

MEASURING AND ASSESSING GENDER REMUNERATION GAP

Ricardo Alvira Baeza. Email: ricardo.alvira@um.es. ORCID ID: 0000-0002-7785-7817

Architect, DEA, PhD Architecture & Urban Planning, Ongoing PhD Political Science

ABSTRACT

There is currently important ongoing debate in Spain about the existing gap between men and women remuneration, usually assessed building on the difference between Mean/Median pay for each sex.

However, since the end of 19th century several authors have proven Mean and Median values can lead to incorrect assessments when reviewing skewed distributions, challenging the validity of these characterizations.

To move forward in this debate, this text explains how to correctly measure *Gender Remuneration Gap* and how it can be interpreted in terms of inequality of opportunities.

Herein proposed formulations are applied to review the remuneration structure of Boards of Directors of 22 IBEX-35 companies as well as that of Spain society as whole, and from the obtained results some strategies are proposed which can improve the state of Spain society.

RESUMEN

Se está produciendo en la actualidad en España un debate acerca de la *brecha* entre los salarios de hombres y mujeres, que suele caracterizarse a partir diferencia entre la Retribución Media/Mediana para cada sexo.

Sin embargo, diferentes autores han demostrado desde finales del siglo XIX que Media y Mediana pueden llevar a valoraciones incorrectas al revisar distribuciones sesgadas, poniendo en duda la validez de estas caracterizaciones.

Para ayudar en este debate, en este texto se explica cómo cuantificar la *Brecha Retributiva por Género* y cómo interpretarla en términos de diferencia de oportunidades.

Se utilizan las formulaciones propuestas para revisar la estructura de remuneración en Consejos de Administración de 22 empresas del IBEX-35 y el conjunto de la sociedad española, y a partir de los resultados observados se enuncian algunas estrategias que mejorarían la situación de la sociedad española.

KEYWORDS

Gender Pay Gap; Equality of opportunities; Economic inequality; Indicators

PALABRAS CLAVE

Brecha Salarial por Género; Igualdad oportunidades; Desigualdad Económica; Indicadores

1 INTRODUCTION

Even if there has been a lot of progress in terms of equality of opportunities between genders in the last decades, there is still in Spain, as well as in almost all most developed countries, a significant *Gender Remuneration Gap [GRG]*¹. Main causes of this GRG are [EC, 2010; EC, 2017 ...]:

- *Higher percentage of women working part-time* which, given the lower remuneration of this type of work, implies higher percentage of women with lower remuneration.
- *Greater dedication of women to child care*, which forces them to choose worse / part time jobs and worse paid after motherhood.
- Persistence of generalized *Labor Segregation*:
 - *Horizontal Segregation*: Greater percentage of women in professional sectors with lower remuneration.
 - *Vertical*: Lower percentage of women in decision-making or managing positions, where salaries are higher.

The above issues are not only present in Spain but also in most developed countries. Therefore, most texts currently promoting *Good Corporate Governance* include measures to reduce or eliminate the GRG [EC, 2000; EC, 2010; Stiglitz, 2015, Oxfam, 2016] such as:

- Establishing *equal pay for equal task and educational level*.
- *Promoting balance between men and women*; no less than 40% of workers of each sex in all professional levels.
- *Improving part-time work conditions*, allowing part-time jobs as option for a wide range of occupations without penalty in the compensation.
- Enabling *greater involvement of parents in children care*.

Likewise, it is worth noting a drawback in moving towards the GRG elimination, which is the difficulty for numerically characterizing it and later assessing the meaning of the measure.

In order to make progress in this issue, in this *research note*² we explain an easy method to characterize GRG and assess it in terms of *inequality of opportunities* so necessary reforms can be proposed in case of an inadequate situation is detected.

Let us review it.

¹ According to the Oxford Dictionary a *gap* is an "a space or interval; a break in continuity" and *remuneration* is "money paid for work or a service". Based on these definitions we define *Gender Remuneration Gap [GRG]* as the space separating the remuneration received by different gender workers. It is significant that the Oxford Dictionary uses the term *break* referring to a state of *continuity [equality or at least, similarity]* that has been broken. The rupture of society stands as the opposite state to its cohesive [i.e., united or non-broken] state. Likewise, we prefer using the term *remuneration* which implies the whole amount of money a person receives as compensation for his/her work [i.e., including bonus, retirement plans; stock options...], instead of *wage* or *pay*, which usually designates only regular salary.

² This research note is part of ongoing research relating economic inequality characterization, and setting inequality values compatible with the optimal state of societies.

2 CHARACTERIZING THE GENDER REMUNERATION GAP

We first review why current GRG characterization building on men and women *Mean/Median Remuneration* is unsuitable.

2.1 MEAN AND MEDIAN REMUNERATION ARE NOT ADEQUATE CHARACTERIZATIONS OF SKEWED DISTRIBUTIONS

Experts and organizations that study the GRG, propose its characterization by subtracting to Men Mean/Median Remuneration MR_M/MdR_M , Women Mean/Median Remuneration, MR_W/MdR_W then dividing by the greater value of both [ILO, 2016]:

$$\text{Mean, M} \quad GRG = \frac{MR_M - MR_W}{\max[MR_M; MR_W]} \quad (1)$$

$$\text{Median, Md} \quad GRG = \frac{MdR_M - MdR_W}{\max[MdR_M; MdR_W]} \quad (2)$$

The above formula implies a positive value when Men's MR/MdR is greater than Women's and a negative value when Women's MR/MdR is greater than that of Men³.

The flaw of the above calculation is *individuals' remunerations often show highly skewed Pareto distributions. And neither MR nor MdR adequately describe men/women remuneration differentiation. As consequence, the difference between men's and women's MR/MdR is independent of the actual differentiation between their remunerations.*

We can see it more clearly with an example. Let us suppose two people have completed a job interview, so the company has decided to hire them both. The only pending issue before signing the contracts is setting each one's remuneration.

In order to do so, the company has devised the following method. One of the two perspective workers has to access the office through a Green Door and the other through a Blue Door, and each one's economic retribution will be as follows:

- The remuneration of the person entering by the Green Door is \$30,000 /year.
- The remuneration of the person entering by the Blue Door is set by a draw under the following probability assignment:
 - P=0.998 probability of a \$ 7,920 / year.
 - P=0.002 probability of a \$ 11,047,920\$ / year.

The company allows the two perspective workers to decide who enters through each door. If you were one of these people ... Which door would you prefer?

Let us suppose 1,000 people work in the company whose remuneration has been set by the same procedure. 500 people have entered through the Green Door [they receive \$30,000/year] and, of the 500 people who have entered through the Blue Door, 499 people receive \$7,920/year and 1 person receives \$11,047,920/year [the odds have been met exactly].

³ According to such formula and data from INE [2017] we obtain a 22.85% GRG between Spain male and female workers [25,992€/year vs. 20,051€/year], standing as a significant GRG.

These figures imply that the MR of the workers who accessed the company through the Green Door and those who entered through the Blue Door is equal [\$30,000/year]. *Although there is a great difference between the annual remuneration that we would expect to perceive according to which door we access the company, this is not detected by comparing the MR of those who already entered through the two doors.*

The reason is that the company remuneration structure implies high inequality in the compensation of the people who entered through the Blue Door, which implies great difference among the *expectations* of the people who enter through each door:

- A person who accesses through the Green Door has *complete certainty* [P=1] of being paid the MR
- A person who accesses through the Blue Door has *almost complete certainty* [P=0.998] of being paid only one fourth of the MR.

If the Cost of Living [CL] were \$15,000/year, *entering through the Green Door would guarantee a decent life, while entering through the Blue Door would almost certainly lead to living at a subsistence level.*

Such inequality of *expectations/opportunities* between workers makes it very preferable accessing through the Green Door, confirming that the *MR is not adequate for measuring neither GRG nor the opportunities linked to income*⁴.

However, it can be argued in the above example *there is important difference between the MdR of both groups of workers, therefore comparing both doors in terms of MdR would allow us to detect which is the best door for accessing the company.*

Below we review another example showing it is not always necessarily so.

Let us suppose a company with a staff of 200 people, half of them have permanent contract and half have fixed-term contract. Their remunerations are the following:

TABLE 1. EXAMPLE 02- INITIAL STATUS [T1]

PERMANENT CONTRACT WORKERS		FIXED TERM CONTRACT WORKERS	
51	\$ 2,500	51	\$ 2,500
49	\$ 3,500	49	\$ 3,500

An analysis is made to review whether there is a remuneration gap between workers, so MdR of each type of contract workers is compared. Both groups' MdR is \$2,500, therefore it is concluded there is no Remuneration Gap between both types of workers. A month later a transformation of remunerations is proposed which would be as follows:

TABLE 2. EXAMPLE 02- REMUNERATION MODIFICATION [T2]

PERMANENT CONTRACT WORKERS		FIXED TERM CONTRACT WORKERS	
51	\$ 2,500	51	\$ 2,500
49	\$ 5,500	49	\$ 3,500

⁴ An exception would be if all workers received equal compensation, i.e., if inequality between different workers' compensations was zero. This suggests us that differentiation measures applied to remunerations may enable us relating MR with the actual *retribution* a person would *expect* to receive..

The MdR of each group of workers is compared again. The value has not changed, therefore it is decided that the remuneration modification does not generate any gap between types of workers, and so it is implemented...

It is obvious that the above conclusion is wrong. At first there is no remuneration bias by type of contract, but the salary restructuring generates a remuneration bias. After restructuring, remuneration expectation is higher for permanent contract workers.

The above two examples show neither the MR nor MdR enable us to correctly assess the existence or not of different expectations/opportunities between groups, and therefore they do not allow us to assess GRG. *In order to do so, it is necessary to assess the difference of expected retribution/opportunities implicit in each retributive structure.*

Let us review, how we can easily assess these expected retribution.

2.2 COMPUTING GRG BASED ON EXPECTED RETRIBUTION

The debate on the ability or not of the capitalist model to reduce economic inequality of societies led by the end of the 19th century to several proposals for measuring it, as prerequisite for being able to answer the question. In this context, Vilfredo Pareto [1896] makes a contribution that poses great interest for the present work; he divides society individuals according to income steps obtaining a skewed distribution⁵.

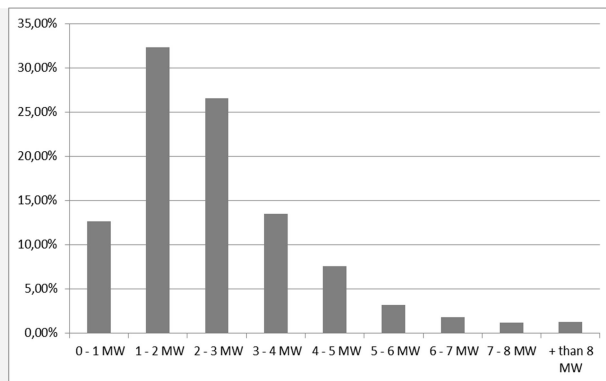


Figure 1. Percentage of Spanish workers according to wage received in 2015 [Source: Own Elaboration using INE data]. By grouping workers according to a linear scale of Salary steps [number of times the Minimum Wage is received,] on the X axis and percentage of workers on the Y axis, we obtain a Pareto-Skewed distribution.

It is remarkable the high percentage of workers with incomes lower than 2 SMI [ca, 45%], and noteworthy during 2003-2005 the probability of belonging to the group of poor workers was four times higher for freelance workers [Tejero, 2017]

And it is interesting that if we independently account men and women, we obtain similar distributions:

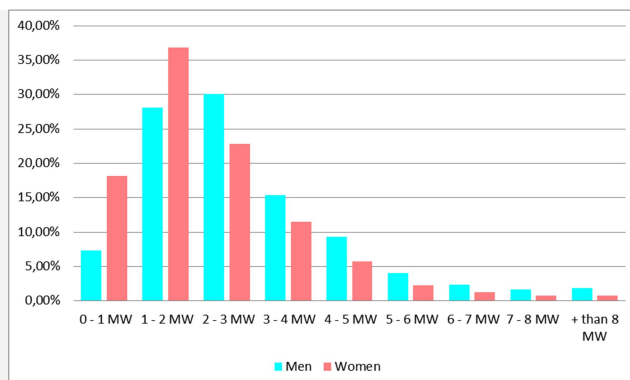


Figure 2. By independently reviewing men [light blue] and women [light pink], both curves also show a skewed distribution.

We see a much higher concentration of women in the lower salary levels. 55% of women have a salary between 0 and 2 Minimum Wage compared to 34% of men in that step. In this remunerative step, income comes close to [or is directly below] the Cost of Living; i.e., working almost does not provide opportunities for these people beyond making ends meet.

⁵ We designate this type of curve a Pareto Distribution, although we find a first reference to them and the difficulty of their characterization in McAlister, 1879.

We have previously raised the possibility of accessing a company through two different doors associated with different probability of being assigned different remunerations, and we asked which door we should *rationally prefer*.

This allows us to conceptualize the issue as a preference/decision-making problem, where, being every other issue equal [that is, the type of work and the contract] *rationality leads us to seek maximizing Expected Remuneration [ER]*. So... this is the question we must answer: Which door in the before mentioned company implies greater ER? Or in more general terms ... *How can we estimate the ER of two groups of workers, when the compensation within each group follows a Pareto distribution?*

To calculate it we need to assess both possible remunerations in each case and the probability associated with each of them. And we must understand that *Pareto distributions involve an underlying probability –as stable frequencies- structure* [Simon, 1955]⁶, where the probability of receiving lower remuneration than average is greater than the probability of receiving a higher one.

This highlights that even if ER could—in the absence of inequality- be equal to MR, its value is usually lower, and it moves further away from MR as the inequality between compensations increases. Can we estimate its value?

It is possible to estimate ER using differentiation/organization measures, and there is a previous author's proposal complying with almost all widely accepted requirements [Alvira, 2014]⁷, according to which ER could be calculated following three steps:

1. We normalize each worker 'i' remuneration R_i in the range 0-Maximum Remuneration, obtaining normalized remunerations r_i

$$r_i = \frac{R_i}{\max[R_i]_{i=1}^n} \quad (3)$$

2. We compute weights coefficients k_i for each worker i:

$$k_i = 1 + \left[\frac{1}{n} * \sum_{i=1}^n r_i \right] - r_i \quad (4)$$

3. From above values, we calculate Expected Remuneration as:

$$RE = \max[R_i]_{i=1}^n * \frac{1}{n} * \sum_{i=1}^n [r_i * k_i] \quad (5)$$

⁶ In the absence of other issues, the curve indicates the probability that a person will receive each level income.

⁷ This formula has been developed into an axiomatic framework [Alvira, 2014] and later empirically tested: to estimate the economic sustainability of EU countries during 2005-2014 [Alvira, 2017b], to assess spatial segregation by income in Spanish cities [Alvira, 2017a] and to estimate scientific publications expected citation [Alvira, forthcoming]. While similar values can be obtained using formulas built on the Herfindahl Hirschman Index or Shannon Entropy, they provide incorrect values for the limiting case that all income is accumulated by a person. Also similar values can be obtained using formulas built on the Gini Coefficient, but it does not take into account money diminishing marginality, something Lorenz advanced in 1905, when he stated the incorrectness of using the area enclosed by the curve.

These equations allow us to estimate ER independently for men and women in each company, and once such values are obtained, we calculate GRG by substituting MR/MdR by ER in the standard formula:

$$GRG = \frac{ER_H - ER_M}{\max(ER_H; ER_M)} \quad (6)$$

However, this formula characterizes the GRG among the workers of a company or organization, but it does not assess the gap between their *opportunities*. In order to assess it, we need to *assign meaning* to GRG. Let us explain an easy way to do it.

2.3 ASSIGNING MEANING TO GRG

Many authors have agreed on the difficulty of adequately interpreting the meaning of measurements of economic inequality of societies. The same value can have different meaning depending on contextual issues. One way of linking the GRG with the context is by relating individuals' ER to the CL in that context [Alvira, 2017b].

The link between the two is easily understood by reviewing the concept of *Appropriable Surplus [AS]* as difference between a person's remuneration and the cost of living in each context. This is the amount of money a person can invest in whatever thing that increases his/her quality of life or the likelihood of him/her [or his/her family] having a better future [e.g., accessing higher education...].

Consequently, to assess the effects of GRG, the relevant parameter is not the difference between men's and women's retributions but between their 'opportunities' which relate to their AS, i.e., we assess the difference between their remunerations once the CL is subtracted. Thus, in addition to the GRG, we need to characterize the *Gender Appropriable Surplus Gap, GASG*:

$$GASG = \frac{AS_M - AS_W}{\max(AS_M; AS_W)} \quad (7)$$

Characterization in terms of GRG and GASG allows us to understand both the distribution of income and opportunities between men and women in companies and societies.

3 REVISION OF REMUNERATION STRUCTURES IN SPAIN

We review below the remuneration structure for two data samples.

We start by reviewing the *compensation structure of the Boards of Directors of 22 IBEX-35 companies*:

TABLE 3. BOARDS OF DIRECTORS OF IBEX-35 COMPANIES

	% Wo- men	MEN			WOMEN			GRG	GASG
		AR [€/year]	ER [€/year]	AS [€/year]	AR [€/year]	ER [€/year]	AS [€/year]		
ABENGOA(1)	15,00%	136.176	91.831	75.806	129.000	100.254	84.229	-0,084	-0,100
Abertis	45,45%	725.167	293.046	277.022	88.200	76.169	60.144	0,740	0,783
Acerinox	12,50%	152.571	89.382	73.357	64.500	62.471	46.446	0,301	0,367
ACS	10,00%	847.167	448.091	432.066	147.500	134.620	118.595	0,700	0,726
AENA (2)	28,57%	24.500	10.609	-	8.000	6.292	-	0,407	-
Banco de Sabadell	20,00%	897.833	371.318	355.294	143.000	140.843	124.818	0,621	0,649
Banco Santan-	37,50%	1.974.300	1.154.904	1.138.879	1.816.667	496.249	480.224	0,570	0,578

TABLE 3. BOARDS OF DIRECTORS OF IBEX-35 COMPANIES

	% Wo- men	MEN			WOMEN			GRG	GASG
		AR [€/year]	ER [€/year]	AS [€/year]	AR [€/year]	ER [€/year]	AS [€/year]		
der									
Banco Popular	18,75%	1.687.692	919.049	903.024	110.000	108.333	92.309	0,882	0,898
Bankia	8,33%	266.545	148.951	132.927	100.000	100.000	83.975	0,329	0,368
Endesa	14,29%	1.103.667	639.420	623.396	230.000	230.000	213.975	0,640	0,657
Ferrovial	7,69%	1.993.417	777.511	761.486	138.000	138.000	121.975	0,823	0,840
FCC	0,00%	273.100	161.308	145.284	-	-	-	1,000	1,000
Gamesa	23,08%	498.800	272.836	256.811	226.000	225.026	209.001	0,175	0,186
Gas Natural	12,50%	344.286	200.076	184.052	157.000	146.708	130.684	0,267	0,290
Grifols	33,33%	506.000	358.748	342.723	131.250	128.385	112.361	0,642	0,672
Inditex	20,00%	1.503.625	419.704	403.680	136.500	136.455	120.430	0,675	0,702
MAPFRE	20,00%	1.050.563	612.388	596.363	176.500	161.832	145.808	0,736	0,756
OHL	18,75%	519.846	207.344	191.320	85.000	78.655	62.631	0,621	0,673
Red Eléctrica	38,46%	290.125	225.240	209.215	153.200	139.279	123.255	0,382	0,411
Repsol	5,88%	808.938	459.435	443.410	265.000	265.000	248.975	0,423	0,438
Sacyr	12,50%	731.857	203.240	187.215	114.000	114.000	97.975	0,439	0,477
Telefónica	9,09%	561.900	291.336	275.311	167.500	148.601	132.577	0,490	0,518
Summary (3)	18,15%	738.357	527.836	511.811	301.678	140.729	124.704	0,733	0,756

NOTES: Own elaboration based on 2016 data from CNMV's website, <https://www.cnmv.es>. Codes are: AR [Average Remuneration], ER [Expected Remuneration]; AS [Appropriable Surplus]; GRG [Gender Remuneration Gap]; GASG [Gender Appropriable Surplus Gap]

- (1) Abengoa is the single company which GRG/GASG favours women.
- (2) Appropriable Surplus is defined as positive number, so there is a minimum 0€ value, which is reached for this company for both genders. As consequence, GASG value is “-”.
- (3) We jointly evaluate the remuneration of the directors of the 22 companies. The percentage of women is far-off from the 40% threshold that EC [2000] defines as a desirable situation. It is significant the high GRG [0,733]

We see different companies show very different GRG/GASG values, confirming these parameters effectiveness in characterizing the significant impact that unlike business remuneration structure can have on equality of opportunities between men and women.

Secondly, we review the *evolution of workers in Spain during the 2008-2015*:

TABLE 4. SPAIN 2008-2015

Year	SMI [€/year]	CL (2) [€/year]	MEN			WOMEN			GRG	GASG
			AR [€/year]	ER [€/year]	AS [€/year]	AR [€/year]	ER [€/year]	AS [€/year]		
2008	8.400	10.836	23.827	21.166	10.329	18.806	16.757	5.920	0,208	0,427
2009	8.736	11.143	24.589	21.824	10.681	19.373	17.291	6.147	0,207	0,424
2010	8.866	11.214	25.123	22.222	11.008	19.671	17.445	6.231	0,215	0,434
2011	8.979	11.178	25.332	22.400	11.221	19.668	17.537	6.359	0,217	0,433
2012	8.979	10.859	25.361	22.315	11.455	19.406	17.207	6.347	0,228	0,446
2013	9.034	10.848	25.337	22.237	11.388	19.392	17.141	6.293	0,229	0,448
2014	9.034	10.611	25.328	22.312	11.700	19.700	17.400	6.788	0,220	0,412
2015	9.080	10.434	25.582	22.589	12.154	19.952	17.588	7.153	0,221	0,412

NOTES: Own elaboration based on INE data, access 2018. We build on INE survey that groups population into categories according to number of times the Minimum Wage is earned. We assume Mean Income for each step is the average value between limiting values: 0-1 MW=0,5*MW; 1-2 MW=1,5*MW; 2-3MW=2,5*MW; 3-4MW=3,5*MW; 4-5MW=4,5*MW; 5-6MW=5,5*MW; 6-7MW=6,5*MW; 7-8MW=7,5*MW; +de8MW = 8,5*MW.

- (1) CL has been assumed as being equal to the expenditure per person for the first quintile of the population in 2010 and for the rest of period is estimated by applying Official Inflation coefficients [both data Eurostat access March 2018]. It is worth mentioning that during some years CL has been almost 1.3 times the Minimum Wage, which strongly challenges the suitability of the value of the latter since it generates workers without any Appropriable Surplus, i.e., poor workers.

When reviewing the whole society, we observe a higher difference appears between GRG and GASG, implying a relevant difference of opportunities between men and women, which causes women to have struggle to deal with similar expenses⁸.

⁸ To understand what this difference may imply, it is useful to review the different meaning of Social Security [SS] affiliation fees for self-employed workers. Spanish legislation [Ley 20/2007] does neither link - unlike the rest of European countries - SS' fees to actual workers' economic surplus nor it estab-

4 RECAP AND CONCLUSIONS

In this brief research note, we have reviewed the issue of the GRG proposing a different and easy way for characterizing it. Remuneration structures show skewed distributions and therefore characterizing them using MR and MdR often leads to incorrectly assessing the phenomenon.

Therefore, the concept of ER has been proposed as the remuneration a future worker could reasonably *expect* to receive if his/her compensation was to be determined by a draw which probabilities were defined by such distribution curve. And *meaning* has been assigned to it in terms of the opportunities it implies for each person by assessing the resulting AS. From these parameters we have defined GRG and GASG.

Using these parameters, the remuneration structure of Directors' Boards of 22 IBEX-35 companies as well as that of the Spanish society as a whole have been assessed:

- The first confirms the high GRG that currently exists in the Boards of Directors of the largest Spanish companies.
- The second one gives us a picture of Spanish society and allows us to understand that behind a considerable GRG [average for the period 2008-2015: 21.85%] there is in fact much greater GASG [average for the period 2008-2015: 43.04%].

This entails that *men and women unequal expected remuneration is actually translated into substantial inequality of opportunities that challenges the Spanish Constitutional framework [Art 1, Art 14, Art 35 ...], and it could be unnecessarily forcing almost 900,000 people to live below the poverty threshold in Spain*⁹.

In order to correct it, Spanish Government must reform current legal framework, promoting necessary changes, specifically [NINCHES, 2011; EC, 2011; OXFAM, 2016]:

- *Raising the Minimum Wage* and regulating *progressive SS' fees for the self-employed*, linking said fees to actual people's net income and setting reduced fees for people with reduced earnings¹⁰.

lishes a minimum income threshold below which the fee is symbolic or no payment is required. All these currently happens in spite of the existence of favorable Supreme Court sentence TS:1997-6441. Noteworthy, data shows SS' fees [minimum fee 264 €/month in 2015] are usually around or exceed 50% of women' AS. Thus, current Spanish legislation is actively contributing to generate a subclass of poor working women with no opportunities; they are just 'making ends meet'. This non-progressiveness of SS' fees and the non-existence of a minimum threshold below which payment is not required, challenges Spanish Constitution [SC, Art 31 links each citizen's contributions for supporting the State to his/her having sufficient **economic capacity** and consecrates the progressive nature of said contributions] and -given the existence of a gender pattern - breaches the equality enshrined in Art 14 of the Spanish Constitution.

⁹ The percentage of population that Ayllón [2013] obtains for Catalonia has been extrapolated to the whole of Spain

¹⁰ NINCHES [2011] highlights women tend to be in the lower part of the distribution of wages, so in most cases raising the Minimum Wage is a way to reduce the GRG. Spain data supports this fact since in 2015 18.2% female workers earned less than the Minimum Wage compared to 7.36% male workers. On the other hand, implementing the progressiveness of the contributions to the SS of self-employed workers, linking them to their net income [and their AS] is urgent at a time when the probability of a self-employed worker of being 'poor' could exceed 30% [Tejero, 2017]. In this sense, we can interpret the Supreme Court [2015] sentence that states that "... a reconsideration of the issue leads us to rectify this

- Enacting *Corporate Governance regulations* for companies, including
 - *Mandatory regulations as:*
 - Limits on the *Maximum admissible GRG*.
 - *Enforcing companies to publish their operating data* so users/consumers can exercise responsible consumption.
 - *Voluntary guidelines*, whose compliance is linked to benefits/penalties in public procurement and taxation for companies with better/worse Corporate Governance. This should include assessment of their remuneration structure and whether they facilitate or not flexible work [flexibility of schedules, reduction of working hours and teleworking]

Likewise we would like to emphasize the necessity to release operating data of companies to the public. Research shows a growing tendency towards *responsible political consumption*, as instrument which enables citizens to direct society towards their preferred model through their individual actions [García-Espejo & Novo-Vázquez, 2017].

Spain [and most countries] legislation must be adapted to enforce companies to make public their remuneration structure, so citizens can act accordingly. Both as consumers of products or services [consuming preferably from those companies *-boycott-* whose remuneration structures contribute to a more equitable society and avoiding consuming from those companies *-boycott-* that contribute to a less just society], and as workers [looking for employment preferably in companies with better corporate governance and avoiding companies with worse one]¹¹.

Therefore, several measures can be easily implemented to reduce the currently significant GRG and even greater GASG in Spain. The high value of these two gaps highlights the existence of a remarkable inequality of opportunities between Spanish citizens based on their sex, which challenges Spanish Constitutional Framework itself.

ACKNOWLEDGMENTS

This manuscript has been translated by professional translator Monica Vilhelm.

5 REFERENCES

- ALVIRA BAEZA, RICARDO [2014] *A Mathematical Theory of Sustainability and Sustainable Development*, ISBN-13: 978-1497439375
- ALVIRA BAEZA, RICARDO [2017a] “Segregación Espacial por Renta. Concepto, Medida y Evaluación de 11 ciudades españolas”, *Cuadernos de Investigación Urbanística*, 114, sept-octubre 2017.

doctrine on the calculation of gross income and to understand that the income to be taken into account - for the purpose of calculating the economic insufficiency- ... is the net income [which] materially determines the true purchasing power of the worker "

¹¹ Research [TPRBN, 2017; García Espejo & Novo Vázquez, 2017] shows the growing importance of political consumption. EC [2011] points out lack of information as key issue hindering it.

- ALVIRA BAEZA, RICARDO [2017b] *Un Modelo y una Metodología para la Transformación de Ciudades hacia la Sostenibilidad*, PhD Dissertation [Summa Cum Laude], Universidad Politécnica de Cartagena
- AYLLÓN, SARA [2013] “DISCRIMINACIÓN SALARIAL DE GÉNERO Y POBREZA EN CATALUÑA”, *Revista de Economía Aplicada*, No. 62 (vol. XXI), 2013, pp. 37-60
- CORTES GENERALES DE ESPAÑA, SC [1978] *Constitución Española*
- EUROPEAN COMMISSION, EC [2000] ‘Commission decision relating to gender balance within the committees and expert groups established by it’ (2000/407/CE)
- EUROPEAN COMMISSION, EC [2010] *Why socio-economic inequalities increase? Facts and policy responses in Europe*, European Research Area
- EUROPEAN COMMISSION, EC [2011] ‘A renewed EU strategy 2011-14 for Corporate Social Responsibility’, COM (2011) 681 final
- EUROPEAN COMMISSION, EC [2017] ‘Communication from the Commission to the European Parliament, the Council and the European Economic and Social Committee EU Action Plan 2017 – 2019. Tackling the gender pay gap’
- GARCÍA ESPEJO, I. Y NOVO VÁZQUEZ, A. [2017] “The Emergence of the ‘Conscious Consumer’: An Analysis of Political Participation through Purchasing Decisions”, *Revista Española de Investigaciones Sociológicas*, 158, pp. 59-78
- INSTITUTO NACIONAL DE ESTADÍSTICA, INE [2017] Encuesta Anual de Estructura Salarial, 2015, 28 June 2017
- INTERNATIONAL LABOR ORGANIZATION, ILO [2016] *Global Wage Report 2016/17, Wage inequality in the workplace*
- JEFATURA DEL ESTADO, JE [2007] ‘Ley Orgánica 3/2007, de 22 de marzo, para la igualdad efectiva de mujeres y hombres’, BOE núm. 71, de 23 de marzo de 2007, Texto consolidado 27 de julio de 2013
- LORENZ, MAX O. [1905] “Methods for measuring the concentration of wealth”, *American Statistical Association*, New Series No 70, June 1905
- MCALISTER, DONALD [1879] ‘The Law of the Geometric Mean’, *Royal Society of London*
- NEW JOINT NEGOTIATING COMMITTEE FOR HIGHER EDUCATION STAFF, NJNCHES [2011] *The Gender Pay Gap - A Literature Review*, New Joint Negotiating Committee for Higher Education Staff, Equality Working Group
- OXFAM [2016] ‘An economy for the 1%, How privilege and power in the economy drive extreme inequality and how this can be stopped’, 210 Oxfam Briefing Paper, 18 January 2016

SIMON, HERBERT [1955] “On a class of skew distribution functions”, *Biometrika*, Vol, 42, No 3/4 [Dec. 1955], pp. 425-440

STIGLITZ, JOSEPH E. [2015] “Inequality and Economic Growth”, *The Political Quarterly*, Volume 86, Issue S1, December 2015, pp. 134-155

TEJERO, AROA [2017] «In-Work Poverty Persistence: The Influence of Past Poverty on the Present», *Revista Española de Investigaciones Sociológicas*, 157, pp. 141-162

THE PRINCE’S RESPONSIBLE BUSINESS NETWORK, TPRBN [2017] ‘Business in the Community, Toolkit 1: Measuring your gender pay gap’

TRIBUNAL SUPREMO [SPAIN SUPREME COURT]

[1997] ES:TS:1997:6441, Recurso de Casación para la unificación de doctrina

[2015] Recurso de casación para la unificación de doctrina núm. 654/2014