ISBN: 978-628-95207-4-3. ISSN: 2414-6390. Digital Object Identifier: 10.18687/LACCEI2023.1.1.930

Gini Index in the Construction Industry; the case study of Chile

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Abstract*– This paper shows the results of the estimation of the Gini index from workers in the Chilean construction industry. As known, this coefficient is a measure of statistical dispersion intended to represent the income inequality within a social group. The Organization for Economic Cooperation and Development (OECD), the World Bank, and the United Nations Development Program (UNDP) have calculated this index for a significant number of countries to classify them according to their level of inequality, where this study may help expand the reach of this type of analyses to other economic sectors. Thus, in this research the Gini index for workers in the Chilean construction industry was calculated for each geographical region in Chile, to know the different economic conditions among the construction workers in the different regions of Chile, in terms of the workers' salary inequality, and along with it, to complement the limited studies in this regard. To estimate the Gini index, it was necessary to collect the data available in Chilean institutions. The results showed that there are no significant differences in terms of inequality when the Gini index is calculated for homogeneous groups of construction workers; however, when the analysis considers workers with different academic backgrounds (with and without professional degrees) important inequality levels appear.

***Keywords*-- Gini index, Workers, Construction Industry, Chile.**

I. Introduction

The following is an introduction to the concept of the Gini index, economic inequality, the research problem, and the scope of this research.

A. Context

A central task for economists has been the study of the development of countries, aiming to increase economic opportunities for people, emphasizing the richness of human lives and not only the wealth of economies [1]. From this viewpoint, employment is one of the pillars on which both the wealth of economies and the richness of human lives are sustained, where a way to help a country grow its wealth is to boost levels of labor [2].

In this sense, Peterson [3] states that increasing economic inequality in recent years has triggered a series of analyses and reflections on its causes and consequences, being such economic inequality in itself a significant social ill that should be addressed.

Therefore, from a methodological point of view, there are some difficulties related to adding all the information to one or more dimensions and expressing them in a coefficient or a graph. According to Lizárraga [4], different mechanisms have been proposed that aim to synthesize this variable to make intertemporal comparisons to relate the different realities between countries and, in this way, to establish an absolute value for inequality and permit an analysis regarding the level of concentration of income in a certain population.

Throughout the history of economic analysis, several indicators have emerged for the study of inequality. However, the most used and accepted to quantify the levels of income inequality is the Gini index, but its applicability crosses various areas, such as pollution, health, and land distribution [5].

This coefficient was created by the Italian statistician Corrado Gini (1884-1965) who published a method designed to measure the inequality of data distribution [6], which can be applied to several areas such as health, engineering, ecology, transportation, etc. However, its main use focuses on the study of income inequality in economics.

In this sense, Buccioni [7] indicates that the Gini index takes values between 0, a value that represents conditions of total equality in the distribution of income, and 1, in the case of maximum inequality. Geometrically, this measure is linked to the Lorenz Curve to illustrate inequality in the distribution of health. On the other hand, Lizárraga [4] points out that the measure of the Italian statistic corresponds to twice the area between the Lorenz curve and the equidistributional line. Thus, it shows how the curve expresses the relationship between the cumulative proportion of the population and the cumulative proportion of income, so that, if the same proportion of income belongs to each proportion of the population, the graph presents a line of 45°, which symbolizes perfect equality.

B. Research Problem

For many decades, global inequality captured little interest in international forums. However, the International Labour Organization (ILO) published in 2004 the first report on the dimensions of globalization [8]. Soon, important institutions linked to development began to focus on issues of global inequality and poverty (United Nations, World Bank, International Monetary Fund, UNICEF).

In the case of developing countries, and specifically, Chile, the country where the case study of this research has been conducted, Policardo *et al.* [9] indicate that one of the most unequal countries in the OECD is Chile, with an average

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Gini of 44.9. This has triggered several studies on inequality to collect more detailed information, where the present research search for contributing to those studies related to income inequality, specifically through the estimation of the Gini index for workers in the Chilean construction industry.

For Chile, and the rest of the world, the construction industry is an important generator of jobs, in addition to providing a significant contribution to the economic development of nations. This suggests that an important part of the population of countries makes up the construction workforce. Therefore, it is interesting to analyze the level of income inequality among this group of people, considering some particularities of this economic sector, such as that its workers have a relatively low level of schooling but with generally higher salaries than the average.

In summary, is it possible to measure inequality among workers in a certain economic sector such as the construction industry, through a method such as the Gini index?

II. Theoretical framework of the Gini Index

As previously mentioned, the present research is focused on the Chilean Construction Industry, essentially on the workers who make up the sector's labor force, to analyze them from the perspective of income inequality, by estimating the Gini index. This should provide useful information for the improvement in the quality of life of the workers of the construction companies.

For this purpose, several income inequality reports developed both worldwide and nationally, were analyzed to gather the information required to understand the calculation procedure of the Gini index. It must be considered that the process used the data available at the time of the study and that the Gini index calculated corresponds to the workers in the construction industry.

The present research has as a general objective the calculation of the Gini index for workers belonging to the Chilean Construction Industry. Its specific objectives are: (a) to explore bibliographically the aspects related to inequality in Chile and in the world, in particular, the Gini index; (b) to identify and collect data for construction workers that allow the calculation of the Gini index, without modifying the structure and concept of the Gini index; and (c) to evaluate the differences that exist in the Gini index for workers in the construction sector in different geographic regions of the country.

In the literature, there are several methods to measure inequality in the distribution of income. Among them are the Theil index, the Atkinson index, and the Test for Median Comparison, among others [10]. Nevertheless, the most common indicator to measure income inequalities is the Gini index which has many desirable properties [11].

A. Gini index in the world

Over the decades, economic development has been the main intention when considering the implementation of actions in the population of a country [12]. However, the concept of economic development has not been free of judgment. In this sense, historical analyses indicate that income inequality has been increasing since the beginning of the 19th century. This is emphasized by Milanovic [13], who has calculated the Gini coefficient over time and has shown that global income inequality increased steadily from 1820 to 2002.

In this context, inequality is shown in different ways, including levels of human capacity, differences in quality of life, inequitable consumption and income, social and urban marginalization, and different access to opportunities and resources, among others.

On the other hand, Hartmann *et al.* [14] indicate that the capacity of an economy to generate and distribute income in a country is linked to the products that it can produce and export, therefore, increases in its productive capacity tend to be associated with a decrease in income inequality. In addition, they state that, while it is important to improve school education and health services for economic development and the reduction of inequality, it is also important to create advanced products and jobs that require specialized education. In this way, those authors conclude that countries that export more complex products tend to have lower levels of income inequality concerning countries that export simple products.

In the case of Latin America, for Astorga Junquera [15] the first decades of the 20th century were characterized by a high proportion of unskilled rural labor, with the lowest incomes, showing the differences between the capital or landowners and the landless and little qualified workers. When labor went from low productivity to higher productivity sectors, income inequality increased due to the stagnation of industrialization in the first third of the last century, and the increase in the labor force grew in the urban informal sector, which conditioned the worsening of inequality. For Guerra-Salas [16], income inequality during the 2000s declined in most Latin American countries; however, he argues that part of this decline was due to an economic expansion concentrated in low-skill-intensive service sectors.

Geographically, global inequality has a contrasting aspect. According to the standardized database of income inequality in the world, Latin America and the Caribbean, along with sub-Saharan Africa, are the regions with the most inequality. The countries with high incomes, grouping several subregions, are the most equitable countries, followed by Eastern Europe and Central Asia [17].

In a labor context, a study conducted by Choe and Van Kerm [18] shows that foreign workers do not increase the distribution of income in the country, where there is no indication that their wages inflate their Gini coefficient. They argued that although foreigners receive less income than natives do, the impact on inequality is lower.

B. Gini index in Chile

While it is a reality that inequality and its reports have been used globally, the interest to explore and learn about this

issue within countries has led to the creation of national reports on the subject.

From a historical perspective, Solimano and Torche [19] argue that the inequality in income and visible wealth in the Chilean territory has historical origins, which go back to the time of the colonies and are linked to the landowners who lived in the country. Also, in terms of historical references, Larrañaga [20] points out that at the time of the colony, societies in America were highly unequal in terms of power and hierarchy among social groups; however, in Chile, this inequality was conditioned by poverty and lack of resources since there was no great wealth to export to the European market.

Accordingly, Ruiz-Tagle [21] stated that, during the last decade of the 20th century, Chile shows greater economic stability, with high growth rates and notable progress in different areas of the economy. The poverty rate was reduced from 40 percent to 20 percent in the period between 1987 and 1996. Under this scenario, a series of indicators showed an increase in the welfare of the population. However, inequality in the country also increased. The author concluded that inequality has been increasing progressively since 1957, leaving the decade of the eighties as the period where the worst level of inequality was reached.

On the other hand, the UNDP [22] affirmed that, in the last decades, Chile has reached a high level of development. The country has had accelerated economic growth with positive results, as evidenced by the fact of having improved infrastructure, the coverage of education has been expanded, the offer of social services has increased, the income of the families and access of families to consumer goods have likewise increased. Similarly, poverty has been markedly reduced, compared to the rest of the Latin American countries.

Despite its growth, in Chile, concern about high levels of income inequality has generated both political and academic interest. Although Chile has shown progress in lowering the poverty rate, income inequality has persisted, and it ranks among the most unequal countries in both the OECD and Latin American countries [23]. In other words, Chile is one of the countries with the highest income inequality in Latin America, even though the Chilean economy has performed well in the last decades. This situation has been demonstrated through conventional indicators of the economy, such as a stable macroeconomic situation without internal or external imbalances, in addition to an accelerated rate of economic growth that has allowed the reduction of poverty levels. However, the distribution of income remains unequal.

From the UNDP [22] point of view, the high-income inequality in Chile is reflected in the low salaries that concern a significant number of workers. A low salary is considered one that is insufficient to cover the basic needs of an average household. The UNDP also indicates that low wages are also influenced by gender. There is a 10 percent higher probability that women will receive a low salary compared to men. This percentage increases by 20% in the segment of workers with secondary education. In addition, 71% of women with a complete secondary education receive a low income for their work, as do 83% of women with incomplete secondary education. Even those women with higher education in the technical-professional field, or university, have a 44% probability of obtaining a low salary.

As previously mentioned, Chile is the country member of the OECD with the highest income inequality, which is evidenced by a Gini index equal to 44.9 [9]. Similarly, the records of the World Bank [17] evidence that Chile is one of the thirty most unequal countries in the world and one of the top ten in Latin America.

C. *Gini Index in the Construction Industry*

The construction industry is an important generator of jobs, in addition to contributing significantly to the economic development of the countries. On the other hand, the construction sector is unquestionably a strong driver of industrial sector development and the ground of strategic plans in many countries [24].

In terms of labor, a factor of inequality in the construction industry can be found in the jobs, which are mainly granted to those with few studies or qualifications, where most workers come from the poorest sectors of society [25]. In terms of safety, construction workers are three to four times more exposed than other industrial workers to die from workplace accidents [26].

Studies on income inequality of specific populations as well as the calculation of the Gini index for these populations have been carried out in different areas such as health, transport, etc. However, the current literature review indicates that this study has been practically non-existent for construction workers. For this reason, the present study is focused on providing information about inequality, through the calculation of the Gini index for workers in the construction industry, based on the case study of Chile.

III. METHODOLOGY

The methodology is composed of four main stages: the study of the background, data collection, calculation of the Gini index, and statistical analysis. The respective stages are explained in more detail in the following sections.

A. *Study of the Background*

The purpose of this stage was to delve into the concept of inequality in the distribution of income and its impact on the population, along with collecting and analyzing different studies about it. To do this, a review of previous studies on the calculation methodology of the Gini index was carried out, to know the parameters and methods used in its calculation.

B. *Data collection*

In this stage, a search for a large amount of information available in the different entities related to the construction sector was conducted, looking for the requirements for the calculation of the Gini index.

1) Data selection: This stage corresponds to the definition of the type of information required for estimating the Gini

index, related to the income of workers who are part of the Construction Industry.

2) Search and contact of competent entities: Based on the required data previously defined, Chilean entities that could have the required information were identified. Subsequently, these institutions were contacted through emails and phone calls. The entities contacted were the following:

- Chilean Chamber of Construction (CChC).
- Social Foundation of the CChC.
- Connection Engineers (company specialized in labor and headhunting).

Finally, despite the limited information available in Chile related to construction workers, the following data were collected from:

a) Socioeconomic Study of Construction Workers from CChC:

- Percentage of workers in the sector of construction, by region, according to specialty and net salary ranges.
- Distribution of surveyed workers according to specialty and geographical region.

b) Study of Salaries of Engineers and Labor Market from Connection Engineers

- Average salaries of engineers for each region of the country.

C. Calculation of the Gini index

1) Organization and adjustment of collected data: Based on the literature review, and considering the information available for the case study, it was possible to determine the incomes used to calculate the Gini index as follows: the values of the income of workers in the construction sector according to the Chilean Ministry of Social Development and Family Issues. The data used in this variable were adjusted to obtain a representative value for each region of the country.

2) Adjustment of data used: Taking into account that the net (liquid) income is classified in different ranges, the regional average was determined according to equation 1, which corresponds to the calculation methodology of the average from data grouped into classes, as described by Levin and Rubin [27].

$$\bar{x} = \sum \frac{f * x}{n} \quad (1)$$

Where, $\bar{x}$: regional average salary; f: frequency (number of observations) of each class; x: the middle point of each class; n: total number of observations of the region.

Due to the existence of open ranges in the income data used, it was necessary to establish a lower limit to the said data according to the minimum wage in Chile. Then, the data were analyzed according to the national average salary of the construction workers and the classification of net income by ranges in the country.

3) Calculation of the Gini index at the national and regional level: Based on the information described above, it was possible to calculate the Gini index at the regional and national levels [28], [29], by using equations 2, 3, and 4 [30]:

$$IG = \frac{\sum(pi - qi)}{\sum pi} \quad (2)$$

Where,

$$pi = \frac{n_1 + n_2 + n_3 + \ldots + n_i}{n_n} x100 \quad (3)$$

$$qi = \frac{x_1 \cdot n_1 + x_2 \cdot n_2 + x_3 \cdot n_3 + \ldots + x_i \cdot n_i}{x_1 \cdot n_1 + x_2 \cdot n_2 + x_3 \cdot n_3 + \ldots + x_n \cdot n_n} x100 \quad (4)$$

with $i = 1, 2, \ldots, n-1$.

Where x_i represents the value of the particular salary corresponding to each class and n_i represents the number of workers with that particular salary. Similarly, x_n corresponds to the salary and n_n to the number of workers.

To calculate the Gini index, the income was ordered from lowest to highest; then, the formulas described above were used.

A breakdown of the Gini index was carried out, making a calculation for each specialty in construction and each geographical region, taking into account six inequality measures for each region of Chile. Based on this information, a statistical analysis was applied to determine the most relevant differences between the different regions of the country, specifically using the nonparametric test of Kruskal-Wallis.

III. Analysis of Results

This section shows the results obtained in the present research, presenting those Chilean geographic regions with the smallest and highest Gini index values for construction workers. In addition, a discussion of the results obtained and their comparison with the characterization made in inequality reports in Chile will be shown.

A. Results of the Gini index

The results of the Gini index were collected for each region as well as at the national level, according to the regional and national averages for the income dimension of construction workers, based on the information coming from the case study of Chile.

It has to be noticed that, for comparative reasons, the Gini index was first calculated for workers without a professional degree (that is, without university education), and then for all workers (including workers with a university degree: civil engineers, architects, construction managers, among others).

Table 1 presents the regional and national breakdown for the Gini index but without professionals (those with a university degree).

TABLE I
RESULTS OF THE GINI INDEX (WITHOUT PROFESSIONALS) BY GEOGRAPHIC REGION

Region	Gini Index (%)
Arica and Parinacota	13.04
Tarapacá	12.19
Antofagasta	7.83
Atacama	10.57
Coquimbo	12.21
Valparaíso	8.8
Metropolitan	10.99
O'Higgins	13.11
Maule	7.42
Bío Bío	7.99
Araucanía	7.34
Los Ríos	5.5
Los Lagos	13.94
Country (Chile)	**11.83**
Standard Dev(σ)	**2.73**
Mean (μ)	**10.07**

Based on the average value obtained, the Gini index in Chile reveals a rather low result, which indicates that inequality for construction workers in Chile is not high.

At the regional level, the results, in general, have low values. Standouts are the Los Lagos Region with the highest Gini index, having a value of 13.94, and the Region of Los Ríos which has a Gini index equal to 5.5, the lowest. In addition, it should be noted that the regions that have a Gini index higher than the national index (11.83) are the regions of Arica and Parinacota, Tarapacá, Coquimbo, O'Higgins, and Los Lagos, which are mainly located in the north of the country, where economic activity is more thriving due to the mining industry and therefore construction.

Then, through the same methodology, results were obtained by adding the income of professionals (those with a university degree) to the calculations of the Gini index of the country and the regions. Table 2 shows the breakdown for these indices, including all workers.

TABLE II
RESULTS OF THE GINI INDEX (WITH PROFESSIONALS) BY GEOGRAPHIC REGION

Region	Gini Index (%)
Arica and Parinacota	63.99
Tarapacá	49.31
Antofagasta	48.76
Atacama	44.96
Coquimbo	52.68
Valparaíso	50.94
Metropolitan	62.82
O'Higgins	52.1
Maule	56.68
Bío Bío	51.11
Araucanía	50.69
Los Ríos	51.76
Los Lagos	57.26
Country (Chile)	**58.36**
Standard Dev(σ)	**5.47**
Mean (μ)	**53.31**

At a general level, it can be seen in Table 2 that all the values increase considerably when including the average income of professionals in the inequality calculations.

It is also observed that at the national level, the Gini index reaches a value of 58.36, higher than the Gini index of Chile overall (44.90 according to the records of the World Bank [17]).

In terms of the local analysis, the results show that the Arica and Parinacota Region obtained the highest Gini index, with a value of 63.99. The region that shows less inequality is the Atacama Region, with a value of 44.96.

On the other hand, it is also observed in Table 2 that the regions with a greater inequality at the national level are the following: Metropolitan region, and Arica and Parinacota region.

Both results coming from Tables 1 and 2 are summarized in Figure 1, which shows the great differences between the Gini Indices for workers in the construction sector, when comparing the values that include professionals and without them.

In other words, Figure 1 shows how for non-professional workers, inequality is practically non-existent, while when the professionals' income is included in the study, the inequality increases considerably, reaching values that are even higher than those found in the Chilean society overall as will be shown later in this article.

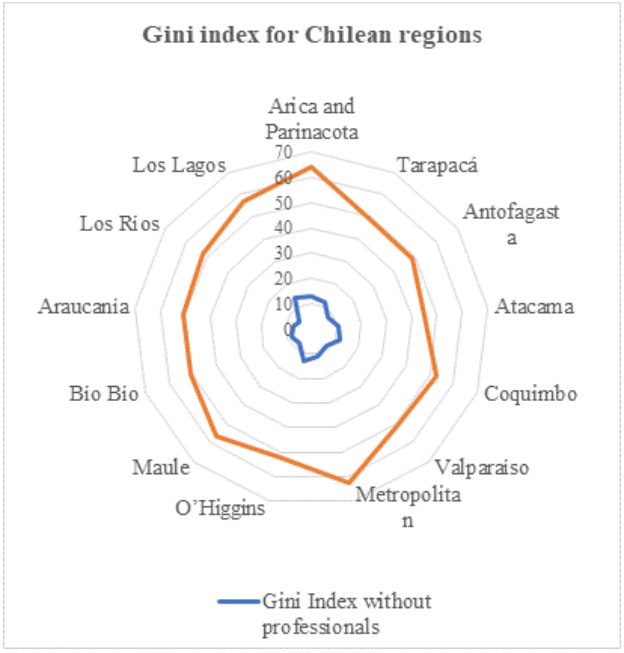

Fig. 1 Distribution of the Gini index according to Chilean regions.

As a complement, Figure 2 also shows the differences found between construction workers when comparing those with a university education and those non-professionals. It is interesting to notice that while differences between both groups (workers with and without university education) are

evident, there is homogeneity in terms of inequality within each group.

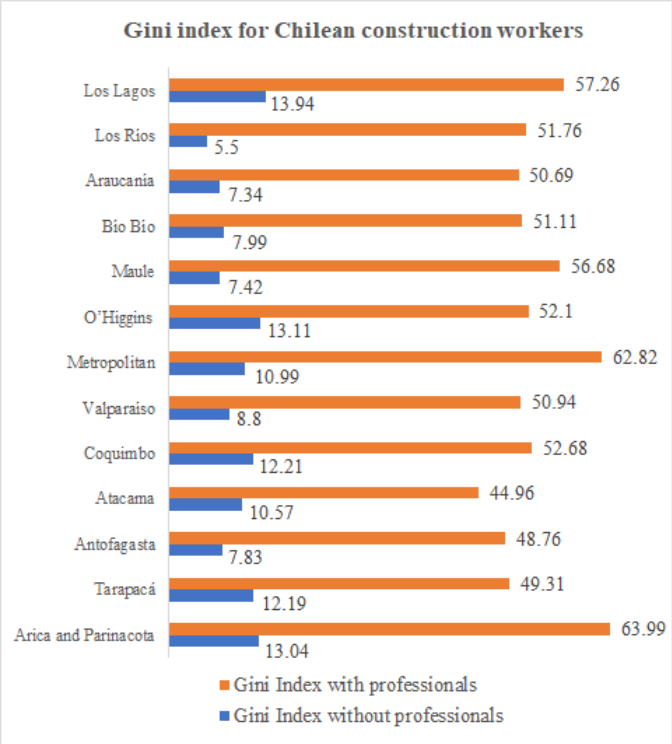

Figure 2. Comparison of Gini index with Professionals versus without professionals.

With the information collected, it was then possible to calculate the Gini index related to the income of the professionals in the construction industry separately, which reaches a value of 22.53 at the national level. This confirms a low level of inequality for this group of people (professionals) within the construction sector.

Thus, the first group of construction workers analyzed which did not include professionals was compared with the second group (including professionals), and finally with the third group (professionals only). This comparison is shown in Figure 3.

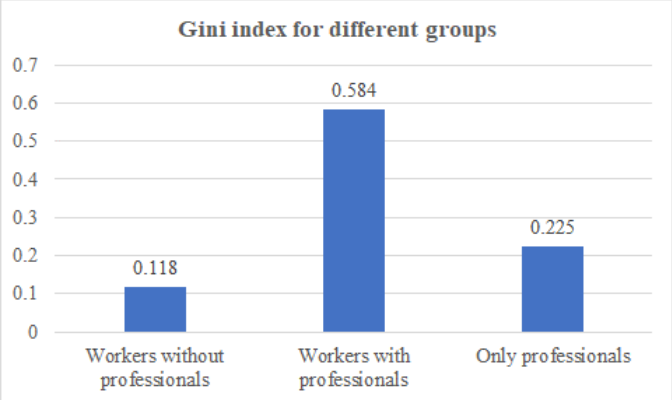

Fig. 3 Gini index for different groups.

Figure 3 graphically shows how inequality is not significant for any group in particular but grouping the income of workers with that of professionals in the construction sector raises index values to almost 60% of its nominal Gini index (58.4). In other words, the inequality within non-professionals workers is not high, nor it is within the group of professionals; on the contrary, the difference is significant when workers with and without university education are combined, evidencing, and confirming a high inequality between both groups.

In addition, the Kruskal-Wallis statistical test was run to analyze the Gini index values between regions for construction workers (with and without professionals). The Kruskal-Wallis results presented in Table 3, show that when the income of the professionals is considered, as well as when it is not, the Chilean regions do not present statistically significant differences. This means that, although there are differences in the results between regions, they are not sufficiently different from each other, giving rise to the response that, for all regions of the country, inequality is presented similarly.

TABLE III
KRUSKAL WALLIS TEST RESULTS

Evaluation of the Gini Index	Significance	p-value	Hypothesis
Without professionals	0.05	0.9712	Ho: regions are equal in terms of inequality.
With professionals	0.05	0.4457	Ho: regions are equal in terms of inequality.

B. Contrast with the general Gini index

As previously mentioned, in worldwide reports of inequality in the distribution of income, Chile is among the thirty countries with the highest Gini index. In this context, when reviewing the values within the country, it is possible to observe that the Gini index shows different results between the different regions and cities. However, given the present research is focused on construction workers, it was decided to compare the Gini index values coming from both samples (Gini index for Chilean people versus Gini index for Chilean construction workers).

To do so, the values of the Gini index by region for the Chilean population obtained from official information from government institutions —particularly the Ministry of Social Development and Family Issues of Chile [31]—, were considered. It should be noticed that the official information for the Gini index in Chile corresponds to the total population in each region, therefore, it also includes construction workers.

Thus, regarding the results of the Gini index, both studies show similarities, agreeing that the regions with the lowest levels of inequality are the Region of Antofagasta and the Atacama Region. In addition, it is possible to appreciate how inequality for construction workers including professionals in the different regions is, in most cases, higher than that existing in the national population. All these results are shown in Figure 4.

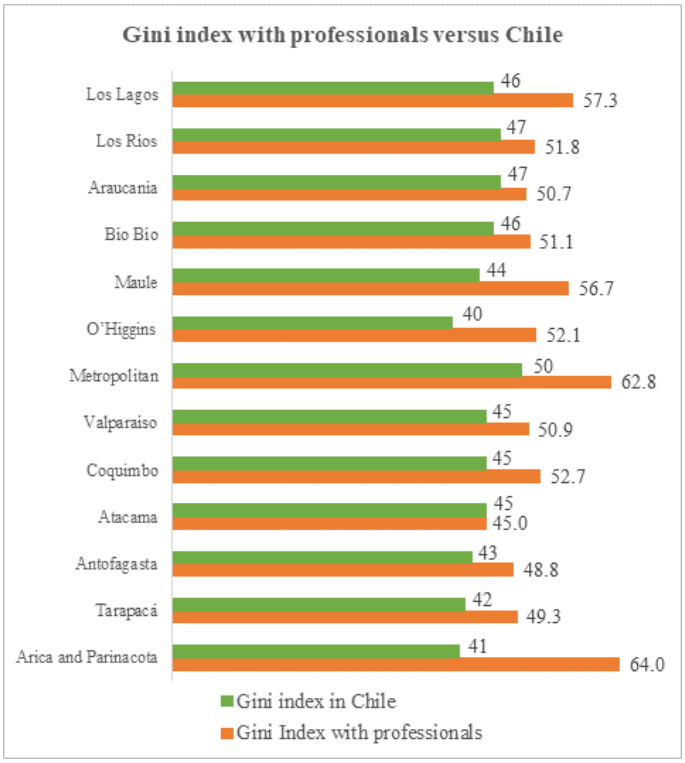

Fig. 4 Comparison of Gini index with Professionals versus in Chile.

From the results found, it is also possible to observe that the levels of wage inequality present in construction workers (being only a part of the total population of each region) vary when compared with the rest of the Chilean population. In particular, as the Gini index values for the construction workers were found to be similar among them, those are different from the values observed for the Chilean population, as shown in Figure 5. Therefore, it could be inferred that the inequality in the distribution of income observed among construction workers is a particular attribute of the construction sector.

In other words, Figure 5 shows substantial differences in the values obtained. In the case of construction workers (without professionals) there is no evident inequality, while in the case of Chilean society, in general, some regions show certain inequality, with the Metropolitan, Los Ríos and La Araucanía regions standing out as those that show more inequality.

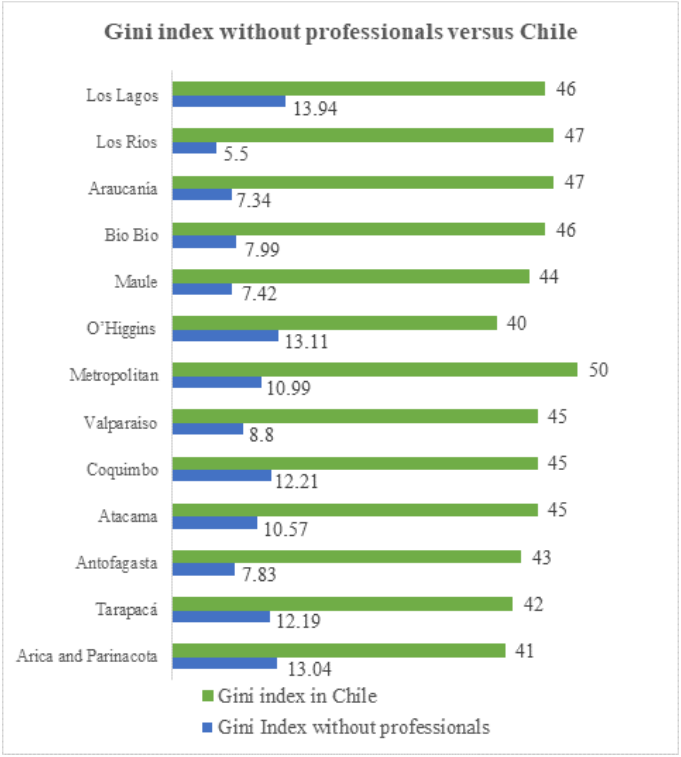

Fig. 5. Comparison of the Gini index without Professionals vs. in Chile.

C. *Discussion*

The purpose of comparing the distribution of income for construction workers without including professionals, and the construction workers including professionals was conducted to know the inequality that exists in the Chilean construction industry, as an example to be considered for other developing countries; those characterized for being the most unequal worldwide.

In this sense, the International Labor Organization [32] asserts that the minimum wage and collective bargaining offer the best options to reduce inequality in the distribution of income between different companies and within those companies, in addition to establishing policies for high salaries. Thus, in terms of salaries, Chile is in second place in terms of the minimum monthly wage in Latin America, with a value of US$411 approximately. In the first place is Ecuador with US$425 per month. At the lowest level is Venezuela, with a minimum income of US$2 monthly. Therefore, Chile, the case study selected in this research, seems not to have problems in terms of minimum monthly wage; something different happens when talking about inequality, especially within the construction sector.

According to the results of the Gini index, the present research allows establishes that, in general, the laborers of the Chilean construction industry do not evidence a high level of inequality between regions. However, the Gini index increases considerably when the income of construction professionals is included (architects, engineers, etc.), causing a great wage inequality for this sector, taking into account that the value for

this index is 58.4 in the country, even greater than the Gini index for the overall Chilean population (44.7).

Also, it can be concluded that the northern regions report a lower level of inequality than the rest of the country (except for the Arica and Parinacota region). This could be explained by two reasons. The first is the high level of investment associated with the mining industry in this area, and with this, higher wages for the construction industry. A second aspect may be associated with the significant number of transnational construction companies located in the such geographical zone, which generally aim to apply wage policies commonly present in industrialized countries (higher wages and lower inequality indices).

It should be noted that for construction workers, without considering the income of professionals, the Gini index is far from the reality that exists in the rest of the country. On the other hand, when the salaries of professionals are included in the calculation of the coefficient, the situation for this group of workers changes considerably, reaching values above 60% for a couple of regions, being the lowest inequality close to 50%. This shows that for the construction workers, there are no greater wage inequalities, but when the income of the professionals is added, a great level of wage inequality is reached, which is in line with the fact that Chile is one of the most unequal societies within developing countries. However, a different situation is found in northern Chile, where the salaries are higher, and the inequality is lower.

III. Conclusions

The measurement of wage inequality is an issue that should be constantly present in economic discussions. It is common for its analysis and evolution to be present when evaluating the economic management of governments and how it affects the standard of living of citizens.

The Gini index calculated for workers in the Chilean construction industry, not including the salary of professionals, reaches a value of 11.8, which is low. On the other hand, the Gini index for the group of professionals reaches a value of 22.5, which is low too. However, by bringing both groups together (workers with and without professional degrees), the value rises to 58.4. The first two scenarios show that for both groups separately the level of inequality is low, and even lower than the Gini index held by Slovakia (with the lowest Gini index worldwide, 23.2). In contrast, the third scenario (both groups together) shows a high level of inequality, being even higher than the value for the Chilean population (53.3 versus 44.7).

The latter warns of the existing gap in the distribution of income by construction workers when compared with professionals in the construction sector. This information made it possible to identify the basic orientation of inequality in the distribution of income and to establish some public and private actions to decrease such levels of inequality.

In addition, based on the results obtained, it is recommended that entities related to the construction industry carry out this type of analysis and include the results in their annual reports, where the reality of the distribution of income for the construction workers may be raised.

Future research related to evaluating inequality among workers belonging to the construction industry should be expanded to other countries, where this study could serve as a basis for other studies, to seek measures to mitigate the inequality present in this industry, especially in developing countries.

Acknowledgment

The authors would like to acknowledge the support provided by the Universidad del Bío-Bío, Chile.

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