Concentration of Large Companies in Regions Explain Tax Collection in Peru

Javier Pedro Flores Arocutipa[1], Jorge Jinchuña Huallpa[2] and Julio Cesar Lujan Minaya [3]

Abstract

The study aims to demonstrate that the number of companies in the regions of Peru correlates positively and significantly with tax collection during the period 2012-2019. It is a basic research, deductive method, relational, not experimental and with a quantitative approach, which analyzed quantitative information of eight years on tax revenues and the number of companies by region, obtained from the portal of the National Superintendence of Tax Administration (SUNAT) and the Ministry of Economy and Finance (MEF). In addition, the cluster discriminant algorithm was used in a total of 2,383,979 companies. Results show that the number of companies in the regions grows between 4% and 8% annually, and tax collection increases between 1.76% and 15.68% annually during the period studied, with an average annual growth of 4.45% throughout Peru. The Pearson correlation coefficient of 0.97 confirms a strong positive relationship between the variables. Three regions account for 91% of total revenue and account for 55% of enterprises. In three clusters, the first, composed of four regions, presents a correlation coefficient of 99.70%, which is confirmed by the discriminant algorithm. In conclusion, the regions with the largest number of (large) companies achieve higher revenues. Three groups are identified, and in the first only two regions are found that significantly affect the collection and the number of companies.

Keywords: *Tax Collection, Large Companies, Regions of Peru.*

INTRODUCTION

The situation of Pymes in Peru, business opportunities and entrepreneurship are crucial issues to address to understand the country's business landscape. The central question is how many entrepreneurs there are in Peru. Although the beginning of entrepreneurship is significant, to aspire to be a world-class country and improve as a nation, it is not enough to take the first step; it is necessary to advance with additional steps.

It is essential to analyze the current state of Pymes in Peru and the opportunities that arise for entrepreneurs in terms of their development. The country's chambers of commerce have less than 5% of affiliated companies. In Peru, 99.8% of the companies are enterprises. This data reflects that Peru is not an industrial country, since only 10% of the companies belong to the manufacturing or industrial sector. The majority of enterprises are in the trade sector (47 per cent) and in the services sector (38 per cent). Although this is not negative, it confirms that Peru is not an industrialized nation (IPE, 2021).

This first point is crucial because it indicates that it is not enough to be an entrepreneur; you cannot become a world-class country without thinking that Pymes must achieve high levels of competitiveness and productivity. In the foreign trade sector, although micro-enterprises represent 54.8% of the total number of exporting companies, they only contribute 1.8% of the total currency. This reinforces the thesis that exports are concentrated in large companies (ComexPerú, 2019).

It follows that 99. 5% of the companies generate 27% of the total value added in the country. (USIL, 2020), the weakness of Pymes has been noted by the presence of COVID 19, approximately 1,177,000 jobs have been lost, and the companies that have suffered the most from these losses are the micro-enterprises that have lost more or less 717,000 jobs. (IPE, 2021), in addition to the breakdown of 200,000 micro-enterprises. Peru is a super informal country; it is said that 48.5% of companies do not register with SUNAT (USIL, 2000, Siñani, 2012).

[1] Universidad Nacional de Moquegua, E-mail: jfloresaro@unam.edu.pe, Orcid: https://orcid.org/0000-0003-0784-4153

[2] Universidad Nacional de Moquegua, E-mail: jjinchunah@unam.edu.pe, Orcid: https://orcid.org/0000-0002-9073-3798

[3] Universidad Nacional de Cañete, E-mail: jclujanm@undc.edu.pe., Orcid: https://orcid.org/0000-0003-3752-824X

There are other fundamental factors that prevent companies from being productive, from being competitive. There is little associativity. If the entrepreneurs of Gamarra want to export immense volumes of one million or five million cotton garments to the U.S. o Asia, this little associativity takes its toll, because the businessman, the Peruvian entrepreneur distrusts not only his friend, his probable partner and do not produce significant amounts for international markets. Another problem is the low access to technology, especially e-commerce technologies, is still incipient in Peru

Limited access to finance is a notable problem, with Reactiva Peru, which issued a series of financial instruments to rescue companies. However, of the 2.3 million formal companies, only about 500,000 were able to access these support funds due to the COVID-19 crisis. Under normal circumstances, the interest rate that financial institutions offer to micro-entrepreneurs is, on average, five times higher than that offered to large enterprises. If in normal times the rate for a large enterprise is 5%, for a micro enterprise it may be 40%.

Another important factor is state procurement. The state is a big buyer and could be an excellent payer, but so far, state programs have only benefited about 14,000 of the 2.3 million companies. Moreover, the state does not stand out as a quick and efficient payer. As for labor informality in Peru, in normal times, three out of four Peruvians work in the informal sector (Bocanegra & Vázquez, 2010). During the pandemic, this figure probably increased to eight out of ten Peruvians. Compared to other countries, the Philippines, with 120 million inhabitants, has developed the export of services through call centers. South Korea, 50 years ago, had a similar level of development as Peru. Today, South Korea is an advanced country in innovation, science and technology, with successful brands such as Samsung, Hyundai and Kia, which focus on the international market (MEF - DGPMI, 2021), (Veliz & Diaz, 2014).

The Lima Chamber of Commerce has 15,000 associated companies, although there are more than one million companies in the country. Each entity works independently, which is problematic because it does not benefit overall productivity. This only provides advantages to a small group of entrepreneurial entrepreneurs, without greater coordination with the rest of Peru's economic actors.

According to the legislation established in 2005 (MINTRA, 2021), SMEs are run by one or two people, have less than 10 employees and their sales do not exceed 150 ITU. (Serna, 2012) points out that family micro-enterprises (PEF) face greater risks due to their size and market participation, and despite efforts, their future remains uncertain. (Serrano & López, 2002) add that the fragmentation of the small isolated property prevents a better adaptation to the status quo of the market. The self-organization of a system based on the exchange of data with the environment and the adoption of new paradigms, such as the management and results system (Huertas et al., 2020), is gaining relevance today

Companies And Collections

In the ranking of the number of companies by regions in 2019, (Table 1), Lima concentrates 1,081,942 companies, followed by Arequipa with 133,629, La Libertad with 126,000, Cusco with 95,262, Lambayeque with 83,000, Puno with 55,268, Tacna with 37,681, Apurímac with 22,769 microenterprises, Madre de Dios with 18,011, and Moquegua with 15,164. The region with the least companies is Huancavelica, with 10,923. (Table 2), In 2012, at the beginning of the analysis period, there were 1.6 million companies, increasing to 2.38 million in 2019, representing a growth of 45.3% with an average annual increase of 5.48%. Lima concentrates 50% of all companies in Peru, going from approximately 770,000 companies in 2012 to 1,081,381 in 2019, a growth of 40.3% in seven years, with an average annual increase of 4.95% (Produce, 2021, Sunat, 2021).

Table 1number Of Enterprises by Region

Regions	Number of companies in the years							
	2012	2013	2014	2015	2016	2017	2018	2019
Amazonas	9,503	9,949	10,463	11,823	12,808	13,351	13,991	15,197
Ancash	50,813	54,189	55,716	59,730	62,097	64,522	67,719	68,470

Apurímac	12,496	14,621	16,483	17,748	18,707	20,897	21,745	22,769
Arequipa	90,914	100,297	108,846	113,449	117,545	123,419	127,842	133,230
Ayacucho	18,899	21,041	23,768	25,962	27,776	29,423	30,703	30,834
Cajamarca	35,888	39,168	40,699	45,062	47,204	49,239	52,009	53,922
Prov. Callao	55,894	59,687	62,734	70,066	71,797	72,982	74,965	78,120
Cusco	56,840	64,936	69,686	79,940	82,947	86,930	88,598	95,262
Huancavelica	6,852	7,569	8,033	9,627	10,037	10,408	11,122	10,923
Huánuco	22,887	25,646	26,951	29,951	31,641	33,230	34,846	36,067
Ica	39,587	43,540	47,470	49,884	51,941	55,168	57,511	61,329
Junín	59,623	66,296	69,971	75,062	78,448	83,523	87,531	87,709
La Libertad	82,486	91,507	98,122	104,734	109,691	115,401	122,291	126,372
Lambayeque	59,179	64,957	68,136	72,166	75,345	79,468	83,170	83,898
Lima	770,697	782,837	824,501	891,174	921,922	980,863	1,020,442	1,081,000
Loreto	31,882	34,434	35,922	39,716	40,896	40,982	41,658	42,149
Madre Dios	11,755	12,551	13,791	14,597	15,478	16,451	16,959	18,011
Moquegua	11,138	11,997	12,264	13,294	13,488	13,767	13,966	15,164
Pasco	10,310	11,279	11,540	12,539	13,143	13,674	14,063	14,347
Piura	68,511	75,205	80,038	88,165	92,267	96,025	99,862	101,641
Puno	35,298	39,352	43,292	46,129	48,750	53,024	54,971	55,268
San Martín	29,436	32,545	34,547	40,158	42,803	44,709	46,408	49,860
Tacna	26,755	29,135	30,443	32,517	33,387	34,459	35,361	37,681
Tumbes	13,216	14,310	15,068	16,549	17,145	17,900	18,420	18,550
Ucayali	23,645	26,304	27,397	30,935	32,523	33,306	34,270	36,451

Note: Own elaboration with information of PRODUCE

In Cusco, the number of companies grew from 56,840 in 2012 to 95,272 in 2019, representing a growth of 67.6% and an average annual increase of 7.66%. Arequipa had 90,914 companies in 2012 and reached 133,230 in 2019, with an approximate growth of 46.5% and an average annual increase of 5.61%. The average annual percentage growth of the number of companies in the period 2012-2019 varied between 4.07% and 8.95%. The region with the largest annual increase in companies is Apurímac, with 8.95%, followed by San Martín with 7.82%, and Cusco with 7.66%. The region with the average annual minimum growth in this period is Loreto, with 4.07% (Table 1).

Table 2tax Revenue by Region of Peru in Thousands of Soles

Regions	Tax collection by region of Peru							
	2012	2013	2014	2015	2016	2017	2018	2019
Amazonas	23,602	32,331	36,765	34,810	43,254	38,740	43,573	49,286
Ancash	317,090	331,847	351,810	356,654	352,806	329,627	404,030	472,806
Apurímac	40,772	62,838	76,450	87,741	85,854	80,398	100,855	113,014
Arequipa	2,365,719	1,868,578	2,280,632	2,039,993	2,153,066	2,618,026	3,237,712	2,531,314
Ayacucho	64,001	80,722	106,163	114,589	122,901	122,130	137,161	143,378
Cajamarca	271,253	308,380	287,825	298,888	309,765	272,853	337,179	348,551
Prov. Callao	3,342,083	3,600,304	3,181,752	3,655,874	3,463,322	3,846,312	3,684,043	4,492,377
Cusco	822,002	743,608	759,830	727,219	645,038	850,935	847,824	841,472

Huancavelica	26,051	29,442	33,813	31,069	33,042	34,029	40,200	40,567
Huánuco	68,817	90,622	100,738	103,240	116,567	115,935	131,074	131,720
Ica	481,159	642,067	708,045	699,099	669,494	687,911	751,832	883,150
Junín	352,512	373,180	418,581	452,389	487,452	459,843	510,529	558,559
La Libertad	1,227,500	1,245,862	1,452,277	1,799,078	1,793,211	1,455,880	1,562,077	1,844,337
Lambayeque	439,569	537,188	582,217	535,172	553,727	503,208	559,900	601,048
Lima	63,336,478	67,581,085	70,945,444	67,302,473	70,158,531	70,896,203	79,022,392	86,300,916
Loreto	335,460	346,845	322,954	310,685	319,706	290,526	316,449	301,289
Madre de Dios	54,234	63,242	47,330	55,443	73,527	79,260	80,931	85,010
Moquegua	84,468	88,330	101,943	101,581	105,387	93,953	103,407	137,250
Pasco	61,802	74,351	81,035	83,716	83,359	87,291	99,737	97,387
Piura	1,166,904	1,101,032	1,189,882	904,544	895,360	898,586	1,186,417	1,318,667
Puno	227,987	272,104	306,260	300,660	325,990	303,003	323,572	316,262
San Martín	150,987	167,287	184,630	185,997	199,938	215,321	230,313	238,794
Tacna	176,406	197,046	207,547	199,448	218,940	211,331	216,748	206,067
Tumbes	53,336	62,093	79,207	86,769	79,183	68,433	84,968	77,348
Ucayali	315,126	382,928	442,304	459,274	520,946	510,748	589,417	664,199

Note: Own elaboration with information from SUNAT

There is a growing trend in tax collection by SUNAT by region between 2012 and 2019. (Table 2). Especially in those with higher PBI (Mankiw, 2018) and higher number of companies. In 2012 the tax revenue in Peru was 76 billion soles, at the end of 2019, was 103 billion soles (Table 3). It grew in the period by 27 billion suns. Thus, in a small region like Apurímac, the annual revenue grew by an average of 15.68% in the period (Table 4), and the average minimum growth was in Piura with 1.76%. In the Loreto region there is a decrease in tax collection in the period of -1.52% per year. Peru has an average annual increase of 4.45%.

Table 3Average Growth of Number of Companies Between the Years 2012-2019

Regions	Annual growth	Regions	Annual growth	Regions	Annual growth
Amazonas	6.94	Huancavelica	6.89	Pasco	4.83
Ancash	4.35	Huánuco	6.71	Piura	5.8
Apurímac	8.95	Ica	6.45	Puno	6.61
Arequipa	5.61	Junín	5.67	San Martín	7.82
Ayacucho	7.24	La Libertad	6.28	Tacna	5.01
Cajamarca	5.99	Lambayeque	5.11	Tumbes	4.96
Prov. Const. Callao	4.9	Lima	4.95	Ucayali	6.38
Cusco	7.66	Loreto	4.07		
Moquegua	4.51	Madre de Dios	6.29		

Note: Own elaboration

Table 4Annual Growth in Tax Collection 2012-2019

Regions	Annual growth	Regions	Annual growth
Amazonas	11.09	Lambayeque	4.57
Ancash	5.87	Lima	4.52
Apurímac	15.68	Loreto	-1.52

Arequipa	0.97	Madre de Dios	6.63
Ayacucho	12.21	Moquegua	7.18
Cajamarca	3.65	Pasco	6.71
Prov. Const. Callao	4.32	Piura	1.76
Cusco	0.33	Puno	4.79
Huancavelica	6.53	San Martín	6.77
Huánuco	9.72	Tacna	2.24
Ica	9.06	Tumbes	5.45
Junín	6.8	Ucayali	11.24
La Libertad	5.99	Perú	4.45

Note: Own elaboration

Micro-Enterprises by Region Economic Sectors

It should be noted that 86.8 per cent of micro-enterprises or enterprises in Peru are in the services and trade sector. And if we focus on the first three sectors; trade and manufacturing services, they represent 95.1%. (Table 5). For example, in Peru in 2019, 1 002 436 companies were service companies and 1070464 were commerce companies and 197 619 were manufacturing companies. To mention the construction sector had in 2019, 66 635 companies, mining 15 470, agricultural sector 30 169 and fishing sector with 3988 companies, which makes a global of approximately 2 383 979 companies nationwide.

Table 5Number Of Companies by Region in Peru

Regions	Enterprises by productive sectors						
	Services	Trade	Manu-facturing	Construction	Mining	Agro	Fishing
Amazonas	7,880	5,320	966	753	45	237	20
Ancash	32,161	26,374	4,224	4,131	464	949	275
Apurímac	10,197	9,093	1,605	834	639	406	27
Arequipa	61,280	53,587	11,578	2,798	2,273	2,047	79
Ayacucho	14,011	13,181	1,949	911	392	357	92
Cajamarca	23,127	22,583	4,188	3,101	232	809	31
Prov. Callao	36,899	33,713	6,197	1,349	103	188	128
Cusco	44,920	39,996	7,306	1,679	449	991	65
Huancavelica	4,955	4,165	701	554	158	367	31
Huánuco	13,535	17,043	2,850	1,721	198	757	32
Ica	22,536	31,723	3,290	1,933	849	1,080	111
Junín	33,216	41,875	6,609	3,245	456	2,322	125
La Libertad	47,779	59,971	10,322	5,044	1,645	1,974	66
Lambayeque	39,994	36,106	5,580	1,114	121	980	188
Lima	457,132	492,811	103,098	26,094	3,727	5,929	769
Loreto	16,256	20,458	2,397	1,459	62	1,547	134
Madre de Dios	6,035	7,545	1,179	176	1,006	2,081	49
Moquegua	7,283	6,504	949	327	64	48	25
Pasco	6,323	5,560	893	951	114	500	25
Piura	41,670	48,471	6,179	3,061	322	1,211	1,051

Puno	20,552	24,838	6,540	1,243	1,943	461	311
San Martín	19,858	22,979	3,671	1,811	89	1,473	108
Tacna	14,037	19,981	2,652	561	82	399	33
Tumbes	7,364	9,476	673	567	11	318	170
Ucayali	13,436	17,111	2,023	1,218	26	2,738	43

Note: Own elaboration with information of PRODUCE

Number Of Enterprises by Size and Region

In Peru, there are 2,386781 enterprises, of which 2291984 are micro-enterprises, 82924 small enterprises and 9070 large enterprises (Table 6). It is noted that 96.14% are micro-enterprises, 3.48% are medium-sized and 0.38% are large enterprises. Lima concentrates 1 087 381 companies, but microenterprises represent one million 31 thousand companies, the small 49030 companies and the large 6537 companies. In percentage terms, large enterprises account for 0.6 per cent, small enterprises for 4.5 per cent and micro-enterprises for 94.7 per cent

In the Arequipa region, as of 2019 it has approximately 133629 companies, of which 96.6 are micro-enterprises 3.2% are small enterprises and 0.12% are large enterprises. It is noted that the Callao region has number of companies below Arequipa, La Libertad, Piura, but in the large company's segment occupies the second place.

Due to the observed data, the column of large companies has been arranged from higher to lower under the motto "the ones that bring the highest taxes are the big companies" (USIL, 2020). In that sense, each of the three segments of companies has been correlated with tax collection and it has been found for the first case, large companies' segment with tax collection finding a Rho of 96.14%, with medium-sized enterprises 0.74% and with micro-enterprises 64%. This confirms how big companies behave or increase, on that scale will be the increase in tax collection. It is definite that the big ones contribute relatively more than the other business segments.

Table 6segmentation Of Companies 2019 In Peru

Regions	Big	Small	Micro	Total
Lima	6,537	49,030	1,031,813	1,087,381
Callao	393	2,585	75,591	78,569
Arequipa	267	4,263	129,098	133,629
La Libertad	254	3,931	122,490	126,674
Piura	204	2,651	99,008	101,863
Lambayeque	168	1,934	81,897	83,999
Puno	168	1,397	54,267	55,832
Loreto	127	1,396	40,790	42,313
Ica	123	1,723	59,615	61,460
Ucayali	110	1,134	35,314	36,558
Cajamarca	108	1,455	52,503	54,066
San Martín	100	1,350	48,489	49,939
Cusco	95	2,004	93,307	95,406
Junín	88	1,581	86,179	87,848
Ancash	69	1,639	66,864	68,571
Tacna	38	679	36,990	37,707
Madre de Dios	36	651	17,366	18,053
Huánuco	36	723	35,341	36,100

Huancavelica	33	124	10,800	10,956
Ayacucho	31	738	30,121	30,890
Apurímac	23	547	22,231	22,801
Tumbes	19	316	18,245	18,579
Amazonas	15	349	14,856	15,219
Moquegua	15	409	14,774	15,198
Pasco	14	316	14,036	14,366
PERU	9,070	82,924	2,291,984	2,383,979

Note: Own elaboration with information of PRODUCE

METHODOLOGY

This study is of a basic type and has a quantitative approach (Hernández et al., 2014). The objective is to demonstrate the correlation between the number of companies and the tax collection. According to the level of research (Supo & Cavero, 2014), it is of nonexperimental design, and of descriptive and relational level (Ortiz & García, 2003). It uses the cluster discriminant algorithm and the Pearson correlation coefficient, based on quantitative data from SUNAT, PRODUCE and MINCETUR. We analyzed information from 2012 to 2019 on tax revenues and the number of companies by region, with a sample error of 1% of the population indicated (Supo & Cavero, 2014).

The technique used is observation, reviewing each of the eight years of the study to analyze the amount collected in taxes by region, observing the number of companies per department and their evolution in different categories, such as micro, small and large companies. A work sheet was used for each region, classifying by economic sectors, company size, years, number of companies and tax amounts (Hernández et al., 2014).

RESULTS AND DISCUSSION

The growth in the number of companies in Peru by region is in positive and high line with taxation in the period 2012-2019. The relationship found in 2012 between the variables, by Rho de Pearson is 96.3% so that the following. is 0.000, meanwhile it can be deduced that the regions that have greater number of companies then have a higher collection, those that have a moderate or low amount then the collection is of the same magnitude. (Table 7)

In 2013, the ratio is 95.2% and sig. is 0.000 which also rescues that it is quite intense. In 2014 the ratio of companies with tax collection is also 96.4%, quite high. The year 2015 contains a correlation of 96.3%, the year 2016 a correlation of 96.2%, the year 2017 with 96.2%, the year 2018 a correlation of 96.4% and the year 2019 a correlation of 96.7%. This suggests that in any case the relationship between business growth in the number of companies and the growth of tax collection has been maintained. It can be said on average that the regions with the largest number of companies have better tax collection (Table 7).

Table 7List of Companies and Tax Collection

Correlation			
Companies / Collections		Pearson correlations	Sig. (unilateral)
Companies 2012	Collections2012	0,963	0,000
Companies 2013	Collections2013	0,952	0,000
Companies 2014	Collections2014	0,964	0,000
Companies 2015	Collections2015	0,963	0,000
Companies 2016	Collections2016	0,962	0,001
Companies 2017	Collections2017	0,962	0,002
Companies 2018	Collections2018	0,964	0,000
Companies 2019	Collections2019	0,967	0,000

Note: Own elaboration

On the other hand, when analyzing the relationship of regions with the two variables (Table 8), all show a positive relationship except Piura and Loreto where the number of companies grows, but the revenue decreases. The same is true of Piura. Eight regions have a correlation greater than 90%, six regions higher than 80%, four regions higher than 70%, four regions greater than 57% and a region with 20.7%. This consolidates the criterion of the greater number of companies, the greater the collection in 23 regions of Peru.

Table 8Correlation, number of companies and taxation

Regions	Rho de Pearson	Sig. (bilateral)
Ayacucho	0,979	.000
Huánuco	0,974	.000
San Martín	0,971	0,000
Ucayali	0,967	0,000
Junín	0,944	0,000
Pasco	0,943	0,000
Apurímac	0,929	0,001
Amazonas	0,906	0,002
Ica	0,887	0,002
Lima	0,872	0,002
Huancavelica	0,849	0,004
Puno	0,843	0,004
Madre Dios	0,838	0,005
Moquegua	0,830	0,005
Ancash	0,748	0,016
Tacna	0,740	0,018
La Libertad	0,715	0,023
Callao	0,713	0,024
Cajamarca	0,681	0,031
Tumbes	0,680	0,032
Lambayeque	0.604	0,057
Arequipa	0,577	0,067
Cusco	0.207	0,312
Piura	-0.043	0,460
Loreto	-0,795	0,009

Note: Own elaboration

Three defined collection groups and the number of enterprises by region have been formed. So, while we propose 2 regions in the high concept, 5 in the middle and 18 in the low, the analysis tells us that 50% is high, 60% is medium and 94.4% is low. The discriminant algorithm indicates that what is segmented by 84% is adequate, in the collection relationship and number of companies. It is concluded that one region (Lima) should be considered high. has 46% of companies, and 84% of the collection. It should be noted that Lima contains 72% of Peru's large companies (Figure 1).
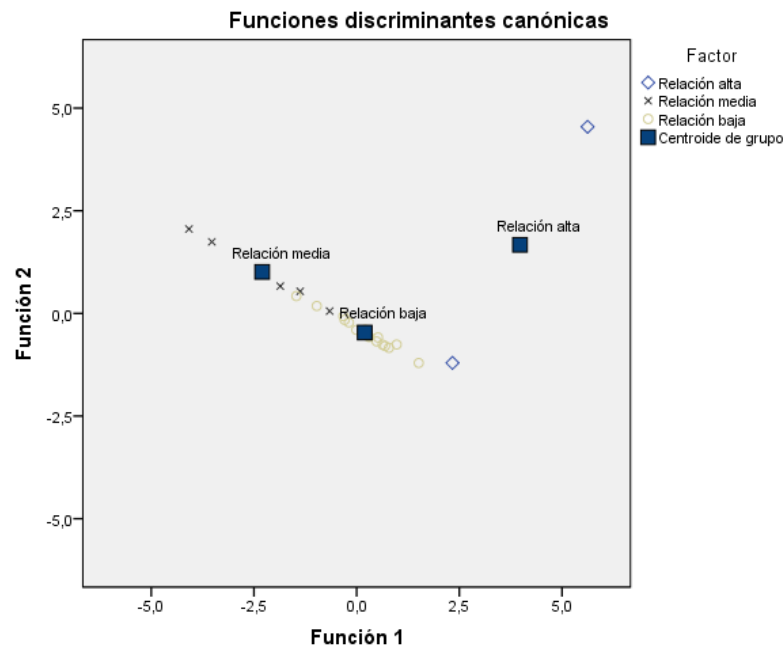
Figure 1 Discriminant analysis of conglomerates
Note: Own elaboration

The size of the company significantly influences the financial results (Duarte et al., 2013) and is crucial for innovation (Esparza & Reyes, 2014). Enterprises with a vision of greatness should consider size as a key factor (Huerta et al., 2010). For example, in Chile in 2006, there were 9,400 large enterprises, 586,500 micro-enterprises, 18,400 medium-sized enterprises and 120,900 small enterprises. The percentage distribution was 1.27% of large companies and 98% of the others, with 80% being micro-enterprises and 16.4% small. In Peru, 96.14% of enterprises are micro-enterprises, 3.48% are medium-sized and 0.38% are large (Pacori, 2016; USIL, 2020).

The market economy and positioning levels influence the difficulties of small businesses, which face administrative, operational and strategic challenges, with a vision of opportunities and threats (García & Taboada, 2012). The tax contribution of micro-enterprises is reduced due to their high mortality rate. The causes of this mortality include poor oversight of cross-cutting and vertical operations, lack of cost-intensive process optimization, and market failures such as monopolies and oligopolies that hinder the development of micro-enterprises (Alva, 2017; Paz & Cerezo, 2020).

Limitations in ICT are also a significant factor for survival in the market (Valderrama & Neme, 2011; Gómez, 2008). Companies are part of the circular flow of income in the dynamics between families and companies (Pindyck & Rubinfeld, 2009; Ramales, 1987; Mankiw, 2018). Generating brands and customer loyalty are crucial factors for the success of micro, small and medium-sized companies, a common practice among medium and large companies (Hernández-Gil et al., 2018). Micro-enterprises, with lower sales, survive in an imperfect economy.

Although the micro enterprise in Peru represents 97% on average, (Gongora, 2020), it was proposed to prove that there was a relationship between legitimacy in the approval of taxes, it was shown that there is little tax awareness (82.2%), that if there is tax education (90.8%), the tax orientation is mediated (51.7%). In fact, the citizen needs tax resources via collection, but they do not request in many cases the respective tickets or invoices, in the consumption of goods and services.

Collection, tax revenues, according to (Carmona et al., 2019) is the act of collecting, the jurisdiction where

taxes should be collected. It is known that when PIB grows then taxation must grow. El (CIAT, 2014) states that in some countries large taxpayers are concentrated in 0.01% to 0.9% of total taxpayers

The Inter-American Center for Tax Administration (CIAT) reached our same results, first that the correlation of the two variables is 47% that the greater the concentration of large companies then there is concentration in the collection. In this case the average revenue %) is 72% and the average concentration of large companies is 0.18%. in the Peruvian case the concentration of large companies is 0.38% (2019) which is greater than 0.20 of 2014. The small business concentrates 3% and the micro 96.14%.

Since 1980, the tax pressure (PT) in Peru was 18.2%, with an average of 16% in the last 30 years (Ledesma, 2010). In 2019, the PT was 16% and in 2020 it fell to 14.5% of the PIB (MEF - DGPMI, 2021). One can see whether the regions can finance their public works and activities with this revenue, but there are doubts about this possibility. Some think that the solution to the low tax collection is only to increase tax collection (Gómez & Morán, 2016), although an alternative is to improve control and oversight by the collection body. It is also essential to consider the difference between nominal PIB, calculated in money, and real, calculated in goods (De Gregorio, 2003; Espinoza, 2015, Solórzano, 2011).

The tax policy is reflected in the tax pressure, but according to Espinoza (2015), SUNAT weakly implements the state's objectives, with only 40% of taxpayers reporting having ever been audited. With current resources, SUNAT probably cannot monitor all taxpayer activities, reaching only 70%. (Bonilla, 2018) highlights the importance of the Laffer curve (Bejarano, 2008), which shows that tax revenues have evolved favorably, reaching 18.36% of PIB in the analysis period. Tax revenues rose from 601 million soles in 1990 to 92,221 million soles in 2016, and to 98,302 million soles in 2019 (Garriga et al., 2018, Morel et al., 2020)

CONCLUSIONS

It is concluded that the number of companies by regions in Peru has a direct and high correlation with tax collection in the period 2012-2019, with a Rho coefficient higher than 0.99. This suggests that regions with a larger number of companies have higher revenues, as do those with moderate and low numbers of companies. It is shown that two regions, representing 8% of the total, contain 76% of large companies and account for 88% of tax collection.

The growth of the number of companies and the percentage growth in the period 2012-2019 has been variable. Apurímac shows annual business growth of 8.95%, while Loreto records minimum growth with 4.07% annually.

The growing trend in tax collection is most noticeable in regions with higher business participation. Three groups are clearly differentiated by their tax contribution and number of companies. The discriminant algorithm confirms the claim that more companies are associated with higher revenues.

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