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WOMEN'S LABOR SEGREGATION AND GENDER EQUALITY IN THE MINING SECTOR: THE CASE OF HUELVA, SPAIN

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ABSTRACT

Nowadays, the mining industry, despite the increasing number of female workers, is still a highly masculinized sector. In the European Union, one of the most important areas of production and export of metals and minerals is Andalusia, a region in Southern Spain, where most mining pits are concentrated in the province of Huelva, which since Roman times has been an important centre of metal extraction. In Spain, the national employment rate of women in the mining industry is at 8%, also because they were excluded by law from the sector until 1996. In 2007, the Spanish government approved the Ley Orgánica para la Igualdad efectiva de Mujeres y Hombres, LOIMH (Law 3/2007 for the Effective Equality of Women and Men), which provides for the equality plans meant to work on and reduce women's horizontal and vertical segregation in companies. The fields of action of the equality plan include the reconciliation of work, personal and family life such as paternity leave and co-responsibility, and gender-based violence in the workplace. Based on the premise that often there is a difference between formal equality and effective equality, in this study we analyse this gap in the firms of the mining industry in the province of Huelva, Spain.

Key words: Gender Equality, Mining Sector, Social Justice, Women's Labour Segregation

INTRODUCTION

In the last decades companies have started to realize that the economic, social

and even natural environment is changing, so, to keep up the pace of competitiveness and financial value of their companies, they need to develop competitive advantages to improve the whole environment of their organization and their image in the market. Moreover, an amplifier effect of this trend is the creation of the Sustainable Development Goals (SDG) elaborated in 2015 by the United Nations, setting the objectives of a more equal and sustainable world for the 2030 Agenda. Among the 17 SDG, stands Gender Equality, labelled as goal number 5. Hand in hand with the SDG goes the concept of Corporate Social Responsibility (CSR), understood as the commitment that companies have with society (European Commission, 2011). So, this is the international framework in which governments are supposed to create adequate policies, models and strategies that organizations should follow to achieve equality.

Leaving aside the problematization of treating gender equality as a target objective created by a Western-centric patriarchal institution that the United Nations is, let us now understand why gender is a driver of sustainability and change. The dimensional complexity of the concept of sustainability goes beyond the scope of this paper, as well as, and linked to this complexity, the diversity of elements involved in corporate social responsibility. Nevertheless, we interpret employment as the key element to promote effective equality in the internal corporate framework, starting from the same ethical point that is based on classic

values of contemporary democratic society. Clearly, from a moral and ethical point of view, it is only fair to treat women

and men equally, giving them the same opportunities, but as data show, this is not enough to push all firms to hire more women. In fact, at the international level this is reflected in countries where the mining industry constitutes an important voice in their economy, such as Chile with 6% female participation in the sector, and Peru with 2%, but in other countries with an important role in the sector such as Canada and Australia (Mihychuck, 2010), women employment is between 20 and 30% (International Labour Organization, 2011). Evidently, it is a strongly masculinized sector and therefore subject to dynamics that foster the equality gap, such as the glass ceiling and horizontal segregation within the companies themselves, as we will see below. So, thanks to data about women in the labor market, we even have empirical and statistical evidence that in an already unequal context like ours is nowadays, increasing the number of women, especially in those sectors that are traditionally masculine or have been masculinized in the last centuries, can turn them into drivers of social change. This because women's perspective is an added value, just like any other marginalized perspective can be, to create a more inclusive narrative and a diverse embracing world. Indeed, reports show that there are differences for instance in the management style of women and men (Fregidou-Malama, 2004), there can be a general improvement both in terms of productivity and social environment (Gomez Carrasco, 2019) when more women are present in the workspace. There are benefits also in the household, as working women are more likely to foster their children's education and aspirations (Schultz, 2002). All these factors together make the social change happen, in the short-run just like in the long-run. That is

why a government that creates a policy or a project aiming and increasing the number of women in the workspace and an organization or firm that applies such directives is fostering social change through women.

Mining in Huelva: past and present

The province of Huelva (SW region of Andalusia, Spain) has been a mining site for a very long time: it goes back to 5000 years ago, with a subsequent Roman exploitation and the so called "mining colonialism" of the last century by the British. Indeed, since 1873, when the Rio Tinto company (nowadays the biggest and richest company in the sector internationally) bought the soil and the subsoil of the area, the British started and unprecedented exploitation of the mining pit, bringing new technologies to facilitate the job. Despite of this, Huelva remained a mainly agricultural area with high illiteracy rates and the lack of specialized schools did not favor the formation of native skilled workers to administrate the mining pits. In fact, skilled and highly skilled workers were brought from abroad, while unskilled workers working in the mine were coming from the province of Huelva and its surrounding areas (Marquez Macias y Tornero Tinarejo, 2009). This did not allow the redistribution of resources, either due to the local administrative mismanagement and to a political- economic unwillingness. That is why this is called "mining colonialism". During this period and later on at the time of the dictator Franco, women, by law, were not allowed to work in the mining sector, this till 1996 (Cuartos, 2006). As a consequence, data show that 8% of the whole female workforce in Spain works in mining, of which only 3,3% works in the mine (García, 2020).

Nowadays the province of Huelva is the greatest producer of metals and minerals in Andalusia, one of the main producers

and exporters in Europe (Consejería de empleo, empresa y comercio, 2020). Despite the technological transition of the last years, which has favored the entry of more women in the sector, gender inequality remains very high, with a concentration of women working as cleaners, waitresses in the company's cafeterias, and administration, with a total presence of 7,6% of women and 92,4% of men in the mining sector (Ministerio para la transacción ecológica y el reto demográfico, 2018).

Given this panorama, it may be justified to take mining activity in the province of Huelva as a case study, exploring the gender differences in the mining sector in such province. More specifically, we want to understand what is the level of implementation of equality plans in the four main mining companies of the province of Huelva, Spain.

LITERATURE REVIEW

The patriarchal society is not only structured on the sexual division of society, but also of work. This division consists in an unequal redistribution of tasks and resources: men are supposed to perform productive tasks, valued and recognized by the others, while women are assigned reproductive tasks, not valued and not recognized by the society (e.g. housework, care work, and mental burden) (Viveros Vigoya, 2002). The sexual division of work is a reproduction strategy of the patriarchal system from the social macro-structure to the personal micro-structure, negatively influencing how a person understands her own *raison d'être* in the society.

So, by taking this into account, this paper starts from the premise that the sexual division of labor in the market has not only become obsolete but also dangerous as it prevents the full development of a person as a complete human being. Indeed, as research points

out (Livi Bacci, 2017; Schultz, 2002), apart from the ethical implications of precluding sectors of the labor market to one gender, it has to be taken into account also the loss in terms of missed opportunities and revenues for the State and the society as a whole. Public money spent on education is seen as a future investment made by the State, as it is thought that that money will one day come back in the form of (specialized) labor force yielding to hire revenues than unskilled work or domestic work. But, when there is a mismatch between the level of education of a person and the level of her employment, not only economically speaking both the State and the citizen incur in a loss in terms of assets and time, but also socially speaking there is no gain in terms of socio-cultural capital, of which future generations loose too. Indeed, there is evidence of direct correlation between the mother's opportunities and her children's (Schultz, 2002). Not mentioning the health dysfunctions proceeding from discrimination in the workplace: depression, stress, anxieties and agitation disorders.

Two concepts here are key to understand women discrimination in the labor market: horizontal segregation and vertical segregation, also known as "glass ceiling". Horizontal segregation refers to the difficulties encountered when accessing some kind of sectors that have been either masculinized in the last centuries, like the mining sector, or that are traditionally masculine sectors, such as the aero spatial sector. The glass ceiling instead, refers to the discrimination experienced by women when it comes to advancements in their careers, that is to reach management and leadership positions. In the mining sector, both kinds of discrimination are displayed, that is why, in the last years, projects and inclusive strategies tried to be implemented.

In 2007 the Spanish government, to intervene on discriminatory practices, approved the Law on Equality between Women and Men 3/2007 (*Ley Organica para la Igualdad entre Mujeres y Hombres*). The Law 3/2007 entails the application of practical plans aiming at equality in the workplace in those companies with more than 250 employees. According to this law, the so called “equality plans” are defined as follows:

“The equality plans shall set out the specific equality objectives to be achieved, the strategies and practices to be adopted for their attainment, as well as the establishment of effective systems for monitoring and evaluating the objectives set”. (LOIMH article 46, apud González, Rodríguez Luna, Barcons Campmajó et al., 2014).

Equality plans must be created after a contextual report with a gender focus in the company. If on one side the Law 3/2007 makes it mandatory for companies to elaborate such plans, on the other hand it leaves margin of action to them. Indeed, when it comes to choosing what kind of measures to implement on inequalities’ dynamics, the companies are free to choose what to do or whether to intervene at all. Clearly, this margin of autonomy sometimes even rubs away the main objective of the law itself. This lack of obligation can lead the Company to not implement any equality plan at all (González et al., 2014). This fields of action of the equality plan should include work, personal, and familiar conciliation, such as paternity leaves and gender violence in the workplace (ibd.) Gonzalez and her colleagues (2014) point out how in private firms equality plans have a diversified impact, depending on the context of the firms itself, on the work sector, on the plan’s design and characteristics, and on its application, highlighting that often time it exists a substantial difference between formal and effective equality.

METHODOLOGY

The methodology used is a content analysis of the annual reports of national and international institutions and of the companies operating in the province of Huelva. The gender equality oriented internal policies of the four main companies operating in the province of Huelva have been analyzed. The analysis has been conducted based on the reports that these firms make available online. Indicators of gender equality in the workplace have been formulated according to what stated in the Spanish national framework of the LOIMH, as equality plans. Reports of national and local public institutions served as sources for a crossed and richer analysis. The difficulties encountered mainly regard the type of available information. For instance, when the company has its headquarters abroad, it is difficult to find the exact internal policies implemented in their firm in Spain. Rather, it is more common to find reports on the general gender equality policy that the company officially adopts. So, based on the availability of the online information, we have shrunk the number of case studies out of the ones present in the province of Huelva.

The indicators created to analyze the companies’ reports from a gender equality framework were built according to the parameters used to create equality plans according to the LOIMH and are the following: (1) Access to education, as it is important to tackle vertical segregation in the sector, to empower working women in this area, and to create a more specialized work- force; (2) Female employment access, this parameter works to fight against both vertical and horizontal segregation, and to set new models and standards of reference; (3) Sexual harassment protocols, an equal and safe work environment is important to the

physical and mental well-being of the employees; (4) Social actions for women communities, in the framework of Corporate Social Responsibility (CSR) contributes in the vision and practice of women as drivers of social change, with the empowerment that follows with it; (5) Women health and working conditions, a more equal society also starts from more just maternity and paternity leaves, preventing occupational hazards; (6) Women on boards of directors, this has the potential of directly helping women to flourish under the mentorship of other women, setting new models for social change; (7) Work-life balance, to tackle both kind of segregation, horizontal and vertical, it is important that the company looks at the workers' needs regardless of their gender, so to facilitate an harmonious balance between family and work life; (8) Salary gap, economic independence and fair paid are two fundamentals aspects of an equal labor market and society.

Starting from the premise that there was no information provided online for item 8, "Salary gap", here follows our analysis on how companies are treating gender equalities in their internal workforce. So, in this section the results of the study will be developed, taking into account each company separately.

RESULTS

MATSA

According to the 2019's report, MATSA has 700 employees and 1300 people with external contracts in Huelva, for a total of 2000 employees (MATSA, 2021).

The 80% of the workforce belongs to the Huelva localities closest to the project and a significant part of them have established their residence in the region. A high percentage of the workforce (90%) has a permanent contract. The average age is 42 years in the case of men and 38 years

in the case of women, and around 18% of the workforce is female (MATSA, 2021). Although MATSA drew up its Equality Plan in 2012, an Equality Commission was set up on 2 April 2019.

Access to education:

Career development and talent management. Programs to promote cultural diversity, inclusion, social equality and the protection of human rights.

Female employment access:

Dedicated days of sensibilization during the whole year and designed courses on women's career advancement. Career development and talent management.

Sexual harassment protocols:

Protocol for prevention and action in the event of sexual harassment or harassment for reasons of sex in the workplace, which will enable our staff to know how to act in the event of suffering or becoming aware of such situations of harassment, without having received any complaint for such cases by 30 September.

Social actions for women communities:

Organization of the march for women on the 8th of March.

Women health and working conditions:

Improvement of the Health and Safety System to prevent occupational hazards.

Women on boards of directors:

The director of the company is a woman since 2016.

Work-life balance:

MATSA, in its commitment to work-life balance, aims at facilitating the reduction of the working day for all those workers who need it as long as they meet the legal requirements existing at any given time. Likewise, the working day is adapted whenever possible. Currently, although it is only applicable to technical, management and middle management staff, MATSA has a flexible working procedure through teleworking and/or remote working, depending on the position and always with the authorisation

of the direct manager (MATSA Annual Report, 2019)

Tharsis Mining

This is the only company totally Andalusian, born in 2018. In Tharsis, 13,3% of the employees are women and 86,67% are men. Officially, the firm declares its commitment to the establishment and development of policies that integrate equal treatment and opportunities between women and men, without direct or indirect discrimination based on sex, as well as the promotion and encouragement of measures to achieve real equality within the organization, establishing equal opportunities between men and women, in accordance with the definition of this principle established in Organic Law 3/2007, of 22 March, for effective equality between women and men. Apart from this statement, the information made available are very scarce and do not allow a full analysis of the company's situation when it comes to gender equality (Tharsis, 2020).

Atlantic Copper

Atlantic Copper has been operating in Huelva for more than 50 years now and is a Spanish company whose sole shareholder is the US global conglomerate Freeport-McMoRan, one of the leading natural resources companies in the United States (Atlantic Copper Website, 2021).

Access to education:

Language school for employees and their children; specialization courses and degrees are paid by the company.

Women health and working conditions:

95% of all the employees' meals is subsidized.

Women on boards of directors:

Five women out of ten people constitutes the board of directors.

Work-life balance:

Facilitating total flexibility for working mothers, and the company has increased the amount of maternity leave for its employees by two weeks beyond what is

called for by legislation. The Family Plan: this program gives the disabled children and spouses of employees support in the form of personalized accompaniment, thus providing families with the best resources for their members' development and integration into society and the job market (Freeport-McMoRan, 2020).

As far as the other three indicators are concerned (female employment access, sexual harassment protocols, social actions for women communities) no information is given on their website and annual reports.

Atalaya Mining

Here work 450 employees, 99% of who based at mine site. The company has created the Fundación Atalaya Riotinto in order to try to alleviate the difficulties of the communities coming from living next to a mining site and to pursue some of the company's Social Corporate Responsibility (SCR)'s goals.

Even though Atalaya Mining in the 2018 investors report (2018b) states its solidarity towards gender equality, there is no mention neither of the word "woman" nor of the words "gender equality" or "equality plan" nor in the report from 2018 (Atalaya Mining, 2018a) nor from 2019 (Atalaya Mining, 2019).

Social actions for women and communities:

In this regard, Fundación Atalaya Riotinto establishes cooperation plans with charities, NGOs and local governments that address such issues. In 2019, Fundación Atalaya Riotino has supported programmes to assist people with Alzheimer Syndrome and their families, and the integration of an IT training classroom for people with disabilities. Also, Fundación Atalaya Riotinto has contributed with funds to support the acquisition, by a local charity, of a van that will allow groups of kids from disadvantaged areas to be transported to several educational activities. Atalaya has

also sponsored a charitable golf tournament to benefit Huelva's Food Bank, and has funded activities of Cruz Roja and Cáritas, in cooperation with the local government of Nerva to assist disadvantaged families with food, clothing and educational needs.

Women on boards of directors:

Ten people out of ten are men on the board.

A part from these two, the rest of the indicators yielding to gender equality taken into account in this paper (access to education, female employment access, women health and working conditions, sexual harassment protocols, and work-life balance), no mention is made nor on their website, nor in their annual reports.

DISCUSSION CONCLUSIONS

AND

Despite the enforcement of the law for Women and Men's Equality (LOIMH), implemented in 2007 in Spain, the way towards gender equality in the mining sector in the province of Huelva seems to be still uphill. Fourteen years have passed but not enough has been done apparently, as not only the information provided online on the websites is still scarce about gender related topics, but also when it is displayed, it does not show high percentages of women working in the sector, nor of particular measures implemented in order to facilitate their participation to this sector or to take care of their needs. MATSA is the company that looks like it is doing better than the others when it comes to women inclusion in the industry as it satisfies many of the indicators created, including a harassment protocol to deal with gender-based violence in the workplace.

On the contrary, Tharsis Mining's and Atalaya Mining's reports are greatly focused on financial issues and very little or nothing is said about the female

workforce and the equality plan in their report.

In other words, in view of this preliminary analysis, the gender labor performance of the mining companies operating in the province of Huelva moves on a double plane. On the one hand, the reports to which this team has had access offer a discourse that recognizes the importance of sustainability in the operation. It is a rather general discourse, linking "sustainability" to the elements closest to the environmental (ecological) dimension. The dimensions with greater difficulties of measurability (social and political governance, mainly) are hardly developed. This is really a common problem in most corporate sustainability reports (Siew, 2015), which new national laws (Law 11/2018 on Non-Financial Information) aims to progressively remedy. Additionally, the Spanish LOIMH is a very interesting tool to "guide" the private sector to be more equal. But, even so, not even the LOIMH is enough, as it still leaves a much high degree of autonomy to the firms when it comes both to the kind of measures and the implementation of the equality plans.

The sector has to be progressively incorporated into standardized sustainability reporting on valid and internationally recognized criteria, such as the Global Reporting Initiative's own. However, any informal conversation with company executives, as well as any expression in the media or in any forum related to socio- environmental performance, places social issues in a predominant place in the public discourse. On the other hand, as we showed in our brief analysis, publicly reported data do not show that such discourses have moved from the level of discourse to the level of facts. Undoubtedly, there is still a long way to go in this regard in the mining sector. In addition, the socio-cultural context in which mining companies work is a rural context, with a traditional culture,

where gender roles and the sexual division of labor are very marked (Catalán Vázquez, M., & Riojas Rodríguez, 2015). These are obstacles that hinder gender progressivism in the socio-territorial context of the western world defined as “developed”.

The main global initiative for the analysis of gender performance for sustainability, the SDGs, also manifests several difficulties that hinder detailed analyses. Particularly in the context of corporate performance, the system of targets and indicators is often difficult to adapt to the business context. Here we find a challenge of high interest for analysis and decision making consistent with its conclusions. (Edouard, & Bernstein, 2016; Kraak, Ricker, & Engelhardt, 2018).

The two research projects that supported the appearance at this conference focus on the study of the importance of the gender dimension in sustainability performance, not only in the internal sphere of work performance, but also in the external one, as a driver of risks and social impacts of mining activity. Currently, both research projects develop their fieldwork using qualitative techniques, executing an evaluation methodology referenced in Ortiz, Domínguez-Gómez, Aledo, and Urgeghe (2018).

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The limitations of the research mainly concern the fact that there have not been any interviews carried out to corroborate the data. Moreover, in the remote case that companies may have decided not to display nor discussed at all about their equality plans on their website, the case would be that our paper would be lacking information about the state of art of gender related issues in the specific company.

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REFERENCES

- Atalaya Mining. (2018a) *Annual report*. Available at: https://atalayamining.com/wp-content/uploads/2019/05/ANNUAL_REP_ORT_atalaya-mining-18.pdf. (Accessed: October 21, 2021).
- Atalaya Mining. (2018b) *Investors presentation October 2018*. Available at: https://atalayamining.com/wp-content/uploads/2018/10/October-2018-marketing-presentation-final.FINAL_.pdf. (Accessed: October 20, 2021).
- Atalaya Mining. (2019) *Annual report*. Available at: https://atalayamining.com/wp-content/uploads/2020/05/AM_2019_AnnualReport.pdf. (Accessed: October 21, 2021).
- Atlantic Copper. (2021) *Who are we?*. Atlantic Copper. Available at: <https://www.atlantic-copper.es/en/who-are-we>. (Accessed: October 24, 2021).
- Catalán Vázquez, M., & Riojas Rodríguez, H. (2015). “Inequidad de género en salud en contextos de riesgos ambientales por actividades mineras e industriales en México”, *Revista panamericana de salud pública*, 37, pp. 379-387.
- Consejería de empleo, empresa y comercio. (2020) *Estrategia minera de Andalucía 2020*. Sevilla, España.
- Cuartos, J. (2006) “La igualdad llega a la mina”, *El País*, 14 May. Available at: https://elpais.com/diario/2006/05/14/domingo/1147578758_850215.html. (Accessed: October 15, 2021).
- Edouard, L., & Bernstein, S. (2016) “Challenges for Measuring Progress towards the Sustainable Development Goals”, *African journal of reproductive health*, 20(3), pp. 45-54. Available at:

- <https://doi.org/10.29063/ajrh2016/v20i3.9>.
- Freeport-McMoRan. (2020) *Charging ahead. Responsibly, reliably, relentlessly.* Available at: <https://www.fcx.com/sites/fcx/files/documents/sustainability/2020-annual-report-on-sustainability.pdf>. (Accessed: October 20, 2021).
- Fregidou Malama, M. (2004): “¿Es necesario equilibrar el poder en las cooperativas entre mujeres y hombres?”, CIRIEC-España, *Revista de Economía*
- Gómez Carrasco, I. (2019) “Women-led cooperatives in Spain: Empowering or perpetuating gender roles?”, *REVESCO Revista de Estudios Cooperativos*, 131, pp. 45-68.
- González B. E., Rodríguez Luna, R., Barcons Campajó, M., Garrido Jiménez, L., Puigpelat Martí, F., Giménez Alcover, P., Casa Vila, G. y Ruiz. S. (2014). *El impacto de los planes de igualdad en las empresas.* Ministerio de Igualdad, Madrid.
- Kraak, M. J., Ricker, B., & Engelhardt, Y. (2018) “Challenges of Mapping Sustainable Development Goals Indicators Data”, *ISPRS international journal of geo-information*, 7(12). Available at: <https://doi.org/10.3390/ijgi7120482>.
- International Labour Organization. (2011). *LABORISTA: Base de datos sobre estadística del trabajo [LABORSTA: Data base on labor statistics]*. Retrieved from <http://www.ilo.org/global/statistics-and-databases/lang-es/index.htm>
- Livi Bacci, M (2017), *A concise history of world population*, John Wiley & Sons, Oxford.
- Márquez Macías, R., y Tornero Tinajero, P. (2009), *Minería, población y sociedad en la provincia de Huelva (1840-1900)*. Universidad de Huelva, pp. 379-413.
- MATSA. (2021) *Dossier corporativo 2020*. Available at: https://www.matsamining.com/media/4720/2021_matsa_dossier_corporativo.pdf.
- Mihychuck, M. (2010, February) *Ramp-UP: A study on the status of women in Canada's mining and exploration sector. President Women in Mining Canada. Final Report.* Mining Industry, Human Resources Council, Toronto.
- Ministerio para la transacción ecológica y el reto demográfico (2018). *Estadística minera de España 2018*. Available at: https://energia.gob.es/mineria/Estadistica/DatosBibliotecaConsumer/2018/Estadistica_Minera_anual_2018.pdf.
- Ortiz, G., Domínguez-Gómez, J.A., Aledo, A. and Urgeghe, A.M. (2018) “Participatory multi-criteria decision analysis for prioritizing impacts in environmental and social impact assessments”, *Sustainability: Science, Practice and Policy*, 14(1), pp.6-21.
- Schultz, T. P. (2002), “Why governments should invest more to educate girls”, *World Development*, 30, 207– 225.
- Siew, R.Y. (2015), “A review of corporate sustainability reporting tools (SRTs)”, *Journal of environmental management*, 164, pp.180-195. Available at: https://www.sciencedirect.com/science/article/pii/S0301479715302620?casa_token=dw2wuXOZcsMAAAA:A:vWPSi7D3SF-dnSRbDm1-W2q6GqvYU3Bxwo-717SMFSarGLC-ZGxtUAFMvrs8Svff3pWdyjo_Q.
- Tharsis. (2020) *Memoria annual 2019*. Available at: https://tharsismining.com/wp-content/uploads/2020/10/2020-09-tharsis-mining-memoria-5_revisado-just.pdf.
- Viveros Vigoya, M (2002), *De quebradores y cumplidores: sobre hombres, masculinidades y relaciones de género en Colombia*, Editorial de la Universidad Nacional de Colombia, Bogotá.