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# Inequalities of the Cultural Workforce and the Social Reproduction of Their Situation in Chile

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# Abstract

This study investigates the socioeconomic situation of cultural workers in Chile. This investigation hypothesises that the socioeconomic status of cultural workers is significantly precarious based on informal work, tax contribution gaps, low salaries and social reproduction in the arts. The purpose of the investigation is to identify and improve people's financial situation in the cultural sector. Hence, this study is divided into three articles, which investigate different variables affecting the socioeconomic situation of cultural workers based on their contribution to pensions, access to public funding and cultural export strategies.

The first article studies the pension scheme of cultural workers, directly affecting their socioeconomic situation. The hypothesis is that cultural workers pensions are significantly low and do not secure a decent life quality, affecting several aspects of their lives. The second article investigates the public funding mechanism for art projects and how this mechanism does not solve the instability of cultural workers incomes but only provides short-term grants, which are not sustainable in the long term. The third article looks for new trade partners for Chilean cultural goods and services. As the internal demand for culture is not sufficient to guarantee economic stability for cultural workers, it is necessary to analyse the external demand for cultural products and find potential partners, which can provide higher incomes to cultural workers in the end.

The three articles share the same methodology. Firstly, a probabilistic model using Logit Binary Choice Model to identify the effect of each significant variable on three dependent variables: i) Probability of a cultural worker contributing to their pension. ii) The likelihood for an artistic project to receive a public grant. iii) The likelihood for a country to import cultural goods from Chile. Later, this investigation applies predictive models using two Machine Learning techniques – Regression Trees and Random Forest – to identify and prioritise the most relevant predictors affecting the probabilities mentioned above.

The study results show that it is possible to improve the pensions, public grants and export strategies for cultural workers by targeting policies in certain significant variables. Moreover, the three articles share the conclusion that variables related to more formality in their labour market could improve their socioeconomic situation and well-being, but acknowledging that policies related to the more formal scheme might find resistance from cultural workers.

**Keywords:** Cultural Workers, Precariousness, Pensions, Public Funding, Export Cultural Goods, Logit Model, Machine Learning.

# Part I

# Framing

# Chapter 1

# Introduction

The cultural economy is popular and recently growing in relevance. However, it has proved hard to investigate, principally due to a lack of data and research. Some work has been done on cultural policy and creative industries, representing a new area of study. Nonetheless, there has not been a special focus on government policy targeting social reproduction in the sector, which means an important topic due to the precarious situation of workers in the cultural sector.

On top of this, there is an additional consideration for cultural sectors of peripheral countries, where histories of underdevelopment of colonialism have created other challenges. They do not have first-mover advantages of mature production systems, thinking on cultural goods and services, affecting the socioeconomic situation of cultural workers involved in those production systems.

Social reproduction is a crucial aspect of this study, as its application resonates with the actual situation of cultural workers and their systematic precariousness. Firstly, social reproduction can be initially understood as systematic replication of the social process of reproduction (Marx, 2004). However, other authors extend the application of the concept by attributing the logic of social reproduction to the capitalist economic system where the inequalities and power relationships have their origin in the educational system, where the educated class represents a minority of the whole society. Subsequently, that inequality in the educational system perpetuates the structure of cultural capital distribution, where individuals with higher academic levels attend to more artistic events and consume more cultural goods (books, sculptures, paintings, etc.)(Bourdieu, 2003).

From that point, there are two concerns on the application of social reproduction in the arts. From a national perspective, the privileged class with significant educational levels is attending cultural events and consuming art in general. That implication echoes the cultural workers, as their industry is observed as niche and elitist, affecting the socioeconomic situation of their workers because of the restricted demand. On the other hand, from a global perspective, the perpetuation of production systems benefits those countries which firstly develop cultural goods and services, putting those in the Global South in a disadvantage position, again affecting the socioeconomic situation of their cultural workers.

Consequently, artists have generally not been taken seriously and not been

included in national social/economic policy. Hence, a unique barrier to developing in all places, especially in the Global South, is social reproduction funding, particularly in the cultural sector.

Then, in general terms, this thesis focuses on those unique aspects, such as 'not cultural policy´, the cultural economy, labours and social reproduction, questions of the informal economy in Latin America and development. Moreover, this investigation provides a body of work on economic theory and another one on policy theory, which are in tension as they do not initially match up adequately. Yet, the articles developed on this study seek to improve this and put the economic and policy theory on cultural labour closer, using an innovative method.

In that context, this investigation aims to describe and scrutinise the actual socioeconomic situation of cultural workers in Latin America, providing strategies oriented to improve the life quality of cultural workers in a sustainable and non-competitive way. It is suggested that cultural workers face a complex financial situation, and based on the vital role of culture in society, they should be better compensated, both economically and socially. A central premise of this work is that by improving the life quality of cultural workers, art production is indirectly improved, thus maximising the value of the final cultural product.

This research uniquely contributes evidence to show that current support mechanisms of cultural workers are not consistently improving their socioeconomic situation. This statement will be demonstrated by critically analysing the most sensitive sources of incomes for cultural workers: i) pensions, ii) grants, and iii) cultural exports, based on the economic, cultural and institutional context of Latin America, using Chile as a case study. Results demonstrate that current mechanisms serve to resolve the funding problem of the cultural workers instead of contributing to solving the labour problem. Furthermore, this research contributes to the literature studying the socioeconomic situation of cultural workers (Gill & Pratt, 2008; Gruber et al., 2018; Menger, 1999; Ross, 2008; D. Throsby, 1996; Towse, 2006; Wassall & Alper, 1992), especially in the Global South (J. P. Singh, 2017). Furthermore, it bridges the gap of a significant lack of qualitative studies on working conditions in the cultural sector (Hesmondhalgh & Baker, 2008), as most of the literature about the creative industries focuses on the economic and political dynamics of the creative industries.

Moreover, this investigation evidences how existing policies oriented to improve cultural workers socioeconomic situation have been ineffective or misdirected. Finally, this work sheds light on possible cultural policies that can improve the incomes of the cultural workforce. By unveiling the circumstances

of cultural workers, this investigation bridges the gap between literature on the funding problem and the labour problem of cultural workers, where much focus has been put to improve the condition of cultural workers by solving the funding problem. Less attention has been considered to understand the labour problem of the cultural sector, which is the aim of this investigation. The primary concern of the academia and funding policy is its approach to support cultural workers under the assumption that the cultural sector is a non-profit sector, mainly relying on the welfare state to survive. Consequently, the mechanisms to support people working in the arts are primarily based on short-term grants and subsidies built on inter-peer competition. There are several problems with this system. The non-profit assumption of the cultural sector carries the view of artistic manifestations mainly as a social service - such as health, social housing and education – where policies focus on giving financial support to the art as if it is a public good (Ross, 2008). As a result, the budget on arts is seen as a chronic expense rather than a long-term investment. Moreover, the public subsidy is usually based on competition among candidates, contradictory to the social climate of the art sector, which promotes cooperation and solidarity among colleagues (Gill & Pratt, 2008). As the financial support is temporary, or as is more frequent, a one-off contribution, it ensures cultural workers chronic reliance on these mechanisms - generating anxiety, uncertainty and discontinuity of their artistic work (Caves, 2000; Jarvis & Pratt, 2006). Overall, the current funding of the cultural sector does not sustainably carry the socioeconomic situation of their workers.

There are also practical reasons for policymakers to see the cultural sector as an industry in need of subsidy rather than an industry that, with support, is self-sustainable. It is primarily the easiest way to support the sector. It does not consider the whole spectrum of cultural workers - which is statistically hard to account for - but only those applying for grants. This accountability problem is singularly present in the cultural sector. It is invisible to the System of National Account and consequently highly complex to make informed decisions on cultural policy towards improvements for cultural workers, as targets of public policies. In the context outlined, this research takes a different approach by viewing this as a labour problem – not of funding – within the cultural workforce. This approach takes a more representative angle to understand the cultural sector, identifying it as profitable and enabling policies that do not involve competition among cultural workers and are sustainable in time. However, academics have not considered this approach before, partly because of the informality of the sector and lack of statistical information inherent in the cultural statistics, which constrains a possible analysis. It is thus a more complex way to identify the organic situation

of the cultural workforce, but at the same time, it is more representative of their reality.

The difficulties in accounting reliable data of the sector stem from several factors related to its intrinsic informality. Registration of cultural workers is a barrier mainly because cultural statistics have not been included in the System of National Accounts. On the contrary, cultural statistics have only been considered in the Cultural Satellite Accounts (CSA), which is a less accurate way to quantify the contribution and register the characteristics of the cultural sector and the cultural workforce. Further, policymakers rarely use CSA as a reference to make public policies. Therefore they primarily serve as a referential mechanism to understand the cultural sector. The other way to account for cultural workers characteristics is based on census and national household surveys.

Nonetheless, they present limitations as the coding used for cultural workers is too broad. They are generally included in a group with other non-cultural jobs, which distorts the statistics and makes cultural workers harder to identify. Lastly, second non-cultural jobs, non-paid work, and other less formal working situations prevailing in the cultural sector affect census, national surveys and consequently statistics on the cultural workforce. As a result, cultural workers self-declare as a split entity, as they do not recognise themselves as one.

Additionally, the third article only considers the international trade of cultural goods. The reason to do so is that cultural services statistics are not entirely accurate and hard to register, due to their informality, spontaneous composition (community events, family events) and sometimes not subject to monetary transactions (basking). This investigation acknowledges the limitation of not including cultural services as it is the most active area of international relations. However, the results from the exports of cultural goods presented in this research provide guidelines that can be used as a reference when considering the cultural export strategies as a whole.

As a result, cultural workers and cultural production are underestimated. Thus, the *leitmotiv* of this study is to find the most sensitive variables affecting the socioeconomic situation of the cultural workers so that later, it can build sustainable proposals to improve it.

# Chapter 2

# Literature Review

This chapter provides a detailed literature review on the labour market and, more specifically, on the cultural labour market. The function of this literature review is to provide a framework on the topics around the socioeconomic situation of cultural workers, which is the subject of study of this thesis. To reach that point is necessary to cover the literature on several topics included in the following sections.

This chapter is divided into two main sections. Firstly a section on economic theory, covering the view on the general labour market, to later move to the specific situation of the cultural labour market. Then, it explores the singularity of cultural workers, theories and empirical evidence that explains their precarious socioeconomic position, which is the research issue of this study. Secondly, a section on public policy theory, explaining cultural governance theory and historical approaches in countries of the Global North and the Global South. This part of the section is crucial as it links the economic theory on the precariousness of cultural workers with the approach on policies that countries had to tackle - if they have - to cover this issue. Later, this second section covers the national statistical system registering economic activities and explores why the cultural sector is not included in it. Then, it explores the difficulties of reporting the cultural activity and the characteristics of the cultural workers, with applications for the case study. This second part of this chapter is relevant because it builds the argument that cultural workers precariousness has been invisibilised to policymakers, due to the lack of statistical information on their situation.

This investigation acknowledges that other areas could be useful to consider, such as educational theory on cultural capital for the demand side, labour theory on unions applied for cultural workers, policy theory on minimum wages and universal basic income and policy theory on subsidies and countervailing measures for cultural exports. However, due to the extension of this thesis, those will not be considered.

Nevertheless, this literature review approach establishes an adequate framework to address the precarious situation of cultural workers, as the problem has been studied in both economic and policy theory. Hence it feels critical to explore both approaches and put them together in a joint literature review to make the problem visible. On the other hand, the subsections on cultural statistics show

how cultural workers characteristics and cultural activities are not adequately registered – due to their informality - making the problem of the precariousness of the artistic labour market remain invisible. Overall, the selected approach for this literature review justifies how it all fits together at a literature level acknowledging the challenge of the multidisciplinary and multifactor aspect of the socioeconomic precariousness of cultural workers and how economic and policy theory aims to make it visible and cultural statistics struggle with the invisibility of it.

## 2.1 Socio-Economic Context of the Creative Economy

The shared literature of this section explores different aspects of the cultural labour market.

The first subsection analyses the labour market starting from the late 18th century to the present. Presenting a critique of the normative labour market, as the only scheme accepted by the neoliberal economy, prevailing in most countries. The second subsection explores the labour market established in the cultural sector and specific characteristics demonstrating why cultural labour is viewed differently from the rest of the labour market. Moreover, this section analyses empirical details on other working schemes present in the cultural sector, such as discontinuous labour markets, informality, part-time jobs, secondary jobs and volunteer jobs. The third subsection of this investigation maps the variables affecting the socioeconomic situation of cultural workers. It identifies the most significant ones to carry out an empirical investigation based on Chile to develop policies that improve the socioeconomic status of cultural workers.

### 2.1.1 The Standard Labour Market Conceptualisation and Operationalisation

This subsection offers a historical overview of labour markets. It highlights the leading labour market-development theories and explores theories on wage allocation for workers and their evolution over time. Moreover, providing a general approach to the different labour market theories, such as single-, dual-, and segmented markets.

### Single Labour Market Theories: Human Capital and Neoclassical Theories

The labour market is a vital component of the production of all sectors of the economy. In this context, labour is defined as the amount of physical, mental and social effort from a worker to produce a good or provide a service, in return for payment (Railkar, 1990). In the context of a neoclassical economic model and the free market – the most widely economic model in the world – the labour market results from the interaction between supply and demand of those workers, which defines an optimum labour level in the economy. In 1776, the principles of labour in the context of a free market were defined, proposing a division of labour based on skills, which were presented to result in greater productivity and economic growth (Smith, 2010). Based on this free-market theory, human capital theory suggests that the most common mechanism is an economic reward related to the investment of human capital made by the worker. However, most such investments do not reasonably apply to creative workers, as demonstrated in several cases.

For example, higher educational attainment correlates with increased expected earnings. However, individuals in creative careers see lower returns on educational investments compared to other industries and receive more variable earnings as a result (D. Throsby, 1994). Differentiated skill level is another predictor of increased revenues, where neoclassical theory suggests that the market will pay a higher salary to a minority of experts that manage specific abilities. One such example is increased wage for work in risk-filled or poor conditions, a concept known as 'compensating differentials' (Antos & Rosen, 1975); where job characteristics influence labour market equilibrium. Such is the case for commodity extraction. The national economic contribution from commodity extraction is often significant and leads to export dependency (at least 60% of total export). This situation is more frequent in peripheral countries: with two-thirds of the 135 peripheral countries being dependent on commodity exports as of 2015 (Nations, 2016). For this reason, salaries tend to be attractive at any level within these industries.

In this sense, some authors suggest that the neoclassical models, and particularly the free market, fail to explain observable institutional realities (Doeringer & Piore, 1985). This situation represents a market failure where the critical principle of optimum salary based on the free market is violated. Workers can either receive a higher wage than their skill attribution or where skilled workers are not compensated. Nevertheless, neoclassical authors justify the separation of the in-

ternal and external labour market as internal labour market salaries are related to the role and not with the worker (O´Brien, 1976). Therefore, more relevant to their salary model is the worker's performance on specific objective tasks. Then the authors' approach is experienced-based and not skill-based, which justifies the salary gap between internal and external labour markets.

In summary, the current neoclassical labour market philosophy employed by most countries worldwide is critiqued for failures, particularly in terms of wage dispersion, unemployment and causes of discrimination. This criticism is relevant to the art sector because of the implicit barriers in the cultural labour market, which results in a concentration of incomes of few workers and preference for collaboration based on network and not entirely on skills. A subsequential subsection, specific to the cultural sector, will cover these aspects.

### Segmented Labour Market and Dual Labour Market Theories

As a reaction to traditional neoclassical labour market theories, Segmented Labour Market (SLM) theories grew in popularity during the 1970s. SLM theories began with the dual labour market theory, which described a labour market with two distinct labour groups with limited inter-mobility (Doeringer & Piore, 1985). On the one hand, a primary sector was determined by good working conditions, stable employment contracts, and liveable salaries. The secondary sector was conversely characterised by poor working conditions, low wages and chronic employment instability. This theory is based on the idea of uncertainty of demand in modern economies and the several options that technology and the organisation of supply chains give (S. Berger et al., 1980). Consequently, the primary sector rigidity guaranteed the indispensability of highly qualified workers and the excellent working conditions, with an opposite scenario for those in the secondary sector, which absorbed all the volatility of the demand-side drivers, such as employer characteristics or the structure of the national economy. As an expansion of dual labour market theory, radical segmentation theory explains the segmentation on monopolistic capitalism, where large corporations required stable labour demand to maximise investment. The exploitation and control over employees explained the stronger segmentation within these two groups of workers, defined by sex, race, and what was described as 'subordinate' and 'independent' jobs in the primary sector (Reich et al., 1973). On the other hand, Marxist criticisms of the labour market state that a binary, non-fluid division of labour such as in a capitalist context, only benefits the employers by easing the hire of cheap unskilled workers for particular jobs, which allows skilled tradesper-

sons to avoid the obligations of simple labour (Braverman, 1998). This effect was coined the 'Babbage's principle' (Babbage, 1832) is primarily a critique of the extreme division of labour system proposed by Adam Smith in 1776 (Smith, 2010). In the end, the consequence of capitalism - as Babbage's principle suggests - is establishing a mass of low-paid workers providing unskilled work with no improvement prospects, which maintains polarisations of workers and, therefore, of society.

New constructive criticism of the previous SLM theories took place under the Cambridge segmentation school, moving the focus from the labour and production – the initial SLM approach – to marketing and market structure. Moreover, technological advances, organisational work changes and production scalability could create job structures heavy on low-skilled workers (Rubery, 1978). Therefore, tradesmanship no longer guaranteed good employment conditions as the dynamism of monopoly capitalism could provide new job structures and new forms of labour demand. Additionally, other authors criticise the SLM theory based on the instauration of trade unions as a determinant of the primary sector (Kahn, 1975). The establishment of legally sanctioned workers' unions initially improved salary negotiating power significantly, especially when companies and institutions were not providing wages according to the living costs and employees' workload. However, new trade unions have primarily lost power in the global neoliberal economic system, which does not fit entirely with the context of social workers rights (Daniels & McIlroy, 2009). For instance, all 36 OECD members have seen the percentage of trade union density diminished in the last ten years, except for Italy and France that maintain their share, and Iceland and Chile that increase their percentage (OECD, 2016). This effect leads to rising wage gaps and the empowerment of companies and institutions developing schemes that undermine the workers' rights. Moreover, specifically for the cultural sector, unions are challenging to develop because of the diversity of cultural workers and the potential risk of losing artistic independence in a highly autonomous industry (Ross, 2000).

Two relevant implementations of dual labour market theory were Fordism and Taylorism. The first was developed by the Ford Motor Company's owner Henry Ford in the 1920s, fully implemented in the post-war era. In short, Fordism is a systematic control of the supply chain process (Jessop, 1991), dividing labour into specific tasks performed by semi-skilled workers to assemble a final product collectively. It is also often viewed as the first labour scheme that connects mass production with mass consumption to the detriment of small-scale production, with the endpoint of reducing costs through the economics of scale and increas-

ing productivity. The model left no chances for workers to progress, learn and be owners of their own time, as the managers were in control of the mass production process and, therefore, the workers involved. Workers were often physically separated from skilled colleagues, discouraging opportunities to interact with and learn from them or perform tasks apart from those initially established for optimum productivity. In compensation, as productivity increased, so did salaries. Fordism provided salary improvements for standard workers and access to goods previously unobtainable for the working class, such as cars, televisions and washing machines. The increased purchasing power of the growing middle class led to a point where the productivity levels could not sustain the growth rate, resulting in businesses abandoning the Fordism model in favour of other possible solutions (Lipietz, 1987); such as 1970's Taylorism.

In opposition to Fordism, Taylorism carefully separates the tasks of a supply chain, using management as the most relevant variable to increase productivity (Tomaney, 1994). It has been described as an invigoration of old work schemes related to craftmanship and specialised skilled labour. However, Taylorism has been criticised as the ultimate production organisation, separating mental (management) from manual tasks (Braverman, 1998). Other authors supported Taylorism, suggesting that the critics did not acknowledge that the management extension also brought consent and cooperation from the workforce (Burawoy, 1982). Nevertheless, the results of both Taylorism and Fordism empirically showed that those labour schemes were not consensual or cooperative. That is why, following these two eras, Post-Fordism working schemes focused on inclusion and participation of the working force, aiming for loyalty based on economic and mental rewards. Moreover, the Post-Fordism labour market paradigm shifted from economies of scale to economies of scope (Tomaney, 1994), where the relevant aspects for the workers are mobility, flexible working hours, knowledge-sharing and adaptability (Virno, 2004).

Furthermore, working schemes keep evolving as nowadays companies are paying attention not only to the productivity of their workers but to their work-life balance and mental health. Some examples show the innovative projects proposing modifications to the actual working scheme. For instance, in 2000, France reduced the standard working week from 40 to 35 hours to lower the unemployment rate and increase the flexibility of labour contracting. Similarly, companies like Perpetual Guardian in New Zealand have experimented with new schemes such as four-day working weeks to let workers spend more time with their families and leisure, with no evident reduction in productivity.

Overall, employees tend to aim for jobs that are perceived as meaningful for

them instead of highly paid positions (A. Schwartz, 1982). In this sense, the creative industries have been a benchmark on workers with this mindset. In a way, cultural workers are pioneers in this kind of behaviour. They soon will be trespass to other industries of the economy, with modifications in how employees attract and motivate workers. It is essential to look at the specific characteristics of the cultural workforce, such as its intrinsic informality and why it is different from other labour groups.

The previous analysis is a general approach to the labour market and theory around salary determination; this is presented as the basis for the formulation of this study. The next step is looking at the specific characteristics of the cultural workforce and why it is different from other groups of workers. Then the following subsection analyses the variables affecting the labour market in the art sector and the socioeconomic situation of cultural workers.

### 2.1.2 The Cultural Labour Market: Uniqueness, Conceptualisation and Operationalisation

This subsection explores the characteristics of the cultural labour market and why it is remarkably different from other industries. Furthermore, it analyses how the cultural labour market factors affect the cultural workers' actual socioeconomic situation.

The first part explores the conceptualisation and operationalisation of the cultural labour market. It also analyses the characteristics of the cultural labour market from a theoretical approach. The second one explores empirical studies supporting the previously presented theories. Finally, the third part investigates the difference in cultural workers' practice and how their labour schemes changed over time.

#### Theory and concepts

This first part explores several theories explaining the precarious situation of the cultural workers' socioeconomic status. Moreover, this study overviews five modern economic theories in cultural work.

Firstly, theory on work-preference (D. Throsby, 1994), where, even though the financial constraint of the cultural sector affects directly cultural workers, they still decide to work on artistic jobs, regardless of the low incomes (Rengers, 2002). Moreover, they prefer to compensate that low income with secondary jobs or increase their work hours instead of moving out of the cultural sector.

Consequently, the stress and fatigue of overworking or dealing with multiple jobs directly impact the performance of cultural workers. This situation is evident in emerging cultural workers. In other words, emerging cultural workers are the most sensitive group to the so-called 'survival constraint' (D. Throsby, 1994). The effect of low incomes is perceived as an entry barrier, leading to monopolistic power from particular cultural institutions that decide which artists will have more exposure to the audience and, endlessly, better financial status.

A second relevant theory is the superstar theory (Rosen, 1983), which identifies the art sector as the winner-takes-all market, where relative performance overcomes absolute performance. The author explains that if an artist has a marginal positive difference in quality, the artist generally takes a significant share of the market. Therefore, international stars and the technical team control the market and leave little room for cultural workers of less renown.

Thirdly, another theory explaining the socioeconomic situation of cultural workers is that generally, artists think they are unfit to perform non-artistic jobs for a living (Abbing, 2008). Therefore, the willingness to work for low incomes is high. However, this misconception could be corrected because of the necessity of taking second jobs, but too late to change to an entirely non-artistic career. That is the reason why the structure of the cultural workforce is generally informal and part-time.

Fourthly, a theory on cultural workers conditions based on the concept of 'psychic income' (Towse, 2019). The economic theory suggests that individuals should optimise their decision based on the activity that reports more economic retribution. However, cultural workers will typically choose an artistic activity, although another job offers better payment. The difference between both incomes is psychic income. For instance, an artist can make 20 pounds per hour as a musician and 25 pounds per hour as a waiter. In that case, those 5 pounds of difference represent the individual's opportunity cost, where cultural workers will often choose the job related to the art sector even though it provides less financial retribution and more poor work conditions.

Finally, another relevant theory explaining the socioeconomic situation of cultural workers is the misinformation of the new coming, which looks at the art sector as a space of realisation. However, newcomers face several informal barriers, which they are not aware of beforehand, restricting their careers and consequently affecting their socioeconomic situation (Menger, 1999). In such a case, the lack of information on the cultural production and the informality of the cultural workforce plays a vital role in the misconception of new coming artists. Eventually, it generates an oversupply of artists, as the entrant artists are not

conscious of the actual situation of the sector.

Overall, the five theories contribute to unveiling the reasons behind the precarious existence of cultural workers, covering aspects of both supply and demand of their labour market.

### Applications and Examples of Cultural Work Theories

After mentioning the theories behind the actual situation of cultural workers, this second part investigates empirical studies that test the previous ideas explaining the condition of the socioeconomic status of cultural workers.

As mentioned in the work-preference theory, there is no direct correlation between efforts and earnings for emerging cultural workers, yet still, cultural workers stay in the sector. Moreover, no matter how hard they work, their precarious situation delivers the same amount of earnings at any level of work, affecting the time restriction and the possibility of better incomes via secondary jobs. The case of Australia has been recently analysed, where artists real income is 21.43% less than the average income of employees. That gap increase even more compared to the average income for managers (47.3%) and professionals (41.27%) (C. Throsby & Petetskaya, 2017). Moreover, for 2014-2015 the average creative income for artists was AUS $18,800, the average creative and arts-related income was AUS $32,600 and the average total income considering second jobs was AUS $48,400. These numbers are significantly lower than earnings from occupations with the same level of qualifications. Specifically, for the same period, the average incomes for managers were AUS $91,700, and for professionals, AUS $82,400. Moreover, considering all employees, the average income was AUS $61,600.

Another relevant study describing cultural workers' work preference, especially the multiple job-holdings, took place in Australia between 2007-2008. On average, artists allocated 53% of their working hours to creative work, 27% to work-related with the art sector, and 20% to non-arts works, with dancers and community artists, took the least working hours outside of the cultural sector, and writers and actors spending more hours working on non-arts work (D. Throsby & Zednik, 2011). The investigation determines that maintaining the multiple-job holding scheme is mainly due to insufficient labour demand, the inadequate financial return from artistic jobs and constrained markets to develop as a cultural worker.

For the case of winner-takes-all theory (Krueger, 2005), investigation on the music market of the US shows that this country has the most prominent music

industry in the world, generating US$4,898 billions in 2015 (IFPI, 2016). The hierarchy of the American nation is such that Japan – the country that follows it – produces 53.7% – of the US. Furthermore, the results showed that 5% of the artists perceived 62% of incomes related with live performances in 2002 and on the other hand, the same 5% got 82% of the market share of live performances in 2003.

The mobility of cultural workers compared to workers of other industries supports the theory that cultural workers are unfit to perform non-artistic jobs (Filer, 1986). The empirical case used data for the US from the 1970 and 1980 Census. The results showed that artists have a higher probability of remaining in their work after five years than workers with non-artistic occupations. Even though this paper wanted to prove that artists do not earn less salary than other industries, that is why there is no more mobility in the cultural sector than in other sectors. A more plausible interpretation supports the artists' unfit to perform non-artistic jobs' theory, as cultural workers skills may be significantly industry-specific, making mobility more difficult.

Based on the theory behind psychic income, a study of over a thousand US painters showed that over 70% of them had rejected high-wage opportunities just because they were not artistically fulfilling (Jeffri et al., 1991). However, if artists do not earn enough money to make a living, their willingness to exchange money for their satisfaction is almost zero. Consequently, a minimum wage can help artists to reach a specific economic condition where they can exchange money for immaterial rewards (Abbing, 2008). Furthermore, in 1990, full-time artists in the US perceived 30% lower incomes than all other full-time workers (D. Throsby, 1994). That might be attributed to increased artists' participation in the total workforce, from 0.73% in 1950 to 1.31% in 1990. In the case of France, during 1986-1997, the number of intermittent workers in the performing arts increased by 50% (Menger, 1999). However, earning per artist diminished by 40% and the worked days per artist, which decreased by 20%. Therefore, the competition becomes fiercer, and salaries decline, as more artists are willing to work in that sector.

The previous examples reflect that the theory behind the precariousness of cultural workers has factual applications in many countries.

### Evolution of the Cultural Labour Market

This third part focuses on changes in the cultural labour market and if practices and labour schemes have changed significantly on time. It seems that the pre-

carious, intermittent and informal jobs have been a predominant condition that has not change significantly.

However, to analyse that point, this part of the subsection explores the labour schemes and conditions of the cultural workers, since it first academic approach with a publication which gave birth to what we know now as the field of Cultural Economics (Baumol & Bowen, 1966). Later, the second wave of analysis on the cultural workers came in the 1980s with the winners-take-all theory (Rosen, 1983). Moreover, in the 1990's a group of scholars (D. Throsby, 1992; Towse, 1992) explore the work scheme of cultural workers, which was consistently part-time and uncorrelated with investment in years of education.

This part based the analysis on the aspects affecting the cultural labour market and consequently the socioeconomic situation of cultural workers – considering four relevant concerns: 'the status of employment and career patterns, the rationale of occupational choice, occupational risk diversification, and the oversupply of artists (Menger, 1999).

Then firstly, for the status of employment and career patterns, it is crucial to understand how cultural work has been perceived historically. Moreover, in the western world, starting from Kant and the Romantic movement, artistic work was seen as something special, even beyond the standard patterns of career and employment from other sectors. Moreover, art was conceived as a creative and transformative act, outlining the autonomous status of artistic career and practice (Kant, 1951). At the same time, the establishment of high culture institutionalism in the late 18th century as a response to the new market for culture, claimed for autonomy (Woodmansee, 1994) to replace the patronage scheme for cultural workers. Furthermore, the autonomy as a career pattern of cultural workers came after the institution of dominant market relations (R. Williams, 1980), as a form of resistance from the cultural workers to the emerging capitalist social relation. On the one hand, cultural workers aim for more autonomy and on the other, managers intend to justify more control on cultural workers (Toynbee, 2014), driven by economic value.

Later in the 19th century, authors provided a critical approach on the capitalist labour process (Marx, 1867), where the career patterns were much related with intense control of working schemed and division of labour. Then, in this context, Marx's theory on labour had autonomy and purposes as the main characteristics of what work should be, setting the attributes of the cultural worker as the core aspects of work and not a particularity of the cultural sector.

Finally, in the 20th century, flexibility has remained a desirable critical component of career patterns in the cultural sector, especially in the context of a

post-industrial 'individualisation' of working schemes. For instance, some studies outlook that cultural workers still choose the cultural sector because of the inherent flexibility of the employment structure (Stinchcombe, 1968). Moreover, authors in the late '90s suggested that the production of a cultural good or services involve a large number of cultural workers with different skills and backgrounds, which are typically working in several cultural projects simultaneously (Menger, 1999). Therefore, the highly dynamic work timing requires autonomy to choose which project to work on and flexibility to shift from one project to another within short periods. Moreover, the actual changes in technologies of communication,

In the 21st century, the production of cultural products has been significantly impacted by incorporating new technologies. This antecedent increases the dynamism of taste changes – an inherent characteristic of the sector – which produces uncertainty on new skills that cultural workers require. Partly, that is one of the reasons why cultural jobs are incredibly supple, experimenting with high rates of change over time (Stinchcombe, 1968). Then, cultural workers need flexibility as projects might evolve as well as the taste does, so cultural workers need to shift alongside the cultural activities. Endlessly, this uncertainty is perceived as an attractive element for cultural workers, as they aim for non-routinary works (Menger, 2006).

Overall, career patterns have remained stable, apart from the irruption of new technologies in the last century. On the one hand, cultural employment remains flexible because of the structural dynamism of the cultural labour market and, on the other hand, autonomous as a revolt against capitalism (Toynbee, 2014).

Secondly, the rationale of occupational choice shows that cultural workers have historically look for peer recognition rather than economic retribution. The idea of art for art sake has remained steady. Moreover, after mass–culture production starts developing, fundamentalist cultural worker rejects the idea of earning more money giving away their work to industrial production, supported with the concept of 'selling out'. Then, cultural workers preferred to remain 'underground', receiving less economic retribution but more artistic retribution from their peers.

A more general aspect of occupational choice in modern days comes from the promoters of post-Fordism, where non-industrial occupations have been reinvented and revalued. This resurrection of artisan occupation is happening everywhere, even in non-artistic jobs. Moreover, this type of occupation is flourishing as a consequence of the educated middle class, making art out of the basics' production (Ross, 2014). Overall, cultural workers' expectations are mainly mo-

tivated by the non-routine dimension, which gives them tremendous social value and personal reward.

Still, on non-routine activities, success hardly depends on measurable, transmitted and certified skills. The learning by doing aspect is essential, as cultural jobs are perceived as 'tied packages of work and learning' (Rosen, 1986). In that sense, the learning potential is another reason cultural workers pursue their careers in the cultural sector. As the learning process never finishes, the cultural workers keep the hope of achieving higher success.

In a contemporary context, some concepts explain the inelastic supply of cultural jobs even considering the economic disadvantages for the cultural workers. In this sense, cultural workers are pioneers unveiling the most active links of capitalist postmodernisation and the emotional connection between workers and their jobs.

The concept to materialise this bond is called 'affective labour', which is more than a contractual relationship, but a fulfilment for the worker to do something meaningful. Consequently, the concept of 'desiring production' reaches all the workers that hold affective labour, leading to producing a particular good or service that is desired and not forced to be produced.

Nowadays, cultural workers represent a benchmark for post-industrial workers. As the job incentives change, people are looking for meaningful jobs rather than pointless but highly paid jobs. Therefore, this postmodernisation scheme can and will be replicated in other industries shortly. Monetary rewards are not the only valuable aspects that workers consider in their jobs, as 'voluntary poverty' deviates the interest of holding less expensive and materialistic lives. Then, physic income (Towse, 2019) is becoming the new centre of attention for organisations. In this sense, cultural workers usually accept non-monetary rewards as compensation for their work, with a discount on their regular wages.

Then the question raised as, even in this adverse context, why the cultural workforce keeps growing, developing and contributing significantly to the economy and society? There are reasons to explain why cultural workers do not quit their jobs, even though economic opportunities might be better in other industries. Furthermore, cultural organisations take advantage of the inelastic supply of cultural employment. Hence, institutions like museums, theatres, and cultural venues rely heavily on low-salary employers and volunteers, which are endlessly the most significant subsidy to the volunteer low-wage army's cultural sector. Then, the volunteer low-wage army is giving a massive favour to cultural institutions but not to itself.

As previously mentioned, non-monetary rewards are more and more significant

for workers in every industry, especially in the cultural sector. Slowly, the time spent on leisure and consumption now is re-invested in non-paid work, which provides a non-monetary reward in the form of physic income. This effect is necessary to compensate for highly stressful and meaningless jobs in the case of multiple-jobs holders, representing a large group of workers in the cultural sector.

Thirdly, about occupational risk diversification, some relevant characteristics of people working in the cultural sector are high rates of self-employment and high unemployment rates. Furthermore, they hold different working schemes, such as part-time, volunteer, freelance and multiple-jobs (Menger, 2001). Therefore, intermittent cultural workers perceived higher wages than long-term employees because the first ones incorporate the risk of unemployment, so rates of self-employment and unemployment are correlated in this case.

In this context, it is vital to notice that the nature of artistic work has always been primarily seasonal. Therefore, there is a discontinuity of cultural jobs. Moreover, this instability motivates cultural workers to hold several jobs simultaneously, either cultural or non-cultural. This condition helps diversify the risk of unemployment and irregular incomes with better conditions in other positions, resulting in a cycling pattern of job allocation.

However, some authors disagree with this dynamic perspective by showing that cultural workers are less likely to leave their jobs and have similar salaries than workers with non-artistic occupations (Filer, 1986). They explain that there is no justification for developing specific models of the labour market for the cultural sector. Nevertheless, other studies showed from a survey of 3,000 artists in New England that only 24% of them did not hold a non-artistic job (Wassall & Alper, 1992).

Furthermore, project managers and cultural organisations transmit the labour uncertainty down to subcontractors or external services, which they transfer to the self-employed cultural worker (freelancers) in the context of highly disintegrated vertical production and flexible market. The result is that more cultural workers are willing to become independent workers, owners of their small businesses.

Then, as freelancers and short-term workers are the ones absorbing most of the occupational risk, cultural workers learn how to spread it by creating portfolios, reflecting their academic, professional and entrepreneurial careers (Faulkner & Anderson, 1987)[1].

[1]It has been largely documented that in artistic careers lower returns from their educational investments exist compared to other industries, and also more variable earnings (Throsby, 1994;

In this context, freelancers in the cultural sector have particular characteristics, such as a rapid transition from training to work, as talented cultural workers start contributing early. Additionally, they are risk-takers and have a high degree of earning's variability. Finally, they perceive a strong sense of personal achievement and typically have a work overload of their primary creative activity. However, freelancers who fail to move into the inner circles of successful colleagues get stuck in a precarious economic situation (Freidson, 1988). For that reason, the notion of freelancers is often understood as either 'forcedlancers', where the freelance scheme is imposed or 'fakelancers' because they are freelancers but work under the same conditions as full-time employees. To avoid the dropout of workers in the cultural industry, it is imperative to have more social benefits, like pension support and minimum wages, for unconstrained working schemes, like freelancers. Those attributes provide more certainty against the risks faced by cultural workers, and endlessly it will be more attractive to entirely stay in the cultural sector rather than look for second jobs in more profitable industries.

Finally, the oversupply of cultural workers, a mix between the labour supply push' and demand uncertainty for cultural goods, give many unemployed people in the cultural sector. Moreover, the surplus of cultural workers has remained historically steady. For instance, in the '80s and '90s, cultural employment had more significant growth rates than general employment, specifically for European countries (Greffe, 1999). However, this situation suffered a substantial increase when the cultural sector was associated with the – so defined – 'creative industries' and 'creative class'. Furthermore, the 'rise of the creative class' implicitly include cultural workers, explained mainly by a 'Creative Index' (Florida, 2005). Not free from controversy, this index showed a consistent increase of the 'creative class' in the US, from 10% at the beginning of the 20th century to almost 20% in the 1980s, to roughly 30% of the workforce by the year 2000. Even though the definition of creative class does not fit entirely with the cultural workers, it still provides a sense of how the cultural sector has perceived an increase in the historical oversupply. However, this result differs significantly from other studies related to the cultural workforce, on which they find that artists in the US are a small percentage of the total workforce, 1.5% in 1998 (Heilbrun & Gray, 2001).

Moreover, contemporary studies effectively summarise the reasons explaining the 'oversupply' of cultural workers, for the following reasons: i) Misinformation of young cultural workers entering the market, ii) Highly flexible organisational

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Towse, 1993).

characteristics, iii) Lack of supply constraints and iv) The motivation of images of 'superstar' artists and cultural workers that even representing a marginal portion of the cultural workers, create an illusion of hope for the rest of the cultural workers (Rengers, 2002). Endlessly, the historical oversupply of cultural workers and the cultural workforce increase over the average of the national workforce is explained by two main reasons. Firstly, because people entering the cultural labour market are younger than the general workforce, therefore prone to assume more risks and are less informed about the possibilities in the cultural sector, more people will work in the industry for low incomes and underdealing practices. The second reason is a demand increase for cultural workers associated with creating cultural facilities and increasing institutions training cultural workers. However, some literature criticises these policies, showing that art schools offered too many programs concerning the prospects (Towse, 1993). The study analysed professional singers who invest significantly in education without condescending economic retribution. Consequently, the author showed that human capital investment is less efficient for artistic occupations. Complementary, another study found that the marginal impact of an additional year of work experience is more significant for cultural workers in their first 30 years of experience than for the rest of the workforce (Filer, 1986). Thus, cultural workers obtain a more significant portion of their human capital while working rather than studying. Hence, it seems more accurate to assume that the increase in demand for cultural workers is related to innovation or/and technological changes. This situation can modify the need for cultural workers fundamentally, rather than thinking about the expansion of educational programs for cultural workers, which does not pay off.

Overall, this subsection focused on cultural workers as a whole. Starting from modern theories explaining their behaviour, then describing empirical studies supporting those theories and finally analysing the evolution of four relevant variables affecting the labour scheme of cultural workers. All this analysis serves the purpose of focusing on the 'labour problem' and step out of the general discussion on the 'funding problem' of the cultural sector, where the attention goes to the mechanisms improving the funds for art projects, rather than attend the socioeconomic problems of cultural workers.

Moreover, this investigation looks impossible to improve the cultural sector by setting the attention just on the projects because behind the projects; there are human resources that construct them, especially in an industry that is heavily intense in human labour. In this particular aspect, improving the socioeconomic situation of cultural workers is the key to unleashing the sector's potential and the role that this industry deserves economically and socially speaking.

For that matter, it is crucial to recognise that people working in the art sector are generally resistant to an industrial-style organisation, preferring short-term, freelance and project-based schemes (Menger, 2006). Consequently, the market fails to ensure minimum social benefits to the cultural workers in those schemes. Topics like health insurance, pensions, and minimum wage are not guaranteed, leaving them in a highly complex scenario in the long term. This situation affects economic decisions and other aspects of life, such as leisure time, social life, and family planning, to name a few.

To sum up, the cultural job market has three main characteristics that make it unique and, therefore, its workforce. Firstly, a complex network of firms and cultural workers involved in the supply chain of cultural production. Secondly, a set of connections between cultural workers to minimise transaction cost and hiring operations, similar to agencies using signal models via portfolios to prove conditions of cultural workers for specific jobs on specific projects. Thirdly, conventional industry-wide negotiations and arrangements regarding wage and fringe benefits schemes.

The interaction of these three characteristics results in job allocation based on work portfolios and reputation, where more experienced and better-connected cultural workers are hired more frequently. On the other hand, less experienced and worst connected cultural workers form an outside group facing the most complex socioeconomic situation of the sector with higher rates of intermittent employment and high unemployment rates, which can potentially lead to quitting their artistic work.

Then, perhaps the reason authorities focus more on the 'funding problem' than the 'labour problem' is that the last one is harder to identify. Generally, data on cultural employment and earnings is unofficial and less reliable. Even essential elements such as the definition of 'primary work' on surveys can distort the data and underestimate the cultural workforce[2]. Moreover, there is a lack of acute treatment of multiple-job holding within cultural workers and a job combination inside and outside the art sphere.

[2]Depending if primary work is defined as the job that contributes with higher economic incomes, or the one that worked the most significant number of hours. The first definition can lead to an underestimation as usually secondary jobs, many times non–artistic jobs, are the ones with the highest economic contribution.

### 2.1.3 Theory, Empirical and Policy Issues for Cultural Workers

The first subsection explored the labour market characteristics from a general perspective, reviewing different theories that explain the evolution of labour schemes throughout history. This subsection explores theories of people working in the cultural sector and how precariousness, informality and overwork are everyday situations among different cultural subdomains in other countries, especially in Latin America.

Moreover, this subsection explores the variables affecting the socioeconomic situation of cultural workers and identifies the most relevant ones for this study. Furthermore, those variables are the starting point to develop separate investigation articles addressing the socioeconomic situation of cultural workers. Hence, this thesis aims to offer a way to ameliorate this by combining theory, empirical and methodological innovation.

For that purpose, it is possible to separate the variables affecting the socioeconomic situation of cultural workers into three groups, i) incomes, ii) monetary transfers, and iii) social benefits.

The first group includes all the different sources of income coming from internal demand, copyrights and exports. Like any other worker, their socioeconomic situation is directly affected by selling their cultural goods or services. In general, cultural workers incomes tend to be lower than the rest of the industries. For example, in the UK, a survey of 5,800 cultural workers showed that in 2010 the average salary for fine artists (£10,000), photographers (£15,000) and illustrators (£15,723) was considerably under the national average (£21,320) (Kretschmer et al., 2011). This situation is partially explained by the elastic demand for cultural goods and services in most countries. People prefer to consume other goods and services because of their lack of cultural capital. Consequently, the demand for cultural goods and services is low and therefore, the supply contracts and the salaries of the industry decrease.

Then in the context of Latin America, the national survey on cultural participation for Chile shows that only 20.9% of the respondents attend a dance performance the last 12 months, 14.2% to a theatre play, 30% to a music concert, 16% to a visual arts exhibition, 43.4% to a film play and 20.5% attend to museums (CNCA, 2018). Consequently, the cultural industry needs a structural change based on education to increase cultural participation. For instance, a way to reflect this lack of education is that only 38.9% of people read one book in the last 12 months. For that reason, cultural workers will have to wait for long-term

policies to observe significant changes in individuals´ consumption habits. Policies are related to education and early exposure to art to build habits on cultural consumption in society.

On the other hand, the possibility of perceiving income from external demand is another option. Particularly for Latin American countries, the potential of external demand is substantially high. For example, in 2013, exports of cultural goods represent 1.2% of total cultural goods exports, which compared to the region´s share in total export goods, 6.1%, is five times less (Deloumeaux, 2016). Consequently, the region has space to improve their export strategies, as exceptional Global South countries have individually done it, with positive results. For instance, also in 2013, Mexico was ranked among the top ten export countries of audiovisual products and Nº 15 over export countries of performance and celebration services (Deloumeaux, 2016). These results demonstrate that not the languages or regions are barriers to improve the export strategies. Then Chilean cultural workers need to look further for external demand to increase their chances of perceiving more incomes. That is one of the pathways, which this program focuses on.

For cultural workers receiving financial allocations from copyrights, it is essential to understand the application of the concept in the context of the cultural industries. In this sense, copyrights aim to retribute, via the market, the creation and promotion of original art proposals (Towse, 2019). Moreover, copyrights intervene in two processes of a cultural project.

Firstly, in the creative process, when artistic proposals on any cultural domain generate copyrights. Then, the creator establishes a copyright license from where the owner of the licence monetises those copyrights. The second option is to perceive incomes from copyrights of a particular piece of art through the other stages of a cultural project, like production, promotion, exhibition, and reception.

Furthermore, the international framework of artistic copyrights is based on the Berna Convention of 1886, which has been subscribed by 176 countries worldwide. However, each country is responsible for developing its national copyrights framework and securing the proper application of it by institutions called societies of copyright and related rights for each cultural subdomain (Bello, 2015).

For the case of Chile, decree-law Nº 28, article 32 proposes strong support between the European Union and Chile to establish a common ground in terms of copyright, applying legal assistance and technical recommendations (Ministerio de Relaciones Exteriores, 2003b). Additionally, the country found a cooperation strategy for copyrights harmonisation with the US, under the decree-law Nº 312 (Ministerio de Relaciones Exteriores, 2003a).

Nevertheless, each country defines the particular characteristics of their national copyrights framework, which constitute a difficulty, in terms, of agreements and monetarisation of copyrights, especially considering the increase of global trade in cultural goods and services.

For the particular case of Chile, the responsibility of recognising, collecting and distributing copyrights is shared between five institutions, *Sociedad Chilena de Derecho de Autor*(SCD) (Music), *Chileactores* (Actors), *Sociedad de Directores Audiovisuales, Guionistas, y Dramaturgos* (ATN) (Theatre and Audiovisual workers), *Creaimagen* (Visual Arts) and *Sociedad de Derecho de las Letras* (Sadel) (Literature). However, the sum of the member of those five institutions only covers 20.7% of total cultural workers. Additionally, SCD gathers 85.7% of the entire copyrights of the industry, which is about 22 million euros, and from that volume, only 16.5% consider copyrights of national artists. The rest is sent abroad.

Because of the reason mentioned above, incomes from copyrights are a matter of technical discussion, which this study will not consider due to their complexity and singularity for each country. On the contrary, this investigation aims to construct policies that governments can apply in the rest of the Latin American region, not only in a single country.

Later on, the second group considers the monetary transfer to cultural workers including, public funds, private grants, scholarships, patronage and direct transfers from family or friends. For this case, public funds is an important topic to consider as for Chile in 2017, constituted 33% of the budget from the Ministry of Culture (OPC, 2019).

On the other hand, private support is also a way to transfer economic resources to cultural workers. However, Trama´s study (Brodsky, Negrón, et al., 2014) shows that only 18.7% of the sample received private support in the last 12 months, which offers less significant support than the public sector. Therefore, this mechanism is excluded from this study.

Additionally, there is a hybrid mechanism in Chile to deliver public-private support to cultural workers, called *Ley de Donaciones Culturales* (Ministerio de Hacienda, 1999). The instrument provides tax benefits to companies, people and entities granting cultural projects. Moreover, the State gives 50% of the resources to the artistic project, which is the discounted tax from the private entity. Then, the private institution contributes with the other 50% of the donation. Nevertheless, for 2013 the contributed amount was around 1.2 million Euros. These authorities targeted the resources to 471 projects, which generally are the same cultural institution year after year, to the detriment of emerging

artists and their socioeconomic situation. As was previously mentioned, this group of workers is the one that struggles the most surviving in this sector, and they are whom this study targets.

Similarly, patronage is a sporadically and less generalised mechanism attributed to cultural workers with well-developed contact networks. Therefore it is not significant for the sector as a whole or the matter of this study.

Likewise, direct transfers from family and friends to cultural workers are typically considered in wealthy spheres. They do not represent a homogenous mechanism to improve the socioeconomic situation of cultural workers. Therefore, it will not be considered for the matter of this study.

Finally, the third group includes social benefits, which helps to improve the socioeconomic situation of cultural workers, such as healthcare insurance, pension support, unemployment insurance and minimum wage schemes.

In this context, healthcare for cultural workers already has been taken through a public policy. In 1985, the public sector developed a healthcare system (de la República, 1985). This scheme allows individuals to have public and free health assistance as long as they contribute 7% of their salaries to the public health system. On the other hand, it is possible to contribute over the mentioned 7% and access private plans in the health insurance system. However, both options require a monthly contribution from the workers, which cannot always be guaranteed, especially in different work schemes and informality, like the cultural sector.

For that reason, in 2004, there was a specific modification to the fifth article of Law Nº 18,469 to support intermittent workers. In this context, sporadic (non-independent) workers in projects receive 12 months of healthcare starting from the last month of contribution if they contribute four months over the previous 12 months. The other option is if the sporadic works come daily, then 60 days of contribution over the last 12 months provides 12 months of healthcare coverage starting from the last day of contribution.

Overall, the existing healthcare systems already establish mechanisms covering the situation of cultural workers effectively, considering their context and working scheme. Therefore, this variable will be out of the study range of this investigation.

Lastly, the minimum wage has consistently been adjusted since the year 1987, going from CLP $11,335 to CLP$ 301,000 to in 2019 (Ministerio del Trabajo y Previsión Social, 2018). Therefore, all workers are covered to a minimum salary. However, this policy is not significantly applied to the cultural sector, as informal and independent workers are 72.4% of the cultural workers in Chile, so this policy

only applies to the remaining 27.6%.

Endlessly, this investigation aims to explain the actual socioeconomic situation of cultural workers mapping the socioeconomic characteristics of the cultural workforce in Chile and suggest improvements in the aspects that cultural policies can affect. Moreover, this study focuses on three elements of cultural workers. Firstly, the perceived pensions after cultural workers retire, in the context of high-labour informality. Secondly, public funds supporting cultural workers instead of cultural projects, making the grants more sustainable and, thirdly, the incomes from external demand (exports of cultural goods), and how it is possible to increase trading partners.

## 2.2 Technical Issues and Context of Cultural Policies

This section covers the specific technical issues and contextualisation of cultural policies, emphasising the Latin American region and Chile.

The first subsection analyses the different approaches of public policies for the cultural sector to understand how governments perceive and support the cultural sector and their workers. Later, this subsection explores the historic approach of countries cultural governance and how they affect the design and implementation of cultural policies. Lastly, this subsection provides information on cultural governance in the Global South and the future barriers of their implementation.

The second subsection investigates the standard methodology to register countries' economic activity and contrasts it with the cultural sector's registration methodology. This subsection also explores why the standard registration systems for the cultural sector - Cultural Satellite Account (CSA) – cannot accurately register cultural production and characteristics of the cultural workforce. Later, this subsection reviews empirical cases of the CSA in several countries to account for differences in implementation and effectiveness. Finally, this subsection analyses the performance of CSA in Chile, analysing the information quality on the cultural sector and the socioeconomic situation of the cultural workforce.

### 2.2.1 Cultural Governance and the Approach on Cultural Policies

This subsection reviews the concept of cultural governance across the globe and how it impacts the design of cultural policies affecting cultural workers. Exploring this topic is relevant for this study because the State's approach to implementing cultural policies marks the type of benefits that the cultural workers will eventually receive and how it affects their socioeconomic situation.

The first part discusses several theories on cultural governance. The second analyses the history behind cultural governance from the 19th century to the present days. Furthermore, the last part briefly reviews the situation of cultural governance in the Global South.

#### Models of Cultural Governance and Theoretical Approaches

Public governance of culture is the design and implementation of cultural policies in a particular context of State, market and civil society. However, those contexts have changed, based on historical contingencies, and moved the focus of what was relevant to promote as cultural policy. Moreover, because of the diversity of different national approaches to cultural governance, it is necessary to begin to touch on the particularity of cultural governance, considering cross-national differences and justifications.

The US experiences a strong representation of neoliberal market economies, which partially translates into their cultural governance. Their cultural sector heavily relies on the market itself as public fundings are less than 0.1% of the GDP, compared to the average numbers for the EU, between 0.5-1.0% (Potts & Cunningham, 2008). Moreover, most of the support for the sector relies on trusts, not-for-profit organisations and corporate transfers (J. M. Schuster, 2006).

On the other hand, Australia and the UK developed cultural governance based on a solid integration of the creative industries to the productive and economic matrix. The first one materialised this initiative in a national plan called Creative Nation (Gilbert & Lo, 2007), while the latter committed to a similar approach focused on economically driven variables for cultural and creative initiatives (Wyatt & Trevena, 2021).

The European region has a broad spectrum of cases. One example of cultural governance is the case of the Nordic countries[3], which establish governance based on a strong welfare state model that supports not only the cultural sector

[3]Denmark, Iceland, Finland, Sweden and Norway.

but the economy in general. The strategy, as mentioned above, relies heavily on local policy and local participation (()Gronlie2004). Another case is the Mediterranean countries[4], which seems to form a cultural governance cluster that appears not to have a significant impact on those countries' current social and cultural development (Rindzevičiūtė, 2021). For the case of Eastern European countries, it is possible to outline some examples exposing the heterogeneous situation based on social and political contexts. For instance, Poland currently experiences cultural governance led by numbers and quantifiable performance, influenced by the values of the New Public Management (NPM) (Lewandowska & Kulczycki, 2021), where the system rewards recognised creators in detriment of innovation, emerging artists and small-scale proposals. Another example in the region is Hungary, where the current president promotes highly conservatives cultural governance, administrated from a top-down perspective (Rindzevičiūtė, 2021). However, their centralist approach conflicts with the international context of a pluralist and interconnected cultural sector. A final example of this sub-region is Russia, which interestingly inherits the vast cultural infrastructure from the late USSR's cultural administration. This advantage helps the cultural sector to work more independently from the ideological and political discourse instrumentalisation of the Government while aiming to nourish support and networks outside of the country (Kurennoy, 2021).

For the Asian region, cases like Korea shows significant governmental support for national production in the last 20 years. Those efforts intended to make cultural production a valuable asset to export Korean identity, firstly to East-Asian Markets in the 90s and then with the prosperous Korean economic growth of the 00s, to the global market (Kwon & Kim, 2014). These governmental strategies simultaneously supported other crucial industries, such as the information and communication technologies industry. In the case of Japan, from the 1990s, the country increased their participation in the UNESCO World Heritage program and the Official Development Assistance (ODA) to support heritage conservation worldwide (Nakano & Zhu, 2020). In a sense, Japan cultural governance targeted public support to one specific pathway to increase Japan's cultural visibility at an international level. China, on the other hand, applies cultural governance, consisting of public support towards enhancing heritage and promoting it internationally to counterbalance the hegemonic power of western culture and also using cultural heritage as a national project to unify the country(Yung-Wen, 2015).

For African countries, cultural governance is predominantly organised by local

[4]Greece, Spain, Italy, Cyprus and Portugal

political culture and standard practices on local administration's practical operations. However, the established local political culture is blended with specific pathways that each Western African country takes, from a chiefly perspective, to an associational mode, a municipal approach to a project-based one, a bureaucratic mode, a sponsorship-based one, or a merchant mode (Olivier de Sardan, 2011).

Finally, the case of Latin American countries is separately analysed due to the importance of this study.

In regards to the theoretical approaches, a good starting point is the four institutional models for cultural policies (Chartrand & McCaughey, 1989), where it is possible to identify different strategies of public governance interacting and affecting cultural policies. Nowadays, cultural governance proves to be much more complex, incorporating other agents such as marketplace, formal/informal institutionalisation, individual actions, and citizens campaigns on cultural initiatives (Srakar & Vecco, 2021). Nevertheless, it is worth naming this theory only due to its simplicity and clarity.

The first institutional model, called 'facilitator', referred to cultural policies where tax expenditures from individuals or companies mainly fund the art sector. This type of model applied especially to the USA, ensuring that multiple actors of society contribute to the funding of the arts, as different companies provide financial resources. On the other hand, those companies receive tax benefits.

The second institutional model, defined by the authors as 'patron', works as an arm's length, where the Government captures the different sources of financial support for the arts. However, an independent, yet public institution, defines which cultural organisations and projects should receive the support based on their artistic value. The UK has substantially used this model.

Thirdly, 'Architect' is an institutional model focused on administering the art sector by a Ministry of Culture. In this example, the State has a principal role in arts fundings. Moreover, the decisions to grant artistic projects are based on the proposal's social impact and artistic excellence. This model provides less pressure to the box office as most of the costs associated with cultural initiatives are already covered with public funding support. This model is associated with highly welfare states, like the Netherlands or France.

Finally, the model representing the political interest through arts is called 'Engineer', based in the Soviet Union and aims to promote political education through arts. Even if transmitting education and values through art might be considered a noble idea, it is essential to remember the associated bias of doctrines from certain countries. Therefore, the negative aspect of this model is that

art is instrumentalised for political or commercial interests of a specific group.

Even though the four-model description helped map the different public governance approaches in cultural policies, it was still a simplistic approach. It did not provide a specific explanation for countries with mixed models and particular idiosyncrasies that explain their approach to cultural policies.

Suppose one considers cultural governance in the western world and different regions, especially in the Global South. In that case, it is possible to propose a less generic description of cultural policies by understanding the internal heterogeneity of each country on the implementation of effective public policies for the cultural sector, due to different political contexts and diversity (Bonet & Négrier, 2011). In this case, cultural policies diversity is mainly explained by the fact that different power relations inside countries, agreements and influence both regional and international, shape the uniqueness of each country. Therefore, even supranational identities propose standardised solutions of public policies, and every Government considers modifications to those suggestions to achieve optimal public policies for every particular case.

The previously described model identifies variables that explain public governance and its consequences on implementing cultural policies in different countries. Notably, the authors identify five variables: institutional configuration, intervention instruments, competence distribution among different governmental levels, influence capacities/priorities and objectives/values of politics.

Firstly, for 'institutional configuration', there are different options for implementing cultural policies. For instance, it can be supported directly by a vital institution such as the Ministry of Culture, responsible for justifying the art sector's expenses in front of other financial public institutions. Another focus is distance management, led by an arm's length strategy. Finally, the tax benefit is a third approach where cultural policies are financed by privates that choose to make donations and support cultural initiatives, receiving tax benefits for their corporations.

For 'intervention instruments', countries can apply different mechanisms such as regulations to protect heritage or intellectual property; also, countries can define a fixed percentage for national products and regulation of prices. Another option is the governmental provision to administrate museums, libraries, and theatres directly. Another mechanism is the direct and indirect incentive system using subsidies and tributary benefits. Additionally, informative strategies include consultancy, advice, seals of quality and finally, sanctions and inspections. Depending on the economic and political context of the country, some nations will use more regulatory instruments to foreign supply or promote the national supply.

The 'competence distribution among different governmental levels' uses different pathways to implement policies, such as the legislative procedure, the attribution of the public budget, either mandatory or voluntary and the possibility of new priorities and paradigms. For instance, if new cultural projects represent the cultural policy, the Government evaluates the public budget. However, suppose the cultural policy requires structural changes, such as an institutional modification from an Art Council to a Ministry of Culture. In that case, implementing the cultural policy will require a legislative discussion.

The variable defined as 'influence capacities/priorities' is based on how the institutional system, norms, constitution, market power, ONG or political parties can affect cultural policies' construction. Depending on the empowerment that particular countries give to civil society or the private sector to participate in creating policies. Or on the other hand, a robust public apparatus that bases cultural policies on the legal framework and public institutions proposals.

Furthermore, for 'objectives/values', the importance is the *lei motiv* of the public policies. In this sense, implementing cultural policies is related to intrinsic goals, such as creating benefits to the arts sector or a particular group of society. On the other hand, public policies can also be motivated by extrinsic goals, such as economic benefits, rewards or external pressures to apply a particular policy. The easiest way to observe the difference between both types of goals is a corporate social responsibility as an extrinsic goal that does not benefit the art sector as the main issue but seeks tributary benefits for companies. On the other hand, cultural policies such as subsidies for cultural projects directly target the art sector.

Another theory on cultural governance is its application as a 'display' (McGuigan, 2004) where the promotion of national culture is seen as a business where countries compete against each other using their cultural manifestation for economic interests. For example, funding audiovisual products (Perret & Saez, 1996) or books (Rouet & Dupin, 1991) to promote political tendencies. Furthermore, cultural policies follow specific programs to achieve a particular output. However, instrumentalisation works implicitly at both policy and program level (J. M. D. Schuster, 2003). Such is the case of artists supporting political campaigns immediately after their projects have been publicly funded. However, countries like the UK used the arm's length model to neutralise political influence. From this perspective, The Arts Council ensures politicians do not take credit or responsibility for the art projects through the actions of the board of trustees, who are elected for their experience in arts rather than political influence (Chartrand & McCaughey, 1989).

In summary, there are different degrees of intervention from the State regarding the arts. The same situation applies to the intentions of the governments to promote them, which can be of many reasons, from aesthetics to politics.

### Historic approach on Cultural Governance and the Cultural Sector

Initially, cultural governance started with the influence of education, politics and religion and how those variables can alter the essence of an artistic proposal. This tendency was recently defined as cultural patronage but started as a standard practice during the Renaissance, with the Medici family supporting artists such as Botticelli, Da Vinci and Michelangelo (Comunian, 2009). Since this period, high hierarchy defined and supported the creation of certain cultural tendencies in society, seen as an elitist way to disseminate culture based on their incentives. This historical context can be understood as the first form of affecting cultural proposals because it modified an artistic expression for non-artistic purposes.

In that sense, the pre-1945 approach on cultural policy was motivated by both the intrinsic value of culture and as an instrument to serve other experiences such as pleasure, self-awareness and knowledge (Belfiore & Bennett, 2008). Nevertheless, they operated from a dominant position of upper and middle classes and their perception of high culture.

However, nowadays, the mechanism of cultural patronage persists as an individual or corporate philanthropy. The artistic content tends to be more democratic and is no longer attributed only to high culture.

Then, after World War II, the global tendency moved towards state intervention in the art sector, based on heritage, social welfare, diversity and inclusion. Moreover, culture was used as a generator for the reconstruction of national pride (Crossik & Kaszynska, 2016). This approach was exemplified in the UK and created the Art Council as a legal entity in 1946 by the Royal Charter, pushed by the economist John Maynard Keynes. Additionally, UNESCO´s creation and their framework put culture as an engine of development for societies and an instrument of diplomacy to interact with other countries (Cummings Jr et al., 1987), initially serving the purpose of establishing educational and cultural guidelines worldwide (Jones, 1999). Furthermore, it is possible to identify a social return from the cultural production (Becker, 1964), justifying cultural investment because of the benefits in terms of education and equality that culture as an instrument can provide.

Then, the established posture on cultural governance was reinforced by the rise of the welfare state in the 1950s and 1960s, with policies on art production,

participation, social programs to promote creativity among communities and more exposure of children to the arts (D. Throsby, 2001).

Later, the scope moved towards a market-driven tendency explained historically by the economic crisis in several countries in the 1970s, named 'the fiscal crisis of the state´ (McGuigan & Mcguigan, 2012) and cuts on government budgets. After this, a neoliberal and free-market tendency arrived in most industries, particularly in the cultural sector, there was a recognition of economic opportunities.

In the newly defined 'cultural industries´, market-driven variables severely affected the artistic proposals. Artists had to modify their initial ideas to suit public and private funding criteria, which have other non-artistic interests, such as politics or cost-benefits effects. Moreover, cultural workers had to carefully modify their language when presenting their projects to convince the benefactor (Belfiore & Firth, 2014). Therefore, by creating cultural goods through mercantilist regimes, the intrinsic properties of the arts lost their artistic value but gained economic value via a crowding-out effect (B. S. Frey, 2005).

Later, the New Public Management (NPM) was established in the UK and Australia, explicitly driven by cultural policies as the market-efficient management of them and the integration of the business approach in cultural projects (Hood, 1991). Then, the efficiency of cultural policies was represented by using performance indicators and annual programs that were economically monitored. This type of evaluation mechanism allowed policymakers to identify best practices.

However, the intrinsic value of culture could not be understood by the use of performing indicators. Consequently, to simplify criteria's, the economic contribution of cultural policies was used as a proxy of the benefits of cultural projects so that the public institutions could prioritise cultural initiatives more efficiently. This tendency was possible to observe in the use of language when authorities referred to the cultural field, moving from the 'cultural industries´ to 'creative industries´ and in the application of financial terms or economic concepts (Caust, 2003).

Afterwards, in the late 20th century, a progression towards a globalised economy appeared. Hence, with that movement, the cultural sector became a field of struggle between a homogenisation of cultural parameters coming from prominent participants of the cultural industry and, on the other hand, national or local artistic expression resisting the establishment (D. Throsby, 2001).

Moreover, contemporary authors recognise culture as an industry but serving multiple purposes (T. Bennett, 2000), which might or might not be economical. Therefore, instead of a technocratic perception of cultural policy, the approach

allows other incentives to motivate cultural policies.

Overall, the actual context of the cultural sector is much more complex than the pre-1945 era, pushing the concept of cultural democracy and creative diversity. In that sense, different tastes and aesthetic values need to be acknowledged and promoted, not just a single predominant aesthetic reason from the western agreement on what is culture.

### Cultural Governance in Latin America and Future Challenges

As culture itself has many interpretations, it is not rare to observe that cultural governance and institutionalisation vary depending on each State/Nation. Moreover, the heterogeneous socioeconomic context of the region's countries does not relate to the importance that each country gives to the cultural sector. For example, countries with relatively low GDP, such as Bolivia and Paraguay, allocate the cultural and creative industries as crucial sectors for their development (Zurita Prat, 2012).

Regarding institutionalisation, almost all the countries of the region have Ministries as the governmental entity that applies cultural governance. Nevertheless, there are differences in the approach to culture as some countries place more importance on heritage conservation and indigenous communities, while others emphasise the creative economy.

For instance, Ecuador, Peru encourages interculturality and ethnic diversity. Subsequently, Bolivia and Venezuela promote a plurinational, intercultural and decolonised country. In that context, the cultural governance of these countries come from their Ministries of culture attending the needs of heritage conservations and traditions from local communities, as they perceive that the cultural value of their nations resides on those aspects (Arango, 2009b). On the other hand, Colombia and Chile establish public supports to more economically driven indicators and innovation (BID, 2013), which cultural and creative projects should consider.

In the case of Argentina, the emphasis is placed on building a national identity and protecting the national production of cultural goods and services, which is not explicit in the cultural governance of all countries. Moreover, their cultural governance intends to secure that access to culture is a constitutive aspect of social inclusion and integration for a national identity (Garretón Merino, 2003).

The case of Paraguay and Brazil are notorious for implementing participatory cultural governance, where cultural policies are designed together between authorities, artists and cultural managers and the civil society (Nivón Bolán, 2006).

This bottom-up approach works exceptionally well for those countries with several regions, where each region might have different necessities and attend to various issues regarding their cultural ecosystems.

Overall, the cultural governance's diversity of the region gave, as a result, different timing on the 'independence' of culture as a sector/Ministry from the Ministries of Education. So, for example, Brazil created their Ministry of Culture in 1985. On the other hand, Mexico established a National Council of Arts and Culture in 1988, representing a benchmark that Colombia replicated in 1997 and Chile in 2003. Regardless of the name, all those institutions worked as Ministries and not as Art Council as the arm's length principle would define, and are responsible for the cultural governance of the country (Zurita Prat, 2012).

Furthermore, considering the actual scenario, cultural governance of peripheral countries came to notice as it has a significant influence on international agreements and cultural trade with the Global North. For example, in 2013, China, India and Turkey were among the top ten exporters of cultural goods globally (Deloumeaux, 2016), so their view on cultural governance is relevant not only locally but internationally.

Moreover, according to what the cultural field is, public policies should seek to support the artistic and aesthetic value of the proposals, rather than financial returns (Caust, 2003). Hence, the challenge for public subsidies is to strengthen the creative capacity without altering the core initiative. This aspect remains particularly complex because of the extreme difficulty of anticipating the pragmatic contribution of artists to the art sector (Klamer & Petrova, 2007).

In that context, the uniqueness of cultural governance comes from the double problem of legitimacy and effectiveness and the fact that people representing the art sector need to validate and evaluate the benefits of cultural proposals to the public authorities, which are mainly motivated by financial results. Nevertheless, those financial results are defined by Key Performance Indicators (KPI) driven by economic factors, requiring data collection, monitoring and eventually systematic statistical data to understand the projects' performance.

For that reason, the System of National Accounts (SNA) intends to produce this information at an aggregate level, except that culture is not considered an economic sector. That dichotomy, between the economic evaluation of cultural projects and not considering culture within the SNA, pushed countries to develop Cultural Satellite Accounts (CSA) to understand the contribution of the cultural industries to the economy, with mixed results further discussed in the next section.

### 2.2.2 Statistic Registration Systems and the Cultural Sector

In this subsection, the study seeks to understand the statistics of the cultural workforce, which is highly relevant to realise the needs and the critique points of improvement for the cultural supply. This action is necessary as a previous step, designing and implementing cultural policies that could improve cultural workers' socioeconomic situation.

Therefore, the first part establishes basic definitions of employment, work and labour force. Then it looks over some of the statistics that explain the relationship between employment, unemployment and economic growth. Later, it describes the historical evolution of the statistical registration system for economic activity and how the cultural sector has been an exception to it. The following subsection explores the interaction between the artistic labour market and its statistics, providing information on the type of works in the cultural sector, based on UNESCO FCS and the CAB Manual, analysing the statistical methodologies to register the cultural workforce and their characteristics. Then, it outlines the challenges to effectively report the cultural workforce's characteristics to understand their socioeconomic situation better, making them accurate and comparable. The last part of the subsection overviews several examples of countries registering their cultural statistics and the application of CSA in Chile.

#### Registration of Economic Activity: Definitions, Historic Review and the Exception of the Cultural Sector

Firstly, it is important to define certain concepts for the analysis before mentioning the most commonly used ratios on labour statistics. Starting with employment, defined as the exchange action of work for a salary (Maruani, 2001), and work as a group of activities and tasks that individuals make to produce a good or service (Bello, 2015). The main difference between both similar concepts is that work can be both paid or not–paid. Additionally, the International Labour Organization (ILO, 2019) defines the labour force as 'the sum of individuals in employments plus unemployed', while the workforce only includes the employed people. This last group is defined as individuals doing profitable work for at least one hour a week. Then, unemployed people are individuals who are not currently working but are looking for a job. Finally, the labour force is defined as the sum of these two groups, considering that the working-age population is defined as people from 16 to 64 (depending on the country, this gap might vary). Then,

with these definitions, it is possible to understand the two most relevant indicators associated with the labour market, the employment/unemployment rate and the labour force participation rate. In this perspective, the OECD provides significant guidelines for measuring the employment rate, generally defined as the ratio between the people employed to the working-age population.

For example, in 2018, the employment rate was 68,4% for the OECD members, with Turkey having the lowest percentage (52%) and Iceland having the highest with 85.1% (OECD, 2019a). On the other hand, the unemployment rate reflects how many people are looking for a job in the working-age population. Then, in 2018, the unemployment rate of the OECD members was 5.3%, with Iceland as one of the lowest percentages (2.6%) and Turkey one of the highest (10.9) (OECD, 2019d). Then, there is an inverse correlation between employment and the unemployment rate. However, as the economist William Phillips suggested in his famous paper (Phillips, 1958), there is an optimum unemployment rate or Non-Accelerating Inflation Rate (NAIRU). This occurs because not necessarily a meagre unemployment rate will be beneficial. Moreover, he suggests that going below the optimum rate might cause problems to the economy as companies struggle to find workers for open positions, affecting the production and consequently the economy. For that reason, institutions such as OECD and National Central Banks are constantly estimating the NAIRU level, which usually revolves around 5%-6%.

The last relevant ratio is the labour force participation rate, which is the labour force - employed and unemployed - to the working-age population. This rate, in particular, is relevant for policymaking, especially for welfare states where a low labour force participation rate means that the State has to support more people with basic needs even though they are of the working age. Therefore, for cases like Turkey is necessary to increase the public budget on government assistance for that group of individuals. In this case, 2017 statistics show that the rate for OECD members was 72.1%, with Turkey having the lowest percentage (58%) and Iceland having the highest one, 88.3% (OECD, 2019b).

The relevance of the labour market lies in its direct relation with economic growth as unstable labour markets can lead to a significant collapse in countries and vice-versa. As an example, the economic effects of the financial crisis severely impact the labour market, as the G20 countries employment growth rate diminished from 1.9% at the beginning of 2008 to -1.2% in the second quarter of 2009, while at the same time, the unemployment rate rose 2.5 percentage points between 2008 and 2010 (Eichhorst et al., 2010). This situation shows that economic growth is significantly sensitive to the labour market regardless of

other productive factors. In this perspective, the instability in the labour market and the high unemployment rates affect several aspects of individuals' lives. In the 1980s, a study of the economic crisis in the UK mentioned there is a causal link between unemployment and health, mortality, crime, delinquency and a set of social variables such as homelessness, family stability, children's education, racial tension and public attitudes (Hakim, 1982). Therefore, the labour market situation is not trivial for the performance of the economy and stability of society.

The SNA is the internationally agreed standard for data collection of economic activity based on accounting conventions (European Commission et al., 2009). Furthermore, the United Nations created this system for international comparisons, economic analysis and policymaking. On the other hand, each nation's Central Bank is responsible for collecting, processing and reporting annual statistics based on the SNA. The system created by the United Nations was first published in 1953, with new versions in 1960, 1964, 1993 and 2008. Each new version incorporates upgrades to make SNA compatible with other international statistical standards. However, the last version –2008 – represents a significant contribution, recognising the importance of the economy's informal sector in production and employment. For instance, 2008's SNA identified employment in the informal sector, both formal and informal jobs. Additionally, identified informal work in the formal sector and other household unincorporated enterprises (European Commission et al., 2009). This last component is crucial to the analysis of this study as the cultural workforce has a high element of informal jobs, which this investigation discuss later.

Typically, the economic activity is consolidated in any industry's System of National Account (SNA). However, the cultural sector is an exception as it is registered in an alternative system called Cultural Satellite Accounts (CSA). There might be many reasons why the cultural sector is not included in the SNA. One argument can be because cultural industries are moulded as a commodity to fit the criteria of international coding. Then, the consequence is that a percentage of statistical information is lost because the conventional statistical systems cannot capture it, and part of the value chain of the cultural product disappears from data, as it is complicated to quantify. Even though culture should not be considered as a commodity because cultural goods and services represent identity and meaning (UNESCO, 2001), which is underlined as an ideological approach of what is culture. However, as SNA does not include the cultural industry, the breakdown between formal and informal jobs cannot be entirely achieved, as statistics of the cultural sector 'orbits' around the SNA, represented as the Cultural Satellite Account (CSA). That is why it is vital to incorporate as many

industries as possible in the scheme of the SNA because being out of it makes that industry invisible to the criteria of solid statistic revisions and future policy construction.

Cultural Satellite Accounts (CSA) is the public account system that allows countries to quantify statistics attributed to the cultural sector. The CSA starting point goes back to 1972 at a UNESCO Conference among European Ministers of Culture. In this meeting, the members urged the creation of more understandable cultural statistics. This event was the prelude to the Framework for Culture Statistics (FCS) in 1986, presented by several experts to the Conference of European Statisticians, which later was upgraded by UNESCO in 2009 and established as a reference framework for CSA. Furthermore, CSA provides data for policymakers to make decisions, evaluate and adjust cultural policies. On a first approach, is the art of description, interpretation, set of goals, implementation and monitoring results (Castellano, 2018). Additionally, CSA is based on indicators, which endlessly account for and inform citizens about the importance of the cultural sector. Consequently, CSA creates critical thinking and debate on the guidelines for cultural policies, defining the path to developing the cultural sector. The validation of public policies for the arts has pushed authorities to develop registration systems to quantify the trade of cultural products both internally and externally. In that aspect, Cultural Satellite Accounts (CSA) established baselines, reference points and historical data from where institutions can design, monitor and evaluate future cultural projects (Bello, 2015). Any country's activities defined in a CSA are constrained to the production categories established on each National Account System, constructed using the System of National Accounts (SNA) framework. Precisely, CSA reflects the public expenditure on culture and arts, the added value of each subcategory of the cultural industries to the GDP, and this particular sector's employment characteristics.

On the other hand, cultural satellite accounts are not mandatory registrations. Therefore, each country is responsible for developing a proper system to register the items considered in the CSA. The disciplines included in the CSA can be represented as those human activities and manifestations that aim to create, produce, distribute, transmit and consume symbolic contents related to art and heritage (Bourdieu, 1984), an idea taken from the definition on cultural fields. The responsibility to collect, validate, analyse and report the data for CSA generally comes from the Ministry of Culture, with support and guidance from the Central Bank (responsible for the SNA). However, the lack of statistical expertise from the Ministries of Culture delivers, as a result, inconsistencies on the CSA, which will be analysed later. Nevertheless, handbooks with guidelines both

internationally and regionally help countries to construct their CSA (Bello, 2015; Gordon & Beilby-Orrin, 2007). Moreover, Ministries of culture are trying to develop CSA all around the world, with the support of two important initiatives, UNESCO Statistical Framework (FCS) and Manual *Convenio Andres Bello*.

The early beginnings of cultural statistics are commonly related to UNESCO's 1986 Framework of Cultural Statistics. This model was the first attempt to recognise culture as an industry and identified five cyclical processes happening in the sector: i) Creation, ii) Production, iii) Dissemination, iv) Exhibition/Reception/Transmission, v) Consumption/ Participation (Hara, 2015). Later in 2009, UNESCO developed a Statistical Framework (FCS) for the cultural industries to compare different countries using a standard international criterion. This initiative is considered the first established methodology to organise cultural statistics. This particular statistical model from UNESCO'S 1986 model recognises a single value chain for each cultural domain. Therefore, the phases of creation, production, dissemination/transmission, exhibition/reception, and consumption account for each cultural domain and sub-domain. However, validating a standardised model is vital to make the data comparable and apply internationally approved indicators. Finally, in 2015 a Latin American institution called *Convenio Andres Bello* (CAB) aimed to establish standard criteria for CSA in the region. This institution created a handbook (Bello, 2015) for Bolivia, Chile, Colombia, Cuba, Ecuador, España, Mexico, Panama, Paraguay, Peru, República Dominicana and Venezuela. However, the institution is currently not active.

### Discussion and Challenges for the Registration of Cultural Jobs

The initial step is to analyse the types of works registered on Cultural Satellite Accounts and the coding systems involved to map the statistics of the cultural workforce, where the cultural workforce is constructed based on people actively working in the cultural sector. In this context, UNESCO FCS methodology allows comparing international data per sector and sub-process. That is the reason why UNESCO FCS applies Harmonised System (HS 07) codes and Statistical Industrial Classification System 4 (SITC 4) for international trade of cultural goods, Central Product Classification (CPC 2) for cultural goods and services, International Standard Industrial Classification (ISIC 4) for cultural production activities and International Standard Classification of Occupations (ISCO 08) for cultural employment (UNESCO, 2009). Specifically, to identify cultural goods, HS 07 works as a breakdown of product's categories with six-sub headings for a more precise description of products; countries can also propose dipper descriptions of

products up to 8 or 10-digit subheadings for specific products. The Harmonized System has its origin in the World Customs Organization (WCO) to represent all the levying duties of customs accurately on imported goods (Council et al., 1989), collecting data and analysing it. On the other hand, SITC 4 is a disaggregation of economic contribution through the different phases of the cultural product, correlating with the tariff nomenclature for customs declaration. United Nations Statistics Division created the SITC for more significant international comparison of trade data. Both methodologies – HS System and SITC – are constructed from the methodological guidelines of the International Merchandise Trade Statistics (IMTS) and were put together as commodity classifications: 'HS system for the collection, compilation and dissemination of international merchandise trade statistics, and SITC for the dissemination and the analysis of trade statistics according to user requirements.' (UNSD, 2011). Equally important is the Central Product Classification (CPC 2) and the International Standard Industrial Classification (ISIC 4) codes. Both identify productive cultural activities; UNSD created CPC 2 and worked for both goods and services. However, only books and newspapers have distinct categories as cultural goods, while all the other cultural goods are grouped in 'Other manufactured products' (UNESCO, 2004). This aggrupation gathers all the rest of cultural goods in a 'known-unknown', which endlessly makes identifying cultural goods harder to achieve. Therefore, the primary usage of the system is to identify cultural services, which under CPC 2 has an extensive description of activities. On the other hand, ISIC 4 is less detailed, with only four-digit description levels, but provides a more standardised and consistent classification of cultural production. This situation happens because it is based on internationally agreed rules, which is helpful for economic analysis and policymaking. However, there are also problems with aggregation, as cultural industries are identifiable at the four- or five-digit classes (more detailed). In contrast, all the information provided by national statistical offices is constructed at a two-three digit class (less detailed). Another problem is that ISIC cannot distinguish between formal and informal production. Therefore, a local cooperative of painters is put together with mainstream musicians, so the earnings for cultural activities at an aggregate level become significantly distorted.

The second framework for CSA's implementation came from *Convenio Andres Bello* (CAB). Moreover, the types of works included in the CAB Manual and used as a reference for CSA are: Work for self-consumption, work for occupation, non-paid work for experience or knowledge (apprentices), volunteer work, work in other productive activities. From the perspective of the cultural workforce,

the CSA gives essential information on how the sector is distributed in terms of artistic companies and individual cultural workers. Additionally, what type of contracts the workers have, if there is any contract at all. This information gives a diagnosis of the level of informality in the cultural sector's job market. In this context, it is expected that there are more job spots than workers in the cultural sector, as people have multiple jobs, having different income sources. Additionally, CSA provides data on the cultural workers and how they are distributed in the cultural sector and several other industries and how the cultural sector employs non–cultural workers. This crossover is vital to understanding the cultural sector's relevance and cultural jobs as other industries and professions benefit from culture's contribution providing spillover effects. However, there are some challenges associated with the collection, validation and comparison of the data of cultural workers, as it is highly complex to accurately identify cultural jobs, both inside and outside of the cultural sector. Even if the CAB Manual is considered a benchmark, the initiative still cannot address informality in the cultural workforce. This happens because the proposed methodology to account for the cultural labour force is based on an index called EETC (*Empleo Equivalente a Tiempo Completo*) (Bello, 2015). EETC is the number of job positions equivalents in a full-time regime. The index is constructed by the total amount of worked hours for all the employed people, divided by the average amount of worked hours at a full-time scheme. This definition avoids the large percentage of freelancers, part-time and independent workers of the sector, which later this investigation analyse.

Considering the identification of cultural occupations, CAB's Manual suggests using the CIIUO-88 system, where each profession or occupation is associated with a four-digit code. CAB manual suggests mapping the cultural workforce's characteristics from both supply and demand, as each method provides valuable data. The manual offers quarterly evaluations to collect data on temporary works based on household surveys (similar to Trama's report) from the supply side. On the other hand, the data for work demand should be collected from companies (much likely to CAS pilot studies) and later match the information to have a complete map of the cultural workforce. Then, the CAB manual suggests an information matrix gathering all the possible characteristics of jobs and workers. It is then possible to sort individuals using different criteria to construct statistics on the sample. Additionally, recommendations' for cultural statistics suggest measuring the employment on cultural industries using not only ISCO 08, as mentioned in UNESCO 2009 FCS, but also incorporate International Standard Classification of Education (ISCED 97) (Hara, 2015), to cross the

origin of the occupation with a particular skill level given by education. Finally, the document suggests incorporating the International Classification of Status in Employment (ICSE 93) to cross the type of work performed with employment status. For instance, a plumber can work in managerial tasks or strictly plumber tasks (Hoffmann, 2003), which will have different codes under the ISCO 08. However, the employment status can be identified using the ICSE as the same plumber could be 'self-employed' or 'employer', contributing to an extra level of worker specification.

Another exciting analysis point is the different approaches to implementing CSA in each country, making comparisons harder to apply. Even basic concepts such as the definition of culture itself might differ from nation to nation. Therefore, there is a necessity to establish global standards, making cultural statistics comparable among countries, by unifying criteria and definitions (Hara, 2015). Nevertheless, there are some constraints to constructing those standards, as the level of commitment with their local cultural sector and the implementation of a CSA is different from country to country. Therefore, it is expected that countries that do not see the cultural sector as a priority or a contribution to their economy and society will not make further progress on global standards' implementation for cultural statistics. Additionally, as CSA is a suggested methodology based mainly on UNESCO'S 2009 FCS and CAB Manual, countries can take different directions on what they want to reflect on CSA. That aspect can also affect the comparison and standardisation of information. However, it needs to be applied that way because it is not possible to miss the cultural authenticity of each nation. For instance, some countries like Mexico, Egypt or Peru point CSA towards heritage and patrimony because their culture is strong in that matters. However, other countries like the US, South Korea, or Chile focus on creative industries, such as digital services or audiovisual products. However, recent efforts have been made to create a Global Standard for CSA, taking into account both the UNESCO Framework for Cultural Statistics and the *Convenio Andres Bello* Manual. Moreover, the UNESCO Institute of Statistics (UIS) and the UN Statistics Division compile recommendations that will constitute the international and ultimate framework for CSA. Finally, in 2019, UNESCO is leading a global consultation on Cultural Satellite Accounts to map different countries' development levels and expertise. However, some difficulties appeared based on the complexity of the cultural job market based on its intrinsic nature. Where cultural workers hold multiple jobs, which are not permanent in time (project-based), not paid (voluntary positions) (Bello, 2015), or have extended working journeys, such as the case of jobs in the music industry and performing arts. Consequently, it is

hard to determine a full–time job for those groups. As a result, statistics for the labour market might be over-represented, showing high employment levels. Still, in reality, individuals are overworking or having a second job to improve their salaries.

Another aspect worth analysing, in terms of employment, is that the cultural sector generates economically productive activities and others that are cultural practices (recreational), being the last ones not associated with production, not contributing to the employment and consequently, invisible to the SNA (Bello, 2015). Thus, CSA's framework has a fundamental problem, as it is just accounting for the cultural workforce of employed people. The informality of artistic jobs makes it more difficult to quantify their contribution. For instance, street performances or artists manifestations in public transports are not registered in the CSA, because the audience has no freedom of acquiring the product. Consequently, these activities are considered monetary transfers between people for technical agreement and are defined as practices and not productive activities. So, this situation generates statistical distortion, as informal cultural workers will declare in the household surveys that they are actively working. At the same time, the CSA does not reflect their contribution to the labour market.

Based on the previous argument, reviewing or modifying the criteria accounting for informal jobs is relevant and making surveys data and CSA more coherent. The debate then is on the definition of cultural practices, as statistically, those activities become a grey area for discussion, distorting the real impact of artistic work. Moreover, not considering that cultural practices represents a large percentage of cultural activities.

Then, the main challenges are, firstly, apply a common framework to standardise the productive domains of the CSA and make them comparable between countries. Secondly, improve the methodology to register informal artistic activities, making CSA more representative of the actual situation of the cultural industries. In this context, (Bello, 2015) suggest that to collect employment information, CSA should apply household surveys, as companies usually will inform on the number of jobs they are providing. However, employers are not aware of the second jobs that their employees might be doing. Thirdly, consider different information sources of the artistic labour market. As this industry, in particular, holds a significant amount of temporary, part-time and unpaid jobs, the contribution of the cultural sector workforce can be underestimated.

So endlessly, if cultural statistics are so difficult to account for, why then do public institutions deliver this task to organisations that are not engaged with the System of National Accounts? Such as the research department of the Art

Council. Furthermore, would it not be more efficient to create a department within the Central Bank responsible for CSA as they manage the information and methodology? Based on the previous facts, it is fair to consider that Central Banks are not taking responsibility for CSA because of the complexity of cultural statistics, which requires mandatory commitment as with the SNA. Additionally, the data does not provide information on the periodicity of payment and the recognition of multiple income sources per artist, such as grants, artist incomes, second jobs or transfers from partners or relatives. Thus, the information related to informal jobs, the different income sources and the periodicity of payment are vital to understanding the socioeconomic situation of cultural workers.

Considering the challenge of account data on the cultural labour market, there are two possible ways to generate statistics on the socioeconomic situation of cultural workers, either using census data or survey data. The main problem of any of both mechanisms is to define who is a cultural worker. For the Census, the definition is clear, 'chief job activity or business last week'. However, for surveys, the description is more flexible as different institutions call for different concepts of a cultural worker. For that reason, the Census is more helpful for comparisons and general information, and surveys are more heterogeneous and gather in-depth information, so both have positive and negative aspects.

Additionally, the project's format, in which the cultural goods and services are embedded, generates a multiplication of short-term contracts (Bille, 2020). In the long–run, this situation gives a false sense of employment in the cultural industry. For example, employment rates are based on survey questions like 'Have you been employed the last XX months', which can be statistically correct and applies for a short-term contract. However, the reality is that employment in the cultural sector can be overestimated as it is built based on a short-term contract. Then, the index is not representing the actual situation of the industry.

In general, people will declare themselves as artists or cultural workers if the income they perceive from their art job or arts-related job is higher than their non-artistic job. Therefore, if someone has a higher salary attributed to a non-artistic job, the Census will not capture that individual's contribution to the cultural and creative sector, leaving that person as a 'hidden artist'. The consequence of having hidden artists is that, whenever authorities want to generate Cultural Satellite Accounts (CSA) and map the creative sector's contribution or the characteristics of the workforce, this data will be missing. Therefore, authorities' perception of the creative industries will be underestimated and less urgent in public policies and budgets.

Then, the existing registration system (CSA) is not taking all the information

into account, presenting information just for formal jobs related to companies providing social insurance to their workers. This estimation misses a significant amount of cultural workers that work in part-time and independent schemes. Additionally, the data does not provide information on the periodicity of payment and the recognition of multiple income sources per artist, such as grants, artist incomes, second jobs or transfers from partners or relatives. Consequently, the CSA can include the data from Trama's report to reach a broader spectrum of cultural workers and better understand the cultural sector.

In general, improvements in the registration system enrich the data and show the most critical variables to support the socioeconomic situation of cultural workers and help allocate the art sector as a relevant economic contributor. Consequently, it can trigger positive changes to the perspective of policymakers on how vital cultural production for countries is.

### Applications of Cultural Satellite Accounts and the case of Chile

Even though the CSA have statistical limitations, several countries tried to implement it, with mixed results. For example, Canada created a Framework for Culture Statistics (FCS) 15 years ago, based on the national classification standards (Gordon & Beilby-Orrin, 2007). Canada's Culture Statistics Program created the framework and is responsible for updating the methodologies and adding new characteristics to the evaluation. For example, in 2006, CSP incorporates surveys of non-profit businesses in the cultural sector. Later, in 2010, they published a report on CSA, which measured the output, gross domestic product and employment (Hara, 2015). Moreover, a peculiarity of its measurement was the inclusion of education, cultural heritage, natural heritage and sports, which reinforce the idea of cultural singularities of each country and the difference between CSA implementations.

Another relevant example is the Australian case, wherein 2014 developed a CSA for 2008-2009, but isolating what is considered cultural industries on one side and creative industries on the other. The results showed a 4% contribution of the cultural sector and 6.3% contribution of the creative industry to the GDP (ABS, 2014). Moreover, the employment statistics – split between cultural and creative industries – show: i) The number of companies, per size and cultural domain and their turnover, and ii) Number of cultural/creative occupations inside and outside of the cultural/creative sector.

Another example is the case of Spain. Their situation is relevant as this country is the bond between Europe and the Latin American region, which for

this study is significant. The described statistics are more related to the situation of the cultural sector in the Global South. This country, in particular, has official statistics for culture in the context of the National Statistical Plan of Spain (Hara, 2015), then, the information quality is equally reliable as the one from the System of National Accounts. Their reports are benchmarks for other countries because the SNA almost incorporates the CSA, which is the structural modification to ensure more and better cultural statistics in Spain.

In the same way, a representative example from the Global South and the Latin American region is Colombia. In 2008, the National Institute of Statistics (DANE) identified union surveys results which became useful to collect information on the cultural production and expenses (Bello, 2015). This action took place while DANE cooperated with the House of Colombian Books to collect data for the book industry. Endlessly, the union surveys were identified as a benchmark to collect information across other cultural domains. This situation could not happen if it were not for other technical institutions advancing on data collection. From this example, it is essential to establish a leader public entity in charge of the CSA and a framework and support from other institutions to achieve excellence in statistics.

Moreover, other countries of the region, such as Argentina and Brazil, reveals some data on the culture workforce, but still insufficient as there is no consistent reporting year-on-year, and not all countries present the same information. Therefore, the reality of the cultural workforce remains hard to compare among countries. However, the further development of CSA in Latin America (Cecchi, 2015) helped to create the first statistics on the contribution of arts to GDP and the mapping of cultural workforces' characteristics.

Overall, even though there are referential frameworks to develop CSA, the truth is that every country applies them based on their cultural context, informality situation of their cultural job market and States interests. Therefore, the results showed are hard to compare among nations. A significant part of the CSA is lost, as the reports succeed in showing statistical information of the cultural sector but fail to make that data comparable. These statistics cannot entirely reflect the socioeconomic situation of the cultural workforce. However, it is a noble attempt to understand the contribution and the volume of it. Moreover, this approach shows again that perspectives and definitions established in each country create different results on the CSA.

In Chile, as the recent UNESCO database for the cultural workforce shows, there is no official data for the country about the percentage of people working in this industry and their actual situation. Furthermore, the UIS database shows

statistics of the cultural sector workforce just for 2013 (UIS, 2017) and a private institution called Trama (Brodsky, Negrón, et al., 2014) develop a report on the cultural workforce in 2015. Then, even if there is information available, it is not integrated. The responsible for the CSA is the Art Council (CNCA), and the applied methodology is built from three different sources. From a technical angle, it is based on UNESCO Cultural Statistical Framework 2009 using definitions of cultural domains and descriptions of activities found in the document. Additionally, the Art Council uses the CAB manual (Bello, 2015) for specific applications of CSA in Latin American. Finally, the country defines variables using the International Measurement of the Economic and Social Importance of Culture (Gordon & Beilby-Orrin, 2007).

Nevertheless, Chile extends cultural domains considering 15 relevant disciplines, excluding tourism, gastronomy and sports, which other countries include. Officially, Chile applies Cultural Satellite Accounts to describe the characteristics of the cultural workforce. However, in both cases – a pilot study in 2014 and recently in 2017 – data accuracy was not entirely significant due to three different reasons; Dispersion of institutions providing information, the informality of cultural labour market, and difficulty registering cultural exports services.

In Chile, from a public pilot study on cultural statistics (CNCA, 2014), it is possible to identify two different sources of information. Firstly, CASEN[5], which reveals the number of cultural jobs in both cultural and non-cultural companies. Additionally, this information is integrated with the number of workers in cultural activities given by SII[6].

From CASEN 2009, the pilot study concludes that 5.9% of the national workforce comes from the cultural sector. Specifically, 153,513 cultural workers are independent, 14,660 employees, and 214,320 employers. Then, independent workers are approximately 40% of the cultural industry, which is significantly higher than the national average, where this group of workers is approximately 20%. Moreover, from the independent workers (153,513) on cultural jobs, 31% works with invoices and receipts, while 69% of them do not provide legal proof for their services. This reality underestimates the actual contribution of the cultural sector to the GDP because that last group represents 27.6% of the total cultural workforce. Additionally, 45,940 cultural employees work without a contract. So, overall there is 42.8% of informality in the cultural workforce.

[5]CASEN is the abbreviation of *Encuesta de Caracterizacion Socioeconomica Nacional*, which is the main instrument of measure and evaluation of Chilean social context.

[6]SII is the abbreviation of *Servicio de Impuestos Internos*, which is the public institution in charge of the application and collection of Chilean taxes

This situation shows a first approach to the uniqueness of the cultural sector in Chile and how the cultural workforce structure is built on a base of independent workers, freelancers and micro-companies. In this context, the high percentage of independent workers affects the accounting information because some may not contribute to taxes. Consequently, there is an under-representation of the cultural sector's contribution, which their workers generate. This problem is possible to correct if independent workers are committed to giving receipts and invoices, and cultural companies are willing to establish contracts with their employees to unveil the actual value of their sector.

The informality of tax declaration is identified in the contributors' profile in the sector. Generally, the distribution of the cultural sector (33% cultural companies and 67% individual contributors) is very similar to the national distribution (34% cultural companies and 66% individual contributors). Moreover, individual contribution is exceptionally high on domains associated with services such as Architecture (89%), Dance (93%), Heritage (87%) and Theatre (60%) (CNCA, 2014). Therefore, a hidden contribution may remain in those cultural domains. Consequently, the tax contribution of the cultural sector could be higher than what is reported, and that could support policies to the same industry, to endlessly improve their socioeconomic situation. Even validating the contribution of the cultural sector based on cultural companies sales, there is a dominant component of small companies (55% of the industry), which makes it even harder to gather data on the cultural workforce when asking information to employers of those institutions.

Endlessly, CSA applies different cultural domains and functions established by UNESCO FCS (UNESCO, 2009). However, one of the problems with the statistical methodology for Chile is that it lacks standardisation, as it gathers data from different cultural institutions, making it very difficult to compare. Additionally, the institutions responsible for delivering this information often are not adequately prepared or not fully engaged with the cultural statistic and provide partial information, narrowing the understanding of the cultural sector's reality and contribution.

On the other hand, Trama (Brodsky, Negrón, et al., 2014), an independent institution, published a report on the socioeconomic situation of cultural workers in Chile. The methodology mainly was built on an online questionnaire handled by cultural workers of four different regions (Antofagasta, Valparaíso, Metropolitan and Maule) of Chile, with a valid sample of 3,988 individuals. The results show interesting statistics on why there is an urgent need to intervene in the socioeconomic situation of cultural workers through public policies. For

instance, the report provided information on the volume and distribution of different types of cultural workers (artists, technicians and intermediaries) and the kind of contracts, if any (no contract, service with an invoice, fixed-term contract and long-term contract). Also, if the sample has secondary jobs not related to the cultural sector. In this context, Trama's report (Brodsky, Negrón, et al., 2014) shows that 47.1% works exclusively in their cultural job and 23.1% works almost exclusively in their cultural job. Then even though the secondary jobs helps to compensate the low incomes of the cultural sector, a significant portion of cultural workers are relying heavily on their cultural jobs, because of time restriction.

In summary, establishing a robust statistical registration system for cultural production is critical as a significant portion of the cultural workforce is invisible to the registration systems. The lack of specificity on cultural statistics leads to inaccurate cultural policies affecting the cultural workers, their income sources, and endlessly their socioeconomic situation.

# Chapter 3

# Literature Review Summary and Thesis Structure

This chapter encompasses the topics covered in the literature review and provides arguments for the thesis structure based on three articles.

## 3.1 Literature Review and Sections Summary

The present section looks at the previous literature review, which covers their respective sections, what they seek to achieve, and the reasons behind their inclusion in this thesis.

The first subsection starts looking at the economic theory related to the labour market and its development over the last century. The section concludes that, in the first four decades, most countries established a neoclassical philosophy towards their national labour market, which had certain flaws, especially in terms of discrimination among workers, wage scattering and pressure towards increasing unemployment. Later, the section analyses segmented and dual labour market theory because both approaches came as a response and historical evolution of the neoclassical labour market theories. Moreover, the segmented labour market theory provided evidence of a professional, well-established and elitist workforce and, on the other hand, a massive blue-collar workforce that absorbs the volatility of the demand. This segmentation was considered rigid in structure and segregative in terms of age, race, gender, perpetuating an unbalanced labour market. Finally, this section covers some aspects of the future of the labour market, paying more attention to workers well-being, mental health and flexibility of labour contracting. Endlessly, this final topic sheds light on this study's intentions, appraising the socioeconomic situation of workers as something relevant and urgent to consider, especially in the cultural sector, which the next chapter widely covers.

The following subsection analysed the different aspects of cultural workers to explain their socioeconomic situation, both theoretically and pragmatically. Moreover, it identifies the reasons for their complex condition, bearing in mind that the free market does not provide enough income and public policies do not sustainably correct market failures that constrain their revenues, especially in

Latin America. Later, it analyses the unique characteristics of the cultural labour market. It starts with a range of theories explaining the cultural labour market, such as work-preference, superstar theory, unfit to perform non-artistic jobs, psychic income and misinformation of newcomers to the cultural sector. Then the previously exposed approaches are complemented with applications and examples in different countries. Finally, this subsection analyses the evolution of the cultural labour market, concluding that informality and precariousness have remained throughout time. Additionally, that the uniqueness of the cultural labour market is constructed by networking of firms and workers, reputational connections between cultural workers, and rigid industry-standard arrangements for wages and benefit schemes. Overall, theory, evidence and the historical evolution of the cultural labour market are relevant to understand the precarious situation of cultural workers worldwide, which is the subject of study of this thesis.

The final subsection on economic theory identifies and lists the most relevant variables affecting the socioeconomic situation of cultural workers, which are divided into incomes, monetary transfers and social benefits. Then, the section expands the analysis, explaining the different sources of revenues, such as internal demand, copyrights and exports of cultural production. Additionally, it covers monetary transfers, such as public funds, private grants, scholarships, patronage and transfers from family and friends. Finally, this subsection considers social benefits such as pension support, health insurance, unemployment insurance and minimum wage scheme. Overall, this subsection is much relevant because it sets the guides of the variables chosen for each of the three articles and justifies the idea of analysing three of those variables in separate pieces.

The second section starts with a subsection on how countries are dealing with their cultural governance, based on the four institutional models of Chartrand & McCaughey, which consider government as 'facilitators' (USA), 'patron' (UK), 'architects' (France) and 'engineers' (Soviet Union). This overview is necessary to understand what are the objectives that countries base their cultural policy on. Later, it covers the historical trend on cultural governance, from the pre-WWII era, where culture was instrumentalised for other purposes, to the welfare-state approach on culture from the 50s and 60s, to the market-driven approach of the 70s. The market-efficient management of cultural policies in the 80s and 90s and the rise of the concept of creative industries finally establish the present struggle associated with a globalise cultural industry, where local and national culture comes into tension with significant shareholders and global trends in the cultural sector. The latter aspect is key to this study because it demonstrates that the actual situation provides space and opportunity to promissory participants in the

global market of cultural production, regardless of their rigid structure. This issue is covered when talking about cultural exports, one of the three relevant topics of this study.

This subsection also explores the cultural governance in the Global South, and more specifically in Latin America, where the case study country is located. Moreover, this section analyses the variety of approaches on cultural governance, based on those countries that choose to establish pluricultural principles and those that are more profit-driven economies, such as those influenced by Anglo-Saxon institutionalisations, which see the cultural sector as a non-profit sector. Both approaches are relevant as different types of cultural governance establish the system that cultural policies assume. Finally, it provides some commentaries of the prominent role of countries of the Global South, the debate on asymmetric relationships between the Global North and the Global South, and how governments register their cultural workforce. All relevant aspects to understand the systematic informality present in the cultural labour market in Latin America, which later impacts issues such as their pensions and their access to public fundings, both topics that this study focuses on.

The following subsection starts defining critical concepts of the labour market included in statistic systems. Then, it investigates how statistical systems work on accounting for labour market characteristics, providing some statistics on the employment, unemployment, and labour force participation rate of OECD countries. Later, this subsection provides historical information on the System of National Accounts (SNA). Then it introduces the barriers that statistical systems present, and how it differs for the cultural sector and its workforce, justifying the existence of Cultural Satellite Accounts (CSA). Afterwards, it presents the challenges of registering cultural jobs, which is crucial for this study. The lack of data on the cultural labour market explains why cultural policies often wrongly target the variables that seek to improve the cultural labour market and their workers. Finally, this subsection introduces the historical milestones of CSA in the case study, the applications for the cultural labour market and their challenges. Endlessly, this section is relevant for the present study. It applies an innovative methodology, using available data to identify variables affecting the socioeconomic situation of cultural workers, which could be expressed as effective cultural policies in the future.

Comprehensively, from the previously exposed theories, the approaches and topics that are included in the three-article thesis and those excluded are represented in the following diagram:

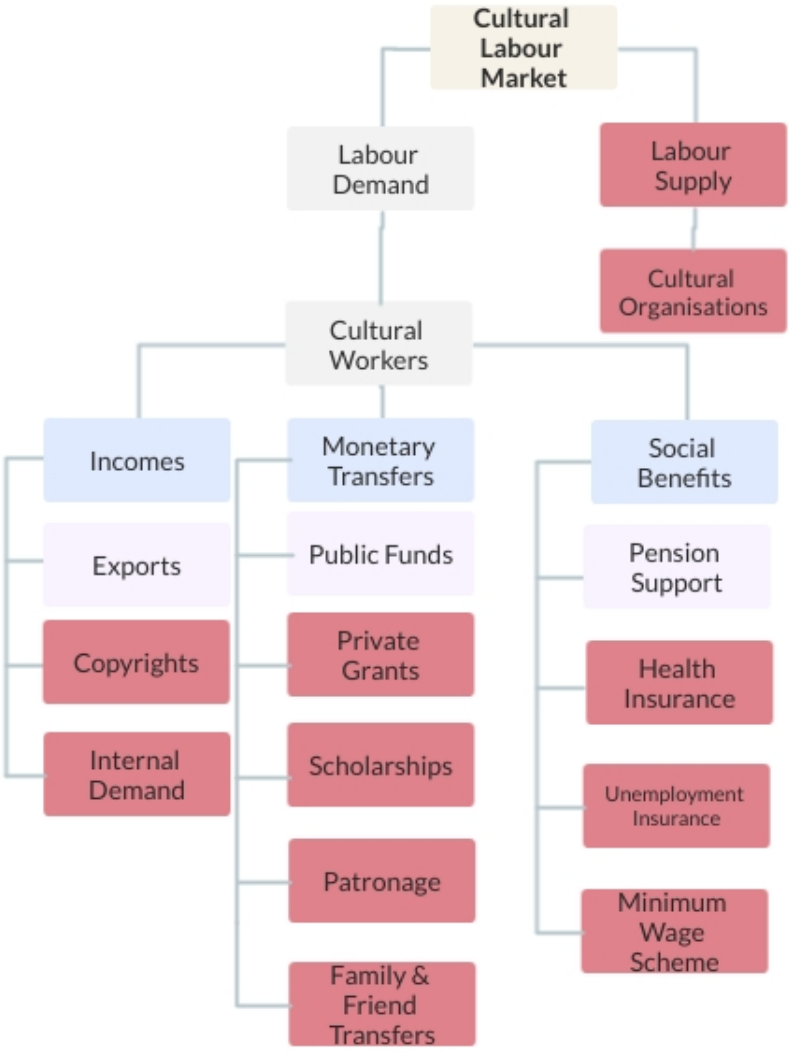


Figure 3.1: Topics included and excluded in the thesis

[1]

[1]Those topics marked in red are excluded from the analysis while those in other colours are considered in this study.

## 3.2 Three-Article Thesis Structure

This section covers the structure of the present study and explains the option of writing it as a three-article structure, the reasons justifying that decision and the challenges addressed.

Initially, the core part of this study is to analyse and improve the socioeconomic situation of cultural workers. For that matter, there is a historical and actual claim to overview this topic. UNESCO leads both claims, historically by their series of reports on the socioeconomic condition of artists, developing a document suggesting recommendations to state members to improve the professional social and economic status of the artists (Unesco, 1980). The monitoring has been consistent, and the international institution produces three consultation surveys on the matter in 1983, 2011 and 2015. These reports suggested improvements on policies related to training, social security, employment, income and tax conditions, mobility and freedom of expression. Been the last one significantly important as the 2015 survey evaluated the actual situation of each state member regarding the artists' socioeconomic condition (Neil, 2015b).

In the present, the discussion of artists' socioeconomic situation has been considered by creating forums of discussions such as Create 2030 in 2018 (UNESCO, 2018). This type of forums precisely discussed three topics connected to cultural workers' socioeconomic situation: Strengthening cultural entrepreneurship IFCD invest in vocational training, rethinking the artist's status as a new policy agenda and rebalancing trade flows, making a case for preferential treatment in culture. These three topics are aligned with the sustainable development goals program from United Nations – 17 goals to transform the world by 2030 – on which goals 4 (quality of education), 8 (decent work and economic growth) and 10 (reduced inequalities) are attained.

There is no doubt that this topic of investigation is relevant as in 2007, UNESCO defined these aspects as a priority of the institution in the general conference (UNESCO, 2007). Nevertheless, even considering the importance of these previous publications, this study expands this analysis and recognises that the cultural sector is not entirely constituted by artists but also by cultural workers who might have or not have cultural jobs. However, they are still participants in the supply chain of cultural production. Then, the visibility of that group of workers is a primary contribution of this study to the literature review.

Choosing these three particular elements of the socioeconomic situation of cultural workers comes from two different approaches. Firstly, the decision sup-

ports the UNESCO vision, wherein in 2015, a survey to the state members of UNESCO provided information on the priority areas for the socioeconomic situation of artists. The priority topics were: Digital technologies and the internet, transnational mobility of the artists, social protection and freedom of artistic expression (Neil, 2015a).

These four topics set the configuration of the three articles of this investigation. Moreover, some of those topics are simultaneously included, and others are individually considered, as the following figures show:

Figure 3.2: UNESCO Priority areas for cultural workers and the first article of investigation

Social protection is much related to the first article of this study. Moreover, even if social security covers aspects such as the health care system, unemployment, education and pensions, this investigation believes it is necessary to evaluate them individually. Therefore, this research will focus entirely on pensions for cultural workers from the topic of social protection.

Now on pensions, there is three focus of social protection. The first focus is when the artist is subsumed into employment status where France, Belgium and the UK offer substantial social benefits. The downplay of this focus is that it requires cultural workers to be employees and eventually formalise the sector, losing the inherent independent spirit of the cultural workforce.

The second focus is welfare-state development, with two unique mechanisms. Firstly, an award mechanism where the state provides pensions to retired artists with significant contributions to the art sector of a specific country. Such is the case of Sweden, Finland, Denmark, Norway, Ireland, Hungary and Paraguay. However, this welfare-state approach is impartial, as it just benefits a small fraction of the cultural workforce and only of those who were consolidated artists. On the other hand, the second mechanism from the welfare state is to provide pensions in a more generalised way. Azerbaijan is a benchmark, providing pensions to 'people engaged in creative activity'. Also, the *Künstlersozialversicherung* (KSK) in Germany, the Artists' Social Insurance Fund Act in Austria and the *Réseau Prévogance Culture* in Switzerland. Slovenia contributes two percent of the incomes of cultural workers for extra support to their pensions. However, from a precarious position as the one for cultural workers, this contribution is not significant. Lastly, Cuba contributes to pensions of cultural workers contributing eight percent of their incomes and 12% of the consumption of cultural goods and services. However, it is important to analyse that transferring the contribution to customers' price can increase the chances of substituting another type of product and affect the final volume of pensions.

The third focus is a non-state system supporting pensions, which rely heavily on unions and associations in charge of the role. Countries applying this mechanism are Russia, Argentina, the USA and Canada-Quebec.

Particularly in Chile, there is no specific mechanism for pensions or social protection for cultural workers. Furthermore, UNESCO reports that the situation of the Chilean cultural sector - not considering the audiovisual industry - is comparable to Central African Republic, Costa Rica, Cyprus, Ethiopia, Namibia, Togo and Suriname, where artists are entirely on their own in regards to pensions (Neil, 2015a). Hence, the case of Chile is interesting to investigate as it is considerably behind in this matter, compared to its regional partners and more related to countries that do not represent the same economic or institutional level.

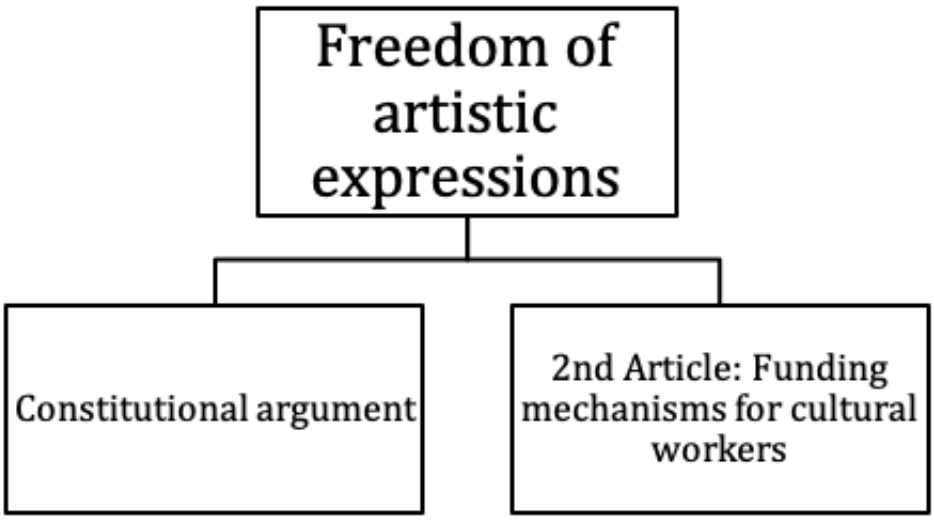


Figure 3.3: UNESCO Priority areas for cultural workers and the second article of investigation

Freedom of artistic expression has two different approaches. Firstly, a constitutional argument for preserving the right of artists to express themselves freely. This approach is significantly discursive as most democratic states included it in the constitution, but it is not effectively implemented in practice, especially in countries of the Global South.

On the other hand, the second approach is a public funding argument, which is where this investigation focuses the most on the second article. This approach is significant for this study because the mechanism's rules can affect the nature of the content of cultural projects. For instance, Denmark mentions whether older and well-established artists have advantages or disadvantages when applying for funds. Paraguay is also developing mechanisms to create equal opportunities for artists of urban and rural communities.

Moreover, the funding mechanism aims to 'ensure equality of accessed treatment and prohibit discrimination'. However, in practice is not always the case. To avoid this situation, most of the state members of UNESCO suggested a public process, with decisions made by experts at an 'arms-length' from public officials. Such is the case for Austria, Canada, Finland, Lithuania, New Zealand and the UK. However, the 2015 survey from UNESCO does not question the sustainability of the resources invested in cultural projects via funding mechanisms.

Rather than propose alternatives that benefit the socioeconomic condition of cultural workers, it just suggests different variations of the same instrument, funding art projects on an annual basis by evaluating an expert commission. This investigation further critiques cultural projects' funding mechanisms, analysing their equality, sustainability, social impact and efficiency, considering funding cultural workers instead.

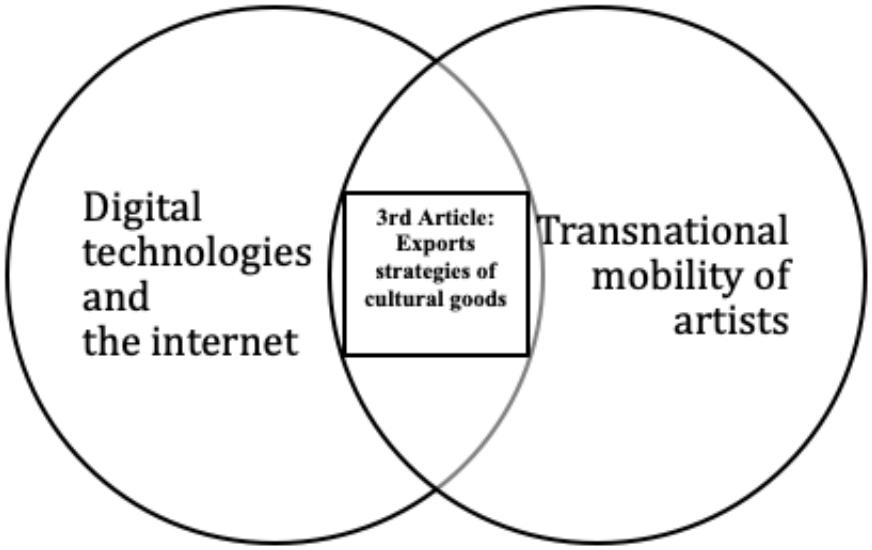


Figure 3.4: UNESCO Priority areas for cultural workers and the third article of investigation

Lastly, digital technologies and the internet are considered to increase the exports of specific cultural goods such as music, movies, and books. Those products can have a competitive advantage if digital technologies are used in a certain way. However, it is essential to acknowledge that technology does not affect all cultural domains, as some have different distribution channels, especially in cultural services. In this context, digital platforms can help disseminate and promote those cultural services. Still, it is not always clear if the effect of digital technologies on artists earnings is always positive. Moreover, books, royalties and licensed music are examples of positive impacts of digitalisation, as reproductions of those goods internationally contribute to increasing incomes of cultural workers

associated with their production. On the other hand, adverse effects of digital technologies on the socioeconomic condition of cultural workers are, for instance, the reduction of domestic sellers of books and music, reduction of traditional CD/DVD markets compared to streaming platforms, and piracy.

Transnational mobility of artists also addresses the third article. Furthermore, it covers what digital technologies were leaving out because certain cultural domains are more oriented to face-to-face distribution, such as visual arts and performing arts. So, this topic is related to the improvements of cultural exports but deals mainly with the distribution of cultural services.

This study identified three themes that are defined as relevant to consider for this study from the previous sections. Firstly, pensions as incomes for cultural workers after they retire. Secondly, incomes taken from the support of public grants. And thirdly, incomes coming from exports of cultural goods and services.

The reason to choose the Global South and particularly Latin America is that the region is a leader in the development of Cultural Satellite Accounts and cultural statistics (Bello, 2015). Additionally, cultural workers from this region struggle with the structural precarity of the sector and the uneven development of their industry compared to the cultural sector of countries of the Global North.

The reason for choosing Chile is that it has more data on cultural statistics, such as CSA pilot studies and the Trama report, among the region's countries. Moreover, the availability of public information regarding the cultural workers and the national workforce, in general, facilitates the development of statistical models for this study. Additionally, information about public grants for artistic projects and cultural export is also available. Then, it will be possible to develop the methodology of all articles without significant problems with the data.

Overall, the following three chapters focus on the investigation gap for the cultural workforce, created on the previous literature based on analysing and propose solutions to improve the 'funding problem' for the cultural workers. However, this research focuses on the 'labour problem' of the cultural workers. It aims to prove the actual context of their pensions, public grants and export strategies, which this study identified as the variables that affect most cultural workers and significantly affect their socioeconomic situation.

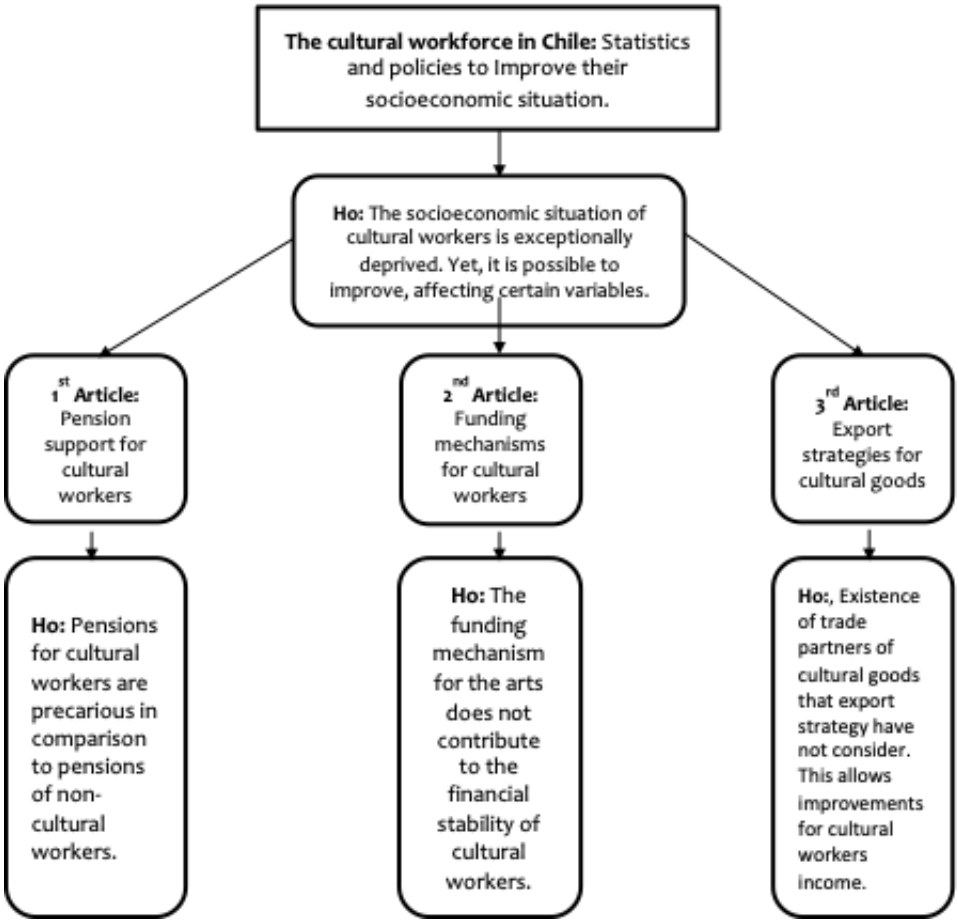


Figure 3.5: Three-Article format PhD Structure

The reason to develop a PhD investigation based on a three-article format is that the topic of investigation demands different approaches to have a complete understanding of how it is possible to improve the socioeconomic situation of cultural workers via cultural policies. Moreover, this study identifies other variables affecting their socioeconomic position, but this study covers only three of them due to the extension of the investigation. Endlessly, each of those variables requires an independent analysis because their mechanisms affect the socioeconomic situation of cultural workers differently.

For instance, the first article investigates the pension scheme of cultural workers, based on informality, part-time jobs and low paid salaries. Then, the second

article talks about the national public funding mechanism for the art sector, *Fondos de Cultura*, and how those grants focus on the art projects, but not on the cultural workers. Finally, the third article identifies that the socioeconomic situation of cultural workers is sensitive to the exports of cultural goods and services. Therefore, this investigation develops an analysis of potential new trade partners and identifies bottlenecks on international commerce of cultural goods and services.

Then, the three-article format allows investigating these topics independently, as, for example, the third article is more related to the market sphere. Still, the first and second are connected with the public domain. Another example is that the second and third article studies variables that affect the socioeconomic situation of cultural workers when they are active, but the first article investigates their condition after they retired.

The methodology - and more specifically, the database – is another reason to establish a three-article format. The first article uses a database on labour schemes, works conditions and income levels for over 104,000 workers. The second article analyses the funding mechanism of the ministry of culture for 2017, incorporating almost 7,000 art projects. Finally, the third article uses databases of international commerce of cultural goods between Chile and their partners between 2005 and 2015. Then, as the articles use different databases, it is necessary to develop each article independently.

Nevertheless, all three articles use predictive models for their outcomes, specifically regression trees and random forest techniques. The econometric methodology contributes to filling the gap on the precarity of the cultural labour market. Much literature and revision have been done from a qualitative perspective, but with a lack of quantitative and econometric exploration.

The results of each article – parallelly – outline the necessary variables to focus on to improve pensions, public funds, and export volumes in the cultural sector. Hence, the conclusions of the three articles help to support a bigger question, how to improve the socioeconomic situation of cultural workers, which can be conceptualised in the form of better cultural policies towards those three topics.

By gathering the potential results of each article, it is possible to construct a set of policies that helps to improve the socioeconomic situation of cultural workers in a sustainable way. Moreover, a case study based on Chile helps to use these results as a reference for other countries of the region and the Global South.

Conclusively, the three-article format is a suitable methodology to approach

the main research problem as the socioeconomic situation of cultural workers is affected by different components that need to be analysed separately. Furthermore, each article is constrained correctly to answer a particular set of questions to maintain the study's extension to a doctoral thesis format.

# Part II

# Three Papers

# Chapter 4

# Support for Pension Schemes

This chapter covers the first article of the study, which focuses on the pension schemes of cultural workers and how to improve them, considering the high degrees of the informality of the cultural sector and the low level of pension´s contribution from cultural workers.

## 4.1 Introduction

This article aims to bridge the gap on pensions literature in the cultural sector, which is hard to investigate due to the different pension schemes present in each country and the complexity to define what classifies as a cultural worker. Furthermore, by applying a probabilistic model, this study identifies the significant variables affecting the probability of contributing to their pensions for cultural workers. Later, this research identifies the most relevant predictors to the afford mentioned probability by implementing predictive models.

This article is relevant for the development of this thesis because it analyses a life-phase of the artist which has not been explored intensively. Moreover, this article signals the situation of cultural workers after they should retire, which in many cases is not what occurs, as those workers are forced to keep working until elder age, because their pensions are not enough to reach a decent socioeconomic status.

In that context, sector-intrinsic characteristics of the cultural sector labour market self-limits pension scheme contribution, resulting in comparatively lower pensions than other economic sectors and the national workforce. Consequently, cultural workers tolerate increased risk of low socioeconomic attainment and relative poverty. This effect is particularly tangible at end of life, where inflexible current pension policies further exacerbate these limitations by failure to consider sector-typical characteristics such as informal, volunteer, and fixed-term contracts. Therefore, pension reform for the cultural sector is arguably one of the most pressing topics to redress.

The current study investigates the pension system for cultural workers, using Chile as a study case. Additionally, this research bases the analysis on the characteristics of the labour scheme of the cultural sector, which includes informality, volunteer jobs, secondary jobs and part-time jobs. Input on this complex issue

is offered as an econometric model estimating the probability of cultural workers contributing to their pensions and the conditions increasing this likelihood. A secondary comparison is subsequently made between cultural workers and the contributory power of non-cultural workers in Chile. By using this methodology, this study intends to illustrate that the standard pension mechanisms are ineffective for workers of the cultural sector, and that explains why pensions in this industry are systematically lower than for other sectors. Moreover, this study explores the relation between the probability of contribution to pensions of cultural workers and non-cultural workers and several independent variables related to individuals work- and social conditions to determine the significant factors determining the likelihood of pension scheme self-contribution.

## 4.2 Literature Review

This section analyses the relevant literature on pension schemes and specifically the one for the cultural sector. The first subsection overviews the role of the welfare state in the pensions schemes. Later, the second subsection looks at the different pensions systems implemented across the globe. The third subsection analyses the current crisis that pension schemes face from a general perspective. The fourth subsection explores the particularities of the pensions schemes in the cultural sector. The fifth subsection considers the pension schemes in the cultural sector, particularly in the Global North, while the sixth subsection evaluates the same aspect for the Global South. The seventh subsection looks at a benchmark on pension scheme for the cultural sector from Colombia. The eighth subsection explores the general pensions system of the case study of this investigation, Chile. The ninth subsection analyses the general subsidiary system for pensions in Chile, and the last subsection discuss the pension scheme for cultural workers in the country.

Overall, the different subsections create an appropriate framework, from where it is possible to recognise the actual state of pension schemes and why it is necessary to look for improvements to them.

### 4.2.1 Pensions and Welfare States

The welfare state is relevant to the discussion. Many modern states hold imperative financial well-being for their citizens, expressed by establishing social policies that provide basic support for economic necessities, which constitutes the origin

of pension systems.

The period of social insurance programs in Germany from 1880 and during the First World War constitute the origin of welfare-state (Orloff, 1993) including one of its pillars, pensions. Many countries adopted these policies during the period between wars. For instance, Britain introduces pension laws in 1908 and 1925. The pension laws were facilitated by the decline of 'friendly societies´ and benefits from trade unions, which cover sickness, funerals and superannuation of workers (Hutt, 1955). As the insurance and assistance from the state became broader, the schemes from unions changed from compulsory to voluntary, and the benefits from friendly societies declined. On the other hand, the United States adopted a pension insurance plan in 1935, pushed by the extension of Civil War pensions (Alber, 1994). Additionally, the country established the Fordist labour scheme, and retirement dates standardised life cycle (W. A. Jackson, 2009), making pension scheme easier to set.

It is possible to analyse the fundamental role of welfare states in applying pension schemes based on the historical context, because the interaction of both elements produces different results on pension levels and coverage. The welfare-state model is relevant for public and private pension schemes as it supports the pensioner if the individual contribution is insufficient by implementing a minimum pension value requirement. For this brief analysis, the description of actual welfare-state models is based on the definitions of the liberal welfare state, the corporatist welfare state, and social democratic welfare-state (Esping-Andersen, 1990), which are particularly associated with the role of the welfare state in the pension system.

Countries like the United States or the United Kingdom are often identified as liberal welfare states. The free market is imperative for the minimum state pension funding and subsidisation of private welfare schemes. In the case of pensions, pension funds owned 33% of UK and 25% of US stocks in 1995 (G. Jackson & Vitols, 2001), which illustrates the high level of involvement of pension schemes in the capital market. Comparatively, the corporate welfare-state may be viewed as a conservative welfare state aiming for stability; typical examples are Germany and Austria. Here, social benefits are provided by labour associations, based on the example of early medieval guild systems and later mutual aid societies, where the contribution to their social benefits was discounted directly from their payroll and supported by public transfer. However, the level of social benefit (pensions) highly depends on the status of the labour association, which is different depending on the type of workers included (blue-collar, white-collar, civil servant). The positive aspect of this regime is that it enjoys a high level of public support

and has an intermediate tax burden. The negative side is that social benefits are related to workers' status, which maintains and supports social cleavages. Now, usually, pensions schemes on this type of welfare state depend heavily on inter-generational contribution. Moreover, previous literature (Barr, 2004; Ediev, 2014) shows that this pension scheme is sensitive to demographic changes where a reduction of the workforce and a natural increase in the ageing population can consume funds very rapidly. Finally, the Social Democratic welfare-state is most connected with social rights' provision, promoting far-reaching and all-inclusive equality. Therefore, the benefits are materialised as income increases. The most iconic representation of this welfare state is Scandinavian countries, such as Sweden, Denmark and Norway, where critics often mention the significant public cost of the system, later transferred to higher taxes to citizens. This welfare-state scheme guarantees access, regardless of the contribution of individuals, so that pensions are guaranteed and funded via taxes, independent of individual contribution.

Conclusively, each welfare regime has a specific approach to social benefits, which defines the condition of pension, especially for informal job schemes. However, there is a common problem with the pension system related to informal job schemes, reviewed in the next section.

### 4.2.2 The Pension System Entity - Globally

To initiate the analysis on different pension schemes, first is necessary to define what a pension is, namely: 'a set of periodic payments to an individual from the moment of retirement to their death, for the purpose of relative economic certainty throughout the remaining lifespan' (Blake, 2006). Pension systems may also consider two additional objectives (Barr, 2004); an equality objective, considering a support scheme to the most vulnerable people in retirement age which will attain at least a minimum income to guarantee living standards; and a distributional objective, which gives more resources to targeted groups of people, such as widows or those with disabilities. In order to function appropriately, pension schemes have certain demographic assumptions as legal retirement age, a difference of it between genders and a life expectancy of workers. These demographic variables are determinant to maintain the pensions system, as changes can generate over-expenditure on retired individuals and make the pension system fail.

Regardless of additional incentives, pension systems rely on two processes: pre-pension contribution and post-retirement distribution. Two primary systems

apply to determine a method of contribution and subsequent pension receipt (Barr, 2002). Firstly, a Defined Benefit (DB) scheme calculates pension as a fixed percentage of the individual's salary while working. DB schemes are frequently associated with Pay-as-you-go (PAYG) pensions, where current workers' pension scheme contribution is made for the benefit of now-retired individuals, representing an intergenerational scheme paying pensions with current revenues. By contrast, an Individual Saving Accounts (ISA) model determines the pension amount at the end of the working life based on the beneficiaries accumulated assets up until that point. The law determines pension scheme contribution rate throughout the individual's career in an ISA model under a Defined Contribution (DC) scheme - a mandatory private fund that accumulates pension contributions manages them in financial assets, distributing the proceeds to its beneficiaries. In addition, some

Cost-benefit calculations of DB versus DC schemes have historically been debated by academics and policymakers and vary on several points, which has been of primary concern for both models regarding who assumes the risk of the pension system. In a DB scheme, the risk is shared between workers and pensioners as it relies on the contribution of the actual workers and the country's economic context, where crisis or instability could potentially restrict the distribution of the benefit to pensioners. For instance, 20 out of the 35 OECD countries collectively face a total of US $ 78 trillion in unfunded or underfunded public pension debt (CityGPS, 2016) in order to maintain the pension payroll. On the other hand, private companies administrating the funds assume the risk in a DC schemes [1]. However, some authors (G. L. Clark et al., 2006; Uthoff, 2001) argued that in reality, actual portfolio risk is transferred to the fund's members. If the portfolio overperforms, higher asset value for the contributors and higher utilities for the private companies share the profit (Barr et al., 2010). On the other hand, when the portfolio underperforms, the future pensioners solely assume losses on accumulated capital. A further critique on the subject suggests that pension fund managers often behave like mutual fund managers, focused on short-term returns which will individually give them higher profits (Opazo et al., 2014). Pensions have increasingly been more exposed to risky investments and the fluctuation of the stock market. However, in the context of post-industrial economies, prefunded private pensions have served as investments for capital markets (Hassel et al., 2019), as those savings – transformed into investment – ensure steady

[1] Particularly in Chile, the companies administrating the funds are called *Administradoras de Fondos de Pensiones* (AFP)

inflows of capital, increasing the depth and liquidity of capital markets (Naczyk & Hassel, 2019).

Nevertheless, as DC schemes require to generate periodical returns over the individual pension contribution, some authors support the scheme as by constantly reinvesting the savings, that money can be directed to capital markets – in particular equity markets (G. Jackson & Vitols, 2001). Consequently, the contribution of each worker can be reinvested in different financial assets, including stocks from local companies, transforming savings into investment. This viewpoint has received criticism for it being financially irresponsible to use pension savings for direct, potentially volatile financial investments (Barr et al., 2010). In this sense, these investments should be restricted and regulated to certain assets such as treasury bonds, stock index, mutual funds and stocks from low-risk companies, which does not always equal local investment. DC schemes are also adopted due to their comparatively favourable administrative temporal- and cost-efficiency. As the welfare state is not involved in the administration, private companies assume the collection and distribution of pensions and thus cost-effectivising via competitiveness between private administrators (Sierra Vasquez, 2017). However, in order to attract clients, private firms have to invest in marketing campaigns, physical offices, and high salaries to attract competent staff (Benavides et al., 2018), which represents a high cost for the administrative companies. This situation is identified as the private-social wedge (De la Torre & Heinz, 2018) as AFP are unable to collaborate among themselves, restricting the whole industry from the economies of scale benefits, which could positively impact workers' pension. Finally, there is a problem with the stability of the DC scheme pension system itself, as private funds face 'moral hazard' problems due to the risk companies administrating the contributions face of defaulting or bankruptcy (G. Jackson & Vitols, 2001) – a reduced risk in state-run schemes financially backed by the national bank.

Apart from the responsibility of risk as a critical factor on DB and DC schemes, the latter face the problem of change and dynamism, as the idea that the future will most likely be like the past moulds the model. In that sense, financial crisis, pandemics, or drastic changes in the world order, can modify the values of the assets invested on the saving accounts, creating significant losses to the contributors and inadequate pensions in the future.

Additionally, change is also perceived in the labour market of contributors, as the individual contribution gaps challenge the DC scheme. In the US, a typical worker born between 1957 – 1964 changed professions 12 times during their professional career (BLS, 2019). This figure is plausibly even more dynamic for

younger generations due to labour market volatility. A recent LinkedIn study (G. Berger, 2016) analysed three million college graduates from 2006 to 2010 and estimated four job changes by the time the individual is 32 years old, which indeed predict potential contribution gaps and impacting the level of worker's pensions by the time of their retirement.

Using the same logic on low contributions, it is relevant to mention that jobs are not always under full-time formal schemes, so the result is that people might have low contribution percentages under specific work schemes. For instance, in the US, under a part-time job scheme, a person who worked for 20 years will not access the state pension. In the same way, some other work schemes have no legal obligation to contribute, such as informal or temporary jobs, so pensioners have to rely on support schemes financed by the State, which contradicts the initial idea that DC schemes produce overall state cost-reduction.

### 4.2.3 Pension Crisis as a Structural Problem

There is a growing public concern that the pension system will be unable to sustain the elderly of coming generations (Taylor et al., 2017). There is no single cause for this, but attributable to several demographic changes, an ageing population trend, changes in payment rates and an increasing proportion of independent workers.

Firstly, the structural 'problem´ of pensions is improving health and longevity express on the extensions of life expectancy, causing more expenditures on retirement people than initially planned. As governments do not want to assume that increase in public expenditure, it has been observable that many countries worldwide are reducing state-funded pension schemes. For instance, the US observed the pension debt increase along time, as in 2000 the debt was -5% of the GDP, while nowadays it is around 9% of the GDP (Trusts, 2019), prioritising other areas of public policies such as health, education and social housing. Alongside, over the past 40 years, many countries have experimented with a shift from DB to DC schemes primarily driven by expected returns. Whereas DB schemes tend to invest in low-return assets such as real state and treasury bonds, the DC scheme invests in high-return assets such as equities. Therefore, pension capital has become an attractive source of investment capital, but it has been argued that this incentivises pension schemes to focus on capital returns that the pension fund contribution can produce, rather than the pensions themselves.

Secondly, there is a globally ageing population, an effect mainly driven by decreasing birth rates ($<$1.5 births per woman worldwide) and a systematically

longer lifespan (Sander et al., 2015). The situation is particularly topical in Latin America, where the population is ageing at a faster rate than the observed in core economies historically (De la Torre & Heinz, 2018). Consequently, the increasing volume of pensioners results in a more significant financial burden financed by a smaller working population. In order to tackle this, the increased retirement age has been proposed by several public and fiscal institutions (OECD, 2014). However, this proposal often finds resistance from society as it is identified as a pragmatically unpopular policy. The ageing population has seen a real lowering of pensions, with pensions having less purchase power than in the 1980s. This trend is most evident in Latin-American and Caribbean (LAC) countries, where the average support ratio [2] from 1980 to 2010 has decreased from 10.2 to 8.4, with a projection to reach 5.0 in 2030 and 2.5 in 2060 (OECD, 2014). On the other hand, the world average of 3.5 working-age people for each older person, 2.4 in North America and 1.9 in Europe (UN, 2015). These results show that there will be more pensioners in the future, hence the importance of having an adequate pension system to face that situation.

Thirdly, payment rates are not up-rated, partially because of an increasing disparity between work-scheme modernisation and more conservative pension systems combined with an increased move to free-market reliance. DC schemes have taken the principal role, normalising investment on high-risk stocks to compensate for low returns. As a result, countries have experienced a significant decrease in replacement rates; even in cases with full contribution from a formal job, the DC scheme has failed to give an expected ´replacement rate´ [3]. (Browne & Valdes, 2018). Moreover, the OECD suggested replacement rates of 40% to maintain a similar life quality for retiring individuals, which historically was never achieved under a DC scheme, especially in Latin American countries. Conjunctively, these moves have reduced the state-guaranteed security in the pension markets, where the intergenerational equity model- the basis of the welfare state- has been bypassed.

Fourthly, the percentage of independent workers is increasing worldwide, as people work in formal, designated jobs, as well as informal, undesignated workplaces (Standing, 2017). Moreover, the post-industrial global economy has perceived structural changes in the production of goods and services coming from

[2] Support ratio is an indicator measuring the number of active people potentially economically supporting inactive people (OECD, 2011)

[3] The replacement rate is the net pension entitlement of an individual divided by net earnings before retirement. The rate measures how effectively a pensions system is capable of providing a pension similar to the level of their previous earnings (OECD, 2019c)

large scale enterprise at the beginning of the 20th century to small organisation production at the end of it (Peck, 1989). Conversely, pension support schemes have not equally evolved with changes in production format as they continue to assume that all workers can contribute equally to their pensions. As a result, pension schemes fail to identify the uniqueness of different employment structures, and the resulting heterogeneity of pension levels increase within different work schemes and industries. While some countries are adapting their pension systems to safeguard self-employment, many schemes continue to hold no legal obligations toward self-employed citizens pension-contributions which, alongside the reduced state-funded involvement described above, risks creating precarious financial situations for independent workers reaching retirement age. This situation will inevitably impact self-employment pension levels as the contribution system for pensions rests mainly on formal roles with an established relationship between employer and employee, excluding independent, informal, part-time or temporary workers. In summary, based on the global trend towards independent working, pensions should experience full-portability by reduced reliance on sponsor-dependent DB pension systems in favour of DC pension schemes based on intergenerational risk-sharing through capital markets (Boeri et al., 2006). In a DC pension solution, the resulting pension is not constrained to the stability and formality of the work scheme but relies on shared responsibility between the generation that is working and the one that is retiring, regardless of their working scheme.

This current pension crisis is described as having its genesis from a developmental disparity between the pension system and the economy as a whole (Taylor et al., 2017). Arguably the crisis is due to a failure of the public schemes and the shift to private risk-based schemes. Public (transfer) pensions 'failed' because nation-states refused to increase contributions, then 'stole' from the future pensions' to give a rate cut today. As the upgrading fell behind, the state pension became useless and unsustainable, a decision that states could have managed differently, as now we face the instability of DC schemes as part of their strategies relies on investing pensions on high-risk stocks.

Other literature takes the critique from a different angle, suggesting that the primary reason for the pension crisis is a structural failure to adapt to long-running demographic trends such as increased life expectancy, declining birth rates, and earlier retirement, the effect of baby boomers and the general scale increase of the pension system (Barr et al., 2010). Collectively, this criticism is predicting an imminent pension crisis as governments can no longer guarantee sustainable pensions to citizens across the employment spectrum. Furthermore, politicians

should have taken unpopular decisions to upgrade payments while these changes occurred. However, in the pursuit of 'low taxation´ they destabilise the pension system.

### 4.2.4 Pension Policy in the Cultural Sector

The first point to consider in this subsection is the fact that pension schemes were constructed under the assumption that one pension approach would fit all sectors of the economy. Nevertheless, pension policy for the cultural sector arguably adds additional uncertainty levels to an already strained system in cultural work. Typical pension schemes often prove ineffective, in large part due to the inevitable contribution gaps due to a structural job scheme informality and low industry-average wages. This exceptionalism argument points to the structural changes in artistic work practices, primarily seen in the last 50 years, with the irruption of freelancer format in the 1970's (Kazi et al., 2014). Furthermore, from 2011 to 2018, the self-employed group has increased in the cultural sector of EU-28 from 30% to 32%, while self-employed in the whole economy went from 15% to 14% (Eurostat, 2018). The result of specific changes in the organisation of work in the cultural sector in the last 20 years has seen the failure to make contributions to pension schemes instead of working in formal jobs and large employers. Then, even though it is not a pre-existing structural situation, the actual scenario of the cultural workers face a frequent informality of employment. In a sense, the pensions system has failed to adapt at the same phase, as the vivid and fastest-growing sectors of the economy (A. C. Pratt, 1997). This situation often leads to solo pension contributions due to a lack of employer support. As a result, artists can often face no provision for financial security once they reach retirement age (McAndrew & McKimm, 2010). In comparison to other employment sectors, the pensions provision for artists is significantly lower (31%) than areas such as education (76%), finance (57%) and construction (49%).

Some cases of artist provision schemes exist, such as in Australia. Here, the majority of artists are part of superannuation schemes [4] and even some of those workers have arrangements for future financial security (D. Throsby & Hollister, 2003). However, only a small portion (10%) of artists is related to artists' superannuation schemes, and slightly more than half of them are related to an

[4] Superannuation (or "super") is a compulsory system of placing a minimum percentage of your income into a fund to support your financial needs in retirement. The super is invested in a range of assets to help grow balance so the worker can have the best possible retirement outcome (AustralianSuper, 2020).

employer superannuation scheme. The rest is in the personal superannuation scheme where all the self-employed are categorised. However, it is worth noting that the formality of the job schemes in Australia is comparatively high, regardless of the low salaries, which seems an exception of the cultural workers' scheme.

Later research from Australia has also included both artist occupations and arts-related occupations (Cunningham & Higgs, 2010), representing an initial approach of the mapping of the cultural supply chain. These analyses are critical and welcome as they provide important guidance statistics for variation in the socioeconomic situation for artists. These cannot be translated to cultural workers as an entity, impairs a comprehensive, industry-general visualisation of the pension situation. In the literature looking at cultural workers as a whole, only one study (Pietrobelli et al., 2004) utilises a broader definition to include the whole cultural workforce, revealing that in the cultural sector, there is a surplus of independent workers with no contract and no social security.

For instance, in the UK, 39% of full-time cultural workers are self-employed compared to 12% of non-cultural workers, and 79% of those employed in cultural occupations as a second job are self-employed, compared to 26% for non-cultural workers (Davies & Lindley, 2003). These significant disparities are even more prominent in countries of the Global South, considering that there is a negative relationship between economic growth and rates of independent and self-employed workers.

In Chile, comparative statistics for cultural workers show 56.6% of independent workers, 2.4% of employers and 33.8% of employees (Brodsky, Negron, et al., 2014). Most relevant to the current topic, literature on Chilean pensions criticises the established system assuming that labour markets have homogeneous characteristics in all industries of the economy (Bravo et al., 2015). Nevertheless, it is necessary to realise that some industries have particular characteristics that make them worth analyse separately from the rest of the economy, especially for prominent industries like the cultural sector, where the rate of individuals initiating cultural activities increased 160% in the '90s and '00s, compared to the '70s and 80's (de la Cultura et al., 2004). Then, observing the compatibility of the pension scheme with peculiar industries, such as the cultural industries, is a further discussion – academically or politically – that has not been done yet.

The structural difference between the salaries of the cultural sector and the rest of the labour market will also inevitably impact pensions; For example, in the UK, average salaries across the cultural sector are significantly lower than the national average, which naturally limits the contribution its workers make to their pension scheme. In a sample of 16,300 British visual and applied artists, a

third of these earned less than £5,000 per annum, with the group average being £9,000 annually (AIR, 2011). These are striking figures considering that 38% of the sample earns 75-100% of their incomes from artistic practice. Another example is the case of Austria, where the median income for artists was €4,500, considering additional contribution from secondary jobs, the total amount is only 72% of the average employee salary and 66% of the average self-employed salary in the country (Schelepa et al., 2008). In the same line, in Canada, the gap between the average salary of artists and the average worker is 37% (Hill & Capriotti, 2009), and for the US, the median income of artists was 66% of the rest of the national workers (McAndrew & McKimm, 2010).

Overall, the worldwide trend shows comparatively low salaries for cultural workers. Consequently, these workers would not be able to save in a risk-based pension scheme due to the incapacity of paying for their living expenses and putting money on their pension saving accounts. That is why the intergenerational transfer model, based on being a citizen right, works regardless of income and suits a more heterogeneous labour market. Again, a choice is being made by the state, giving away the administration of pensions to private managers based on individual saving accounts, which has created a problem for the low paid and artists.

Endlessly, these justify special support schemes to avoid resulting low salaries, low pensions, and precarious socioeconomic situation for retired cultural workers. If not, the incompatibility of the pension system with the cultural workforce may generate an undersupply of workers, reducing the size of the cultural labour market and the sector itself. In this situation, the most affected part of the cultural sector would be, firstly, the informal and independent workers, from where most of the artistic expression comes from and secondly, craft workers specifically, who keep the country's cultural identity alive.

### 4.2.5 Pension Schemes for Cultural Workers in the Global North

In this subsection is vital to acknowledge the vastness of the pension scheme literature due to each country's pension contribution system. Furthermore, pension schemes can vary among different cultural domains within the same country. Therefore, examples of standard models are provided and inform a final summary.

One of the first financial protectionist models for cultural workers was found in the Scandinavian countries of Finland, Denmark and Sweden (Heikkinen, 2003).

These countries provide pension support schemes for artists, but these mechanisms are described as 'awards' rather than pensions as they are constrained to the art contribution's quality of the individual to the sector. The driver of this mechanism is the artist's level of success. Therefore, the purpose of the pension is not economic security for the retired cultural worker, but rather financial recognition for the successful individual artist – leaving the cultural workforce unprotected. This 'winner takes all' (Frank & Cook, 1996), is a common effect in the cultural sector (A. C. Pratt, 2007), where a few workers, so-called 'rockstars' or 'referents' capture a substantial percentage of the market share, leaving the rest of the cultural workers, heavily competing for the share that is left. The previously mentioned effect – common in the cultural sector – is intrinsically incompatible with existing pension schemes, as artists that manage to achieve favourable results in their career are awarded financial support after retirement. Awards only granted to a marginal portion of cultural workers, which depend on popular trends given at a specific time, networking, or privileged socioeconomic backgrounds (Hough, 2012). Endlessly, this type of pension support leaves no room for emerging artists, experimental artists, or cultural workers that cannot reach the network to achieve greater audiences.

Austria is one of few countries which has developed an official pension support scheme for artists[5], which they have implemented since 2001. The government-funded pension scheme provides up to €85.50 per month if the income from the artistic activity is more than €4,094 per year and the sum of all their multiple incomes is less than €19,622 annually. Additionally, the individual has to show evidence of training on any art form or an art-based university degree (McAndrew & McKimm, 2010). Despite limiting the types of cultural beneficiaries and providing an arguably low income and, as a result, not resolving the typical relative poverty impacting these workers, the Austrian model provides an important initial framework for cultural worker financial security. However, this scheme remains simple and lacks features of traditional pension schemes. For example, it operates much more like a universal credit system [6], as the worker provides no prior contribution to the scheme before benefiting – resulting in the status of cultural worker continuing to be one of low financial stability, seemingly reliant on state funding for its survival. It is also important to acknowledge that, given the comparatively small amount, this pension is only sufficient for workers with access to alternative funds, continuing the limited availability of those of

[5]The scheme excludes other cultural workers.

[6]Universal Credit is a financial contribution to help individuals with their living costs.

lower socioeconomic status to choose this career. Despite these flaws, Austria has taken a significant first step for cultural workforce security by introducing an industry-modified pension scheme.

Alongside Austria, Germany offers a more developed, equitable mechanism in the Künstlersozialkasse (KSK) or Artists' Social Insurance Fund, which aims to balance the social protection of independent artists to those in employment. It is the only mechanism that provides pension support based on work schemes and not on productivity. Self-employed artists earning more than €5,000 per year are accepted to the KSK Artists' Social Insurance Fund. Member workers contribute with half of their social insurance, which is a transfer of 17.7% of their incomes to the fund, 9.3% for pension fund and 7.3% for medical insurance. The other half of the contribution to their social insurance is divided between companies that regularly use services of independent artists (30%) – such as theatre companies and galleries – and the Federal Government, which supports the mechanism with the remaining 20% of contribution (Artists, 2019). The 'share' from employers is paid from those companies who use artists, journalists, and authors' services in the form of a social insurance levy for artists. The total amount of fees and royalties paid, the levy is 4.2% for 2019 (Zemans, 2007). Finally, the career entrants, defined as people engaged in independent work schemes as an artist for the last three years, automatically receive the benefit regardless of their salaries (Sozialkasse, 2015) The German pension scheme for artists represents a mixed mechanism where the government, private firms of the industry and independent artists balance the social protection of independent and dependent artists. Nevertheless, as the Austrian mechanism, the scheme fails to support cultural workers as a broader definition than just 'artists'. That situation is problematic, as cultural support workers, such as managers and technicians, are equally relevant to the industry and create cultural products as artists. Therefore, the exclusion of cultural support workers from the pension support scheme creates tensions between artists and the rest of the cultural sector workers and leaves many people without social security.

Comparatively, the United Kingdom currently lacks any pension support scheme for cultural workers, and pension security is placed on the individual employer. Despite the inequality and financial insecurity this generates, it has nevertheless provoked some crucial initiatives. For example, dancers in the UK's most prominent dance companies benefit from a retirement fund where the company contributes with 5.5% of the workers' income and the dancer with 4% of their

income [7](Zemans, 2007). However, the mechanism is still limited to one domain (dancing) and one particular role of the domain (dancers). On the other hand, the British Actors have an equity pension scheme created and managed by First Act Insurance, an independent insurance intermediary that works with the UK's leading insurers and underwriters. In particular, the mechanism offers customised pension plans for members of the entertainment industry (Zemans, 2007). However, the coverage of both examples is constrained to a group of cultural workers associated with performance and entertainment and privately administered. Conclusively, there is no cross-cultural domain policy to support pensions of cultural workers in the UK.

On the counterpart, the case of Russia represents a country belonging to the Global North, but without any support initiative for pensions of cultural workers, which transitioned from a PAYGO system to a standard funding system for all workers (Lim, 2005).

Despite varying implementations of pension strategies, no country in the Global North has yet effectively provided a pension scheme that caters to the needs of cultural workers yet recognises the individual traits of the cultural sector. Despite individual mechanisms in countries where mechanisms are in place, current schemes continue to foster elitism as the artists supported by the scheme are the ones that already hold a relevant portion of the market share, either through job security at influential employers or by providing a significant contribution to the country's art history. In cases where pension disbursements are nondiscriminatory, the sum is comparatively low that it places the worker in relative poverty and thus requires additional pension funding regardless. Finally, the mechanisms supporting pensions in the cultural sector should consider the reality of cultural workers and acknowledge that informality is inherent not only to the artistic roles but also to cultural support roles, which are involved in the production of cultural goods and services. Nevertheless, relevant attempts are being made to create pension schemes that benefit cultural workers and consider the individual difficulties characteristic of this industry. Germany provides a crucial positive example of how such models can be implemented successfully.

[7]In the case that the dancer decides to work as a freelance, the employer contribution is dismissed for obvious reasons.

### 4.2.6 Pension Statistics of Independent and Cultural Workers in Latin America

Having analysed the situation in the Global North, the followed description distance the results significantly, as in the Global South, the contribution and the public expenditure are far below countries of the Global North. For instance, the average OECD pension contribution is 18.1%, compared to countries of Latin America like Mexico (6.2%) and Chile (12.4%) (OECD, 2019c). The average public spending for the same group is 8% while for the two countries of Latin America – Mexico and Chile – are 2.3% and 2.8% respectively (OECD, 2017). Considering that the two previously mentioned countries are included in the OECD, due to the high performance of their social, political and economic indicators, there is not much to expect on pension support from other countries of the Global South, which are not considered.

In this aspect, the main difference between the Global North and the Global South is that employment informality is more predominant in the latter. Even though the informal economy is decreasing, the average informality rate of national employment for 14 out of 33 Latin American countries is 47% (Gonzalez, 2015). Additionally, one in four Latin Americans is believed to be a self-employed worker where low and irregular salaries are explained by low productivity (Bertranou, 2009), associated with unskilled labour, resulting in a low coverage ratio for pensions – less than 30% across the region (Rofman & Lucchetti, 2006). This percentage approaches zero for workers in the primary sector and small companies (less than 50 employees), where employment is predominantly independent and informal, often with a lack of contracts for independent workers, which provides a lack of social security coverage.

Moreover, the informal predominance is partially explained by the excessive legislation that increases economic activities' costs. Then, by avoiding the creation and operation of companies in a formal scheme, these additional costs are reduced. Adversely, labour market informality is also caused by a lack of governmental regulations. Additionally, informal labour is more prominent in public areas with insufficient protection. Such is the case of the lack of land regulation, where this situation promotes the development of squatter housing and street vending (Freije, 2001), a frequent situation in countries of Global South. Moreover, as estimations show that more than half of the world's working population belongs to the informal economy (Neuwirth, 2012), this has as a consequence a significant amount of workers avoiding tax payments, hence not receiving pensions based on their work (Maloney, 2004), unless the worker has some sort of

savings.

Condescend to the previous statement, the lack of literature reviewing pension schemes of cultural workers is even sparser for Latin American countries. Then this section prompt the analysis of pensions for independent workers as a proxy for the cultural sector, which is highly represented by independent - often precarious - workers (Gill & Pratt, 2008). Nevertheless, analysing the pension schemes of independent workers to understand cultural workers circumstances has two main flaws; it ignores the percentage of cultural workers in formal occupations or sectors as dependent workers and does not consider those independent workers of other industries might have particular characteristics or different levels of informality, for example, seasonal jobs associated to specific periods of agricultural production, or the construction industry. Therefore, while analysing independent workers to understand cultural workers is employed as a direct approach, specific literature is warranted.

Cultural workers show worse working conditions, lower salaries and a significant degree of informality (Menger, 1999), which explains their low pensions. Moreover, in a context of higher informality – such as the one in Latin America, the contribution of cultural workers to pensions is significantly low, attributed to the effect of an informal economy and an informal sector (cultural sector). Nevertheless, cultural workers in Latin America lack incentives to move out of informal schemes as moving to formal schemes is structurally complicated because of weak legal frameworks, such as complex tax systems or barriers for entrepreneurs.

This context sets the scenario where any form of pension support policy for cultural workers in Latin American countries is largely absent. Moreover, there are two relevant problems associated with Latin American pensions (De la Torre & Heinz, 2018): Firstly, the low coverage of the contributory system, regardless of which pension scheme is applied, and secondly, the low levels of savings accumulation, specifically for DC schemes. The latter applies to mix regimes like Mexico, Peru, Costa Rica, Panama and Uruguay, and full regimes such as Bolivia, Dominican Republic, El Salvador and Chile. Both issues are exacerbated by widespread labour market informality. For example, in Peru, the PAYGO system denies pensions to individuals that have not contributed the minimum amount of years, not even their accumulated contributions (Carranza et al., 2017), which is generally the case for informal workers. Therefore, low contribution densities and early retirement ages, combined with low saving rates, resulting in a uniform replacement rate. Further, policymakers often reflect the results of the DC scheme based on the returns of the financial assets, but the true

variable to evaluate the performance of the indicator should be the replacement of the pension mechanism. In sum, the precarious situation of retired independent workers in the Latin America is attributable to low productivity, structural labour market informality and lack of reliable measurements of real pensions.

### 4.2.7 Pension Schemes for Cultural Workers in Colombia: A Benchmark

This subsection covers an example of successful policy from Latin America. More specifically, a recently implemented law decree (Nº 2012 – 11/2017) in Huila, Colombia, where cultural workers proposed a governmental resource reallocation which consisted of the creation of a supporting pension system due to the large numbers of cultural workers without financially secure retirement (Huila, 2017). The new law established two possible applications to cultural policy. Firstly, workers would receive up to of 30% of the monthly minimum wage, in the form of a pension, if they fulfilled the following conditions: Individuals must be Colombian citizens, over 65 (men)/57 (women) years old, having lived in Colombia for the last 10 years, have received a monthly income below minimum wage (as independent workers) and been registered as cultural workers by the Ministry of Culture. Secondly, for cultural workers under 65 (men)/57 (women) that fulfilled all other criteria, the annual support would be added to their voluntary pension savings, going from six daily minimum-wages (€44.59), up to €282, depending on the individual contribution of the cultural workers to their voluntary pension savings, regardless of the amount of tax collected from the cultural tax.

The political history behind the proposal took place when cultural workers of Huila realise that public resources destined for health care benefits for cultural workers were not efficiently allocated, as those workers were managing their healthcare on a combination of public healthcare and private resources. Eventually, they propose to the government a reallocation of resources. The reallocation consisted of creating a supporting pension system for cultural workers, as many of them were arriving at the elder stage under challenging conditions. However, actions were not materialised until 2013, when cultural workers ask for support from Senator Jorge Eduardo Géchen, proposing the law project Nº 116, proposing a reallocation of resources to a pension support system for cultural workers. The initiative was officially announced as the law decree nº 2012 in November 2017. The new law suggested that 10% of taxes collected from cultural industries – called 'Estampilla Pro Cultura´ – should be redirected to improve the pensions

of cultural workers (Ministerio del Trabajo, 2017).

The previous example represents a benchmark for two reasons. Firstly, the policy is an efficient redistribution of public resources towards cultural workers' pensions. This action illustrates that it is not necessary to spend more financial resources in order to support cultural workers' pensions but to redistribute what is available, especially in a sector perceiving substantial financial cuts (O´Connor, 2000). Secondly, the fact that the policy comes from the cultural workers with a representation of a parliamentary, which supports the idea that policies constructed bottom-up, have a better sense of discretion towards the policy goal compared to top-down policies, which many times have a lack of representation of the objective group (Matland, 1995).

### 4.2.8 The Pension System in Chile

This subsection analyses the course of action that took Chile to the established pension system.

Moreover, Chile's first pension support scheme was designed in the 1920s, motivated by the extensive migration of workers from rural areas to the cities in the final years of the 19th century and the beginning of the 20th century. As a consequence, the living conditions of the working classes deteriorated considerably. The first stage, implemented in 1924, included a social security system including health, disability and pension support for the working class, which manual labourers with low salaries. In 1925, the scheme was expanded to administrative workers, civil servants and journalists. Over time, more sectors of the national workforce were included in the social security system until it spanned the total workforce. Between 1924 and 1980, pensions were administrated under the intergenerational – PAYG – scheme within a DB scheme. The pension system worked through several semi-public institutions collecting workers' contributions for specific areas of the economy. The semi-public institutions, called *Cajas de Prevision*, worked independently from each other and consequently had different benefits, retirement ages and system-access prerequisites. As a result, different sectors had different *Cajas de Prevision*.

In 1980, the pension system migrated to a DC pensions scheme[8], the new

[8]In the 1970s, Chile almost established universal coverage for welfare pensions, but problems arose when social benefits were influenced by political support, focusing social legislation into well-organised urban workers in detriment of people working in rural areas (Borzutzky, 2002). By the establishment of the dictatorship in 1973 – under the command of Augusto Pinochet – the social system was abolished, and focus was placed on reducing public spending and

mechanism represented a significant change, moving from a pension system where current employee contributions supported the payment of current pensions to an individual capitalisation system, where their pension contribution determines each workers pension during employment. Moreover, law Nº 3,500 determined that savings from the individual capitalisation system should be administrated by a pool of private companies, named Pension Fund Administrators (AFP) (Ministerio del Trabajo y Prevision Social, 1980).

This system remains the current pension system in Chile. Currently, seven companies represent AFPs, with each AFP having five funds to invest in –differentiated by risk and return levels– from Fund A (higher risk, higher expected returns) to E (lowest risk, lowest expected returns), each fund is constituted by different investment percentage on equities and bonds. The individual contribution for the employee is 10% of their monthly salary and is automatically discounted by the employer. Additionally, the employees choose which AFP should administer their pension's contribution, which is typically based on two variables, the AFP commission for the fund administration (0.47%-1.47%) and the historical returns of the AFPs (performance).

There are several areas of critique to Chilean pension schemes, including the general critiques to the DC scheme previously mentioned. A fundamental critique of the pension scheme, specific to Chile, is that the military and police workforce is not included in the AFP system and still subscribe to the PAYG-DB scheme. Considering that the transition of the civic population from a DB to a DC scheme was done during a military regime, it generates polarisation, suspicion and critiques among society.

Another critique is the structural distribution of utilities and loss from the AFP. Considering that AFPs are private companies, it is expected that these could experience utilities or losses associated with the business itself (De la Torre & Heinz, 2018). However, the utilities are distributed to companies' shareholders or reallocated as performance bonds for executives of the companies, while the contributors assume the underperformance of the assets. Moreover, as asset managers' do not have a contractual obligation to provide an established retirement pension to workers, the interests of AFP might be significantly different from the contributors. Lastly, utilities are distributed among the stakeholders,

privatising public services (Ewig & Kay, 2011). One of the most relevant applications was the pensions system, and in order to change it, Augusto Pinochet was supported by a group of economists trained at the University of Chicago under Milton Friedman and Arnold Harberger. Particularly, one of these alumni –Jose Piñera Echeñique– led the implementation of the existing DC pension scheme.

but losses are charged to the contributors, representing an asymmetric administration mechanism.

A final critique of the existing pension scheme in the country is the effective inclusion of independent workers. In this context, since 2018, independent workers contribute a mandatory 10% of their taxable salary to pensions, plus the AFP fee (0.41% to 1.48%) (Ministerio del Trabajo y Prevision Social, 2016). This mechanism was created to avoid informality and contribution gaps on people working on their own. Furthermore, starting in 2020, the contribution of independent workers will increase by 0.75% per year, until 2028, when it will reach 17%[9] (Ministerio del Trabajo y Prevision Social, 2019). These actions aim to incorporate independent workers on the same social welfare scheme as dependent workers. The social welfare scheme includes disability insurance, work accident insurance, health care, family benefits and pension support. The benefit is only valid if they reach an annual amount of 5 minimum wage salary as independent workers. However, 40% of independent workers are in the 1st quintile, and most independent workers perceived less than two minimum salaries per month. Moreover, 44.7% of the total independent workers received less than one minimum salary each month (Bertranou, 2009). Also, considering that independent workers have a highly seasonal work scheme, the requirements to access the social welfare scheme might be too difficult to achieve for the majority of them.

Based on the reasons mentioned above and other commentaries, international experts suggested different pathways to solve the structural problem of Chilean's pensions. Moreover, in 2015 and after two years of discussion – a panel of international expert develop a report on pension improvements, called *Comisión Bravo*. The commission created three strong proposals (A, B and C) to improve the existing pension scheme. It has been proposal A the one with more support among the experts, which suggest creating a mixed model with a basic universal pension that covers at least 80% of the population and increase the solidary support by 20% to people that are not included in the AFP system (Bravo et al., 2015). All of this via fiscal expenses and an extra contribution from the employer.

On the other hand, in the same year, Joseph Stiglitz, Nobel Prize in Economics, mentioned how the actual Chilean pension system was a failure as it provided more inequity (Subsecretaria de Prevision Social, 2015). The American economist suggests reinforcing the pension support system, incorporating a redistribution mechanism to compensate the less wealthy sector of society.

[9]Excluding workers over 55 years older men and 50 years older women, considering the 1st of January of 2018.

Additionally, the academic considered incorporating a public AFP, which could provide 'public confidence' to the contributors.

### 4.2.9 Solidary Pension Support System in Chile

Before the current system, the past solidary pension scheme – active from 1981 until 2008 – had two solidarity pillars for pensions. However, the mechanism showed significant shortcomings, which later were redesign. The scheme had a Guaranteed Minimum Pension (GEPM), which provided US$184 to workers that contributed at least for 240 months and were eligible for a pension lower than the one provided by the GEPM. And secondly, assist and support (PASIS), which provided US$103 to individuals under the minimum threshold of income to apply for the pension system, and were not eligible for any other pension support. After a survey on social protection in 2002, the pension support system exposed the ineffectiveness of the GEPM, where both of its requirements were difficult to apply in reality (Berstein et al., 2005), and on average, workers contributed five months per year (Corvera, 2005), far from what was initially designed. Moreover, the pension scheme did not consider independent and informal workers, and most importantly, the initial design of the pensions system guaranteed a replacement rate of 70%. However, the projections for retired people between 2020 and 2025 showed a replacement rate of 51% for men and 28% for women (para la Reforma Previsional, 2006).

The reform to the pension system was considered as a firm promise from all candidates during the presidential campaign in 2005, and in 2006 the elected president – Michelle Bachelet – create an advisory board to improve the existing pension system, which concluded with a report that set the bases for the law project to reform pensions sent to the parliament in 2006 and later approved as law Nº 20,255 in March 2008 (Ministerio Secretaría General de la Republica, 2008). The new pension support system guaranteed a minimum and stable consumption level after retirement, prevent poverty at the elder stage, and reduce gender inequalities at the time of retirement by providing incomes to elders that have never contribute at all (Attanasio et al., 2011).

The actual pension support mechanism consists of a Basic Solidary Pension (PBS) and a Solidary Pension Contribution (APS). Both solidary pillars work together to ensure a minimum pension for the more disadvantaged group of society. In order to qualify as a beneficiary, both mechanisms gather public information about individuals´ income.

The PBS is a minimum pension for people over 65 years old who cannot access

contributory pensions. As requirements, they have to reside in Chile at least for 20 years and be part of the 60% financially more deprived sector of the country, (Larranaga et al., 2014). Additionally, the PBS applies to the physically or mentally disabled, between 18 and 65, which also fulfils the previously mentioned requirements. The actual amount of this minimum pension is CLP$ 107,304, approximately $144.65 Euros[10]. On the other hand, the APS is solidary support (CS) to individuals that contributed to their pensions, but with a small amount. The requirements are the same for both PBS and APS, and the last one also considers disabled people between 18 and 65 years old. The APS applies to pensions up to the Maximum Pension with Solidary Contribution (PMAS). The value of PMAS is CLP$317,085, approximately $417 Euros. The APS exists as an incentive to avoid some of the contributors relying only on the PBS and stop working. That is why the APS offers transitory support from the PBS, as a starting point, up to the PMAS.

Then, the solidary support is calculated as it follows:

$$CS = PBS - IndividualPension * PBS/PMAS$$

The cost of this public policy is 0.8% of the GDP, MMCLP$1,411 – approximately $1,856 millions of Euros – and represents the most considerable monetary transfer of the State. However, the effectiveness of the policy has mixed results as official information mentions that the policy targets elders within the 60% more disadvantaged population of the country, approximately 1.4 million beneficiaries. Nevertheless, on the other hand, self-declaration shows that 33.9% of elders receive benefits from the PBS (Subsecretaria de Prevision Social, 2017), showing a massive gap in the perception of the benefit.

Considering the national pension´s system, this study focuses on pensions for the cultural workers, considering unique characteristics of the industry, such as high levels of informality, low salaries, part-time work and volunteering.

### 4.2.10 Pension Scheme for Cultural Workers in Chile

Firstly, it is essential to acknowledge that there is no general pension support scheme for the cultural workers in the country. The only possible mechanism is the solidary pension system which targets the 60% less-wealthy sector of the country. Then, it might be that not all cultural workers can be eligible for these benefits even though they perceive precarious pensions.

[10]As a reference, the minimum wage in Chile is CLP$301,000 ($405.76 Euros approximately).

However, a specific scheme exists for certain cultural workers, called 'pension by grace'. In this system, the president allocates retirement pensions to people with outstanding contribution to the country (Ministerio Secretaria General de la Republica, 1981), much similar to the previous examples of Scandinavian countries and the UK.

This benefit applies to cultural workers and other agents of society who contribute to other sectors. Moreover, the annual budget for this mechanism is around US$75 million and between 2016 and the first term of 2018 granted 3,383 pensions, with 3.7% allocated to cultural workers. The amount per person is defined using a 'non-remunerative income', whit a minimum of 75% of the minimum wage. The granted pension can be as many minimum non-remunerative incomes as the president establishes individually for each person.

However, there are many reasons to explain the precarious pensions and the lack of contribution to the pension system in the cultural sector of Chile. One of the reasons explaining the precarious pensions in Chile is the working scheme in the cultural sector. In this sense, when a company or a cultural institution hires a cultural worker, the employee chooses from a set of options: i) no contract and no invoice, ii) pay with an invoice but no contract, or iii) establish a long-term contract, fixed-term contract or based on a project. Then, typically employers avoid establishing a long-term contract because that is the only legal figure where the employer has to pay compensations after the cultural worker finish their bond with the company or cultural institution (Ministerio Secretaria General de la Republica, 2015).

In terms of contribution of cultural workers' pension, Trama (Brodsky, Negron, et al., 2014) published statistics, where 88.3% of individuals working in a cultural job do not have a contract, in both formal and informal sector. Moreover, 37.2% of those informal workers are not involved in any pension system. This statistic compared to the 24% of national workers having between 5 years and over 14 years of no contribution. As this percentage is significant mainly compared to the rest of the industries, it is essential to propose measures that mitigate the socioeconomic vulnerability of cultural workers in the future. Moreover, if cultural workers are separated in roles, artists represent 40.8% of cultural workers not contributing, followed by technicians and intermediaries, 34.5% and 29.5%, respectively. The situation is highly problematic as the core group of the cultural sector is less connected with the pension system.

The sector's informality has a strong link with pensions and endlessly with the socioeconomic situation of cultural workers. As it was previously mentioned, 42.8% (Brodsky, Negron, et al., 2014) of them work informally, compared to

the 29% on the national labour market (INE, 2019b). Even considering the unique contract scheme for cultural workers developed by the government in 2003 to diminish the informality percentage (Ministerio Secretaria General de la Republica, 2015), cultural workers have not subscribed to this scheme and preferred to stay informal. However, even if the level of labour formalization increase, the pension coverage will still be low as salaries in the cultural sector are lower than the average of the labour market, same as tax collection, as was previously mentioned.

Finally, part-time workers' cultural sector is highly driven, which consequently do not contribute with taxes as much as full-time workers, without even considering the number of voluntary workers. Consequently, part-time workers do not commit to the pension system, which represents the majority of cultural workers

Alternatively, contribute to the project's duration, creating gaps on their pensions, which endlessly negatively affects the total amount for their retirement plan, especially considering an individual capitalization pension system.

Overall, the contribution of the cultural workers to their pensions is low because the working schemes of the sector are not fully compatible with the pension system established by the government. Remarkably, this is the point that this article highlights by comparing the probability of contribution of cultural workers with the probability of contribution of other workers of the economy, considering relevant variables of their working schemes, demographic characteristics and socioeconomic situation.

## 4.3 Research Gaps and Final Remarks

This section discusses the gaps that this article intends to cover and offers some final remarks before moving into the methodology section. In that context, pensions in the cultural sector remain largely unexplored, especially econometric models illustrating the comparative difference in contributory power to pensions between cultural and non-cultural workers. Two main elements are causing this. In part, the lack of translational literature can be ascribed to practical issues such as country-specific pension schemes. The significant variability between different pension models in general and specific measures implemented for cultural workers complicates international comparisons. For this reason, at present, a comparative review of international cultural pension policy remains absent. A second important point regards the lack of a consensual definition of the cultural workforce. Despite previous attempts to study pensions in the cultural sector (Cunningham

& Higgs, 2010; Hesmondhalgh & Baker, 2010; McAndrew & McKimm, 2010), the literature utilises an insufficiently broad definition of the cultural workforce, commonly referring only to artists, but not to cultural workers, which can hold both cultural or non-cultural jobs but are indeed included in the supply chain of a cultural good or service.

This research contributes to the literary gap by investigating the pension scheme of cultural workers in Chile, identifying and quantifying the impact of significant variables to the probability of cultural workers contributing to their pension, and later defining predictors that explain that same probability. In that context, no previous work has use machine learning to define predictors on this matter for the cultural sector.

## 4.4 Proposal

This section establishes that the cultural sector has intrinsic structural characteristics incompatible with the existing pension scheme. Moreover, that incompatibility unable cultural workers to retire with decent pensions, generating a difference between the cultural sector and workers in other sectors of the economy as the chances for cultural workers to contribute to their pensions are lower than the rest of the workers. To show the difference in contribution, this study calculates the probability of the cultural worker to contribute to their pensions scheme and compared it against the probability of contributing to the pensions of the non-cultural workers. Then, significant results showing differences in the probability of contribution between both group of workers can point to the necessity of a social welfare system able to support livelihoods in a sector of economic uncertainty (A. C. Pratt, 2007), by creating a specific pension provision for the cultural sector. Endlessly, the article aims to highlight the particularities of the cultural sector and the need for pension support.

To calculate the probability of contribution, this study identifies a set of demographic and labour variables – taken from the National Employment Survey- to explain the potential gap between the contribution probability of cultural and non-cultural workers. Then, based on a previous study (Fuentes, 2010), this investigation runs a Logit regression using the demographic and labour variables to calculate the probability of contribution of both groups. The study assumes the definition of cultural workers based on the UNESCO FSC 2009, using an industrial approach, where cultural workers are considered if their institution or workplace is related to a cultural domain, regardless of their jobs is cultural or

not. Later, this study implements predictive models to outline the most relevant predictors affecting the probability of contributing to their pensions for cultural and non-cultural workers.

This type of study has not been done previously for the art sector, mainly because of the difficulty of working with a database with workers of different industries of the economy and generating information on a significant scale on their labour schemes using a survey. Additionally, it is unusual to see databases where workers are coded considering cultural workers, which was the case with the initial database used by this study, as it was necessary to recodify the workers to identify cultural workers accurately.

### 4.4.1 Hypothesis

From the context of the previous section, this study develops a primary hypothesis to stress that the probability of contribution to pensions of cultural workers is different from the probability of contribution of non-cultural workers, considering demographic and working characteristics.

The hypothesis can be expressed as it follows:

$H_0$: Probability for cultural workers to contribute to their pension is the same than for non-cultural workers

$H_1$: Probability for cultural workers to contribute to their pensions is different than the one for non-cultural workers

By rejecting the null hypothesis, this study shows that cultural workers are not contributing equally to their pensions as other economic workers, impacting future pensions of cultural workers and deteriorating their socioeconomic situation. Moreover, suppose the null hypothesis is rejected. In that case, the result suggests that the pension system is incompatible with the cultural labour market, as the variables affecting the probability are inherent to the cultural sector, which – from a policy perspective – can justify an intervention in the form of a pension support scheme.

### 4.4.2 Research Questions

Based on the initial hypothesis, the research questions try to unveil if the economic sector makes any difference in the probability of contributing to a worker‘s

pension. Then, if it does, what are the characteristics that create that difference, which can potentially be explained by the structural informality of the sector and the inherent work schemes, such as multiple jobs, part-time jobs, volunteer and seasonal work. And finally, compare if those categories affecting the probability to contribute to their pensions is the same for cultural workers and non-cultural workers.

Overall, this study defines the following research questions because it is clear from the literature that pensions in the cultural sector are lower than in other sectors. What is missing is a systematic approach to prove that statement and understand the variables causing that gap.

Endlessly, these research questions are relevant for the context because the systemic difference between cultural workers pensions and non-cultural workers pensions is pushing workers out of the cultural sector, as the incentive to look for more stable work is higher. Moreover, it is generating a precarious situation for their pensions and life quality for those who decide to stay in the sector.

The research questions are the followings:

1. Does the probability of contribution to pensions of cultural workers differs from the one for non-cultural workers?

2. Which are the key potential factors determining the probability of contributing to pensions of cultural workers?

3. Which are the key potential factors determining the probability of contributing to pensions of non-cultural workers? Is there any difference in the significant variables affecting the probability of contribution of cultural workers?

## 4.5 Methodology

This section describe the main methodology of the article, provides information on the data collection, the criteria to classify the cultural workforce, the cultural goods and services and finally gives a description of the utilised variables for the models.

### 4.5.1 Data Collection

All data for cultural workers was taken from the National Employment Survey (ENE), constructed by the National Institution of Statistics (INE) in Chile. This survey is a quarterly publication consistently run to a continuous sample of 37,000 households (INE, 2019a). The objective of the survey is to classify and characterise the employment situation of every person living in the surveyed households over the minimum legal working age of 15 years, registering their demographic and labour characteristics. Moreover, the information provided by the survey allows the elaboration of the unemployment rate, participation in the labour market by gender and some categories of the economic activity, employment situation, and occupational groups. Additionally, the survey allows the elaboration of the labour market indicators, such as informality and underutilisation of the labour force.

The characteristics of a survey provide an insight into the worker by using several criteria (Pommerehne & Frey, 1989), helping to identify more accurately who is a cultural worker, by using a coding system, but also describing their occupation and sector involved. However, a limitation of using ENE is that even though it is a survey, it has some census characteristics. As several of the questions defining the job characteristics of the surveyed are based on their 'last week' situation, which could represent a frugal interpretation of their actual reality as workers (Menger, 1999). Additionally, the survey does not consider the treatment of multiple-job holding, only mentioning it as a question to know if individuals have an additional job, but no further information is gathered. Considering multiple job schemes in the analysis could be helpful and more accurate, as multiple job holding is inherent to many cultural workers (D. Throsby & Zednik, 2011).

In terms of adequacy, the available data suits the purpose of the study for several reasons. Moreover, the robustness of the survey relies on the backup of a public institution specialised in statistics like the National Institute of Statistics (INE). However, three relevant aspects could represent a risk for the results of the study. Firstly, there is a risk that the surveyed declare inaccurate information due to a misunderstanding of the questions or the complexity of them, which can potentially induce wrong answers. Secondly, due to the nature of a household survey, there is the chance that workers in the household might not be present at the moment of the survey, which restricts the number of people surveyed. There is a potential risk on the results due to the variable's construction that defines if independent workers contributed to their pensions. This because the only reported answer of contribution or not is done for formal occupations in

formal sectors, while answers for informal occupations in formal and informal sectors and formal occupations in informal sectors are not reported, yet constructed based on certain assumptions and statistical structures for the sake of this study. Finally, another limitation is using the information from ENE at a certain period, generating conclusions that represent the workers' situation at that moment. That situation is possible to change in the future, to move from formal to informal jobs, or change occupations and sectors (Bosch & Maloney, 2007; Goñi Pacchioni, 2013). This behaviour in the labour market cannot identify on a cross-sectional data analysis like this study.

Later, this study codes the cultural workers using the ISIC-Coding System – criteria present as a variable of the database – and applies the UNESCO FCS 2009 framework to identify cultural workers and separate them from non-cultural workers.

### 4.5.2 Classification of the Cultural Workforce

Two standardised, international systems have been developed to classify occupational subgroups within national and international workforces: the first of which is the International Standards of Occupations (ISCO-88) codes (ILO, 1988) – termed the occupational approach. The ISCO-88 system was developed as a tool to facilitate an international exchange of national occupational data for research and policy implementation. This numerical coding system groups jobs together with similar occupations in terms of work duties and similarity of skill-level – defined as range and complexity of tasks performed. Relevant to the current study, the ISCO-88 identifies cultural workers on cultural and non-cultural production. This definition is not much help because the occupational approach might lead to the mistake of considering cultural jobs outside of the cultural industries, introducing double accountability, where those workers included in the supply chain of non-cultural industries and at the same time in the production process of cultural industries will be classified erroneously as cultural workers. Then, the contribution of those workers could be considered in the cultural workforce and another workforce.

The second approach commonly used to identify subgroups of the workforce, and the approach used in the current study, is the International Standard Industrial Classification of All Economic Activities (ISIC) – the industrial approach (UN, 2008). This coding system identifies institutions with production processes in the cultural sector. Consequently, it includes cultural and non-cultural jobs in related cultural institutions. For that reason, this study uses the industrial

approach recognising that the production of cultural goods and services involves both cultural and non-cultural jobs. Therefore, the cultural workforce is defined as all the jobs involved in producing a specific cultural good or service.

However, a preliminary limitation that comes from the construction of the data is that, is not possible to identify cultural workers just using the guidelines of the ISIC coding system. However, by using this coding system[11] some cultural jobs and some non-cultural jobs are considered in other industrial sectors, given the contribution of those workers to other sectors of the economy, distorting the possibility of constructing the cultural workforce. One could argue that ISIC Rev4, already acknowledge this situation creating a particular category for the art sector, defined as 'Sector R´. However, 'Sector R´ incorporates cultural workers and other categories that are not related to cultural goods and services, such as jobs related to the gambling industry and the sports industry.

The previous example underlines the structural problem that Cultural Satellite Accounts (CSA) face when adequately registering the cultural workforce. As a consequence is not possible to map who is working in the cultural sector. In this point, this investigation suggests reviewing the structure of the ISIC coding system, considering the cultural industry as a separate industry, as the industrial approach does with Agriculture, Mining or Construction, especially considering that – for example, in the UK, the contribution of the cultural sector overtakes the one from the agricultural sector and some areas of UK manufacturing (Cebr, 2019), with the latter one been included in the system of national accounts, different from the situation of the cultural sector. Moreover, there is an economic argument to formalise the accountability of the cultural sector. For example, the gross value added per cultural worker from 2009 to 2016 was £62,000, compared to £46,800 for the broader UK economy. Then if the importance of the cultural sector and the creative industries to the economy is substantial, it is necessary to raise awareness of building a robust representation of them in the international statistical frameworks. Firstly, policymakers can interpret the cultural labour market correctly and develop actions towards improving their socioeconomic situation, which historically has been undervalued. And secondly, so that academics can develop pieces of work about the cultural labour market that can be comparable and easily accessed as it is in other sectors of the economy.

[11] An industry approach for the cultural sector considers all the cultural and non-cultural jobs that are involved in the production of cultural goods and services included in the cultural subdomains established in the UNESCO FCS 2009.

### 4.5.3 Definition of Cultural Goods and Services

After using the ISIC coding system, the workers were identified as cultural workers or non-cultural workers using the UNESCO Statistical Framework 2009, an internationally agreed methodology to identify cultural work. This statistical framework, based on the industrial approach, identifies six main cultural domains; 'Cultural and Natural Heritage´, which considers museums and VR museums, archaeological and historical places, cultural landscapes and natural heritage; 'Performance and Celebration´, which incorporates performing arts, music, festivals fairs and feasts. 'Visual Arts and Crafts´, including fine arts, photography and crafts; 'Books and Press´ including books, newspaper and magazine, other printed matter, library, VR library and book fairs; 'Audio-Visual and Interactive Media´ including film and video, TV and radio, internet streaming, internet podcasting and video games; 'Design and Creative Services´ which includes fashion design, graphic design, interior design, landscape design, architectural services, advertising services.

Additionally, there is a section of activities named transversal domains. Including 'intangible cultural heritage´ which considers the preservation of historical sites and buildings, collection and repository of cultural forms, movable objects and intangibles, 'archiving and preserving´ including architectonic preservation/exhibition, museums and galleries conservation/exhibition, paintings, sculpture, jewellery and artefacts with design attributes. This category also includes the preservation of manuscripts, photographs, books, films and radio recordings. Another transversal domain is 'education and training´, which considers education related to transmitting and teaching cultural values or cultural skills. Furthermore, 'equipment and supporting material´ defined as those tools to produce cultural products and activities.

Notably, Tourism, Sports and Recreation are excluded from the framework as even though they are considered related domains, with cultural elements, they are not always considered cultural activities. In the case of tourism, there is a separated solid methodology to register activities related to this activity, having their own tourism account (TSA) (Eurostat-OCDE-OMT-UN, 2001). On the other hand, activities related to sport are not considered as the cultural component comes from the act of attending to a sporting event or watching it on TV, but not the people involved in the professional sport itself (UNESCO, 2009). Finally, recreational activities such as gambling are excluded as they produce negative externalities to the players, which goes in the direct opposite direction of the effect of a cultural activity, which is to provide well-being and

happiness (Fujiwara & MacKerron, 2015). Additionally, considering that – for example – in the UK, the National Lottery is a significant funding source for other sectors to compensate for the negative externality of addicting gambling. For instance, in 2017, The National Lottery Good Causes Fund distribute economic resources to Health, Education, Environment and Charitable Causes (40%), Sport (20%), Arts (20%) and Heritage (20%) (National Lottery, 2017).

It is essential to clarify that ISIC coding system separates the different industries into sections, where 'Section R´ incorporates artistic activities, entertainment and sports. However, this research defined a representative coding of the cultural workforce, by considering activities in other sections different from the 'Section R´[12], which can be included in some cultural sub-domains, regardless if their specific job is cultural or non-cultural and also excluding some activities of 'Section R´, such as gambling and sports entertainment. The specific code selection associated with the ISIC Rev4 2012 is included in the appendix. Furthermore, by applying this criterion, the study mitigates the under-representation of the cultural sector, present in the 'Section R´ and spread in other sectors. For example, activities associated with craft can be hidden in 'manufacturing´, instead of being counted as a cultural activity.

### 4.5.4 Variable Description

This subsection describes the variables analysed in this study. Later, a subset of those variables is renamed and used for the probabilistic and predictive models.

The variables from the dataset are the followings:

#### A. Demographic Indicators

[12]The rest of the sections are: Section A) Agriculture, forestry and fishing, Section B) Mining and quarrying, Section C) Manufacturing, Section D) Electricity, gas, steam and air conditioning supply, Section E) Water supply; sewerage, waste management and remediation activities, Section F) Construction, Section G) Wholesale and retail trade; repair of motor vehicles and motorcycles, Section H) Transportation and storage, Section I) Accommodation and food service activities, Section J) Information and communication, Section K) Financial and insurance activities, Section L) Real estate activities, Section M) Professional, scientific and technical activities, Section N) Administrative and support service activities, Section O) Public administration and defence; compulsory social security, Section P) Education, Section Q) Human health and social work activities, Section R) Arts, entertainment and recreation, Section S) Other service activities, Section T) Activities of households as employers; undifferentiated goods- and services-producing activities of households for own use, U) Activities of extraterritorial organizations and bodies.

$$Region.X = \begin{cases} 1 & \text{if } \textit{If worker is from X region}, \\ 0 & \text{if } \textit{If worker is not from X region}, \end{cases}$$

$$Gender = \begin{cases} 1 & \text{if } \textit{The worker is female}, \\ 0 & \text{if } \textit{The worker is not female}, \end{cases}$$

$$Age = \begin{cases} 1 & \text{if } \textit{Age} < 26, \\ 2 & \text{if } \textit{Age between } 26 \textit{ and } 35, \\ 3 & \text{if } \textit{Age between } 36 \textit{ and } 45, \\ 4 & \text{if } \textit{Age between } 46 \textit{ and } 55, \\ 5 & \text{if } \textit{Age between } 56 \textit{ and } 65, \\ 6 & \text{if } \textit{Age} > 65, \end{cases}$$

$$\textit{Relation with the Household} = \begin{cases} 1 & \text{if } \textit{Head of Household}, \\ 2 & \text{if } \textit{Spouse/Husband}, \\ 3 & \text{if } \textit{Partner}, \\ 4 & \text{if } \textit{Son/Daughter or Stepchild}, \\ 5 & \text{if } \textit{Son/Daughter in law}, \\ 6 & \text{if } \textit{Parents or Parents in law}, \\ 7 & \text{if } \textit{Other Relatives}, \\ 8 & \text{if } \textit{No Relatives}, \\ 9 & \text{if } \textit{Domestic Service}, \end{cases}$$

$$Type = \begin{cases} 1 & \text{if } \textit{Workplace in urban area}, \\ 2 & \text{if } \textit{Workplace in other urban area}, \\ 3 & \text{if } \textit{Workplace in rural area}, \end{cases}$$

$$Educational\ Level = \begin{cases} 1 & \text{if } \textit{No Studies}, \\ 2 & \text{if } \textit{Nursery School}, \\ 3 & \text{if } \textit{Kinder}, \\ 4 & \text{if } \textit{Primary School}, \\ 5 & \text{if } \textit{Common Secondary School}, \\ 6 & \text{if } \textit{Technical Professional Secondary School}, \\ 7 & \text{if } \textit{Humanities}, \\ 8 & \text{if } \textit{Centre for Technical Education}, \\ 9 & \text{if } \textit{Professional Institution}, \\ 10 & \text{if } \textit{University}, \\ 11 & \text{if } \textit{Post Degree}, \\ 12 & \text{if } \textit{Master}, \\ 13 & \text{if } \textit{PhD}, \\ 14 & \text{if } \textit{Normalist}, \\ 15 & \text{if } \textit{Ignored Level}, \end{cases}$$

**A. Labour Situation on the Reference Work**

$$Works^{13} = \begin{cases} 1 & \text{if } \textit{Yes}, \\ 0 & \text{if } \textit{No}, \end{cases}$$

**B. Characterisation of the Principal Activity**

$$Contract: This\ work\ was\ done\ for = \begin{cases} 1 & \text{if } \textit{...your business, company or self} - \textit{employed activity}, \\ 2 & \text{if } \textit{...as an employee or blue} - \textit{collar worker}, \\ & \textit{company business or institution or private house employee}, \\ 3 & \text{if } \textit{...for the business, company}, \\ & \textit{or self} - \textit{employed activity of a member of your family}, \end{cases}$$

$$Size = \begin{cases} 1 & \text{if } < 5 \textit{workers}, \\ 2 & \text{if } \textit{From } 5 \textit{ to } 10 \textit{ workers}, \\ 3 & \text{if } \textit{From } 11 \textit{ to } 49 \textit{ workers}, \\ 4 & \text{if } \textit{From } 50 \textit{ to } 199 \textit{ workers}, \\ 5 & \text{if } > 200 \textit{ workers}, \end{cases}$$

[13] Last week , between Monday and Sunday. Did you work at least one hour

$$Workplace = \begin{cases} 1 & \text{if} \quad < \textit{installations/offices of clients/employer}, \\ 2 & \text{if} \quad \textit{house of client /employer}, \\ 3 & \text{if} \quad \textit{own/rented installations/offices}, \\ 4 & \text{if} \quad \textit{office/place/workshop/fabric annex to household}, \\ 5 & \text{if} \quad \textit{own household}, \\ 6 & \text{if} \quad \textit{street or public road}, \\ 7 & \text{if} \quad \textit{construction, mines or similar}, \\ 8 & \text{if} \quad \textit{agricultural property or maritime space or aereal space}, \\ 9 & \text{if} \quad \textit{other places}, \end{cases}$$

### C. Work Schedule

$$Work\text{-}scheme = \begin{cases} 1 & \text{if} \quad Full - Time, \\ 2 & \text{if} \quad Part - Time, \end{cases}$$

$$Overtime^{14} = \begin{cases} 1 & \text{if} \quad Yes, \\ 0 & \text{if} \quad No, \end{cases}$$

$$Intention\ Overtime^{15} = \begin{cases} 1 & \text{if} \quad Yes, \\ 0 & \text{if} \quad No, \end{cases}$$

$$Seniority = \{ \ Number\ of\ years\ at\ their\ actual\ job,$$

### E. Job Search

$$Searches^{16} = \begin{cases} 1 & \text{if} \quad Yes, \\ 0 & \text{if} \quad No, \end{cases}$$

### F. Other Employment Variables

[14] Overtime or extra hours
[15] Intention of doing overtime or extra hours
[16] Job seeking or create own company

$$CISE^{17} = \begin{cases} 1 & \text{if } \textit{Employer}, \\ 2 & \text{if } \textit{Independent}, \\ 3 & \text{if } \textit{Employee private sector}, \\ 4 & \text{if } \textit{Employee public sector}, \\ 5 & \text{if } \textit{Live} - \textit{in domestic service staff}, \\ 6 & \text{if } \textit{Family member or unpaid staff}, \\ 7 & \text{if } \textit{Doesnot apply}, \end{cases}$$

$$CINE^{18} = \begin{cases} 1 & \text{if } \textit{Never studied}, \\ 2 & \text{if } \textit{Nursery education}, \\ 3 & \text{if } \textit{Primary school level } 1, \\ 4 & \text{if } \textit{Primary school level } 2, \\ 5 & \text{if } \textit{Secondary school}, \\ 6 & \text{if } \textit{Technical education}, \\ 7 & \text{if } \textit{Bachelors Degree}, \\ 8 & \text{if } \textit{Masters Degree}, \\ 9 & \text{if } \textit{Doctoral Degree}, \\ 10 & \text{if } \textit{Ignored level}, \end{cases}$$

$$\textit{Effective}^{19} = \begin{cases} 1 & \text{if } < 15 \textit{ hrs}, \\ 2 & \text{if } 16 - 30 \textit{ hrs}, \\ 3 & \text{if } 31 - 45 \textit{ hrs}, \\ 4 & \text{if } 46 - 60 \textit{ hrs}, \\ 5 & \text{if } 60 \textit{ hrs} <, \end{cases}$$

[17] Job classification
[18] International classification of educational level
[19] Effective working hours during the referenced week

$$
Activity^{20} = \begin{cases}
1 & \text{if } \textit{Agriculture, forestry and fishing}, \\
2 & \text{if } \textit{Mining and quarrying}, \\
3 & \text{if } \textit{Manufacturing}, \\
4 & \text{if } \textit{Electricity, gas, steam and air conditioning supply}, \\
5 & \text{if } \textit{Water supply sewerage waste management and remediation activities}, \\
6 & \text{if } \textit{Construction}, \\
7 & \text{if } \textit{Wholesale and retail trade}, \\
8 & \text{if } \textit{Transportation and storage}, \\
9 & \text{if } \textit{Accomodation and food service}, \\
10 & \text{if } \textit{Public administration and defense ; compulsory social security}, \\
11 & \text{if } \textit{Education}, \\
12 & \text{if } \textit{Human health and social work activities}, \\
13 & \text{if } \textit{Arts, entertainment and recreation}, \\
14 & \text{if } \textit{Other, service activities}, \\
15 & \text{if } \textit{Activities of households as employers}, \\
16 & \text{if } \textit{Activities of extraterritorial organizations and bodies},
\end{cases}
$$

## 4.6 Descriptive Statistics

This section is a comparative analysis between cultural workers and non-cultural workers based on the main variables of the survey. Furthermore, the variables of analysis were grouped in different sections to group variables explaining related concepts.

The first subsection explains the demographic characteristics of the workers, such as gender, age and educational level. Section A relates to the working situation on the reference week. Section B is about the characterisation of the principal activity. Section C talks about specific characteristics of the work schemes, Section E is about job search, and Section F is a compiled of other variables much more related to international indicators.

[20] Economic activity branch of institution

### 4.6.1 Comparative Data Analysis for Cultural Workers and Non-Cultural Workers

This section analyses the variables of six influential groups of variables[21] describing the characteristics of the cultural workforce and compared them with the results of the non-cultural workforce.

Based on the survey and for this analysis, the cultural workers represent 7.1% of the national workers over 15 years old, the legal requirement to count as workers, relatively in line with the official number of 6% of creative-cultural workers in the country (Aspillaga, 2014).

**Demographic Variables**

| **Region** | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| I Tarapacá | 3.8% | 3.3% |
| II Antofagasta | 3.2% | 3.4% |
| III Atacama | 2.7% | 2.9% |
| IV Coquimbo | 5.1% | 5.9% |
| V Valparaíso | 15.3% | 14% |
| VI O´Higgins | 4.6% | 5.9% |
| VII Maule | 5.3% | 6.1% |
| VIII Biobio | 9.1% | 12.3% |
| IX La Araucanía | 4.6% | 5.4% |
| X Los Lagos | 4.4% | 6% |
| XI Aysen | 2.5% | 2.5% |
| XII Magallanes y Antártica | 1.5% | 1.3% |
| Metropolitan Region | 31.7% | 24.6% |
| XIV Los Ríos | 3.4% | 2.8% |
| XV Arica y Parinacota | 2.9% | 3.4% |
| **Total** | **100%** | **100%** |

Table 4.1: Geographical distribution per region between cultural and non-cultural workers.

[21]The six categories of variables are: 1) Demographic variables, 2) Section A: Labour situation on the reference week, 3) Section B: Characterisation of the principal activity, 4) Section C: Work Schedule, 5) Section E: Search for employment, 6) Section F: Other Employment Variables.

The most representative regions of the cultural workers are the Metropolitan Region, Valparaíso Region and Bíobío Region, which are the most populated regions in the country[22] For the non-cultural workers, the highest concentration is also based in Metropolitan Region, followed by Valparaíso Region and the Bíobío Region. In both cases, the three regions concentrate more than half of the workers' groups, which suggest a high concentration of infrastructure and development in those three regions of Chile.

| **Gender** | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Male | 35.2% | 58% |
| Female | 64.8% | 42% |
| **Total** | **100%** | **100%** |

Table 4.2: Gender distribution between cultural and non-cultural workers.

In terms of gender distribution, for the cultural workers, 64.9% were female and 35.1% male. For the non-cultural workers, the tendency goes the other way around, with 56.3% male and 43.7% female.

| **Age** | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| 1 (<26 years old) | 13.5% | 11% |
| 2 (26-35 years old) | 20.6% | 20.8% |
| 3 (36-45 years old) | 19.7% | 21.4% |
| 4 (46-55 years old) | 19.8% | 23.5% |
| 5 (56-65 years old) | 16.7% | 17% |
| 6 (65> years old) | 9.8% | 6.3% |
| **Total** | **100%** | **100%** |

Table 4.3: Age distribution between cultural and non-cultural workers.

The age distribution is similar for both group of workers, except for the youngest and oldest category, where their percentage is slightly more significant in both categories for cultural workers.

[22]See Appendix for a map of the regions, considering the total amount of habitants.

| **Relation with the Household** | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Head of household | 44.8% | 50.5% |
| Spouse/Husband | 17.9% | 13.3% |
| Partner | 7.6% | 6.9% |
| Son/Daughter or Stepchild | 22.1% | 21.2% |
| Son/Daughter in law | 1.9% | 2.1% |
| Grandchild | 1.3% | 1.4% |
| Brother/Sister or Brother/Sister in law | 1.6% | 1.7% |
| Parents or Parents in law | 0.7% | 0.5% |
| Other relatives | 1.2% | 1.1% |
| No relatives | 1.1% | 0.9% |
| Domestic service | 0% | 0.4% |
| **Total** | **100%** | **100%** |

Table 4.4: Relation with household distribution between cultural and non-cultural workers.

About the relation with the household, the most relevant aspect is that 44.8% of the surveyed cultural workers are head of household, compared to the 50.5% for the non-cultural workers. Furthermore, 17.9% is the spouse or husband of the head of household for cultural workers, compared to 13.3% for non-cultural workers.

| **Type** | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Urban | 78.2% | 68.24% |
| Other urban areas | 12.4% | 13.58% |
| Rural | 9.4% | 18.18% |
| **Total** | **100%** | **100%** |

Table 4.5: Urban distribution between cultural and non-cultural workers.

Related to the type of urban context, cultural workers and non-cultural workers are highly concentrated in urban areas, with 78.2% and 68.2% respectively. While the other urban areas remain reasonably similar for both groups, the workers in rural represent a difference between both group of workers, with 9.4% and

18.2% for cultural workers and non-cultural workers, respectively.

| **Educational Level** | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| No studies | 0.8% | 0.84% |
| Nursery School | 0% | 0% |
| Kinder | 0.2% | 0.11% |
| Primary School | 17.4% | 20.06% |
| Common Secondary School | 32.2% | 30.24% |
| Technical Professional Secondary School | 12.7% | 13.24% |
| Humanities | 2.8% | 1.3% |
| Centre for Technical Education | 3% | 3.42% |
| Professional Institution | 10.2% | 9.45% |
| University | 19.6% | 19.4% |
| Post Degree | 0.4% | 0.55% |
| Master | 0.7% | 0.96% |
| PhD | 0% | 0.25% |
| Normalist | 0.1% | 0.04% |
| Ignored level | 0% | 0.14% |
| **Total** | **100%** | **100%** |

Table 4.6: Educational level distribution between cultural and non-cultural workers.

In terms of education, both groups of workers share the same distribution with minor differences in primary school, where the percentage is slightly higher for non-cultural workers and in common secondary school, where the percentage is slightly higher for cultural workers.

**Section A: Labour Situation on the Reference Week**

| **Works.** Last week, between Monday and Sunday. Did you work at least one hour? | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Yes | 84.5% | 89.8% |
| No | 15,5% | 10.2% |
| **Total** | **100%** | **100%** |

Table 4.7: Distribution of last week work between cultural and non-cultural workers.

Of the total surveyed workers, 84.5% worked at least one hour on the week previous to the survey, and 15.5% did not. For the latter, 45% declared that they worked on a secondary activity for at least an hour, and 54.9% said they did not. However, for the last group, they all recognise that they had another income source.

### Section B: Characterisation of the Principal Activity

| **Contract.** This work was done for... | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| ... your business, company or self-employed activity? | 58.7% | 25.4% |
| ... as an employee or blue-collar worker, company, business or institution or private house employee? | 37.6% | 71.2% |
| ... for the business, company, or self-employed activity of a member of your family? | 3.8% | 3.5% |
| **Total** | **100%** | **100%** |

Table 4.8: Type of contract distribution between cultural and non-cultural workers.

Regarding the characteristics of the primary job, 58.7% of the cultural workers mentioned that their work is done for their business, company or self-employed

activity, compared to the 25.4% of non-cultural workers. On the other hand, employees in the cultural sector represent 37.6% compared to 71.2% of the non-cultural workers. This significant difference goes in line with the theory of informality and independent works of the cultural sector associated with project-based jobs (Menger, 1999).

| **Size.** In all the country. How many people work in the company, business or institution that pays you or self-employed activity, including yourself? | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Less than 5 | 68.1% | 34.5% |
| From 5 to 10 people | 5.8% | 6.8% |
| From 11 to 49 people | 8.3% | 13.2% |
| From 50 to 199 people | 5.1% | 10.5% |
| 200 or more people | 12.7% | 35% |
| **Total** | **100%** | **100%** |

Table 4.9: Size of the company distribution between cultural and non-cultural workers.

Another relevant point of analysis is the size of the company, business, institution, or self-employed company that the worker is involved in. In that context, 68.1% of cultural workers perform their jobs in workplaces with less than five people, compared to 34.5% of non-cultural workers in the same-size company. On the other hand, 12.7% of cultural workers base their work on 200 people or more, compared to 35% of non-cultural workers in the largest size category for companies. The statistics support the idea that the cultural sector relies heavily on independent workers who are their 'own company´ or hire a few more people.

| **Workplace.** In the week that finished last Sunday. Where did you mainly performed your working tasks | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| In installations or offices of clients or employer | 40.5% | 53.6% |
| In the house of client or employer | 4.8% | 5.8% |
| In own or rented installations or offices | 9.3% | 4.5% |
| In the office, place, workshop or fabric, annex to your household (same property) | 6% | 4.2% |
| In your own household | 22.8% | 5% |
| On the street or public road | 14.8% | 10.2% |
| In construction, mines or similar | 0.3% | 6.5% |
| In an agricultural property or maritime space or aereal space | 0.2% | 9.6% |
| In other places (specify) | 1.4% | 0.6% |
| **Total** | **100%** | **100%** |

Table 4.10: Place of work distribution between cultural and non-cultural workers.

The most significant option for both groups is the employer or client's office about the place of work. However, there is a significant difference between both percentages, partially explained by the high fraction of cultural workers in their household, in their rented installations or offices and the ones working on the street or public road. Again, supporting the theory of predominant independent workers in the sector and specifically informal ones, which are more sensitive to be pushed away from social benefits, such as pensions or health support.

**Section C: Work Schedule**

| **Work-Scheme.** What kind of work scheme does your job have? | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Full-time | 56.4% | 81.1% |
| Part-time | 43.6% | 18.9% |
| **Total** | **100%** | **100%** |

Table 4.11: Work scheme distribution between cultural and non-cultural workers.

These statistics show the significant number of cultural workers doing part-time jobs, which supports the idea that this group of workers hold multiple jobs simultaneously, with partial schemes. This result is partially explained by the project-based nature of the artistic work. Some cultural workers hold additional jobs that are more lucrative outside of the cultural sector-recognising a precarious situation regarding salaries in the art industry.

| **Overtime.** Last week. Did you work more hours than usual in your main activity? Overtime or extra hours, paid or not | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Yes | 2.7% | 4% |
| No | 97.3% | 96% |
| **Total** | **100%** | **100%** |

Table 4.12: Overtime or extra hours distribution between cultural and non-cultural workers.

For the variable measuring extra hours at work, both groups have a high representation for the 'no' category, as over 95% of them took that answer.

| **Intention Overtime.** If it were just up to you. Would you regularly work more hours than the actual ones? | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Yes | 43.4% | 34.1% |
| No | 56.6% | 65.9% |
| **Total** | **100%** | **100%** |

Table 4.13: Intention to overwork distribution between cultural and non-cultural workers.

Regarding extra hours at work, the percentage of cultural workers willing to work extra hours is more significant by almost ten percent. This effect could be explained by the physic income theory or affective work (Towse, 2019), where workers enjoy their jobs and receive a feeling of wealth and happiness by doing it, which is highly represented in the art sector.

### Section E: Job Search

| **Searches.** In the last four weeks, until Sunday of the referenced week. Have you tried to find employment, or have you taken any actions to create your own company or business? | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Yes | 8.1% | 6.5% |
| No | 91.9% | 93.5% |
| **Total** | **100%** | **100%** |

Table 4.14: Intention of searching for job distribution between cultural and non-cultural workers.

About searching for new jobs, the difference is not entirely significant, as, for both groups of workers, more than 90% of them mentioned that they did not look for new jobs in the last four weeks.

**Section F: Other Employment Variables**

| **CISE.** Job based on the International Classification of Status in Employment (ICSE-93) | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Does not apply | 4.6% | 4% |
| Employer | 55.3% | 22.3% |
| Independent | 37% | 55.7% |
| Employee private sector | 1.6% | 13% |
| Employee public sector | 0% | 3.3% |
| Live-in domestic service staff | 0% | 0.5% |
| Family member or unpaid staff | 1.5% | 1.3% |
| **Total** | **100%** | **100%** |

Table 4.15: Job Classification (CISE) between cultural and non-cultural workers.

The most crucial element of the job categories (CISE) between both groups of workers is that 92.3% of the cultural workers are either employers or independent workers, which shows the significant amount of people running their businesses or providing self-reliant services, either formally or informally. This result compared to a 78% for the same two groups of workers for non-cultural workers. The difference between the percentages is explained by dependent workers primarily in the private sector (13%) and the public sector (3.3%). Overall, the results show that non-dependent workers highly drive the national workforce.

| **CINE.** International classification of educational level (ISCED) 1997 | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Never studied | 0.8% | 0.8% |
| Educación preescolar | 0.2% | 0.1% |
| Primary school (level 1) | 9% | 9.2% |
| Primary school (level 2) | 9.3% | 11.3% |
| Secondary school | 47.6% | 45% |
| Technical Education (Tertiary non-universitary level) | 12.8% | 12.5% |
| Bachelor's degree | 19.2% | 19.1% |
| Master's degree | 1% | 1.5% |
| Doctoral degree | 0% | 0.3% |
| Ignored level | 0.1% | 0.2% |
| **Total** | **100%** | **100%** |

Table 4.16: Educational level (CINE) distribution between cultural and non-cultural workers.

In terms of educational level, the percentage of each category is similar for both groups of workers, with minor differences. The largest groups of workers reach secondary school for both cases, with 47.6% for cultural workers and 45% for non-cultural workers, followed by bachelor's degrees with 19.2% and 19.1% for cultural and non-cultural workers% respectively.

| **Effective.** Effective working hours during the referenced week | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| $<$ 15 hrs | 25.5% | 15.3% |
| 16-30 hrs | 21.3% | 17.2% |
| 31-45 hrs | 30.7% | 47.2% |
| 46-60 hrs | 14.8% | 15% |
| 60 $<$ hrs | 7.8% | 5.3% |
| **Total** | **100%** | **100%** |

Table 4.17: Effective working hours distribution between cultural and non-cultural workers.

In terms of effective working hours, both groups have the most significant representation in the category '31-45 hrs', with 30.7% for cultural workers and 47.2% for non-cultural workers. However, even though both groups share the same tendency throughout the categories, there are a slightly higher representation of cultural workers on the category '$<$15 hrs' and '16-30 hrs', suggesting that relatively speaking, there are more cultural workers on part-time jobs than in the rest of the national workforce.

| **Activity.** Economic activity branch of the company or institution paying to the worker or who the occupied individual is the owner. | Cultural Workers | Non-Cultural Workers |
|---|---|---|
| Agriculture, forestry and fishing | 0% | 11.1% |
| Mining and quarrying | 0% | 1.6% |
| Manufacturing | 21.4% | 9.8% |
| Electricity, gas, steam and air conditioning supply | 0% | 0.3% |
| Water supply; sewerage, waste management and remediation activities | 0% | 0.6% |
| Construction | 0.4% | 8.6% |
| Wholesale and retail trade | 43.6% | 17.3% |
| Transportation and storage | 0.1% | 6.5% |
| Accommodation and food services | 2% | 5% |
| Information and communication | 5.1% | 1.1% |
| Financial and insurance | 0% | 1.4% |
| Real state | 0% | 0.7% |
| Professional, scientific and technical activities | 6.5% | 2.7% |
| Administrative and support service activities | 2.6% | 6.3% |
| Public administration and defense; compulsory social security | 1% | 9% |
| Education | 2% | 6% |
| Human health and social work activities | 0% | 3.9% |
| Arts, entertainment and recreation | 7.9% | 1.1% |
| Other service activities | 7.7% | 2.8% |
| Activities of households as employers | 0% | 4.2% |
| Activities of extraterritorial organizations and bodies | 0% | 0% |
| **Total** | **100%** | **100%** |

Table 4.18: Economic activity of institution or company distribution between cultural and non-cultural workers.

As a summary, the results show the following conclusions for each section of variables. For demographic variables, the regional distribution shows a high concentration of both groups of workers in three specific regions – Metropolitan, Valparaíso, and Bíobio – which are the most populated. In terms of gender, the distribution is predominantly feminine for cultural workers, while the distribution for non-cultural workers is the other way around. Both groups show similar distributions about the age distribution, with higher concentrations in the categories 26-35, 36-45, 56-65 years old, with slightly higher percentages on cultural workers in the categories $<$26 and 65$>$ years old. Regarding the relation with the household, both groups have the head of the household as principal role, even though the percentage for non-cultural workers is higher than that of cultural workers. This tendency is followed by son/daughter or stepchild and spouse/husband – nonetheless – the percentage of the last two mentioned categories are slightly more significant for cultural workers. Regarding urban distribution, both groups have a high concentration on urban areas, with a higher percentage of non-cultural workers in rural locations.

In the case of section A, both groups have an immense majority of workers who have worked at least an hour last week, with a minor difference ($+5\%$) of cultural workers answering 'no´ compared to non-cultural workers.

Section B firstly shows a different result on the type of contract for both groups of workers. Been cultural workers predominantly working as independent or self-employed and non-cultural workers having a contract with an employer. Regarding the company's size or institutions, cultural workers show a significant majority of companies with less than five people. In comparison, non-cultural workers share the more extensive category with equal percentages of less than five people and more than 200 people, 34.5% and 35% respectively. About the workplace, both groups have the installations or offices of clients or employer as their principal place to perform work tasks. However, in the case of cultural workers, own household represents a significant second category. It is also important to mention that street or public roads represent more than 10% of the distribution for both groups of workers.

For Section C, the work schemes have different distributions for both group, while cultural workers have a relatively homogeneous distribution between full-time and part-time workers, non-cultural workers are highly concentrated in full-time work schemes (81.1%). About overtime and extra hours, almost the total amount of workers in both groups declare not doing them. On the intention to work extra hours, cultural workers have a more balanced distribution between ones that said yes and the ones that do not, while non-cultural workers are more

inclined towards not working extra hours. about the intention of looking for a new job, both groups have over 90% of their surveyed declaring not been active on looking for an additional job.

Finally, section F shows that most cultural workers are employers, followed by a significant percentage of independent workers. At the same time, most non-cultural workers are independently followed by an influential group of employers. Both groups present similar distributions in terms of educational level, with the larger group having secondary school as their higher educational level, followed by bachelor's degree and technical education, all with similar percentages. About the effective working hours, cultural workers have a majority in the 31-45 hours section, but fairly distributed between that category (30.7%), 16-30 hrs (21.3%) and $<$ 15 hrs (25.5%), while non-cultural workers are more concentrated in the 31-45 hours category.

### 4.6.2 Discussion and Variables Selection

Moving from the descriptive statistics, this subsection considers which variables could affect workers' pensions to choose them for the econometric models.

Firstly, the regional distribution of workers is related to the most significant urban hubs of the country and does not reflect any difference between cultural and non-cultural workers. Moreover, the results of more prominent placement of workers of any industry in those cities are much more related to the idea of higher wages and lower unemployment rates in non-rural areas (Sharma & Chandrasekhar, 2014). Therefore the variable is dismissed from the analysis.

The result for gender shows a higher percentage of women in the cultural sector, which could be attributed to cultural domains with high female participation such as textile, craft and dance. The gap between the gender percentage could potentially explain differences in pensions for cultural and non-cultural workers. This considering that women tend to be more risk-averse on contributing to pensions (Bajtelsmit et al., 1999), or by the fact that women perceive lower salaries and therefore intend to be more responsible at considering their incomes at the moment of retirement (Hinz et al., 1997). For those reasons, one could expect that an industry with more female representation could express a higher probability of contribution to pensions. Therefore this variable is initially considered in the regression model.

For age, even though the distribution on both groups result relatively similar, or instance, age is a significant demographic variable affecting the decision to incorporate on a pension scheme (Bryan & Lloyd, 2014). Additionally, the higher

percentage on the first and last category, <26 years old and 65> years old on cultural workers, could generate a difference in the regression. Mainly because cultural workers usually have an early start in their career (Alper & Wassall, 2006), but also by the fact that workers have to stay in their jobs over the legal age of retirement when their pensions are not significant enough to cover their expenses (Pettersson, 2014), which is the case for a significant part of cultural workers (Gill & Pratt, 2008). For the reasons mentioned above, the variable is included in the regression.

Relation with the household does not show a substantial difference in the different categories of variables for both groups of workers. However, the main difference is that non-cultural workers have a higher percentage on the head of household and a lower percentage on spouse/husband, with an inverse result for cultural workers. The difference could suggest that as jobs in the cultural sector are related with lower remunerations (Gill & Pratt, 2008), then the primary source of income could come from a more lucrative occupation outside of the cultural sector, explaining the higher percentage of a head of household in the non-cultural group of workers.

Urban location, urban allocations have a significantly higher percentage for both groups of workers. The almost double percentage of rural workers for non-cultural workers can partially be explained by non-cultural workers in the agricultural sector, which does not correlate in the cultural sector. However, urban location works with the same pattern as regional distribution. There should not be any intrinsic characteristics of cultural workers – in terms of urban location – that could result in differences in the probability of contributing to their pensions.

The variable Works does not show a significant difference between the percentage of individuals who worked last week between cultural and non-cultural workers. However, the question evaluates working continuity, which certainly has an impact on the contribution to pensions. Where higher pension contribution works as a job quality indicator (Falaris, 2011), understanding that better quality refers to a higher degree of formality, therefore, cases of sporadic or intermittent job-schemes, should have fewer chances of contributing to pensions, compared to continuous job schemes.

The case of the type of contract that the workers have, which is different for cultural and non-cultural workers. The difference between their results could show differences in the probability of contribution to pensions, as pension contribution is correlated with employment in the formal sector (Falaris, 2011), which could be a factor as cultural workers are more related with self-employed activity or own

business, and non-cultural workers with an employee and blue-collar workers.

The size of the firm is determinant to define the probability of contribution to a pension scheme (R. L. Clark & Schieber, 1998). In the case of the cultural workers, the highest concentration of workers is on institutions of less than five people, and in the case of non-cultural workers is distributed in different categories, being 200 or more people the highest one. Consequently, one could expect a substantial difference in the probability of contribution to pensions based on these results.

Workplace, the result shows that both groups tend to work in installations or offices of clients or employer. However, there is a much higher percentage of cultural workers in their own offices, offices annex to their household, own household and the public road. The higher percentage of an informal workplace could negatively impact the probability of contributing to their pensions.

In the case of work schemes, the degree of formality or informality, where benefits and pensions are often associated with full-time jobs (Stormer, 2008). Full-time workers primarily represent the case of non-cultural workers. In the case of cultural workers, it is almost evenly represented between full-time and part-time jobs, with a slightly higher tendency for full-time schemes. So based on the results, one could argue that non-cultural workers tend to opt for more formal work schemes, making a difference as formal schemes are associated with higher contribution to pensions.

If the individual performs overwork or extra hours, the answer on both groups of workers is predominantly negative, with over 95% for cultural and non-cultural workers. This study includes this variable as extended hours of work has a concave relation with pension contribution (Barrientos, 1998), reflecting poor job quality.

About the intention of working extra hours, both groups tend to answer 'no'. However, the percentage of workers giving that answer is more significant in the case of non-cultural workers. The effect of willingness to work extra hours in pensions depends on the pension scheme. If a worker's pension is sensitive to earnings, the worker will be willing to work extra hours. This situation happens more often at the end of the career of workers rather than when they are young (Barr & Diamond, 2006).

About the action of looking for new jobs or starting a company on its own, searches, both groups declare no intention, with a percentage of over 90% and a slightly higher tendency for cultural workers to look for job opportunities. This variable is relevant, as pensions schemes explain the tenure in a company or institution (Ippolito, 1991), with a better pension benefit plan explaining a higher tenure.

For the case of job classification, CISE, the distribution shows that a predominant percentage of cultural workers are self-defined as 'employer', followed by 'independent', which together gathers more than 90% of the sample. On the other hand, most non-cultural workers are considered 'independent', but there is more participation in dependent categories, both in the private and public sectors. This difference in the distribution could support a gap in the probability of contribution between both groups of workers, considering that the classification of their jobs affects the contribution of their pensions, particularly in Latin America (Daude et al., 2015).

In the case of the educational level, cine, the results show a somewhat similar distribution for both groups. Moreover, the educational level affects the probability of contribution to pensions where those who were contributing to pensions had higher educational levels and higher work profile such as managers and professionals (Bryan et al., 2011). Moreover, the evidence shows that people, in general, do not make an informed decision on their pensions (G. L. Clark et al., 2009; G. L. Clark & Strauss, 2008). However, the effect of schooling is significant if it interacts with financial education (Behrman et al., 2012), which could be expected in reality, improving the possibility of contributing to pensions, accumulating more resources for their retirement.

Effective hours explains the work-schemes, which is fairly in line with the results on work-scheme. Then, cultural workers show a higher percentage of workers in the categories $<$15 hrs and 16-30 hrs, suggesting part-time schemes, associating it to more informality and consequently a lower probability of contribution to pensions (Fuentes, 2010).

After the discussion, this investigation considers the variables to run a logit model using the previous variables as independent variables, supported by the literature mentioning the relation between them and the contribution to pensions.

## 4.7 Models Choice and Database Treatment

This section describes the models used for this article. The first subsection analyses the implementation of a Logit Regression Model to calculate the probability of cultural and non-cultural workers contributing to their pensions and the significant variables affecting that probability. The second subsection covers the implementation of predictive models to identify the most relevant predictors affecting the probability of contributing to pensions of cultural and non-cultural workers. Finally, the third subsection outlines the modifications and treatments

to the database to work with it.

### 4.7.1 Logit Regression Model

As previously defined, the decision of contributing to pensions is a binary action taken by the worker. Therefore a binary choice model suits the methodology of this investigation.

A binary choice model was chosen to estimate coefficients and look for those independent variables affecting the probability of contribution of pensions of cultural workers. Understanding what the root of that relation is.

The first regression considers all the variables from the descriptive statistics. However, some of these variables might not be significant. Nevertheless, that situation will be exposed by running an initial regression.

The regression is based on an investigation where the author calculates the probability of contribution to pensions of independent workers, using as independent variables, demographic characteristics of the individual, characteristics of the work scheme and the job itself (Fuentes, 2010). The study concludes that a 1% increase in alternative savings decreases the probability of contributing, between -0.1% and -0.5%, depending on the model. An increase in spending on children´s education increases the probability of contributing to pensions, the same for years of education, permanent work, male gender (but not significant), and paying taxes. The coefficient is positive in terms of the age variable, yet increases up to 55 age, but then decreases.

The study criteria are applied to the independent variables of this study, considering the variables available in the survey and including them after previous support from the literature.

For this model, the dependent variable is the probability of a cultural worker contributing to the pension system, assuming a value of 1 when the cultural worker contributes to the pension system and a value of 0 when the cultural worker does not contribute to the pension system. The independent variables are a set of variables describing the characteristics of the cultural workers[23].

$$Ycontribute = \beta_0 + \beta_1 * \chi^c + \beta_2 * \chi^h + \beta_3 * \chi^t + \mu$$

In this case, this research compares the probability of pension contribution of cultural workers and non-cultural workers.

Now, with the results of this comparison, there are three possible scenarios:

[23]A detailed description of the variables is attached on the appendix.

$$1)\ Pr(Contribution)_{CW} > Pr(Contribution)_{NCW},$$

In this case, cultural workers have a higher probability of contributing to their pensions than non-cultural workers. Therefore, the working scheme of cultural workers is structurally more suitable to the pension system.

$$2)\ Pr(Contribution)_{CW} = Pr(Contribution)_{NCW},$$

In this case, cultural workers have the same probability of contributing to their pensions as the non-cultural workers. Therefore, the working scheme of cultural workers has no distinct difference from the pension system.

$$3)\ Pr(Contribution)_{CW} < Pr(Contribution)_{NCW},$$

In this case, cultural workers have a lower probability of contributing to their pensions than non-cultural workers. Therefore, the working scheme of cultural workers is structurally less suitable to the pension system.

Consequently, this study firstly compares the probability of both cultural and non-cultural workers contributing to their pension schemes by using this methodology. Later, the regression shows the most significant variables explaining the pension contribution of cultural workers and see if there is any difference with non-cultural workers.

Later on, this investigation analyses the most significant variables affecting the decision to contribute to the pension system. And finally, we compared those predictors with non-cultural workers and see if there are any differences.

Endlessly, the results can potentially justify a pension support scheme for the cultural workforce if the probability of contribution of cultural workers is systematically lower than the probability of contribution of the rest of the national workforce.

### 4.7.2 Predictive Models

For pensions, previous studies applied machine learning techniques to calculate early retirements applied to a general workforce sample (Boado Penas et al., 2019), but not the probability of contribution. Hence, this implementation is unique because no early studies implement this approach, using the cultural workforce as the subject of study.

Moreover, regression trees identify the most relevant interaction of predictors that leads to contributing to their pensions. On the other hand, random forests individually rank the most significant predictors to the probability of contributing to their pensions.

The results can outline which variables should cultural policies target in the future to improve the rates of the contribution of cultural and non-cultural workers to their pensions. Additionally, it maps the difference in predictors for both groups, which could potentially justify special treatment for pensions schemes in the cultural sector due to their singularities.

### 4.7.3 Database Treatment

This chapter initially analyses which variables fit the concepts of formality and informality, to later assume that workers associated with informality do not contribute to their pensions, and those related with formality contributes to them.

For that matter, there are two variables in the survey that directly classify the data based on formality or informality. The first one is formal/informal sector, where the variable **sector** defines the formality of the workers based on the sector, with the following characteristics:

$$Sector = \begin{cases} 1 & \text{if} \quad \textit{Formal sector}, \\ 2 & \text{if} \quad \textit{Informal sector}, \\ 3 & \text{if} \quad \textit{Household as employer's sector}, \end{cases}$$

[24]

Secondly, there is another variable, which focuses the formality/informality using an occupation approach. The variable is *Occupform*, and defines the formality of the workers based on their occupation, with the following characteristics:

$$OccupForm = \begin{cases} 1 & \text{if} \quad \textit{Formal occupation}, \\ 2 & \text{if} \quad \textit{Informal occupation}, \end{cases}$$

Both variables are compared with the one that reflects the direct answer if the worker contributes to their pensions or not. For that purpose, this study uses the answers contained in variable *employer.contribution*. Suppose the employer contributes to the pension of the worker or not. This variable only considers

[24] Household service sector will also be considered as informal, because those households do not have a defined business line.

dependent workers in formal sectors, which significantly restricts the analysis of both cultural workers and non-cultural workers.

Later, to decide if the criteria of formality/informality are going to be based on *Sector* or *Occupform*, this study analyses how the categories of formality/informality of both variables fit the answers on *employer.contribution*.

Firstly analysing the interaction between *employer.contribution* and *Sector*, where the results do not accurately capture what formal and informal sector is, because, for example, there are 4390 individuals whose employers do not contribute to their pensions (*EmployerContribution* = *No*), but are classified as formal sector (*Sector* = 1). Therefore, *Sector* is not a proper variable to distinguish between formality and informality when trying to understand who are the workers that contribute or not to their pensions, based on the criteria of formality/informality.

| E. Contribution | Formal Sector | Informal Sector | Household as Employer |
|---|---|---|---|
| No | 4390 | 676 | 1099 |
| Does not answer | 6 | 0 | 0 |
| Does not know | 248 | 5 | 11 |
| Yes | 26599 | 48 | 870 |

Table 4.19: Interaction between categories of *EmployerContribution* and *Sector*.

On the other hand, if one analyze the interaction between *employer.contribution* and *Occupform*, it is possible to observe that the criteria of formality/informality fits better, as there are no observations when employers do not contribute to the pensions of workers (*EmployerContribution* = *No*) and at the same time presenting formal occupations (*Occupform*=1), then the incompatibility of criteria presented between *employer.contribution* and *Sector* does not exist between *employer.contribution* and *Occupform*.

| E. Contribution | Formal Occupation | Informal Occupation |
|---|---|---|
| No | 0 | 6165 |
| Does not answer | 4 | 2 |
| Does not know | 156 | 108 |
| Yes | 27491 | 26 |

Table 4.20: Interaction between categories of *employer.contribution* and *Occupform*.

Therefore, *Occupform* is used as the variable that explains formality and informality, where workers in formal occupations contribute to their pensions, and those in informal occupations do not. The criteria are based on the use of social security contribution as a measure to differentiate formal employment where workers contribute to their pensions with informal employment where workers do not contribute to their pensions (Marcouiller et al., 1997). Moreover, non-standard work schemes related to informal occupations are related to a lack of social security – such as pensions (Kalleberg, 2000). As informal occupations have no legal relationship with their employers or clients and therefore no social security, including pensions.

Overall, this study considers that workers with informal occupations do not contribute to their pensions. Finally, formal occupations and formal sector are defined as dependent workers, and their contribution to pensions depends on the answer they provide for *EmployerContribution*, which, as previously established, fits the formality/informality criteria of *Occupform*.

Then, the variable *Occupform* is renamed as *Contribution*, creating a dummy variable with the following characteristics:

$$Contribution = \begin{cases} 1 & \text{if} \quad \textit{The worker contributes to their pension}, \\ 0 & \text{if} \quad \textit{The worker does not contributes to their pension}, \end{cases}$$

Later, to simplify the estimation and homogenise the independent variables using categories, this study renames certain variables briefly profiled below.

The variable *Gender* is redefined as *Woman*, as it follows:

$$Woman = \begin{cases} 1 & \text{if} \quad \textit{The worker is female}, \\ 0 & \text{if} \quad \textit{The worker is not female}, \end{cases}$$

The variable *Age* is redefined as *AgeGap*, the categories are defined as it follows:

$$AgeGap = \begin{cases} 1 & \text{if} \quad Age < 18, \\ 2 & \text{if} \quad \textit{Age between } 18 \textit{ and } 25, \\ 3 & \text{if} \quad \textit{Age between } 25 \textit{ and } 55, \\ 4 & \text{if} \quad Age > 55, \end{cases}$$

The variable *Relation with the household* is redefined as a dummy variable, *household*, with the following description:

$$Household = \begin{cases} 1 & \text{if } \textit{The worker is head of household}, \\ 0 & \text{if } \textit{The worker is not a head of household}, \end{cases}$$

For educational level ($CINE$), the categories are renamed as it follows:

$$Ed.\ Level = \begin{cases} Low\ level & \text{if } Educational\ level < PrimarySchool(level2), \\ Medium\ level & \text{if } Educational\ level\ between\ Secondary\ School \\ \quad and\ Technical\ Education, & \\ High\ Level & \text{if } Educational\ level\ between\ Bachelors\ Degree \\ \quad and\ Doctoral\ Degree, & \end{cases}$$

The variable *Size* is restructured with the following categories:

$$Size = \begin{cases} Small & \text{if } Company\ Institution < 50\ people, \\ Medium & \text{if } Company\ Institution\ between\ 50\ and\ 199\ people, \\ Large & \text{if } Company\ Institution > 200\ people, \end{cases}$$

The variable $Work - Scheme$ is redefined as a dummy variable, *part-time*, establish as it follows:

$$Part\text{-}time = \begin{cases} 1 & \text{if } The\ worker\ is\ \ in\ a\ part - time\ scheme, \\ 0 & \text{if } The\ worker\ is\ not\ in\ a\ part - time\ scheme, \end{cases}$$

The variable textit*Works*, is redefined with the following categories:

$$Works = \begin{cases} 1 & \text{if } \textit{The worker has worked at least an hour during last week}, \\ 0 & \text{if } \textit{The worker has not worked at least an hour during last week}, \end{cases}$$

The variable *IntentionOvertime* is redefined with the following categories:

$$Intention\ Overtime = \begin{cases} 1 & \text{if } The\ worker\ would\ \ work\ extra\ hours, \\ 0 & \text{if } The\ worker\ would\ not\ work\ extra\ hours, \end{cases}$$

The variable *Searches* is redefined with the following categories:

$$Searches = \begin{cases} 1 & \text{if } \textit{The worker has look for jobs} \\ & \textit{or starting a new business on the last month}, \\ 0 & \text{if } \textit{The worker has not look for jobs} \\ & \textit{or starting a new business on the last month}, \end{cases}$$

Later, after coding the cultural workers, they are labeled using a dummy for cultural workers, established as it follows:

$$Dpc = \begin{cases} 1 & \text{if } \textit{The worker is a cultural worker}, \\ 0 & \text{if } \textit{The worker is not a cultural worker}, \end{cases}$$

Later, the group of cultural workers ($Dpc = 1$), are incorporated in the variable *EconomicActivity*, as a new category or economic sector called *cultural*. Up to this point is relevant to mention that those cultural workers taken from other economic activities are only included in the new category, *cultural*, and excluded from their previous economic activity, using the coding criteria previously described.

After the descriptions of the implemented models and how this investigation worked the database, the following step reflects the results, which are outlined in the following section.

## 4.8 Results

The first investigation question aims to calculate the probability of contributing to the pensions of cultural workers compared to workers of other industries. For that, this study uses a logit binary choice model showing which variables are significant to the contribution of pensions and then using marginal effects to compare the probability of contribution of different sectors using the cultural workers as a reference point.

Later, this investigation applies machine learning techniques to identify the most relevant predictors of the probability of contributing to pensions for cultural workers.

Finally, this article analyse the predictive power of the regression models, to identify the one that works best.

### 4.8.1 Logit Regression Model

This subsection establishes a logit regression model, analysing the probability of contribution to pensions of cultural and non-cultural workers identifying potential differences in both groups.

The first regression considers independent variables dealing with demographic characteristics, aspects of the conditions of workers, the working place, job schemes and economic sectors. The model would be established in the following equation:

**Initial Logit Regression Model**

$$\begin{aligned} Pr(Contribute) = \beta_0 + \beta_1 Region + \beta_2 Woman + \\ \beta_3 Household + \beta_4 Type + \beta_5 Size + \beta_6 Age + \\ \beta_7 Seniority + \beta_8 Works + \beta_9 Part - time + \\ \beta_{10} IntentionOvertime + \beta_{11} Searches \\ \beta_{12} Edlevel + \beta_{13} Workplace + \beta_{14} Activity + \xi \end{aligned}$$

The results showing the significance of variables are briefly exposed in the following table.

Table 4.21: Logit Regression Results.

| Categories | Coef. | Std.Error | Statistic | P-Value | Signif. |
|---|---|---|---|---|---|
| (Intercept) | 35.5888 | 2.9839 | 11.9271 | 0.0000 | *** |
| *Region.Antofagasta* | -0.8031 | 0.1093 | -7.3465 | 0.0000 | *** |
| *Region.Atacama* | -0.1781 | 0.1184 | -1.5043 | 0.1325 | |
| *Region.Coquimbo* | 0.1820 | 0.1232 | 1.4776 | 0.1395 | |
| *Region.Valparaiso* | -0.4249 | 0.1019 | -4.1718 | 0.0000 | *** |
| *Region.LGBOHiggins* | -0.5618 | 0.1029 | -5.4571 | 0.0000 | *** |
| *Region.Maule* | -0.1709 | 0.1027 | -1.6647 | 0.0960 | . |
| *Region.Biobio* | -0.1965 | 0.1162 | -1.6913 | 0.0908 | . |
| *Region.Araucania* | 0.1719 | 0.1584 | 1.0848 | 0.2780 | |
| *Region.Lagos* | -0.5168 | 0.1114 | -4.6409 | 0.0000 | *** |
| *Region.Aysen* | -0.2029 | 0.0935 | -2.1688 | 0.0301 | * |
| *Region.Magallanes* | -0.3418 | 0.0966 | -3.5383 | 0.0004 | *** |
| *Region.Metropolitan* | 0.1125 | 0.1045 | 1.0759 | 0.2820 | |
| *Region.Rios* | -0.2226 | 0.1015 | -2.1934 | 0.0283 | * |

| Categories | Coef. | Std.Error | Stats. | P-Value | Signif. |
|---|---|---|---|---|---|
| $Region.Arica_P arinacota$ | -0.2222 | 0.1322 | -1.6806 | 0.0928 | . |
| $Region.Niuble$ | -0.2438 | 0.0909 | -2.6825 | 0.0073 | ** |
| $Woman$ | -0.0342 | 0.0322 | -1.0621 | 0.2882 | |
| $Household$ | 0.2285 | 0.0297 | 7.7040 | 0.0000 | *** |
| $Type.Other$ | -0.0898 | 0.0408 | -2.1998 | 0.0278 | * |
| $Type.Rural$ | -0.0622 | 0.0431 | -1.4425 | 0.1492 | |
| $Works$ | 0.3491 | 0.0458 | 7.6255 | 0.0000 | *** |
| $Searches$ | -0.7543 | 0.0522 | -14.4525 | 0.0000 | *** |
| $Size.Medium$ | 1.5796 | 0.0590 | 26.7941 | 0.0000 | *** |
| $Size.Large$ | 1.5092 | 0.0413 | 36.5263 | 0.0000 | *** |
| $AgeGap.18-25$ | 2.6679 | 0.3843 | 6.9431 | 0.0000 | *** |
| $AgeGap.25-55$ | 3.1732 | 0.3831 | 8.2838 | 0.0000 | *** |
| $AgeGap.>55$ | 2.8495 | 0.3842 | 7.4162 | 0.0000 | *** |
| $Seniority$ | -0.0191 | 0.0015 | -12.9852 | 0.0000 | *** |
| $Part-time$ | -1.5639 | 0.0346 | -45.1925 | 0.0000 | *** |
| $IntentionOvertime$ | -0.1654 | 0.0287 | -5.7571 | 0.0000 | *** |
| $Ed.MediumLevel$ | 0.6951 | 0.0346 | 20.0714 | 0.0000 | *** |
| $Ed.HighLevel$ | 0.8039 | 0.0485 | 16.5688 | 0.0000 | *** |
| $Workplace.HouseEmployer/Client$ | -1.8497 | 0.0666 | -27.7792 | 0.0000 | *** |
| $Workplace.OwnRentedOffice$ | 0.7446 | 0.0727 | 10.2437 | 0.0000 | *** |
| $Workplace.OfficeAnnexHousehold$ | -0.5158 | 0.0620 | -8.3189 | 0.0000 | *** |
| $Workplace.OwnHousehold$ | -1.3728 | 0.0611 | -22.4626 | 0.0000 | *** |
| $Workplace.Street$ | -1.0742 | 0.0481 | -22.3435 | 0.0000 | *** |
| $Workplace.Mining/Construction$ | 0.1835 | 0.0831 | 2.2080 | 0.0272 | * |
| $Workplace.Agric/Aereal/Maritime$ | -0.2465 | 0.0738 | -3.3395 | 0.0008 | *** |
| $Workplace.Others$ | -1.0356 | 0.1457 | -7.1101 | 0.0000 | *** |
| $Activity$ $AdministrativeSupportService$ | 1.1869 | 0.1630 | 7.2796 | 0.0000 | *** |
| $Activity$ $Finance$ | 0.3764 | 0.0571 | 6.5967 | 0.0000 | *** |
| $Activity$ $ActivitiesOfHouseholds$ $AsEmployers$ | 0.3595 | 0.0717 | 5.0127 | 0.0000 | *** |
| $Activity$ $RealState$ | -0.0371 | 0.0771 | -0.4808 | 0.6307 | |
| $Activity$ $Professional/Scientific$ | 0.8510 | 0.0800 | 10.6332 | 0.0000 | *** |

| Categories | Coef. | Std.Error | Stats. | P-Value | Signif. |
|---|---|---|---|---|---|
| /Technical/Activities | | | | | |
| Activity | 0.3738 | 0.0670 | 5.5799 | 0.0000 | *** |
| PublicAdm/Defence | | | | | |
| Activity | 0.6044 | 0.1841 | 3.2823 | 0.0010 | ** |
| Agriculture/Forestry/Fishing | | | | | |
| Activity | -0.2658 | 0.0807 | -3.2928 | 0.0010 | ** |
| Accomodation/FoodServices | | | | | |
| Activity | 0.7823 | 0.1724 | 4.5384 | 0.0000 | *** |
| Arts/Entertainment/Recreation | | | | | |
| Activity | 1.6251 | 0.1879 | 8.6509 | 0.0000 | *** |
| Wholesale/RetailTrade | | | | | |
| Activity | 1.0308 | 0.1871 | 5.5089 | 0.0000 | *** |
| Construction | | | | | |
| Activity | 1.6009 | 0.2255 | 7.0980 | 0.0000 | *** |
| Education | | | | | |
| Activity | 0.2963 | 0.0740 | 4.0041 | 0.0001 | *** |
| Mining/Quarrying | | | | | |
| Activity | 0.1213 | 0.0800 | 1.5160 | 0.1295 | |
| Manufacturing | | | | | |
| Activity | -0.1471 | 0.0832 | -1.7676 | 0.0771 | . |
| Information/Communication | | | | | |
| Activity | 1.8412 | 0.3486 | 5.2811 | 0.0000 | *** |
| OtherServices | | | | | |
| Activity | 0.1549 | 0.0895 | 1.7303 | 0.0836 | . |
| HumanHealth/ SocialWorkActivities | | | | | |
| Activity | 0.3646 | 0.1036 | 3.5187 | 0.0004 | *** |
| WaterSupply/ Sewerage/WasteManag | | | | | |
| Activity | 0.2374 | 0.1662 | 1.4279 | 0.1533 | |
| Electricity/Gas/ Steam/AirCondSupply | | | | | |
| Activity | 1.3214 | 0.1197 | 11.0364 | 0.0000 | *** |
| Transportation/Storage | | | | | |

From the regression results, one can observe that most of the categories of the variables are significant, with few exceptions in some regions (Atacama,

Coquimbo, Araucanía and Metropolitan), and certain economic activities such as *Electricity*, *Gas*, *Steam and Air Conditioned Supply*, *Manufacturing* and *Real State*. Those regions and economic activities that are not significant could potentially be attributed to a low number of observations on those categories, and high variance, leading to a high Std. Error[25]. Additionally, Mcfadden pseudo $R^2$ shows a result of 0.34, which can be interpreted as a good fit and the Chi-Square goodness of fit test is 0. Therefore the sample data fits, and the probability of the observed distribution of the data is due to sampling error is 0.

### Marginal Effects

Additionally, using this regression, it is possible to observe the marginal effect of each independent variable on the probability of contribution, to acknowledge if there is a correlation between dependent and independent variables. However, this study focuses specifically on the marginal effects of the different sectors of the economy to compare them with the cultural sector.

The results of the marginal effects are established in the following table.

Table 4.22: Marginal Effects Logit Regression Results.

| Categories | AME |
|---|---|
| *Region.Antofagasta* | -0.1597 |
| *Region.Atacama* | -0.0308 |
| *Region.Coquimbo* | 0.0285 |
| *Region.Valparaiso* | -0.0776 |
| *Region.LGBOHiggins* | -0.1058 |
| *Region.Maule* | -0.0294 |
| *Region.Biobio* | -0.0341 |
| *Region.Araucania* | 0.0269 |
| *Region.Lagos* | -0.0969 |
| *Region.Aysen* | -0.0348 |
| *Region.Magallanes* | -0.0607 |
| *Region.Metropolitan* | 0.0180 |
| *Region.Rios* | -0.0388 |
| *Region.Arica$_P$arinacota* | -0.0389 |
| *Region.Niuble* | -0.0416 |
| *Woman* | -0.0056 |

[25]except for Metropolitan, which has a high number of observations

| Categories | AME |
|---|---|
| *Household* | 0.0377 |
| *Type.Other* | -0.0151 |
| *Type.Rural* | -0.0104 |
| *Size.Medium* | 0.1767 |
| *Size.Large* | 0.2186 |
| *Works* | 0.0621 |
| *Searches* | -0.1471 |
| *AgeGap*.$18-25$ | 0.2277 |
| *AgeGap*.$25-55$ | 0.5965 |
| *AgeGap*. $>55$ | 0.3201 |
| *Seniority* | -0.0031 |
| *Part* $-$ *time* | -0.3205 |
| *IntentionOvertime* | -0.0277 |
| *Ed.MediumLevel* | 0.1181 |
| *Ed.HighLevel* | 0.1154 |
| *Workplace.HouseEmployer/Client* | -0.4092 |
| *Workplace.OwnRentedOffice* | 0.0994 |
| *Workplace.OfficeAnnexHousehold* | -0.0965 |
| *Workplace.OwnHousehold* | -0.2949 |
| *Workplace.Street* | -0.2175 |
| *Workplace.Mining/Construction* | 0.0288 |
| *Workplace.Agric/Aereal/Maritime* | -0.0430 |
| *Workplace.Others* | -0.2167 |
| *Activity* | 0.1376 |
| *Administrative* | 0 |
| *SupportService* | |
| *Activity* | 0.0574 |
| *Finance* | |
| *Activity* | 0.0539 |
| *ActivitiesOfHouseholds* | |
| *AsEmployers* | |
| *Activity* | -0.0062 |
| *RealState* | |
| *Activity* | 0.1131 |
| *Professional/Scientific* | |
| */TechnicalActivities* | |
| *Activity* | 0.0561 |

| Categories | AME |
|---|---|
| *PublicAdm/Defence Activity* | 0.0827 |
| *Agriculture/Forestry/Fishing Activity* | -0.0467 |
| *Accomodation/FoodServices Activity* | 0.1012 |
| *Arts/Entertainment/Recreation Activity* | 0.1605 |
| *Wholesale/RetailTrade Activity* | 0.1238 |
| *Construction Activity* | 0.1596 |
| *Education Activity* | 0.0450 |
| *Mining/Quarrying Activity* | 0.0194 |
| *Manufacturing Activity* | -0.0250 |
| *Information/Communication Activity* | 0.1694 |
| *OtherServices Activity* | 0.0244 |
| *HumanHealth/ SocialWorkActivities Activity* | 0.0540 |
| *WaterSupply/ Sewerage/WasteManag Activity* | 0.0364 |
| *Electricity/Gas/ Steam/AirCondSupply Activity* | 0.1455 |
| *Transportation/Storage* | |

The marginal effects shows a correlation effect on the probability of each independent variable to the probability of contribution to pensions. However, all independent variables that are not categories of economic activity are only considered as control variables. However, if one focuses on the marginal effects

of economic activities, it is possible to compare the effect on the probability of contribution to pensions when been a cultural worker against been in other sectors of the economy. After identifying and coding cultural workers, the category 'cultural sector´ considers cultural workers both in the cultural sector and outside of it, taking the latter from their initial productive sector and putting them in this new category.

The results show that most of the sectors present better correlation effects with the probability of contributing to their pensions, comparing the cultural sector, with the highest positive difference for Other Services Sector (16.9%), Wholesale/Retail Trade (16.1%), and Transport and Storage Sector (14.6%).

As Other Services Sector represents the highest difference in probability, this sector can be desegregated into activities of membership organizations, repair of computers and personal and household goods, and other personal service activities. However, given the vast difference of activities situated in this category, it is impossible to attribute it to a particular reason, rather than understand that other services sector works as a 'black box´ where all the possibly undefined or problematic to define activities go.

In wholesale/retail trade, the result is expected as this sector provides a better environment of formality to enrol on social benefits, have written contracts and registered businesses. This compared to sectors that are service-based (Pisani, Rivarola, et al., 2019), such as the cultural sector. Additionally, wholesale consider three possible categories, identify as independent suppliers, merchandising groups, and cooperatives, with the last two attributing the most significant number of companies and sales, with structured and formal schemes for workers (Gales & Blackburn, 1990). Therefore, one could expect a significant difference in the probability of contribution of this sector compared to the one for cultural workers.

Transport and storage also have an incentive to be a more formal sector in order to access and provide other formal companies and institutions (Pisani, Rivarola, et al., 2019), so one could expect more registered companies/institutions. Consequently, it is expected that their probability of contributing to their pensions are higher than a sector with a more considerable degree of informality like the cultural sector. Mainly due to more structured job schemes and more formal workplaces.

On the other hand, three specific sectors are facing correlations with lower probabilities than the group of cultural workers. Where accommodation and food services sector has -4.7% less probability, followed by information and communication with -2.5% and the real state sector with -0.6%. However, the p-value

shows that the last two are not significant. Therefore the only valid analysis should be done for the accommodation and food services sector. The explanation could be based on the fact that the accommodation sector is stationary and highly sensitive to tourist flow, which generates many job schemes for a short period (C. C. Williams & Horodnic, 2017), which presumably could not be formal or at least will not be protected under social security.

Additionally, food services in countries of the Global South rely heavily on informal food markets as a source of food and additionally as a selling point for micro-farmers (ILO, 2020). Those workplaces and occupations are highly informal, and therefore one could expect that there are no structured job schemes or contracts, which would eventually relates with low probability of contribution to pensions.

Endlessly, considering the sectors of the economy compared with the cultural sector, 15 out of 20 are statistically significant. Then, 93.3% of the significant sectors of the economy correlates with better probabilities of contributing to pensions than the cultural sector.

### 4.8.2 Predictive Models for Cultural Workers´ Pension

Having answered the first investigation question, the remaining two questions will be evaluated using statistic learning, more specifically supervised learning. The second question of investigation predicts the significant variables that correlates with the contribution of pensions of cultural workers, and the third one looks for the difference between the predicted variables of cultural workers and non-cultural workers.

The importance of the predictive methodologies relies on replicating the models with a different database, but expecting the same results. For that reason, this section explores different predictive techniques to the probability of contribution to pensions, using i) Regression Trees and ii) Random Forests.

#### Regression Trees

The aim is to comparatively focus on cultural and non-cultural workers and predict which variables correlate with the probability of contributing to their pensions more sensitively. For that matter, this investigation applies regression trees. With this methodology, it is possible to unveil the interactions between predictors and the probability of contribution to pensions for cultural workers.

Additionally, since regression trees are not parametric, the sample distribution does not need to fulfil any assumption on its form.

In general, when applying regression trees, the data splits into two groups by finding the value of the primary independent variable (predictor) that provides the smallest sum of square residuals (SSR). As the variables of this model are dummy variables, they can only assume values 0 or 1. Consequently, the threshold splitting of the data is 0 or 1 for each significant variable, and calculate the sum of squared residuals. To avoid overfitting the model, this study defines a minimum amount of observations for a split, so then it is possible to replicate the regression tree in other data.

The model is trained, using 80% of the sample, and later tested using the whole sample to predict the probability of contribution to pensions of cultural workers. The results can be graphically expressed as:

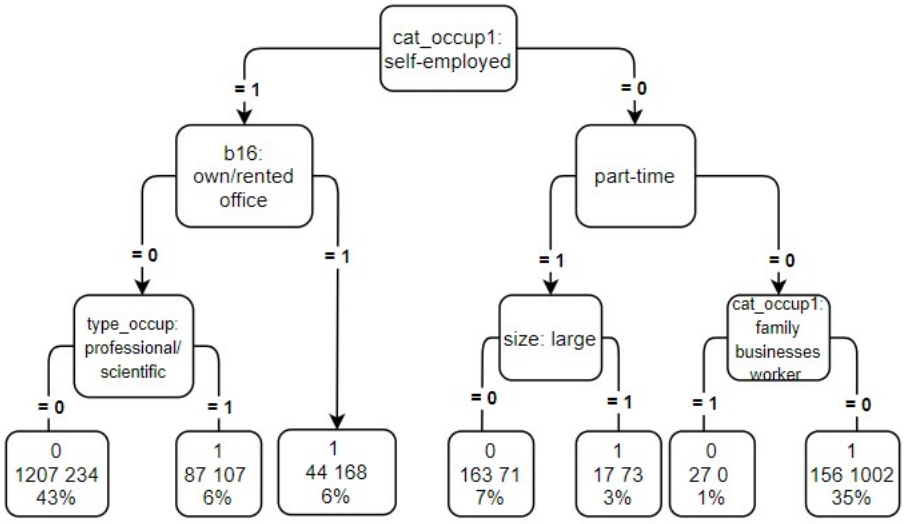


Table 4.23: Regression Tree for Cultural Workers.

| Categories Interaction | Predicted | Actual/Total (%) |
|---|---|---|
| Self-Employed, No Own/Rented office, No Occupation Professional Scientific | Do not Contribute | 43% |
| Self-Employed, No Own/Rented office, Occupation Professional Scientific | Contribute | 6% |
| Self-Employed, Own/Rented office | Contribute | 6% |
| No Self-Employed, No Part-Time, No Family Worker | Contribute | 35% |
| No Self-Employed, No Part-Time, Family Worker | Do not Contribute | 1% |
| No Self-Employed, Part Time, Large Companies/Institutions | Contribute | 3% |
| No Self-Employed, Part Time, No Large Companies/Institutions | Do not Contribute | 7% |

Table 4.24: Regression Tree Summary for Cultural Workers.

Based on the regression tree results, the most relevant predictor correlating with the probability of contribution to pensions is self-employed, representing 55% of the cultural workers. However, the most relevant aspect here is the interactions between different categories that are associated to a scenario where the cultural worker contributes to their pensions. Then, for those self-employed workers, if they use an own or rented office as a workplace, they are associated with contributing to their pensions, representing 6% of the sample. In that case, a category often associated with informality (self-employed) interacts with one attributed to a more formal workplace (own/rented office).

On the other hand, those self-employed workers, who use a different workplace than their own or rented office, but works as a professional or scientific occupation, are related to contributing to their pensions, also representing 6% of the sample. For this scenario, there is one informal category (self-employed), interacting with the possibility of all the different categories of workplace that are not own or rented office (office or employer/client, house of employer/client, place annex to own household, own household, street and constructions/mines), which can be either formal or informal workplaces. These two categories (one informal and one mixed) are combined with a formal category, professional or scientific occupation, which correlates with the outcome of contributing to pensions. Incorporating professional and scientific occupations can be linked to contribution, as that type of occupation is related to formal sectors, especially considering

cultural workers in those areas, such as researchers in the field.

For those who are self-employed, and have a different workplace than own or rented office, and a different occupation than professional or scientific, the related scenario is that they do not contribute, this interaction of categories represents the largest group of the sample, 43%.

For those who are not self-employed but part-time workers, the determinant category is if they work in large size companies/institutions or not. Then, those part-time employers working in large companies are related to contributing to pensions, while those part-time workers in size different than large do not, representing 3% and 7% of the sample, respectively. Often, large size companies/institutions are related with more formal schemes of job, and structured contributions to the social security of their workers. Therefore one could expect that workers contribute to their pensions, regardless if they are part-time. On the other hand, those part-time workers in middle and small-sized companies/institutions are not associated to contribute to their pensions, as they have more flexible and sometimes informal structures.

Finally, those who are not self-employed and do not work on a part-time scheme are determined because they work for family businesses. Those who work in family businesses correlates with not contributing to their pensions, representing 1% of the sample. This group of individuals can often experience work relationships among family members that can be informal and even on a verbal agreement.

While those who are not self-employed, do not work on part-time schemes and do not work on family business represents the second-largest majority of individuals of the sample, with 35%. Moreover, those workers have as an option been employed in the public or private sector, which has a certain degree of formality and relates with contributing to their pensions.

Overall, the most relevant predictor correlating with the contribution to pensions is self-employed, represented by 55% of the sample. Of those self-employed, 43% of the sample are linked with not contributing to their pensions, and 12% of the sample are. On the other hand, no self-employed represents 42% of the sample, where those no self-employed related with contributing to their pensions are 38% of the sample, and those who do not are 8% of the sample. Finally, from the total sample of cultural workers, 50% correlates with contributing to their pensions, and 50% do not.

Additionally, the model's predictive power is 81.8% which represents a high value and reflects the possibility of replicating the model robustly with other databases.

### Random Forests

This study applies random forest methodology to increase the model's predictive power. Random forests provide a solution that incorporates more flexibility, improving the predictive power of the model. However, one is aware that random forests will provide a less descriptive interpretation of results in exchange for a higher predictive capacity.

The results of the most relevant variables (predictors) are ranked in order of those who represent a higher percentage of Mean Decrease Accuracy (MDA). The most determinant variables correlating with the probability of contribution to pensions are based on the percentage increase in Mean Decrease Accuracy (MDA), also called Permutation Importance, which reflects the suitability of the category as a predictor. Then, a high percentage of MDA reflects higher importance of a specific predictor, where the random forest accuracy decreases due to permuting a predictor in out-of-bag samples randomly.

| **Categories** | **% of MDA** | Corr. with *dp* |
|---|---|---|
| 1. *Part − time* | 4.19% | -0.47 |
| 2. *Catocup*1 − *SelfEmployed* | 2.95% | -0.48 |
| 3. *Catocup − Employee* | 2.81% | 0.47 |
| 4. *Workplace − Client/EmployerOffice* | 2.67% | 0.47 |
| 5. *Catocup*1 − *PrivateSectorEmployee* | 2.66% | 0.46 |
| 6. *Catocup − Independent* | 2.37% | -0.43 |
| 7. *Workplace − OwnRentedOffice* | 1.98% | -0.2 |
| 8. *Workplace − OwnHousehold* | 1.83% | -0.32 |
| 9. *Workplace − Street* | 1.83% | -0.31 |
| 10. *Size − Small* | 1.66% | -0.42 |

Table 4.25: Random Forest Top Ten Variables for Cultural Workers.

From the table, it is possible to observe that the most relevant predictors are part-time, self-employed, employee, client/employer office as workplace, private sector employee, independent workers, own rented office as workplace, own house as a workplace, street as a workplace, and small size companies institutions. The majority of these categories are associated with high degrees of informality and intrinsic to the cultural sector.

With these results is not possible to talk about causalities, as prediction models do not reflect that, but it is essential to observe the correlations between the dependent variable and the most relevant independent ones.

In that context, the most relevant predictor is part-time, which has a correlation of -0.47, strong ($>$0.4), suggesting that those on part-time schemes are also prone not to contribute to their pensions. Later, the correlation between the contribution to their pensions and self-employed cultural workers is -0.48, suggesting that being self-employed reduces the probability of contributing to pensions, with a relatively strong correlation. Independent workers have a correlation of -0.43, which means that those workers also have fewer probabilities of contributing to their pensions. For handcrafts as an occupation, the correlation is weaker ($<$0.4), with -0.29. However, the logic remains consistent, where informal occupation, such as handcraft, tend to face scenarios of less contribution to their pensions. Those workers using an own rented office as a workplace have a weak correlation, -0.2, suggesting that those choosing that option as a workplace reduce their probability of contribution to pensions. Again referring to the workplace, for workers using their home as a workplace, the correlation is also weak, -0.32, but also outlines that those using their dependencies as workplace tend to have lower chances of contributing to pensions. Again referring to the informal component of the workplace, where possibly there is no formal declaration that the property can be used as a workplace, so then one could expect that there is also no straightforward procedure to formalise their contribution pensions scheme. Same situation with the street as a workplace, where the correlation is weak, -0.31, suggesting that those street artists have low chances to contribute to their pensions due to the informal origin of their workplace. Finally, small size institutions/companies have a strong correlation, -0.42, also contributing to the intuition that more informal workplaces are often related with lower probabilities of contributing to pensions.

On the other hand, employee as a scheme has a high correlation of 0.47, suggesting that those working with formal contracts will eventually have to deal with the formal aspect of contributing to their social benefits, including pensions. Similarly, clients or employer offices as workplace have a positive and strong correlation of 0.47, which reaffirms the idea that a more formal workplace follows higher probabilities of contributing to their pensions. The same situation repeats for employees in the private sector, with a positive correlation of 0.46. The explanation goes in line with what was previously exposed for employers.

The effect of both positive and negative correlations goes in line with the literature suggesting that more informality on workplaces, job schemes and oc-

cupations tend to be accompanied by low rates of contribution to pensions, and the other way around for those categories associated with more formal attributions, which present a positive correlation suggesting higher chances to contribute to their pensions.

It is interesting to outline the effect of categories associated with the workplace of the cultural worker on the contribution of pensions, as four of the categories are included in the top ten rankings. Additionally, the occupational categories of the workers are determinant, as three of the top ten categories reflect them. However, the most determinant category is part-time as a job scheme, and finally, the company's size is relatively important, as small size companies are included as a relevant category to determine the contribution to pensions, but in the last place. Overall, job schemes, occupational categories, workplace and company size are the most important variables to predict the probability of contribution of pensions of cultural workers.

To test how well this model could be applied to other databases, one could consider the mean of the predicted probability of contribution, observing that the model's predictive power is 84%, representing a solid and robust outcome, higher than the predictive power of regression trees.

Moreover, as the model's predictive power is high, it is expected that these results will remain pretty similar to other databases, which opens the possibility of replicating this analysis to other countries. Reflecting a dilemma for the sector, as the reason why cultural workers struggle with their pensions, is based on informal and structurally intrinsic variables.

### 4.8.3 Predictive Models for Non-Cultural Workers´ Pension

Having answered the question of what are the key variables related with the probability of contributing to pensions for cultural workers, this study moves to the non-cultural workers and aims to answer the third investigation question, which is to see if non-cultural workers also have similar variables or if they differ. If there is any difference, one could presume that there are specific characteristics of the cultural sector that make them unique, and therefore, their situation should be treated and supported separately in terms of pensions. This investigation applies the same predictive models used for cultural workers to answer that question.

**Regression Trees**

Same as how it was done previously for cultural workers, the data is trained with 80% of the sample and then test with the remaining 20%. The results are expressed in the following diagram:

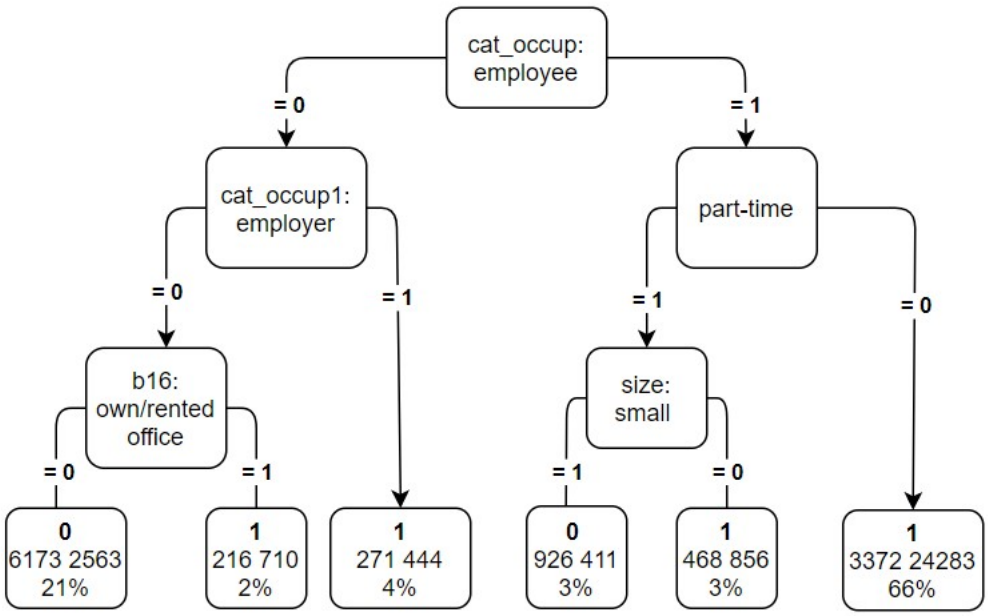


Table 4.26: Regression Tree for Non-Cultural Workers.

| Categories Interaction | Predicted | Actual/Total (%) |
|---|---|---|
| Not Employee, Not Employer, No Own/Rented office | Do not Contribute | 21% |
| Not Employee, Not Employer, Own/Rented office | Contribute | 2% |
| Not Employee, Employer | Contribute | 4% |
| Employee, No Part-Time | Contribute | 66% |
| Employee, Part-Time, Small Companies/Institutions | Do not Contribute | 3% |
| Employee, Part-Time, No Small Companies/Institutions | Contribute | 3% |

Table 4.27: Regression Tree Summary for Non-Cultural Workers.

For non-cultural workers, the most relevant predictors are the category employee, representing 72% of the sample, while other categories different from employee, represents the remaining 27% of the sample.

Those employees that do not work part-time represents the highest percentage of workers, with 66% of the sample, and this group, in particular, relates with the fact of contributing to their pensions. This is an expected result as it is an interaction of two formal categories. Additionally, those employees that work as part-time workers relates differently to their contribution based on the size of their company/institution as a terminal node. Those who work on small-size companies/institutions correlates with not contributing and represents 3% of the total sample. The interaction between employee and the following two informal categories is linked to not contributing to pensions, which is an expected result, as small size companies/institutions are less rigid with the formalization of their contracts, especially for those who are part-time workers. On the other hand, employees who work part-time, but in middle or large companies/institutions, are associated with contributing to their pensions and represent 3% of the total sample, as their employers offer structured contracts.

Later, for those who are not employed, the following internal node is employer, so for those whose employer is their terminal node, their representation in the sample is 4%, and the outcome is a contribution to their pensions. Nevertheless, for those not employers, the terminal node is own/rented office as a workplace, where those employers in their own/rented office relate to contribute to their pensions, representing 2% of the sample. While those who have a different workplaceare associated to not contribute, and represent a significant group of

workers in the sample, 21%.

As a summary, the most determinant predictor is employee, where 72% of the sample is represented. Of the workers in that category, 69% of the sample contributes, and 3% do not. On the other hand, not employee represents 27% of the sample, where 21% of the sample represented by this category do not contribute, and 6% contributes to their pensions. Finally, 75% of non-cultural workers contribute to their pensions, compared to 24% of them that do not.

In comparison with cultural workers, these percentages show significant differences. Firstly, 50% of cultural workers does not contribute to their pensions, compared to 24% of non-cultural workers, which could be attributed to higher levels of labour informality in the cultural sector.

Secondly, the most determinant predictor correlating with pensions for cultural workers was self-employed, a reasonably informal category represented by 55% of the sample. While for non-cultural workers, the most relevant category was employee, a formal category representing 72% of the sample. These results support the idea of a predominant informal sector for cultural workers again compared to non-cultural workers.

Thirdly, the largest group of cultural workers is associated with an interaction of informal variables, particularly self-employed, no own/rented office, no occupation professional scientific, representing 43% of the sample and related to not contributing to their pension. On the other hand, the largest group of non-cultural workers is an interaction of formal categories represented by employees that are not part-time. This group represents 66% of the non-cultural workers, and they are associated to contribute to their pensions. This result reinforces the idea of a highly informal sector for cultural workers compared to non-cultural workers.

### Random Forests

Using the same logic applied to cultural workers, random forest provides the most important predictors linked with the probability of contribution of pensions, but for non-cultural workers, based on the percentage of MDA.

| **Categories** | **% of MDA** | **Corr. with** *dp* |
|---|---|---|
| 1. *Catocup − Employee* | 3.12% | 0.43 |
| 2. *Part − time* | 2.72% | -0.4 |
| 3. *Catocup*1 *− SelfEmployed* | 2.62% | -0.42 |
| 4. *Catocup − Independent* | 2.11% | -0.38 |
| 5. *Size − Small* | 1.8% | -0.41 |
| 6. *Seniority* | 1.66% | -0.42 |
| 7. *Catocup*1 *− PrivateSectorEmployee* | 1.41% | 0.27 |
| 8. *Age* | 1.39% | -0.073 |
| 9. *Workplace − Client/EmployerOffice* | 1.18% | 0.31 |
| 10. *Ed − LowLevel* | 0.9% | -0.25 |

Table 4.28: Random Forest Top Ten Variables for Non-Cultural Workers.

Firstly, is important to remember that the results do not implicate causalities, as predictive models only reflect correlations between the dependent variable and the most relevant independent ones.

In that context, predictors associated with informality are Part-Time Schemes, Self-Employed, Independent Workers, Small Size Companies/Institutions and Low Educational Level. On the other hand, the predictors attributed to formality are Employee, Seniority, Private Sector Employee. And a neutral demographic variable, age.

Considering the correlation of these predictors with the probability of contribution to pensions of non-cultural workers, one can observe that the most significant informal predictor is Employee, which, consistent with the literature, provides a positive correlation (0.43). Compared with the set of predictors of cultural workers, this category comes 7th, which shows a particular focus of relevant predictors for non-cultural workers based on occupational categories, represented in three out of the four most relevant predictors.

In the second place, Part-Time, which has a negative and strong correlation (-0.4), but a reasonably different priority, as for cultural workers this variable rates in second place. This result could be attributed to higher degrees of informality on part-time schemes in the cultural sector than those in other sectors of the economy.

After that, Self-Employed, with a high and negative correlation (-0.42), shares the same position as cultural workers, but with a slightly lower correlation. Later,

Independent workers show a negative and relatively strong correlation (-0.38), in line with the results. Both results show that in the labour market, regardless of the sector of the economy, being self-employed is determinant to predict a contribution to pensions. This result is coherent with the literature as 51% of independent workers (self-employer was defined as a subcategory of it) are in informal jobs in Chile, and 74.9% do not contribute to their pensions (Fuentes, 2010).

Small size companies/institutions have a high and negative correlation of -0.41. This case is different from cultural workers because even though the level of correlation is almost the same, for cultural workers, this predictors ranks 10th. Later comes Independent workers, which also have a reasonably significant and negative correlation (-0.38), with equal importance on both groups of workers (4th for cultural workers and 3rd for non-cultural workers).

The following predictor is seniority, a category/variable that is not represented in the predictive model for cultural workers, with a negative and high correlation of -0.42. A possible reason for the absence of this predictor for cultural workers is that the dynamism of their sector is much higher than the rest of the economy, often jobs are projected based, or cultural workers move to different institutions trying to gather experience or looking for better financial situations. Therefore, cultural workers are not frequently found staying in the same job for several years. Therefore, seniority is not a relevant aspect for them. On the contrary, in other sectors of the economy, the amount of years on the same job positively affects their pensions (Immergut et al., 2007), as the dynamism of the labour market is not as high as the cultural sector, and the schemes are more formal, which one could expect that non-cultural workers will stay longer in their positions, making this predictor relevant to the contribution to their pensions.

In seventh place comes the private sector employee occupation, which has a positive and weak correlation. This is the only category apart from the first predictor that share the same position on both rankings, with the difference that for non-cultural workers, the correlation is weaker. However, as private-sector employees are often related to more formal schemes, the correlation with the probability of contributing to pensions goes in line with the literature, where more formal schemes, occupations, and workplaces are associated with better chances to contribute.

Later, age shows a weak negative correlation of -0.073. As non-cultural workers get older, the probability of contributing to their pensions decrease.

In the ninth place, client or employer office has a relatively weak positive correlation, which is coherent with the fact that it is a formal category. The

result shows that having a client or employer office as a workplace increase the probability of contribution of pensions of non-cultural workers.

Finally, low education level, which has a negative, but not strong correlation (-0.25). Then, low levels of education are related to lower probabilities of contributing to pensions. Additionally, comparing with cultural workers, this is the only predictor associated with education that appears on any of both rankings. This result can be attributed to the fact that in the cultural sector, level of education is not as relevant because the return of the investment of education is low and because of the importance of working experience. In contrast, in other sectors of the economy, the level of education is determinant, as formal education (higher levels of education) potentially brings professional jobs that tend to be more formal, and with more formal schemes comes higher probabilities of contribution to pensions. That is why low levels of education are negatively correlated with the probability of contributing to pensions.

Endlessly, the correlations of the top ten categories are coherent with the fact that they are negative when they are informal and positive when they are formal.

Additionally, the model's predictive power is 86.3& which is higher than the regression trees model-showing that the results from this random forest can predict variables related to the probability of contribution to pensions of non-cultural workers in a robust way.

On the other hand, for non-cultural workers, the predominance of predictors is based on occupational categories, both formal (Employee and Private Sector Employee) and informal (Self-Employed and Independent). The rest of the relevant variables are represented with only one category, such as job-scheme (Part-time), size of the company or institution (small size), seniority, age, workplace (client or employer office) and educational level (low level). Compared to cultural workers, there is a larger group of variables as main predictors correlated with the contribution to pensions. The top ten categories are spread in different types of variables. In contrast, for cultural workers, the predictors are mainly concentrated in the workplace and occupational categories and secondarily in job schemes and the company's size. Reflecting how cultural workers' decision to contribute to their pensions is determined for just a few variables, making it easier for policymakers to focus on and improve the lack of contribution to pensions of cultural workers, previously explained in the literature.

### 4.8.4 Predictive Power (AUC)

This section focuses on the predictive power of the previously analyzed model by observing the Area Under the Curve (AUC) of Logit Model, Regression Trees and Random Forests to conclude which one has better predictive power. When AUC has values closer to 0, the model's predictive power can be interpreted as insufficient, while values closer to 1 are associated with models with good predictive power.

The results can be observed in the following figure:

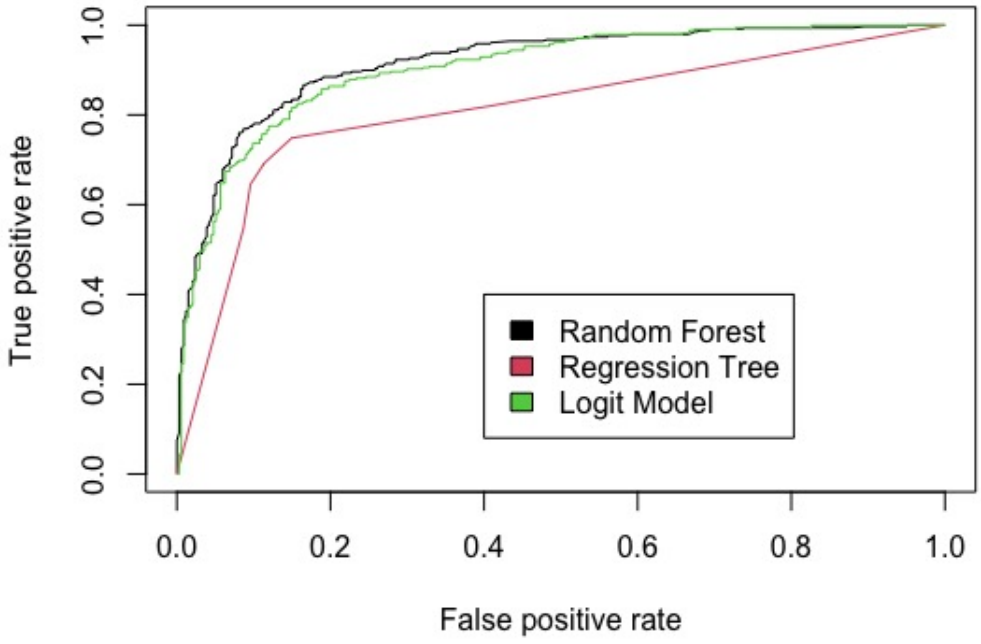


Figure 4.1: Predictive Power of Models on the Probability for Cultural Workers to Contribute to Their Pensions.

From the graph, all three models have predictive power values closer to 1, which shows the good predictive power of all models. Nevertheless, it is possible

to conclude that the highest predictive power is attributed to the Random Forest model with a value of 0.9159, followed by the Logit Model with a value of 0.9029 and finally, the Regression Trees Model with 0.8082.

In the context of a significant linear relationship between independent variables and the outcome, Logit will be capturing a remarkable volume of information. That is why Logit has a high predictive power, same as the ML models.

However, machine learning techniques provide an added value from an exploratory sense. That is why regardless of the good predictive performance of Logit, it is necessary to incorporate Regression Trees and Random Forests. Both machine learning techniques add exploratory approaches to the selection criteria. For example, random forests provide a rank table prioritising the most relevant variables correlating with the outcome and enriching the investigation. Overall, that chance to identify the most relevant predictors is the added value from the exploratory perspective. However, with Logit, it is not easy to conclude and compare the most relevant predictors to predict a specific outcome.

## 4.9 Conclusion

The results of this study provide three relevant outcomes. Firstly, by using a Logit binary choice model, it is possible to conclude that the probability of contributing to pensions for cultural workers is different from workers of other sectors of the economy. Particularly, from 20 compared sectors, 15 were statistically significant, and from those, only one sector had a lower probability of contribution to pensions than cultural workers, accommodation and food services with -4.3% less probability of contributing to pensions. The rest of the sectors all have better probabilities of contribution to their pensions, been Other Services Sector (17%), Wholesale/Retail Trade (16.1%) and Transport and Storage Sector (14.5%) the ones that present the highest differences. Overall, the other 15 sectors, representing 93.3% of the economy, have a better probability of contributing to pensions than cultural workers.

Secondly, through the application of regression trees and random forest, it is possible to predict the main categories of those variables associated with the probability of contribution to pensions of cultural workers.

Regression trees showed the most relevant interactions between categories of variables that correlate with the contribution or not contribution to pensions. For cultural workers, the main category affecting cultural workers is self-employment, representing 55% of the sample, with the highest representation for those self-

employed, with a different workplace than own/rented office and a different occupation than professional scientific. This interaction targets 43% of the sample, and as an outcome, they do not contribute to their pensions. On the other hand, no self-employed represents 46% of the sample, with the most relevant interaction being no self-employed, no part-time, and no family business workers, representing 35% of the sample and contributing to their pensions. Overall, 50% of cultural workers contribute to their pensions, and 50% do not.

For non-cultural workers, the situation is slightly different, as the most determinant category has been employee, representing 72% of the sample. Moreover, the crucial interaction for those employees is employee, no part-time, with 66% of the sample. On the other hand, not being an employee represents 27% of the sample, with the most relevant interaction been not employee, not employer, and workplace different from own/rented office, with 21% of the sample. Hence, for non-cultural workers, those who contribute to their pensions represent 75% of the sample, while those who do not are 25% of the sample.

The most relevant conclusions from regression trees are the difference between the percentage of workers contributing to their pensions, 50% for cultural workers and 75% for non-cultural workers. Additionally, the most important category for cultural workers is a reasonably informal category (self-employed), representing 55% of the sample, while for non-cultural workers is a formal category (employee), representing 72% of the sample. Finally, the most representative interaction for cultural workers (43%) is associated to not contributing to pensions, while the most significant for non-cultural workers (66%) shows the contribution to pensions.

The three conclusions from regression trees suggest that there is a higher degree of informality for cultural workers, which explains the lower probabilities of contribution to their pensions, where two out of four cultural workers will contribute to their pensions, compared to three out of four non-cultural workers taking the same decision.

Random forest individualises each category and shows the main categories of each variable related to the probability of contribution to pensions. The results show that the most relevant predictor for cultural workers is the part-time scheme and for non-cultural workers is employee as an occupation. The interesting fact is that the most relevant predictor for cultural workers correlates negatively with the probability of contributing, while the one for non-cultural workers does it positively. After that predictor, there is no match between any predictor on the top ten ranks. Moreover, in both groups, informal categories are negatively correlated to the probability of contribution to pensions, such as self-

employed, part-time, independent worker, street as workplace, own household as workplace, own rented office and small size companies/institutions. On the other hand, formal categories are positively correlated with the dependent variable. An example of this is the office of employer or client as workplace, employee and private sector employee.

For cultural workers, the predictors are mainly focused on the workplace (office of employer/client, street, own household, own rented office) and occupational categories (self-employed, independent, employee and private sector employee). While for non-cultural workers, the predictors are distributed more heterogeneously on different types of variables, with the predominance of occupational categories (self-employed, independent, employee, private sector employee), size of the company or institution (small), educational level (low level), workplace (client/employer office), job scheme (part-time), seniority and age.

Finally, both groups of workers have more predictors often associated with informality. However, the concentration of categories associated with occupation and workplace shows that the vivid informality and the lack of contribution to pensions in the cultural sector are explained by a few aspects, compared to conventional sectors of the economy, where other variables such as educational level, seniority or age could seem important.

Overall, this study concludes that there is significant evidence to establish a difference in the probability of contribution to pensions of cultural workers compared to other sectors of the economy, wherein general, their probability is lower than non-cultural workers. Additionally, it exposes the most relevant predictors related to the probability of contribution to pensions. And finally, it highlights the difference between the relevant predictors for cultural and non-cultural workers. The structural differences and higher association to informality for the cultural sector prove that the pensions system does not entirely fit this sector due to their singularities. As a result, as often found in the literature, cultural workers struggle with their pensions as they fail to contribute due to the previously exposed reasons.

Moreover, these three key findings push the existing pensions system to consider the unique characteristics of specific industries – like the cultural sector – when designing a pension system to avoid structural precariousness for a particular group of retired workers. Furthermore, having the most relevant predictors identified makes policies towards better pensions for cultural workers easier to construct and implement.

For that matter, establishing a specific support scheme for cultural workers´ pensions can be evaluated as their precariousness and informality make their

pension situation more complicated than most sectors of the economy. Overall, the present study highlights why a specific pension support scheme for cultural workers should be considered. Even considering a pension scheme for informal workers will not benefit cultural workers as much as non-cultural workers, as the informality in the cultural sector affects their workers more than in other sectors.

# Chapter 5

# Equitable Public Funds

This chapter encloses the second article of the study, which investigates the public grants for cultural projects and ways to improve them, considering the selection bias and the high dependency of cultural workers on these funds to develop their projects.

## 5.1 Introduction

This article contributes to bridging the gap on public funding literature in the cultural sector, which is a complex subject of study because of the different approaches on grants for the arts, defined by each country's social, economic, and political position. Moreover, this study applies a probabilistic model to identify the most significant variables affecting the probability of receiving a public granting for an art project, hence for a cultural worker. Subsequently, this research maps the most relevant predictors to the previously mentioned probability using predictive models.

This article is essential for expanding this thesis because it analyses a type of financial support that has not been approached from an econometric perspective. Endlessly, this article shows the actual scenario for those cultural workers that intend to receive grants and probes that public funding is a popular yet unfair mechanism to rely on.

In that context, public funding mechanisms – expressed as monetary support – remains a key component in the cultural sector due to the frequent reliance on them for cultural projects (Crossik & Kaszynska, 2016). Competitive public funding mechanisms continue to support art projects, executing many cultural proposals that would not have been possible otherwise. This public instrument has helped the art sector flourish and be present despite historical branding as an economically non-lucrative sector. However, the competitive component of the funds for the cultural sector has been subject to both support and critiques. On the one hand, arguing that without competition, there will be a culture of economic state dependency by most cultural artists (Matarasso & Landry, 1999). In contrast, other authors argue that the nature of cultural industries promote a poor environment for funding mechanisms profitability, such as sensitivity to economic cycles and budget cuts (Copic et al., 2013; DiMaggio, 1983; Yúdice,

1999), uneven competition among cultural workers (Feder & Katz-Gerro, 2015), short-term attributions (Van der Ploeg, 2006) and instrumentalisation for political or economic purposes (Belfiore, 2004),

This study contributes an empiric and econometric analysis of a competitive funding mechanism in Latin America, using Chile as a case study. Mainly, this investigation analyses the actual mechanisms by doing data analysis of the granted projects of the national funding mechanism – *Fondos de Cultura* – in 2017. By using a Probit choice model, this research explores the variables affecting the probability of receiving support from the competitive funding mechanism, based on variables such as geographic location, the amount granted, the political value of the project, and the experience of the cultural worker. By using this methodology, this article aims to demonstrate that competitive funding mechanisms do not provide sustainable, fair and democratic support to the incomes of cultural workers, impacting negatively those who target their projects to certain production phases, live outside of the capital region, or apply to some specific sub-funds.

The first section is a literature review on competitive funding mechanisms, spanning from definitions, historical overview, general critiques to competitive funding mechanism in the arts, actual mechanisms in the Global North and Latin America, and the particular situation of the funding mechanism of the cultural sector in Chile and critiques associated to it.

The second section shows the actual proposal of this study, including the hypothesis and research questions.

The third section develops the methodology, considering the data collection and the applied model.

## 5.2 Literature Review

This section analyses the prominent literature on public grants, with particular emphasis on the cultural sector. The first subsection covers the definitions and categories attributed to public grants and a brief discussion on the importance of public grants for the art sector. The following subsection is a historical review of public funding in the arts. The third subsection analyses the different critiques of competitive funding mechanisms. At the same time, the fourth subsection talks about cultural institutionalism and the implementation of funding mechanisms in the Global North. Later, the fifth subsection does the same analysis for Latin America. Finally, the sixth subsection focuses on the public grants for the case

study, Chile, and analyses the system's most relevant critiques.

Endlessly, the different subsections generate a coherent framework. This study utilises this framework as a starting point to recognise the current status of public fundings for the arts and why it is possible to find improvements.

### 5.2.1 Definition, categorisation, and the value of public funding mechanisms for the arts

This subsection considers the necessary precedents to begin discussing the competitive funding mechanism for the arts, considering definitions, categories and some of the reasons why the art sector relies on public funding so thickly.

Public support for the arts has been vastly discussed and modelled (Chartrand & McCaughey, 1989; Cummings Jr et al., 1987; Mulcahy, 2000). It can be variably instrumentalised by supply subsidies, tax incentives, regulations and quotas, specific legislations, or rights supporting the sector (Madden, 2009). Subsidies are primarily categorised as direct or indirect subsidies (Toepler & Zimmer, 2002). A direct subsidy is based on the direct government to target-group monetary transfers. In contrast, indirect subsidy considers government intervention not directly involving financial transfers, such as quotas, tax or duty exemptions, and investment loans.

The current research focuses specifically on direct supply subsidies, which are the ones considered in government fiscal accounts as cash payments provided to particular producers (G. Schwartz & Clements, 1999), assuming that payments to consumers – whether in cash or kind – are established as welfare transfers (Pigou, 2013). Direct subsidies comprise several types of funding mechanisms: collaborative, independent, and competitive. Cooperative funding mechanisms are public financial support available for projects or programs of cross-disciplinary or team-based approaches. The funds are not competitive but require establishing a collaboration between different focuses to access the grant. Independent funding mechanisms are grants earmarked for a specific target group, where the number of individuals does not affect the benefit, as they all receive the same grant, such as Universal Basic Income[1] or the benefits from the *Intermittent del spectacle* [2]. Finally, a competitive funding mechanism allows several individuals to compete for the benefit – which is limited to a specific budget – and after

[1] A public mechanism to support all individuals in society with a minimum salary (Standing, 2017).

[2] A public mechanism to support cultural workers in France.

evaluating the proposal, those with better characteristics receive grant pay-out. Here, individual performance and the number of applicants affects the probability of benefit receipt.

The reason to focus on direct subsidies to cultural production is that, in the cultural sector, many countries have chosen competitive funding mechanisms as the primary tool to support art projects and cultural workers. Competition among peers for those grants generates a tense atmosphere in the cultural sector at the moment of applying for financial support, and often causing divisions between experimented and emerging proposals, and between those who know how to use or what is the desire in criteria and those who do not.

Competitive funding mechanisms for the art sector vary on three relevant aspects: Firstly, political context and their relationship with the welfare state and the free market. Where conservative, right-wing governments typically support the arts by funding large institutions and private philanthropy to limit free market interaction. Conversely, social-democratic or left-wing parties support the art sector by promoting disadvantaged cultural initiatives, including emerging artists or non-mainstream artists (Caust, 2015; Harvie, 2015); balancing their presence in the cultural industry compared to mainstream and lucrative art expressions.

Secondly, institutional structures also impact competitive funding mechanisms, ranging from countries with Art Councils that apply an independent arm's length approach to fund cultural projects. And in the other hand, countries preferring Ministries of Culture to manage arts funding, much closer to the political directions of the government.

Lastly, from a political perspective, competitive funding mechanisms are impacted by the structure of the decision making process itself, where countries usually choose between bureaucratic control from the central government to allocate funds or place greater focus on empowering cultural workers and citizens over art funding allocations (Galligan, 1993), creating expert panels, advisory boards and local meetings to guide the cultural policies. The latter achieves a better representation of what communities and local governments need regarding cultural goods and services.

As a result, cultural workers have a heavy reliance on public grants stems from comparatively lower average incomes in the cultural sector than most other sectors. For instance, in 2017, a global study from the Artist-Run Centre and Collectives Conference (ARCA) on funding for the visual sector showed that public funding represented between 65% and 95% of total resources of the cultural institutions (Burgess & De Rosa, 2017). This figure clearly illustrates the level of dependency of cultural organisations and workers on public funding. Addi-

tionally, there is significant competition for funding mechanisms in the cultural sector, which affects the inner collaborative spirit of the industry (Gruber et al., 2018), mainly explained by the oversupply of labourers in the artistic labour market (Caust, 2019). Nevertheless, competitive mechanisms to fund art projects hold continued support in the literature (Matarasso & Landry, 1999), as, in their absence, some artists will remain dependent on non-competitive public funds without incentive toward self-sustainability. Moreover, it has been suggested that competitive public funding mechanisms encourage cultural creators and organisations to follow state-determined 'cultural objectives' when producing projects: allowing some state guidance over the sector. However, this argument does not acknowledge the intrinsically contradictory relationship between state and culture (Nivón Bolán, 2006), where the cultural world has to ensure that artistic rights, cultural cooperation, diversity, sustainable environment, participation, heritage, autonomy and solidarity prevail over KPIs results and instrumentalisation of the policy programme for the arts.

However, the question remains as to why the state should warrant funding for the art sector.

One argument from the literature suggests that the despair growth between productivity – due to a lack of technological input – of performing arts in comparison to their labour costs justify the public subsidy to the art sector (Baumol & Bowen, 1966). However, this argument is contested, stressing the statement that capital will not replace labour in performing arts more easily in the future considering the introduction of new technologies (A. T. Peacock et al., 1969). Furthering this argument, the real reason why prices rise and – therefore why public subsidy to the arts is necessary – is not because of wage inflation, but because of the cost of materials and payment of non-artistic workers (A. Peacock et al., 1982).

Another argument highlights the financial spillover from art production as a sufficient reason to fund the art sector publicly (Robbins, 1971). As museums, theatres, and other expressions of art attract tourism and keep those of high socioeconomic status in the community of the city (Toepler & Zimmer, 2002), thus 'spilling over' and increasing demand for other industries, such as restaurants and hotels. Nevertheless, the literature also criticises this approach, suggesting that positive spillovers are hard to quantify and do not benefit all citizens equally, disproportionately benefiting high-income individuals with greater consumption-power of those 'other industries' regardless of their cultural consumption (A. Peacock et al., 1982).

A final argument for governmental funding of the arts defines culture as a

'merit good (Netzer, 1978) of which the free-market provides more miniature art than the social optimum – and that the allocation of cultural resources is biased toward higher social classes (B. S. Frey, 2020). The justification of better distribution of arts comes from the recognition of a market failure, restricting the optimum level of cultural production for the welfare of society. Moreover, considering actions of the market often lead to an under-provision of specific cultural goods and services (A. C. Pratt, 2007), that is, when funding mechanisms for cultural projects enter into action.

Overall, subsidies expressed as money transfers are the most direct and desired type of public support as they provide freedom to utilise those sources and construct art proposals. Moreover, direct subsidies remain crucial to elevate cultural production closer to the desired optimal level. However, the competitive component of the funding mechanisms is what is put into questions and what will be mainly analysed and evaluated in this study. Furthermore, this study does not discuss indirect subsidies, as they often do not face competitive mechanisms.

### 5.2.2 Historical approach to public funding mechanisms for the arts

This subsection traces the origins of funding and support for the arts, elaborating a descriptive timeline previous to the 17th century until our days.

To understand the origin of funding for the arts and its evolution up to these days, one has to understand the concept of 'artistic patronage' as the first expressions of support for the art sector. Historically, artistic patronage has been seen as status endowment and a way to preserve political power while simultaneously reserving interpretation on high-art expressions to a cultured nobility (Castiglione, 1959) – including painting, sculpture, music, architecture and poetry.

Moreover, old forms of funding the arts were registered previous to the 17th century, which was divided into individual and corporate patronage. Personal patronage allowed the artist into the patron's household in return for providing the patron artistic works on request. Alternatively, the patron could hire the artists for specific work, in which time the artist could stay in the household of the patron. Corporate patronage included guilds, monasteries, convents and city councils commissioning the works of artists (Burke, 2014). From the 17th to early 18th centuries, the state support for the arts moved to the illustrated monarchies of Europe, which assumed responsibility for the creation and patronage of cultural expressions such as libraries, museums, theatres and other forms of cultural

institutions. During the 18th century, incipient cultural bureaucracy stimulated cultural state patronage, setting the interest of rulers within the funded cultural manifestations, a mindset that prevailed for the 19th century and part of the 20th century (Cristián Antoine & Brablec, 2011).

The first attempted bias-reduction was seen in the 20th century. Short after WWII, Lord John M. Keynes – inspired and supported by the Bloomsbury Group – was designated to develop a new model of state patronage for the arts in the UK, which saw the light in 1945 with the creation of the Art Council, which remains active until these days. The institution supports and funds the arts in the UK to make culture accessible to everyone and protect its national identity symbolism (Upchurch, 2004). These arm's length or semi-autonomous government bodies provided a benchmark for funding mechanisms of the arts globally through their ability to reduce political bias for grants.

Later, France's Ministry of Cultural Affairs was established in 1958. The Ministry had a different institutional structure to its UK counterpart, following the principle of 'giving back the culture to the people' and functioning as a benchmark for unbiased cultural funding (Wangermée, Gournay, et al., 1991). André Malraux, Minister of Cultural Affairs from 1958 to 1969, promoted a democratic dominant policy relying on three major principles: democratise, disseminate and create (Ory et al., 1986). With these three principles, Malraux believed in supporting a 'universal world of art'. His view was explained by the dynamic adventure of human history itself (Allan, 2009), which generates constant change and creates new forms of cultural expressions. Keeping this broad approach to the arts, Malraux provided financial certainty to the funds of the cultural sector with the inclusion of a five-year cultural programme into the following 'National Equipment and Modernisation Plan', implementing – among other policies – The Artistic Education and Production Services responsible for encouraging new art forms and expressions (French Embassy, 1964).

The established posture on cultural governance was reinforced by the rise of the welfare states in the 1950s and 1960s, with policies on art production, participation, social programs promoting creativity among communities and more exposure of children to the arts (D. Throsby, 2001). Furthermore, identifying a social return from the cultural production (Becker, 2009), justifying cultural investments based on the benefits on education and equality that culture can provide.

In the 1970s', policies adopted more market-driven tendencies during the financial crises in several countries, as a result of government funding cuts (McGuigan & Mcguigan, 2012). Finally, in the following decades, neoliberal

and free-market tendencies became the norm in most industries - particularly in the cultural sector, where opportunities to monetise became apparent.

From an international perspective, UNESCO's creation in 1946 put culture as an engine of development for societies and an instrument of diplomacy to interact with other countries (Cummings Jr et al., 1987), serving the purpose of establishing educational and cultural guidelines worldwide (UNESCO, 2017). Additionally, one of the milestones that increased institutional support of cultural projects was the UN inclusion of culture as one of the rights in the Universal Declaration of Human Rights (UN, 1948). This action set the need of governments to guarantee the access of culture to their citizens, necessitating a constant supply of cultural expressions, emphasising the necessity of building robust fund mechanisms for the cultural sector to meet demand.

Reinforcement of an international guideline in the matter came in 1970, with the Intergovernmental Conference on Institutional, Administrative, and Financial Aspects of Cultural Policies in Venice. The results of that conference suggested, among other resolutions, three relevant aspects for this literature review. Firstly, that Member States are committed to developing mechanisms to support the talent of creative artists. Secondly, Member States have to consider involving creative artists in designing and applying cultural policies targeted to them. And thirdly, that Member States should compromise an appropriate fraction of the national budget to develop cultural policies (UNESCO, 1970).

Finally, the World Conference on Cultural Policies, held in Mexico in 1982, established the guideline for cultural policies in the following years worldwide, with particular emphasis on public planning and funding of cultural projects and international cooperation to support culture development (Zurita Prat, 2012).

Endlessly, the historical transition of public support for the arts has introduced neo-liberal economic indicators (KPI) as an objective yet simplified method of evaluating the arts and their funding mechanisms. As a result, current cultural policy marries a mix between artistic merit and economic performance.

### 5.2.3 Critiques to competitive funding mechanisms

This subsection outlines the most relevant arguments criticising the competitive aspect of funding mechanisms in the art sector. There are several critiques of competitive public funding mechanisms for the art sector.

The instrumentalisation of cultural projects, using economic drivers instead of artistic ones, could affect the distribution of grants on funding mechanisms, improving the chances of getting the grant for those projects that were more

profitable. In this context, when the neo-liberal model started to permeate the cultural sector in the 1980s, the cultural sector was redefined as 'creative industries', and market-oriented cultural policies, including the criteria for the public funding mechanism, were introduced (Belfiore, 2004; Garnham, 2005; McGuigan & Mcguigan, 2012). Problematically, funding mechanisms might preferably support cultural projects with good economic profitability, also because such variables are easier to operationalise (C. Gray, 2007), potentially affecting the artistic proposal to prioritise economic attractiveness over artistic value (Gilfillan & Morrow, 2018). This criterion may bias the type of projects created. Overall, artistic projects may be thought of as fitting into three interconnected spheres (Holden, 2016): 'home-made', 'publicly funded', or 'commercial' culture. The two last concepts have agents deciding what to fund or produce, whereas the artistic value of 'home-made' culture is determined by the viewer and/or cultural worker independently.

Closely related to the economic argument is that public funding mechanisms and cultural policy, in general, are at high risk of politicisation. It is not unusual to identify funded projects related to certain political tendencies or following specific criteria of government or institutional programmes of the Ministry of Culture, which shape cultural practices and the definition of projects by administering financial rewards to subjectively favourable causes (T. Bennett, 1992). A pragmatic solution to reduce the political influence on the selection of cultural projects may be to implement arm's length institutions, which are related to the Ministry of Culture but are apolitical and legally independent of government (Neil, 2019). Such an institution designates a politically independent panel of peers and independent experts to administer funding based on artistic merit and value. Successful examples of such institutions can be seen in Estonia, Canada, Australia, the UK and Scandinavian countries.

For both cases of instrumentalisation, the financial independence of cultural workers is key to avoiding economic and political influences on artistic expression. It is, therefore, necessary to diversify income sources of cultural workers, incorporating both public and private sources (Shaheed, 2013). This aspect is paramount, as instrumentalisation of cultural funding may pose a democratic dilemma if cultural expression becomes indirectly infringed (Lacarrieu et al., 2018).

Current funding mechanisms also generate issues within the cultural sector, by, for example, forcing competition between applicants of public funds; particularly harmful for the culture sector, which traditionally values inter-collaboration due to its highly atomised structure: composed mainly of micro and small organi-

sations (Burgess & De Rosa, 2017; O´Connor, 2010). Consequently, the number of applications to public grants is directly correlated to the number of small organisations, whose significant volume causes competition and poses difficulty for fair selection practices. Such a saturated market is also particularly detrimental to emerging cultural workers with no networks and little experience in funding applications – resulting in disproportionately more successful claims for funding by large organisation despite these constituting a much smaller portion of the cultural sector (Feder & Katz-Gerro, 2015). Such practices have resulted in the monetisation of applying for cultural funds, with frequently successful applications gaining paid advisory 'consultancy' roles as experts in funding applications. This initiatives further exacerbates the issue, as cultural workers who can afford consultancy services are often better established. This situation generates distortions to the distribution of public resources, as the grant might be assigned to a project with low value but high expertise on the application platform over a project with high value but low success rate for funding applications (Baldin & Bille, 201; Wassall & Alper, 1992). Here, segregated funding mechanisms for unknown artists may be beneficial, especially when large cultural institutions can self-sustain. Then in the context of this critique, public policy – represented as funding mechanisms – fails in two crucial aspects; firstly, by reducing diversity as grants become concentrated to a few cultural proposals – mostly large institutions – and secondly, by failing to support emerging artists as their lack of network and experience: reducing their chances of successful funding applications.

Additionally, it is problematic that granted funding is often concentrated in urban areas, causing some authors to propose disaggregation of competitive funds from national to regional or even local level (Copic et al., 2013). By doing so, the cultural policy ensures that proposals from all areas would be taken into consideration, democratising the process of participation (Vich, 2013). It also increases access to the funding process; for example, local Ministry of Culture representatives would implement workshops to teach local cultural workers how to apply for grants and access public funds successfully. The reality is the opposite for cultural workers in metropolitan areas, where they are closer to cultural hubs and networks and are more familiar with the application process, increasing their chances of receiving a grant.

A critique related to a more practical aspect is that current funding mechanisms are impractical for and out of sync with the working style of the culture industry. This weakness is partially due to yearly one-off grant transfers to cultural workers heavily relying on public funding. Moreover, funding based on yearly competition is a diallelus, as one-off grants sustain cultural workers reliance on

yearly grant applications to ensure their incomes. This issue may arguably affect the creative process of cultural workers as they struggle to find funding: spending a substantial amount of time applying for public grants and modifying or standardising their creative proposals to increase their odds of securing funding. This argument contradicts the actual motivation of funding mechanisms, which is to promote creativity. Here, empirical evidence suggests that the current situation is unhelpful: that if the artists' income increases (up to a certain level), artistic production follows; without reducing quality or quantity of work (D. Throsby, 1996; Towse, 2001) suggesting that optional funding mechanisms could be considered. Another argument illustrating the unsustainability of these competitive funds is the dependence of this mechanism on economic cycles, with significant funding cuts, as most countries do not prioritise culture in their public budget planning (Ruppert, 2006; Wyszomirski, 2004).

Such critiques sparked a wealth of suggested alternative mechanisms to increase the support of public funding, such is the case of the National Lottery in the UK, distributing money to the good-cause sector, where initially 20.7% of the resources were transferred to the art sector, establishing a competitive mechanism where applications have to demonstrate value for money and impact on audience (Creigh-Tyte & Gallimore, 2000), complementing the support from the Art Council. Another example is a regional structural fund - called the Creative Europe Programme, which complements the national fund mechanisms for the arts in Europe with a budget of 1.8 billion euros for project grants (Bruell, 2013).

Finally, for some countries, the difference between federal states and centralised state is a relevant aspect to consider alternative support, as federal states provide more funding options because the public support does not come from a unique donor (B. S. Frey, 2020) such as the central government. Moreover, there are different layers of public support in federal states, such as national, state, regional or local. Then countries that are not federal can emulate this structure for funding purposes.

Overall, this subsection highlights the criticism of competitive fundings in the cultural sector, which, based on the literature, has significant space for improvement to endlessly transform those public mechanisms into a more fair, egalitarian and accessible system.

### 5.2.4 Cultural institutionalism and funding mechanisms for the arts in the Global North

This subsection outlines public funding mechanisms in countries of the Global North. It is worth considering that despite these countries sharing a joint economic and political stability, their approach towards art and the cultural workers varies significantly; therefore, it is vital to analyse them on a case-by-case basis.

Beginning in the United States (US), funding mechanisms particularly encourage free-market enterprise of artistic funding (Wu, 1998). Analysis of the US cultural industries suggests that high free-market involvement may be helpful at the early stages of an industry where many cultural projects are born. However, as the sector matures, it becomes less accessible, as consolidated agents absorb significant shares of the market, making the sector very homogeneous and with fewer actors with larger market share (Lewis, 2000). This situation constrains the market's growth past a certain point, requiring state intervention to promote diversity and support different art expressions, especially those in early stages, which cannot financially sustain themselves.

US state intervention covers a wide range of possible mechanisms, from strong regulations such as censorship to subsidies like direct transfers to cultural workers. Problematically, this approach is regarded as less beneficial for two primary components of a good support cultural policy: diversity and innovation. In the US, State Arts Agencies (SAAs) are the public agencies responsible for the financial support of artists and non-profit art organisations. In the mid 60's and '70s, the funding mechanism was a competitive process, where only the 'best' ones got the grant (J. F. Lowell, 2004). However, two significant problems developed as a result. Firstly, only a relatively small portion of American cultural workers benefited from the participation opportunities of the SAAs, and that group were typically white, well-educated individuals. Secondly, due to the knowledge that SAAs were supporting cultural projects, the supply of art producers increased significantly at a disproportionate rate to SAAs grant increases (J. Lowell, 2008); provoking an oversupply of cultural projects and workers looking for funds.

Moreover, the funding mechanism of the SAAs failed to commit to their four internal goals as the criteria to grant art projects initially was funding large organisations related to 'high-art', such as symphony orchestras, museums and prestigious theatre and ballet companies. Only after they expanded their budget when their funding criteria moved to local artists and arts organisations, considering cultural minorities, community organisations and school (J. F. Lowell, 2004).

Similarly, the UK Art Council is responsible for the distribution of public resources for cultural projects according to an arm's length principle, with relative autonomy from the central government (Quinn et al., 1998). Their funding ecology is based on three main pillars of funding open to different types of applicants, Non-profit organisations (NPO), development funds and project grants. The two primary funding sources are the Grant in Aid, Department for Culture Media and Sport, and National Lottery Good Causes. Most of the resources of the Art Council's funding is distributed to two main programs. First, the National Portfolio Organisations represents a macro-scale funding mechanism, where granted cultural institutions received financial support for four years (Art Council, 2014). A positive aspect of the National Portfolio Organisations is that the money is transferred to the institution. However, it is not directly related to a cultural project, giving those institutions more artistic freedom to invest, which could be cultural proposals that are economically efficient or other proposals that might be more experimental and less popular. A minor program, Projects Grants, oversees micro-scale grants to cultural proposals and arts-related activities, supporting projects spanning up to three years, for anything from £1,000 to £100,000 (Art Council, 2020a).

Projects are separated to either the Art Council or Project Grants depending on their request for above or below £15,000 – with larger projects being reviewed by the Arts Council and receiving more extensive evaluation and longer response-time: however, the four evaluation criteria of quality, public engagement, finance and management remains the same for both pathways.

Both programs have a more extensive period of coverage – at least four or up to three years respectively – eliminating the problem of short-term projects and the economic uncertainty of cultural workers associated with those institutions/projects. Additionally, this time frame shows that both programs are not dependent on economic fluctuations or budget cuts, which is one of the major critiques to competitive fund mechanisms in the art sector (DiMaggio, 1983). Finally, it is relevant to highlight that assigning significant grants to the National Portfolio Organizations and separating grants smaller than £15,000 and larger than £15,000 for the Projects Grants contributes to a more even competition among applicants, as larger institutions compete with each other for larger grants, leaving smaller institutions – asking for lower financial support – do the same between them. The same logic works for cultural projects that require financial support for less than £15,000, as they do not compete with the ones asking for more considerable sums of money.

Despite these positive attributes, several authors have also suggested that

the funding criteria of the Art Council aim for economic benefits rather than cultural value (Belfiore, 2004; McGuigan, 2005), based on their selection criteria and the guidelines of the National Portfolio Organisation, calculating potential earned incomes and how the project will attract incomes from other sources (Art Council, 2020b). Moreover, funding mechanisms in the UK have changed with time: where state support was initially based on a projects artistic or cultural benefit, current state support also requires a benefit to other policies (C. Gray, 2007). Therefore, there has been a call to promote philanthropic fundraising and entrepreneurial proposals as a way to look for alternative funds, rather than give the leading role to competitive funding mechanisms (Cruz, 2016). However, attempts to do this by the voluntary sector has produced increased financial support for large organisations, leaving small art organisations to continue to rely on original public funding (Gordon-Nesbitt, 2012).

The Swedish funding mechanism model has successfully moved from a traditional 'top-down' to a 'bottom-up' funding model by empowering regional and local cultural proposals. A 'Collaborative Cultural Model' instauration promotes Collaborative Council dialogue with municipalities, the local art sector, and civil society. Defining, all together, the most representative strategies to distribute the grants for regional cultural projects (Deloumeaux, 2016). Nevertheless, the last decision on which project should receive the grant is made by The Swedish Arts Council board, using only a reference the consultations to the Collaborative Council. For that reason, representatives from the regional and local government often criticise the model, as the dominance of the Swedish Art Council on regional cultural policy still prevails over the recommendations of local agents (Copic et al., 2013).

Apart from The Collaborative Cultural Model, Sweden also offers a side-funding mechanism for emergent and experimental cultural projects, called 'Kulturbryggan' (the bridge of culture) (Neil, 2019). This cultural policy represents a benchmark for funding mechanisms as competitive funding mechanisms often prioritise cultural projects with experienced cultural workers. Individuals that previously have been awarded grants present a significant number of projects in their portfolio and/or have networks in the cultural sector often have higher chances of receiving these funds. Therefore, by creating a separate fund for emerging and experimental cultural workers, the Swedish Art Council corrects the disparities that competitive funding mechanisms could create.

Finally, the French *Intermittents du spectacle* represents a significant effort from the French government to improve the socioeconomic situation of cultural workers. This cultural policy safeguards cultural workers economic interests

by granting them a salary during unemployment between cultural projects, and through non-lucrative stages of production of cultural goods and services. This cultural policy reflects France's recognition that culture is a crucial component of national identity and heritage (Mah, 2004). To be eligible for the benefits from the *Intermittents du spectacle*, cultural workers have to demonstrate that they worked 570 hours during a continuous 12 month-period in order to access benefits (Service Public Pro, 2016a). Moreover, cultural workers must be registered in *La Sécurité Sociale des Artistes Auteurs*, provide evidence that they do not exceed 208 working hours per month, among other requests, to access the grant (Service Public Pro, 2016b). This mechanism thus addresses today's concerns regarding the artistic field and its interaction with economic and market-based motivation, without taking apart the romantic status of what an independent artist is (Wolff, 1981).

Moreover, the grant supports cultural workers without compromising or influencing their cultural activity, different from the example of competitive funding mechanisms, with all the limitations and critiques mentioned in the previous section. Though reminiscent of unemployment insurance, the characteristics of the cultural labour market, based on cultural projects, requires *Intermittents du spectacle* to work as a non-competitive funding mechanism, covering those periods where cultural workers are creating, producing and designing cultural projects and they are not receiving incomes. In that way, this mechanism provides a series of benefits for the socioeconomic situation of cultural workers. Firstly, it gives a sense of security and reduces the stress of economic uncertainty, affecting the outcomes of artistic proposals. Secondly, it provides cultural workers with artistic freedom as their proposals are not evaluated under an economic performance indicator. Furthermore, artists individually rely on their projects to generate incomes but have the additional security of government support during non-lucrative periods. Lastly, this eliminates the competitive component from the funding mechanism as *Intermittents du spectacle* is universal and has non-exclusion and non-rivalry among cultural workers.

From this brief analysis of funding mechanisms for the cultural sector, it is possible to conclude that even this group of countries are all concentrated in the Global North. Their approach to fund cultural projects and support cultural workers distant significantly, depending on their approach to the interaction between the cultural sector and the free market, the level of intervention of the government on support the cultural sector and how this support is provided, either from a central perspective or from a local/regional perspective.

### 5.2.5 Cultural institutionalism and funding mechanisms for the arts in Latin America

This subsection of the literature review observes the different institutional pathways of the cultural sector in Latin America and how those institutions have implemented funding mechanisms to support the cultural sector.

In Latin America, equality and democratisation were the main drivers to justify a significant market intervention, applying for public cultural fundings during the '60s and 70's decade (Stanziola, 2002). Institutionally speaking, public funding of cultural projects commenced in 1958 when - inspired by the creation of the Ministry of Cultural Affairs in France – Argentina created the National Fund for the Arts (Zurita Prat, 2012). Later, many other countries of the region replicated the model and put the direct funding of artistic creation as a mandatory aspect of cultural policy. Consequently, the region saw the creation of public institutions responsible for the arts in Peru (1971), Bolivia (1975), Cuba (1976), Brasil (1985) and Mexico (1988). Later, at the end of the 20th and beginning of the 21st centuries, several Latin American countries reformed with new constitutions in Colombia (1991), Mexico (1992), Peru (1993), Argentina (1994), Bolivia (2009) and Ecuador (2009). This new constitutional process encouraged the reformation of cultural aspects in society and recognition of a pluricultural state, and the respect and promotion of cultural diversity. The challenge that followed was creating a sustainable, inclusive cultural policy programme, which took two main directions in Latin America (Arango, 2009a).

Some countries took the example of the indirect cultural institutionalism of the British Art Council and the arm's length principle, with Mexico being the first country to establish their Art Council called CONACULTA in 1988, which later changed into the Secretary of Culture in 2015. Later, Chile creates their Art Council in 2003, recently modified to a Ministry of Culture in 2018. On the other hand, those countries that chose direct cultural institutionalism – such as the French model – included Colombia (1997), Ecuador (2007), and Bolivia (2009). In all cases – coincidentally – after writing a new constitution in the country, culture was included as a civic right, enforcing the creation of significant public and political institution in charge of the country's cultural policies.

Later, the arrival of the vision from the Washington Consensus in 1989[3] put into question culture symbolic and aesthetic value. As the neoliberal speech

[3]The Washington Consensus took place to review the ideas of government in peripheral countries of Latin America, and propose a new set of policies for countries of that region(Williamson, 2009).

strengthened, based on weaker cultural sector institutionalism, where the State obligation is to *laissez faire*, as a significant intervention from the public sphere could be considered as a violation to the freedom of expression (Arango, 2009a). Moreover, the establishment of the orange economy and the cost-effective approach on the cultural sector – renamed as creative industries – changed the priority of the cultural programs from patrimony and cultural diversity to innovation and promotion of creativity (interamericano de Desarrollo et al., 2013).

Additionally, the level of intervention from the government depended on the cultural institutionalism of the country. However, continually establishing the economic importance of the sector as the argument to avoid public funding cuts (UNESCO, 1997). From that point, the cultural programs of Latin America experimented with different scenarios. Chile, for instance, promoted the creation of a National Policy Plan for culture, which is a specific objective shared with Brazil, Paraguay and Peru. On the other hand, Colombia and Uruguay suggest a National System for Culture, an initial step to developing a National Policy Plan. In Argentina and Venezuela, basing their systematic policy planning on a mixed funding mechanism between the private and public sphere. Regardless, due to each country's commitment to a National Policy Plan, the regions general goal is to decentralise those mechanisms by collaboratively reviewing the criteria for funds, creating collaborations between the central government and the regional and local cultural authorities.

Overall, Latin American countries share three main institutional principles for culture. i) Promotion of cultural diversity, ii) Protection, valorisation, promotion, and increase of cultural patrimony and iii) Strengthening or development of 'cultural industries'. The promotion of cultural diversity, ethnic pluralism, or indigenous participation is represented in Ecuador, Paraguay, Peru and Venezuela, but is absent in other countries, such as Chile. Secondly, all the region's countries mention the protection, valorisation, promotion and increase of the cultural patrimony. Nevertheless, this institutional principle is only indirectly related to the funding mechanism rather than a separate mechanism to preserve patrimony. Finally, a common ground of the institutional principles is strengthening or developing the 'cultural industries' as previously explained.

It is worth analysing some individual cases of the region to acknowledge that cultural diversity is also projected to cultural policies and how to manage funding mechanisms.

Brazil is one of the most relevant cases as it has been a pioneer in the region in supporting the art sector through different types of mechanisms throughout its history. However, the presidency of Jair Bolsonaro has drastically changed

Brazil's cultural scenario, starting with the dissolution of the Ministry of Culture in January 2019 and the subsequent creation of a joint Secretary of culture, sports, communication and social policy under the name of Ministry of Citizenship. These actions have caused significant detrimental budget cuts for cultural policies and funding for the arts. This milestone is important to acknowledge as this leaves Brazil as one of the dew countries in the world with no active funding mechanism for the art sector. Therefore, the analysis is based on the historical measures that the government took to support the arts before 2019. In that context, the most critical tool implemented to support the arts is the Rouanet Law – established in 1991 – a mechanism to support the cultural sector using tax incentives for legal entities and individuals to partially invest their income tax in cultural projects on Brazilian territory, or related to Brazilian culture abroad (Brum Spirit, 2012), with the Ministry of Culture as an evaluator and following approver of the projects. Nevertheless, the Rouanet Law has been flanked by criticism as most benefactors have been large companies, such as banks, oil companies, airlines and telecommunication (Friques & Luque, 2016) – which caused the Rouanet Law to set a 10% maximum limit deduction from income tax for all benefactors. The law also allows companies to make 'Cultural Marketing' through sponsorship (Friques & Luque, 2016), which can infringe upon the artistic freedom of cultural projects. It also creates a space for middle-man agents who 'sell' the donations of certain companies to particular cultural projects in return for large commissions (Brum Spirit, 2012), increasing the chances to receive the grant for those projects that accept to pay those commissions. Despite questionable incentives, the funding mechanism has proven to be a success. The effectiveness of the Rouanet Law can be expressed in the increase of their funding, which (SÁ-Earp et al., 2012) estimates to a 3500% increase of funds between 1995 and 2011, attributable to a high concentration of performing art productions in the Southeast region of the country.

A significant critique of the Rouanet Law is the concentration of benefited projects in some areas of the country. As the country is distributed in five main regions: North, Northeast, South, Southeast, and Central-West, 80% of the granted projects between 1992 and 2014 came from the Southeast region, and 11% came from the South region (Friques & Luque, 2016). These numbers confirm a constant problem with competitive mechanisms, where cultural workers from areas that are more economically developed have an advantage when applying for grants, so in the case of Brazil, it is no surprise that the most significant cities, like Sao Paulo or Rio de Janeiro, are in the Southeast Region. To mitigate this situation, in 2004, the Ministry of Culture announced the program *Pontos*

*de Cultura*, which aimed to generate cultural hubs around the country to diversify the cultural supply and balance the cultural proposals from other regions of Brazil and protect ancestral traditions, folklore and intangible heritage (Turino, 2013). Moreover, *Pontos de Cultura* showed that expressions and cultural needs of each community were complex and different (Bezerra et al., 2011), so the program allowed citizens to build a representative cultural community and at the same time tell the government how to spend the resources on culture, using a bottom-up process. Complementary to *Pontos de Cultura*, *Cultura Viva* was a cultural policy that used to tight up all the nodes generated by *Pontos de Cultura* and provide a network of cultural hubs. The effectiveness of these two policies working together is mixed as building a network with such heterogenic elements poses the problem that cultural hubs have different levels of commitment and institutional sophistication (Bezerra et al., 2011) creating a gap between the expected result of the policy and reality. Finally, incorporating the territory as a mid-level element generated by the networks, creating customised designs and strategies for each territory, monitored by the local government (Barbosa da Silva & Labrea, 2017). This initiative represents a compelling idea but hard to implement. However, the effectiveness of the policy showed that between 2004 -2011 the program managed to implement 3670 cultural hubs in 1000 municipalities across the country (Brum Spirit, 2012).

Parallelly, *Funarte*, established in 1975, is another funding mechanism from the Secretary of Culture and much older than Rounat Law. This mechanism is responsible for cultural policies supporting the visual arts, music, circus, dance and theatre, excluding architectural heritage and public libraries. Comparatively, Funarte represents 10% of the funds that Rounet Law manages, and lately has perceived a 46% increase on the budget from 2019 to 2020 up to 6.6 million euros (Folhape, 2020) despite the recent institutional debilitation of the arts in the country. However, the scope of the mechanism is different from the Rounat Law, as the government determines the amount of funding for *Funarte*, but *Funarte* define their policies (Canada Council of the Arts, 2000) and also because it acts as a supporting body of cultural projects considered as popular culture and stimulates the artistic output (Stroud, 2013). However, the actual funds show support for cultural workers through scholarships, national awards, artistic residencies, reconstruction of cultural infrastructure, and financial support for international promotion, which are not often related to popular cultural expressions or young artists.

In Peru, the establishment of a public funding mechanism is relatively new. Founded in 2018, the *Estimulos Económicos a la Cultura* provides three com-

petitive main lines of grants, one for audiovisual, phonographic and new media projects, one for art projects and finally, one associated with literature. In 2019, the competitive funding granted 6.5 million euros and received over 2000 applications with 358 granted projects; an acceptance rate of 18%. However, the problem presented by this mechanism is the unbalanced assignation of resources and applications, as 55.6% of the granted projects are for the audiovisual, phonographic and new media projects, 21.5% for art projects and 22.9% for books and literature (P. Ministerio de Cultura, 2019). Another problem is the uneven contribution to different stages of the supply chain where Production receives 63% of the funds, followed by Circulation (19%), Access (13%), Creation (4%) and Education (1%). This distribution can lead to many executed projects with a low audience as Circulation and Access receive secondary consideration from funding mechanisms. However, it is essential to note that the mechanism is only two years old. Parallelly, in 2011 Peru implemented the system of *Puntos de Cultura* – inspired by the cultural policy in Brazil – creating 215 cultural hubs up to date.

In Colombia, the most relevant public funding mechanism for the arts is called *Programa Nacional de Estímulos* (PNE), governed by the Ministry of Culture. They were both established in 1998. The funding mechanism mainly focuses on a natural person instead of a legal person. However, it is possible to apply as groups or legal persons associated with particular cultural projects. The objective of PNE is to mobilise Colombian cultural workers, both nationally and internationally, providing financial support in the form of scholarships, internships, national awards, distinctions and artistic residencies using different lines of action, such as formation, investigation, creation and circulation (C. Ministerio de Cultura, 2019). Last year, the program gave grants for the sum of 4.7 million euros, emphasising the 'orange economy' – attributing 23% of the grant – to develop the creative industries and the economic sustainability of the sector. Nevertheless, it is vital to construct a funding mechanism that recognises the artistic freedom and creative capacity (C. Ministerio de Cultura, 2009), where these characteristics are the primary source for cultural development and where the market does not constitute a valorisation guarantee of cultural projects. However, a report on Colombian creative industries outlines the potential economic benefits from the cultural sector, to renegotiate public budget using the financial contribution of the sector as an argument (de Cultura & Bello, 2003). Even though this argument efficiently convinces policymakers to pay more attention and inject more public resources into the art sector, it forgets the importance of culture as the end for development (UNESCO, 1997). It does not guarantee the development of non-cost-effective cultural expressions.

From the previous examples, it is possible to conclude that in Latin America, the political context or changes in government alters the institutional structure responsible for cultural policies. New constitutions and changes between art councils, ministries of culture and secretaries of culture often contribute to uncertainty regarding how cultural workers will be funded in the future. For that reason, it is necessary to consider state cultural programmes that run independently from the political contingency, as artistic creation cannot be deteriorated because of economic or political reasons. Lastly, it seems from the competitive funding mechanisms of the region that there are two pending matters, previously exposed in the general literature review: firstly, there is a common problem on the concentration of the grants on urban poles; secondly, there is a necessity to re-engage the criteria of these mechanisms towards the aesthetic and symbolic values of cultural projects and lower the relevance of economic and political profit that can be taken from them.

### 5.2.6 Funding Mechanisms for the arts in Chile and critiques to the actual system

This subsection outlines the history of Chile's main funding mechanisms, their evolution and modifications, analyses alternative funding mechanisms and finally offers a critique of the grant policy.

In Chile, *Fondos de Cultura* (Ex-FONDART) is the primary public mechanism to fund art projects. The fund aims to increase and diversify the supply of cultural goods and services, contributing an equal cultural supply growth among regions, provinces, and districts along with the country. Created in 1992, the Ministry of Education first administrated it until 2003, when the Art Council was created, and continue administrating the funding mechanism. Later, in 2018, the Ministry of Culture was established and absorbed responsibility.

*Fondos de Cultura* is aligned with the mission of the Ministry of Culture, implementing public policies for harmonic, pluralist and equitable cultural development. Moreover, the vision of the Ministry of Culture incorporates the promotion of equitable distribution of funds to the regions, reducing the cultural centralism of Santiago. At the same time, it supports the elaboration of investigation and studies on the cultural sector. And finally, it supports cultural management, collaborative work with NGO's, private institutions, civil society and the development of more cultural infrastructure. Overall, the national cultural fund represents a significant economic source for Chile's cultural workers.

In 2014, *Fondos de Cultura* accumulated 34.3% (about 12.5 million euros) of the Ministry of Cultures annual budget.

Regardless of the importance of the competitive fund for the cultural sector, *Fondos de Cultura* has experimented with several modifications in their almost 30 years of existence. The distribution of the funds and the creation and elimination of sub-funds have changed several times depending on the political programme and the authorities in charge of the Art Council – now the Ministry of Culture. For instance, during the government of Ex-President Ricardo Lagos, significant efforts were made to improve FONDART, aiming to duplicate the size of the fund in three years, allocate 30% of the grants to young cultural workers and regionalise the fund more evenly (Garretón & Antonio, 2008). Alternatively, between 2007-2010 a particular subcategory was introduced for projects related to the bicentennial of Chile, with an extended period of project implementation (30 months) focusing on the reinforcement of stable cultural institutions and outstanding artistic casts.

Nevertheless, the implementation of the competitive funding mechanism has not escaped critique. The most constant critiques are aimed at four different aspects. Firstly, the coverage rate is expressed by the fraction of approving projects compared to those applied. Secondly, the preference for profitable projects or well-established institutions as applicants. Thirdly, the concentration of grants in the metropolitan region (Santiago); or the necessity of bottom-up criterion to grant projects. And fourthly, the sustainability of the grants, as the mechanism is a one-off money transfer.

About the coverage rate, it has been consistent around 20% from all the submitted projects for the past ten years (CNCA & Consultores, 2011). In 2019, the coverage rate was 15.5% (OPC, 2019) - suggesting numbers are not increasing. Furthermore, only 36.6% of cultural workers received public support that year (Brodsky, Negron, et al., 2014). These numbers show that the Ministry of Cultures efforts may be insufficient, and input from other contribution channels for a higher support percentage or contribution to the incomes of cultural workers may be warranted. Potential relevant supporting mechanisms may be to either increase fund size or create alternative funds with specific criteria, for example, for regional projects (excluding the metropolitan region) or for emerging artists.

Alternative funds in this matter can contribute with a multiplier effect, making private corporations contribute with grants and financial support for the art sector (Labarca, 1990). In Chile, there have been additional efforts in that direction, the most important mechanism is the Law of Cultural Donations – established in 1991 – a private/public mechanism promoting the support from corporations

or natural individuals to a pool of cultural projects previously approved by the qualification committee of cultural donations (Faúndez, 2008), where selected projects receive 50% of the grant from the donors via tax concessions, of which the State matches the other half.

The potential problem with this type of funding mechanism is the perception of patronage from private corporations, altering the State's role and incorporating the neoconservative doctrine in the cultural sector. As it is possible to transfer the cultural initiative to private companies, diminish the one from the State and control the one from popular sectors (García, 1987), which could be a significant risk of the modus operandi of the Law of Cultural Donations.

Moreover, elitism and influence from privates can encompass the whole spectrum of funding mechanisms (Monsó Espíndola, 2015), including Law of Cultural Donations, but also *Fondos de Cultura*, as cultural elites define the grants of *Fondos de Cultura*. It is not rare to observe cases such as the one in 2015, where *Fondos de Cultura* granted the construction of CorpArtes, the cultural venue of a private bank called Corpbanca, a solid and ambivalent institution. On the other hand, corporative elites define the grants by the Law of Corporate Donations. Moreover, since 2004 the donors tend to group themselves in major corporations or foundations instead of acting individually (Sahli, 2012). This effect could represent a strategy to empower those corporations and influence through their donations determined cultural initiatives, which again harms the artistic or symbolic value of the proposal in favour of other interests.

This kind of example intensifies the idea that funding mechanisms for the arts are gradually more economically and industrial driven, with more applications each year from private universities, mercantile societies, commercial galleries and corporate holdings (Villaroel, 2015). The problem with this type of applicants is that based on the competitive nature of the fund, large corporations have to compete alongside emergent workers and independent organisations, with noticeable results. Overall, based on the elitist critique, there is a high chance that those cultural workers who benefited from the grants are established institutions or professionals with experience and connections, leaving emerging or geographically retired cultural workers in a disadvantaged position. Then, the result is that the funding mechanisms fail to solve the socioeconomic problem of cultural workers. Mainly because cultural workers keep working in second jobs for a steady source of income as the majority fails to get grants because their project is not suitable to the 'guidelines' of the fund.

Regarding the third focus of critiques, the centralisation of the Fondos de Cultura: In 2019, the Metropolitan Region gathered 48% of the fund (OPC,

2019), reflecting that it has not been possible to keep the de-regionalisation policy consistent. Moreover, for that same year, 68.7% of Fondart Nacional and 70.7% of the Audiovisual fund was granted in the Metropolitan Region. These numbers illustrate that it is not only necessary to develop policies with the intention of even regional fund-distribution, but it is also warranted to build infrastructure, promote cultural education (Copic et al., 2013) and socialise and democratise art creation by making cultural goods more available (Arango, 2009a). Consequently, creating cultural hubs within different sub-domains generating significant and competitive demand for those grants in other parts of the country.

Furthermore, the critiques attributed to the interest of funding projects holding political or economic value rather than cultural or artistic value and the centralisation of the fund's management, can be mitigated if the government implements a bottom-up construction of the guidelines of the funding mechanism. In that context, Malucha Pinto – a well-known actress, theatre director and playwright – suggest that the Ministry of Culture should promote collective discussions on cultural policies, what is the long-term policy programme and the role of cultural workers in society (Pinto, 2012). Moreover, the actress mentions that there is no real participation channel for transcendental topics for the country – apart from social media –, these topics are not discussed collectively, and the government is not investing in generating those participation channels. That initial step could attract the interest of local authorities and cultural workers with the guidelines of the cultural policy programme, so the grants are assigned to projects that represent the artistic needs of every region.

A final critique to *Fondos de Cultura* is the sustainability of projects as the grants are a one-off income source that disappears by the end of a year. For that reason, it is necessary to provide a funding mechanism that ensures a constant flow of financial resources for the majority of cultural workers, so they can create projects that are not constrained by all the factors previously mentioned. Moreover, it is essential to consider funding mechanisms for the arts that care about state policies (long-term) rather than governmental policies (short-term) and raise awareness about the socioeconomic stability of cultural workers. Then moving towards long-term financial support for the cultural workers will generate more substantial cultural projects, as participants of the art sector will have a life quality sufficiently good to start making creative and transcendental art.

Based on the previous arguments, one of the possible solutions is to modify the existing mechanism and establish quotas for the emerging artists, restrict the assignation of established cultural institutions and guarantee funds for more extended periods, and monitor the project results. The other possible solution

is implementing a minimum wage for cultural workers, specifically when cultural workers do not perceive incomes, such as production and creation stages. In this context, there are considerable benefits to a minimum wage system. For instance, this mechanism allows sustainable support, as it is a state policy and not a governmental one; not constrained to political influence. Additionally, it improves the socioeconomic situation structurally as the support is not attributed to a specific cultural project, but the cultural workers themselves and finally does not promote competition but collaboration among the sector, because the benefits of a cultural worker are not constrained to the benefit of their peers.

Furthermore, before a public subsidy to the artists, each cultural subdomain must ensure a reasonable investment in infrastructure, securing a proper development for the cultural workers, so then, artists have a field to create, produce and promote their cultural projects. This idea goes in line with the economic theory of the poverty trap (Sachs et al., 2004), where it is possible to observe that no matter how much financial support countries receive from international institutions and core countries, emerging economies will not overcome the poverty line, mainly because there is no previous investment in infrastructure where these funds can be collected and no correct institutionalism where the funds can be managed and distributed. This theory applies to cultural workers and their socioeconomic situation because it helps explain why they need a previous investment in infrastructure, so that cultural workers can overcome their precarious socioeconomic situation by having an appropriate field to develop their creativity and reach proper audiences. Ensuring the sustainability of their projects when the public support comes as direct money transfer to cultural workers or grants to cultural projects.

## 5.3 Research Gaps and Final Remarks

This section comments on the gap that this investigation intends to bridge and offers some final remarks, prior to the methodology section.

Public grants for the art sector is a largely investigated topic; however, most literature focuses on theoretical, ideological and philosophical approaches to funding mechanisms for the arts (Flew, 2004; C. Gray, 2000; Volkerling, 1996; Zimmer & Toepler, 1996). The theoretical bias in the literature is attributed to, as some authors suggest (C. Gray, 1996; J. M. D. Schuster, 1987) that the task of comparing cultural policies – applying a neo-institutionalist approach (Toepler & Zimmer, 2002) – remains highly complex as different countries develop different

cases for funding mechanisms. Moreover, any art ecosystem – including art infrastructure and funding mechanisms – is constrained within its economic and socio-political context (Yong et al., 2016) and that it is, therefore, a mistake to interpret funding mechanisms for the arts as comparable and transferable abstract models due to country-specific cultural idiosyncrasies (Everitt, 1999). For that reason, the literature remains largely rhetorical. Thus, a natural investigation gap arises, as the long-term benefit of competitive funding mechanisms to cultural workers has never been documented nor econometrically modelled.

Thus, this investigation suggests a methodology to map the variables affecting the probability of obtaining a public grant for an art project in Chile. The outcome of this research can potentially improve the structure and criteria of public funding, identifying the most significant variables and set the attention on those variables to make competitive funding more democratic, fair and inclusive.

## 5.4 Proposal

This section establishes that in Chile, the actual funding mechanism for the arts (*Fondos de Cultura*) unequally distributes resources with a short-term thinking design. Consequently, this situation does not improve the socioeconomic stability of cultural workers. Moreover, the Art Council mission´s mentions the implementation of public policies (funding mechanisms) for a harmonic cultural development, pluralist and equitable and promotion of equitable distribution of the budget to the regions, reducing the cultural centralism of Santiago. Then, this investigation analyses if the criteria to award grants to the cultural sector are satisfying these objectives or not by implementing a probabilistic model that determines the chances of cultural projects receiving a grant and the variables affecting that probability.

Moreover, this study incorporates variables representing the characteristics of the applicants and their cultural projects to the national fund for art projects. It uses a Logit regression to determine if the significant variables are coherent with the Art Council´s mission and do not present any distortion or selection bias. Later, this investigation establishes a machine learning model based on regression trees and random forests to identify the most relevant predictors or interactions between predictors of an application determining the probability of receiving a public grant from the Art Council.

Overall, this article aims to prove that *Fondos de Cultura* is not impacting a significant number of cultural workers and is generating problems between cul-

tural workers associated with the competitive nature of the mechanism itself.

### 5.4.1 Hypothesis

Based on the previous section, the hypothesis of this article aims to prove that the funding mechanisms from the Art Council are considering the institution's mission in the selection criteria for cultural projects and ensure an appropriate socioeconomic situation for cultural workers associated with those cultural projects.

The study‘s primary hypothesis is represented in the following equation as:

$H_0$: Mission of Art Council is coherent with the selection criteria of funding mechanisms

$H_1$: Mission of Art Council is not coherent with the selection criteria of funding mechanisms

This study establishes several sub-hypotheses validating the four main components of the Art Council´s mission to prove that hypothesis. Then if that four sub-hypothesis are met, it is possible to conclude that the selection criteria of funding mechanisms are aligned with the Art Council´s Mission. Remarkably, the four main components of the Art Council´s mission are 1) Harmonic Cultural Development, 2) Pluralist Cultural Development, 3) Equitable Cultural Development and 4) Equitable budget distribution to the regions.

Therefore, the sub-hypotheses are established as it follows:

**1st Sub hypothesis**

$H_0$: Harmonic cultural development is considered in the selection criteria of funding mechanisms

$H_1$: Harmonic cultural development is not considered in the selection criteria of funding mechanisms

**2nd Sub hypothesis**

$H_0$: Pluralist cultural development is considered in the selection criteria of funding mechanisms

$H_1$: Pluralist cultural development is not considered in the selection criteria of funding mechanisms

**3rd Sub hypothesis**

$H_0$: Equitable cultural development is considered in the selection criteria of funding mechanisms

$H_1$: Equitable cultural development is considered in the selection criteria of funding mechanisms

**4th Sub hypothesis**

$H_0$: Equitable budget distribution to the regions is considered in the selection criteria of funding mechanisms

$H_1$: Equitable budget distribution to the regions is not considered in the selection criteria of funding mechanisms

### 5.4.2 Research questions

1. How does the actual funding mechanism not contribute to the socioeconomic situation of cultural workers?

2. What modifications to the existing system can improve the contribution to the socioeconomic situation of cultural workers?

3. Why a direct funding mechanism to the cultural workers (not the artistic projects) can improve their socioeconomic situation?

4. How does a previous investment in infrastructure ensure an adequate minimum wage for cultural workers?

## 5.5 Methodology

This section covers the methodology behind this second article, describes the data collection process and provides a recounting of the variables from the database.

### 5.5.1 Data Collection

This study first analyses the actual mechanism through a database of the granted projects constructed from the Ministry of Culture publications for 2017. The database is divided into subfunds based on cultural subsectors and categories based on what the applicants need to fund. Overall, the database provides over 13,500 applications, which rather succeed or failed to be granted.

About the adequacy of the database, one has to consider that this information represents the most significant public funding mechanism for the art sector. Therefore it is natural to target this database and not other ones based on secondary support mechanisms for art projects. Additionally, due to its importance for the art sector, the Ministry of Culture ensures that all the information presented in the database is accurate and reliable. Generally, after their annual publication, other independent or private organisations related to the cultural sector analyse that data for statistic analysis on the criteria that the public sphere uses to support art projects. Therefore, the Ministry of Culture needs to keep a high-quality database.

On the limitations of the database, one could mention the difficulty of comparing applications from one year to another, which would have been a very insightful analysis due to the availability of the data. However, each year the presentation of the data changes, adding or eliminating certain variables. Additionally, the application categories are constantly reviewed. From one year to another, one could expect that some categories have been added, split, merge or eliminated, difficulting the process of year-on-year comparison.

Finally, the risk of using this particular database relates to the fact that it is only representative of a specific year. Hence, the results of the applications could be biased towards political incentives of that particular period, because of the government in charge of the cultural policy program established in that period. Considering that cultural policy guidelines are four years long in Chile, affecting the criteria of public funding for the art sector and public investing, exhibition, and other components.

### 5.5.2 Variables Description

This subsection describes variables analysed in this study. The variables from the database outline the characteristics of the project, the responsible of it and the fund and sub-fund where the application is allocated. All these variables help to understand which ones affect the probability of receiving a public grant and which ones do not. Additionally, the database provides information on the projects that were and were not selected.

$$Dp = \begin{cases} 1 & \text{if} \quad \textit{The project is selected}, \\ 0 & \text{if} \quad \textit{The project is not selected or in waiting list}, \end{cases}$$

**A. Demographic Indicators**

$$Gender = \begin{cases} 1 & \text{if} \quad \textit{The applicant is female}, \\ 0 & \text{if} \quad \textit{The applicant is not female}, \end{cases}$$

$$Type = \begin{cases} 1 & \text{if} \quad \textit{The applicant is a natural person}, \\ 0 & \text{if} \quad \textit{The applicant is not a natural person}, \end{cases}$$

**B. Production Phases**

$$Creation = \begin{cases} 1 & \text{if} \quad \textit{If application is for creation phase}, \\ 0 & \text{if} \quad \textit{If application is not for creation phase}, \end{cases}$$

$$Production = \begin{cases} 1 & \text{if} \quad \textit{If application is for production phase}, \\ 0 & \text{if} \quad \textit{If application is not for production phase}, \end{cases}$$

$$Dissemination = \begin{cases} 1 & \text{if} \quad \textit{If application is for dissemination phase}, \\ 0 & \text{if} \quad \textit{If application is not for dissemination phase}, \end{cases}$$

$$Exhibition = \begin{cases} 1 & \text{if} \quad \textit{If application is for exhibition phase}, \\ 0 & \text{if} \quad \textit{If application is not for exhibition phase}, \end{cases}$$

$$Consumption = \begin{cases} 1 & \text{if } \textit{If application is for consumption phase}, \\ 0 & \text{if } \textit{If application is not for consumption phase}, \end{cases}$$

**C. Type of Fund**

$$National\ Fondart = \begin{cases} 1 & \text{if } \textit{If application is for National Fondart}, \\ 0 & \text{if } \textit{If application is not for National Fondart}, \end{cases}$$

$$Regional\ Fondart = \begin{cases} 1 & \text{if } \textit{If application is for Regional Fondart}, \\ 0 & \text{if } \textit{If application is not for Regional Fondart}, \end{cases}$$

$$Audiovisual\ Fund = \begin{cases} 1 & \text{if } \textit{If application is for Audiovisual Fund}, \\ 0 & \text{if } \textit{If application is not for Audiovisual Fund}, \end{cases}$$

$$Music\ Fund = \begin{cases} 1 & \text{if } \textit{If application is for Music Fund}, \\ 0 & \text{if } \textit{If application is not for Music Fund}, \end{cases}$$

$$Books\ and\ Literature\ Fund = \begin{cases} 1 & \text{if } \textit{If application is for Books and Literature Fund}, \\ 0 & \text{if } \textit{If application is not for Books and Literature Fund}, \end{cases}$$

$$Studies\ Fund = \begin{cases} 1 & \text{if } \textit{If application is for Studies Fund}, \\ 0 & \text{if } \textit{If application is not for Studies Fund}, \end{cases}$$

$$Cultural\ Intermediation\ Program = \begin{cases} 1 & \text{if } \textit{If application is for Cultural Intermediation Program}, \\ 0 & \text{if } \textit{If application is not for Cultural Intermediation Program}, \end{cases}$$

**D. Cost of the project**

*Amount = Total amount required*

*Labour = Total amount required for labour resources*

### E. Evaluation

*Score = Total score for the application*

*Feedback = Total feedback value for the application*

### F. Geographic Location

$$RegionX = \begin{cases} 1 & \text{if } \textit{If application is for X region}, \\ 0 & \text{if } \textit{If application is not for X region}, \end{cases}$$

## 5.6 Descriptive Statistics

This section covers the statistics associated with the database, mapping the characteristics of those projects granted and those that do not. From the total sample of 7,871 art projects, 2,789 got granted, and 5,082 did not, representing a rate of success of 35.4% of getting funded.

Moving to descriptive statistics, the first group of variables are related to demographic indicators. The second group is related to the cultural production phases. The third group of analysis consist of the different funds that the project can apply to. The fourth group covers all the variables associated with the characteristics of the project in terms of cost, distribution of the cost and time of implementation. The fifth group covers the aspect of the evaluation of the judges, such as score and feedback. Finally, the last group consider the geographic location of the application.

### A. Demographic Variables

| **Gender** | Granted | Non-Granted |
|---|---|---|
| Male | 68.1% | 66% |
| Female | 31.9% | 34% |
| **Total** | **100%** | **100%** |

Table 5.1: Gender distribution between granted and non-granted applications.

The results for *Gender* shows a predominance of male applicants for both granted and non-granted projects. To a certain extent, the results show no discrimination in terms of *Gender* for those projects that receive the grants as the proportions of male and female remains pretty the same in both groups of projects, with a slight increase of 2% more males in the group of granted projects.

| **Type Person** | Granted | Non-Granted |
|---|---|---|
| Individuals | 78.9% | 79.8% |
| Legal Entity | 20.9% | 20% |
| Blank | 0.2% | 0.2% |
| **Total** | **100%** | **100%** |

Table 5.2: Type distribution between granted and non-granted applications.

In terms of the type of applicants, the statistics show that almost 80% of them are natural individuals in both granted and non-granted projects. However, there is a marginal increase of natural individuals in the non-granted group.

### B. Production Phases

| **Production Phase** | Granted | Non-Granted |
|---|---|---|
| Creation | 34.9% | 38.5% |
| Production | 13.6% | 16.1% |
| Dissemination | 9% | 5.4% |
| Exhibition | 37.5% | 33% |
| Consumption | 5% | 7% |
| **Total** | **100%** | **100%** |

Table 5.3: Production Phases distribution between granted and non-granted applications.

The statistics for the cultural production phases show that *Creation* and *Exhibition* are the most significant percentages in both groups. *Creation* is the largest category for non-granted with 38.5%, followed by *Exhibition* with 33%. On the other hand, *Exhibition* is the immense majority for granted projects, with 37.5%, followed by *Creation* with 34.9%. In both groups, the subsequential category is *Production*, with a slightly higher representation for non-granted projects (16.1%), than for granted (13.6%). Finally, *Dissemination* is the category with less representation, with a lower percentage for non-granted projects (5.4%) than granted projects (9%).

### C. Type of Fund

| **Type Fund** | Granted | Non-Granted |
|---|---|---|
| National Fondart | 16.5% | 10.8% |
| Regional Fondart | 25.7% | 18.6% |
| Audiovisual Fund | 12.7% | 11.5% |
| Music Fund | 16.6% | 15.1% |
| Books and Literature Fund | 26.4% | 42% |
| Cultural Interm. Program | 2.1% | 2% |
| **Total** | **100%** | **100%** |

Table 5.4: Type of Funds distribution between granted and non-granted applications.

The highest percentage on both groups of projects is *Books.and.Literature.Fund* regarding the cultural production phases. However, there is a significant difference in the percentage of this fund, representing 26.4% of granted projects and 42% of non-granted projects. In second place comes *Regional.Fondart* with a higher representation for granted projects (25.7%) than non-granted projects (18.6%). In both groups of projects, the subsequential fund is *Music.Fund*, followed by *National.Fondart* in the case of granted projects, and by *Audiovisual.Fund* in non-granted ones. Overall, the distribution seems more homogeneous for granted projects where no fund surpasses 27%, while for non-granted projects, there is a concentration of application in the *Books.and.Literature.Fund*, and a homogeneous distribution of the other funds. Finally, in both cases, *Cultural.Interm.Program* represents a marginal percentage of 2%.

### D. Cost of the Project

| *Amount* **(CLP)** | **Granted** | **Non-Granted** |
|---|---|---|
| Mean | 11.577.546 | 12.688.397 |
| Min. | - | 2.600 |
| 1st Qu. | 3.144.918 | 4.291.627 |
| Median | 6.478.223 | 7.834.170 |
| 3rd Qu. | 12.866.695 | 14.025.000 |
| Max. | 229.998.916 | 220.000.000 |
| Var. | 384.346.890.012.876 | 409.401.932.955.041 |
| SD | 19.604.767 | 20.233.683 |
| IQR | 9.721.777 | 9.733.373 |

Table 5.5: Summary Statistics of *Amount* for Cultural Projects.

In regards to the *Amount*, on average, non-granted projects are 9.6% higher than granted projects. The same tendency is reflected on each quartile of the sample, except the max amount, which is 4.5% higher for granted projects.

| *Labour* **(USD$ Millions)** | **Granted** | **Non-Granted** |
|---|---|---|
| Mean | 3.031.884 | 2.558.538 |
| Min. | - | - |
| 1st Qu. | - | 1.477.133 |
| Median | - | - |
| 3rd Qu. | 2.970.000 | 2.648.800 |
| Max. | 111.407.845 | 91.542.000 |
| Var. | 66.142.618.907.918 | 45.252.669.767.762 |
| SD | 8.132.811 | 6.727.010 |
| IQR | 2.970.000 | 2.648.800 |

Table 5.6: Summary Statistics of *Labour* for Cultural Projects.

On average, for the case of *Labour*, granted project ask for a higher amount for labour costs than non-granted projects, specifically 18.5%. This tendency is also reflected in the third and fourth quartile of the sample. Additionally, the standard deviation of labour cost is 20.8% higher for granted projects.

## E. Evaluation

| *Score* **(USD$ Millions)** | **Granted** | **Non-Granted** |
|---|---|---|
| Mean | 95 | 75.8 |
| Min. | 7 | 0 |
| 1st Qu. | 92 | 70 |
| Median | 96.5 | 82 |
| 3rd Qu. | 100 | 89.5 |
| Max. | 101.1 | 135 |
| Var. | 39.8 | 1377.5 |
| SD | 6.3 | 37.1 |
| IQR | 8 | 19.5 |

Table 5.7: Summary Statistics of *Score* for Cultural Projects.

The statistics for *Score* show that, on average, *Score* is higher for granted projects (95) than non-granted projects (75.8). Additionally, the standard deviation is considerably higher for non-granted projects (37.1) than for granted (6.3). The statistics reflect a more homogeneous and higher score for those granted projects, while non-granted projects have more dispersion and a lower score in general.

### F. Geographic Location

| **Region** | Granted | Non-Granted |
|---|---|---|
| I Tarapacá | 2.3% | 1.5% |
| II Antofagasta | 1.7% | 1.5% |
| III Atacama | 2.1% | 1.8% |
| IV Coquimbo | 3% | 3.8% |
| V Valparaíso | 13.7% | 13.4% |
| VI O´Higgins | 3.3% | 2.9% |
| VII Maule | 2.8% | 3.8% |
| VIII Biobio | 5.5% | 5.1% |
| IX La Araucanía | 4% | 3.1% |
| X Los Lagos | 3.5% | 2.4% |
| XI Aysen | 1.4% | 0.6% |
| XII Magallanes & Antártica | 1.9% | 1.2% |
| Metropolitan Region | 43% | 49.9% |
| XIV Los Ríos | 4.2% | 2.7% |
| XV Arica & Parinacota | 2.6% | 1.7% |
| Blank | 4.9% | 4.7% |
| **Total** | **100%** | **100%** |

Table 5.8: Geographical distribution of granted and non-granted projects.

Finally, *Region* shows a high concentration of the sample in the *Metropolitan.Region* for both cases, with a slight reduction of participation for the case of granted projects (43%), compared to non-granted projects (49.9%). The subsequential region for both groups is *Region.Valparaiso*, with a similar percentage, around 13%.

However, from that point, the rest of the regions show percentages around 5% and below, with especially low percentages on extreme regions, in both north and south. Been the extreme north represented by *Region.AricaParinacota* (2.6%), *Region.Tarapaca* (2.3%) and *Region.Atacama* (2.1%) for granted projects, and representing even a smaller percentage for the group of non-granted projects, with 1.7%, 1.5% and 1.8%, respectively. On the other hand, the extreme south is represented by *Region.Aysen* and *Region.MagallanesAntartica*, showing 1.4% and 1.9% for granted projects and 0.6% and 1.2% for non-granted projects.

Overall, the statistics reflect a high concentration of applications in the *Metropolitan.Region*, followed by *Region.Valparaiso*, both regions located in the centre of the country. On the other hand, extreme regions in the north and south represent the lowest percentages of applications. Finally, percent-

ages for non-granted projects tend to be slightly more concentrated in the *Metropolitan.Region*. As a result, the percentages of all the other regions for that group are lower than their relatives in the granted projects group.

## 5.7 Discussion and Variables Selection

This section focuses entirely on the arguments to include some or all the database variables in the regression models. It is relevant to state that because there are no previous studies using regressions to evaluate the efficiency of public grants to the cultural sector, the inclusion of variables relies entirely on two factors. Firstly, the data available throughout the applications, and secondly, if the variables contribute with comparable information about the applicants.

Starting the variable selection, *Gender* represents an important demographic variable supported for many studies on grants distributions (Lee et al., 2013; Ley & Hamilton, 2008; Van den Besselaar & Sandström, 2015). Even though from the descriptive statistics, there is no evident difference in the *Gender* distribution between granted and non granted projects.

For *Type.Person*, both groups reflect a substantial predominance of individuals in both granted and non-granted projects. Moreover, there is no considerable literature justifying the inclusion of this variable. However, it will be considered from an exploratory point of view to understand if the type of applicant affects the probability of receiving a public grant for cultural projects.

Regarding the *ProductionPhase*, there is no previous record of using the different production phases in a public grant study, especially for the cultural sector. However, in this case, the idea of using the UNESCO cultural production chain, as a reference to categorise the different applications, came to nurture the regression to identify if the judges' criteria are biased towards application focusing on Creation, Production, Dissemination, Exhibition or Consumption.

*Funds* has a relevant contribution as a variable because it reflects different categories based on a regional or national criterion and classifying the various sub-sectors based on artistic disciplines. Thus, this variable can reflect if the judges prefer to accept applications coming from regions different from the metropolitan area and if they prefer applications supporting specific sub-sectors to the detriment of others.

In the case of *Region*, it represents a common demographic variable on grant studies (Hoekman et al., 2013; Janger et al., 2019). For this article, the variable contributes information on the origin of each application and can disclose if the

judges hold preferences for applications of certain regions.

Finally, *Score* appears with tautological importance as many studies on grants incorporate this variable with a vital significance (Eblen et al., 2016; Harrington, 2011). In this context, one could expect that applications with a high score will often have higher probabilities of been granted.

These are the variables incorporated from the database. However, through the database treatment, this article creates additional variables that help to make the models more explanatory.

## 5.8 Models Choice and Database Treatment

This entire section enclose the arguments to implement a Logit regression model, as well as the predictive models. Additionally, this section talks about the design of additional variable taken from the information of the database helping to enrich both the probabilistic and predictive models.

### 5.8.1 Logit Regression Model

This article initially applies Logit Regression Model because the intended objective is to observe the impact of each significant variable on the probability of getting a public grant for an art project. Therefore, the contribution to the probability of obtaining a grant is materialised in the marginal effects of each variable. Overall, this model shows the most significant variables affecting t – positively or negatively – the probability of receiving a public grant for an art project.

This type of model has not been applied to evaluate competitive funds in the art sector. Moreover, the literature on competitive funds mainly applies to scientific and academic contests (Gross & Bergstrom, 2019; Mutz et al., 2015), using Return on Investment (ROI) methodologies, or ex-ante/ex-post evaluation using OLS, to analyse if assigning a grant to a specific project is worth it based on their background and the performance of the project after been granted. This point highlights one of the study's limitations, as the database presents information on the applications for the grants and the consequent resolution but does not hold any information about the performance of the projects or applicants after the grant, financially or socially speaking. Hence, the type of methodologies that can apply to the study is only based on ex-ante information previous to the adjudication of the grant.

### 5.8.2 Predictive Models

In the case of prediction for grants, studies also focus on grants for researchers and academics, using non-parametric tests, Anova and Generalized Linear Models (GLM) (Mutz et al., 2015; Van den Besselaar & Sandström, 2015), under the hypothesis that better projects, gives as a consequence more academic publications and citations.

Overall, the predictive aspect of the methodology presents the same limitation as the Logit model. The estimation of coefficients and later predictors would be elaborated based on ex-ante information as it is not possible to trace the performance of each granted project individually.

### 5.8.3 Database Treatment

This section focuses on the methodology to create two variables from the database that were not initially present and how some categorical variables turned into dummies to process them.

Firstly, to create the variable *Feedback*, this study applies a Natural Language Process (NLP) algorithm. A common technique to understand language text or speech and analyse it through computers for research purposes (Chowdhury, 2003).

In this case, NLP is applied to obtain the sentiments associated with the feedback that the judges provided to each applicant when evaluating their cultural projects. As an outcome, those commentaries could be positive, negative or neutral.

More specifically, this investigation took the feedback for each project, applying text analysis and polarising it into positive and negative commentaries. Each project accounts for up to five commentaries from the judges on different aspects of the projects, such as coherence, impact, career, quality and curriculum. The polarity command takes the group of commentaries for each project and gives a final classification – positive or negative – based on average values on the individual values of each commentary for each art project. The criteria to establish positive and negative commentaries are part of the R command 'polarity', where the algorithm is based on lexicographic dictionaries. Moreover, polarized words have different weights based on an established polarised frame. The values fluctuate from -1 to 1, where -1 is a highly negative commentary, 0 is a neutral commentary, and 1 is highly positive. The command captures the intensity of the feedback based on context cluster, identifying polarized words and the four

words before and the two words after (Hu & Liu, 2004) and assigning a value to that cluster, later repeating that process throughout the commentary and other commentaries. Later, each context cluster of each commentary is summed and divided by the square root of the word count, which endlessly provides a final score for the commentary. The objective of building this variable is to understand how coherent are the judges' criteria with the results of the application, where higher levels of *Feedback* should be related with higher probabilities of receiving a grant.

$$Feedback = Total\ feedback\ value\ for\ the\ application$$

Secondly, to construct the variables *Creation*, *Production*, *Dissemination*, *Exhibition* and *Consumption*, all cultural production phases, this research associated each category from the cultural production phase with each specific subfund from the dataset. By combining the subfunds associated with each cultural projects to a specific cultural production phase, one was able to analyze the application based on the cultural production phase they wanted to be funded[4]. The intention of building these variables is to explore if certain phases of the supply chain of cultural production receive more financial resources than others. If this assumption is correct, it means that not all supply chains have the same probability of receiving a grant. This result stresses the harmonic cultural development, mentioned in the Art Council mission and established as the first sub-hypothesis of this study.

$$Creation = \begin{cases} 1 & \text{if } \textit{If application is for creation phase}, \\ 0 & \text{if } \textit{If application is not for creation phase}, \end{cases}$$

$$Production = \begin{cases} 1 & \text{if } \textit{If application is for production phase}, \\ 0 & \text{if } \textit{If application is not for production phase}, \end{cases}$$

$$Dissemination = \begin{cases} 1 & \text{if } \textit{If application is for dissemination phase}, \\ 0 & \text{if } \textit{If application is not for dissemination phase}, \end{cases}$$

$$Exhibition = \begin{cases} 1 & \text{if } \textit{If application is for exhibition phase}, \\ 0 & \text{if } \textit{If application is not for exhibition phase}, \end{cases}$$

[4]See Appendix 2, for the complete classification of subfunds, based on the cultural production phases

$$Consumption = \begin{cases} 1 & \text{if } \textit{If application is for consumption phase}, \\ 0 & \text{if } \textit{If application is not for consumption phase}, \end{cases}$$

Thirdly, *DiffReg* was designed as a variable reflecting differences between the region where the applicant resides and from where they apply for the grant. This variable is relevant for the study because it shows that some applicants prefer to apply their projects from a different region to improve their chances of receiving a grant. That behaviours implicitly suggest that the funding mechanism might not be equitable in distributing their funds throughout the regions, - stressing the fourth sub hypothesis. Hence, applications from certain regions could experience higher probabilities of receiving a grant than others.

$$DiffReg = \begin{cases} 1 & \text{if } \textit{Residence region different from application region}, \\ 0 & \text{if } \textit{Residence region same from application region}, \end{cases}$$

On the other hand, *diffdays* is a variable constructed based on the difference between when the projects are intended to start and finish. This variable is relevant because it intends to explore if the length of the projects affects the probability of receiving a grant.

$DiffDays = Total\ days\ to\ implement\ the\ project$

Another constructed variable is *DiffAmount*, which is the difference between the asked amount and the monetary contribution from the applicant. This research considers that it is relevant to incorporate this variable to understand, if personal contributions from the applicants affect the probability of receiving a grant.

$DiffAmount = Monetary\ difference\ between\ the\ requested\ amount\ and\ the\ contribution\ from\ the\ applicant$

Finally, a set of variables were reformulated as dummy variables to isolate the effect of their categories individually in the regression. Such is the case for *Gender*, *TypePeople*, each category from *Region*, and each phase from cultural production phases, which was previously explained.

The dummy variables are represented as it follows:

$$Gender = \begin{cases} 1 & \text{if} \quad \textit{The applicant is female}, \\ 0 & \text{if} \quad \textit{The applicant is not female}, \end{cases}$$

$$Type = \begin{cases} 1 & \text{if} \quad \textit{The applicant is a natural person}, \\ 0 & \text{if} \quad \textit{The applicant is not a natural person}, \end{cases}$$

$$RegionX = \begin{cases} 1 & \text{if} \quad \textit{If application is for X region}, \\ 0 & \text{if} \quad \textit{If application is not for X region}, \end{cases}$$

After describing the variables from the database and how this study worked with them, the next step reflects the results from both probabilistic and predictive model, which are outlined in the following section.

## 5.9 Results

This section first shows the logit model results, outlining the impact of those significant independent variables correlating with the probability of receiving a grant by their marginal effects.

Following that analysis, this section article applies regression trees and random forests as machine learning techniques to identify the most significant predictors related to the probability mentioned above.

Finally, a subsection on predictive power compares the different models to conclude which one works better identifying predictors of the probability of receiving a grant, regardless of the applied database.

### 5.9.1 Logit Regression Model

This subsection establishes a Logit regression model to analyse the probability of receiving a grant for art projects.

Moreover, the Logit regression model presents independent variables that deal with a broad range of characteristics, such as demographic variables, production phases, type of funds, project cost, evaluation scheme and geographic location. The model goes as it follows:

**Logit Regression Model 1**

$$Pr(Grant) = \beta_0 + \beta_1 Type.Fund + \beta_2 Creation + \beta_3 Production + \beta_4 Dissemination + \beta_5 Exhibition + \beta_6 Consumption + \beta_7 Type.Person \beta_8 Gender + \beta_9 Labour + \beta_{10} Region.Tarapaca + \beta_{11} Region.Antofagasta + \beta_{12} Region.Atacama + beta_{13} Region.Coquimbo + \beta_{14} Region.Valparaiso + \beta_{15} Region.OHiggins + \beta_{16} Region.Maule + beta_{17} Region.BioBio + \beta_{18} Region.LaAraucania + \beta_{19} Region.LosLagos + \beta_{20} Region.Aysen + beta_{21} Region.MagallanesAntartica + \beta_{22} Region.Los.Rios + \beta_{23} Region.AricaParinacota + \beta_{24} Score + \beta_{25} DiffReg + \beta_{26} DiffDays + \beta_{27} DiffAmount + \beta_{28} Feedback + \xi$$

The results of the regression are presented in the next table:

| Categories | Coef. | Std.Error | Statistic | P-Value | Signif. |
|---|---|---|---|---|---|
| Intercept | -28.2788 | 0.8174 | -34.5951 | 0.0000 | *** |
| *Regional.Fondart* | -1.3450 | 0.25 | -5.3789 | 0.0000 | *** |
| *Audiovisual.Fund* | -2.0043 | 0.1499 | -13.3632 | 0.0000 | *** |
| *Music.Fund* | -2.7487 | 0.1507 | -18.2297 | 0.0000 | *** |
| *Books.and.Literature.Fund* | -0.8355 | 0.1584 | -5.2736 | 0.0000 | *** |
| *Cultural.Interm.Program* | -1.2895 | 0.3726 | -3.4606 | 0.0005 | *** |
| *Production* | -0.5456 | 0.1427 | -3.8210 | 0.0001 | *** |
| *Dissemination* | -0.3097 | 0.1500 | -2.0644 | 0.0389 | * |
| *Exhibition* | -0.9444 | 0.0961 | -9.8261 | 0.0000 | *** |
| *Consumption* | -0.6112 | 0.2184 | -2.7981 | 0.0051 | ** |
| *Type.Person* | -0.0625 | 0.0937 | -0.6675 | 0.5044 | |
| *Gender* | -0.0834 | 0.0837 | -0.9962 | 0.3191 | |
| *Labour* | 0.0000 | 0.0000 | 0.7792 | 0.4358 | |
| *Region.Tarapaca* | 1.6645 | 0.2772 | 6.0039 | 0.0000 | *** |
| *Region.Antofagasta* | 1.3259 | 0.2762 | 4.7998 | 0.0000 | *** |
| *Region.Atacama* | 2.8833 | 0.3056 | 9.4347 | 0.000 | *** |
| *Region.Coquimbo* | 1.0909 | 0.2212 | 4.9305 | 0.0000 | *** |
| *Region.Valparaiso* | 0.7984 | 0.1255 | 6.3620 | 0.000 | *** |
| *Region.OHiggins* | 1.4833 | 0.2306 | 6.4310 | 0.0000 | *** |
| *Region.Maule* | 0.6765 | 0.1967 | 3.4378 | 0.0005 | *** |
| *Region.Biobio* | 1.3415 | 0.1805 | 7.4306 | 0.0000 | *** |
| *Region.La.Araucania* | 1.0379 | 0.2080 | 4.9893 | 0.0000 | *** |
| *Region.Los.Lagos* | 1.0209 | 0.2126 | 4.7997 | 0.0000 | *** |
| *Region.Aysen* | 2.8732 | 0.4025 | 7.1367 | 0.0000 | *** |
| *Region.MagallanesAntartica* | 0.8869 | 0.2859 | 3.1020 | 0.0019 | ** |
| *Region.Los.Rios* | 1.5160 | 0.2055 | 7.3750 | 0.0000 | *** |
| *Region.AricaParinacota* | 1.8437 | 0.2678 | 6.8833 | 0.0000 | *** |
| *Score* | 0.3150 | 0.0089 | 35.3402 | 0.0000 | *** |
| *DiffReg* | 0.1189 | 0.2330 | 0.5106 | 0.6095 | |
| *DiffDays* | -0.0000 | 0.0000 | -0.7868 | 0.4313 | |
| *DiffAmount* | 0.0000 | 0.0000 | 2.4734 | 0.0133 | * |
| *Feedback* | 1.5094 | 0.2146 | 7.0327 | 0.0000 | *** |

Table 5.10: Logit Regression Results of Variables Affecting the Probability of Receiving a Public Grant for Cultural Projects.

From these results, one can observe that all six variables associated with funds are significant.

Additionally, some of the production phases have a better p-value than others, been *Production* and *Exhibition*, those with higher significance, followed by *Consumption* and lastly *Dissemination*.

In regards to *Type.Person*, *Gender*, this Logit regression finds no significance at all. Therefore, the type of applicant – either legal or natural, and been female or male does not represent any importance to the probability of receiving a grant.

From the set of variables related to the characteristics of the project, *Labour*, *DiffReg* and *DiffDays* probe to be not significant to the probability of receiving a grant. Moreover, *DiffAmount* is only significant to the 5%.

Next, from geographic location group, out of 15 regions, only two regions are not significant - *Region.Atacama* and *Region.Valparaiso*.

Finally, the variables associated with evaluation, *Score* and *Feedback*, are both significant.

The variables that will not be considered in the marginal effects due to lack of significance are *Type.Person*, *Gender*, *Labour*, *DiffReg*, *DiffDays*. Lastly, even though *Region* involves certain non-significant regions, as a whole, it will be considered in the analysis because the large majority are significant.

**Marginal Effects**

The individual effect of each coefficient is represented through the marginal effects. Moreover, the percentua effect on the independent variable are measured using the Average Marginal Effect (AME).

The results are the followings:

| Categories | AME |
|---|---|
| *Regional.Fondart* | 0.1326 |
| *Audiovisual.Fund* | -0.1490 |
| *Music.Fund* | -0.1938 |
| *Books.and.Literature.Fund* | -0.0892 |
| *Cultural.Interm.Program* | -0.1000 |
| *Production* | -0.0586 |
| *Dissemination* | -0.0344 |
| *Exhibition* | -0.1070 |
| *Consumption* | -0.0618 |
| *Type.Person* | -0.0077 |
| *Gender* | -0.0100 |
| *Labour* | 0.0000 |
| *Region.Tarapaca* | 0.3204 |
| *Region.Antofagasta* | 0.2393 |
| *Region.Atacama* | 0.6005 |
| *Region.Coquimbo* | 0.1836 |
| *Region.Valparaiso* | 0.1192 |
| *Region.LGBOHiggins* | 0.2744 |
| *Region.Maule* | 0.1020 |
| *Region.Biobio* | 0.2368 |
| *Region.Araucania* | 0.1730 |
| *Region.LosLagos* | 0.1699 |
| *Region.Aysen* | 0.6013 |
| *Region.MagallanesAntartica* | 0.1436 |
| *Region.LosRios* | 0.2811 |
| *Region.AricaParinacota* | 0.3643 |
| *Score* | 0.0384 |
| *DiffReg* | 0.0148 |
| *DiffDays* | 0.0000 |
| *DiffAmount* | 0.0000 |
| *Feedback* | 0.1842 |

Table 5.12: Marginal Effects of Variables Affecting the Probability of Receiving a Public Grant for Cultural Projects.

Firstly, from the group of variables associated with funds, the results are con-

trasted with the marginal effect of *National.Fondart*. In that context, *Regional.Fondart* has a higher difference in the probability of receiving a grant (20.8%), suggesting that applying to *Regional.Fondart* has 20.8% higher chances of getting accepted than *National.Fondart*.

The sector-specific funds represent negative differences compared to *National.Fondart*. Where, *Audiovisual.Fund* has a difference in probability of -14.9%, *Music.Fund* one of -19.3%, *Books.and.Literature.Fund* has -8.9% and *Cultural.Interm.Program* a value of -10%. Therefore, sector-specific funds provide less chances of receiving grants than *National.Fondart* and by transitivity than *Regional.Fondart*.

Moving on to cultural production phases, the values of the marginal effects are compared to the ones for the *Creation* phase. In that context, all of the other production phases present negative differences. *Exhibition* represents the most considerable difference compared to *Creation*, with -10.7%, followed by *Consumption* representing a negative difference of -6.1%. Later, *Production* has a negative difference of -5.8%, and *Dissemination* has the lowest negative difference with -3.4%. Hence, applying with a cultural project oriented to the *Creation* phase provides better chances to receive a grant than *Disemination*, followed by *Production*, *Consumption* and finally *Exhibition*.

Regarding the geographic indicators, all of the categories have positive differences with respect to *Metropolitan.Region*. In this context, the highest percentages are *Region.Aysen*, registering 60.1% more chances of receiving a grant than *Metropolitan.Region*. Followed by *Region.Atacama*, with 60% more probability than the region of reference. Later, *Region.AricaParinacota* has 36.4% and *Region.Tarapaca* 32% over the reference region. Curiously, the highest percentages are registered in extreme geographical regions, with a high concentration of regions in the north of Chile, except *Region.Aysen*. This result can be attributed to the high volume of applications received by the central regions, making the funds more competitive, reflecting higher chances of receiving grants in more extreme regions with less demographic density.

The variables associated with evaluation, *Score* and *Feedback*, have positive differences, where one unit on *Score* represents 3.8% higher probabilities to receive a grant, and one more unit on *Feedback* contributes with 18.4% more to the chances of receiving funding.

*DiffAmount* previously showed a weak significance and a null effect on the probability of receiving a grant. Hence, the amount of money allocated to the project from the responsible has no incidence on the probability of being granted

Overall, the marginal effects outline that applying to *Regional.Fondart* provides higher chances of receiving a grant than *National.Fondart* and even more

than the sector-specific funds. On the other hand, *Creation* appears as the most significant contributor to increasing the probabilities of receiving a grant regarding the cultural production phases. Additionally, in terms of the country's different regions, this study finds that the more extreme regions, both south and north, have larger probabilities of receiving grants. Finally, the evaluation variables have both positive effects, where higher scores and better feedback improves the chances of receiving a grant, as logic could anticipate.

### 5.9.2 Predictive Models

Following the Logit model, this subsection covers the applications of predictive models, focusing on one hand on regression trees to unveil the most significant interactions between predictors to the probability for a cultural project to receive a grant. And on the other hand, random forests to explain which are the individually most essential predictors correlated with the previously mentioned probability.

#### Regression Trees

Regression trees are the first machine learning technique applied to this study. In summary, this methodology shows the set of interactions between categories associated with different variables affecting more significantly the probability of applying an art project to receive public funding.

The results for regression trees are the followings:

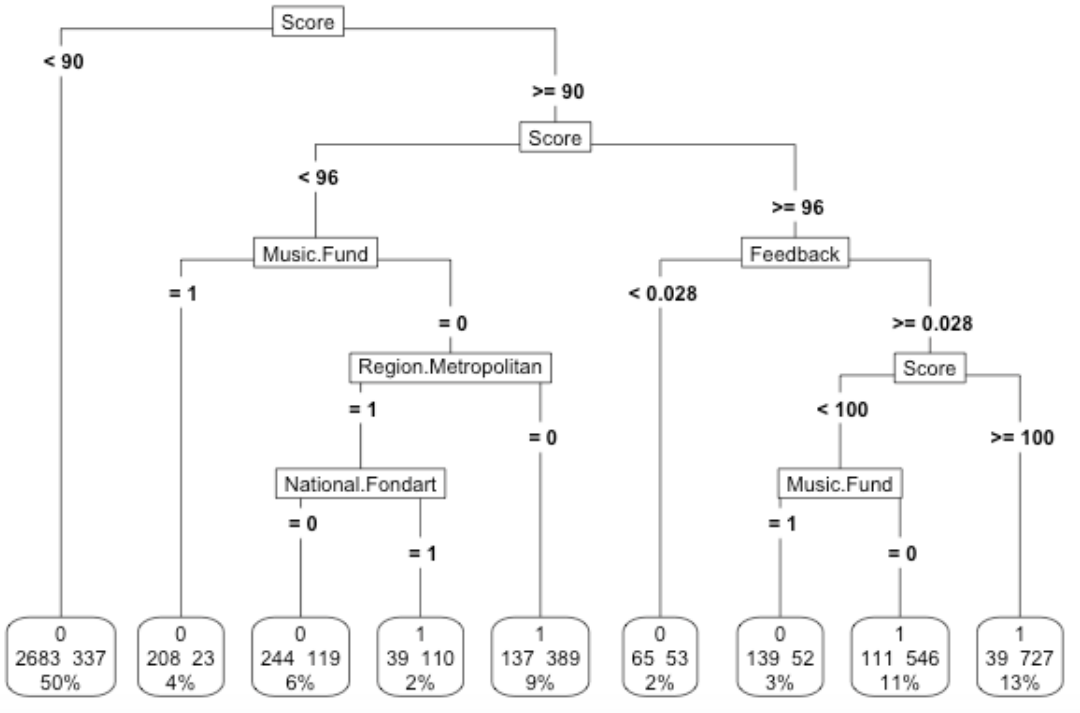


Figure 5.1: Regression Trees for Public Grants for Cultural Projects.

| Categories Interaction | Predicted | Actual/Total (%) |
|---|---|---|
| $Score < 90$ | Does not Receive Public Grants | 50% |
| $90 <= Score < 96$, $Music.Fund = 1$ | Does not Receive Public Grants | 4% |
| $90 <= Score < 96$, $Music.Fund = 0$, $Metropolitan.Region = 1$, $National.Fondart = 0$ | Does not Receive Public Grants | 6% |
| $90 <= Score < 96$, $Music.Fund = 0$, $Metropolitan.Region = 1$, $National.Fondart = 1$ | Receives Public Grants | 2% |
| $90 <= Score < 96$, $Music.Fund = 0$, $Metropolitan.Region = 0$ | Receive Public Grants | 9% |
| $Score >= 96$, $Feedback < 0.028$ | Does Not Receive Public Grants | 2% |
| $96 <= Score < 100$, $Feedback >= 0.028$, $Music.Fund = 1$ | Does not Receive Public Grants | 3% |
| $96 <= Score < 100$, $Feedback >= 0.028$, $Music.Fund = 0$ | Receive Public Grants | 11% |
| $Score >= 100$, $Feedback >= 0.028$ | Receives Public Grants | 13% |

Table 5.13: Regression Tree Summary for Applications of Cultural Projects to Public Grants.

From the outcome of regression trees, it is possible to mention that *Score* is the most crucial predictor associated to the probability of receiving a grant. Moreover, *Score* below 90 represents 50% of the sample and are related to not receiving any grant. Additionally, 65% of the sample does not receive public grants, while 33% is granted with funding.

However, the interaction between different categories and *Score* reveal different outcomes. For instance, those projects with a *Score* between 90 and 96, excluding the last number, and applied to *Music.Fund* are linked with not been eligible to receive public grants, representing 4% of the sample, suggesting that

*Music.Fund* is a highly competitive fund.

On the other hand, those projects in the same range for *Score*, which do not apply to *Music.Fund* or *National.Fondart*, but apply to *Metropolitan.Region* are related to not receiving public grants, representing 6% of the sample. This result suggests two things, the low percentage of the sample included in this categories interaction suggest that many applications from *Metropolitan.Region* apply for *National.Fondart* and *Music.Fund*, explained by the fact that performing arts are predominantly based on this region. Additionally, the fact that the relation with the grant is not favourable for the applications means that *Metropolitan.Region* is a highly competitive region in terms of applications.

For applications between the same range of *Score* previously exposed, which do not apply to *Music.Fund*, apply to *National.Fondart* in *Metropolitan.Region*, the correlation is favourable and represents 2% of the sample. Again the interaction suggests that receiving a grants tends to be more favorable for applications to geographically driven funds, rather than sub-sectors funds.

In the case of application within the same range for *Score*, but do not apply to *Music.Fund* nor to *Metropolitan.Region*, the relation is that they receive the public grants, representing 9% of the sample. The correlation suggests that there are more chances to receive a grant when applying to a region different from *Metropolitan.Region* and a fund that is not directly related to performing, exposing the highly concentrated demand for grants and performing arts in the capital region.

For categories interaction focused on a *Score* higher than 96, with a *Feedback* below 0.028, the relationship suggest that they do not receive funds, representing 2% of the sample.

For projects with s *Score* over an equal 96 but below 100, with *Feedback* over 0.028, applying to *Music.Fund* correlates with not receiving grants, representing 3% of the sample. On the other hand, for those projects within the same range for *Score* and *Feedback*, which are not applying to *Music.Fund* are associated with receive the grant, representing 11% of the sample. Proving how competitive *Music.Fund* is compared to other funds.

Lastly, projects scoring over 100, with *Feedback* over 0.028, are related with receiving financial support, representing 13% of the sample. This result is expected, considering that with few exception[5], the maximum evaluation score is

[5]The possibility of having a score higher than 100 is based on bonus points for being disabled, being directly or indirectly victim of a violation of human rights during dictatorship or have an indigenous background.

100.

In summary, the results reveal the over demand of applications coming from *Metropolitan.Region* and the high competitiveness of *Music.Fund*.

### Random Forest

This part of the study uses random forests to predict the categories associated with specific cultural projects receiving a grant. The reason to consider an alternative machine learning technique from regression trees is that random forests increase the model's predictive power compared to regression trees.

The results are ranked based on the highest percentage of Mean Decrease Accuracy (MDA), which determines the most relevant predictors related to the probability of receiving public funds. The results are the followings:

| **Categories** | **% of MDA** | **Corr. with** *dp*1 |
|---|---|---|
| 1. *Score* | 0.2122 | 0.5 |
| 2. *Music.Fund* | 0.0169 | -0.003 |
| 3. *Feedback* | 0.0164 | 0.3 |
| 4. *Books.and.Literature.Fund* | 0.016 | -0.0003 |
| 5. *Metropolitan.Region* | 0.0159 | -0.0233 |
| 6. *Labour* | 0.0131 | 0.002 |
| 7. *National.Fondart* | 0.012 | 0.0567 |
| 8. *Regional.Fondart* | 0.0119 | 0.0528 |
| 9. *Exhibition* | 0.0104 | 0.0066 |
| 10. *DiffDays* | 0.0095 | -0.0553 |

Table 5.14: Random Forest Summary of Top Ten Predictors for Public Grants for Cultural Projects.

From the results, one can conclude that *Score* is the largest predictor associated with receive grants by a significant distance, which is foreseeable and broadly understood as the ultimate variable defining the acceptance or rejection of projects to the funds. Moreover, with a strong correlation of 0.5, with the dependent variable, higher scores are associated with a larger probability of receiving a grant.

Followed by *Music.Fund*, as the second most relevant predictor, with a negative and weak correlation of -0.0003.

Later, the third most crucial predictor is *Feedback*. This research generates this variable based on positive, negative and neutral feedback from the judges, giving an overall positive or negative feedback to the project. The correlation is 0.3, relatively strong to moderate, and shows that higher positive feedback is related with higher probabilities of receiving a grant.

The fourth predictor is another fund, *Books.and.Literature.Fund*, with a weak and negative correlation of -0.0003. This result anticipates that applications to funds focusing on specific disciplines – such as music and books – are less prone to be accepted than more general funds such as *National.Fund* or *Regional.Fund*.

The fifth most relevant predictor is *Metropolitan.Region*, where the correlation is negative and significantly weak, -0.0233. Showing that applying from the most significant region in the country has a negative correlation with the probability of receiving a public grant. The outcome can be explained due to the highly competitive demand for public funds from the central region.

The sixth predictor is *Labour*, which indicate that higher sums of money allocated to labour or towards cultural workers instead of capital correlates positively with the probability of receiving a grant, but with a considerably weak correlation ($<0.1$). The result suggests that to increase their chances of receiving a grant, the applicant should structure their projects, place more resources on the workers' cost, and put less attention on infrastructure or equipment.

The seventh and eighth predictors are *National.Fondart* and *Regional.Fondart*, respectively. Both represent a positive but weak correlation ($<0.1$), indicating that applying to those funds is associated to higher chances of receiving a grant.

The ninth most relevant predictor is *Exhibition*, which, based on the correlation, shows that applying to projects focused on that phase of the supply chain is associated with increasing the chances of receiving a grant, but perceiving a weak correlation ($<0.1$). This result implies that applications targeting funds for exhibitions of cultural projects have better chances of receiving a grant, although it is not one of the most determinant predictors.

The tenth predictor is *DiffDays*, reflecting the number of days that the applicant determines to implement the project. The results evidence a negative and weak correlation ($<0.1$), suggesting that shorter projects have better chances of receiving a grant.

Altogether, the results from random forest show the importance of applying to geographical-specific funds rather than sector-specific ones, which can be interpreted as the main conclusion from the results. As four out of six are represented as relevant predictors. Hence, one can conclude that projects applying to sector-specific funds have more difficulties of getting accepted. On the

other hand, applications to geographic-specific funds – *Regional.Fondart* and *National.Fondart* – are often more related to better possibilities of been granted.

Additionally, the outcome of random forest reflects the empowerment of judges when deciding to grant a project, as *Score* and *Feedback* are both predictors generated by them, been *Score* the top one predictor. Perhaps, to make the evaluation process more objective and less dependent on judges criteria, the fund could apply parametrisation, giving a predetermined score to certain aspects of the applicant job experience, studies, and aspects of the project itself. Then, *Score* will have a part that is objective and previously determined and another based on the judges' criteria, giving away importance to *Feedback*, avoiding conflict of interests between judges and applicants.

On the other hand, *Labour* and *DiffDays* are predictors related to the project's magnitude, which shows that more modest projects in terms of implementation and focus on covering the salaries for cultural workers instead of other items are associated with receive a grant. Hence, the applicant should consider more modest versions of their projects to improve their chances of receiving public money.

Additionally, *Metropolitan.Region* appears as the only relevant region as a predictor, meaning that its magnitude is largely related with receiving a grant. Moreover, the negative effect of the predictor linked with the probability of receiving a grant hints at saturation of applications coming from this region and fewer chances for those projects to be funded.

Finally, *Exhibition* is the only predictor associated with the cultural supply chain, coming in seventh place. Then, wherein the supply chain should the art project focus on is not entirely relevant, but focusing on audiences is something that criteria of the funds find as necessary and where projects tend to have a higher probability of receiving the grant. Hence, the funding mechanism expect cultural workers to develop their projects independently – financially speaking – during the creation, production and dissemination of projects, and are more willing to intervene with monetary support in the phase that facilitates audiences the understanding of artistic work or the marketing methods used to build audiences.

### 5.9.3 Predictive Power (AUC)

This last subsection from the results covers the predictive power of the three models previously analysed, the Logit binary choice model and both Machine Learning models. The applied methodology for that is called Area Under the Curve (AUC).

AUC calculates the relative predictive power of the model, assuming values between [1,0], been 1 the highest value and predictive power, and 0 the lowest. In this chapter, a value close to 1 suggests that the model can predict almost perfectly the cultural projects that will receive a grant, and 0 suggest the opposite ultimately.

Visually, the outcome on predictive power can be expressed as it follows:

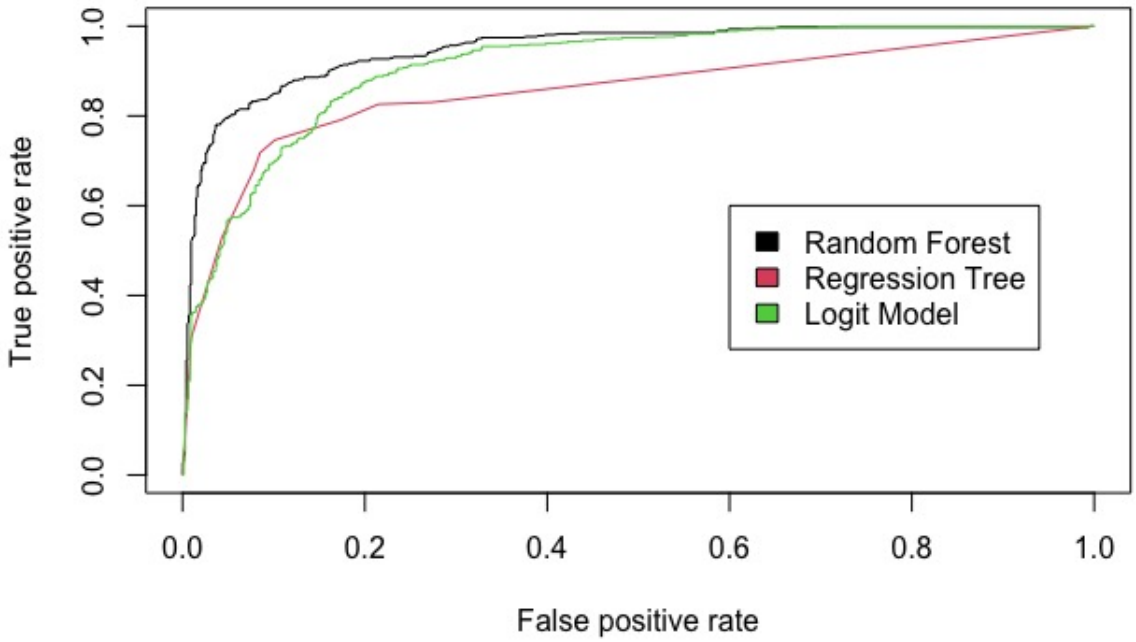


Figure 5.2: Predictive Power of Models on the Probability for Cultural Projects to Receive a Public Grant.

The figure shows the values of the x-axis as 'false positive rate´, which represents the probability that the model classifies as false positives when the model predicts a particular value, but the real value is a different one. In that context, higher values on the x-axis reflect low predictive power for that particular model. Oppositely, the y axis reflects the 'true positive rate´, which stands for the probability that the predictive model identifies true positives, matching the predicted

and the real value accurately. Therefore, high values on the y axis represent greater predictive power for a specific model.

Based on the outcome, all three models have high predictive power. This result means that the same models can be applied to other datasets expecting the same results regarding which predictors are the most relevant. In summary, random forest ranks first as the most potent predictive model with 0.9480, followed by the Logit model with 0.9095, and lastly, the regression tree model 0.8556.

## 5.10 Conclusions

From the results, it is possible to observe that the actual funding mechanism have specific characteristics which are not contributing to the socioeconomic situation of cultural workers. In that context, the results challenge all four sub hypothesis.

The first sub hypothesis suggests that there is no harmonic cultural development associated with the criteria of the funding mechanism, understanding that harmonic cultural development should consider all the possible phases of cultural production, and the applications targeting different cultural phases should not have different probabilities of been granted. From the Logit model, one could observe that *Creation* is the phase that relates with a higher probability of receiving a grant. Comparatively with *Creation*, *Production* contributes -5.8%, *Dissemination* contributes -3.4%, *Exhibition* contributes -10.7% and *Consumption* contributes -6.1%. Moving to the predictive models, specifically Random Forest, because of its higher predictive power, one can notice that *Exhibition* is the only predictor associated with cultural production phases, representing a weak but positive correlation with the probability of receiving a grant. Hence, in both models, the first sub hypothesis is rejected as the variables attributed to cultural production phases are significant and show no harmonic cultural development associated with the funding mechanism.

The second sub hypothesis mentions a pluralist cultural development, which the funding mechanism incorporates in their criteria. For that case, the results from the Logit model shows that non of the demographic characteristic of the applicant (*Gender*, *Type.Person*) or any characteristic of the project (*Amount*, *Labour*, *DiffAmount*, *DiffReg*, *DiffDays*) are significantly related to the probability of receiving a grant. This result is reinforced in both predictive models, as Regression Trees has no interaction with categories from these variables. In Random Forest, *DiffDays* is the only relevant predictor (Nº 10) associated with the probability of receiving a grant, with a weak and negative correlation with the

dependent variable. Thus, shorter projects could have better chances of receiving a grant. Nevertheless, considering the overall results from the three models, this sub hypothesis can not be rejected. Therefore, this study concludes that there is a component of pluralism in the criteria of funding mechanisms.

The third sub hypothesis describes equitable cultural development as a criterion of the funding mechanisms. This statement is stressed in all the three models analyse in this investigation. Firstly, the Logit model shows that all six dummy variables related to funds are significant. Furthermore, using *National.Fondart* as point of contrast, one can observe that *Regional.Fondart* gives 13.2% higher chances to receive a grant, while *Audiovisual.Fund* reduces the probability in -14.9%, *Music.Fund* in -19.3%, *Books.and.Literature.Fund* in -8.9%, and *Cultural.Interm.Program* in -10%. On the other hand, the predictive models reflect the importance of the different funds as correlated predictors. Considering Random Forest, due to the high predictive power, one can observe that four out of six funds are included as relevant predictors related to the probability of receiving a public grant. Moreover, *Music.Fund* and *Books.and.Literature.Fund* contributes with negative and weak correlations, while *National.Fondart* and *Regional.Fondart* have stronger and positive correlations. Thus, based on Logit models and Random Forests results, sector-specific funds are negatively related to the probability of receiving a grant, while geographic-specific funds are positively associated with cultural projects receiving a grant. This reflection will be covered more widely in the following research question. Overall, the third sub hypothesis is also rejected as this investigation proves that the public funding mechanism for cultural projects does not support equitable cultural development across different sectors of the art industry.

The fourth sub hypothesis covers the equitable distribution of budget among different regions, which should be considered a funding mechanism criterion. In that context, the Logit model shows that all regions are considered significant to the analysis. Moreover, marginal effects reflect that all regions contribute differently and positively to the probability of receiving a grant when compared with *Metropolitan.Region*. Special emphasis can be given to more geographically extreme regions, which show the highest percentage compared to *Metropolitan.Region*, such as *Region.Tarapaca* (32%), *Region.AricaParinacota* (36.4%), *Region.Atacama* (60%) in the north of the country, and *Region.Aysen* (60%) in the south. The results highlight the opportunities of grants coming from less populated regions and with less cultural infrastructure and artistic proposals. On the other hand, Random Forest present *Metropolitan.Region* as the only top ten predictors associated with regions, showing a negative and weak correlation

with the probability of receiving a grant. In line with the results found in the Logit model, Random Forests suggest that applying to *Metropolitan.Region* is related with lower chances of being selected for grants. This effect can be attributed to the highly centralised demographic distribution of the country, where most of the population and, therefore, the cultural sector is installed in this region. Consequently, there is an over-saturation of applications from this geographic location, making the process extremely competitive and challenging to grant applications. Based on the information previously analysed, it is possible to reject the null hypothesis that equitable distribution between regions is incorporated in the criteria of the funding mechanisms.

In summary, this investigation rejects three out of four hypotheses. Therefore it is possible to conclude that the actual funding mechanisms are not contributing to the socioeconomic situation of cultural workers in terms of the different phases of cultural production, the different funds and the different regions related to the applications. Moreover, there is a bias to support applications focused on *Creation*, which are not sector-specific and geographically extreme regions.

Been the first research question answered, the following step is to question what type of modifications can be done to improve the socioeconomic situation of cultural workers based on public funding mechanisms.

The second research question covers potential modifications to the actual funding mechanisms to improve the benefits to the socioeconomic situation of cultural workers. From the results, one can consider three different proposals that could improve the distribution of public funding.

Firstly, because of the negative results from sector-specific funds and the positive effect of geographic-specific funds, one could consider changing the origin of the funds from sector-specific funds to geographic-specific funds, improving the chances of receiving grants.

Secondly, based on the results of different regions, this study considers that the financial resources of the grants could be managed by local authorities, having competitive fund calls in each region, avoiding the saturation of applications from the biggest or more populated regions. In that sense, by having smaller budgets distributed in each region, the mechanisms encourage cultural workers to apply in regions different from the typical ones. One could expect that the probability of being granted should be more or less the same in each region.

Thirdly, to avoid an overdemand for applications, this study proposes a parametrisation of certain aspects of the evaluation. By doing so, applicants will partially know beforehand if they have a real chance to receive a grant, avoiding applications that later will be dismissed and putting the unnecessary

workload on the public apparatus in charge of the process.

Furthermore, other mechanisms could potentially be reviewed as funding policies, such as direct fundings based on artistic merit or experience, but not related to a specific art project or the case of a minimum wage for cultural workers, leaving the artistic curation utterly free to the artists. Those ideas can be evaluated in the future, as previous steps are needed in terms of cultural infrastructure, institutional modernisation, and systematisation of cultural data to manage and distribute the public financial resources more equitably and efficiently.

# Chapter 6

# Cultural Exports Improvement

This chapter analyses the flow, process, and policies of the distribution of Chilean cultural goods and services globally, and how to improve them considering the trade barriers and asymmetric position of cultural goods of countries from Latin America.

## 6.1 Introduction

This article contributes to closing the gap on cultural trade literature, which proves to be hard to develop new investigation because most of the literature on cultural trade focuses on using gravity models, and no models on cultural trade have considered treatments and agreements variables. Moreover, by applying a probabilistic model, this study identifies the significant variables affecting the probability of a country importing Chilean cultural goods. After that, this research identifies the most relevant predictors to the previously mentioned probability using predictive models.

This article is relevant for this thesis's pursuit because it helps to improve the cultural export strategies by signaling the most relevant predictors of it. Furthermore, this article is mainly driven by the fact that the internal demand for cultural products is not helping to bring a stable socioeconomic situation for cultural workers, leaving aside the structural/institutional conditions of the artistic labour market and their employment contracts.

In that context, by focusing on improvements in cultural exports, one can observe two significant effects. Firstly, intensity on export strategies, generating higher volumes of exports and higher incomes to those cultural workers associated with the exported products, as the volume of exports increases due to higher external demand. Secondly, the expansion of export strategies can lead to the inclusion of new cultural workers in the export schemes, benefiting them with external demand for their products. Hence, both effects, intensity of export and expansion of export, benefits the cultural sector and their workers, which endlessly leads to higher incomes and a better socioeconomic situation for those involved in the productive process.

However, there are restrictions that countries face to improve their cultural export strategies, such as limitations in terms of market access taken mainly

by a few countries, local institutionalisation to develop proper cultural export strategies and commercial barriers due to agreements between specific countries on cultural products. All of these variables affect cultural exports, especially those from Latin America – which this study focuses on, as most of the market share is controlled by countries of the Global North.

Consequently, this article acknowledges those limitations and aims to develop a model incorporating macroeconomic variables, geographic variables, cultural variables, trade facilitation variables on agreements, trade facilitation variables on memberships and measures of institutional stability for each country to unveil potential trade partners of cultural goods for Chile. This model would be tested using a Logit Binary Choice Model to understand the significant variables affecting the probability of countries to import Chilean cultural goods, and later designing predictive models based on Regression Trees and Random Forests, to highlight the most significant predictors to the probability of foreign countries to import Chilean cultural goods.

## 6.2 Literature Review

In this section, this research outlines the origin of the concepts Global North and Global South. Later on, it explores paternalistic trade from the Global North to the Global South, with particular emphasis on cultural trade. Afterwards, this investigation analyses the main international agreements and conventions that affect the North-South interaction and how they sometimes overlap and lack effective implementation. Later, a subsection looks to the unique situation of cultural exports from Latin America, as a region of the Global South, and addresses the challenges that the region face to secure a more homogeneous relation with its counterpart. The final subsection explores the specific case of Chile as a country of Latin America, analysing the current situation of their cultural exports, the barriers and challenges they face.

### 6.2.1 Theory and Historic Milestones of the Asymmetric Trade Relationship Between the Global North and the Global South

This subsection analyses the asymmetric trade existent between countries of the Global North and the Global South. The focus is first established in the general theories of development, which explains the genesis of trade asymmetries. Later,

the analysis moves to the historical periods where and how those asymmetries have been preserved.

### General Theories of Development

Development is a concept that polarises and assumes that someone holds the role of underdeveloped, a discriminatory mechanism (Bhabha et al., 1990). Furthermore, it is possible to identify that development is seen as a privilege and power over the undeveloped (M. Howard et al., 1988). This aspect of domination, implicit in the developed position, applies to international trade, where an early asymmetric North-South, Core-Peripheral interaction favoured the Global North.

To understand the concept of development, it is essential to acknowledge the origins of it. One development theory identifies the role of the underdeveloped with the idea of the outsider in need of help. This concept has historically gone through six stages of transformation: the barbarian, the pagan, the infidel, the wild man, the native and the underdeveloped (Trinh, 1989), all of them reflecting the same target group. This theory takes back the relation to what initially defined as 'the barbarian', stack in the very roots of the political and economic relationship between the Global North and the Global South. For example, this conception from the Western World applies to Africa, Asia and Latin America, observing those region from an imperialistic perspective.

Another theory on development explaining the North-South relation is based on the dependency theories, elaborated in the '60s by a group of Latin American economists working in the Economic Commission for Latin America (CEPAL)(Furtado, 1970; Paz & Sunkel, 1970). These authors established the division of the Global North and the Global South, based on the concepts of core, periphery and semiperiphery, separating countries based on their development level. The core group considers countries that turned their economy into manufacturing nations in the 19th century, such as Western Europe, the US, Canada, Australia, New Zealand and South Africa. On the other hand, the periphery is another way to call the Third World and all the countries included in that definition. Finally, the semiperiphery considered countries from the Third World that were turning to industrialised economies, such as Malaysia or Thailand.

Even though colonial commodity production establishes a unidirectional dependency based on the added value from exports of the Global North, the dependency theory failed to acknowledge the legacy infrastructure (physical and human) that would enable a post-colonialist economy, which had different results

for manufactured goods, services and also cultural products. Hence, concepts of First World/Third World and, more recently, Global North/Global South focus on spatial and socioeconomic differences, that works intensively nowadays, regardless of the 'progress' on globalisation and network of world cities (Escobar, 2011).

Later in the '80s, a political process of critics and reimagination of the colonialist discourse started, as some anthropologists (Strathern, 1988) acknowledge that development theory was moving towards a Western way, which was not representing the interest of countries of the 'Third World'. In this context, authors explore the dominance of sociologist movements from North America in Latin America and from a more traditional to a modern society (Morandé, 1984), giving a rural attribution to the pre-established society in the Latin American region and demeaning the value of their inherent culture. For instance, during the 20th century, the nascent social movements in Latin America, based on Socialism, Marxism, indigenous inclusion and import-substitution industrialisation, were capped by the US.

The North American country introduced a plan to support the region under the American political and economic philosophy, called 'Alliance for Progress' (Escobar, 2011). The program resulted in a dominant ideology for international institutions and particular nations states. Such was the case of Chile and the Chicago Boys, a group of young Chilean economists that pursued doctoral studies on the free-market model at Chicago University under the supervision of Milton Friedman (Letelier, 1976). Those young economists would later take critical roles in Chile and perpetuate the economic liberal model and the trade asymmetries favouring the Global North to these days.

### Historical Periods of Dominance of One Model

From a historical perspective, the asymmetries on trade and the global economic model have not drastically changed from the colonial period of the 19th century, defining the colonialist move as the production of discourse under conditions of unequal power (Mohanty, 1988). Colonialist countries still represent the trade agreements and rely heavily on extractions from their colonies. Consequently, the post-colonial era has not altered the positions of power significantly.

In that sense, the First World took the first-mover advantage on economic development, assuming that role in every market, controlling the conditions of trade agreements, capturing the market power and unbalancing the international trade in their favour.

Firstly, the creation of the Inter-American Development Commission in January 1940, which promote Latin American production to be exported to the US market, with technical support and capital transfer to Latin America, focusing primarily on the production of strategic materials for the US economy (Escobar, 2011). Then the following years, the existing North-South colonialism took notice of the asymmetry of trade, generating concepts, strategies and trade agreements to control the Third World. For example, after the postwar period, 'Third World' countries had to borrow resources from core countries and experience a deterioration of the terms of trade, extraction of their surplus and subordination of their policy formulation Escobar, 2011.

Later, between 1945 and 1955, the world saw the consolidation of the US capitalist system over the communist regime in several countries. The objective of the US was to support European countries that were beaten by the war, establishing the Marshall Plan. For instance, the support that European countries received from the US between 1945-1950 rose to USD$ 19 billion, while on the other side, Latin American countries received USD$150 million and a set of recommendations supporting private capital. These actions were interpreted as a clear message of indoctrination of the capitalist system and rejection of left-wing regimes and nationalism (Escobar, 2011).

The previously described event increased the uneven development of both regions and strengthened the legacy of colonial commodity production. Furthermore, European countries were able to develop their economies based on manufacturing, to the detriment of peripheral countries which had to rely on imports from the industrialised countries (Global North). Hence, adopting the capitalist system, incorporating foreign capitals, increasing the imports of finished products and reducing the national manufacturer companies.

Later, in the 1960s, core countries provided paternalistic support, helping peripheral countries to plan their commercial strategies and supporting the growths of countries of the southern hemisphere, but in a way that did not represent a threat to the economic position of core countries. This paternalistic 'aid' was build based on the idea of the 'war on poverty' (Rahnema et al., 1991). This concept, coined by the World Bank after WWII, identified two-thirds of the world as poor. The definition came from the World Bank in 1948, which established that a country was defined as poor if the annual income per capita was below USD$ 100 (Escobar, 2011). Then the US, international institutions, and other Western World countries turn to solve the 'war on poverty', using the previously mentioned colonialist approach. However, the previously mentioned approach contrasted with the political situation of Latin America. Mainly because, at that

time, Latin American countries were consolidating their national economies, establishing state-sponsored manufacture and developing strong democracies after dictatorial regimes (Bethell, 1991). These political actions were something that paternalistic governments did not see.

Following those events, in 1980, the Independent Commission of Germany published 'The Brandt Report' establishing the division of Global North and Global South(Brandt et al., 1980), which analysed the main concerns on international development. The document defined the 'Brandt Line', establishing a geographic and economic division of the world where industrialised countries – Global North, were placed in the north region of the world, except Australia, New Zealand and Singapore. On the other hand, peripheral countries or Global South were identified as countries in the world's southern hemisphere. The 'Brandt Line' stated the difference between core and peripheral countries and put on evidence the geographical/economic segmentation of the world, which endlessly contributes to establishing a paternalistic international trade from the Global North, generating trade asymmetries to the detriment of the Global South.

Authors suggest that 40 years after the publication of the Brandt report, the divisional line between Global North and Global South has evolved into a complex network of global, regional and local 'Brandt lines' (Solarz, 2014). However, economically speaking, the Global North's paternalism still prevails in a very explicit manner, driven mainly by the market power of the region, with no intention to give away market share, regardless of the so-called 'preferential treatment'. This situation forces countries of the Global South to accept the 'benevolent' proposal of the Global North or be commercially cast out. A clear example is the result of an investigation showing that shares of exports of the Global South diminish from 0.7% in 1980 to 0.5% in 2010 (J. P. Singh, 2017), regardless of all the multilateral agreements, negotiation rounds and conventions promoting the exports of cultural products from the Global South.

The specific case of Latin America saw the benefits of trade openness in the 1980s, especially the bloc including Argentina, Paraguay, Uruguay, and Brazil (Balboa & Medalla, 2010). However, that openness has not progressed, since the beginning of the 2000s, even more, the region shows a contribution of 8% to the global exports in 2015 (Beaton et al., 2017), way below other emerging markets, such as the East Asia bloc, accounting 25.5% of global exports for the same year (Aggarwal & Koo, 2016).

Nowadays, there is a significant dispersion in the openness to trade of South American countries, where large economies, such as Brazil and Argentina, trade around 25% of their GDP, but other countries such as Paraguay and Suriname

record almost 70%. On the other hand, the five biggest LAC economies account for 91% of total global partners, while the rest of the LAC economies averages 60% of them (Beaton et al., 2017). Conclusively, there is a margin for large LAC economies to increase their trade percentages on the one hand. On the other, it is for smaller LAC economies to expand their connectivity with trade partners.

Finally, Chile predominantly focuses on how international agreements impact the international trade of Copper because the commodity accounts for almost half of the national exports. This figure has remained relatively stable as Cooper represented 42% of Chilean exports in 1986 and a decade later as well (Spilimbergo, 2002). Chile's comparative advantage, based on mining and counter-seasonal agriculture, provide it with access to demands on large economies, such as Europe, North America and the Asia-Pacific (especially China)(Santander, 2021). However, manufactured products seem to be responsible for long-term growth[1]. Hence, policies should focus on comparative advantages for Chile in the manufacturing sector (Siliverstovs & Herzer, 2007).

In terms of commercial agreements, Chile has signed Free Trade Agreements (FTAs) with the EU, USA, China and South Korea. It also participates in the Pacific Alliance since 2012 with Mexico, Colombia and Peru. Chile also has a trade continuity agreement with the UK. The future challenges that the country faces in terms of commercial trade are substituting the unaccomplished Union of South American Nations with ProSur, to genuinely create a regional bloc that can improve the economic integration and trade relationships (Santander, 2021).

Overall, as the world's largest copper exporter, Chile is an export-driven economy sensitive to global demand patterns.

### Free Market and the Illusion of Trade Equilibrium

After the theoretical and historical description of trade asymmetries, this part focus on the actual debate on the free market pushed by the Global North and the pragmatic results on market equilibrium.

In that context, as the focus is on asymmetries, the relation between free trade and market equilibrium that normative economics models assume is not empirically the case. For instance, the reality shows that in the Uruguay Round, the concessions of the EU (MUS$578,816) and the USA (MUS$214,791) were much higher than countries of the Global South, such as Argentina (MUS$6,331)

[1]Some of those products includes fish fillets and different fish meat, chemical wood pulp, wine, and fruit (such as apricots, cherries, and peaches)

or Brazil (MUS$38,037) (Kapstein, 2008). Hence, policies and international institutions based upon normative assumptions may exacerbate rather than mitigate challenges.

Then, where only free-market prevails, institutions of Global North will not need to give away market share to the Global South as the market self regulates. The previously described scenario would be the ideal one, where the trade balance is less unfair due to tariff cuts and multilateral agreements, rather than 'preferential treatment´. But as mentioned before, in reality, if the solution is free markets, the flows of international trade will lead to asymmetries.

Furthermore, even though the Global South benefits from the collaboration with institutions of the Global North, the problem comes from the terms of agreements of that collaboration and how fair are these. In part, there is some responsibility from the Global South, as they accept specific rules such as selling their resources to 'the most convenient bidder´, degrading their ecology and reducing the representation of native communities (Escobar, 2011).

Endlessly, apparent progress and development flourish, but applying a paternalistic seal, where the Third World sees itself as underdeveloped and ignorant and rejects the importance of their own culture and contributes to trade asymmetries. Unless there is a state intervention protecting the local production through tariffs and quotas, compensating the asymmetric relationship with major exporters and restricting imports, often concentrated in the Global North.

### 6.2.2 Paternalism in Global Trade and Cultural Exports

Based on the previous subsection, one relevant aspect is if the paternalistic trade patterns operate equally across the whole economy or affect some industries more than others, such as the trade of cultural products.

In this context, international trade on cultural products is different from other industries. As UNESCO mentioned, the market forces cannot guarantee the conservation and promotion of cultural diversity (UNESCO, 2001), representing a unique clash between trade values (liberalisation) and a specific social value (culture). In any other industry, by liberating international trade, countries will tend to specialise in those products that they have a 'comparative advantage´, and consequently importing those products where the goods and services involved do not require a minimum production in the country. Hence, culture requires a certain level of domestic production and development, regardless of the comparative advantage of other countries. The cultural value of particular good or service determines what, who and how it is produced and consumed (Broude,

2005). For that reason, it is essential to maintain the domestic production of cultural goods and services to preserve their value. At the same time, expose it to exchange with other countries to create new forms of cultural production, with their value.

As previously mentioned, UNESCO highlighted the importance of intervening the international cultural trade to make up for the asymmetries generated by free trade. Additionally, through GATT 1994, WTO establishes some forms of protections to cultural expressions (Voon et al., 2011), which helped countries as a legal mechanism to protect their local artistic production. Finally, at a national level, governments have implemented national policies to acknowledge the value of domestic cultural production, imposing tariffs and quotas to import cultural products. Those specific cases are covered in the following section.

Having identified the singularity of international cultural trade from other industries, this section explores the origins of the asymmetric positions of international cultural trade. Furthermore, establishing a paternalistic role in the artistic trade mainly comes from Anglosaxon countries or countries influenced by their culture. In that context, The United States serves as an excellent approach to North-South paternalistic cultural products trade.

This country has been the most transcendental exporter of contents in terms of films and music recordings, representing 51.5% of the global exports of these products in 2007 (WTO, 2009). However, progressively other regional blocks have taken part in the market share. In 2013, the participation decreased to 49% for North America and Europe (Deloumeaux, 2016) due to increasing cultural goods exports from China. But still, the western block holds a dominant situation both in the export levels and in their negotiation role for international agreements.

The literature suggests that common language and geographic barriers make US productions the most attractive for a global demand (Disdier et al., 2010), which explains their high levels of exports. But the origin of that shared language – as a benefit – comes from the idea of a 'first-mover advantage´. The first supplier presents a specific product or service to the market, resulting in long-term competitive advantage (Kerin et al., 1992). In the US, the long-term advantage represents the 'snow ball´ of network support, institutions and market size where their language is predominant. Consequently, the established infrastructure and networks supporting US cultural exports provide the country with a comparative advantage in international trade. Considering David Ricardo theory on international trade, the comparative advantage of the US is reflected in higher labour, land and capital productivity, then lower marginal costs, expanding their frontier production possibility (FPP) (Ricardo, 2017). As a result, their production is

more prominent, so as their exports and their international market share.

Said from a different perspective, the predominant language for worldwide consumers and diversity gaps means that United States productions have a global representation compared to, for example, Bollywood movies, which reflect a more local context (Acheson & Maule, 2004). This particular example is not trivial as Bollywood´s official language is Hindi, which has a larger group of native speakers than English. However, the cultural goods from the US show a global context, which overcomes the effect of native speakers of other languages, which their cultural products have a more local representation. This logic can also be applied to other relevant languages such as Mandarin Chinese and Spanish.

The American industry knows that, and it is reflected in sales outside the country. In that context, non-US revenues are approximately 50% of the total income for the United States film industry (Francois & Van Ypersele, 2002). For this reason, it is not strange for the United States to uphold a dominant position.

In this context, the North-South coproductions in the audiovisual sector represent an excellent example of implicit paternalism. Global productions tend to favour the Northside of the coproduction by seeking basic infrastructure, convenient exchange rate, and cheap but skilled local workforce (Conor, 2011). However, some authors mention the benefits of these partnerships, highlighting the positive externalities for local communities from the settlement of staff teams for film shooting (Beeton, 2016), such as an increase in services associated with catering, hotels and film-induced tourism.

Overall, the wages of cultural workers in the Global South is inherently unbalanced, in significant part attributed to the complex scenario of cultural exports from countries of the region. A common problem for transnational mobility of cultural workers and digital technologies is the unequal situation for cultural exports of the Global South because those clusters of cultural products come from the Global North, which is often considered leading sectors and highly valued globally (Leriche & Daviet, 2010). Therefore, the incomes of cultural workers of the Global South rely heavily on internal demand, which represents a disadvantage compared to the cultural workers of the Global North, which have both internal and external market for their products. Then, the export context of the Global South cannot ensure an optimum socioeconomic situation for the cultural workers of countries of the region. Hence, it is not possible to fairly compare the export conditions of artistic products of the Global North and Global South and the socioeconomic situation of the cultural workers of both regions, sensitive to the incomes related to those cultural exports.

### 6.2.3 Conventions and International Agreements Affecting the Cultural Trade

The previous subsections showed the unstable situation of North-South cultural trade. For the cultural sector, international institutions have specially developed conventions and multinational agreements to improve the asymmetric trade situation. Therefore, this section overviews the effects of international agreements on cultural exports and how the position of the Global North and the Global South differs due to the application of support and preferential treatment to specific products of certain nations. Understanding why it is necessary to look at trade policy and why trade policy for culture differs (or not) from other industries.

To analyse the trade asymmetries, three main international trade agreements remain the most significant for cultural trade, especially for countries of the Global South. i) Multilateral Regime of the WTO, ii) Bilateral and regional preferential trade agreements, and iii) The UNESCO Convention 2005 on Cultural Diversity (Ginsburgh & Throsby, 2006).

Starting in the '60s, GATT emphasised the Special and Differential Treatment (SDT) and the Generalised System of Preferences, providing peripheral countries with preferential treatment towards their exports (J. Singh, 2016), helping to balance the hegemonic power of the Global North on international trade. Nevertheless, the results of SDT only had a 2% impact on global commerce, and their benefits were limited to issues regarding human rights and environmental conditions, and intellectual property rights (Sell, 2013) where only the latter one impacted cultural trade.

Later, WTO came to replace the GATT in 1995, working as a permanent agreement. Moreover, GATS represents the framework for service transactions within WTO, where audiovisual services are included (WTO, 1995). Nevertheless, just a few countries have accepted commitments in terms of the free trading of cultural goods. This position can be exposed in the role of the US in the Uruguay Round (1986-1994), where the cultural identity did not recognise characteristics of audiovisual goods (Voon, 2007).

Nowadays, the United States and other countries such as Japan and China seek proposals to restrict or freeze local barriers for audiovisual goods. Canada, for example, has refused to agree on such barriers until the rights to promote and preserve cultural diversity are secure. Moreover, Article IV of the GATT explicitly allows for screen quotas for minimum amounts of domestic origin cinema. These clearances are still preserved in the WTO, as countries like Korea, Brazil, Venezuela, Italy, and Spain, took a more advantaged position, using this excep-

tion as an instrument to establish quotas for national (or EU) film exhibition (Head & Mayer, 2009).

Multilateral forums, such as the WTO, allowed peripheral countries to perceive gains from the Global North countries. However, some authors (Scott & Wilkinson, 2011) suggest that the increase in international trade, within the actual context, generates more benefits to the import markets than the export markets in the Global South.

On the other hand, the Doha Round (2001-2015) represents the more recent multilateral trade negotiation, which aimed to cut trade barriers in Agriculture, Non-Agricultural Market Access (NAMA) and Services and restrict the monopolistic power of significant trading nations (Adler et al., 2009). However, the Doha talks failed mainly because the US and the EU were unwilling to give up their agricultural subsidies (Amadeo, 2019). Additionally, Brazil, India and China showed a strong position, which did not stand the terms of agreements of countries of the Global North (J. P. Singh, 2017)—demonstrating that economic leaders of the Global South can affect the international trade conditions.

However, even though the BIC (Brazil, India and China) regional block represents 40% of the world's population, their exports of goods only represent 15.2% (J. Singh, 2016). This situation shows that even big countries of the Global South struggle to find representation on the market share, not because of their productive capacity but because of commercial barriers. Then, members of the Global North can see big countries of the Global South as threats, so they retain their market share by restricting certain imports from those countries (J. Singh, 2016). Additionally, like Doha, negotiation rounds resulted from the debilitation of peripheral countries' negotiation blocks, as agreements become more difficult to happen and deadlocks stagnate consensus, which was the pyramidal norm for WTO's decision-making process (Narlikar & Tussie, 2016). Moreover, peripheral countries agree on non-reciprocal trade agreements (Srinivasan, 2019), perpetuating the economic power of the Global North.

Secondly, the case of Bilateral and Regional Preferential Trade Agreements (PTAs) intended to build trading blocks and better commercial relation between countries of the Global North and the Global South. However, the respect of reciprocity and nondiscrimination – MFN principle – to increase global welfare is not always considered in the PTAs, which ends in specific interchange related to particular products in particular countries. An example of this is how core countries often exclude Brazil, China, India and South Africa on their PTA's (J. P. Singh, 2017), because they represent a threat to the actual market situation. Instead, countries of the Global North often look for weak trading partners of

the Global South.

Moreover, Regional Trade Agreements consider geographical blocks such as the North American Free Trade Agreement (NAFTA) or the European Union (Iapadre, 2014). But still, agreements within these regional blocks have difficulties because their members have different positions and market power that might interfere with the fair trade of products. For example, the inclusion of Mexico in NAFTA served no other purpose but to establish the idea that Mexico is economically dependent on the US (Skonieczny, 2001). Showing again that the intentions of PTA's can hide incentives that provide higher gains for the countries of the Global North to the detriment of the Global South.

Finally, the 2005 UNESCO Convention on the Protection and Promotion of the Diversity of Cultural Expressions attempts to move the cultural industry from a cultural exception in international trade to cultural diversity (J. P. Singh, 2015). Specifically, preferential treatment is defined in Article 16 of the Convention as the obligations that core countries assume to support peripheral countries in promoting and exporting their cultural goods, services, artists, professionals, and practitioners (UNESCO, 2009).

Moreover, the UNESCO Convention attempts to restrict countries' sovereignty on cultural policies by demanding equitable access and fundamental freedoms (Germann, 2010). However, due to the institutional framework of WTO (legal binding), the commercial aspect rules over the cultural element. Then, under WTO agreements, the economic component has a predominance on behalf of the cultural component (Loisen & Pauwels, 2015). This situation provides a 'free pass' for the corporate powers that dominate cultural industries (Germann, 2010). Consequently, the UNESCO Convention 2005 ends as a discursive agreement to protect cultural diversity from economic liberalisation mainly because it does not have the legal tools to incentive an effective preferential treatment, one that creates trade concessions over the reciprocity to the paternalistic countries.

Hence, considering that the WTO was created and later managed by the Quad group of countries (Canada, US, EU, Japan) (Wilkinson, 2014), it will be understandable that countries of the Global South should work on plurilateral agreements outside of the WTO. Hence, the countries of the southern hemisphere establish a framework that can later be stressed by multilateral agreements with all the nations of the WTO, but guaranteeing a practical application of preferential treatment or at least do not contribute to commercial barriers and unfair trade between North and South.

### 6.2.4 Cultural Trade in Latin America and Future Challenges

Having analysed the general context of international cultural trade, considering the hegemonic power of the Global North and the applications of conventions and international agreements, this study explores the cultural trade from Latin America. Moreover, this subsection analyses explicitly the cultural trade from Latin America, their actual context theories explaining their disadvantaged position and future challenges of this regional block on international cultural trade.

The reason to analyse their particular case is the under representation of this region in the international cultural trade market, affecting the possibilities of cultural workers of Latin America to benefit from a global market. In that context, Latin American cultural and creative industries revenues constitute 6% of the worldwide market share, substantially below North America (28%), Europe (32%), and Asia-Pacific (33%) (Times, 2015). However, the contribution of CCIs in the total exports of Latin America is significant enough to look for better export strategies and increase their market share. Moreover, for 2011 the Creative Industries represented 2.2% of the total exports of Latin American Countries, with a value of USD$ 876,000 Million (IDB & Council, 2014).

Hence, cultural exports from Latin America face a disadvantaged scenario, which this section aims to highlight so that later one can explore possible solutions to it. In that context, the literature developed several theories explaining the difference of export levels volumes from Latin America and countries of the Global North, which will be analysed.

#### Theories on Cultural Trade Difference Between Global North and Global South

One approach to the difference between the cultural trade volume from the Global North and Global South is based on 'cultural distance´, where common norms and values diverge from two particular countries (Hofstede, 2001). Or said differently, countries with similar cultural taste will often trade more (Disdier et al., 2010; Guiso et al., 2009).

Specifically, five dimensions cover cultural distance where norms and values could differ; power distance, uncertainty avoidance, individualism versus collectivism, masculinity versus femininity, and long-term versus short-term orientation. In this context, a study analyzed the trade flows of the US and its trading partners, considering the presence of immigrant and cultural distance. The results

show that the effect of cultural distance reduce exports, where cultural exports are more sensitive (-0.49%), than non-cultural exports (-0.27%), and that the presence of immigrants reduces the effect of cultural distance more for cultural exports (-0.386%) than non-cultural exports (-0.144%) (Tadesse & White, 2010). In that sense, the top ten countries by the number of immigrants are predominantly from the Global North, led by the US and followed by Germany, Russia, the UK, France, Australia, Canada and Spain, with a few exceptions from Saudi Arabia and the United Arab Emirates (Center, 2020).

Another related argument is that European countries have a much beneficial situation in terms of cultural exports as they are part of a political and economic union (UE), which reduces cultural distance, guaranteeing significant flows of citizens from those countries. In the case of the US, the cultural hegemony of Anglo-Saxon culture ensures a constant flow of immigrants, benefiting their cultural exports. This situation is far from the reality of the Latin American regional block, as their countries have significantly lower levels of immigration compared to countries of the Global North. Moreover, this situation cannot be justified by the size of the nations, as Argentina has immigrants levels similar to the Netherlands and Sweden, and Brazil to Denmark or Poland (Center, 2020). The difference in immigration levels can be attributed to the historically cultural and geographical isolation of the Latin American region from the rest of the world, impacting cultural exports.

On the other hand, authors suggest that the illiteracy rates in Latin America explain why cultural production levels are far below the ones observed in other regions, such as Europe. As a consequence, high illiteracy rates constrained the demand for cultural products, so there is no incentive to the private sector to produce them (Stanziola, 2002) and also creates cultural differences in the social field, inherent to the core of Latin American society, also impacting the cultural production (Acosta, 2014). For instance, England had an illiteracy rate of 3% in 1920, while 30 years before that, France had an illiteracy rate of 10% (García Canclini, 1996). In the United States, the illiteracy rate was wildly divergent at the beginning of the twentieth century, with average illiteracy rates of 0.9% in some states and 39.6% in others. However, by 1950, the gap was reduced to 9% between the highest and the lowest illiteracy rates (Mueller, 1959). In contrast, the illiteracy rate of Brazil in 1920 was 75% (García Canclini, 1996), and even 60 years later, the illiteracy rate of Latin America and the Caribbean remained around 20% (Macrotrends, 2020), far from the percentages of Global North countries. In this context, a study on imports of US film in 33 countries found that language, education and religion are significant variables contributing

to increase the export levels of US audiovisual products (Marvasti & Canterbery, 2005). Consequently, countries with lower illiteracy rates have a more privileged position to develop cultural production and export them. Nevertheless, the actual situation shows a more even status between countries in the Latin American region and the Global North, where most of them present illiteracy rates below 10% (Roser & Ortiz-Ospina, 2016). However, the cultural sector of regions, like North America and Europe, had the temporary advantage over countries of the Global South because they developed their cultural export strategy first and captured a more significant part of the market share.

### Statistics on Cultural Trade Difference Between Global North and the Latin American region

From the perspective of international cultural trade, statistics support the initial statement that cultural exports from the Global South, and specifically from Latin America, have a marginal contribution to the global market share of cultural exports. In that context, the OECD publishes information on exports, imports, and commercial balance of countries worldwide. Hence, based on that data, the following figures show the exports, imports, and commercial balance of the top countries of Latin America trading cultural products.

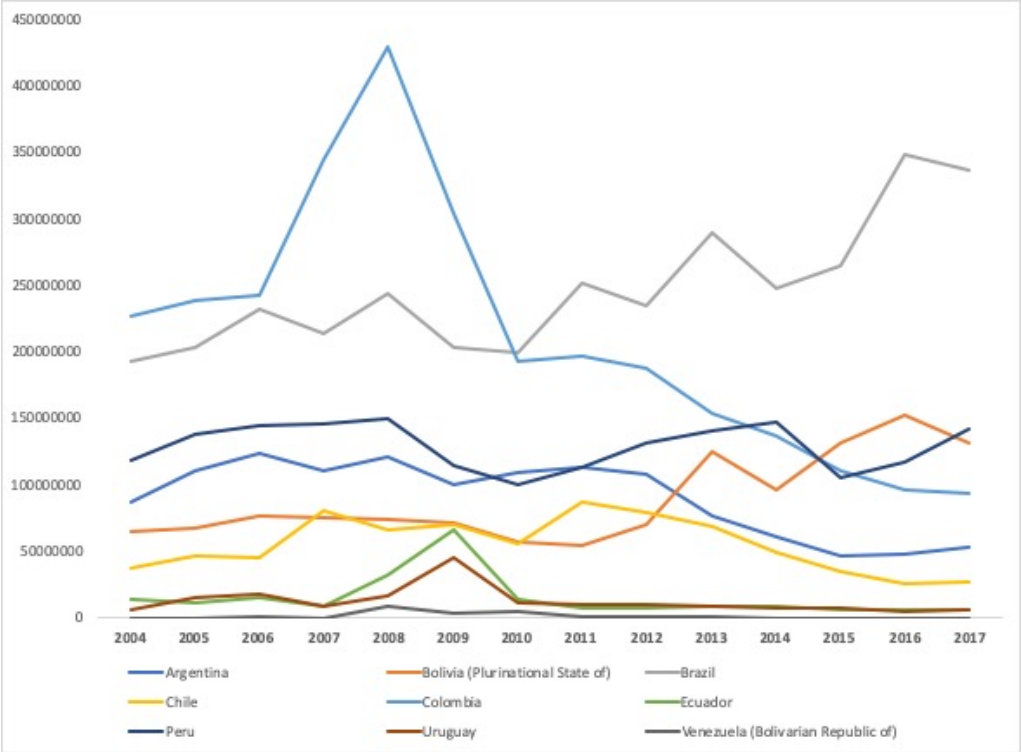


Figure 6.1: Exports of Cultural Goods in Top 9 Countries of Latin America (US$) 2004-2017.

From the graph, it is possible to observe that Brazil seems like an outlier in terms of cultural exports volume. Nevertheless, those exports are predominantly 'related´ cultural goods, such as DVD´s reproducers, TV´s and sound systems (Calcagno et al., 2008). Unlike the following top exports; Peru, Bolivia and Colombia, which, even though their volumes are considerably lower, their exports are intrinsically related to non-industrial cultural goods, such as crafts.

As Brazilian cultural exports are associated with industrialised goods, it is not strange to observe a higher percentage of cultural exports. Moreover, Brazilian cultural goods exports achieve 3% of the total exports in 2011 (IDB & Council, 2014). However, in other countries such as Paraguay, Peru and Chile, the percentage of cultural exports on total exports is around 0.5% (IDB & Council, 2014), suggesting that there is still considerable space for new strategies and improvements on cultural exports.

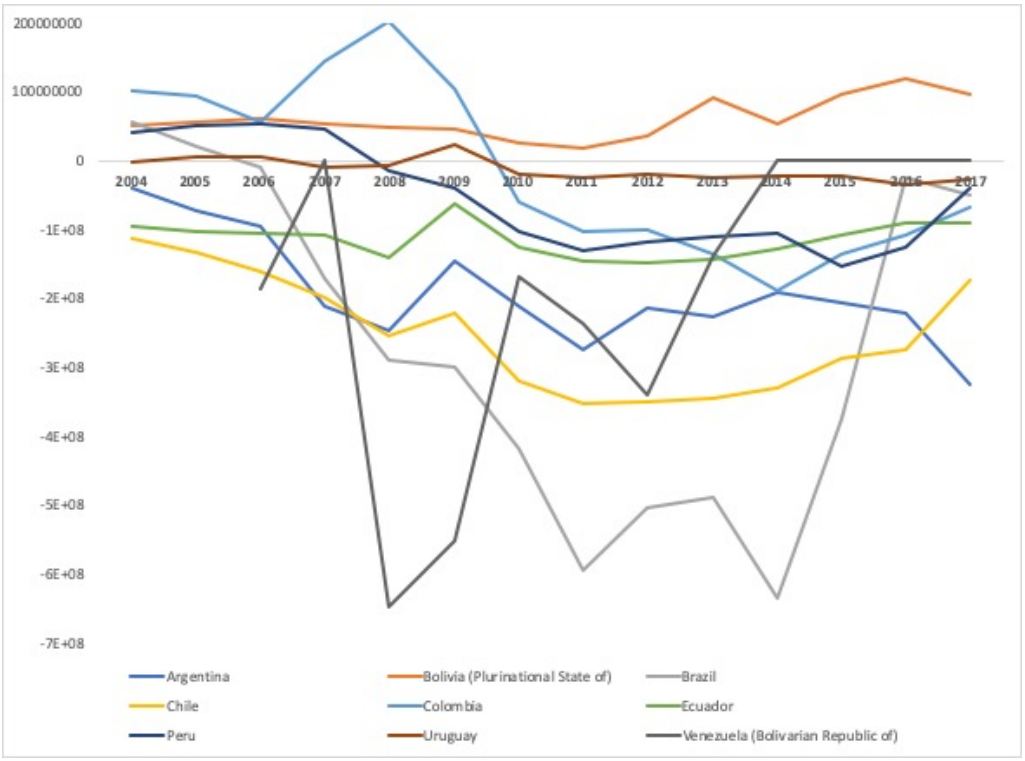


Figure 6.2: Commercial Balance of Cultural Goods in Top 9 Countries of Latin America (US$) 2004-2017.

From the previous graph, one can observe that the region has a negative commercial balance in cultural goods. Bolivia is the only South American country with a positive commercial balance on cultural goods (Deloumeaux, 2016). Moreover, the dimensions of patterns of trade – imbalance – shows that countries of the Global South have large volumes of cultural goods imports compared to their exports, reflecting an asymmetric trade flow.

This situation reinforces the explanation of a hegemonic power of other regional blocks, such as the US, Europe and Asia, in terms of cultural trade. All the countries of Latin America, apart from Bolivia, have a more substantial consumption of cultural products from those regional blocks, compared to their national production.

On the other hand, the extension of Latin American exports is mainly constrained to the region's limits. As for 2006, the exports of cultural goods of the top 7 Latin American exporters stayed in the region (74.6%), followed by USA

(17.8%) (Calcagno et al., 2008). Consequently, there is a significant potential for South American cultural exports in Europe, Asia and Africa. Especially considering that for the same year, the imports to the region from Asia (34.5%) and Europe (10.9%) are significant (Calcagno et al., 2008). Therefore, the trade channels are probably somewhat established, but the unidirectional trade impacts the cultural exports of Latin America negatively.

### The Challenges of Latin American Cultural Exports

Based on the previous evidence explaining the uneven situation of Latin American cultural exports, the future challenges advocate increasing cultural exports, both in terms of volume and trade partners.

A significant role towards that objective is the one represented by WTO and UNESCO, which can generate a common framework contributing skill transfer and capacity building for peripheral countries (Richieri Hanania, 2016) increasing their cultural exports. Another institutional example is the summit UE-CELAC, which provides an instance of dialogue and negotiation between both regional blocks, wherein 2015 they highlighted the importance of cultural trade between both parties (García Leiva, 2016). Hence, changes in the established normativity can promote a rebalancing of international cultural trade.

However, even considering the previous examples of institutional support towards cultural exports of peripheral countries. The effectiveness of that support depends on how committed are the institutions and policies in countries of Latin America. Moreover, each nation's different social and economic context results in varying levels of development of the public apparatus. Especially for peripheral countries, this situation creates different results on implementing cultural policies due to the national considerations regarding international agreements. Thus, the objective of establishing fairer trade agreements between Global North and Global South can potentially fail due to national and local normative institutions and their lack of capacity to implement international support.

As an example, the impact of the UNESCO Convention 2005 in terms of cultural trade has been visible in Latin America, with the development of institutional frameworks like Ministries of Culture and other governmental departments (Baltà, 2014). Such is the case of Peru, where the UNESCO Convention was the primary guideline to describe the Cultural Policy Guidelines for 2013–2016 (de Cultura, 2012) or the National Culture Plan 2011–2020 in Brazil (da Cultura, 2011). Based on the previous examples, an internal challenge for countries of the Global South is that cultural industries are not as vital in peripheral countries

as in the Global North. This situation can lead to limitations on how effective the legislation, policies and international agreements are applied in this sector (Baltà, 2014).

However, one has to consider that countries of the Global North prefer to trade – and support preferential treatment – countries with past colonial ties (Rose, 2000) and linguistic proximity (Melitz, 2008). As a result, countries of the Global North are selective and arbitrary. They often will not apply preferential treatment to economic leaders of the Global South such as Brazil, China, India and South Africa (J. P. Singh, 2017). The main reason is that those countries can potentially take a considerable market share or initiate a partnership with countries of the Global South, which will endlessly put the paternalistic position of the Global North in danger. An example of this situation was the Doha Round, where India refused to agree the commercial terms of the US, identified as a milestone of how countries of the Global South can reject 'preferential agreements' that seeks to increase the benefits of the Global North, over the possible concessions given to countries of the Global South.

Another relevant challenge is the regional collaboration as an economic block, which is an ongoing process. In this context, several international institutions are contributing to building a more robust regional partnership. For instance, since 2012, the South American Cultural Council of the UNASUR facilitates collaborations on cultural trade in the region. Additionally, in 2014 the II Summit of CELAC established both, The Habana Declaration and an action plan 2014-2021 to reinforce cultural exports within the region (García Leiva, 2016). Furthermore, the cultural development plan of the IDB uses bilateral agreements with institutions in 26 countries (CNCA, 2015). Finally, *Programa Ibermedia* grants Iberoamerican cultural projects around the world, financially supporting their promotion and exports with subprograms, such as *Ibermedia* in the audiovisual domain, *Iberescena* for performing arts and *Ibermusica* for the music sector.

A final challenge is to set regional collaboration at a micro level, considering local initiatives coming from communities. In that sense, *Corredor Cultural Caribe* and *Ibercultura Viva*, have been taking the lead on the development of those kinds of initiatives in the region (Melguizo, 2013).

Overall, this subsection explored theories and statistics on the unbalanced situation of cultural trade in Latin America, compared to other regional blocks. Additionally, it shows that challenges to improve cultural exports from Latin America come from the better dialogue between countries of the region, resulting in better terms and conditions for trading cultural products with countries of the Global North, which complements the actual support from international

agreements and conventions. In sum, the potential mechanisms to remedy the imbalance of cultural goods trade comes first from avoiding failing normative institutions within the Global South region. Secondly, a new normative system promoting symmetric and fair trade between countries of both global regions via conventions, trades and agreements. This considering that the actual normative system does not rest on that asymmetry, as it was at its genesis.

### 6.2.5 Cultural Trade: The Case of Chile

This subsection follows the review of cultural trade in Latin America. It moves the specific characteristics of cultural trade in Chile as a representative of the Latin American region with the potential of improving their cultural export levels.

Furthermore, this section analyses the Chilean cultural export strategies and their context over time. Additionally, it highlights the main statistics on cultural exports, analyses the leading promoters of cultural exports - both public and private, observes the interaction between international agreements and Chilean cultural policies, and finally overviews the main challenges and barriers that Chile faces on cultural exports.

#### The Trade Data

Primarily, Chile is a relevant case study, as it is the leading net exporter of cultural goods in Spanish speaking countries of South America. Moreover, the Chilean case represents a benchmark in terms of exports strategies. For example, their contribution to cultural goods exports in 2016 reached US$69 billion, followed by Argentina (US$58 billions) and Peru (US$44 billions) (UN, 2020).

However, the balance between cultural exports and imports of the country has room for improvements, as the government tends to import substantially more than what they export. In this context, the exports of cultural goods represent 10% of the volume of imports of cultural goods, with 64% of it been supplies, 28% finished products and 8% equipment for audiovisual reproduction equipment (Aspillaga, 2014). Coherent with the fact that the country has a robust export strategy of commodities and resources more than finished products. Moreover, the lack of promotion of cultural products abroad can be observed by the results of Trama´s study, which shows that 71.1% of cultural workers in Chile struggles to distribute and promote their cultural goods and services (Brodsky, Negrón, et al., 2014).

Another significant aspect of the cultural trade context is that their cultural goods are much more restricted to specific cultural domains. Furthermore, 70% of cultural goods exports are equally distributed between craft and editorial products (books, newspapers and magazines), and 80.7% of the cultural services exports are attributed to infrastructure and equipment, primarily associated with informatic media, audiovisual, radio, TV and videogames (CNCA, 2019).

In terms of the main destinations of Chilean cultural exports, the products go predominantly to countries of the region. The evidence goes in line with the regional trade in countries of Latin America (J. P. Singh, 2017), where the top importers of cultural exports from Chile are Argentina, Peru and Brazil. Followed by other countries of the region, on a second category, in terms of volume, one can find Mexico, the US and Europe (Aspillaga, 2014). The narrowed pool of cultural importers can also be attributed to the consistent collaboration of several institutions promoting partnership between Iberoamerican countries. Such as SEGIB, OEI, CAB, CERLALC, OEA, CELAC, MERCOSUR, UNASUR, ALBA, CAN and SICA (García Leiva, 2016), to name some of them.

Regarding the relative importance of the cultural sector and the cultural exports in the Chilean economy, one can consider that the creative industry is significant, but lacks participation in the volume of total exports. For instance, the creative industries account 2.2% of the GDP (CNCA, 2017), over other sectors such as the tobacco industry and the fishing industry. However, the evidence shows that the percentage of representation decreases significantly when comparing cultural exports and total exports. Public reports on the matter revealed that in 2013, the cultural sector in Chile represented 0.29% of total exports, USD$ 221 Million. Then, as previously mentioned, there are possibilities to increase the cultural goods exports due to the importance of the sector in the economy and the significant gap between cultural good exports and total exports of the country.

### The Institutionality

About the institutions responsible for the cultural export strategies, the country has several institutions in a sort of overlapping of responsibilities. In that context, the specific institution leading the proliferation of Chilean cultural brands abroad, the analysis of new markets and the strategies of every exportable product is *ProChile* (Ffrench-Davis, 2002). However, the Ministry of Culture has an international unit responsible for building and preserving commercial relationships with other countries and promoting cultural trade (CNCA, 2017b). Si-

multaneously, the Ministry of Foreign Affairs monitors international agreements dealing with exports of cultural goods and services, such as WTO agreements or UNESCO Convention 2005, through the Department of Economic International Relations, International Chilean Agency of Cooperation and Development, and the Department of Cultural Affairs.

However, as previously mentioned, *Prochile* has been the most notorious promoter of the Chilean cultural sector abroad. Testimony of that is *Prochile* support on cultural export strategies throughout a decade, initially supporting specific domains of the cultural sector, through a program called *Marcas Sectoriales* (Sectorial Brands). Introducing support strategies to Architecture, through the brand *Arquitectura de Chile* and the audiovisual sector, through *Cine Chile*, both in 2009 (CNCA, 2015), and since 2008 supporting graphic and editorial domains (ProChile, 2015).

The following graph shows the volumes of cultural exports between 2005-2015, reflecting the importance of the insurgence of *ProChile*. The effect of *ProChile* support can be observed in the increase of cultural exports between 2010 and 2011. However, since then, the volumes of cultural exports have consistently decreased until 2015, not to mention that the main trade partners remained within the region, acknowledging the rigid geocultural barrier.

As previously mentioned, there are other public organisms supporting cultural exports from Chile, Even though *ProChile* is the official public institution in charge of cultural exports in the country. In that sense, the Directorate of Cultural Affairs (DIRAC) from the Ministry of Foreign Affairs supports Chilean cultural projects from embassies, consulates and missions worldwide, with the idea that culture strengths diplomatic relations between countries (CNCA, 2015). It is important to mention that the scope in this case is to promote the country's image, not promote profitability on exports of cultural projects. Another example of public support is CORFO[2], which promotes entrepreunership and new business. And in that line, supports the program *Programa de Fomento al Cine y la Industria Audiovisual* in a joint effort with CNCA, ProChile, DIRAC and CNTV, promoting exports of national audiovisual products (Cajavilca, 2017).

### The Policies and Agreements

Additionally, there are other mechanisms of support, such as cooperation agencies and international agreements. Some of the international cooperation are; *Agencia de Cooperación Internacional* (AGCI), a public institution searching and capturing international collaboration to the promotion of Chilean exports. *Fundación Imagen de Chile*, an independent agency, supporting the promotion of Chilean image since 2009, financing Chilean projects on national and international fairs and festivals such as the Bienal of Venecia or Expo-Milán.

Regarding international agreements on cultural exports, UNESCO Convention 2005 supports the cultural exports of peripheral countries via preferential treatment. However, quadrennial reports 2012 and 2016 on cultural policies for Chile explicitly manifest that there is no evidence of cooperation programs in line with the UNESCO Convention, exposing the discursive rather than pragmatic essence of the convention in the country. On the other hand, Chile has more than 130 bilateral agreements for cultural trade, but most of them are not updated (Solis, 2017).

Finally, Chile has an important FTA with countries like the US. Therefore it is essential to protect cultural exports on commercial agreements that could potentially harm them. That was the case with the FTA with the US, where Chile created the coalition for cultural diversity to exclude certain cultural products from the FTA to protect them (Vilches, 2017).

[2] *Corporación de Fomento de la Producción*

### The Barriers and Challenges

Now that this subsection outlined the actual context of Chilean cultural trade in their most relevant dimensions, the discussion moves towards the existing barrier and challenges that Chilean cultural exports faces. More specifically, involving aspects such as ownership of products, lack of resources to promote products, lack of consistent support policies and the hegemony of international agreements maintaining the status quo of a North-cultural producer and a South-cultural consumer.

Firstly, there is a problem with copyrights of cultural products coming from Chile. In that sense, the intellectual property of it is owned by editorials from other countries - for example, Spain (Vilches, 2017). Hence, most of the revenues produced by those local artists stay in the hands of the ones that own the legal rights of the product.

Another factor is the predominance of exports on cultural services over cultural goods. This situation represents a limitation that Chile shares with other Global South countries, as those countries do not have a manufacturer seal in their production strategy, exporting pieces and components, rather than finished products. Then, it is highly complex to turn the net commercial balance positive if most of the cultural products are imported from countries of the Global North.

Also relevant is the sustainability of public policies towards the support of cultural exports. That is why support strategies need to be firstly invariant to governments and authorities, constructed as a long-term support strategy, and secondly, create collaboration with other ministries, as in Chile each ministry works towards their own goals independently (Rodríguez, 2013). Those goals are established to fully achieve an industry policy towards supporting the country's cultural exports.

## 6.2.6 Relation between Cultural Exports and Socioeconomic Situation of Cultural Workers

This subsection covers the linkage between cultural exports and the general topic of this thesis, which is the improvements of the socioeconomic situation of cultural workers, as the linkage is not as directly evident as for the previous articles on pensions and public grants.

Hence, the point that needs making is the relation of cultural trade to cultural workers. A potential assumption could be that if cultural trade asymmetries are mitigated, employment in the cultural sector of countries – negatively affected –

may increase. As countries from the Global North, such as the UK, have already experienced the benefits of the creative industries, leading to employment growth and export earnings (Hesmondhalgh, 2008), especially within the sector.

Moreover, a well-designed cultural export strategy can provide several benefits to the sector, the workers, and the economy. More concretely, the South-South trade of cultural goods in 2008 reached a figure of USD$ 60 billion, which represents a 20% annual growth. In contrast, the exports from the Global South to the Global North showed a 10.5% of annual growth (UN, 2010). The economic benefits from the trade of cultural goods go partly to the cultural workers involved in the production chain of those goods, improving their incomes.

By considering cultural products on the national export strategy, countries can improve their slow-moving global trade environment. At the same time, by trading cultural products, governments foster innovation and social innovation, with the benefits of a more inclusive and equitable economic growth strategy (Cropley et al., 2011). This strategy is of particular interest to the cultural and creative sector, as their market share is atomised in several small companies (Greffe, 2006), so ethical and inclusive economic growth is crucial for them and the workers involved.

There is also the argument that there is a spill-over effect of actual cultural goods on future cultural goods production (Grossman & Helpman, 2001). Hence, the implication can be extended to cultural exports, where cultural exports will benefit future cultural goods production and the cultural workers involved in those supply chains and provide additional employment to the sector.

To illustrate the previous point, one can consider 'Nollywood´, the prominent Nigerian movie industry or 'K-Pop´music industry from South Korea. Both examples attain that after the booming of their industries, the cultural workers benefited from it. For instance, Nollywood is considered the second-largest employer in the country, with a satellite channel called Nollywood TV and distributions of DVDs sold in other countries of the African region. Moreover, Nollywood is contributing 1.4% of Nigeria´s GDP(Kabanda, 2018). On the other hand, the phenomenon of K-Pop culture has contributed to an annual average growth rate of exports on Korean music of 36.4% between 2005 and 2011 (Messerlin & Shin, 2013). Hence, export strategies of specific cultural goods and services can contribute significantly to the export growth and, therefore, to the GDP, incorporating more workers in their sectors and levelling up their standards and socioeconomic situation.

Overall, improvements in exports of cultural goods can contribute to actual and future workers, enhancing inclusive economic growth in the sector and cre-

ating a better socioeconomic situation for those cultural workers. Nevertheless, the aggregate demand for cultural exports could generate jobs in the cultural sector. Nonetheless, the question is what types of employment will be and how the existing nature of the artistic labour market helps or hinders new jobs.

## 6.3 Research Gaps and Final Remarks

From the literature previously presented, this study acknowledges that there are gaps that can be bridged. Furthermore, by covering those gaps, this investigation could address the challenge of providing suggestions to improve the cultural exports strategy in Chile.

More specifically, the literature review on cultural export strategies shows two significant gaps. Firstly, research on cultural exports presents a methodological gap (Miles, 2017). There is an absence of models associated with prediction, mainly focusing on causation using Gravity Models to analyse the most significant variables explaining the volumes of cultural exports. Moreover, studies on cultural trade have mainly focused on using Gravity Models to outline the impact of certain essential variables on the export volumes. Still, nothing has been done to predict which countries have better probabilities of trading cultural products and the variables explaining those probabilistic levels. This study aims to expand the analysis to a predictive model using machine learning, identifying the most significant variables affecting the probability of trading with a country – in this case, Chile, instead of using the export volume as a dependent variable in an ordinary regression. This new approach addresses the methodological gap globally and locally, as a predictive model has not been tested for cultural exports of any other country and Chile.

Secondly, there is an empirical gap in previous research (Miles, 2017). Moreover, some of these new variables seem to be relevant and worthy of investigation in the context of cultural exports. Furthermore, previous studies on cultural trade have focused on economic, demographic, cultural and geographical variables. However, no study has incorporated variables covering preferential treatment, bilateral agreements, and multilateral agreements to the analysis. This research considers those new variables in the investigation to find if preferential treatment, conventions, and international agreements have any positive effect on the country's cultural exports. This investigation incorporates these variables because elements of preferential treatment or exceptional trade conditions are commonly associated with cultural trade and the idea of rebalancing the market share of

cultural products between countries of the Global North and the Global South. Then, incorporating these variables is doubly relevant as they are analysed in the context of a Global South country, Chile. Including these variables addresses the empirical gap globally and locally as no study on cultural trade has included them.

Hence, this research proposes a methodology to understand the variables affecting the possibility of countries importing Chilean cultural goods. The results of this study can potentially improve the country's cultural exports by identifying the most relevant variables and focusing the efforts of strategies and supporting institutions in that direction, providing results that policymaker can use as evidence when designing the export strategy of cultural goods.

## 6.4 Proposal

This study investigates the variables explaining why countries trade cultural products with Chile. The reason to do that is to look for further importers of Chilean cultural goods and services, endlessly increasing the exports from Chile. Then as a consequence, workers income associated with the production of those cultural products will increase, leading to a better socioeconomic situation for them.

Due to the precarious statistical information on the exports and imports of cultural services, this investigation focuses primarily on cultural goods, which can be interpreted as a limitation of the resources of the study. On the other hand, due to the extension of this study, the proposed model considers the aggregate volumes of cultural exports from Chile, so the analysis of individual cultural sectors or cultural good groups are beyond the spectrum of this study.

The distribution and promotion of cultural goods and services is a sensitive variable to improve the socioeconomic situation of cultural workers. Thus, this article recognises that to rely on incomes from their jobs, cultural workers need to export their products and reach audiences outside of the national territory. Specifically for Chile, this is an urgent need as the geographic characteristics make transport costs a sensitive variable for cultural products. Additionally, the difference in development between the capital city and the rest of the regions contributes to establishing barriers in the consumption of cultural goods and services. The total population in Chile is 16 million, with 50% of the people living in Santiago. Based on the previous facts, it is vital to explore new trade partners abroad to increase the export volume of cultural products.

### 6.4.1 Hypothesis

Based on the previous section, this study hypothesis suggest that Chilean cultural goods have potential trade partners that have not been considered yet. Understanding the variables and predictors explaining the decision of importing Chilean cultural goods will unveil new trading partners increasing the incomes of cultural workers associated with the production of those goods. Consequently, improving the socioeconomic situation of those cultural workers.
This research hypothesis is represented as it follows:

$H_0$: Chilean cultural export strategy face international trade barriers affecting the possibility of improvements and new trade partners

$H_1$: Chilean cultural export strategy does not face international trade barriers affecting the possibility of improvements and new trade partners

Cultural workers need to explore new markets, as the local demand for cultural goods and services is not enough to ensure sustainable incomes for workers in the cultural sector. In that context, Chilean cultural goods have a restricted international reach that can be improved.

### 6.4.2 Research Questions

1. What are the export strategies for cultural goods?; whom do they benefit, can they be improved, and how?
2. How to explain the actual exports levels of cultural goods from Chile to other countries?
3. What are the possible variables that could predict new trade partners with Chile? (eg: physical proximity, cultural proximity, established trade links)

## 6.5 Methodology

This section overviews the methodology of this article, also covering the data collection, and the description of the variables incorporated in the model.

This article uses a Logit binary choice model to run a regression and calculate the probability of a country importing Chilean cultural goods, then identifying which variables are significant to that decision. Later, using marginal effects to

that regression, one can identify the individual effects of each critical variable on the probability of importing Chilean cultural goods.

In other words, this study calculates the effect of an increase of one unit of each independent variable to the probability of importing cultural goods from Chile from another country, expressed in percentage. Endlessly, the model shows the variables that affect the chances of importing Chilean cultural goods more sensibly and if that effect is positive or negative. This analysis based on a Logit binary choice model is helpful to isolate the impact of each independent variable. Hence that situation provides the opportunity to focus on the discussion and analysis of certain variables instead of others, based on the magnitude of their effect on the dependent variable. The Logit model has the limitation of linear relationship assumption between dependent and independent variable in terms of weaknesses. Finally, a threat to Logit Models is that models are built in a base of a discrete function, limiting the outcome to values between zero and one. Therefore, even though one could establish the dependent variable as a continuous variable, Logit models do not allow that analysis. Consequently, it biases the model design towards discrete dependent variables, which can undoubtedly lose opportunities to explore the hypothesis differently.

After that first analysis, this study explores applications of machine learning to predict the destinies of exports of Chilean cultural goods, based on a set of variables on volumes of trades, macroeconomic indicators, geographical variables, cultural variables, trade facilitation variables and institution stability.

Concretely, this study builds predictive models using regression trees and random forests as machine learning techniques to analyze the most relevant predictors to calculate the probability from other countries to import Chilean cultural goods. The strength of this methodology is that it simply allows to identifies and rank the most relevant variables predicting the dependent variable. On the other hand, the potential opportunities of those results are forecasting new trade partners, which for some reasons have not been taken into consideration, but hold the same characteristics as some of the importer countries. The weakness of the predictive model is that it does not provide a quantifiable measure of the effect of the independent variables on the dependent variable. Hence it is possible to rank the importance of the independent variables but not determine the size of the impact. Finally, the primary threat of predicted models is using results for decision-making based on the outcome when the model's predictive power is not high enough, causing unexpected implementation problems.

Hence, from the predictive models, this study analyses the probability of each country to import Chilean cultural goods and contrast those probabilities with

the effective volumes of trade to establish a list of potential trade partners that have not been considered.

### 6.5.1 Data Collection

For data collection, this study merges two databases to construct a sample of countries importing goods from Chile, during the years 2005 and 2015. Additionally, the reason to build this database is that it reflects the volume of exports and demographic, sociological, economic and commercial variables of both the country of origin and the one of destiny.

Firstly, this article takes information from the UNCTAD database on exports of Chile to all the countries importing cultural goods from Chile. This information is gathered for the period between 2005 and 2015 and expressed in US$ Millions. The database breaks down the trade volume by sub-domain and subproduct, applying the categories from UNCTAD for cultural goods. One of the limitations of this database is that UNCTAD focuses mainly on physical goods, which leaves a restricted space to services and immaterial. The reason why cultural services are put aside from this study. Nevertheless, reports from UNCTAD show that creative good exports have a more extensive representation of CCIs international trade than services, 69% creative goods and 31% creative services in 2008 (Staines & Mercer, 2013). Therefore this database has a good indication of cultural exports from Chile and their commercial partners. Overall, the first dataset is helpful because it helps to quantify and rank the importers of Chilean cultural goods, providing disaggregated information of the cultural goods that each country imports.

Secondly, this research incorporates a United States International Trade Commission (USITC) database named Dynamic Gravity Dataset (DGD). This dataset specialises in international trading, covering the period between 1948 to 2016, displaying the information between two trading partners (countries) and their macroeconomic indicators, geographic attributes, cultural relation, institutional solidity, trading agreements and sanctions. The second dataset contributes to each country's specific characteristic, which later will be helpful for the construction of predicting models on Chilean cultural exports.

The outcome of merging both datasets is a sample from 2005 to 2015 of Chilean cultural exports volume and characteristics of each country importing them.

About the limitations of the database, this research identifies two main factors that could potentially generate difficulties in developing the study. Firstly,

countries tend to have a relatively limited selection of trade partners to export their cultural goods. That situation is more notorious for Latin American countries, where idiomatic barriers and regional trade partners provide a shortlist of destinies where the cultural goods are imported, providing a highly concentrated and non-homogeneous distribution of the Chilean cultural exports around the globe. From a statistical point of view and considering all the list of countries, there will be a significant representation of missing values. As, throughout the decade of analysis, most countries have not imported cultural goods from Chile, so the vast amount of zeros has to be compensated by using data imputation to help explore the patterns of missingness on the dataset. Secondly, there is some limitation in regards to the structure of the database, which can be described as time-series observations on a set of different variables, often called panel data or longitudinal data (Hsiao, 2007). For instance, as several variables are analysed through periods, it is not possible to isolate the effect of specific years on the independent variables' results. To solve the previous problem, this study proposes fixed effects on years so that it possible to isolate the impact of each year on the results of the variables.

### 6.5.2 Variable Description

By merging both databases, it is possible to have a larger spectrum of variables for each country importing cultural goods from Chile. Therefore, one can observe the volumes of trade and macroeconomic, geographic, cultural, commercial, and institutional characteristics that help develop a better analysis of why certain countries import Chilean cultural goods and others not.

For that matter, this section describes the different variables of analysis, with their respective categories.

Firstly, the exports of creative goods from Chile are categorized based on the definitions of a domain, sub-domain and cultural goods on the UNESCO Statistical Framework 2009 (UNESCO, 2009). The reason to choose this criterion for the study is that, on one side, the dataset comes from UNCTAD. Therefore the cultural goods categories follow the general guidelines of UNESCO. On the other hand, UNESCO Statistical Framework (FCS) allows comparisons of data for cultural industries between different countries, using a standard international criterion. Furthermore, 70% of coding from UNESCO FCS is associated with cultural goods, and only 30% comes from cultural services. Hence, due to the limitation of the data available, it is suitable to use a codification system that focuses on goods.

The specific domains and sub-domains unveil the most disaggregated description possible for cultural goods. Consequently, the categories of cultural goods exports are the following:

**Cultural Goods Domains**

$$\textit{All Creative Goods} = \begin{cases} \textit{ArtCrafts} \\ \textit{Audiovisual} \\ \textit{Design} \\ \textit{NewMedia} \\ \textit{PerformingArts} \\ \textit{Publishing} \\ \textit{VisualArts} \end{cases}$$

With the previously described categories, one can identify the volumes of exports from the most aggregated definition of 'All Creative Goods' to the most detailed description of cultural goods.

Later, from the DGD database, it is possible to identify countries importing Chilean cultural goods. The description of those variables is the following:

**A. Macroeconomic Indicators**

$Pop = Population\ of\ destination\ country$

$Capital\ const = Capital\ stock\ at\ constant\ prices\ of\ destination\ country$

$GDP.PWTconst = Real\ GDP\ inflation\ and\ PPP\ adjusted\ of\ destination\ country\ (PWT)$

$GDP.WDIconst = Real\ GDP\ of\ destination\ country\ (WDI)$

$GDP.WDIcapconst = Real\ GDP\ per\ capita\ of\ destination\ country\ (WDI)$

### B. Geographic Variables

Distance = Population weighted distance between country pair

$$Contiguity = \begin{cases} Yes & \text{if} \quad Country\ pair\ shares\ \ common\ border, \\ No & \text{if} \quad Country\ pair\ does\ not\ shares\ \ common\ border, \end{cases}$$

$$Landlocked\ D = \begin{cases} Yes & \text{if} \quad Destination\ Country\ is\ landlocked, \\ No & \text{if} \quad Destination\ Country\ is\ not\ landlocked, \end{cases}$$

$$Island\ D = \begin{cases} Yes & \text{if} \quad Destination\ Country\ is\ an\ island, \\ No & \text{if} \quad Destination\ Country\ is\ not\ an\ island, \end{cases}$$

Region = Geographic region of origin/destination country.

### C. Cultural Variables

$$Common\ Language = \begin{cases} Yes & \text{if} \quad Country\ pair\ speak\ at\ least\ one\ common\ language, \\ No & \text{if} \quad Country\ pair\ do\ not\ speak\ at\ least\ one\ common\ language, \end{cases}$$

### D. Trade Facilitation Variables on Agreements

$$Agree\ PTA = \begin{cases} Yes & \text{if} \quad Country\ pair\ in\ at\ least \\ & \quad\ one\ active\ preferential\ trade\ agreement, \\ No & \text{if} \quad Country\ pair\ not\ in\ at\ least \\ & \quad\ one\ active\ preferential\ trade\ agreement, \end{cases}$$

$$Agree\ PTA\ Goods = \begin{cases} Yes & \text{if} \quad Country\ pair\ in\ at\ least\ one\ active\ PTA\ on\ goods, \\ No & \text{if} \quad Country\ pair\ not\ in\ at\ least\ one\ active\ PTA\ on\ goods, \end{cases}$$

$$Agree\ CU = \begin{cases} Yes & \text{if} \quad Country\ pair\ is\ in\ at\ least\ one\ customs\ union, \\ No & \text{if} \quad Country\ pair\ is\ not\ in\ at\ least\ one\ custom\ union, \end{cases}$$

$$Agree\ EIA = \begin{cases} Yes & \text{if} \quad Country\ pair\ is\ in\ at\ least\ one\ economic\ integration\ agreement, \\ No & \text{if} \quad Country\ pair\ is\ not\ in\ at\ least\ one\ economic\ integration\ agreement, \end{cases}$$

$$Agree\ FTA = \begin{cases} Yes & \text{if} \quad Country\ pair\ is\ in\ at\ least\ one\ free\ trade\ agreement, \\ No & \text{if} \quad Country\ pair\ is\ not\ in\ at\ least\ one\ free\ trade\ agreement, \end{cases}$$

$$Agree\ PSA = \begin{cases} Yes & \text{if} \quad Country\ pair\ is\ in\ at\ least\ one\ partial\ scope\ agreement, \\ No & \text{if} \quad Country\ pair\ is\ not\ in\ at\ least\ one\ partial\ scope\ agreement, \end{cases}$$

### E. Trade Facilitation Variables on Country Membership

$$Member\ EU\ D = \begin{cases} Yes & \text{if} \quad Destination\ country\ is\ a\ EU\ member, \\ No & \text{if} \quad Destination\ country\ is\ not\ a\ EU\ member, \end{cases}$$

$$Member\ WTO\ D = \begin{cases} Yes & \text{if} \quad Destination\ country\ is\ a\ WTO\ member, \\ No & \text{if} \quad Destination\ country\ is\ not\ a\ WTO\ member, \end{cases}$$

$$Member\ WTO\ Joint = \begin{cases} Yes & \text{if} \quad Country\ pair\ are\ WTO\ members, \\ No & \text{if} \quad Country\ pair\ are\ not\ WTO\ members, \end{cases}$$

$$Member\ GATT\ D = \begin{cases} Yes & \text{if} \quad Destination\ country\ is\ a\ GATT\ member, \\ No & \text{if} \quad Destination\ country\ is\ not\ a\ GATT\ member, \end{cases}$$

$$Member\ GATT\ Joint = \begin{cases} Yes & \text{if} \quad Country\ pair\ are\ GATT\ members, \\ No & \text{if} \quad Country\ pair\ are\ GATT\ members, \end{cases}$$

**F. Measures of Institutional Stability**

Polity = Polity (political stability) score of the destination country.

$$\textit{Sanction Threat} = \begin{cases} \textit{Yes} & \text{if} \quad \textit{A threat of sanction exists between countries}, \\ \textit{No} & \text{if} \quad \textit{A threat of sanction does not exists between countries}, \end{cases}$$

$$\textit{Sanction Threat Trade} = \begin{cases} \textit{Yes} & \text{if} \quad \textit{A threat of trade sanction exists between countries}, \\ \textit{No} & \text{if} \quad \textit{A threat of trade sanction} \\ & \quad \textit{does not exists between countries}, \end{cases}$$

$$\textit{Sanction Imposition} = \begin{cases} \textit{Yes} & \text{if} \quad \textit{A sanction exists between countries}, \\ \textit{No} & \text{if} \quad \textit{A sanction does not exists between countries}, \end{cases}$$

$$\textit{Sanction Imposition Trade} = \begin{cases} \textit{Yes} & \text{if} \quad \textit{A trade sanction exists between countries}, \\ \textit{No} & \text{if} \quad \textit{A trade sanction} \\ & \quad \textit{does not exists between countries}, \end{cases}$$

The last four variables regarding the sanction thread are dismissed from the descriptive statistics and the model, because the answer is negative for all the countries.

In abstract, the previously mentioned variables were the ones presented in the dataset. However, one could expect a much more robust model considering variables specifically related to the cultural sector. This aspect could be interpreted as a limitation of the model, which can change the model's results if considered in future iterations of the model.

## 6.6 Descriptive Statistics

This section analyses the descriptive statistics before modelling the regressions. The first subsection compares trade volumes between the top countries importing Chilean cultural goods and the ones that trade the least. On the other hand, the second subsection presents an analysis of the different variables taken from the database and their results for the top and bottom five importers of Chilean cultural goods. This study aims to find patterns and differences between the two groups of countries by making this comparison.

### 6.6.1 Cultural Trade Volumes Between Highest and Lowest Traders of Chilean Cultural Goods

This subsection analyses several figures to outline the fact that Chilean cultural export strategy focuses on specific countries, which are few in numbers, and close in geographical proximity.

Considering the countries that have imported cultural goods from Chile, through the referenced decade, the summary statistics are the following:

| **Stats** | *dp* **(USD$ Millions)** | *dptotal* **(USD$ Millions)** |
|---|---|---|
| Mean | 5.2 | 29.1 |
| Min. | 0.000001 | 0.000009 |
| 1st Qu. | 0.007 | 0.005 |
| Median | 0.06 | 0.07 |
| 3rd Qu. | 1 | 0.331 |
| Max. | 160.5 | 1,251 |
| Var. | 334 | 19,966 |
| SD | 18.27 | 141.3 |
| IQR | 0.97 | 1.12 |

Table 6.1: Summary Statistics of Cultural Goods Exports from Chile for 2005-2015.

Table 4.1. shows a statistic summary for the aggregated values of cultural goods exports from Chile through the decade of 2005-2015 (*dp*). The mean for the yearly imports of Chilean cultural goods among all the countries is USD$ 5.2 million. However, the distribution of the Chilean cultural goods exports shows that the median value is USD$ 0.06 million, far from the mean value. Moreover, the representation of the third quartile is USD$ 1 million, which represents a considerable difference when analyzing the Max value of the distribution, which is USD$ 160.5 million. These results suggest a high dispersion on the values of the imports throughout the sample, supported with the results on the standard deviation, USD$ 18.27 million. Overall, there is a considerable dispersion on Chile's exports of cultural goods, with a high concentration of large values in the 4th quartile.

On the other hand, the same table shows the statistic summary for the accumulated ten years of imports of Chilean cultural goods for each country (*dptotal*). In that context, the mean of the decade-long imports of Chilean cultural goods

for the sample is USD$ 29.1 million. On the other hand, the median is far lower, USD$ 0.07 million. The first quartile is USD$ 0.005 million, and the min value is USD$ 0.000009, which is the most inferior yearly import from the sample, having not imported anymore during the rest of the decade. The third quartile representing 75% is USD$ 0.331 million, and the maximum value is USD$ 1,251 million, which, compared to the third quartile, shows a significant difference. The difference between the third quartile and the max. value goes in the same line as the yearly exports of cultural goods from Chile, where the high values of exports are concentrated in the last quartile, where the three other quartiles show low levels of exports of cultural goods. Moreover, SD shows an excellent dispersion towards the mean of USD$ 141.3 million.

On the other hand, the results of the top ten historical imports of Chilean cultural goods from 2005 to 2015, goes as it follows:

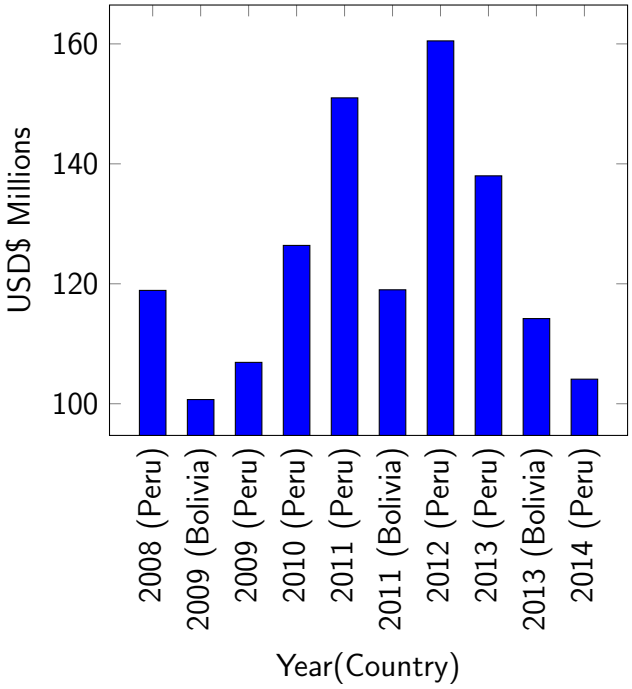


Figure 6.3: Top Ten Ranking of Historic Cultural Goods Exports from Chile.

From Figure 4.3. it is possible to observe that most of the highest level of imports has taken place in the second half of the decade of analysis( 70%). The majority have been performed in Peru (70%), the geographically closest country

to Chile, followed by the second nearest neighbour, Bolivia, with 30% of the top ten annual imports. This situation exposes that throughout the decade of analysis, the influence of neighbouring countries is crucial to the results of Chilean cultural exports, with only two countries been consistently the largest importers of Chilean cultural goods.

Another relevant analysis is a ranking of countries that imported the most from Chile over the decade of analysis. The results are the following:

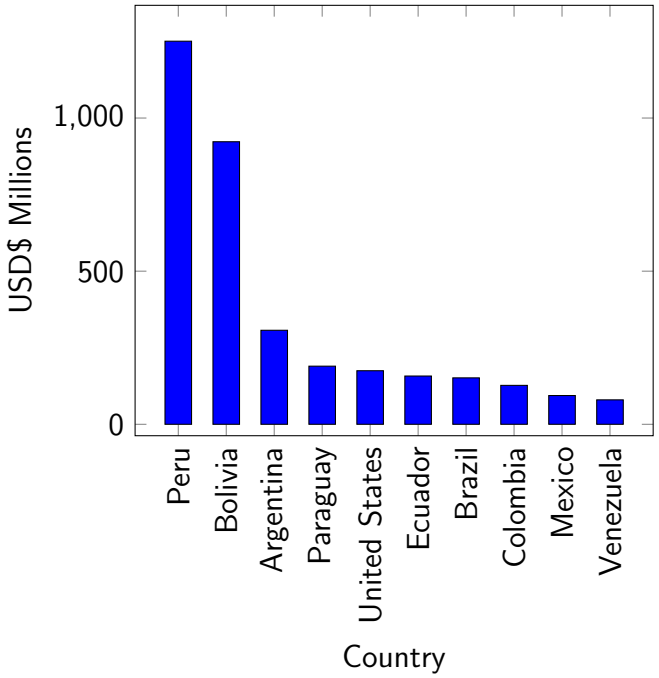


Figure 6.4: Top Ten Accumulated Volumes of Cultural Goods Exports from Chile in 2005-2015.

Figure 4.4 shows that the level of imports of the prominent importer, Peru, represents 33.49% of the top ten imports of the decade. Bolivia followed them with 24.7%, which together explains 58.19% of the total exports of cultural goods from Chile from the last decade. The followed countries represent minor contribution, such as Argentina, Paraguay, United States and Ecuador. It is essential to highlight that the three-country neighbours of Chile are the top three importers and jointly represent 66.41% of the total cultural goods exports from Chile. This result reinforces the idea that the reach of their cultural export strategy is constrained to a regional and even neighbour approach.

To contrast the previous analysis, the following figure shows the ten countries that have accumulate less imports from Chile during the period of analysis, to observe the difference in volume. The results are the followings:

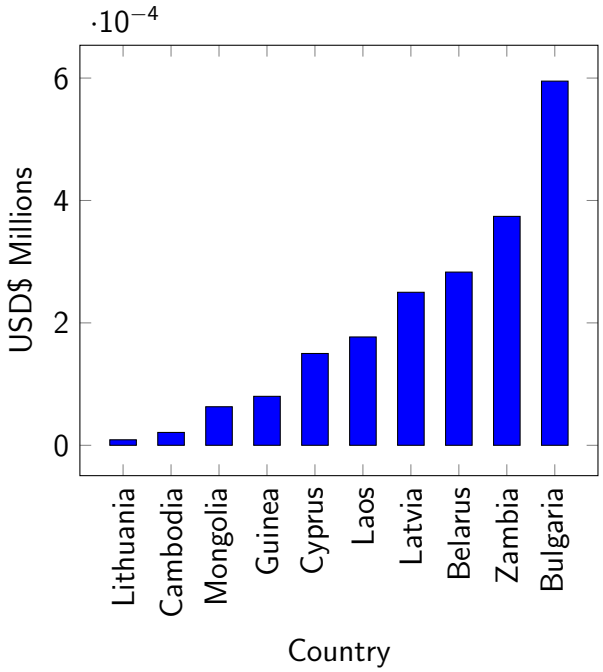


Figure 6.5: Bottom Ten Accumulated Volumes of Cultural Goods Exports from Chile in 2005-2015.

From the results, it is possible to observe that the bottom ten importers of Chilean cultural goods are significantly lower than the top ten. Moreover, the low import volumes of countries from Figure 4.5. are associated with a yearly import throughout the decade. In other words, the countries on the list only imported Chilean cultural goods once in ten years.

From the previously analysed figures, one can reconfirm that during 2005-2015, the exports of Chilean cultural goods have landed to a particular group of countries, led by the three countries, which all have in common the fact of being neighbours with Chile. Specifically, Peru, Bolivia and Argentina, accounted for 58.19% of the accumulated exports of Chilean cultural goods for the decade of analysis.

Moreover, Peru consistently showed the highest yearly import of Chilean cultural goods throughout the decade, with seven out of ten of the highest annual

imports, followed by Bolivia with three of them. This situation reinforces the fact that these two countries have been intense and consistent in Chilean cultural exports goods.

Finally, the values of the bottom ten importers of Chilean cultural goods exposes a dramatic heterogeneous distribution of the destinies of Chilean cultural goods.

### 6.6.2 Top and Bottom Five Chilean Cultural Goods Importers: A Descriptive Analysis

This subsection contrasts the top five with the last five countries in the ranking, identifying differences and similarities in those ten countries' principal characteristics regarding cultural, economic, sociological, commercial and geographical variables.

#### A. Macroeconomic Indicators

Figures 4.6 and 4.7 can observe the difference in population between the top and bottom importers of cultural goods.

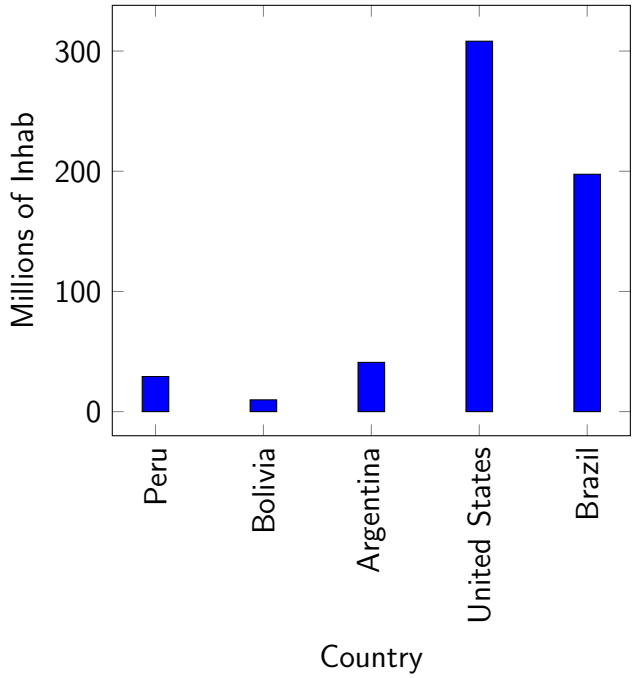


Figure 6.6: Comparison of the top five importers of cultural goods from Chile per USD Millions, and their population for 2005-2015.

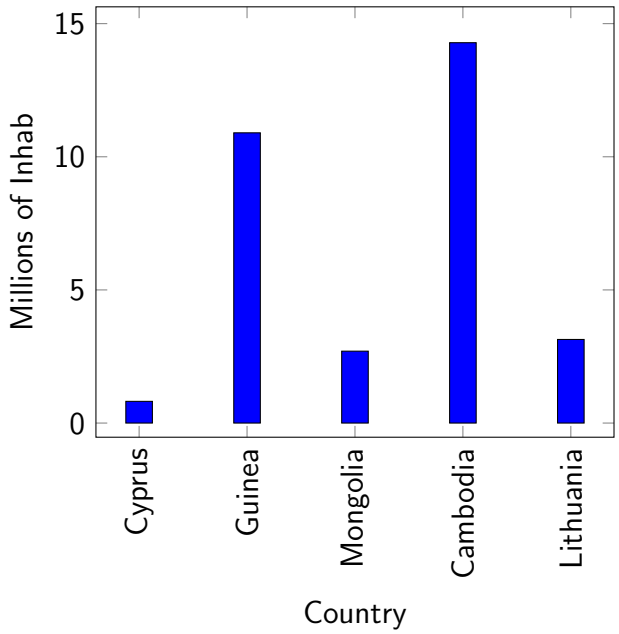


Figure 6.7: Comparison of the bottom five importers of cultural goods from Chile per USD Millions, and their population for 2005-2015.

The statistics show that the bottom five countries are smaller in size compared to the top five importers. Moreover, all of the bottom five countries have less than 15 million inhabitants. In comparison, only one of the top five countries has less than 10 million inhabitants (Bolivia), while all others are mid to big-sized countries. Hence, top importers of Chilean cultural goods are more prominent in population than the bottom ones.

About the mean capital stock, Figure 4.8. and Figure 4.9. shows the yearly average capital stock for the decade 2005-2015 for the top and bottom five countries importing Chilean cultural goods.

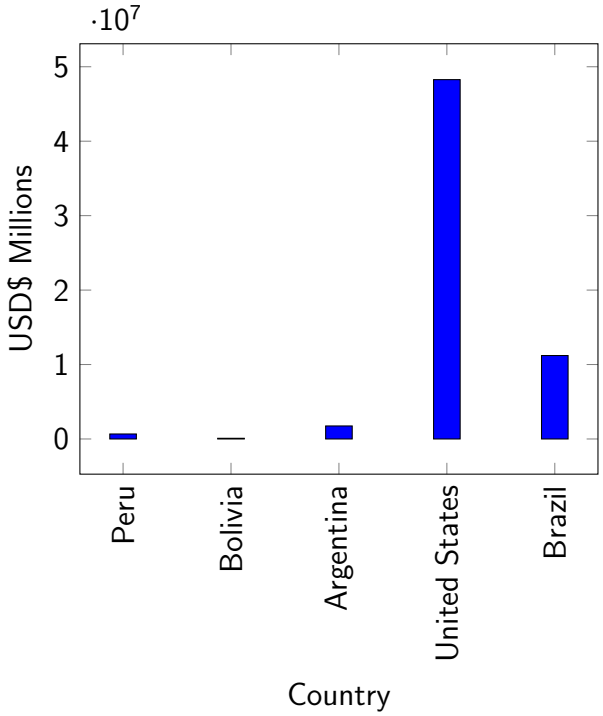


Figure 6.8: Comparison of the top five importers of cultural goods from Chile per USD Millions, and mean capital stock for 2005-2015.

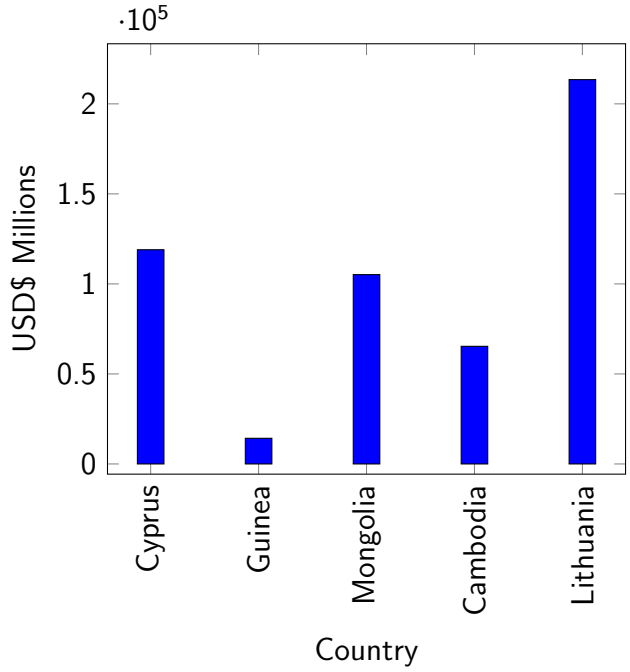


Figure 6.9: Comparison of the bottom five importers of cultural goods from Chile per USD Millions, and mean capital stock for 2005-2015.

From the last figures, one can observe that in general, top importers of Chilean cultural goods have higher capital stocks than the worst five importers, except for Bolivia, which even though it is a leading importer, their capital stock is more minored than to the other top five countries.

In the case of mean GDP, Figures 4.10. and Figure 4.11. shows the following results for the top and bottom five Chilean cultural importers:

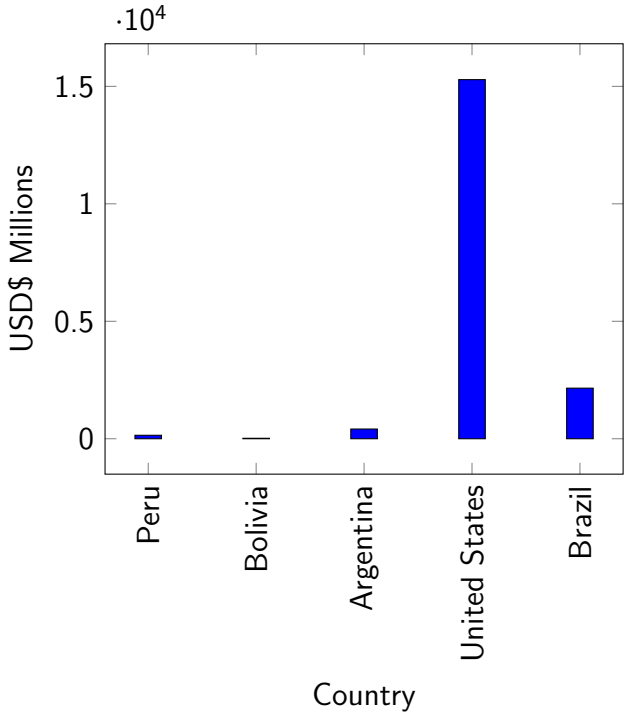


Figure 6.10: Comparison of the top five importers of cultural goods from Chile per USD Millions, and their annual mean GDP (WDI) for 2005-2015.

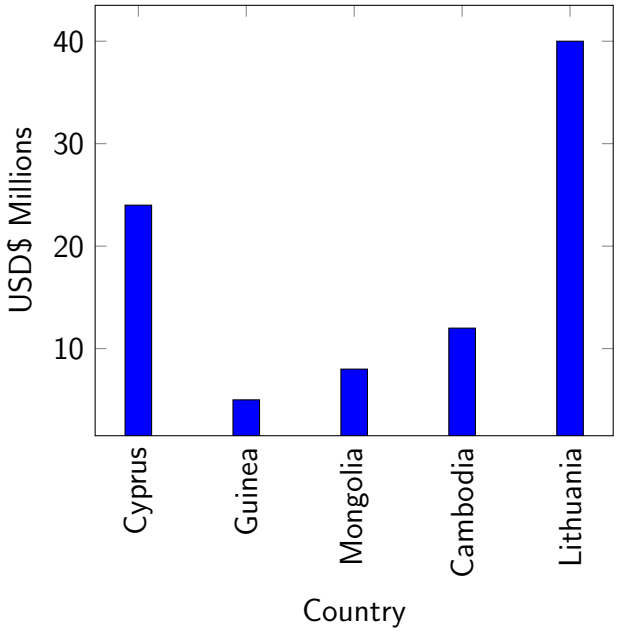


Figure 6.11: Comparison of the bottom five importers of cultural goods from Chile per USD Millions, and their annual mean GDP (WDI) for 2005-2015.

The results show that the top importers of Chilean cultural goods have a higher GDP than the bottom five importers, except for Bolivia.

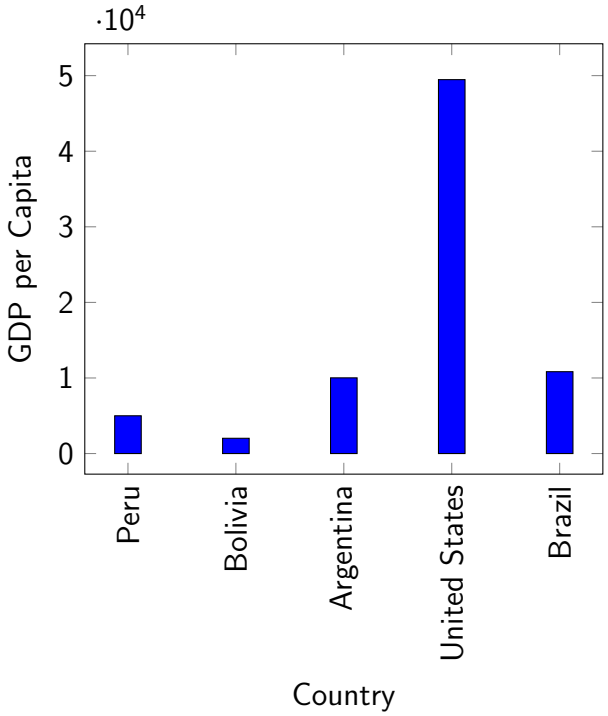


Figure 6.12: Comparison of the top five importers of cultural goods from Chile per USD Millions, and their annual mean GDP per Capita for 2005-2015.

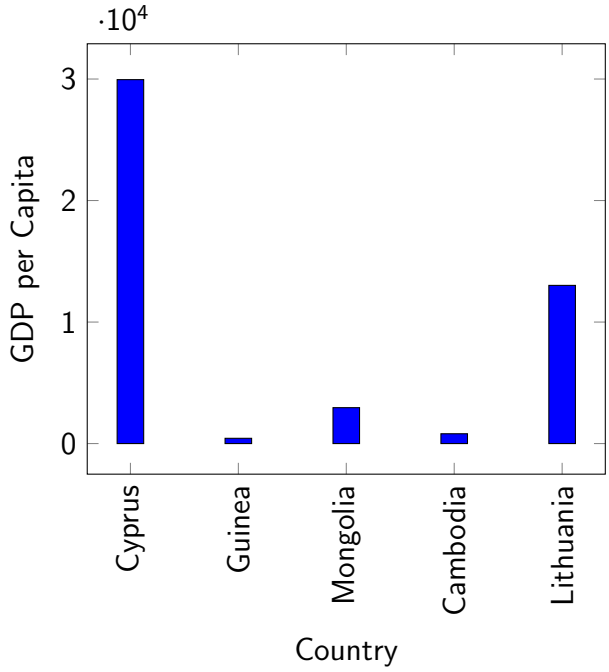


Figure 6.13: Comparison of the bottom five importers of cultural goods from Chile per USD Millions, and their annual mean GDP per Capita for 2005-2015.

From Figure 4.12. and Figure 4.13. it is possible to observe that the results on GDP per Capita are mixed and not entirely conclusive.

### B. Geographic Variables

This section analyses the results of the top and bottom five importers of Chilean cultural goods, considering geographical variables. In that context, this section compares geographical distance, region, contiguity to Chile, landlocked and island. The objective is to observe any relation or difference between the countries.

Firstly, Figure 4.14. and Figure 4.15. shows the difference on geographical distance for the top and bottom five countries importing Chilean cultural goods. The results are the following:

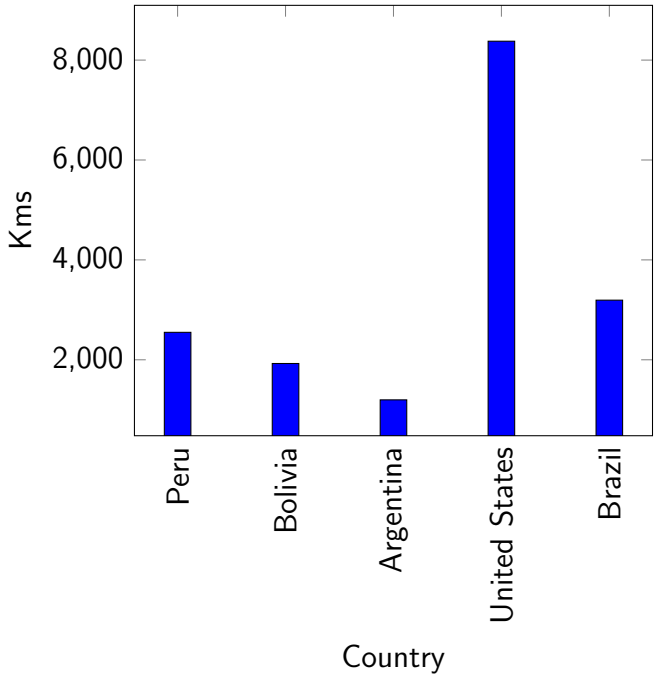


Figure 6.14: Comparison of the top five importers of cultural goods from Chile per USD Millions, and their geographical distance with Chile.

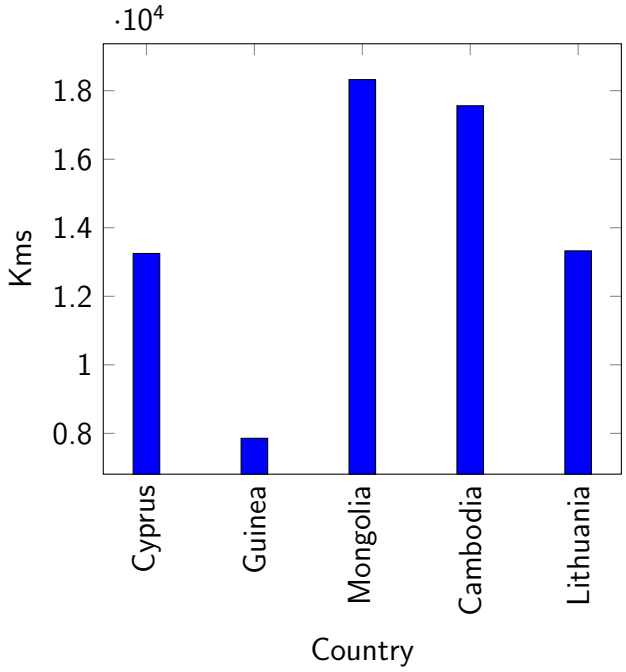


Figure 6.15: Comparison of the bottom five importers of cultural goods from Chile per USD Millions, and their geographical distance with Chile.

From both figures, one can observe that the most considerable geographical distance is related to countries that import smaller Chilean cultural goods. Furthermore, the spread of the lowest five importers is remarkably more extensive than the highest five. On the other hand, the most significant importers of Chilean cultural goods are the three neighbouring countries, Peru, Bolivia and Argentina. Hence, the results support the initial theory that geographically closer countries tend to trade more.

The following table shows a set of discretionary and categorical variables related to the geographical characteristics of countries importing Chilean cultural goods.

| **Ranking** | **Country** | *Region* | *Contiguity* | *Landlocked* | *Island* |
|---|---|---|---|---|---|
| 1. | Peru | S. America | Yes | No | No |
| 2. | Bolivia | S. America | Yes | Yes | No |
| 3. | Argentina | S. America | Yes | No | No |
| 4. | United States | N. America | No | No | No |
| 5. | Brazil | S. America | No | No | No |
| 5. | Cyprus | Europe | No | No | Yes |
| 4. | Guinea | Africa | No | No | No |
| 3. | Mongolia | E. Asia | No | Yes | No |
| 2. | Cambodia | S. E. Asia | No | No | No |
| 1. | Lithuania | Europe | No | No | No |

Table 6.2: Comparison of the top five and bottom five importers of cultural goods from Chile per USD Millions, and their contiguity with Chile, geographical situation and region for 2005-2015.

From Table 4.2. it is possible to observe that the top five importers are countries based on the American continent, the same as Chile. Moreover, the bottom five are spread in different continents such as Asia, Africa, and Europe, separate from Chile's mainland.

## C. Cultural Variables

The following section analyses common language as a cultural variable, which can have similarities or differences with Chile and their top and bottom five importers of Chilean cultural goods.

| **Ranking** | **Country** | *Common Language* |
|---|---|---|
| 1. | Peru | Yes |
| 2. | Bolivia | Yes |
| 3. | Argentina | Yes |
| 4. | United States | Yes |
| 5. | Brazil | Yes |
| 5. | Cyprus | Yes |
| 4. | Guinea | No |
| 3. | Mongolia | No |
| 2. | Cambodia | Yes |
| 1. | Lithuania | No |

Table 6.3: Comparison of the top five and bottom five importers of cultural goods from Chile per USD Millions, and their common language with Chile for 2005-2015.

From the results of Table 4.3, it is possible to observe that the top five countries importing Chilean cultural goods share a common language with Chile (which does not necessarily need to be the official language). On the other hand, three of them do not have a common language with Chile for the worst five importers. Then, the results support the idea that countries sharing a common language will tend to commercialise more.

### D. Trade Facilitation Variables on Agreements

This subsection analyses variables representing trade facilitation on agreements. In that context, the following table shows if the importer country has a preferential trade agreement with Chile (*Agree PTA*), a specific preferential trade agreement for goods (*Agree PTA goods*) and a custom union with Chile (*Agree CU*). The results goes as it follows:

| **Ranking** | **Country** | *agree PTA* | *agree PTA goods* | *agree CU* |
|---|---|---|---|---|
| 1. | Peru | Yes | Yes | No |
| 2. | Bolivia | Yes | Yes | No |
| 3. | Argentina | Yes | Yes | No |
| 4. | United States | Yes | Yes | No |
| 5. | Brazil | Yes | Yes | No |
| 5. | Cyprus | Yes | Yes | No |
| 4. | Guinea | Yes | Yes | No |
| 3. | Mongolia | No | No | No |
| 2. | Cambodia | No | No | No |
| 1. | Lithuania | Yes | Yes | No |

Table 6.4: Comparison of the top 5 and bottom 5 importers of cultural goods from Chile per USD Millions, and their pairing with Chile on preferential trade agreements and customs union for 2005-2015.

Regarding preferential trade agreements, Table 4.4. shows that the top five countries have preferential trade treatments with Chile and also specifically for goods. However, from the bottom five importers, two countries do not present preferential trade treatments with Chile and also not for goods, Mongolia and Cambodia. Additionally, none of the ten countries shows custom unions with Chile.

Later, Table 4.5. presents information on the top and bottom five importers of Chilean cultural goods under the criteria of having economic integration agreements with Chile (*Agree EIA*), if they have free trade agreements with Chile (*Agree FTA*) and if they are part of any partial scope agreement with Chile (*Agree PSA*).

| **Ranking** | **Country** | *Agree EIA* | *Agree FTA* | *Agree PSA* |
|---|---|---|---|---|
| 1. | Peru | Yes | Yes | Yes |
| 2. | Bolivia | No | No | Yes |
| 3. | Argentina | No | No | Yes |
| 4. | United States | Yes | Yes | No |
| 5. | Brazil | No | No | Yes |
| 5. | Cyprus | Yes | Yes | No |
| 4. | Guinea | No | No | Yes |
| 3. | Mongolia | No | No | No |
| 2. | Cambodia | No | No | No |
| 1. | Lithuania | Yes | Yes | No |

Table 6.5: Comparison of the top five and bottom five importers of cultural goods from Chile per USD Millions, and their pairing with Chile on one economic integration, one free trade agreement, and one partial scope agreement for 2005-2015.

The results show that the most notable difference comes from four of the top five importers of Chilean cultural goods having a partial scope agreement with Chile. The only exception is the country not in the same region as Chile and the other four top importers, United States. On the other hand, four out of five of the worst importers of Chilean cultural goods do not have a partial scope agreement with Chile, been Guinea, the only exception. The other two variables have mixed results, which are not conclusive.

### E. Trade Facilitation Variables on Country Membership

This subsection analyses variables related to countries membership to a specific international organisation dealing with rules of trade. This analysis is done for the top and bottom five countries importing Chilean cultural goods.

The following table shows the actual membership situation to the WTO (*Member WTO*) and the condition when the import destination country and Chile are members of WTO (*Member WTO Joint*).

| **Ranking** | **Country** | *Member WTO* | *Member WTO Joint* |
|---|---|---|---|
| 1. | Peru | Yes | Yes |
| 2. | Bolivia | Yes | Yes |
| 3. | Argentina | Yes | Yes |
| 4. | United States | Yes | Yes |
| 5. | Brazil | Yes | Yes |
| 5. | Cyprus | Yes | Yes |
| 4. | Guinea | Yes | Yes |
| 3. | Mongolia | Yes | Yes |
| 2. | Cambodia | Yes | Yes |
| 1. | Lithuania | Yes | Yes |

Table 6.6: Comparison of the top five and bottom five importers of cultural goods from Chile per USD Millions, and their membership to the WTO for 2005-2015.

In Table 4.6. one can see that both the top five and the worst five countries are members of the WTO. This considering that 97.4% of the countries in the world are either members of the WTO or observer governments. Hence, the study expected the responses reflected on the table.

Next, the following table shows the results of top and bottom five importers of Chilean cultural goods and their actual situation as GATT member (*Member Gatt*) and their pairing situation with Chile as GATT members (*Member Gatt Joint*).

| **Ranking** | **Country** | *Member Gatt* | *Member Gatt Joint* |
|---|---|---|---|
| 1. | Peru | Yes | Yes |
| 2. | Bolivia | Yes | Yes |
| 3. | Argentina | Yes | Yes |
| 4. | United States | Yes | Yes |
| 5. | Brazil | Yes | Yes |
| 5. | Cyprus | Yes | Yes |
| 4. | Guinea | Yes | Yes |
| 3. | Mongolia | Yes | No |
| 2. | Cambodia | Yes | No |
| 1. | Lithuania | Yes | No |

Table 6.7: Comparison of the top five and bottom five importers of cultural goods from Chile per USD Millions, and their membership to the GATT for 2005-2015.

For Table 4.7., in terms of GATT, the top five importers are paired with Chile on GATT, while three out of five of the worst importers of Chilean cultural goods are not paired with Chile on GATT. These results partially reflect that countries that do not have a pair membership of GATT might not trade between them.

The homogeneous results of Tables 4.6. and 4.7. reflect that GATT/WTO membership do not have any substantial effect on trade (Rose, 2004), as the product is the same for the top and bottom importers of Chilean cultural goods.

## F. Measures of Institutional Stability

This final section shows the results of variables on institutional stability for the top and bottom five importers of Chilean cultural goods.

Specifically, the following table shows the political stability score for the top five importers of Chilean cultural goods.

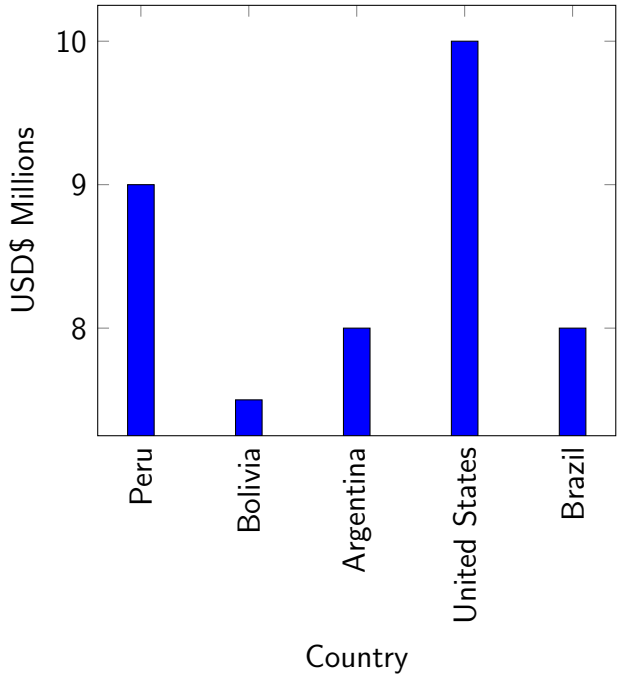


Table 6.8: Comparison of the top five importers of cultural goods from Chile per USD Millions, and their political stability between Chile and them for 2005-2015.

On the other hand, table 4.8. shows the results of the political stability score for the bottom five importers of Chilean cultural goods.

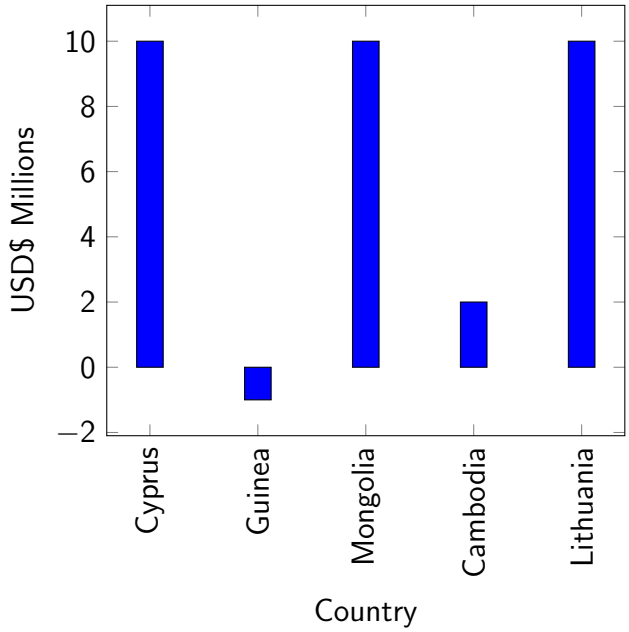


Table 6.9: Comparison of the bottom five importers of cultural goods from Chile per USD Millions, and their political stability between Chile and them for 2005-2015.

From the previous two tables, the results report differences between both groups of countries. Moreover, the top five importers average a score of 8.5 out of 10, much higher than the worst five importers, who average a score of 6.2, with particular cases such as Cambodia, scoring 2 points and Guinea, scoring -1. Hence, one can observe differences in the political stability between the top and bottom importers of Chilean cultural goods, which could impact the volume of Chilean cultural goods exports to those destinies.

The following two tables reflect the results of sanctions between Chile and the top and bottom five destinations of Chilean cultural exports. Particularly, table 4.10 shows if any sanction exists between Chile and destiny countries (*Sanction Threat*), or a thread of trade sanction between Chile and destiny countries (*Sanction Threat Trades*)

| **Ranking** | **Country** | *Sanction Threat* | *Sanction Threat Trade* |
|---|---|---|---|
| 1. | Peru | No | No |
| 2. | Bolivia | No | No |
| 3. | Argentina | No | No |
| 4. | United States | No | No |
| 5. | Brazil | No | No |
| 5. | Cyprus | No | No |
| 4. | Guinea | No | No |
| 3. | Mongolia | No | No |
| 2. | Cambodia | No | No |
| 1. | Lithuania | No | No |

Table 6.10: Comparison of the top five and bottom five importers of cultural goods from Chile per USD Millions, and their paring on sanction threat and trade sanction threat with Chile for 2005-2015.

The results from Table 4.10. show that the sanction threat does not differ from the top and bottom countries, as none of them has either a sanction threat or a trade sanction threat with Chile.

| **Ranking** | **Country** | *Sanction Imposition* | *Sanction Imposition Trade* |
|---|---|---|---|
| 1. | Peru | No | No |
| 2. | Bolivia | No | No |
| 3. | Argentina | No | No |
| 4. | United States | No | No |
| 5. | Brazil | No | No |
| 5. | Cyprus | No | No |
| 4. | Guinea | No | No |
| 3. | Mongolia | No | No |
| 2. | Cambodia | No | No |
| 1. | Lithuania | No | No |

Table 6.11: Comparison of the top 5 and bottom 5 importers of cultural goods from Chile per USD Millions, and their paring on existent sanction and trade sanction with Chile for 2005-2015.

Regarding Table 4.11, the logic remains the same as on the previous table, where non of the ten countries report existent sanctions or trade sanctions with

Chile. Thus, from the last two tables, one can not provide any conclusions on sanction trade, as neither top nor bottom countries have any sanction relation with Chile.

Overall, the results from trade volumes and the indicators from section A. to section F. show statistical results of relevant variables related to international trade of Chilean cultural goods, taken from the merged databases of UNCTAD and DGD.

The trade volumes show a historical predominance of Peru and Bolivia as the largest importers of Chilean cultural goods throughout the decade of analysis. Additionally, the most significant accumulated volumes of trade for that decade are all coming from countries of the South American region (except for the US), being the closest neighbours (Peru, Bolivia and Argentina), the countries with the highest export rates. On the other hand, countries with the lowest accumulated export volumes tend to be geographically more distant from Chile, such as Lithuania, Cambodia or Mongolia. Hence, there is a preliminary relation between export volumes and geographical distance between importers and Chile.

Analysing the results of section A. Macroeconomic Indicators, one can observe the difference of the top five importers of Chilean cultural goods, which have significantly larger populations, higher capital stocks and higher GDP. Therefore, those variables are relevant for the analysis, and the regression model will consider them. Furthermore, GDP per capita shows non-conclusive results. Because it is a ratio of two other variables (population and GDP) believed in the model, it would undoubtedly generate estimation problems.

For section B. Geographic Variables, the results show that distance is a variable to consider as the largest importers of cultural goods within the same region, especially their neighbours. Hence, distance is a variable to consider when formulating the model. On the other hand, contiguity, landlocked and island are all variables related to proximity or geographical characteristics, which, judging for the effect of distance, could show significance as independent variables. Considering that they are expressed as dummy variables (yes or no answers), one should not expect the same problem between them and distance as with GDP per capita and population or GDP.

In section C. Cultural Variables, this study wanted to incorporate something culturally intrinsic to countries to understand if that effect was relevant when trading between countries. DGD database provided information on the common language between Chile and their importers for cultural goods. Hence, this study took that variable and realised that at least all the top five importers shared a common language, without necessarily being the country's official language.

This situation did not have the same results for the last five countries, which was an incentive to consider common language as an independent variable – and proxy of cultural affinities – explaining the decisions of governments to import Chilean cultural goods.

Later, section D. Trade Facilitation Variables on Agreements provided information on preferential trade agreements, preferential trade agreements on goods, custom unions, economic integration, free trade agreements and partial scope agreements between Chile and other countries. There is a difference between the first and last five countries importing Chilean cultural goods for both preferential trade agreements. The top five have preferential trade agreements, but not all of the last ones have, particularly Mongolia and Cambodia. Then, based on these results and the fact that one variable is a subset of the other, this study considers the variable on preferential trade agreements for the model. On the other hand, custom unions have a negative response for all, top and last countries. Therefore, future estimations discard this variable.

In the case of economic integration agreements, free trade agreements and partial scope agreements with Chile, all those variables are considered as non of them are a subset of the other. Furthermore, partial scopes agreements show a marked tendency of representation for top importers of Chilean cultural goods.

For section E. Trade Facilitation Variables on Country Membership, the variables included consider if the countries are WTO members, joint members of WTO, members of GATT and joint members of GATT. From these variables, the study considers the actual situation of countries of destiny for Chilean cultural goods. The results show that the top and bottom countries importing Chilean cultural goods are both members of WTO and GATT. Nonetheless, these variables are incorporated into the model to extend the analysis to the rest of the countries trading Chilean cultural goods, probing what theory on international trade suggests, that GATT/WTO members have similar trade patterns as those who are not members.

Finally, section F. Measures of Institutional Stability shows five variables, a political stability score, sanction threat, sanction threat trade, sanction imposition and sanction imposition trade. The political stability score indicates that the top five importers of Chilean cultural goods have a higher political stability score than the bottom five. Hence, it could be a relevant variable when trying to understand the factors explaining/predicting the probability of one country importing Chilean cultural goods. Therefore it is included in the model as an independent variable.

For the other four variables of this section, there is no positive answer for ei-

ther sanction threat, sanction threat on trade, sanction imposition, and sanction imposition on trade on any of the list's top or bottom five countries. Therefore, due to the lack of sanctions for any country from the database, these four variables are not considered in the model.

## 6.7 Discussion and Variables Selection

This section covers the reasons to select variables from the database to include them in the regression models.

The first variable of analysis is *Pop*. The results from the descriptive statistics are in line with the assumptions of the Gravity Model, where flows of international trade are directly proportional to the size of countries, measured by population or GDP (Ramos, 2016). Hence, for international trade models, the population is a relevant variable included in the models of this article.

Later, *Capitalconst* is included in extensions of the classic gravity model, where high levels of R & D, FDI and indirectly capital stocks explains higher flows of international trade between countries (Wang et al., 2010). That literature is coherent with the results from the last section and will be incorporated in the probabilistic and predictive models.

From the database, there are three different expressions of GDP, which their inclusion are supported by the gravity model theory, where the GDP of countries have significant variables explaining the volume of trade between countries (De Benedictis & Taglioni, 2011), a same tendency found in the results from the statistical results. However, it is not possible to include all of the expression of GDP, as they could present statistical problems between them. Thus, this study chooses to use *GDP.PWTconst* as the representation of GDP because it has a better picture of the GDP volumes adjusted for inflation and PPP.

In regards of the geographical variables, the database provides five relevant variables *Distance*, *Region*, *Contiguity*, *Landlocked* and *Island*. For *Distance*, *Region* and *Contiguity*, the result from the descriptive statistics are related to the idea that geographical proximity is directly proportional to higher volumes of trade (Pöyhönen, 1963). A relevant aspect is the exclusion of *Region* as the fixed effects of that variable affects *Distance* due to high correlation. On the other hand, previous literature on international trade explains the effect of landlocked countries, where *Landlocked* tend to decrease trade (Moisé & Sorescu, 2013) due to larger border crossing times. In the same way, *Island* has been previously reported as a variable that isolates countries and negatively affects trade (Melitz,

2007). Both variables are included in the model expecting similar outcomes to the one from previous literature.

The reason to choose language as a 'cultural' descriptor is that it is a behavioural indicator that builds cultural identity (Felix-Ortiz et al., 1994) and people's perception of their reality (Bonvillain, 2019). Hence, one could expect that sharing a language facilitates communication and the ability of a country to commercialise with other ones, as they perceive a 'cultural proximity' of their norms and behaviour. Moreover, language has been effectively used as a proxy of 'cultural proximity' in other models of international trade (Frankel et al., 1997). For those reasons, *CommonLanguage* is included in the model.

The variables on trade facilitation include *AgreePTA*, *AgreePTAGoods*, *AgreeCU*, *AgreeEIA*, *AgreeFTA* and *AgreePSA*. Specifically, on preferential trade agreements, the literature suggests an increase of bilateral trade in the presence of PTAs, (Cardamone, 2007; Yao et al., 2021). For FTAs, the literature suggest positive effects on trade (Baier & Bergstrand, 2007), with more evident effects in the long run (P. Egger, 2004). In the case of custom unions, the literature mentions it as a superior expression of the regional trade agreement. Hence their effects on trade are more beneficial than FTA (Park & Park, 2009). The same tendency is proved by literature on EIAs, where their presence increase the trade between countries (Baier et al., 2014). Finally, literature on PSA also suggests a positive outcome on international trade (P. H. Egger & Tarlea, 2015).

Later, the variables on trade memberships include *MemberEUD MemberWTOD*, *MemberWTOJoint*, *MemberGATTD* and *MemberGATTJoint*. For the case of EU membership, the literature talks about the trade benefits of been part of the EU, with a positive effect on trade (Shepotylo, 2010). Other studies target the trade relation between EU countries and non-EU countries, which proved to be negative but not significant in terms of the volume of trade (Gudgin et al., 2017). For the case of GATT/WTO members, recent studies show a positive and significant effect (Bodin, 2017; Larch et al., 2019) on both memberships.

In the case of *Polity*, the literature supports the idea that better institutionalism provides better international trade (Anderson & Marcouiller, 2002; Belloc, 2006). For that reason, this variable is also included in the models.

Additionally, the variables associated with sanctions (*SanctionThreat*, *SanctionThreatTrade*, *SanctionImposition*, *SanctionImpositionTrade*) were excluded due to the absence of values, which highlights the fact that there are no countries throughout the observed period with any type of sanctions with Chile, with counted exceptions.

## 6.8 Models Choice and Database Treatment

This section covers the formulation of the Logit regression and the predictive models. Additionally, it covers the modifications and omissions of certain variables for the previously mentioned models.

### 6.8.1 Logit Regression Model

The use of the Logit Regression model is explained because this study aims to use the probability of importing Chilean cultural goods as the dependent variable. For that reason, when using probability, the most suitable regression model to apply is Logit regression. In that context, the outcome of the regression model is materialised in the marginal effects of each independent variable and how much it affects the probability of importing Chilean cultural goods. In other words, this regression model shows the marginal and individual effect of each variable on the chance of importing Chilean cultural goods. Hence, with those results, one can understand the significant variables affecting the probability of importing Chilean cultural goods the most, either positively or negatively.

This type of models has not been used before on international trade. What has typically been applied is trade volumes as a dependent and continuous variable (Bergstrand, 1985; De Benedictis & Taglioni, 2011). In this investigation, using probabilities as a dependent variable comes from the idea of individualising the probability of importing Chilean cultural goods from each country globally by predicting that probability and later using it as a reference for further export policymaking. Hence, the limitations associated with these models will come in an exploratory approach, if there is any.

Later, in the following subsection, there is a brief explanation of the logic behind the predictive models.

### 6.8.2 Predictive Models

On the other hand, this study applies predictive models to understand the independent variables that will affect the probability of importing Chilean cultural goods. Those independent variables are expressed as predictors of a future likelihood of importing Chilean cultural goods.

The reason to do so is that, by designing a predictive model with good predictive power, other countries can use it, applying other databases. The model itself would not necessarily change its accuracy if the case study or the

database changes. Same as with the probabilistic model, there is no data of similar models for cultural exports. Therefore, the limitations will be found during the application of the study, if any.

### 6.8.3 Database Treatment

This subsection covers how this study worked with the database, as by doing so, it is possible to solve practical statistic issues, isolate the effect of each year of analysis and dismiss variables that do not contribute due to homogeneity of response.

Some of the variables (*Logcapital*, *LogGDP*, *Logpop*) are converted to logarithmic values because of outliers´ presence, which ultimately affected the convergence of the model's likelihood. The origin of the outliers comes from the existent economic, capital and population concentration of certain countries. Hence, by applying logarithmic, one can mitigate the difference between the values of countries.

To capture the effect of each year, this study applies fixed effect for each year, where instead of considering the set of independent variables for each year, this study converts the years into dummy variables and establish the first year of analysis - 2005 - as the reference to compared fixed effects from the subsequent years.

$$YearXX = \begin{cases} 1 & \text{if} \quad \textit{The year is XX}, \\ 0 & \text{if} \quad \textit{The year is not XX}, \end{cases}$$

After explaining the database treatment and both applied models, the following step is to analyse the results, which are outlined in the following section.

## 6.9 Results

This section covers the different statistic models, both Logit and Predictive models, to estimate the second and third investigation questions. For the second question, this study uses a Logit binary choice model to understand the independent variables explaining the probability for a foreign country to import Chilean cultural goods.

Later, this study applies predictive models such as regression trees and random forests to answer the third question of investigation, to explore the variables predicting higher possibilities of importing Chilean cultural goods.

The final subsection compares the different models to conclude which one has a higher predictive power.

### 6.9.1 Logit Regression Model

For this part of the results, this study design a binary choice Logit regression to analyse the probability of a foreign country importing Chilean cultural goods, which is the dependent variable. And later, identify the effect of each independent variable to the probability of importing Chilean cultural goods through the marginal effects.

#### Regression Analysis

On the other hand, the Logit regression considers macroeconomic indicators, geographic variables, cultural variables, trade facilitation variables on agreements, trade facilitation variables on country membership and measures of institutional stability, all of them as independent variables.

The dependent variable is expressed as it follows:

$$Import = \begin{cases} 1 & \text{if} \quad \textit{Country imports Chilean cultural goods}, \\ 0 & \text{if} \quad \textit{Country does not imports Chilean cultural goods}, \end{cases}$$

Then, the independent variables are the ones considered after the database treatment, which result in a Logit regression model expressed in the following equation:

**Initial Logit Regression Model**

$$\begin{aligned} Pr(Import) = \beta_0 + \beta_1 Logcapital + \beta_2 LogGDP + \\ \beta_3 Logpop + \beta_4 Distance + \beta_5 Contiguity + \beta_6 Landlockedd + \\ \beta_7 Islandd + \beta_8 CommonLanguage + \beta_9 AgreePTA + \\ \beta_{10} AgreeEIA + \beta_{11} AgreeFTA \\ \beta_{12} AgreePSA + \beta_{13} MemberEUd + \beta_{14} MemberWTOd + \beta_{15} MemberGATTd + \\ \beta_{16} Polityd + \beta_{17} Year2006 + \beta_{18} Year2007 + \beta_{19} Year2008 + \\ \beta_{20} Year2009 + \beta_{21} Year2010 + \beta_{22} Year2011 + \beta_{23} Year2012 + \beta_{24} Year2013 + \beta_{25} Year2014 \xi \end{aligned}$$

The results of the regression are presented in the next table:

| Categories | Coef. | Std.Error | Statistic | P-Value | Signif. |
|---|---|---|---|---|---|
| (Intercept) | -18.9391 | 3.201235 | -5.91619 | 0.0000 | *** |
| *Logcapital* | 1.4303 | 0.6307 | 2.2680 | 0.0233 | * |
| *LogGDP* | 1.2686 | 0.5778 | 2.1957 | 0.0281 | * |
| *Logpop* | -0.6842 | 0.2431 | -2.8151 | 0.0049 | ** |
| *Distance* | -0.0003 | 0.0000 | -9.2544 | 0.0000 | *** |
| *Contiguity* | 15.1644 | 596.7153 | 0.0254 | 0.9797 | |
| *Landlockedd* | -0.6639 | 0.2828 | -2.3472 | 0.0189 | * |
| *Islandd* | -0.3107 | 0.2989 | -1.0395 | 0.2986 | |
| *CommonLanguage* | 1.0957 | 0.2245 | 4.8803 | 0.0000 | *** |
| *AgreePTA* | 2.0359 | 0.7237 | 2.8132 | 0.0049 | ** |
| *AgreeEIA* | 1.2005 | 1.0252 | 1.1711 | 0.2416 | |
| *AgreeFTA* | 0.8745 | 0.8393 | 1.0420 | 0.2974 | |
| *AgreePSA* | -1.9126 | 0.6964 | -2.7464 | 0.0060 | ** |
| *MemberEUd* | -3.7748 | 0.8155 | -4.6289 | 0.0000 | *** |
| *MemberWTOd* | 0.4888 | 0.3940 | 1.2407 | 0.2147 | |
| *MemberGATTd* | -0.1499 | 0.2865 | -0.5234 | 0.6007 | |
| *Polityd* | 0.0653 | 0.0190 | 3.4340 | 0.0006 | *** |
| *Year*2006 | -0.0655 | 0.3808 | -0.1720 | 0.8634 | |
| *Year*2007 | 0.0160 | 0.3792 | 0.0423 | 0.9663 | |
| *Year*2008 | -0.0894 | 0.3812 | -0.2345 | 0.8146 | |
| *Year*2009 | 0.0339 | 0.3801 | 0.0891 | 0.9290 | |
| *Year*2010 | -0.1042 | 0.3808 | -0.2735 | 0.7845 | |
| *Year*2011 | -0.3201 | 0.3832 | -0.8354 | 0.4035 | |
| *Year*2012 | -0.7135 | 0.3910 | -1.8248 | 0.0680 | . |
| *Year*2013 | -1.0015 | 0.3962 | -2.5281 | 0.0115 | * |
| *Year*2014 | -0.7115 | 0.3906 | -1.8213 | 0.0686 | . |

Table 6.13: Logit Regression Results.

The Logit regression results show that a large set of variables are significant, excluding most of the fixed effects of years.

Firstly, *Distance* appears as a strongly significant variable, with negative coefficients, analysed in the marginal effects. On the other hand, *CommonLanguage* seems to be another critical variable, possibly represented as a proxy of cultural similarities. Additionally, *Polityd* has a positive coefficient, discussed later in the marginal effects. Finally, the last variable from the group of 99.999% of signif-

icance is *MemberEUd*, reflecting the relevance for the model to have importers from the European Union, with a negative coefficient.

On a second group, variables with a significance level of 99.99% are *Logpop*, coherent with international trade theory. Additionally, *AgreePTA* and *AgreePSA*, with different coefficients, even though both are trade agreements.

The third group of variables with 95% of significance are *Logcapital*, *LogGDP*, *Landlockedd* and the fixed effect of *Year*2013, which worth analyse and observe if there was any contingency explaining that difference.

Finally, the group of variables showing a 90% of significance are the fixed effects on *Year*2012 and *Year*2014.

**Marginal Effects**

To understand the impact of the variables taken from the Logit regression results, one can observe the marginal effects of those variables to measure the impact of percentage on countries' probability of commercialising Chilean cultural goods.

| Categories | AME |
|---|---|
| *Logcapital* | 0.3514 |
| *LogGDP* | 0.3117 |
| *Logpop* | -0.1681 |
| *Distance* | -0.0001 |
| *Contiguity* | 0.5231 |
| *Landlockedd* | -0.1642 |
| *Islandd* | -0.0771 |
| *Commonlanguage* | 0.2659 |
| *AgreePTA* | 0.4688 |
| *AgreeEIA* | 0.2768 |
| *AgreeFTA* | 0.2067 |
| *AgreePSA* | -0.4443 |
| *MemberEUd* | -0.6764 |
| *MemberWTOd* | 0.1214 |
| *MemberGATTd* | -0.0366 |
| *Polityd* | 0.0160 |
| *Year*2006 | -0.0161 |
| *Year*2007 | 0.0039 |
| *Year*2008 | -0.0220 |
| *Year*2009 | 0.0083 |
| *Year*2010 | -0.0257 |
| *Year*2011 | -0.0795 |
| *Year*2012 | -0.1765 |
| *Year*2013 | -0.2442 |
| *Year*2014 | -0.1760 |

Table 6.15: Marginal Effect Results.

The marginal effects suggest that *Distance* has a contribution of -0.1% to the probability of importing Chilean cultural goods. Even though it is statistically significant, the impact is not substantive. This result is supported by the gravity model theory, where countries tend to commercialise more with other countries that have more minor trade frictions (Bergstrand, 1985), often based in the same geographical region.

Later, *CommonLanguage* shows a positive contribution of 26.6% to the probability of commercialising Chilean cultural goods. This variable works as a proxy

of cultural proximity as sharing a language bring commercial partners closer. This effect has been documented together with the impact of colonial history and similar per capita income between trade partners, defined as 'extended gravity model' (Defever et al., 2015).

Additionally, *MemberEUd* shows a high and negative contribution to the probability of trading Chilean cultural goods, by -67.6%, reflecting how determinant is to be a member of the European Union for a Chilean cultural trade partner. The effect can be explained by the strict policies of the EU to import cultural goods from countries outside of the region in their declared fight against illicit traffic of cultural goods. In that context, the most recent initiative was a new regulation on the import of cultural goods in 2019, where the EU enforces importers to provide evidence on the legitimacy of the cultural goods, especially on craft, jewellery and sculptures (Dehouck, 2019).

In the case of *Polityd*, the contribution is positive but not large, as a marginal increase on it contributes with 1.6% to the probability of trading Chilean cultural goods. Nevertheless, it backs up the idea that political stability and trust in their financial system makes a country more attractive to commercialise with, even more determinant than transportation costs (Haberler, 1936). Moreover, from the 'Lucas Paradox' it is possible to conclude that low institutional quality is the most relevant explanation for the lack of capital flows and investment from countries of the Global North to countries of the Global South (described as rich and emerging countries) (Alfaro et al., 2008). The previous argument goes in line with the results of this regression.

Later, *Logpop* contributes with -16% to the probability of importing cultural goods from Chile. Hence, countries with larger populations tend to have lower possibilities of importing Chilean cultural goods. This statement at first could sound contradictory, as the literature suggests that in general, larger countries have larger trade volumes (Yotov et al., 2016).

However, suppose one considers this effect jointly with the result on *LogGDP*. In that case, it becomes easier to understand the logic behind the outcome. *LogGDP* shows a contribution of 31.2% to the probability of importing cultural goods from Chile, suggesting that countries with higher GDP will be more likely to trade Chilean cultural goods, coherent with the trade gravity model. Then considering this result and the one obtained for *Logpop*, it is possible to conclude that countries with lower volumes of the population but high GDP levels have higher chances of importing Chilean cultural goods, hence, countries with high GDP per capita. Potentially explained by the fact that often more wealthy countries on a lower base of the population tend to have a more homogeneous

distribution of educated citizens (OECD, 2020) and better access to culture (Eurobarometer, 2007).

Additionally, *Logcapital* has a marginal effect of 35.1% as higher levels of capital stock represent a more elevated level of productions and, therefore, economic growth(Acemoglu, 2012). Hence, it is expected that *Logcapital* and *LogGDP* have similar marginal effects.

Regarding the agreements, *AgreePTA* shows a marginal effect of 46.9% to the probability of trading Chilean cultural goods, showing that if country pair are in any preferential trade agreement, the chances of commercialising will increase. The result is condescending with significant international efforts to balance the cultural flows from the Global South to the Global North and give them more visibility and market share. Examples of preferential treatment can be found in Article 16 of UNESCO 2005 Convention (Von Schorlemer & Stoll, 2012), PTAs from WTO (Horn et al., 2010) and more particularly Article IV of GAT, which allows screen-quotas for films (Marvasti, 1994).

On the other hand, *AgreePSA* reflects a negative marginal effect of -44.4%, suggesting that if countries are paired in at least one partial scope agreement, then the chances that one country will import Chilean cultural goods is lower. The results can be supported by the fact that Partial Scope Agreements (PSA) only cover certain products and are not referred to as WTO Agreements. Moreover, PSA has become less and less attractive, even for countries of the Global South (Nugroho, 2007), because they are often interpreted as the first approach to a Free Trade Agreement (FTA)(Fiorentino et al., 2007). Furthermore, FTA negatively affects the competitiveness of countries (Saadé & Turkina, 2019), especially those trying to improve their position in a given industry, hence adversely affecting their economic growth (Zhu & Li, 2017).

*Landlockedd* shows a marginal effect of -16.4%. Then countries that do not have maritime access have lower probabilities of trading Chilean cultural goods. This result can be explained since naval access is often associated with ports, a relevant import channel. Later, *MemberWTOd* has a positive marginal effect of 12.1%, which suggest that country members of the WTO have higher chances of importing Chilean cultural goods.

Finally, *Year*2012, *Year*2013 and *Year*2014 have fairly significant and negative marginal effects, -17.7%, -24.4% and -17.6% respectively. This considering that these years have negative marginal effects and that from all the marginal effects of years, the only positive ones are 2007 and 2009. As those marginal effects are compared to the year 2005, one can conclude that years after the financial crisis, Chilean cultural imports experimented a decrease in their volumes

compared to pre-crisis levels. The previous outcome is coherent with the reports on international trade of goods (UNCTAD, 2014) and cultural goods specifically (Deloumeaux, 2016).

In summary, being a member of the EU has a severe and negative impact on the probability of importing Chilean cultural goods, reflecting the barriers that countries and regional blocks of the Global North impose to cultural exports of the Global South. Additionally, higher GDP and capital stock levels contribute to the probability of importing Chilean cultural goods, representing core countries´ profile, in line with the theory on international trade previously mentioned. Besides, the results suggest that preferential trade agreements have a considerable contribution to the probability of importing Chilean cultural goods. Thus, PTA should be encouraged at a national and international level to balance the export share of cultural goods and services between the Global North and the Global South. Finally, partial scope agreements provide a negative and significant impact on the probability of importing Chilean cultural goods. Moreover, PTAs are seen as the initial step to FTAs, which tend to benefits countries that are more consolidated in specific industries, which is not the case for Chile.

### 6.9.2 Predictive Models

After analysing the Logit model, this subsection encloses the results of the predictive models, identifying the most relevant interactions between predictors for regression trees and the essential individual predictors for random forests, both to explain the probability of importing Chilean cultural goods.

By using these results is not possible to talk about causalities, as prediction models offer correlations between variables.

#### Regression Trees

Using regression trees, this study focuses on finding the most relevant categories on each variable to predict which country has higher probabilities of importing cultural goods from Chile. Using this methodology, it is possible to observe the set of interactions between different categories or levels on certain variables that significantly affect the probability of trading cultural goods from Chile with another country partner.

When applying regression trees, the sample is partitioned into two groups, finding the value of the most relevant independent variable as a predictor, providing the minimum sum of square residuals (SSR).

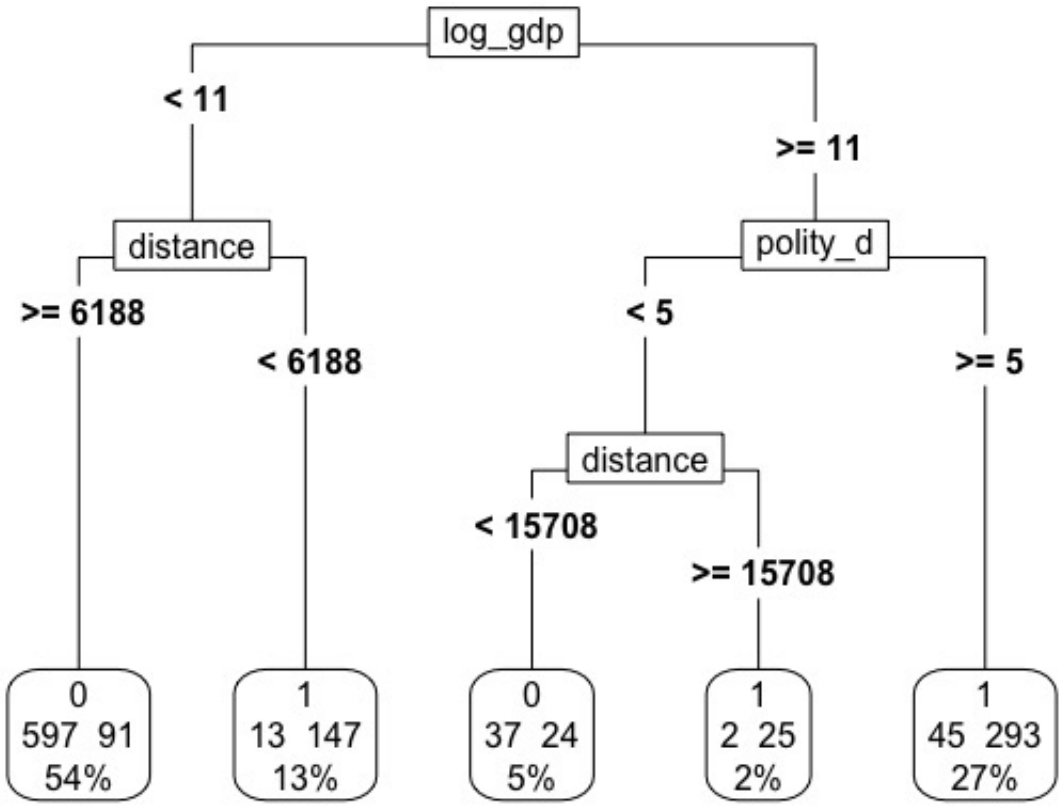


Figure 6.16: Regression Tree for Trade Partners on Chilean Cultural Goods Exports.

| Categories Interaction | Predicted | Actual/Total (%) |
|---|---|---|
| *LogGDP* $< 11$, *Distance* $>= 6,188$ | Do not Trade With Chile | 54% |
| *LogGDP* $< 11$, *Distance* $< 6,188$ | Trade With Chile | 13% |
| *LogGDP* $>= 11$, *Polityd* $>= 5$ | Trade With Chile | 27% |
| *LogGDP* $>= 11$, *Polityd* $< 5$, *Distance* $>= 15,708$ | Trade With Chile | 2% |
| *LogGDP* $>= 11$, *Polityd* $< 5$, *Distance* $< 15,708$ | Do not Trade With Chile | 5% |

Table 6.16: Regression Tree Summary for Trade Partners on Chilean Cultural Goods Exports.

From the regression tree results, one can conclude that the most relevant predictor related to the probability of trading Chilean cultural goods exports is *LogGDP*, where values below 11 represent 67% of the sample. In contrast, values over 11 equal 34% of the sample.

Those countries with a *LogGDP* lower than 11 and *Distance* from Chile inferior to 6,188 km are correlated with importing cultural goods from Chile, representing 13% of the sample. Implicitly, in that case, the interaction of variables highlight countries from the South and Center American region. On the other hand, those countries with *LogGDP* lower than 11, but further *Distance* than 6,188 km from Chile, do not trade with Chile and represents 54% of the sample. That percentage represents countries from other regions, different from South and Central America.

On the other hand, for those countries with a *LogGDP* equal or higher than 11, and a *Polityd* equal or over 5, are related with trading with Chile, representing 27% of the sample. Additionally, for those with *LogGDP* equal or higher than 11 and with a *Polityd* lower than 5, the distance determines the relation with the binary dependent variable. Where *Distance* over 15,708 km are associated with countries trading with Chile, representing 2% of the sample. While those countries with the same conditions but with *Distance* below 15,708 km correlates with not importing Chilean cultural goods, meaning 5% of the sample.

Overall, it is interesting to observe that for *LogGDP*, value 11 is the cut point for the predictor, as this is the *LogGDP* level of Chile. Hence, there are more countries with *LogGDP* $>= 11$ importing Chilean cultural goods (29% of

the sample) than those countries with lower levels of GDP (13% of the sample). The result goes in line with the theory of the extended gravity model, where governments tend to trade more when their GDP is similar (Defever et al., 2015).

### Random Forests

Later, this study uses random forests to predict the categories correlated with the action of importing cultural goods from Chile. This methodology is often interpreted as an improvement from regression trees because, in general increases, the predictive power of the model and solves the problem of overfitting regression trees. However, this technique will provide a less descriptive interpretation of the outcomes but providing a higher predictive capacity.

The results of the random forests are ranked starting from the category that has the higher percentage of Mean Decrease Accuracy (MDA). The results are the following.

| **Categories** | **% of MDA** | **Corr. with** $dp1$ |
|---|---|---|
| 1. *LogGDP* | 0.1161 | 0.52 |
| 2. *Distance* | 0.0921 | -0.291 |
| 3. *Logcapital* | 0.0757 | 0.479 |
| 4. *Polityd* | 0.039 | 0.3843 |
| 5. *Logpop* | 0.0388 | 0.1874 |
| 6. *AgreeEIA* | 0.0295 | 0.4195 |
| 7. *AgreeFTA* | 0.0274 | 0.4218 |
| 8. *CommonLanguage* | 0.0227 | 0.2846 |
| 9. *AgreePTA* | 0.0185 | 0.4284 |
| 10. *MemberGATTd* | 0.0124 | 0.2959 |

Table 6.17: Random Forest Top Ten Variables.

From the results of table 4.17, it is not possible to identify causalities between the dependent variable and the sets of independent variables. However, finding the most relevant predictors of the dependent variable ranked from the one with a high percentage of Mean Decrease Accuracy (MDA). A high percentage of MDA shows the higher importance of a specific predictor, showing that an absence of that predictor will cause a fall in the accuracy of the random forest model because of randomly permuted predictors in out-of-bag samples.

Even though random forests cannot conclude any causalities, it is worth noticing the correlation between the predictors and the dependent variable, taking the predictors with the highest MDA percentage as the most important ones.

In that context, the most relevant variable explaining countries importing Chilean cultural goods is *LogGDP*, which has a correlation of 0.498, which is considered substantial ($>$0.4). These results suggest that at higher levels of *LogGDP*, there should be higher probabilities that a country will import Chilean cultural goods.

The followed predictor is *Distance*, with a weak correlation of -0.286. The results suggest that an increase in distance is negatively related to the possibility of import Chilean cultural goods, which goes in line with the international trade theory where countries tend to trade with partners of the same region, which have lower distance proximity. Furthermore, implementing technology improvements and digital platforms could potentially compensate for the negative effect of geographical distance (Chaney, 2011).

In third place comes *Logcapital*, which has a positive and strong correlation of 0.456, predicting that increases in the logarithm of capital stocks are associated to a higher probability for trade partners to import Chilean cultural goods. This result goes in line with the theory on international trade, where higher capital stocks are related to higher flows of international trade between countries (Wang et al., 2010).

In the fourth place comes *Logpop*, which represents the logarithm of the population size of the destination country. This predictor has a positive and weak correlation of 0.175 and suggests that more prominent countries in terms of their population size are linked with higher probabilities of importing Chilean cultural goods. The result is very much related to the classical outcome of the Gravity Model for international trade, where countries tend to trade more with countries with higher populations (Pöyhönen, 1963).

In fifth place is *Polityd*, a scoring system reflecting the political stability of the destination country. This predictor has a high and reasonably strong correlation of 0.371, where higher levels of political stability are positively related with increasing chances of trade partners to import Chilean cultural goods. This result goes in line with the literature, where countries with robust public institutions tend to trade more. To extend that argument, countries with good governance have high trade patterns between them, due to lower transaction costs. Still, countries with bad and similar governance will not have high trade patterns, because the transaction costs remain high, same as the institutional insecurity (De Groot et al., 2004).

Later, *AgreeEIA* shows a strong correlation of 0.397, explaining that those countries paired with Chile in at least one economic integration agreement should have higher chances of import their cultural goods. This result is supported with literature on how integration agreements, often with countries of the same region, tend to reduce the trade cost, keeping the benefits of free trade (Krugman, 1993). This effect has particular applications in Latin America and the positive impact in international trade by the application of economic integration agreement between members (Soloaga & Wintersb, 2001).

In seventh place is *AgreeFTA*, which also present a strong correlation of 0.4, consistent with the previous predictor, shows that countries paired with Chile in at least one free trade agreement should perceive higher chances to import cultural goods from Chile.

Later comes *CommonLanguage*, which has a weaker but positive correlation of 0.272, suggesting that countries with a common language with Chile are associated with higher probabilities of importing Chilean cultural goods. This study applies common language as a proxy of cultural proximity. In that context, the literature suggests that 'cultural familiarity´ should have a positive effect on trade between countries (Frankel et al., 1997). Hence, the results of the predictive model are coherent with the theory and other models of international trade, where the language was used as a proxy of 'cultural familiarity´[3] (De Groot et al., 2004).

In ninth place is *AgreePTA*, which, similar to other predictors related to agreements, has a strong and positive correlation of 0.416. Results suggest that countries paired with Chile in at least one active preferential trade agreement should expect higher chances of import Chilean cultural goods.

Finally, the tenth most relevant predictor is *MemberGATTd*, which has a weaker and positive correlation of 0.287, suggesting that those countries that are state members of the General Agreement on Tariffs and Trade are related with higher chances of import cultural goods from Chile. This result differs from other studies, where been a member of WTO or GATT proved to be insignificant to the trade patterns of the countries (Rose, 2004).

From the findings of random forests predictors, one can outline that countries with higher probabilities of importing Chilean cultural goods are those with stronger public institutionalisation, better economic performance, larger popula-

[3]Other proxies of cultural familiarity include religion, historical ties and colonial backgrounds. However, religion and historical ties were not variables available from the dataset, and colonial background was too specific to consider for the context of Chile.

tions and closer geographical and cultural distance.

### 6.9.3 Predictive Power AUC

After the results of both probabilistic and predictive models, this section analyses the Area Under the Curve (AUC) of the Logit model, regression trees and random forest, comparing which one has better predictive power. AUC is a good estimation of the predictive power of binary models and can be described as the probability of categorising observations in one group or the other correctly. In this case, the likelihood of categorising countries as importers or not correctly.

AUC calculates the relative predictive power of the model, where AUC can take values $[1, 0]$, considering 1 as the value for a perfect predictive power, been able to perfectly separate, in this case, the countries that import cultural goods from Chile, from the ones that do not import them. On the other hand, values closer to 0, represent an insufficient predictive power from the model. Nevertheless, having a predictive power of 1 would also be unsuitable, as, in practice, one could expect some degree of variance on the results, depending on the dataset used.

Graphically, the results on predictive power can be expressed as it follows:

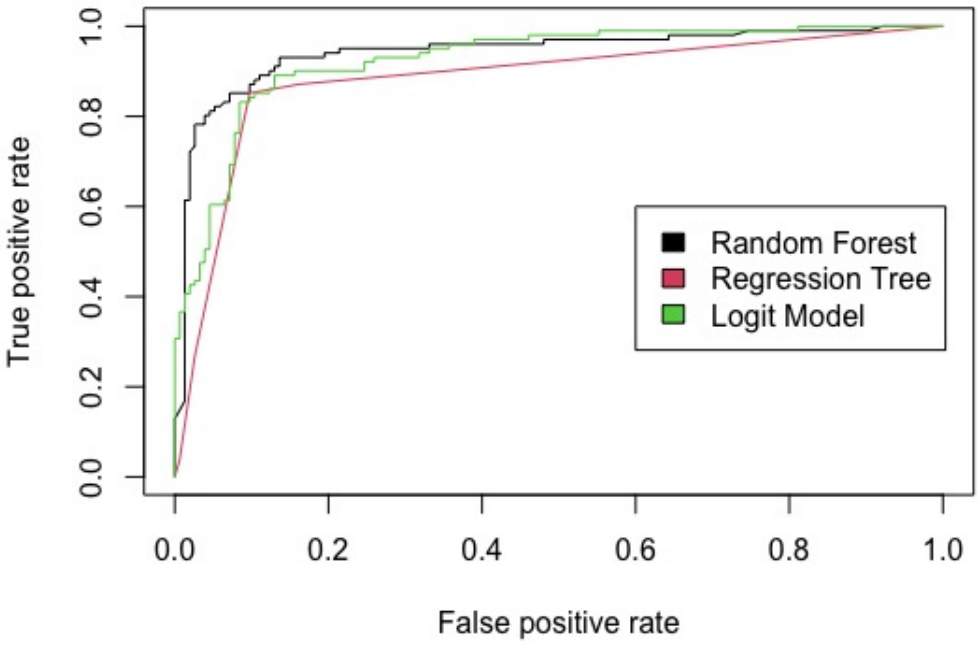


Figure 6.17: Predictive Power of Models on the Probability of Importing Chilean Cultural Goods.

From the graph, the x-axis is the 'false positive rate´, representing the probability that the predictive model categorises false positives, where the model predicts a specific value. Still, the real value ends up being different. Hence, high values on the x-axis represent an insufficient predictive power of the model.

On the other hand, the y axis is the 'true positive rate´, representing the probability that the predictive model categorises true positive, reflecting concordance between the predicted and the effective value. Hence, higher values of the y-axis represent a better predictive power of the model.

The highest predictive power comes from the random forest model with 0.9457, followed by the Logit model with 0.9385 and the regression tree model with 0.891. Even though the three models have high predictive power, random forest leads the rank as the model that can be replicated with other datasets and expect identical results with the best accuracy among the three models.

## 6.10 Conclusions

This article outlines the evidence on the actual situation of Chilean exports on cultural goods. It analyses the variables affecting it and creates predictive models to identify the most relevant predictors correlating with importing Chilean cultural goods. From the results, one can conclude four significant outcomes.

From the descriptive statistics, it is possible to conclude that the distribution of Chilean cultural goods exports between 2005 -2015 has been constrained majorly to countries of the Latin American region, excluding the US. Moreover, the top five countries, Peru, Bolivia, Argentina, United States and Brazil, represents 81.17% of the total imports of Chilean cultural goods. And the top two importers of Chilean cultural goods, Peru and Bolivia, represent 61.3% of the entire Chilean cultural exports, concluding that Chile needs to explore new exports strategies to diversify their trade partners on cultural goods exports. The following paragraphs comprised how and who to trade with.

Secondly, applying a Logit binary choice model, this article calculates countries' probability of importing Chilean cultural goods. The results identify the most significant variables and the contribution of those variables to the likelihood previously described. Later, from the significant variables, this study concludes that the highest marginal effect is the GDP (31.1%), where higher GDP levels are associated with higher chances to import Chilean cultural goods if the trade partner is an EU member (-67.6%), which this study attributes to the strict norms established by the EU in terms of imports of cultural goods to avoid illicit traffic. And variables associated with trade agreements, country pair in; preferential trade agreements (46.8%), economic integration agreements (27.6%) and partial scope agreements (44.4%). Been the first two type of agreements, positively related with the probability of importing Chilean cultural goods as they refer to trade strategies that privilege Chile's position as an exporter from Latin America. On the other hand, partial scope agreements negatively relates with the chances of importing Chilean cultural goods as those types of agreements are selective and not built in the WTO framework.

Thirdly, this study applies predictive models based on regression trees and random forests to identify the most critical predictors correlating with the probability of importing Chilean cultural goods. Regression trees show that the most relevant predictor is *LogGDP*, where values under 11 represent 67% of the sample and values over 11 represent the remainder. It is essential to highlight that from all the relevant interactions between predictors, 42% are linked with importing

Chilean cultural goods. Moreover, the results of the regression trees show that macroeconomic, geographic and institutional stability variables are determinant to the decision of trading Chilean cultural goods. Furthermore, countries with a *LogGDP* $>=$11 have higher chances of importing Chilean cultural goods, which not surprisingly is the exact *LogGDP* value for Chile —reaffirming the theory that countries tend to trade with countries with similar GDP. Another relevant insight is the fact that for lower GDP levels than in Chile, *LogGDP* $<$11, the model predicts that trade partners could import Chilean cultural goods if the distance between them is less than 6,188 km, which is a discretionary range that targets most of the countries in South America. Implicitly what the model suggests is that for those countries with a lower GDP level than Chile, if they are based in the same geographical region as Chile, then those countries will import Chilean cultural goods. Finally, for those countries with *LogGDP* $>=$11, the only way to not been associated with importing Chilean cultural goods is to have a political stability score below five and a distance from Chile below 15,708 km.

Subsequently, random forests show the most relevant predictors individually, based on the percentage of MDA, where the ranking is lead by *LogGDP*, which positively correlates with the probability of import Chilean cultural goods. Followed by *Distance*, which is the only predictors negatively associated with the probability of the event. The rest of the top ten variables are *Logcapital*, *Polityd*, *Logpop*, *AgreeEIA*, *AgreeFTA*, *CommonLanguage*, *AgreePTA* and *MemberGATTd*. The results show that macroeconomic variables are the most important predictors (1, 3 and 5), also geographical variables (2), institutional stability variables (4) and a large section of predictors associated with agreements (6, 7 and 9). Cultural variables are also considered (8), and finally, trade facilitation memberships are mentioned (10). Hence, from a policy perspective, to ensure better export levels for Chilean cultural goods, it is important to focus mostly on countries with high GDP and capital stock. Additionally, as the distance is a given variable, improving transport and relying more on digital products can bring trade partners closer. The conclusions of this paper are mainly based on the random forest predictive model from the three models. It was the one that presented better predictive power or higher AUC.

The results presented in this chapter provide guidelines on which variable are more sensitive to affect the cultural goods exports. The predictive model implicitly provides recommendations on which governments should Chile allocate their efforts to develop more robust trade channels. Finally, the extensions of the predictive model are vast due to the possibility of replicating it with any other country and comparing and group export strategies. This application is espe-

cially significant for Latin American countries, where block negotiation is key to aim for better trade conditions with the Global North. Endlessly, the improvements in export strategy will benefit producers of cultural goods, improving their socioeconomic situation.

# Part III

# Joint Discussion and Conclusions

# Chapter 7

# Joint Discussion

This chapter analyses the results of each article to give sense to the central hypothesis of the investigation. In that context, as a hypothesis, this research states that the socioeconomic situation of cultural workers is exceptionally deprived. By running specific models, it is possible to identify the most significant variables affecting the socioeconomic position of cultural workers, later acting on those variables and improving their socioeconomic situation.

Furthermore, this study targeted three variables affecting the socioeconomic situation of cultural workers. Pensions of cultural workers, the public funding mechanism for art projects and the exports of cultural goods. All three subjects of study target different aspects of the cultural workers' life and socioeconomic environment.

The three articles conclude that predictors related to more formality in the cultural labour market can potentially improve the socioeconomic situation of cultural workers, yet considering that implementing policies towards more formality can struggle the spirit of the cultural sector itself.

The chapter on pensions targets the incomes of cultural workers once their careers finish and how informality affects that financial resource. Moreover, the hypothesis affirms that pensions for cultural workers are precarious compared to pensions for non-cultural workers. In this case, the research questions first ask if the probability of contribution of pensions is different for cultural workers than non-cultural workers, resulting in 93.3% of the economic sectors having better possibilities of contributing to their pensions than cultural workers. The difference in probability can be attributed to the particularities of the artistic labour market, reflected in higher degrees of informality than other sectors of the economy. In that context, the pensions literature review signals the problems artists face when retiring due to a high degree of informality in the sector and how the pension system has failed to adapt to the specificities of their labour market. Overall, the results from the model are coherent with previous literature, where workers of the cultural sector have a low probability of contribution to their pensions, explained by their ruling informality.

The second research question asks for the key variables associated with the probability of contributing to pensions for cultural workers. The results state that the relevant predictors are linked to workplaces and occupational categories, fol-

lowed by job schemes and companies' size. Here, the critical literature identifies the characteristics of those predictors for the cultural workers but not relating them with pensions. However, the literature review highlights that industries with high levels of informality, like the cultural sector, are also represented with uncertain workplaces. Additionally, occupational categories are much represented with self-employment, part-time job schemes, freelancer and multiple-jobs, and companies are atomised in micro and small institutions, in line with the literature review. These previously described characteristics constrain cultural workers capacity to contribute to their pensions due to the common association of informality to all of these categories. Yet, from this point, policies can target these predictors and put efforts on formal workplaces out of the worker's house, occupational categories and job schemes. By doing so, policies can keep the essence of small institutions and independent workers in the cultural labour market, but adding components of formality. Hence, increasing the chances that they contribute to their pensions.

The third research question asks for any difference in the predictors correlating with pension probability for cultural and non-cultural workers. In this case, the result suggests that predictors for non-cultural workers are mainly related to occupational categories, followed by job scheme, size of the company, seniority, age, workplace and educational levels. For non-cultural workers, the critical predictors are spread into more categories than cultural workers. Work experience, educational level, and age are significant predictors, together with some common predictors with cultural workers. The results are much related to the theory on pensions covered in the literature review, associating variables like seniority, educational level and age. Overall, the results show that policymakers must focus on many more variables to improve non-cultural workers' pensions. In that context, cultural policies can target the predictors of cultural workers' pensions more easily but create specific pension provisions for the art sector. This initiative could be supported by the fact that pension schemes have failed to adapt to the particularities of the cultural labour market – previously described – and their inherent informality. Endlessly, the decision for cultural workers to contribute to their pensions is mainly associated to a few variables compared to non-cultural workers. This situation opens a more convenient opportunity for policymakers to improve the rates of contribution to pensions, compared to non-cultural workers, but recognising the need for a specific pension format that represents the art sector more accurately.

Followed by that is the second article, which explores the funding mechanisms for cultural workers. Furthermore, the hypothesis utter that the selection

criteria of public funding mechanism are not aligned with the mission of the Art Council. Hence, not contributing to a harmonic, pluralist, equitable cultural development and equitable budget distribution among the regions, affecting the financial stability of people working in the art sector. In that context, the first research question directly asks how public funding mechanisms are not contributing to the socioeconomic situation of cultural workers, expressed in four different sub-hypothesis.

Firstly, the results show that public grants do not contribute to harmonic cultural development as the funds are unequally more targeted to a particular cultural production phase, Creation. On the other hand, Exhibition is established as a predictor associated with receiving public grants. This result does not have a correlative in the critical theory of public subsidies for the art sector. However, it can be related to the internal guidelines of the Art Council or Ministry of Culture, where economic or political reasons could define the emphasis on particular production phases. In that context, critical theory exposed in the literature review explains that funding mechanisms prefer supporting good profitability over highly artistic value, and a bias of successful applications towards specific political tendencies could exist. Endlessly, implicit variables could exist determining a 'more profitable' or 'politically coherent' project. However, the models could not capture them, only reflecting the preference of the funding mechanism towards certain cultural production phases.

On the other hand, the findings suggest a pluralist component on the public funding criteria as all the variables related to demographic characteristics or any characteristic of the project prove to be not significant to the decision to grant cultural projects. Moreover, this investigation concludes there is no discrimination on evident components of the individual (*Gender*, *TypePerson*), or characteristic of the projects (*Amount*, *Labour*, *DiffAmount*, *DiffReg*, *DiffDays*). Furthermore, it is not possible to identify implicit components that could suggest more complex ways of discrimination. For instance, the literature review mentions individuals paying for advice to improve their application; however, this study could not identify any data on these points. Or an uneven competition for grants between emerging and consolidated artists, resulting in more applications from larger institutions. This situation could have easily been disguised by the fact that an applicant is a natural person, and the years of experience from the applicant are not visualised in the data, hiding that effect and making it untraceable. Overall, this research fails to reject a pluralist cultural development hypothesis as a criterion for funding mechanisms. But it is also aware of the limitations of the dataset to cover this matter. Hence, the challenge for future

studies is to picture the often implicit variables that capture discrimination in more indirect ways and stress this hypothesis more robustly.

Subsequently, the study outcomes prove that funding mechanisms do not contribute to equitable cultural development as sector-specific funds are related with lower probabilities of receiving a grant compared to geographic-specific funds. Hence, not all the sub-funds provide the same chances, allocating more resources and development to specific sub-sectors rather than others. This result can also be connected to the previous explanation on the guidelines and preferences of the Art Council/Ministry of Culture, which can be economically and politically influenced towards specific sub-sectors to the detriment of others.

Finally, the results suggest no equitable budget distribution among different regions, as art projects from the most populated areas have fewer chances of receiving a grant. This situation is potentially explained by an overdemand of applications from those regions, which provides higher probabilities of obtaining funds to projects from more distant areas in both north and south of the country. This result is related to the literature review, attempting to reduce the focus of application from centred/urban areas and redistributing the grants to a regional or local level, making them more geographically democratic. From a practical perspective, it is feasible to reorganise the authorities responsible for distributing the public grants. However, there has to be a strong belief in the transparency of those institutions as if one moves from national to a regional or local level, the atomisation of the institutions in charge becomes higher and more complex to monitor. Endlessly, suppose the public funds move to regional or local distribution. In that case, the national government must present a monitoring entity to certify that the selection and distribution process is transparent and fair.

As a summary, three of the four sub-hypothesis are rejected, answering the first research question, and concluding that the selection criteria of public funding mechanisms are not aligned with the mission of the art council in terms of harmonic and equitable cultural development and equitable budget distribution to the regions, but it is committed to a pluralist cultural development, which is still not enough to ensure a democratic funding mechanism.

The second research question refers to the potential improvements to the actual funding mechanisms based on the Logit and predictive models results. For that matter, this study focuses on the possible changes to the public grants, which could eventually benefit cultural workers' socioeconomic situation. Firstly, modify the composition of the funds from sector-specific to geographic-specific. The reason to do so, its because the results showed that applications to sector-specific funds are associated with lower probabilities of granting projects, disrupt-

ing an equitable development of art projects across the sector. Additionally, this investigation suggests transferring public funding mechanisms from a national level to a regional level. The budget will be more restricted on each region and encourage applicants to develop cultural projects away from the country's most populated areas.

Consequently, homogenising the probabilities of applications from different regions, and releasing the overdemand of applications from the most centrist areas, to the more distant ones in both north and south of the country. Finally, the third proposal of improvement focuses on simplifying the selection and partially hinders the judges. The study results proved that judges have a high level of power over the resolution of the application. In that sense, this investigation considers parameterising some components of the evaluation. Then, the applicants can partially anticipate the outcome of their application and stop pursuing public grants if they have low scores on the parametrise items. Endlessly, this measure reduces the application volume and release workload to make the evaluation process more effective, representative and accurate.

Finally, the third article covers the exports of cultural goods, considering the potential of external demands and the benefits of income for those cultural workers involved in their supply chain. Furthermore, the hypothesis outlines potential trade partners and strategies to intensify the trade with actual partners that have not been considered in the export strategy. The first research question asks for the existing export strategies for cultural goods, who are they targeting and how authorities can improve them. This study showed that the export strategy of Chile targets a few countries, including primarily those in the Latin American region. The benefited countries are Peru and Bolivia mostly, followed by Argentina, Paraguay and the USA. The results are coherent with the literature on cultural trade, especially for countries of the Global South. Hence, this study recognises that, as a peripheral country, Chile faces many trade barriers for exporting their cultural goods, resulting in export strategies concentrated in countries of their region. Nevertheless, this investigation can evaluate that strategy by understanding the significant variables affecting importing Chilean cultural goods and identifying predictors for that outcome, which this study focuses on.

The second question targets the implication of significant variables related with the probability of importing cultural goods for a particular country. In this case, the Logit model reflects that cultural proximity is related with trade between countries, been distance between countries a negative association and common language a positive one. Being a member of the EU negatively relates with the probability of importing Chilean cultural goods, and political stability

is positively related with the likelihood mentioned above. Additionally, countries with low populations and high GDP tend to have better chances of importing Chilean cultural goods. The same positive impact applies to those countries with high levels of capital stocks.

Additionally, country pairing for preferential trade agreements relates with positive results for the probability of importing cultural goods, which has an opposite effect for country pairing on partial scope agreements. Those countries without maritime access are associated with lower possibilities. Finally, there is a negative relation on trade after the financial crisis, based on the individual effects of each year of analysis. On those variables, the literature review supports their importance and the results from the probabilistic model. Conclusively, this research reinforces the idea that cultural policies should target those variables that they can influence, especially trade agreements, increasing the implementation of preferential trade agreements. A good starting point could be revisiting the status of implementation of UNESCO Convention 2005 and how to enact their articles more effectively. On the other hand, reduce the partial scope agreements, as they could be interpreted as a stepped door to free-trade agreements, which in this case, could harm the national cultural production significantly.

The third question is related to the predictors correlating with the probability of importing Chilean cultural goods. For that matter, this study uses machine learning techniques to forecast the most significant predictors. More specifically, this research uses regression trees and random forest methodologies to answer the last research question. Based on random forest – the model with better predictive power – the outcome suggests that the relevant predictors associated with imports of Chilean cultural goods are better economic performance, more formality of public institutions, and more and better commercial agreements. More specifically, GDP expressed in logarithmic scale probe to be the most crucial predictor, having a positive correlation with the dependent variable.

In addition, distance is a relevant predictor with a negative correlation with the targeted probability. These two variables are followed by capital stocks on a logarithmic scale, the country's political institution, and the logarithmic expression of population, which all positively correlate with the probability of importing Chilean cultural goods. Up to that point, all the predictors are macroeconomic indicators or exogenous variables that cultural policies can not alter. However, the following predictors are related to economic integration agreements, free trade agreements, the development of a common language – at least for trading, preferential trade agreements and members of GATT. The literature does not mention predictors but significant variables affecting countries' trade patterns on

these results. The related authors are also named in the previous paragraph. However, there is a difference between the probabilistic and predictive models. The last one allocates a positive correlation between importing Chilean cultural goods and economic integration agreements and free trade agreements, also covered in the literature review. Endlessly, the latter group of predictors have in common that cultural policies can affect them, considering that they positively correlate with the probability of countries importing Chilean cultural goods.

# Chapter 8

# Conclusion

Overall, one of the practical weaknesses of this study that is relevant to acknowledge is that it is not possible to cover all the spectrum of variables affecting the socioeconomic situation of cultural workers. Even though this investigation highlights the variables affecting pensions, public funding applications and exports of cultural goods so that countries can consider cultural policies on the most significant variables of the three aspects covered in this study. However, the overall effect of those policies could still be null, as other types of incomes, monetary transfers, and social benefits could still negatively affect cultural workers' socioeconomic situation.

The risks associated with this investigation are mainly associated with the methodology. There is no antecedent of using machine learning techniques predicting any relation with pensions of cultural workers, public grants for artistic projects or exports of cultural goods. That particular issue is mitigated by creating models with a high level of predictive power. Hence, the selection of significant variables is robust, and other studies can replicate the model with similar datasets for other countries.

On the whole, this study initially provides a general framework in the form of a literature review that assembled the economic and policy theory on the cultural labour market, and discussed the problems on registering the cultural activities and characteristics of cultural workers. Hence, the first part helps to visibilise the situation of the precariousness of cultural workers, and the second part argues why the problem has remained invisible for governments. Later, this investigation intends to show the most significant variables associated with three particular aspects, crucial to the socioeconomic situation of cultural workers: their pensions, access to public funding and the possibility of exports of cultural goods. By doing so, governments can take action on those significant variables and potentially could improve the three aspects previously mentioned and endlessly the socioeconomic situation of cultural workers.

The contribution of this investigation is first to identify those significant variables. Then generate predictive models using machine learning to rank the most relevant ones so that governments can pay special attention to those variables, so that the socioeconomic situation of cultural workers improves. However, this investigation does not discuss other aspects affecting cultural workers economic

stability, such as incomes associated with internal demands and copyrights, monetary transfers related to private grants, patronage and direct transfers from relatives, and social benefits such as healthcare insurance, unemployment insurance and minimum wage schemes.

More specifically, this study acknowledges that the first (pensions) and second (grants) articles are concomitant to the public sphere. In contrast, the third article (exports of cultural goods) is related to the private realm of international trade fluctuations. Moreover, the results presented in the three articles highlight that the most relevant predictors correlating with pensions contribution, funding access and exports of cultural goods are related to more development and formality in their labour market, economy and public institutions. Nevertheless, suppose policymakers consider these results and formalise the cultural sector to improve their socioeconomic situation. In that case, one will find a severe level of resistance from cultural workers. This particular aspect is determinant, as this investigation shows the problem of pensions, public funding and export of cultural goods. Still, the solutions might not be gently received by the same cultural workers who target the benefits. They often prefer the informality of their institutions and labour market and keep some personal freedom rather than formalise their sector.

In this context, a previous step towards an accepted formality of the cultural sector could be workshops and educational programs promoting the benefits of a more formal industry. Many countries have tried to incentivise cultural workers to register their activities to perceive benefits from welfare states to address this issue. Such is the case of countries like Croatia, Slovenia and Togo, where Ministries of culture promoted registration of cultural workers. By doing so, the cultural workers become eligible to receive social benefits.

This study explored different pathways to improve the socioeconomic situation of cultural workers, acknowledging the precarious position of the labour market in the art sector.

Furthermore, the results showed that governments could implement significant improvements in pensions, public grants and export strategies, which individually and all together can increase the life quality of cultural workers. In this matter, the formality of the sector seems a common ground for all three pathways of improvement. Hence, even though pensions, public grants and export strategies have separately significant predictors, more formality could impact all three as a synergistic strategy. However, the solution to this situation is not readily evident, as moving to a more formal work scheme will find resistance from cultural workers. Empirical evidence supports this idea. For example, in

1970, the Comprehensive Employment as Training Act (CETA) was conceived to establish full-time schedules and provide job subsidies to cultural workers. However, the idea was firmly rejected because people working in the art sector felt pushed to a scheme where their freedom was going to be an alibi (Dubin, 1987). Then, cultural policies must strategically attend to cultural workers' needs without entrapping them in constrained contractual formulas.

With the results from the papers and the joint discussion, this study proposes a set of recommendations based on the three aspects covered in this investigation, which can take the form of a public policy or contribute with pathways for future research.

Regarding pensions, the results exposed the unconventional situation of the cultural labour market compared to the rest of the economy. Their uniqueness, covered in this investigation, answers why there should be a targeted social insurance system for the art sector. In that context, this study suggests creating a specific fund that supports pensions of cultural workers, regardless if they are self-employed or not. The latter is justified because cultural workers often hold multiple jobs simultaneously and change between employee and self-employed schemes throughout their careers. Therefore, it would be complex to define if a retiring cultural worker is self-employed or employed. Thus, a public fund for their pensions could help artists go through their senior phase of life. From that point, the pension fund can have two non-exclusive pathways to feed it. Firstly, that fund can be sustained internally, designing a tax mechanism for those cultural institutions with a substantial market share and high volume of revenues. In this case, the tax collection might not be as significant, obstructing the pension fund's objective. On the other hand, if the tax fee is too high, it could affect the preservation of those institutions. For that reason, there is a need for additional contributions from other industries.

Secondly, the government can establish an automatic funding scheme, with contributions to the fund from those industries that are more lucrative, such as the financial or mining sector. As an incentive to incorporate those industries in the scheme, the government could lay out tax incentives for those companies willing to contribute or arrange a matching fund scheme, where half of the contribution to the pension fund comes from companies and half from the State. Finally, targeting more lucrative industries helps balance the negative externalities these companies generate by compensating other aspects of the economy and society, such as the arts, which creates positive pecuniary effects on society.

On public funds, the recommendation is to modify the origin of funds from sector-oriented to region-oriented. These actions can make more democratic and

fair grant allocations and guarantee homogeneous support to cultural projects from all the country's regions. In this way, the ministry of culture can decentralise the grants, by decentralising the budget and giving the financial responsibility of funding projects to the local administrations, simulating a federal administration. In many cases, there are responsible for the cultural policies at a regional level; such is the case of Chile, expressed in the form of Regional Ministerial Secretaries (Seremi), who could lead the regional grant allocation.

Additionally, to reinforce the regional-based approach, the government can establish automatic funding schemes for those artistic projects based on specific regions to retain and attract investment to that local area. The plan can be formulated as a match funding. The applicant starts with an initial investment. The local government proportionally multiplies it after meeting a fixed set of conditions to avoid the evaluating process that competitive fundings already have. If authorities consider this alternative mechanism, they ensure higher incentives for artists to develop their projects in alternative regions, fostering local art and attracting others to those areas, consolidating creative and artistic hubs around the country and geographically democratising the art production.

On the other hand, a more radical but complementary proposal is implementing a form of Universal Basic Income as a possible measure to release some pressure from the competitive funds. An example of this type of mechanism can be found in France (Intermittent del spectacle). As this study proves, some sub-hypothesis are not considered in the selection criteria, so it would be suitable to present a non-competitive mechanism that can fund artists, and consequently, their projects. This mechanism could have the advantage of supporting artists in non-lucrative stages, which still implicitly filters those projects that can not economically stand for themselves, at least partially. Additionally, it benefits from being a more democratic mechanism. Everyone who declares to work as a cultural worker for a certain amount of hours a year is entitled to receive the benefit. Hence, the mechanism's unconditional support helps partially assess the financial needs of emerging and consolidated artists equally. A final use of this mechanism is that, as cultural workers have to register to receive their benefit, authorities are implicitly creating a reliable database of the cultural workforce and cultural production. This statistic system can be helpful to identify the main problems of the sector and design cultural policies for the matter.

On export strategies, the present problem is that the main variables associated with countries importing Chilean cultural goods are macro variables that are hard to influence, as they are often presented as exogenous variables. On a second line, the trade agreements seem relevant, which is one of the pathways

of recommendations. To focus and validate the international trade agreements, especially those that offer preferential trade agreements, such as UNESCO Convention 2005. Monitoring and matching their export strategy with the points stated in those agreements that benefit Chilean cultural exports. Substantial developments must accompany these efforts on cultural statistic accounts, which provides beneficial outcomes on the weaknesses and commercial opportunities, leading the cultural export strategies to specific targets. Endlessly, investing in better cultural statistics helps define cultural policies that support preferential treatment and increase collaboration among the South American region.

The second recommendation pathway is to create a Department of Development and Forecasting to incorporate pilot studies of cultural goods to specific countries based on the outcomes of predictive models. In this particular investigation, the random forest model can predict the probability of importing Chilean cultural goods for each country and later rank those countries.

These pilot studies are of particular relevance for countries of the South American region because those countries tend to hold solid commercial partnerships with their neighbours. In the case of Chile, it has an almost absolute representation of import partners coming from this region. For that reason, incorporating predictive models through pilot studies allows countries to recalibrate their export strategies, prioritising those nearby partners, and exploring others abroad. The predictive model results could be used as a guideline for higher diversification of the export strategy.

Overall, the extensions of the predictive model are vast due to the possibility of replicating it with any other country, comparing and grouping export strategies. This application is especially significant for countries in South America, where block negotiation is key to aim for better trade conditions with the Global North. Endlessly, the improvements in export strategy will benefit producers of cultural goods, hence improving their socioeconomic situation.

Apart from the recommendations, another relevant aspect to consider from this study is the innovative component implicit in this research, which has two faces. Firstly, the precarious socioeconomic situation is recognised as the sum of many parts that can be treated and studied individually. In this case, they focus on three elements, pensions, public grants and export strategies that affect the end of the worker's career, the public sector supporting cultural workers, and the private sector involving cultural workers income. In this sense, many studies have covered the precarious individuals in the art sector. Still, this investigation makes an effort to unveil what is actually behind that precariousness to the very detailed component of a predictor, which in the end can be identified, approached

by policymakers and targeted by cultural policies.

The second component is the remarkably predictive power of the machine learning models, which comes as an unconventional methodology to attain precariousness in the cultural labour market and cultural studies. The predictive power of the models allows future studies to apply them in a different database, extend the results of this study to other countries and observe the characteristic differences in the significant predictors.

Moreover, this research acknowledges that due to restrictions on the extension of this thesis, it was not possible to cover all the variables affecting the socioeconomic situation of the cultural workers. However, this research can be interpreted as a starting point. Three of the most significant factors were covered so that future studies can investigate other factors from the three sources variables affecting cultural workers' socioeconomic situation: incomes, monetary transfers, and social benefits. Hence, future studies can use the established methodology of this investigation to keep identifying relevant predictors. Not surprisingly, one could expect that those predictors should have in common; the formality, the robustness of institutionalisation and improvement of trade agreements as a common trend that should positively affect the socioeconomic situation of cultural workers.

# Part IV

# Appendix

# 8.1 Methodology and Model Choice

This section covers the statistical methods applied to this investigation. Moreover, the three analysed aspects - pensions, public grants and exports of cultural goods - share the same methodology, which is a first approach using a probabilistic model to understand the variables that affect more significantly the probability to contribute to pensions of cultural workers, to receive a public grant and import cultural exports. A predictive model follows that analysis to determine the most relevant predictors affecting the three previously mentioned variables. Hence, the first subsection describes the probabilistic model, represented by a Logit Binary Choice model. Later, the second subsection considers machine learning models expressed as Regression Trees and Random Forests models.

## 8.1.1 Logit Binary Choice Model

This subsection describes the Logit binary choice model as a probabilistic model to tackle the problems on pensions, public grants and exports of cultural goods presented in this study.

Then, this investigation uses a Logit model, expressed as the inverse function of a logarithmic distribution, in order to address certain limitations of linear models. For instance, linear regressions present certain limitations, such as a dependent variable with values under zero or over one, considering that some of the independent variables assume non-binary values. Additionally, there is a conceptual problem with a linear relation between binary independent and non-binary independent variables. As the explanatory variable increases continually, one would expect that the probability would reach values over one. This effect becomes evident in the marginal contribution of the dependent variable and the effect on probability. Another problem is that the residual of the dependent variable is heteroskedastic by definition. Consequently, the variance, standard errors and t-values will be miscalculated because even though the residual can only take values from 0 to 1, the value can be different, depending on the independent variables, which is included in the equation but is non-binary. Finally, as the residual takes only two values, then it cannot be normally distributed (Soderbom, 2009).

Hence, this study moves from a Linear Probability Model to a Logit/Probit Model, where the function of the sum of the independent variables – instead of being linear – takes values only from zero to one, expressed as a probability, in

this case, of action on contributing to pensions, been granted, or import Chilean cultural goods.

Later, marginal effects are essential to show the individual effect of change of a specific independent variable to the dependent variable, keeping all of the other independent variables constant. In this case, this investigation measures how changes on independent variables affect the predicted probability of contribution to pensions using the Average Marginal Effect (AME).

AME provides a summary reflecting the full distribution of each dependent variable, by calculating marginal effects at each specific value of them and average across the resulting effect estimates. Other estimations for marginal effects like Marginal effects at representative values (MER) or Marginal effects at means (MEM) can be useful, however AME express variability more accurately than MEM. On the other hand, MER is functional but only to calculate the marginal effect for particular combinations of values that could be potentially interesting for the study (Leeper, 2017). Hence, AME represents a more simple summary respecting the distribution of the original data. Nevertheless, AME can be a problematic technique when it comes to calculate the marginal effects for interactions between variables, as it requires calculating cross derivative or cross differences, depending on all the covariates in the model. Furthermore, the interaction effect can present different signs for different observations making the computation of a summary a complex procedure (Ai & Norton, 2003).

### 8.1.2 Prediction Using Machine Learning

This subsection explains why this study chooses predictive models under the scheme of machine learning. Machine learning has an added value compared to traditional regressions when it comes to prediction problems. Moreover, machine learning models are designed to optimise a prediction, where as the standard empirical techniques commonly focus on unbiasedness (Kleinberg et al., 2015). Remarkably, this study wants to predict the impact of cultural workers on their pension contribution probability (prediction). Then, this methodology seems more suitable to investigate the hypothesis. That is why initially, this study focuses on calculating coefficients to Logit decision regression and then moves to prediction using machine learning.

The most classic economic applications focus on parameter estimation ($\hat{\beta}$). Machine learning does not perform well on those kinds of estimations, even though the methodology produces regression coefficients, they are most likely inconsistent (Mullainathan & Spiess, 2017), as the value of $\beta$ will be based on

certain assumptions when generating data, therefore is hard to compare $\hat{\beta}$ and $\beta$. Machine learning techniques are developed to maximize prediction performance (Hastie et al., 2009). The prediction works fine because one calculates $\hat{y}$ and can compare it with y, which is known data. Ultimately, what machine learning focuses on is to minimize the loss function, $L(\hat{y}, y)$, such as Sum of Square Residuals (SSR) (Varian, 2014).

Supervised machine learning focuses on optimally predict $y$ from $x$. The success of machine learning is due to its capacity of discovering complex generalized patterns, managing to fit complex and flexible functional forms that work well 'out-of-sample´ (Mullainathan & Spiess, 2017).

The three most relevant applications of machine learning are new data for traditional questions, calculation of coefficients, where the inference procedure considers a prediction task, and direct policy applications, which applies to this study. Applications of these techniques have been documented in different fields of public policies. For instance, to detain or release arrestees, based on the prediction of the probability of the arrestee to commit a crime (Lakkaraju et al., 2015), or in education, predict teachers with the highest added value (Chetty et al., 2011), and in social policy, predict the highest risk youth to target the interventions on them (Chandler et al., 2011).

Overall, machine learning prediction allows high order of interaction, such as decision trees, based on classification and regression trees (CART), providing an outcome, which can be interpreted as a specific decision or scenario of the dependent variable related to certain values of the predictors. However, the down part is that these techniques are good at predicting values for the dependent variable $\hat{y}$, but they are not that accurate in predicting $\hat{\beta}$ (Kleinberg et al., 2015). Nevertheless, machine learning techniques can improve the interpretation of results by regularising, selecting and ranking, removing variables that could be irrelevant in a multiple regression model (James et al., 2013), avoiding unnecessary complexity in the final model and allowing to infer which are the most relevant variables for a prediction. This result could not be achieved with least squares.

### Regression Trees

Regression trees, as classification models, offer an alternative different from what economists typically implement on binary choice problems, or often called classification problems, for what they usually use a GLM Model like Logit (Varian, 2014). Nevertheless, classification models offer a practical methodology for interpretation due to the graphic and sequenced explanation on which variables

(independent) affect the dependent variable and because they are closer to human decision-making (James et al., 2013).

There are internal nodes representing variables that are significant to the dependent variable and terminal nodes within the structure of regression trees or leaves where the tree finishes. Additionally, the tree must be interpreted from top to bottom, where at the top are located the most relevant variables determining the dependent variable. The terminal leaf shows the value of the dependent variable considering the combination of the independent variables of subsequent nodes.

The selection of variables in regression trees is determined by both regularisation and empirical tuning to calculate predictions of $y$. By regularisation, regression trees choose the best tree among a certain depth and empirical tuning (Mullainathan & Spiess, 2017). One makes sure that the prediction function will perform well out-of-sample by training the model with a percentage of the sample, which will be the 'in-sample´, and then applying the prediction function to the other percentage of the sample as if it was an 'out-of-sample´ data. Later the prediction function asks which regularisation level leads to the best performance on the 'out-of-sample´ data. Moreover, if a sample is divided into training and test sample, then a mean estimation is enough to calculate the predictive power of the regression tree.

A reason to choose classification models over conventional OLS is that generally, independent variables might affect other independent variables. By using OLS, the selection of interactions should be made hand-curated, with results potentially showing more regressors than data (Mullainathan & Spiess, 2017). This situation is evident when using categorical variables, as this study does. Then to solve that problem, machine learning looks for those interactions automatically by applying – for example – regression trees, which is a highly interactive function class.

However, this methodology has the problem that the model overfits the data. Then it is not capable of been used with other databases. This problem happens typically when the regression tree is deep enough so that each observation will end up in a terminal node. Therefore less node means less overfitting. To correct this, it is possible to apply adjusted $R^2$ or cross-validation.

Additionally, a down part of this methodology is their predictive capacity. In this context, other supervised learning approaches perform better, like ridge regressions, the lasso, principal components regression, and non-linear models such as polynomial regressions, step functions, regression splines, smoothing splines, local regression, generalized additive models (James et al., 2013). Neverthe-

less, there are methodologies related to tree-based methods that improve their predictive capacities, such as bagging and random forest.

### Random Forests

This methodology improves the lack of prediction from the tree-based methods by creating bootstrapped training samples of decision trees (James et al., 2013).

More broadly, random forests first choose a bootstrap of the sample and 'grows´ a tree. Then, at each node of the tree, selects a random sample of the predictors (x) to make the next decision without pruning the trees. Repeating this process creates a random forest of trees.

Another relevant point of the algorithm is that to avoid the trees always choose the same significant variables in the same order, random forests use a random sample of m predictors, where $m = \sqrt{p}$. By doing so, the methodology avoids that the predictions of the trees are highly correlated, and reducing the test error and OOB error, then on average $(p-m)/p$ of the splits will not consider the strong predictor. By adding randomness, the predictive power increases and detach the model from the training data, reducing overfitting.

This reasonably simple methodology has been described as the most successful algorithm of modern times (J. Howard & Bowles, 2012), and other authors have compared different machine learning algorithms, concluding that random forest is the best overall performer (Caruana & Niculescu-Mizil, 2006), allowing researchers to rank the most relevant predictors for a given model.

However, the problem with random forests is that they are often described as 'black box´, because they do not offer summaries of relationships between the predictors (Varian, 2014), which is a present characteristic in regression trees.

## 8.2 Predictive Power (AUC)

This section covers the technique used in this study to compare the predictive power of the different models to decide which one offers better predictability.

In that context, this research applies Area Under the Curve (AUC), which can be explained as the probability that a particular model place a random positive case higher than a random negative case. In other words, a predictive model which delivers 100% of their predictions wrong will have as an outcome a value of 0 for AUC. On the other hand, those predictive models having 100% of their predictions correct will have an AUC value of 1 (Course, 2021).

AUC is beneficial for this investigation because it does not measure the absolute predictive power of each, but compares and ranks the predictive power of different models. This considering that there are at least three models considered in this study. On the other hand, the weakness associated with this technique is that it may be more important to minimise false positives for specific studies, even though that means an increase in false negatives. In that sense, AUC is not helpful for that optimisation (Course, 2021). This situation often happens in investigations associated with security and health.

## 8.3 Appendix 1st Article

### 8.3.1 Selection Criteria on ISIC Codes, Industrial Approach

This research uses the UNESCO Framework 2009 as a precedent to consider certain ISIC Rev4 2012 codes to isolate the cultural workforce. Even though the UNESCO FCS suggest including specific codes, this study customised that criteria based on the particular characteristics of the cultural domains of the country as well as excluding some other activities. Those are mainly related to sports, leisure and gambling, which are initially considered relative domains of the cultural sector. Nevertheless, this study does not consider them.

It is essential to mention that the criteria of this study mainly include a significant amount of codes related to craft production. However, there are several types of craft production, both related and non-related to cultural production. Therefore it is crucial to separate the different kinds of craft and identify which ones apply to cultural domains. The different categories for craftwork are utilitarian craft, traditional craft, creative craft and cutting edge craft (Klamer & Petrova, 2007). Utilitarian craft is associated with a concrete and practical use. Traditional crafts are associated with making something considered traditional, which sometimes might overlap with utilitarian craft but differentiated to the first category due to traditional skills and practices, which are inherently cultural manifestations. Another category is the creative craft, which is much more related to cultural domains themselves, as these products usually are used for decoration or set on display. Finally, cutting edge craft is associated with exploring new technologies and craft techniques, which sometimes makes them qualify as artists or designers. A visual presentation of the previous description goes as it follows:

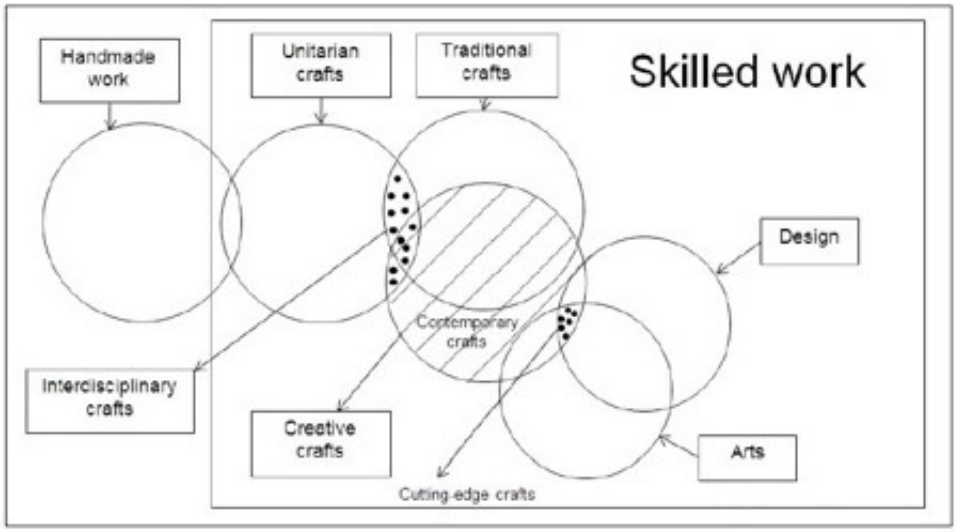


Figure 8.1: The Creative Craft Versus Other Crafts and Skills (Klamer & Petrova, 2007).

The last four categories include ISIC codes that qualify as cultural production. Hence, the challenge was understanding each worker if their activity was related to a specific type of craft and whether it was related to a cultural good or service.

Overall, the different codes included in this investigation are described in the following section of this appendix. Additionally, a comparative table between the codes used in the FCS criteria and the one used in the study is provided. It is relevant to mention that differences between the FCS criteria and the ones used in this study are not only due to modifications on the criteria. They are also related to the particular characteristics of the cultural domain of the country, where this study did not find some codes included in the FCS criteria in the list of codes of the sample.

### 8.3.2 Codes Considered in Cultural Domains

1401: Considered workers of any production of fashion design, design and creative services. The activities related to fashion production includes non-school clothing, non-sport clothing, non-corporate clothing and leather clothing—crafts in wood, leather, sheep tread, toys, musical instruments.

1601: Considered workers of any craft production.

1701: Considered workers of any craft production.

1801: Considered workers of any production of other printed matters, excluding printing of bills and industrial purposes. Additional includes production related to graphic design and advertising services.

2301: Considered workers of any craft production.

2501: Considered workers of any craft production.

3101: Considered workers of any furniture production on craft, upon request, or to private individuals.

3201: Considered workers of any craft production, festivals and fairs, excluding production of dental prostheses.

4101: Considered workers of the construction company of cultural venues.

4801: Considered workers of any production of other printed matters.

4804: Considered workers of any fashion design production (non-sport clothing), books and craft on wood furniture, musical instruments, electronic games. On the other hand, this investigation does not include pharmacies, school supplies, household appliance, perfumes, medical supplies, industrial furniture for both home and office.

4807: Considered workers of any fashion design production, Photography, toys, fairs, craft furniture in wood.

4808: Considered workers of any fashion design production, clothes, shoes, toys, furniture craft.

4809: Considered workers of any fashion design production, clothes, shoes, toys, leathercraft.

4810: Considered workers of any fashion design production, excluding functional clothes and perfumes.

5601: Considered workers of any production of festivals and fairs.

5801: Considered workers of any production of books and press and other printed matter.

5901: Considered workers of any production of audiovisual and music.

6001: Considered workers of any production of radio and TV.

6201: Considered workers of any production of design, videogames, advertising services.

7101: Considered workers of any production of architectural services.

7301: Considered workers of any production of advertising services.

7401: Considered workers of any production of Photography, advertising services, fashion design and interior design.

7701: Considered workers of any production of festivals, fairs and feasts.

7801: Considered workers of any fashion design production.

7901: Considered workers of any production of fairs and feast.

8401: Considered workers of any production of public institutions related to culture.

8599: Considered workers of any production of educational institutes related to culture.

9001: Considered workers of all the products contained in this coding.

9101: Considered workers of all the products contained in this coding.

9201: Considered workers of all the products contained in this coding, except gambling services.

9301: Considered workers of any production of non-sport and non-tourism.

9501: Considered workers of any production of videogames, printer and photocopier maintenance.

9502: Considered workers of any production of audio-video maintenance.

9503: Considered workers of any repair of clothes, shoes, furniture and musical instrument.

9699: Considered workers of any production of tattoo services (as a design and creative services) and street artists.

### 8.3.3 Comparative Code Criteria Between FCS and This Study

| FCS Coding Criteria | Research Coding |
|---|---|
| **1000** | |
| 1410 | 1401 |
| 1520 | 1601 |
| 1811 | 1701 |
| 1812 | 1801 |
| 1820 | |
| **2000** | |
| 2022 | 2301 |
| 2029 | 2501 |
| 2610 | |
| 2620 | |
| 2630 | |
| 2640 | |
| 2670 | |
| 2680 | |
| 2829 | |
| **3000** | |
| 3012 | 3101 |
| 3211 | 3201 |
| 3220 | |
| 3230 | |
| 3290 | |
| 3320 | |
| **4000** | |
| 4290 | 4101 |
| 4649 | 4801 |
| 4651 | 4804 |
| 4652 | 4807 |
| 4742 | 4808 |
| 4761 | 4809 |
| 4762 | 4810 |
| 4763 | |
| 4774 | |
| 4791 | |
| 4911 | |
| 4922 | |

| FCS Coding Criteria | Research Coding |
|---|---|
| **5000** | |
| 5011 | 5601 |
| 5110 | 5801 |
| 5510 | 5901 |
| 5520 | |
| 5811 | |
| 5813 | |
| 5819 | |
| 5820 | |
| 5911 | |
| 5912 | |
| 5913 | |
| 5914 | |
| 5920 | |
| **6000** | |
| 6010 | 6001 |
| 6020 | 6201 |
| 6110 | |
| 6120 | |
| 6201 | |
| 6202 | |
| 6209 | |
| 6311 | |
| 6312 | |
| 6391 | |
| 6399 | |

| FCS Coding Criteria | Research Coding |
|---|---|
| **7000** | |
| 7110 | 7101 |
| 7220 | 7301 |
| 7310 | 7401 |
| 7410 | 7701 |
| 7420 | 7801 |
| 7721 | 7901 |
| 7722 | |
| 7730 | |
| 7911 | |
| 7912 | |
| 7990 | |
| **8000** | |
| 8522 | 8401 |
| 8530 | 8599 |
| 8541 | |
| 8542 | |
| **9000** | |
| 9000 | 9001 |
| 9101 | 9101 |
| 9102 | 9201 |
| 9103 | 9301 |
| 9200 | 9501 |
| 9311 | 9502 |
| 9312 | 9503 |
| 9319 | 9699 |
| 9321 | |
| 9329 | |
| 9511 | |
| 9609 | |

Table 8.1: Comparative Code Criteria Between FCS and This Study

### 8.3.4 Regional Map and Demography of Chile

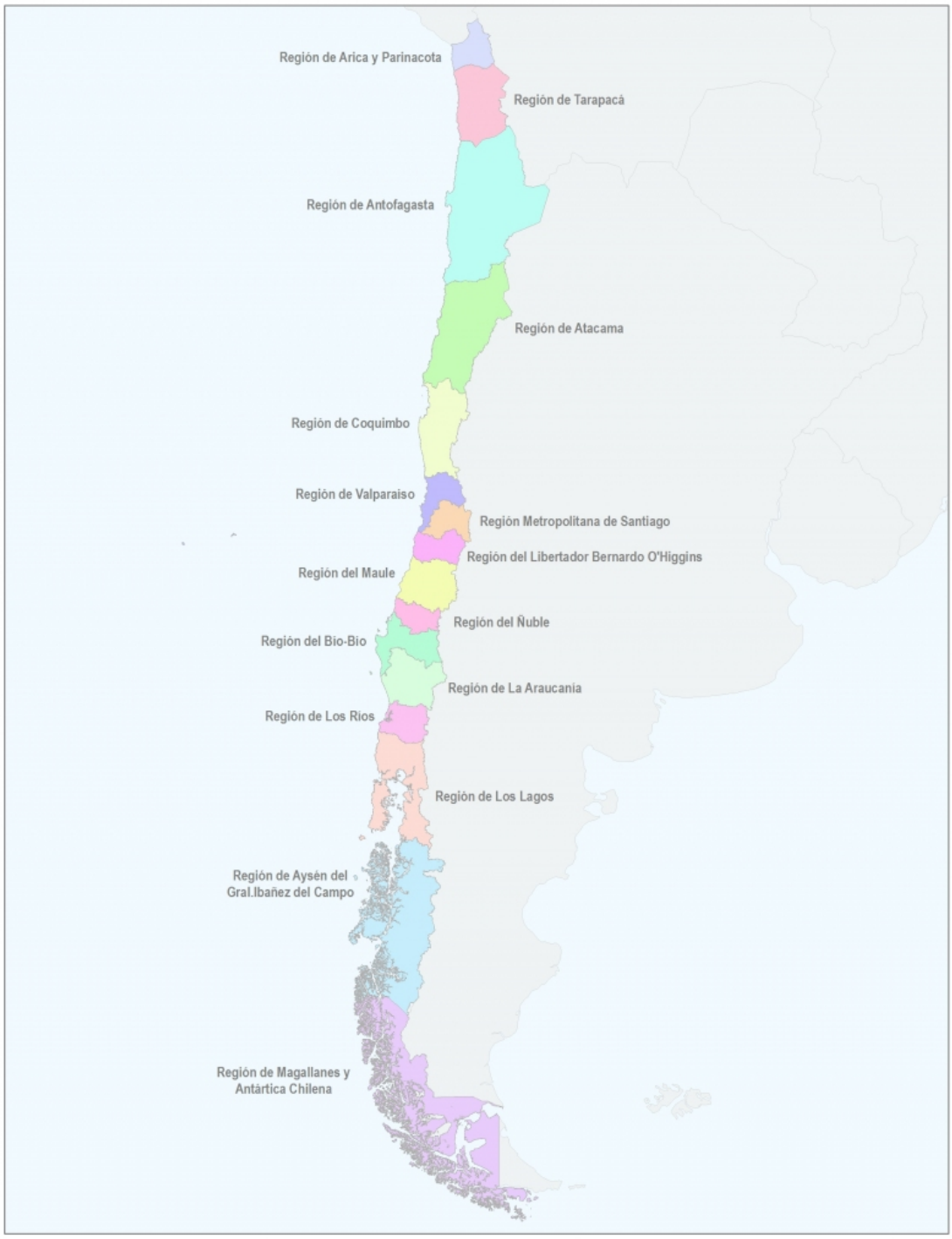


Figure 8.2: Chilean Map per Region.

| Region | Population (inh) |
|---|---|
| I Tarapacá | 330,558 |
| II Antofagasta | 607,534 |
| III Atacama | 286,168 |
| IV Coquimbo | 757,586 |
| V Valparaíso | 1,815,902 |
| VI O´Higgins | 914,555 |
| VII Maule | 1,044,950 |
| VIII Biobio | 2,037,414 |
| IX La Araucanía | 957,224 |
| X Los Lagos | 828,708 |
| XI Aysen | 103,158 |
| XII Magallanes y Antártica | 166,533 |
| Metropolitan Region | 7,112,808 |
| XIV Los Ríos | 384,837 |
| XV Arica y Parinacota | 226,068 |

Table 8.2: Population in Chile Distributed by Region

## 8.4 Appendix 2nd Article

### 8.4.1 Classification Criteria for Cultural Phases

The technical classification criteria for the cultural production phases are the followings:

| **Cultural Phase** | **Technical Justification** | **Subfund-Modality** |
|---|---|---|
| Exhibition-Reception-Transmission | Refers to audience-oriented activities that facilitate understanding of a cultural work. | Fondart Regional – Actividades Formativas |
| Dissemination | Involves the bringing of generally mass-produced cultural expressions to the public. Live performance | Fondo de la Música – Actividades Presenciales de Fomento a la Música Nacional |
| Exhibition-Reception-Transmission | Refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Media exposure | Fondo del Libro y la Lectura – Apoyo a la difusión del libro, la lectura y la creación nacional |

| | | |
|---|---|---|
| Production | Refers to the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Programa de Intermediación Cultural – Apoyo a la gestión – Programación de Espacios y Agentes Culturales |
| Creation | Refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional-Arquitectura-Creación |
| Dissemination | Involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondart Nacional-Arquitectura |
| Exhibition-Reception-Transmission | Refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Nacional-Arquitectura |
| Creation | Refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional-Arquitectura-Investigación |
| Creation | Refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional-Artes Escénicas-Creación y Producción o sólo Producción |
| Dissemination | Involves the bringing of generally mass-produced cultural expressions to the public. A live performance (concert, festivals, etc. | Fondart Nacional-Artes Escénicas-Difusión-Organización de Festivales, Encuentros y Muestras |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. | Fondart Nacional-Artes Escénicas-Difusión-Proyectos de Difusión |

| | | |
|---|---|---|
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional-Artes Escénicas-Investigación |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional-Artes Visuales-Creación y Producción o sólo Producción |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. A live performance (concert, festivals, etc. | Fondart Nacional-Artes Visuales-Difusión-Organización de Festivales, Encuentros y Muestras |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. | Fondart Nacional-Artes Visuales-Difusión-Proyectos de Difusión |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional-Artes Visuales-Investigación |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional-Artesanía-Creación y Producción o sólo Producción |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience | Fondart Nacional-Artesanía-Difusión-Proyectos de Difusión |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional-Artesanía-Investigación |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondo de la Música- Celebración Centenario Violeta Parra-Única |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional-Centenario de Violeta Parra |

| | | |
|---|---|---|
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Nacional-Circulación Nacional e Internacional-Circulación Internacional-Persona Jurídica-Encuentros, Muestras y Actividades de transferencia de conocimiento |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional-Circulación Nacional e Internacional-Circulación Internacional-Persona Natural-Residencias Artísticas |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. A live performance (concert, festivals, etc.). | Fondart Nacional-Circulación Nacional e Internacional-Circulación Nacional-Persona Jurídica |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional-Circulación Regional-Región de XX-Encuentros, Muestras y Transferencia de conocimientos |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. A live performance (concert, festivals, etc. | Fondart Regional-Circulación Regional-Región de XX-Encuentros, Muestras y Transferencia de conocimientos |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Circulación Regional-Región de XX – Encuentros, Muestras y Transferencia de conocimientos |

| | | |
|---|---|---|
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Convocatoria para asistir a Feria Classical Next – Modalidad Única |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Convocatoria para asistir a Feria XX – Delegación Artistas |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Convocatoria para asistir a Ferias XX – Delegación Industria |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Convocatoria para participar en Feria WOMEX – Modalidad Unica |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. | Fondo de la Música – Coros, Orquestas y Bandas Instrumentales – Única |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondo del Libro y la Lectura – Creación |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación Artística – Única – Artes Circenses |

| | | |
|---|---|---|
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación Artística – Única – Artes Visuales |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación Artística – Única – Danza |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación Artística – Única – Fotografía |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación Artística – Única – Nuevo medios |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación Artística – Única – Teatros |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación en Artesanía – Única |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación en Cultural Tradicional – Única |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación en Culturas de Pueblos Originarios – Única |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación en Culturas Migrantes – Única |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional – Creación en Culturas Regionales – Experimentación, arte, ciencia y tecnología de Antofagasta |

| | | |
|---|---|---|
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fomento al turismo cultural y gastronómico de la Región de Atacama |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Fomento y difusión de la artesanía tradicional regional de O'Higgins |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Formación en identidad regional de Coquimbo |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Fortalecimiento de la lengua rapa nui |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Fortalecimiento de las identidades de Magallanes |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Gestión sustentable de patrimonio cultural de la Región de Valparaíso |

| | | |
|---|---|---|
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Identidad cultural y memoria histórica de La Araucanía |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Identidad de Tarapacá |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Incentivo al desarrollo de ferias artesanales y/o ferias de oficios de la Región de Los Lagos |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Regional/Creación en Culturas Regionales/Fondart Regional – Investigación de la identidad y del patrimonio agrícola regional del Maule |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Participación y consumo cultural en Región del Biobío |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Salvaguardia cultural del pueblo tribal afrodescendiente de Arica y Parinacota |

| | | |
|---|---|---|
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Creación en Culturas Regionales – Fondart Regional – Turismo cultural Los Ríos |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.) | Fondart Regional – Difusión – Organización de Festivales, Carnavales y Ferias |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Difusión – Proyectos de Difusión. |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Difusión de la Música Nacional – Otros Medios (Prensa Escrita y TV) |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Difusión de la Música Nacional – Radios |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Difusión de la Música Nacional – Radios Online y Programas Digitales |

| | | |
|---|---|---|
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional – Diseño – Creación y Producción o sólo Producción |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. A live performance (concert, festivals, etc. | Fondart Nacional – Diseño – Difusión – Organización de festivales, encuentros y muestras |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Nacional – Diseño – Difusión – Proyectos de Difusión |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondart Nacional – Diseño – Investigación |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Fomento a la Asociatividad – Única |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. | Fondo del Libro y la Lectura – Fomento a la Industria – Apoyo a ediciones |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions | Fondo de la Música – Fomento a la Industria – Desarrollo de Catálogos de la Música Nacional |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions | Fondo del Libro y la Lectura – Fomento a la Industria – Emprendimiento – Micro-editoriales |

| | | |
|---|---|---|
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondo del Libro y la Lectura – Fomento a la Industria – Emprendimiento – Micro-editoriales |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries | Fondo del Libro y la Lectura – Fomento a la Industria – Emprendimiento – Creación o instalación de librerías |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondo del Libro y la Lectura – Fomento a la Industria – Emprendimiento – Creación o instalación de librerías |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions | Fondo del Libro y la Lectura – Fomento a la Industria – Emprendimiento – Librería existentes |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondo del Libro y la Lectura – Fomento a la Industria – Emprendimiento – Librería existentes |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions | Fondo de la Música – Fomento a la Industria – Fomento al Luthier |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions | Fondo de la Música – Fomento a la Industria – Salas de Concierto y Estudios de Grabación |

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| Consumption-Participation | is the audience or general public using cultural products and participating in cultural experiences, including practicing as amateurs. Examples: reading a book, dancing, listening to the radio, visiting an art gallery, etc. | Fondo del Libro y la Lectura – Fomento de la Lectura y/o Escritura – Apoyo a festivales y ferias |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo del Libro y la Lectura – Fomento de la Lectura y/o Escritura – Bibliomóvil |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo del Libro y la Lectura – Fomento de la Lectura y/o Escritura – Colecciones bibliográficas – Adquisición de material bibliográfico para bibliotecas y espacios de lectura no convencionales |
| Consumption-Participation | is the audience or general public using cultural products and participating in cultural experiences, including practicing as amateurs. Examples: reading a book, dancing, listening to the radio, visiting an art gallery, etc. | Fondo del Libro y la Lectura – Fomento de la Lectura y/o Escritura – Desarrollo de capacidades de mediación de la lectura y escritura |
| Consumption-Participation | is the audience or general public using cultural products and participating in cultural experiences, including practicing as amateurs. Examples: reading a book, dancing, listening to the radio, visiting an art gallery, etc. | Fondo del Libro y la Lectura – Fomento de la Lectura y/o Escritura – Iniciativas de fomento lector en medios de comunicación – Iniciativas en medios de comunicación local (soportes escritos, visuales y orales) |

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| Consumption-Participation | is the audience or general public using cultural products and participating in cultural experiences, including practicing as amateurs. Examples: reading a book, dancing, listening to the radio, visiting an art gallery, etc. | Fondo del Libro y la Lectura – Fomento de la Lectura y/o Escritura – Iniciativas de fomento lector y/o escritor en espacios de lectura convencionales o no convencionales |
| Consumption-Participation | is the audience or general public using cultural products and participating in cultural experiences, including practicing as amateurs. Examples: reading a book, dancing, listening to the radio, visiting an art gallery, etc. | Fondo del Libro y la Lectura – Fomento de la Lectura y/o Escritura – Iniciativas docentes o escolares en fomento lector y/o escritor |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo del Libro y la Lectura – Fomento de la Lectura y/o Escritura – Mejoramiento de infraestructura bibliotecaria, habilitación de espacios de lectura en bibliotecas, centros educativos, culturales o de salud que atiendan a personas con discapacidad |
| Consumption-Participation | is the audience or general public using cultural products and participating in cultural experiences, including practicing as amateurs. Examples: reading a book, dancing, listening to the radio, visiting an art gallery, etc. | Fondo de la Música – Fomento y Desarrollo de la Música de Raíz Folklórica y de Pueblos Originarios – Actividades Presenciales, Música en Vivo, Ferias y Festivales de Música de Raíz Folklórica y de Pueblos Originarios |

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| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondo de la Música – Fomento y Desarrollo de la Música de Raíz Folklórica y de Pueblos Originarios – Creación, Producción, Difusión, Edición y Distribución de la Música de Raíz Folklórica y de Pueblos Originarios |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc | Fondo de la Música – Fomento y Desarrollo de la Música de Raíz Folklórica y de Pueblos Originarios – Investigación, Preservación y Registro de la Música de Raíz Folklórica y de Pueblos Originarios |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc | Fondo de la Música – Formación – Actividades Formativas Escolares y Profesionales |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Formación – Becas |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc | Fondo de la Música – Formación – Becas de Especilización |

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| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc | Fondo de la Música – Formación – Becas de Postgrado |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Formación – Becas Jóvenes Talentos |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc | Fondo del Libro y la Lectura – Formación – Residencias en el país |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Nacional – Formación – Segunda Convocatoria 2017 – Becas de Especialización |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Nacional – Formación – Segunda Convocatoria 2017 – Becas de Postgrado |
| Consumption-Participation | is the audience or general public using cultural products and participating in cultural experiences, including practicing as amateurs. Examples: reading a book, dancing, listening to the radio, visiting an art gallery, etc | Fondart Regional – Gastronomía y Arte Culinario – Única |

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| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc | Fondo Estudios – Haz tu Tesis en Cultura – Posgrado |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc | Fondo Estudios – Haz tu Tesis en Cultura – Pregrado |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondart Nacional – Infraestructura Cultural – Única |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondo del Libro y la Lectura – Investigación – Investigaciones en torno al libro, la lectura y/o escritura |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondo del Libro y la Lectura – Investigación – Investigaciones sobre lenguas de pueblos originarios y/o tradiciones orales |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondo de la Música – Investigación y Registro de la Música Nacional – Investigación |

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| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondo de la Música – Investigación y Registro de la Música Nacional – Preservación y Registro |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – IX Bolivia Lab – Laboratorio de Proyectos – Modalidad única |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondo de la Música – Línea de Apoyo a la Circulación de la Música Nacional – Mediación |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.) | Fondo de la Música – Línea de Apoyo a la Circulación de la Música Nacional – Música Clásica |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondo de la Música – Línea de Apoyo a la Circulación de la Música Nacional – Música de Raíz Folclórica |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondo de la Música – Línea de Apoyo a la Circulación de la Música Nacional – Música Popular |

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| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondo de la Música – Línea de Apoyo a la Circulación de la Música Internacional – 100 años Violeta Parra |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc | Fondo de la Música – Línea de Apoyo a la Circulación de la Música Internacional – Mediación |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Línea de Apoyo a la Circulación de la Música Internacional – Música Clásica |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Línea de Apoyo a la Circulación de la Música Internacional – Música Folclórica |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo de la Música – Línea de Apoyo a la Circulación de la Música Internacional – Música Popular |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Línea de Difusión e Implementación – Difusión en medios electrónicos |

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| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Línea de Difusión e Implementación – Festivales |
| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de Difusión e Implementación – Implementación de equipamiento |
| Dissemination | Involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondo Audiovisual – Línea de Distribución con fin de integración de audiencias de personas con discapacidad – Modalidad única |
| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de Fomento al Codesarrollo de Proyectos de Coproducción Chile-Italia – Modalidad Unica |
| Exhibition-Reception-Transmission | Refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Línea de Formación – Becas |
| Exhibition-Reception-Transmission | Refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Línea de Formación – Formación de público |

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| Exhibition-Reception-Transmission | Refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Línea de Formación – Formación técnica o profesional grupal |
| Creation | Refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondo Audiovisual – Línea de Guión – Desarrollo de guión |
| Creation | Refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondo Audiovisual – Línea de Guión – Desarrollo o reescritura documental |
| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondo Audiovisual – Línea de Guión – Reescritura de guión Ficción y Animación |
| Creation | Refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondo Audiovisual – Línea de Investigación – Modalidad única |
| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de producción Audiovisual – Animación |

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| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de producción Audiovisual – Cortometraje |
| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de producción Audiovisual – Largometraje de Ficción |
| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de producción Audiovisual – Otros Formatos |
| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de producción audiovisual de largometrajes en régimen de coproducción – Coproducción mayoritaria |
| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de producción audiovisual de largometrajes en régimen de coproducción/coproducción minoritaria |
| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de producción audiovisual de largometrajes en régimen de coproducción – Animación |

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| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de producción audiovisual de largometrajes en régimen de coproducción – Documental |
| Production | Is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo Audiovisual – Línea de producción audiovisual de largometrajes en régimen de coproducción – Ficción |
| Exhibition-Reception-Transmission | Refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo del Libro y la Lectura – Misión a Feria Internacional del Libro de Bologna – Delegación de Editores y Profesionales de Libro |
| Creation | Refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondart Regional – Patrimonio Cultural – Investigación |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Patrimonio Cultural – Puesta en Valor |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Regional – Patrimonio Cultural – Salvaguardia |

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| Creation | refers to the inventiveness, exploration and conception of the content that form the raw material for cultural industries. Examples: text, tune, sketch, work of art, etc. | Fondo de la Música – Producción, Difusión, Edición y Distribución – Música Clásica - Docta, Electroacústica, Arte Sonoro y Paisaje Sonoro |
| Creation, Production, Dissemination, Exhibition-Reception-Transmission | | Fondo de la Música – Producción, Difusión, Edición y Distribución – Música Popular |
| Consumption-Participation | is the audience or general public using cultural products and participating in cultural experiences, including practicing as amateurs. Examples: reading a book, dancing, listening to the radio, visiting an art gallery, etc. | Fondo Audiovisual – Programa de Apoyo a Festivales de Trayectoria 2017-2018 – Modalidad Única |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondo del Libro y la Lectura – Programa de Apoyo a la Traducción – Modalidad Única |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc. | Fondo de la Música – Programa de Apoyo a Orquestas Profesionales – Única |
| Dissemination | involves the bringing of generally mass-produced cultural expressions to the public. Examples: delivery and commercialization in wholesale and retail, online sale, screening of a film, a live performance (concert, festivals, etc.). | Fondo de la Música – Programa de Apoyo a Orquestas Profesionales – Única |

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| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Festivales y Premios Internacionales 2017 – Eventos en Centroamérica, Sudamérica y Caribe |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Festivales y Premios Internacionales 2017 – Eventos en Norteamérica, México, Europa y resto del mundo |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Mercados Internacionales 2017 – Doc Outlook – Visions du Reel (Nyon, Suiza) |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Mercados Internacionales 2017 – Doc Outlook – European Film Market (Berlín - Alemania) |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Mercados Internacionales 2017 – Doc Outlook – Hot Docs (Toronto, Canadá) |

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| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Mercados Internacionales 2017 – Doc Outlook – Kidscreen Summit (Miami - Estados Unidos) |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Mercados Internacionales 2017 – Doc Outlook – Marché du Film (Cannes, Francia) |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Mercados Internacionales 2017 – Doc Outlook – Mercado Guadalajara (Guadalajara - México) |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Mercados Internacionales 2017 – Doc Outlook – MIFA Annecy (Annecy, Francia) |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Mercados Internacionales 2017 – Doc Outlook – Rio Content Market (Rio de Janerio - Brasil) |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de apoyo para la participación en Mercados Internacionales 2017 – Doc Outlook – Short Film Market (Clermont Ferrand - Francia) |

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| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondo Audiovisual – Programa de Formación para Público Preescolar y Escolar Convocatoria 2017-2018 – Metodología de cine clubes |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Fondart Nacional – Recuperación – Circulación |
| Production | is the assembly of all the elements (supplies, equipment, professionals) necessary for the realization (materialization) of cultural expressions. Examples: television programmes, books, music recordings, etc | Fondart Nacional – Recuperación – Recuperación de implementación artístico cultural |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Programa de Intermediación Cultural – Redes de Espacios y/o Agentes Culturales – Interregionales |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Programa de Intermediación Cultural – Redes de Espacios y/o Agentes Culturales – Regionales |
| Exhibition-Reception-Transmission | refers to audience-oriented activities that facilitate understanding of a cultural work or the marketing methods used to build audience. Examples: documentation of a cultural work, media exposure, advertising, market analyses, etc. | Programa de Intermediación Cultural – Redes de Espacios y/o Agentes Culturales – Sectoriales |

Table 8.3: Classification Criteria for Cultural Phases.

## 8.5 Appendix 3rd Article

### 8.5.1 Classification Criteria for Cultural Domains

It is essential to mention that some of the Cultural Domains of the UNESCO FCS 2009 classification are excluded. The first one to be excluded is Cultural and Natural Heritage. This domain-only considers services, such as Museums (including VR experience), Archaeological and Historical Places, Cultural Landscapes and Natural Heritage. On the other hand, the so-called 'Related Domains´, including G. Tourism and H. Sports and Recreation are excluded. The reason to do so is that Tourism has there own statistics outside of the cultural sector, together with the fact that goods in G. Tourism only considers cruise ships, which are not cultural goods but serve the purpose of transport people. Finally, this study believes that Sports and Recreation have no relation with the cultural sector.

Another critical point is the criteria of what are the selected codes in each domain and sub-domain. For that matter, UNESCO FCS 2009 applies the Harmonized System (HS 07 and HS 12). The HS 07 and HS 12 classifies goods by their observable characteristics, and registering only declared goods as they cross the border (UNESCO, 2009), which is also the code system that UNCTAD uses to publish their series.

The following table provides more detailed information of the subcultural domains, the specific description of goods included in each of them, and the HS 07 and HS 12 codes associated with those goods.

**Cultural Goods Sub-Domains**

| Art Crafts | Goods Description | HS Codes |
|---|---|---|
| Celebration | Articles for Christmas festivities | 950510 |
| Celebration | Festival, carnival or other entertainment articles, incl. conjuring tricks and novelty jokes, n.e.s. | 950590 |
| Celebration | Travelling circuses and travelling menageries | 950810 |

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| Other Art Crafts | Hand-woven tapestries of the type Gobelins, Flanders, Aubusson, Beauvais and the like and needle-worked tapestries | 580500 |
| Other Art Crafts | Narrow woven fabrics: Woven pile fabrics (including terry towelling and similar terry fabrics) and chenille fabrics | 580610 |
| Other Art Crafts | Narrow woven fabrics: Other woven fabrics, containing by weight 5% or more of lastomeric yarn or rubber thread | 580620 |
| Other Art Crafts | Narrow woven fabrics: Other woven fabrics of cotton | 580631 |
| Other Art Crafts | Narrow woven fabrics: Other woven fabrics of man-made fibres | 580632 |
| Other Art Crafts | Narrow woven fabrics: Other woven fabrics of other textile materials | 580639 |
| Other Art Crafts | Fabrics consisting of warp without weft assembled by means of and adhesive (bolducs) | 580640 |
| Other Art Crafts | Braids in the piece; ornamental trimmings in the piece, without embroidery; other than knitted or crocheted | 580810 |
| Other Art Crafts | Other braids in the piece; ornamental trimmings in the piece, without embroidery; other than knitted or crocheted | 580890 |
| Other Art Crafts | Woven fabrics of metal thread and woven fabrics of metallised yarn of heading 5605 of a kind used in apparels as furnishing fabrics or for similar purposes | 580900 |
| Other Art Crafts | Embroidery in the piece, in strips or in motifs without visible ground | 581010 |
| Other Art Crafts | Embroidery in the piece, in strips or in motifs: Other embroidery of cotton | 581091 |
| Other Art Crafts | Embroidery in the piece, in strips or in motifs: Other embroidery of man-made fibres | 581092 |
| Other Art Crafts | Embroidery in the piece, in strips or in motifs: Other embroidery of other textile materials | 581099 |

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|---|---|---|
| Other Art Crafts | Quilted textile products in the piece | 581100 |
| Other Art Crafts | Knitted or crocheted fabrics of a width not exceeding 30 cm, containing by weight 5% or more of lastomeric yarn but not containing robber thread | 600240 |
| Other Art Crafts | Other knitted or crocheted fabrics of a width not exceeding 30 cm, containing by weight 5% or more of lastomeric yarn or robber thread | 600290 |
| Other Art Crafts | Knitted or crocheted fabrics of a width not exceeding 30 cm of wool or fine animal hair | 600310 |
| Other Art Crafts | Knitted or crocheted fabrics of a width not exceeding 30 cm of cotton | 600320 |
| Other Art Crafts | Knitted or crocheted fabrics of a width not exceeding 30 cm of synthetic fibres | 600330 |
| Other Art Crafts | Knitted or crocheted fabrics of a width not exceeding 30 cm of artificial fibres | 600340 |
| Other Art Crafts | Other knitted or crocheted fabrics of a width not exceeding 30 cm | 600390 |
| Other Art Crafts | Knitted or crocheted fabrics, of a width exceeding 30 cm containing by weight 5% or more of lastomeric yarn but not containing robber thread | 600410 |
| Other Art Crafts | Other knitted or crocheted fabrics, of a width exceeding 30 cm containing by weight 5% or more of lastomeric yarn or robber thread | 600490 |

Table 8.4: Classification Criteria for Cultural Domains: Art Crafts.

| **Audiovisual** | **Goods Description** | **HS Codes** |
|---|---|---|
| Film | Cinematograph film, exposed and developed whether or not incorporating sound track or only consisting of sound track of a width of 35 mm or more | 370610 |

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|---|---|---|
| Film | Cinematographic film, exposed and developed, whether or not incorporating soundtrack or consisting only of soundtrack, width ¡ 35 mm | 370690 |
| Audiovisual | Reception apparatus for radiobroadcasting, whether or not combined in the same housing, with sound recording or reproducing apparatus or a clock | 8527 |
| Audiovisual | Monitors, projectors, not incorporating television reception apparatus; reception apparatus for TV, whether or not incorporating radiobroadcast receivers or sound video recording reproducing apparatus | 8528 |
| Audiovisual | Cinematographic cameras and projectors, whether or not incorporating sound recording or reproducing apparatus | 9007 |
| Audiovisual | Microfilms, microfiche or other microform readers, whether or not capable of producing copies 88131 Microfilm, microfiche or other microform readers, whether or not capable of producing copies | 900820 |
| Audiovisual | Image projectors | 900810 |
| Audiovisual | Other image projectors | 900830 |
| Audiovisual | Photographic (other than cinematographic) enlargers and reducers | 900840 |
| Audiovisual | Parts and accessories of image projectors, heading 9008 | 900890 |
| Audiovisual | Video recording and reproducing apparatus, magnetic tapetype | 852110 |
| Audiovisual | Video-recording or reproducing apparatus, whether or not incorporating a video tuner magnetic tapetype | 852190 |

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|---|---|---|
| Audiovisual | Transmission apparatus | 852550 |
| Audiovisual | Transmission apparatus incorporating reception apparatus | 852560 |
| Audiovisual | Television cameras, digital cameras and video cameras recorders | 852580 |
| Computer and related equipment | Portable automatic data processing machines | 847130 |
| Computer and related equipment | Other automatic data processing machines comprising in the same housing at least a central processing unit and an input and output unit | 847141 |
| Computer and related equipment | Other automatic data processing machines presented in the form of systems | 847149 |
| Computer and related equipment | Processing units other than those of subheading 847141 or 847149, whether or not containing in the same housing one or two of the following types of unit: storage units, input units output units | 847150 |
| Computer and related equipment | Input or output units, whether or not containing storage units in the same housing | 847160 |
| Computer and related equipment | Storage units | 847170 |
| Computer and related equipment | Other units of automatic data processing machines | 847180 |
| Computer and related equipment | Parts and accessories of the machines of heading 8471 | 847330 |

Table 8.5: Classification Criteria for Cultural Domains: Audiovisual.

| **Design** | **Goods Description** | **HS Codes** |
|---|---|---|

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|---|---|---|
| Architecture | Plans and drawings for architectural, engineering, industrial, commercial, topographical or similar purposes, being originals drawn by hand; hand-written texts; photographic reproductions on sensitised paper and carbon copies of the foregoing | 490600 |
| Fashion | Peru | 151 |
| Glassware | Peru | 138 |
| Interior | Peru | 126.4 |
| Jewelry | Articles of jewellery and parts thereof of silver, whether or not plated or clad with other precious metal | 711311 |
| Jewelry | Articles of jewellery and parts thereof of other precious metal, whether or not plated or clad with precious metal | 711319 |
| Jewelry | Articles of jewellery and parts thereof of base metal clad with precious metal | 711320 |
| Jewelry | Articles of goldsmiths' or silversmiths' wares and parts thereof of silver, whether or not plated or clad with other precious metal | 711411 |
| Jewelry | Articles of goldsmiths' or silversmiths' wares and parts thereof of other precious metal, whether or not plated or clad with precious metal | 711419 |
| Jewelry | Articles of goldsmiths' or silversmiths' wares and parts thereof of base metal clad with precious metal | 711420 |
| Jewelry | Articles of natural or cultured pearls | 711610 |
| Jewelry | Articles of precious or semi-precious stones (natural, synthetic or reconstructed) | 711620 |
| Toys | Peru | 118.9 |

Table 8.6: Classification Criteria for Cultural Domains: Design.

| New Media | Goods Description | HS Codes |
|---|---|---|
| Recorded Media | Cards incorporating a magnetic stripe | 852321 |
| Recorded Media | Magnetic media for the recording of sound or of other phenomena (excl. cards incorporating a magnetic stripe and goods of chapter 37) | 852329 |
| Recorded Media | Solid-state non-volatile storage devices | 852351 |
| Recorded Media | Semiconductor media, unrecorded, for the recording of sound or of other phenomena | 852359 |
| Recorded Media | Gramophone records and other media for the recording of sound or of other phenomena, whether or not recorded, incl. matrices and masters for the production of discs | 852380 |
| Recorded Media | Music, printed or in manuscript, whether or not bound or illustrated | 490400 |
| Videogames | Video games used with a television receiver | 950410 |

Table 8.7: Classification Criteria for Cultural Domains: New Media.

| Performing Arts | Goods Description | HS Codes |
|---|---|---|
| Music | Sound recording apparatus operated by coins, banknotes, bank cards, tokens or by other means of payment 76331 Apparatus operated by coins, banknotes, bank cards, tokens or by other means of payment | 851920 |
| Music | Turntables (record decks) | 851930 |
| Music | Microphones and stands therefore | 851810 |
| Music | Single loudspeakers, mounted in their enclosures | 851821 |
| Music | Multiple loudspeakers, mounted in the same enclosure | 851822 |
| Music | Other microphones and stand therefore | 851829 |

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|---|---|---|
| Music | Headphones and earphones, whether or not combined with a microphone, and sets consisting of a microphone and one or more loudspeakers | 851830 |
| Music | Audio-frequency electric amplifiers | 851840 |
| Music | Electric sound amplifier sets | 851850 |
| Music | Musical instrument strings | 920930 |
| Music | Parts and accessories for pianos | 920991 |
| Music | Parts and accessories for the musical instruments of heading 9202 | 920992 |
| Music | Parts and accessories for the musical instruments of heading 9207 | 920994 |
| Music | Parts and accessories for musical instruments "e.g. mechanisms for musical boxes, cards, discs and rolls for mechanical instruments" n.e.s.; metronomes, tuning forks and pitch pipes of all kinds | 920999 |
| Musical Instruments | Bells, gongs and the like | 830610 |
| Musical Instruments | Upright pianos | 920110 |
| Musical Instruments | Grand pianos | 920120 |
| Musical Instruments | Harpsichords and other keyboard stringed instruments (excl. pianos) | 920190 |
| Musical Instruments | Other string musical instruments (for example violins, harps) played with a bow | 920210 |
| Musical Instruments | Other string musical instruments (for example violins, harps) played with a bow | 920290 |
| Musical Instruments | Brass wind instruments (for example, clarinets, trumpets bagpipes) | 920510 |
| Musical Instruments | Wind musical instruments (excl. brass-wind instruments) | 920590 |
| Musical Instruments | Percussion musical instruments (for example drums, xylophones, cymbals, castanets, maracas) | 920600 |
| Musical Instruments | Keyboard instruments other than accordions | 920710 |
| Musical Instruments | Accordions and musical instruments without keyboards, the sound of which is produced, or must be amplified, electrically | 920790 |

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|---|---|---|
| Musical Instruments | Musical boxes | 920810 |
| Musical Instruments | Fairground organs, mechanical street organs, mechanical singing birds, musical saws and other musical instrument; decoy calls of all kinds; whistles, call horn and other mouth blown sound signaling instruments | 920890 |

Table 8.8: Classification Criteria for Cultural Domains: Performing Arts.

| **Publishing** | **Goods Description** | **HS Codes** |
|---|---|---|
| Books | Printed reading books, brochures, leaflets and similar printed matter whether in single sheets whether or not folded | 490110 |
| Books | Dictionaries and encyclopedias and serial installments thereof | 490191 |
| Books | Printed books, brochures and similar printed matter | 490199 |
| Newspaper | Newspapers, journals and periodicals, whether or not illustrated or containing advertising material appearing at least four times a week | 490210 |
| Newspaper | Other newspapers, journals and periodicals | 490290 |
| Other Printed Matter | Children's picture, drawing or colouring books | 490300 |
| Other Printed Matter | Maps and hydrographical or similar charts of all kinds in book form | 490591 |
| Other Printed Matter | Maps and hydrographical or similar charts of all kinds in globes | 490510 |
| Other Printed Matter | Other maps and hydrographical or similar charts of all kinds | 490599 |
| Other Printed Matter | Postcards, printed or illustrated; printed greeting cards | 490900 |
| Other Printed Matter | Calendars of any kind, printed, including calendar blocks | 491000 |
| Other Printed Matter | Letterpress printing machinery, reel fed, excluding flexographic printing | 844314 |

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|---|---|---|
| Other Printed Matter | Letterpress printing machinery, other than reel fed, excluding flexographic printing | 844315 |
| Other Printed Matter | Flexographic printing machinery | 834316 |
| Other Printed Matter | Gravure printing machinery | 834317 |

Table 8.9: Classification Criteria for Cultural Domains: Publishing.

| **Visual Arts** | **Goods Description** | **HS Codes** |
|---|---|---|
| Antiques | Collections and collectors' pieces of zoological, botanical, mineralogical, anatomical, historical, archaeological, palaeontological, ethnographic or numismatic interest | 970500 |
| Antiques | Antiques of an age exceeding one hundred years | 970600 |
| Paintings | Paintings, drawings and pastels, executed entirely by hand, other than drawings of heading 4906 and other than hand-painted or hand-decorated manufactured articles, collages and similar decorative plaques | 970110 |
| Paintings | Collages and similar decorative plaques | 970190 |
| Paintings | Pictures, designs and photographs | 491191 |
| Photography | Photographic plates and film, exposed and developed, other than cinematographic film for offset reproduction | 370510 |
| Photography | Photographic plates and film, exposed and developed (excl for offset production) | 370590 |
| Photography | Instant print film | 370120 |
| Photography | Other plates and film, with any side exceeding 255mm | 370130 |
| Photography | Photographic plates and film in the flat sensitised, unexposed for colour photography | 370191 |

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|---|---|---|
| Photography | Photographic plates and film in the flat for monochrome photography, sensitised, unexposed, of any material other than paper, paperboard or textiles (excl. X-ray film and photographic plates, film in the flat with any side ¿ 255 mm, and instant print film | 370199 |
| Photography | Photograph film, rolls, sensitised, unexposed, of any material other than paper, paperboard or textile | 3702 |
| Photography | Photographic paper, paperboard and textiles, sensitised, unexposed | 3703 |
| Photography | Photographic paper, paperboard and textiles, exposed but not developed | 370400 |
| Photography | Sensitisation emulsions | 370710 |
| Photography | Other chemical preparations for photographic uses | 370790 |
| Photography | Photographic cameras (except cine), accessories | 9006 |
| Photography | Apparatus and equipment for automatically developing photographic (including cinematographic) films or paper in rolls or for automatically exposing developed film to rolls of photographic paper | 901010 |
| Photography | Other apparatus and equipment for photographic (including cinematographic) laboratories; negatoscopes | 901050 |
| Photography | Projection screens | 901060 |
| Photography | Parts and accessories for apparatus and equipment for photographic laboratories | 901090 |
| Sculptures | Original sculptures and statuary, in any material | 970300 |
| Sculptures | Statuettes and other ornamental articles in plastic | 392640 |
| Sculptures | Statuettes and other ornaments, of wood | 442010 |

| | | |
|---|---|---|
| Sculptures | Wood marquetry and inlaid wood; caskets and cases for jewelry or cutlery, and similar articles, of wood; wooden articles of furniture | 442090 |
| Sculptures | Statuettes and other ornamental ceramic articles of porcelain or China | 691310 |
| Sculptures | Statuettes and other ornamental ceramic articles, n.e.s. (excl. of porcelain or china) | 691390 |
| Sculptures | Glassware articles including statuettes | 701890 |
| Sculptures | Statuettes and other ornaments, of base metal plated with precious metal | 830621 |
| Sculptures | Statuettes and other ornaments, of base metal, not plated with precious metal (excl. works of art, collectors pieces and antiques) | 830629 |
| Other Visual Arts | Worked ivory and ivory articles | 960110 |
| Other Visual Arts | Bone, tortoiseshell, horn, antlers, coral, mother-of-pearl and other animal carving material, and articles of these materials (including articles obtained by moulding) | 960190 |
| Other Visual Arts | Original engravings, prints and lithographs | 970200 |

Table 8.10: Classification Criteria for Cultural Domains: Visual Arts.

## 8.6 Notes

### 8.6.1 Short Statement on The Study's Contribution

This study identifies that the socioeconomic situation of cultural workers has several problems based on informal work, tax contribution gaps, low salaries based on the 'psychic income' of cultural workers and asymmetric information of the actual situation of the cultural industries.

From that starting point, this study aims to contribute to policy formulations that directly benefit cultural workers' socioeconomic situation. The main difference with previous studies is that this investigation separates two key concepts

of cultural support, the 'funding problem' and the 'labour problem'.

For most cultural policies, the focus has always been on the 'funding problem', which financially supports cultural projects as a primary objective and indirectly improves the socioeconomic situation of cultural workers, with mixed results. Instead, this investigation focuses on the 'labour problem', which directly build policies to improve permanently and equally the socioeconomic situation of cultural workers.

In this context, the research questions of this study, firstly, investigate why countries have turned to solve the 'funding problem' in the art sector to the detriment of the 'labour problem' of cultural workers. Secondly, this investigation proposes three different cultural policies that improve the socioeconomic situation of cultural workers from a different perspective: Minimum pensions for cultural workers, sustainable funding mechanisms for cultural workers and improved export strategies of cultural goods and services.

Based on those three articles, the research questions of each article aims to demonstrate that assuming and improving the 'labour problem' is statistically possible.

### 8.6.2 My Disciplinary Position

The investigation approach uses statistical analysis and economic theory to create policies that suggest improvements to the socioeconomic situation of cultural workers. Therefore, the mix between different disciplines is merged into the concepts of Cultural Economics and Cultural Policies.

Therefore, from this research, it is possible to identify two main disciplines involved. Firstly, Cultural Economics, specifically focused on labour policies for the sector, as the main topic of investigation is the improvement of the socioeconomic situation of cultural workers and how public and private mechanisms of support can achieve that. Therefore the object of study, regardless of the methodology, is the cultural sector.

Secondly, Cultural Policies, because the proposed mechanisms are based on governmental intervention. Therefore, the cultural governance, political context and welfare state level are relevant variables of analysis for this study.

On top of those two main disciplines, there is a blend of critical reading on public finance and economics. From the financial perspective, the construction of policies involves costs that need to be distributed among the State, the cultural workers and/or other relevant agents. For this reason, constraints of the public budget and tax structure are significant for the matter of this study. So then,

it is possible to evaluate the performance of established projects and reassign resources to the proposed policies to ensure financial feasibility. Additionally, from the economic perspective, the analysis of the cultural labour market is based on economic variables such as employment, job informality or income. Moreover, the application of economic models such as the 'gravity model' or the use of a database for the pension situation of cultural workers, the public funding mechanism for art projects and the export volume and destination of cultural goods and services are all related with economic KPI.

Overall, the investigation approach is much related to my disciplinary position, as I hold a degree in Economics, an MA in Finance and an MA in Cultural Management. This background explains the idea of identifying the actual socioeconomic situation of cultural workers analysing statistics, which set the common ground of the PhD. Then, applying economic and financial analysis to the database, to later construct sustainable cultural policies that improve the socioeconomic situation of cultural workers.

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