cited in Sanhueza et al. The Chilean system in that regard is attempting against social mobility by not investing enough capital in education, thus attempting against the quality of life of its citizens, but at the same time since the system is not based in meritocracy as seen above, the system could reproduce a model of

society that perpetuates inequality considering the achievements of students of the low-income families are not the same as the high-income families (Sanhueza et al., 2015). Other researchers cited in Powdthavee et al. found that education influences not exclusively the income situation but also permits the presence of better decision-making about health, marriage and family life, where studies find that people with a more educational situation on average have a better mental and physical health and that more educated people remain lesser time unemployed, not to mention the stability of educated marriages.Ross and Wu (1995) as mentioned in Ivančič et al. (2008) identify that even with similar income levels, people with low education have a worse life than highly educated people and this could harm their health status. Well-educated people can use knowledge and the technology available in order to prevent and treat health conditions as they can use these resources more effectively according to Cutler, Deaton and Lleras-Muney (2006). It is important to notice that the approach used by schools in preventing diseases and carrying a healthy way of life can reduce risky behaviours regarding health, as unhealthy behaviours such as substance abuse and disruptive behaviours can be avoided with education (Ivančič, 2008). The relationship between education and quality of life as seen before can be associated with social mobility, health and even marriage prospects. It is to be noticed the struggle that the Chilean government faces with the investment in education and how this could attempt against the quality of life of the citizens by not allowing the student to follow high education paths.

## Chapter 3. Health

Health is directly related to the quality of life as a curated state of health translates into a better mental and body state of living. This chapter explores the Chilean healthcare system. The first section relates to a clear view of the system that is necessary to contextualise the Chilean situation, their achievements and failures, followed by a section that analyses the measures of health within the country, trying to understand the maladies that affect the population and further understanding the prevention that the country could make; a section is dedicated to the expenditure that the country does in the healthcare system and if it enough to cover the necessities of the citizens, and finally, a section in which the reader can find a further relationship between health and quality of life.

### 3.1 Health in Chile

The Chilean system of health is divided into private (ISAPRE), which covers 14.4% of the population and public (FONASA) which covers 78% of the population. The latter has a subdivision of levels depending on the salary, from A (people with low income) to D (people with higher income). All the Chilean citizens pay 7% on health from their salary. The public system has three categories of assistance to the population: primary, secondary, and tertiary which translates into first attention (CESFAM), specialised treatment, and hospitalisation respectively. There is no need to sign a contract with FONASA but it is necessary to do so with ISAPRE. (Superintendencia de Salud). Within public healthcare, there is the GES list of diseases (Superintendencia de Salud) that are covered by the state, no matter sex or age, or if the individual belongs to FONASA or ISAPRE. According to the Chilean Ministry of Health, 79,8% of individuals from ISAPRE or FONASA report coverage for their needs for GES disease. Some part of the population is not covered by

GES, but this aria because some of them have decided to choose another health institution or follow another physician which is the 34.7%, while the 10,5% decided not to wait for the GES to manage their health issues, and 9,9% indicates that did not know that the GES could cover their disease, revealing a lack of information within the citizens. There are 85 diseases (Superintendencia de Salud) where the state covers the investigation, diagnosis, development, and the following of the chronic disease. The law Ricarte Soto is a system of financial protection for diagnoses and treatments that have a high cost for the patient and gives protection for all health insurance, public or not.

The Chilean population counts on the EMP (Examen de Medicina Preventiva) to do prevention and investigation of diseases. It is divided by different ages until the elderly age. It also includes the measure of consumption of certain substances that could harm the health of the patient and for a certain portion of the population, there are stipulated certain exams such as breast cancer exams for women over 50 years old or a functional evaluation for elderly people from 65 years old. These are done by the CESFAM. For workers' security, the ISL (Instituto de Seguridad Nacional) works as a public entity that manages the security against work accidents and professional illness. It is a service that belongs to the Ministry of Work and Social Insurance and a company can decide to associate with it or prefer to go to the ACHS, or Mutual de Seguridad which are private institutions that cover the accidents of workers. As it is noticeable, the Chilean health system has a wide range of services open to the citizens in order to prevent and treat illnesses, but it has a low distribution of physicians that help with these diseases as the country counts only 22,6 doctors per year per 100.000 inhabitants (Subsecretaría de Redes Asistenciales, 2017) compared to the OECD average of 33 doctors for 100.000 inhabitants. To secure fair access to services it is critical for inclusive societies and high-performance health systems to count on the right amount of professionals. The barriers to reaching health services persist, particularly among the disadvantaged part of the population. For example, the time of

waiting for a knee intervention in Chile is better than a year. In Chile, the coverage for public assistance is below the average of the OECD; the coverage of the health system for the population is not sufficient by itself since the expenditure by the individual plays an important role to reach effective healthcare and affects the access to it (OECD, 2019). The quality of the system has to be evaluated since a quality service should be safe, appropriate, clinically effective and receptive to the necessities of the patient (OECD, 2019). For example, the effectiveness of the care for cancer patients in Chile is below the OECD average, calculated as the average of living after 5 years from the diagnosis (OECD, 2019). On the other hand, Chile has had one of the best increments of life expectancy since the 70s as it has an 18 years increment in this area. The strengthening of the health system has contributed to this increment, other than the role played by education, better living conditions and income. As the OECD reports, for example, cancer test detection appears to be relatively equal for different socioeconomic statuses which can be a good indicator in order to acknowledge the progress that the Chilean government has made in healthcare. Basic services are the principal point of entry to health systems; the indicators about the use of these services provide a critical measurement of accessibility, and data regarding the socioeconomic level display the level of inequality. Long waiting times for surgery causes dissatisfaction for patients because the benefits are being postponed while they suffer pain and disability. Waiting times are the result of a complex interaction between demand and supply of health services, where doctors play a critical role on both sides.

The demand for health services and surgery is determined by the health status of the population, the advancement in technology, the preferences, and the economic burden that the patients can handle when the cost of the surgery is shared by the state and the citizen, so the availability also of the medical teams affect the indexes of surgical activity. For example, a Chilean citizen has to wait on average 433 days in order to have a hip surgical intervention (OECD, 2019)

The number of hospitals and the availability of hospital beds is insufficient and many establishments show precarious conditions in infrastructure (Goic 2015). On the other hand, the private sector has around the 14,4% of the population (Casen, 2017) that simultaneously is the population with higher income, presents a modern infrastructure, the access to medical services is relatively timely, as the exams are made with the most advanced technology, but at the same time shows negative aspects such as the fact that the cost of the services is rather high, a cost that most of the population cannot pay and if they do, is at expense of an indebtedness. The concept of medicine and health as a business is the principal limitation in the private sector (Goic, 2015).

As it is seen, the Chilean situation is precarious for infrastructure but strong in the number of programs dedicated to the prevention of certain diseases. However, it is noticeable the lack of investment in education in order to bring more medical students in order to provide a full service in healthcare. The lack of investment in healthcare frustrates the citizens as they have to wait long periods of time for the treatment of their diseases, even though the promise of the state is to cover the demand with programs that give access to health, it fails to be of quality and on time.

### 3.2 Measures of Health

Over the years there have been efforts to measure the health status of the population in order to help policymakers to make better choices regarding the well-being of the citizens and to strengthen the national healthcare system and to do cross-country comparisons.

Chile is living the opportunity to make decisions that protect the population and future generations. This is a view that is necessary to take to focus on the protection, not only on risk factors and the diagnosis of health problems but there is a need to take care of the

population before, during pregnancy, before pregnancy with protection to women, the protection of the child and the promotion of healthy habits and consciousness about the protection of health that will allow Chile to grow with good levels of production that will permit the country to achieve better economic opportunities and equality for the families (Ministerio de Salud, 2018). According to the Chilean Ministry of Health, Chile has a mortality rate of 5.7 over 1000 people where mortality rate refers to the frequency of the diseases occurring in a geographical area and in a determined period of time for every 1000 citizens (Ministerio de Salud, 2018). the mortality rate increased and was the worst in the last 45 years due to the Covid-19 pandemic reaching a 30% increase compared to the last 5 years, being 2021 the most lethal year since 1976 (Carranza, 2021) while the rate of death for newborns is 4 for every 1000 children born alive (World Bank, 2020, from Child Mortality). As noticeable in Martínez et al. (2021), the ageing of the population has been the most extraordinary collective achievement at a world level (UN, 2019) and for the first time in history, most part of the population reaches 60 or more years of life expectancy (WHO, 2018) where the life expectancy in Chile reaches 80 years old (World Bank 2020). There has been a transformation in the morbidity of the population going through infectious diseases in the 20th century towards communicable and non-communicable diseases in the last few years (Martínez et al., 2021). It is estimated that 71% of all deaths in the year are caused by non-transmittable diseases (WHO, 2021). In the case of Chile according to a Lancet study about the Global Burden of Disease (Vos, 2020), the country presents a 64,5% of deceased that were 70 years or more, where the non-communicable diseases were the principal cause of death that represented the 85,8% in 2019, followed by deaths occurring because of lesions, 7,3% and 6,9% corresponded to communicable, maternal and newborn, and nutritional diseases. In ten years, between 2009 and 2019, cancer increased from 26,8% to 28% which now constitutes the first cause of death in the country, which follows the trend of high-income countries as the article reports. According to the Chilean Ministry of health, in the year 2016, 6.8% of the population has diabetes mellitus and arterial

hypertension and 3.8% present diabetes, arterial hypertension and obesity, with no significant difference between men and women in the former but it is significant in the latter. When speaking about mental health, 15.8% present depressive symptoms in the last 12 months according to the Ministry of Health in 2016, making mood disorders frequent within the Chilean population. These kinds of disorders lead to high cost for the country since they are more complex conditions that require a specialised evaluation and a prolonged treatment, needing most of the time pharmacological treatments and therapy; moreover, it interferes with everyday life and work performance, signifying absenteeism from work in some cases. People with mild to moderate disabilities account for 11.7% of the population over 18 years old, while 8,3% accounts for severe disabilities according to SENADIS 2015 as cited by the Ministry of Health, and the low-income part of the population is the one to have more people with disabilities, disabilities that have an impact on education since the group with a severe disability only reaches 7,1 years of schooling in average. There are other factors of risk to take into consideration such as tobacco use which has had a significant decrease in the last years reaching a 32.5% of the population that consumes it following the campaign against the consumption (PAHO, 2022), however, Chile is one of the top consumers of tobacco in Latin America and the Caribbean according to the Ministry of Health citing the WHO. The consumption of alcohol and the risk of consumption has increased in Chile to more than 0.5 litres of alcohol per individual (OECD, 2019), where also people of scholar ages have reached an increase in consumption (Ministry of Health, 2017). Considering this, it is noticeable that the Chilean population has a high prevalence of alcohol consumption compared to other Latin American countries (Ministry of Health, 2017). Adequate food consumption is an important aspect of health, as better nutrition leads to a better health status (OECD, 2019). Adults that follow a diet rich in fruits and vegetables and low in sugar and salt have a lower risk of developing one or more diseases of the cardiovascular type and some types of cancer (Graf and Cecchini, 2017 as cited in OECD, 2019) but it is observed that Chile has low compliance with

international and national normative and dietary guides according to the ministry of health based on WHO recommendations were less than the 40% of the citizens consume at least a piece of fruit a day in 2017 (OECD, 2019). Obesity reaches 3,4% of the population, being more prevalent in women. To be highlighted the top position that Chile has in obesity in Latin America, according to the WHO, and the OECD, 74.2% of the population is overweight. Nutrition is an important part of children's health and 3,2% of children between 0 to 6 years old report malnutrition or risk of malnutrition.

On physical activities, the country is not doing well either as it presents prevalently physical inactivity higher than the world average (Ministerio de Salud) as physical inactivity reaches 86,7%. Overall, the perception of one's health is given by polls made to the citizens where 59,7% recognise having good or very good health; however, this varies consistently with age: older people report the worst perceived health status. The structure of mortality gives prevalence to diseases such as circulatory system diseases, cancer and respiratory diseases, which together account for 61,5% of the dead in the country. The suicide rates have diminished in OECD countries between 1990 and 2017, but Chile has suffered an increase in this field with 10,2 suicides every 100.000 inhabitants (OECD, 2019).

The measures for health helped to have an overview of the principal problems that the country has related to people’s health situation. It is noticeable how the health of the population is not on the best path, however, the state should take into account these situations and give a turn into the campaigning for prevention in order to avoid further health problems and, at the same time, avoid the congestion of the system.

### 3.3 Expenditure on Health

According to Statista as cited by the Superintendencia de Salud, the expenditure on health by the Chilean government amounts to 9.4% of the GDP; however, the expenditure of families on healthcare amounts to 22% for FONASA and 33% for ISAPRE (Superintendencia de Salud).

It is noticed that the expenditures in dollars for health are below the OECD average of 3994USD per capita, whereas Chile expends 2182 USD in parity of the power of acquisition. Higher expenditure on health translates into better performance in four dimensions of healthcare: quality, access, results and healthcare professionals (OECD, 2019). The level of expenditure on health in a country that covers not only the necessities of individuals, such as the health of the population and its changes through time, depends on a variety of demographic factors, social and economic, and organisational dispositions, and the financing of the healthcare system. The proportion of the expenditure on goods and services in the health field compared to the total expenditure in the economy can vary through time due to the differences in the growth of the expenditure in health compared to the growth in the economy as a whole. It was calculated that OECD countries spend on average 8.8% of their GDP on health services in 2018, which includes Chile, which has increased its expenditure on health in the past years due to an expansion in the coverage of health for the population. However, there are a variety of modalities in which health can be financed, whereas Chile has an out-of-pocket expenditure of 34% according to the OECD. The Chilean system faces challenges that, through the years, have had difficulties to overcome. To acknowledge the weaknesses of the public sector in medical attention does not imply ignoring the great labour that has been made to better the system in the whole country, but neither signifies hiding the deficiencies and the dramatic situation in which the patients find themselves within the system. Some of the weaknesses, according to Goic

(2015), of the system are the number of old hospitals that have not been renewed in the last years, the deficit in hospital beds, and ambulances, a deficit in technology, difficulties of access to medical attention, limited dental coverage, work conditions that do not meet expectations, low level of compensation, among other difficulties. In Chile, less than 50% of the physicians work in the public sector and a majority work in the private sector attracted by the labour conditions and the elevated incomes they can get (Goic, 2015). Over a third of the expenditure is paid by families, compared to the 20% of the OECD. The pocket expenditure reveals one of the biggest deficiencies of the system, as the cost of medications is also high and exists an oligopoly of the pharmaceutical industry that fixes prices for their own benefit where there was found, in some cases, collusion to increase the prices without a reason (Goic, 2015). The SERNAC (Servicio Nacional del Consumidor) determined differences of more than 2000% between a branded medicine and a generic one. (La Tercera, 2019). the Vicepresident of the Cámara de Innovación Farmacéutica (CIF) explained in an interview with Pulso (La Tercera, 2019) that the high prices of brand-name medicines are because of a higher investment that is required for research for the elaboration of a new molecule or an active ingredient that constitute the basis for the new medicine. She declares that for a molecule to get into the market it is a necessary investment of USD2.600 million for every process that at the same time could be a research lasting 10 years. The Vicepresident of the Asociación de Productores Locales de Medicamentos (PROLMED) added that the high prices of medicines could be because of the public coverage for them, replying that these medicines are being covered by the insurance services of healthcare in other countries and that in Chile the coverage is very little. According to a research made by Fifarma and CIF in 2018, it was established that less than 6% of the new medicines registered in Chile count with a typology of coverage by the health system, accounting for public or private while the average of the OECD is around the 70% (La Tercera). The SERNAC put into a trial the pharmacies that were colluded and made them pay compensation to all the citizens affected by the pharmaceutical collusion;

the total amount of medicines amounted to a total of 206 products that had colluded prices found in 2007-2008. The compensatory process will benefit more than 53000 consumers (SERNAC, 2020). According to the director of the SERNAC in 2020 in an interview with Pulso, it remains that no “money or compensation can repair the damage caused by the manipulation of the prices within the market, where at stake there is the life and health of the people” (translation made by the author). Since 2016, there has been an anti-collusion law that aims to avoid collusion and punish these acts made by enterprises that incur in these practices. However, the price of medicines continues to be higher in Latin America (La Tercera 2019). The situation highlights that the Chilean system of healthcare makes people that need pharmacological treatment pay high quantities of money, especially for diseases that are not covered by the GES or the Ricarte Soto law, in which the medicines are covered by the state (La Tercera, 2019). Again, the discussion of the out of pocket expenditure comes into place as the expenditure on medicines is not covered by health insurance. Noticeable is also that in FONASA, people sometimes have to wait hours to get their medicines, needing sometimes to recur to private pharmacies. In the private sector, if the health insurance could negotiate with the pharmaceutical, there could be a reduction in the prices of medicines (Senado, 2020).

In conclusion, the expenditure in Chile is far from sufficient to cover the necessities of the population. It has a good expenditure when compared to the GDP and it reaches international standards, however, when compared to the expenditure made in USD, with a correction on PPP, the country fails to follow these global standards. There is also a failure in the system when considering that people with low income is the one that gets late healthcare and that the people with more economic resources have the possibility to enter a better system, reproducing patterns of inequality among the citizens. The problem related to the pharmaceutical industry should be addressed so that the out of pocket expenditure

diminishes. These are the economic challenges that Chile faces regarding the healthcare system.

### 3.4 Relationship with quality of life

According to the Stiglitz et al. (2009) report, health is the key factor in the length and the QOL, where people with less education status and income tend to limit their life span and it determines the overall QOL (Stiglitz 2009). Morbidity is an indicator that makes us realise how people are coping with a state of disability and how their quality of life gets disrupted by it or not. It also demonstrates some of the inequalities found within the population of a certain region, country or community. As cited in Stiglitz et al., Mackenbach (2006) acknowledges that people with lower income who present a lower educational level and income have the tendency to die at a younger age and to endure different health problems in their shortened lives. Ivančič 2008 acknowledged that children that are malnourished or that present frequent states of sickness miss school and might get sleepy during classes; other diseases or conditions such as problems of vision or hearing might represent problems when learning and usual bad health can lead to a worst human capital development. According to the Chilean Ministry of Health, health is one of the determinants of the QOL which does not have to centre itself on identifying the different factors that influence this state but also on the interrelation of the constructs of the disease, the functional limitations and the self evaluation of health. Moreover, with the ageing of the population, the self perception of health and QOL diminishes. The quality index of the Ministry of Health asks the population to evaluate diverse areas of QOL, which includes a direct question to grade quality of life and to evaluate other fields of it that includes mental and physical wellbeing and health among others. The results display that 67,4% of the population self-qualifies their quality of life as good or very good and, while the age increases, the self perceived quality of life decreases. According to the HDI, Chile has 0,847 points (from zero to 1)

which place the country in the group with very high human development, ranking 38 in the world and in first place in Latin America and the Caribbean. Physical and psychological health are representative as two of the most important factors to increase QOL satisfaction in many sources (Powdthavee 2015).

Surveys in a variety of countries found that the population recognise health status as one of the top factors for QOL (OECD 2011). QOL has turned into a concept that is important, and also a target for research in the areas of healthcare and medicine (Fayers and Machim, 2016, as cited in Haraldstad et al., 2019). Chile has the potential to increase its quality of life through health if the investment in healthcare is thought to improve the quality of the service, by allocating the expenditure to the public service where most of the population is part. Since the self perception of quality of life decreases with ageing, the creation of programs directed at elderly people could better the conditions of the population. Health, as seen as a priority for the country, could make a difference for the citizens as further allocation of funds in this area could mean less waiting for basic healthcare services, better programs to promote healthy habits and better campaigning for the prevention and treatment of some illnesses as 9.9% of the citizens ignore that some of the maladies they have could be treated by the public system for example. The relationships with quality of life seen above should encourage the country to make decisions that influence the well being of the citizens, as healthy citizens are more productive as they have lower probabilities to call in sick to their jobs and have a better performance in the workplace (Poças, 2014). Prevention of diseases, such as stimulating physical activity and a healthy diet could be beneficial for the quality of life, so the country could assign resources in order to decrease the emergence of diseases that could cost the state more money than prevention does. In conclusion, there is a relationship between health and quality of life and an improvement in the latter could bring more advantages for the community and the country as a whole.

## Conclusions

Quality of life has played an important role in the development studies sphere and was the principal character of this thesis, relating this term with human capital factors: education and health. The thesis started with a historical overview of the various definitions of quality of life and its changes through time, arriving at the conclusion that this thesis needed a definition that is near to the definitions of the OECD and the UN, where the former defines the quality of life as well balanced work and life, education and skills, social connections, civic engagement and governance, environmental quality, personal security and subjective well being and the latter includes in the term health, education and economy from its Human Development Index. So the definition used in the scope of this thesis is a reflection of the changes that the term suffers in order to adapt to the research that is being made. Human capital instead is well defined by some authors as the characteristics of a population that make a contribution to economic productivity. It is composed of health and education by some authors and has different characteristics as noticed in this thesis: human capital is not tradeable, the individual does not always have control over the acquisition of human capital and has qualitative and quantitative aspects, that the author tried to develop in this thesis. Human capital can be the knowledge and abilities that a person can get in the period of their life but also is the amount of health that can maintain during this period. It should be accounted for the problems of measurement that human capital has as an investment in such, as the consequences are not visible in the short term, so governments fail to acknowledge the positive consequences of the action of distributing a greater amount of economic resources on human capital and this is useful to understand the reasons behind choosing these two factors in order to explain development through the quality of life. The aim of this thesis is to bring more acknowledgement to the importance of these two factors in order to put a better weight on the problems that the system has regarding health and education and find new motivations to fix the organisation in these areas. National accounts

as they are nowadays lack the understanding of the benefits of an improvement of human capital and evaluate the output of such improvement. In knowledge-based economies, it is necessary to see human capital in a different light and to count with accurate measurement tools that help the country maintain the quality of human capital as an investment. Human capital has belonged to economic models since the 80s with the introduction of this factor in diverse studies, proving a relationship with economic growth, recognising also that the expenditure on human capital was difficult to achieve as lower-income families lacked the resources in order to gain more education and quality healthcare, but that a redistribution of the resources could help the population reach the same aims and augment social cohesion and development, finding relationships with GDP. Chile is considered by the author to be a good example of how the non-distribution of the resources can be harmful to the community, even having the economic possibility to do so as the country has increased its economic richness since the 80s and has gone into an increasing path since that moment. Chile has a problem with equity nowadays, interrupting the betterment of human capital of their poor citizens, and hampering development through the quality of life, as social mobility remains stagnated, causing also productivity stagnation. As seen in 2019, the inequalities cause frustration among the citizens and the country risks another uprising if these problems are not timely solved. With better strategies concerning health and education, the country could flourish in human capital, therefore in the quality of life that is one of the components of development.

Education in chile carries a series of challenges coming from the inequality that the country faces nowadays. The country has a high desertion rate in school and low university participation, with a high desertion rate also in this area. Another challenge posed for the educational sphere in Chile is the test to enter the university, which is discriminatory against the poor families of the societies that could not provide a better education for their children, having to allocate them to low-quality public schools that the country has not

taken into consideration to manage with higher amounts of economic resources. Even if the efforts to redistribute the economic resources have been made, the principal problem is the expenditure that has remained stagnated. If the public schools do not have the quality of the private schools in Chile, it is more difficult to find social mobility, which is found predominantly in the high education field. Chile knows that the objectives of education are to reach quality, equity and availability, but when are the resources that are lacking, there is little to do with the acknowledgement of what is necessary to succeed in their aims to reach a better education. To end the socioeconomic discrimination in the schools, there is a need to invest more in infrastructure, social help for the student, and a fund for vulnerable students, among other needs that could be required. This is an important change that the country could do in order to gain more quality of life and better its human capital. Education gives place to literacy, better reasoning and better capabilities to learn as a wise mind can help people reach satisfaction in their life through acquiring a better job and increasing their income. They can report a better well being and can gain better access to healthcare, not to mention that well educated people have a major participation in civic life by voting more in elections. Education brings about development and this has been addressed in this thesis.

From the health point of view, Chile presents a system that is divided into public and private, where the public sector has a major weight over the state as the citizens that comprise this category are the ones with low income and a worsened health, considering also the elderly that do not usually possess good health. There are programs in Chile that cover the maladies that the citizens can encounter during their lives, however, there are still problems of information for the future patients as there is a percentage that does not know about the number of benefits that can get with the public system, including the ones in the private sector that can use these services. Chile has a good prevention program to avoid diseases in general, but the functioning of this program gets hampered by the lack of

economic resources that can be destined for the healthcare system such as the number of doctors available in the public sector and long waiting times to receive treatment. The barriers to obtaining good healthcare are positioned in the low-income part of the population when the healthcare system should be safe, appropriate, open and receptive to the necessities of the citizens. Chile in this matter finds itself below international standards as above mention, the number of doctors is too low and the waiting time for surgical interventions is too high, finding as guilty the low investment that the country allocates in the field of medicine and healthcare, even if in the past years the country has incremented the expenditure, it can be found that i is still below OECD standards for example. The relationship with quality of life here is rather direct as healthy citizens present a better quality of life.

As a final remark, the recommendation for the Chilean system of education and health is to be generous and conscious with the expenditure so as to better the quality of life of the citizens as this is one of the motors of development that the country needs to prosper not only domestically but to keep its represntativenes as one of the potences of Latin America and the Caribbean.

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