



**Undergraduate Dissertation**  
**DEGREE IN BUSINESS ADMINISTRATION &  
MANAGEMENT**

Title: Natura Business Plan

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FACULTY OF ECONOMICS AND BUSINESS  
2020/2021

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## Abstract

For several years now we have been hearing about the strange concept of “working from home”, but what is it really about? How is it viewed before and after the Covid crisis? Was it a luxury before and now an obligation?

The first point will talk about the real company which will be studied later. We will talk about the history of the company, explain the concept of a B Corporation, since this company is one of them and its values. Following this, we will dive into the company’s sector which is the renewable energy sector emphasising in its future and the impact of the crisis as well as the skills and jobs needed in this sector and the great issue of gender inequality.

Afterwards it will be divided in the perception of working from home before and after the Covid crisis. In the past, we will talk about the proper definition of this term, organizational factors and job characteristics. While in the after, we will read about its shift, as well as the terms of e-commerce, automation and digitization, transition in job skills and the future.

This paper also will report the results obtained in a survey done in the firm previously studied, about what the workers think regarding working from home. And finally the conclusions.

## 1. Introduction

As we all know these past two years have been really difficult for everyone. Some people have lost family members, some others have lost their jobs and some of them are still looking for one. As a student myself, I also had some struggles, online classes, not being able to concentrate while being at home, and online exams. So I thought about digging into this topic and learning more about how this situation affected people in specific sectors and regions as well as know what real workers thought about this.

I was really interested in this topic as I have said before since I am going to enter into the labour market and I wanted to discover what was in store for me and future generations. That is why I decided to divide the topic of working from home in two blocks, before and after the Covid, since I assume that we would approach this subject differently. As with everything in life, there are millions of opinions, but from my point of view, working from home before was almost viewed as a luxury while now it can be an obligation in some cases and a punishment in others.

I was lucky enough to be in touch with an amazing company where I could put all my acquired knowledge to good use and have real opinions. This part of the project was also really enriching and overwhelming since this firm is big on working towards a better future for everyone and working together. This was expressed in their values and also in their B corporation certification. To know more about this company, we had to also learn more about the sector where it operates.

### 1.1 The company

#### 1.1.1 History

Natura Medio Ambiente was born in Zaragoza in 1997 when the founder, Luis, decided to create a company that could take into account the social and environmental factors and make a big positive impact on society.

At the beginning Natura was created to make an industrial environment, go to the companies, study and help them, manage industrial waste, etc. After doing some projects, one of the owner's most important clients called him at 7pm asking him if they knew how to do environmental impact assessments and after thinking about it for a few seconds he answered that they did so he got a meeting first thing in the morning the next day. He went to a bookstore, bought three books about environmental impact assessments and studied them all night. The next day he went to the meeting without an ounce of sleep and got the job. That is how the real purpose of Natura was born.

Luis, owner and CEO of Natura, has always been a risk-lover so he started to think about expanding beyond Zaragoza. First nationally, he opened branch offices in Salamanca, Santander, Madrid, Barcelona, Valencia and Seville. Although after the 2012 crisis he reduced again and went back to just Zaragoza's branch office.

Afterwards it was time to expand internationally, that was when in 2008, Bulgaria became a reality. After months of studying the different locations he could open another branch office in, he started thinking about Latin America but there was not any work there yet. One client told him that he did not have work for him there yet but maybe he could be interested in working in Bulgaria. So he decided to open in Sofia, the Bulgarian capital. They had two really good years there until Europe cut cohesion and infrastructure funds to Eastern European countries. Bulgaria is left with just two wild farms.

Things kept going well in Spain so he decided to do another market research as to where Natura should go next, but this time it would be outside of Europe. He started marking trips to Mexico, as he thought it would be a great place to start developing a web of connections all through Latin America. Mexico was the best option in Latin America since they were going to launch several public international contests in energy purchase by renewable enterprises. They could do a great job there and apply all the knowledge acquired in Europe.

In 2008 the financial crisis hit. Natura still had several jobs at the beginning and kept maintaining its good position in the renewable sector. Until the crisis of that sector happened so in 2014 the CEO was left with two different options. The first one was to stop working, shut down the firm and start looking for another job. And on the other hand, he could leave everything behind and just start making contacts and working in Mexico. This was a really tough decision, since he almost did not know anyone over there, and he had to leave all of his family in Spain. But he was a firm believer in himself and in that Mexico was going to become a reality and that they could have a lot of work there.

The first few months in Mexico were devastating since even though he had started making trips there it was still a new country and a new culture. Little by little things started to improve, he started making connections and even helped in founding the Casa Aragonesa in Mexico to help other people from Aragón to connect with others from there. Mexico starts to grow and he participates in development efforts in the Spanish Chamber of Commerce in Mexico as a counsellor.

After the success there, they started to invest in other Latin-American countries. In 2014 they opened in Chile since there was a big potential for growth and work opportunities. They assigned a director there but some years later they discovered that he was trying to take over their clients and projects to open up a firm of his own. So this ended up in a lawsuit against him. Nowadays Chile has been reactivated due to social protests and the pandemic situation.

The next country was Colombia, which opened in 2018. It was a total success from the start, with great future possibilities. At the moment there are a lot of projects in the making and it is a country really potent in the environmental sector.

Just before the pandemic started, in 2020 they also opened in Peru. The first projects are coming in and things are apparently going with no problem.

At the present time Mexico has stopped all of its work since the president is against renewable energy. Nonetheless Natura keeps its position with the same number of workers and characteristics thanks to the projects that have been in the making until now. There are good prospects about its unblocking in the near future.

They are present in all the countries mentioned before and they count with around 200 employees all around the world.

### 1.1.2 B corporation

Many people may not know yet what a Certified B Corporation is, what they do or why they are so important for society, especially nowadays. On a daily basis we may even consume products from these firms and brands without realising. Some big firms that are certified as such are for example Ben&Jerry's, Danone or Central Lechera Asturiana.

But what are they really about? According to their own webpage: "Certified B Corporations are businesses that meet the highest standards of verified social and environmental performance, public transparency, and legal accountability to balance profit and purpose. B Corps are accelerating a global culture shift to redefine success in business and build a more inclusive and sustainable economy."

They also acknowledge that apart from Nonprofits and governments they are also crucial in the fight against social inequality, health problems and poverty among other serious problems that should concern all of us. It is a community of enterprises that look beyond monetary profit and want to also make a positive impact for everyone and use those profits and growth to a greater end.

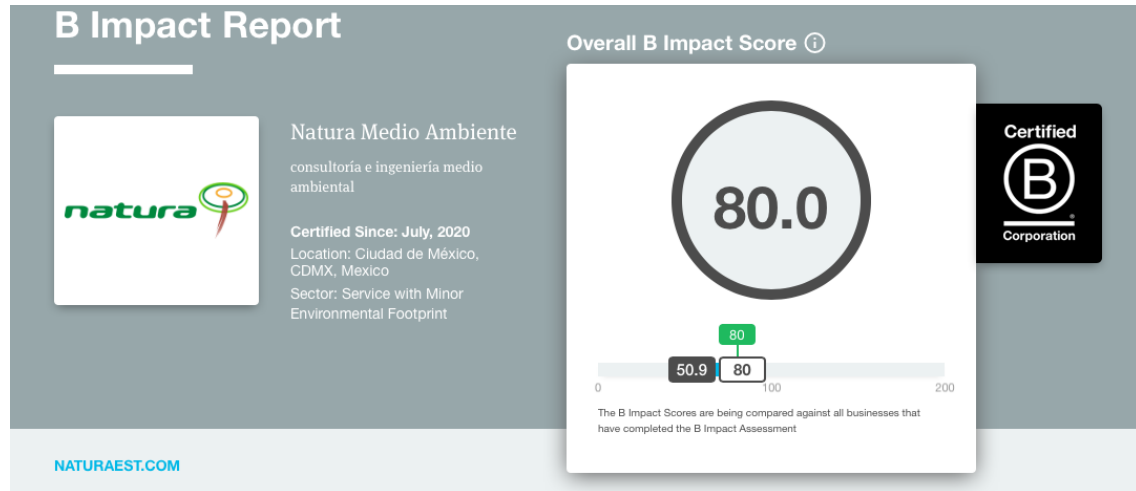
To be certified after an in depth evaluation they must have verified performance, legal accountability and public transparency. They do not value just the product or service offered by them but also the positive impact of the firm.

Natura is a company that from the beginning, its main focus has been social and environmental aid in addition to a consistent internal cooperative approach and



teamwork. Therefore, they have always belonged to the ONU (Organización de las Naciones Unidas) through the United Nations Global Compact for Business Ethics.

Several years later the next step was to become a B Corporation.



### 1.1.3 Values

The most important things in life are not actual things. First of all is family, be able to have a good and healthy relationship with them, take care of your parents and make life easier for your brothers and sisters. Then are the rest of the people in your environment (a maximum of 200 relationships), fruitful relationships. And finally to transcend, find the most valuable and better people and teach them the knowledge for human development.

You have to have merits to know what is really important in your life and take extreme care of the following five relationships: parents/kids, partner, brothers and sisters, workmates and friends.

A leader has to give examples to others, otherwise even though he may give orders the rest will not follow him. He does not have to worry about not having enough workers but for the team to be organised. Leadership goes beyond having the most resources but instead to have peace and harmony. Finding a leader to give them responsibility is easy, what is really difficult is to find a leader who will act in a beneficial way for the rest of the group. Their function must be a continuous work of finding the best solution for everyone, or trying to.

He must be generous without overspending, to get people to work with joy, to wish without greed and to be authoritarian without brutality. He must not be cruel or oppressor;

he must help and support the others. If a person is new in Natura and he does not have the support of the rest of the employees, we will not be able to lead.

Regarding the actual team, preparation leads to success and lack of preparation to failure. Every important matter has to be studied meticulously, examine it rigorously, distinguish it clearly and practice it with dedication.

In a developed company, our journey towards inner righteousness, prompts an introspective search of who we really are and our purpose in life. Our goal in life is not being successful or being loved but to turn into the most authentic expression of ourselves, living from a true individuality.

In Natura life is considered a personal and collective journey towards our own true nature.

## 2. Renewable sector (And Spain vs Mexico)

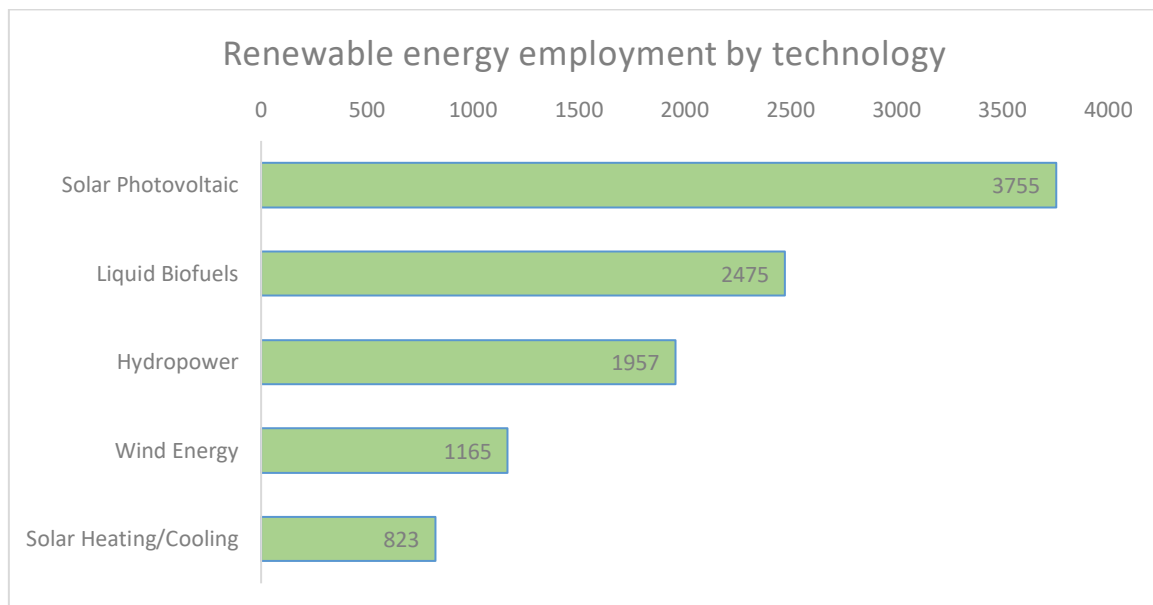
### 2.1 Intro

The renewable energy industry belongs to the energy sector but is focused on innovative and appropriate renewable energy technologies. This industry has been looked upon as an emerging industry but has quickly turned into an expansive and important industry since a lot of countries started to heavily invest.

IRENA (International Renewable Energy Agency) is an intergovernmental organisation that supports countries in their transition to a sustainable energy future and serves as the principal platform for international co-operation, a centre of excellence, and a repository of policy, technology, resource and financial knowledge on renewable energy. And according to Francesco La Camera, its director-general, during these difficult times due to the coronavirus situation a relationship between the natural environment, our economies and human well-being is crucial. Now more than ever renewable energy has to have a big impact in society and we need the use of clean, healthy, reliable and durable energy supply.

As shown in the IRENA's annual review for 2020, there is an estimation of 11.5 million renewable energy jobs in 2019 (increasing from 2018 when there were 11 million), and 32% of those are held by women. And 63% of the total jobs in this sector are in Asia. Also there has been an increase in employment offers specially in solar photovoltaic technologies, with 33% of total renewable energy workforce.

**Figure 1.** Renewable energy employment by technology (*In thousands of jobs*)



*Source: IRENA*

In the top three renewable energy employment by technology we have solar photovoltaic, with 3,755 thousand jobs as previously mentioned. Then liquid biofuels with 2,475 thousand and in third place hydropower with 1,957 thousand jobs, wind energy with 1,165 and 823 coming from solar heating and cooling. There are few more but with not that many jobs.

It is interesting to see that neither Spain or Mexico are in the top ten countries regarding the three biggest kinds of renewable energy: solar photovoltaic, liquid biofuels and hydropower. In both Solar PV (photovoltaic) hydropower the country with the most jobs is China followed by Japan in the first one and by India in the latter. And in Liquid biofuels the first country is Brazil and then Indonesia.

But afterwards we have wind employment where Mexico is the 7th country with more jobs followed by Spain in the 6th place.

Spain had had a pretty stagnant sector until recently when a new dynamic has been incorporated due to several enforcement of laws in the EU's Renewable Energy Directive in all levels additionally to a growing interest from both public and private sectors. The Spanish Association of Renewable Energy (APPA) has declared a 10.7% growth in real terms in 2018 in this sector. The APPA also highlights that the largest employers in Spain were biomass, wind energy and solar PV, in total this sector employed more than 80,000 people in 2018. There was also an increase of 3.3% in employment, wind energy was the one which created the most jobs followed by solar PV and biofuels.

The largest installed solar PV capacity's region is located in Mexico, above Chile and Brazil. This energy grew 1.9 GW in 2019 and estimated an amount of more than 50,000 jobs. Although the Instituto Nacional de Estadística y Geografía in Mexico (INEGI) acknowledged in 2020 a lower direct and indirect solar PV employment, less than half of the amount from the previous year.

## 2.2 The future of the sector and the impact of the covid'19

Like every other sector, the renewable energy sector is adapting little by little to the “new normal” adapting itself to new restrictions but there are still a lot of uncertainties still. The pandemic situation has had a big impact all around the world and especially in the expansion and creation of clean energy technologies. From February until Mayor June many countries were strictly in lockdown which caused the delay or cancellation in construction of renewable energy installations. Since then things have been almost turning back to normal regarding construction, policy implementation and such, adapting and modifying to maintain the health restrictions.

In spite of all these implementations due to the health crisis, the prosperity and the future of the energy sector is still the same. Solar PV and wind farms are in most countries the cheapest way of plants that generate electricity. Also total installed capacity for both of them is supposed to be higher than gas and coal in 2024.

Additionally, renewable energy will become the largest source of electricity for the whole world in 2025, surpassing coal.

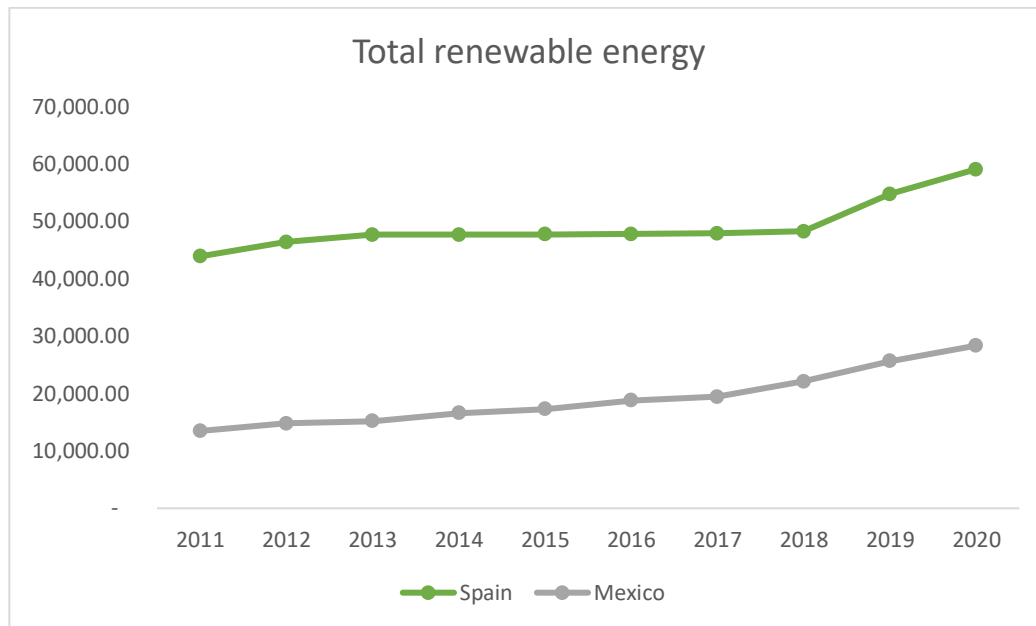
There is also an accelerating energy industry convergence. Renewable growth may increase in 2021 as according to the Paris Climate Accord, \$2 trillion are being invested in clean energy and to not have carbon in the power sector by 2035 to try to have zero carbon emissions by 2050.

For a while the industry was mainly set on solar and wind but due to new technologies we have more clean energy sources. Thanks to an increasing demand in the renewable energy sector, electric transportation and some other factors are helping the industry convergence. Governments will want to meet climate change goals which will increase the investment in the energy sector. As well as the creation of new economies that will help reduce carbon emissions such as the hydrogen economy, expanding clean energy infrastructures. A big factor will also be the digitization of supply chains; companies adjust themselves for a post-pandemic area.

Smart policies can create a change in the right direction in terms of everyone's behaviour. More and more people are working from home more and travelling less, even if it is for work or for vacation, people buy less and if they buy something is usually online

shopping. Changes like these may have a positive impact in the long term if people keep acting like that after the crisis. Thanks to some policies, people use more public transport or just walk instead of using a personal vehicle. Small changes like those can have a big impact in the future.

**Figure 2. Total renewable energy**



*Source: IRENA*

As we can imagine, Spain has almost double the renewable energy than Mexico. Both countries have been pretty stable until 2018 where their energy capacity increased. We can assume that it will continue doing so in the future.

Spain is working towards its targets for 2030, especially in the electricity sector. And also for the goals for 2050 of 100% renewable energy in the electricity mix and 97% renewable energy in the total energy mix. Although Spain's total energy has still plenty of fossil fuels, it is determined to work towards its goals for a future without carbon, especially in the transport, industry and buildings sector.

For Mexico, its energy mix is mainly oil and gas, even though its demand for the electricity sector has been growing 1.6% yearly on average. Oil accounts for almost half of its energy mix and although it has decreased scientifically over these past years it is still much higher than other countries from the International Energy Agency. But thanks to their good resources and targets towards clean energy and pairing it with improvements in productivity, this will drive economic growth. As a result, energy demand is set to increase significantly.

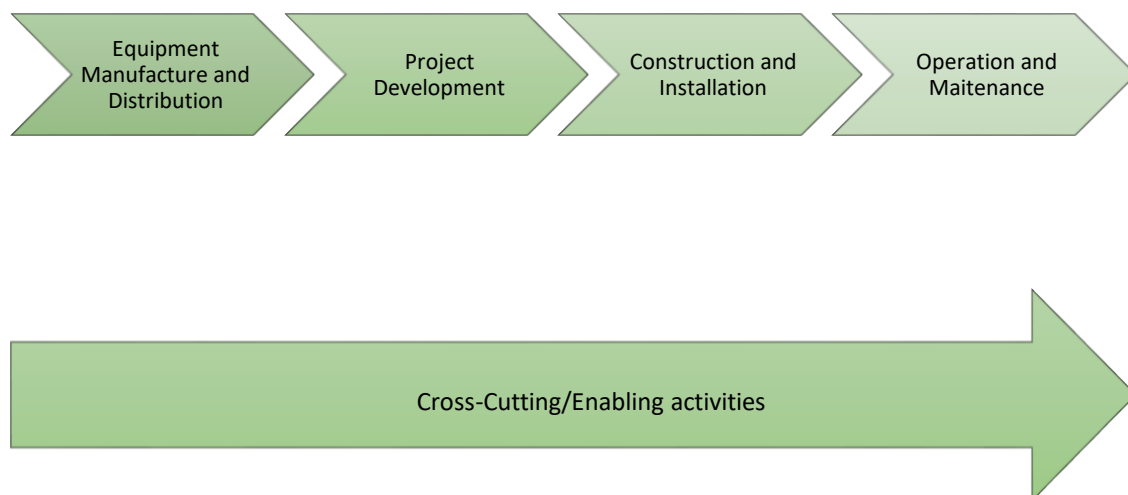
### 2.3 Skills and jobs in the sector

As an evolving and relatively new sector as the renewable sector is, we can expect to have many opportunities and even many new job prospects. Those with careers in this specific sector are creating a better world for everyone in the near and long future as well as creating new ways of energy. From solar panels or wind farms to hydropower or liquid fuels, there are thousands of distinctive jobs in the renewable energy sector and also several sectors within.

It is estimated that with strong policy support, up to 2.1 million people can be employed in wind energy, and 6.3 million in solar photovoltaic by 2030, there will be approximately 12 million biofuel-related agricultural and industrial.

This sector has four major elements to its value chain:

**Figure 3. Renewable sector value chain**



*Renewable energy value chain. Source: ILO*

All renewable energy sub-sectors require big investment in terms of capital equipment, which is provided by equipment manufacturers. Such as wind or water turbines, solar panels and biomass biogas digesters.

A big part of this value chain is the involvement in the project development stage, during which project design, planning and other regulatory permits should be carried out, and negotiations should be conducted with regulatory agencies.

Any major renewable energy project requires substantial investment on the site,

equipment preparation, installation and commissioning and most projects. This state is where most people are hired.

After being installed, there is only to operate it and obviously the maintenance.

According to the International Renewable Energy Industry Alliance (Ren-Alliance) these are the most difficult occupations to fill.

**Figure 4. Occupation by sub-sector**

Sub sector	Occupation
<b>Wind energy</b>	Project developers, service technicians, data analysts, electrical, computer, mechanical and construction engineers
<b>Solar energy</b>	Photovoltaic and solar thermal system installers and maintainers, building inspectors
<b>Hydropower</b>	Electrical and operations and maintenance engineers, technicians, tradespersons, sustainability specialists
<b>Geothermal</b>	Trainers, geothermal engineers
<b>Bioenergy</b>	R&D and design engineers, service technician, trainers

*Source: REN Alliance survey*

Something that affects the renewable energy sector is the shortage of engineers in many countries but especially in Europe which may be because of students' preferences. Technical specialists in a variety of renewable technologies are needed. Also qualified design engineers are essential, they need to have specific knowledge.

A huge lack of qualified trainers has been recognised in all energy sub sectors which can interfere in the development of this sector. According to a survey done by UNESCO on *Key regional initiatives in energy education in Asia and their contribution to sustainable development in the region*, the problem being a shortage of qualified teachers and supporting staff.

A variety of core skills are indispensable to work in renewable energy. Environmental awareness and personal enthusiasm are very desirable attitudes to have and to convince potential customers according to the Austrian Public Employment Service.

This table shows the degree of weakness of core skills among renewable energy workers in all countries consulted.

*Figure 5. Degree of weakness of core skills among renewable energy*

	Skilled/Semi-skilled Labour	Management/ Professional
<b>Strategic and leadership skills</b>	High	Medium
<b>Environmental awareness and attitude/willingness to learn about sustainable development</b>	Medium	Low
<b>Coordination, management and business skills</b>	Low	High
<b>Systems and risk analysis skills</b>	Low	High
<b>Innovation skills</b>	Low	Medium
<b>Interpersonal communication and negotiation skills</b>	Low	Medium
<b>Marketing skills</b>	low	
<b>Foreign language skills</b>	Medium	Medium
<b>Interdisciplinary skills</b>	High	High
<b>Advocacy skills</b>	Medium	Medium

*Source: REN Alliance survey*



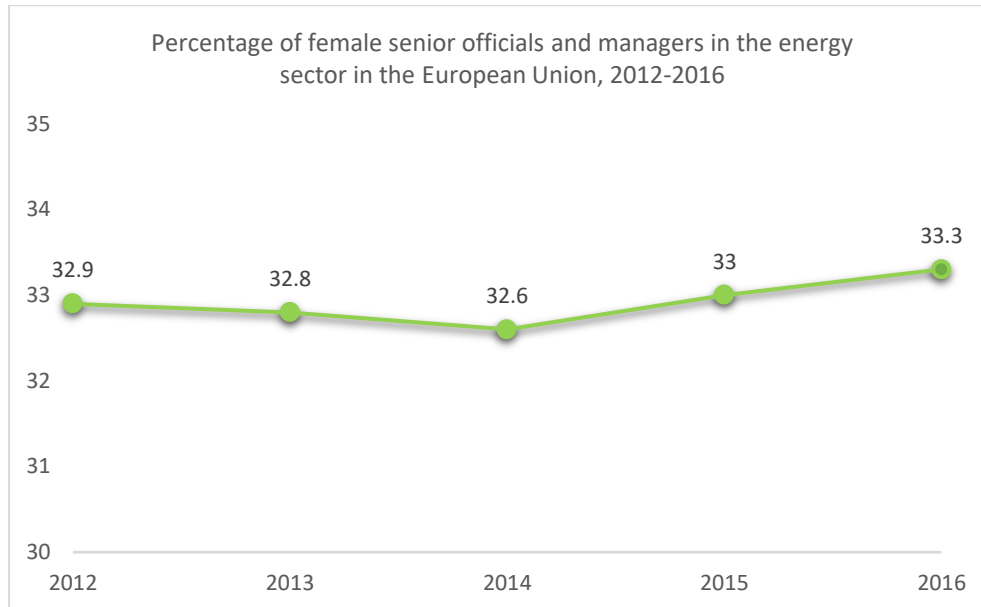
## 2.4 Gender inequality in the sector

Women are key in innovative and inclusive solutions but unfortunately the energy sector is one with the largest gap between men and women. Although the number of female inventors is increasing across different technological sectors, according to the European Patent Office's World Patent Statistical Database, women are less likely to be listed as inventors in the energy sector.

In 2010, a new initiative of the Clean Energy Ministerial (CEM) to raise international collaboration and participation of women in the clean energy transformation was created, called The Clean Energy, Education and Empowerment Programme (C3E International). Women only account for 22% of the energy sector (despite being 48% in the global labour force), and the number decreases if we talk about management levels.

Not many women reach senior roles in the energy sector especially if we compare with other sectors. As we can see in the chart below, the percentage of female senior officials and managers in the Energy Sector in the European Union has slightly increased in the last few years but we still have a long way to go.

**Figure 6.** *Percentage of female senior officials and managers in the energy sector in the European Union, 2012-2016*



*Source: IEA*

According to The Boston Consulting Group and the Women in Energy Association, they have studied the gender diversity problems in the three major stages of female careers granted in the energy sector.

The first one is the incorporation of women into the sector, this industry does not succeed in attracting high-qualified females at the entry level. Then in terms of providing them with opportunities in the long-run, they do not succeed since they have problems keeping them in mid-career. And finally they do not offer them and make them take part in senior leadership, they tend to not grant them opportunities to those looking for promotions.

Some reasons for these struggles may be due to the low number of female students in majors of the sector. But the main problem resides in the lack of gender diversity and equal opportunities, as we have said, especially in this sector.

### 3. Methodology

At the beginning, I did not know much about the topic I have chosen to write about, so the first thing I did before writing anything was to gather as much information as possible and to educate myself to know more about it.

I knew I wanted to do a case study about a real firm, and acquire information from that. I divided the paper in two main blocks, one talking about the firm itself and its sector and the other more theoretical part about working from home before and after the Covid crisis.

As I have previously mentioned, I was lucky enough to be able to get in touch personally with the CEO of Natura Medio Ambiente, the company I talked about, so I gathered some information about them by talking to him and interviewing him. As well as information about its values and the great impact of companies that take part of the B corporation.

The International Renewable Energy Agency (IRENA) and the International Energy Agency's reports (IEA) were my biggest allies in learning more about the renewable energy sector. Additionally, the graphs made thanks to that information were really hopeful to have a broader and more descriptive view. I also learned the great issue about gender inequality especially in this sector.

In terms of Working from Home (WFM) information, the McKinsey report about the future of work after the Covid was really useful to have a glimpse about what the future will look like and the prospects of the labour market in the short and long term. I wanted to show the clear differences between the job characteristics before and the shift in job transition after.

Finally, the most practical part was the survey done to know the opinions of real workers in a company about working at an office and remotely. It was important to not just have a theoretical perception but also a more realistic point of view. I decided to do a survey since it was the most fitting tool for the kind of information I wanted to collect. The main goal was to have as many responses as possible and specific questions, in several I used a numerical scale (from 1 being a little to 5 being a lot). Additionally, some control questions were asked to know the gender and range of age of the worker.

## 4. Working from home (WFH)

### 4.1 Intro

We may think that the term “working from home” is relatively new and has just appeared thanks to the pandemic and because we didn’t have any other form of working during the lockdown. Most people were happy at the beginning of just staying at home with their families, having meetings in their pajamas until time passed and I think everyone was at the turning point of going mad. So, is this concept really new? What does the future of working look like?

If we research a little bit we can find for example some articles from Harvard Business Review in 2014 where the title was “To Raise Productivity, Let More Employees Work from Home “. This article talks about a study done by professor Nicholas Bloom and graduate student James Liang, co-founder of Chinese travel website Ctrip, gave the staff at his company the opportunity to work from home for nine months, so half of them worked from home while the other half remained at the office.

The results of this experiment were remarkable, not only the workers working from home saved almost \$2000 for the whole duration of the experiment but also they were happier, more productive and less likely to quit their job.

But how can we know and measure the satisfaction and perceived productivity when professionals work from home? A study was carried out to examine four main factors on WFM for employees from several Australian organizations. They evaluated factors such as organizational, job, individual work style and household characteristics.

### 4.2 Organizational factors

First we have the **organizational factors**, which consists of six organizational factors that affect WFM.

- Management culture: this goes back to the actual culture of the firm and the leadership style. Whether the organisation is more traditional (hierarchical, autocratic, power distance) or more entrepreneurial (flexibility, innovation, creativity). Laissez-faire decision-making style leads employees alone to make the decisions on their own, the leader provides some guidance but lets them decide what is best. When mentors provide good guidance, performance tends to increase. The first type may derive from lack of motivation and decrease of creativity by the employees. A non-traditional management culture is expected to have better results if working from home than a more traditional one.

- Technical support: as we can imagine, we do not have the same resources at home than at the office, so the better the technical support, the better the results.
- Manager's trust: it is really difficult to measure trust, it is personally between employee and manager. But in this case, which is the manager's trust on the employee working from home, if the employee feels as if they have their superior's trust they will perform better and facilitate their job. The more trust in the employee, the better the outcome.
- Human resource support: Human resources has a relevant part in welcoming new employees and teaching them about the firm's culture and how things are specifically there. But it is important to highlight that the culture related to WFM can change the aftermath for employees. So as they have a big impact on them, they must proceed with precaution and anticipate their needs, establishing some measures or policies for everything to go smoothly for people working from home.
- Financial support: working from home may be beneficial financially speaking for both employer and employee. For the employee mainly because they save the cost of transport which sometimes can be very high if we put it into perspective. And if less people work at an office, their employer can reduce the space used and some others. But the tricky thing is that some costs may shift from employer to employee, for example all the utilities needed, paper, equipment, ... So they have to take that also into consideration in terms of financial support.
- Training for WFM: it normally may involve teaching them the use of technology, how to work from home or occupational health and safety (OHS). Managers and other workers must be trained also; this can be beneficial for all of them.

### 4.3 Job characteristics

Then comes the **job characteristics**. There is lack of evidence about a clear relationship between WFM and particular job characteristics. As you do not have social interactions in WFM, the job should be interesting and motivated for the employee. Also due to this, jobs that you complete fully yourself (task identity) are more suitable for WFM contrary to teamwork, which can be more difficult to perform. It is also highly advisable that a manager or agents take a look at their work and give them feedback about it since that is a way of measuring their performance, or for the worker to feel a part of the company even if they are not physically there.

In the case of working from home, we must have a clear balance between our work and home life to not overdo it or go crazy. Depending on how it is managed this issue, we

came across several **individual work style** that will be helpful and beneficial if they are followed.

First, it is really important to play the day, they may not have the structure or support that they would have if they were working in the office. Then, talking about overdoing it, they have to know when to stop. Since they are working from home, the line may blur and as they are already home they can work more, so they have to be aware of that.

In terms of balancing both their work and their own life, they should do something different instead of similar activities, they may do the actual work itself at home but meet with colleagues sometimes afterwards. And finally if they are working, they are working, that means that it does not matter that they are at home, they may be isolated to not be bothered but external agents such as family members.

Another big impact are **household characteristics**; it has been studied that these factors may act as barriers for some workers. This goes hand in hand with the example mentioned before, for concentration purposes they need to avoid interruptions that may distract them. Some of these factors may be for example if there are children at home (their age, if they go to school...), the size of the household, if there are other people apart from the worker...

## 5. Working from Home after Covid

### 5.1 Intro

As we can imagine working from home is viewed differently before and after the pandemic. Before, it sounded almost like a blessing in disguise while nowadays people are not so in favor anymore. There were some trends accelerated by the Covid-19. Remote work was the first one, between 20 and 25% of workers (in advanced economies) were able to work remotely more than three days a week on a long-term basis. These economies with a bigger share of jobs computer-based have a higher potential to work from home than emerging economies

The digitization, it is obvious that as we were not able to leave our homes and we were even afraid, there was a huge growth in e-commerce and digital platforms.

And finally automation, increase in the creation and use of robotic process automation.

A transition in occupation may increase by 25% by 2030. This pandemic has made all of us more aware about the importance of physical proximity as a factor shaping the future of work. Work arenas with high physical proximity were one of the most affected in the short term during COVID-19 and some of them will continue with these effects.

## 5.2 E-commerce

As more people are working from home, e-commerce and other virtual transactions are increasing simultaneously, creating increased demand for independent professionals working project by project (also called gig work). However, many of these jobs do not provide career progression or some additional benefits that normal jobs may offer.

In 2020, the share of e-commerce in retail sales grew at two to five times the rate before COVID-19, increasing its share of total retail sales by several multiples. A lot of people, for example, started to order their groceries remotely from an app.

There has been a shift to digital transactions with a growth in delivery, transportation and warehouse jobs, while a decline in in-store retail jobs such as salespersons. A lot of physical stores will close down, an example of this is Zara. According to some news, this group will close around 1200 stores worldwide due to this crisis and its consequences.

After a study on year-over-year growth of e-commerce as a share of total retail sales in percentage points we discovered that Spain grew 4.7 percentage points from the annual average in 2015-2019 to 2019-2020, growing even more than what was expected as projected for 2019-2020 based on trend growth.

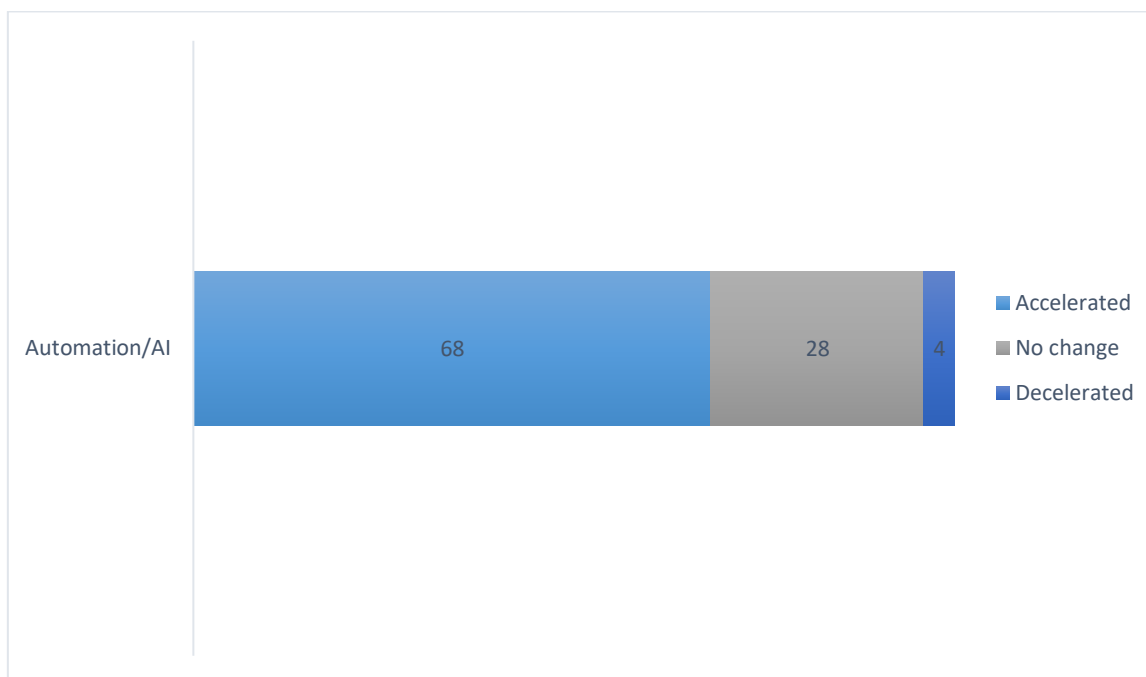
## 5.3 Automation and digitization

On the other hand, although many companies have decided not to increase spending during the pandemic, investment in automation may grow during the recovery. In a global survey of 800 senior executives made in mid-2020, 2 out of 3 answered that they were investing more in automation and artificial intelligence (AI). Research shows that faster adoption of automation, AI, and digital technologies is likely to be concentrated in specific use cases, reflecting priorities related to COVID-19. The use of AI in automation in warehouses and logistics is typical, but it is expected also for work arenas with high levels of human interaction and contact to have a big acceleration in adoption of automation and artificial intelligence.

In a survey made by McKinsey Global, they wanted to prove that executive say that Covid-19 is accelerating adoption of automation and digital technologies, that is why they asked 800 persons the following question: Since the start of the COVID-19 outbreak, how has your company's or business area's adoption of the following technology trends changed?

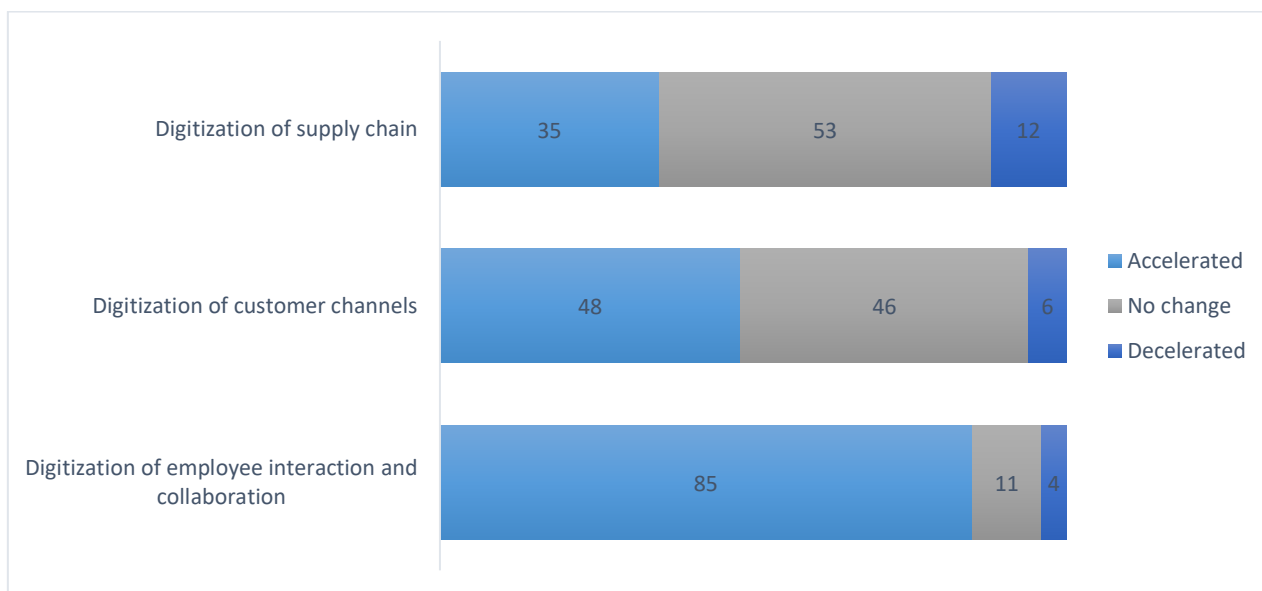
## Automation

*Figure 7. Automation/AI change*



## Digitization

*Figure 8. Digitization change*



*Source: McKinsey Global Business Executive Survey*



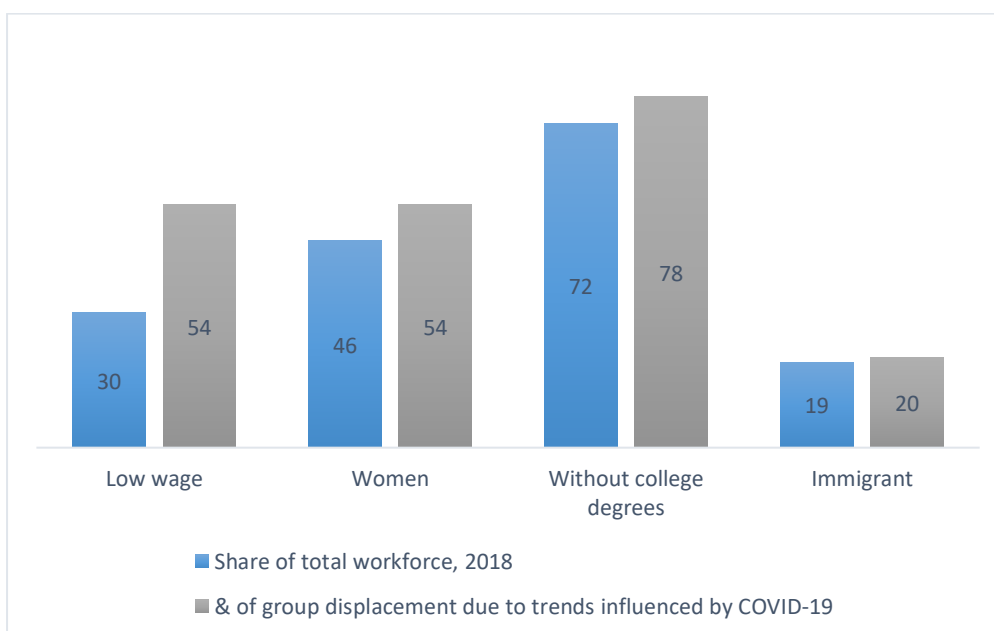
This crisis may be different from past ones, as this one impacted especially service sectors as well as small and medium enterprises. But we also talk about the acceleration of other sectors such as the automation one as we can see in the graphs above.

The adoption of automation and AI is likely to accelerate most in work places with higher physical proximity. It is estimated that by the year 2030, the percentage of workers being replaced by automation in the United States could go from 20 percent before the Covid to 28 percent after. Positions such as cashiers, salespersons, bank tellers, had high automation potential before, but now it is even more important to reduce human proximity.

#### 5.4 Transition in job skills

The impact and consequences of Covid-19 on every market has resulted in a great transition for workers to new occupations. This change is the repercussion of worker displacement in the post-Covid-19 situation and big declines in some jobs. This risk of displacement is especially notable in women, younger and less educated workers.

**Figure 9.** Displacement of workers by 2030 due to pandemic-influenced trends, compared to share of 2018 workforce



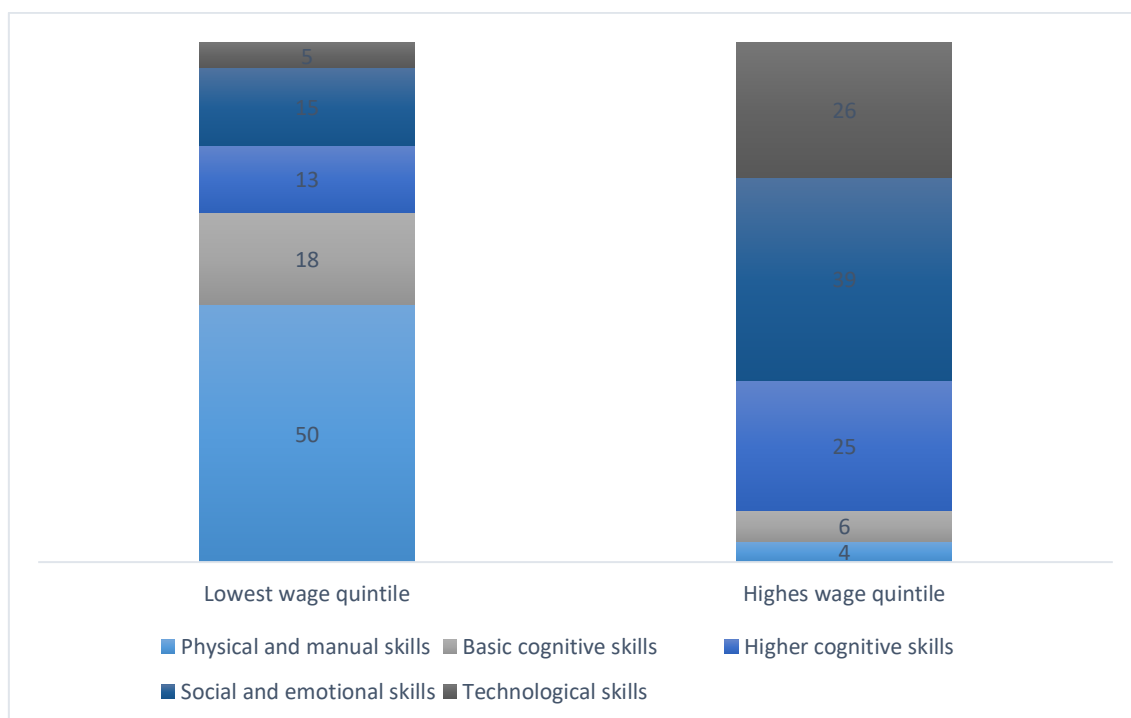
Source: McKinsey Global Business Executive Survey

The effects of this crisis can result in the increase of the number of women, younger workers with lower education and immigrants that may need to change occupations. This number in Spain as well as in other European countries such as Germany or France may increase by 24 percent on average after the influence of the Covid-19. 41 percent more women in Spain might need to change their occupations in comparison to just 10 percent of men. Approximately 30 percent of workers with a low level of education may have to change their job, compared to just an 8 percent of workers with higher education. And in terms of immigrants, 25 percent may need to change occupations.

We also have to highlight that low-wage workers are more likely to need to switch occupations than middle and high-income workers. There may also be an increase in demand for higher skilled jobs.

Additionally, a shift in the type of skills that companies may ask the workers to have will appear. A demand for technological and social emotional skills will grow, while demand for basic cognitive skills will decline.

**Figure 10.** Time spent using skills in each skill category by wage quintile in the United States



Source: McKinsey Global Business Executive Survey

We can see a clear difference between the type of skills needed and used depending on the level of wage. And in the post-Covid situation, we find a clear demand for social and emotional skills as well as technological skills, especially for jobs with high wage quintiles, in the US they could increase up to 25 percent.

## 5.5 The future

Some things have to change moving forward, business executives and policymakers have plenty of alternatives to help workers make this shift in terms of skill transition after the Covid. Although this crisis has shown us that workers and companies are really capable of adapting faster than we thought. We have several examples.

- Businesses have an opportunity to rethink where and how work is done. Agility to retrained and redeployed workers according to the situation presented.
- Deciding who can work remotely by focusing on activities instead of the whole job. Companies have to study the roles that can be done remotely and which ones have to be face-to-face. Some institutions even gave employees “work from home” packages (such as laptops, cameras...)
- Focusing on skills instead of on academic degrees when recruiting can decrease occupational transition. This can increase the number of job candidates and its diversity. The US Business Roundtable is even encouraging enterprises to focus on skill-based hiring, this requires the ability to identify and verify those skills.
- Expanding workforce benefits and protections to cover independent workers. As mentioned before, many gig workers do not have the same benefits that they would have having a normal job. During the crisis many were given similar benefits temporarily
- Supporting lifelong learning and expanding mid-career training options. We do not have to stop learning just because we are not in school anymore, education not only occurs early in life. Mid-career workers especially need short-term education programs to keep learning and growing.

- Lowering barriers to physical and occupational mobility. Some workers may not be able to move locations easily which affects the adjustment to rapid changes in labour demand. It is stated that in the US, the greater the permission requirements for a job, the lower the mobility of workers between occupations, this can increase costs for customers.

These inconveniences are going to affect the majority of workers which will turn into disadvantages. Companies and the governments will have to help the workers in this transition.

In Spain specifically, the long-term effect of the crisis is expected to be less impactful than in other advanced economies. As we have mentioned in previous sections, e-commerce grew tremendously during the pandemic (for example grocery shopping). Only 18 percent of Spaniards could work remotely most of the time, this is an average lower than in other countries. As it was predictable, the sector with highest positive net employment change was the health sector and the most punished was the food service. With all the job adjustments talked about before, we all will have to give the best of ourselves towards a better future for everyone.

## 6. Discussion and conclusions

We have seen that the renewable energy sector has really suffered thanks to the Covid-19, nevertheless it is expected an accelerating energy industry convergence. Also, renewable growth may increase in 2021 according to the Paris Climate Accord, so we can talk about an expansion and bright future for this sector. In addition to this, we have highlighted the importance of clean energy and sustainable options, as well as the impact that B corps can have in all of this.

Companies with good values and a mindset that goes beyond thinking just about profits and money but instead taking care of the people surrounding them and the environment are the future.

In terms of working from home, we can observe a clear difference in how the subject is being approached before and after the crisis. Before all of this, this concept seemed like a novelty and we were still trying to discover how that would work, but after the crisis it was not anymore about an option but a necessity. There was a shift in the job transition and during the lock-down everyone except health workers and some others were forced to work remotely. Companies nowadays ask for technological and social emotional skills more than before.

We can talk about an increase in digitization, automation and e-commerce, even though most firms are not spending money on anything at the moment, the investment in those three sectors is growing. During this time people have realized that they do not have to go out for simple tasks such as grocery shopping, and can just order it online from an app. It is expected than in Spain only 18% of workers will be able to work from home most of the time.

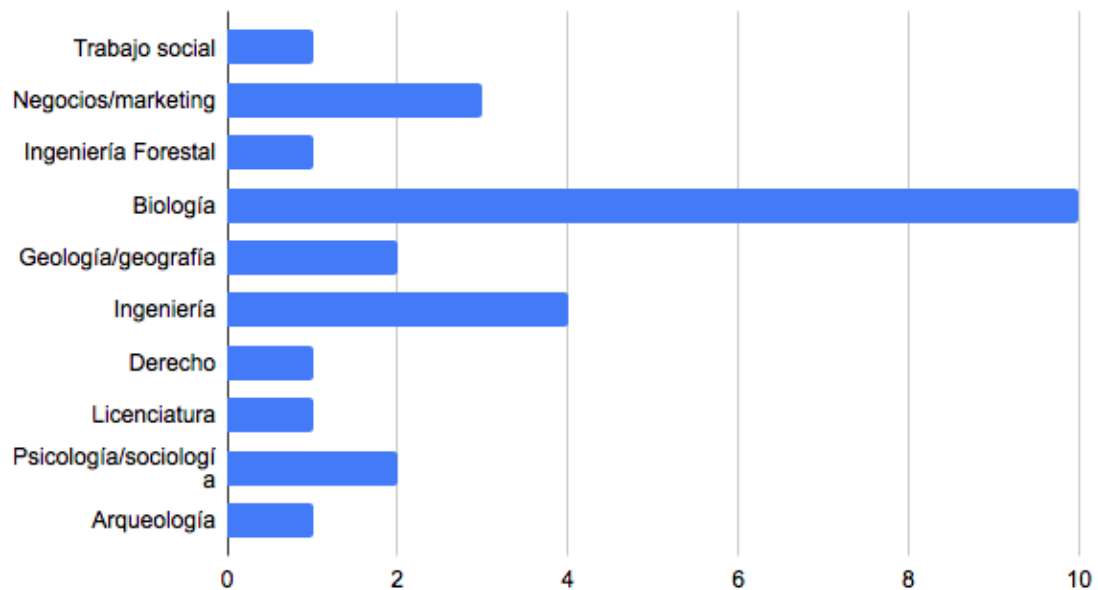
For the future of the labour market, companies and governments have a big part in helping workers during this transition.

## 7. Survey

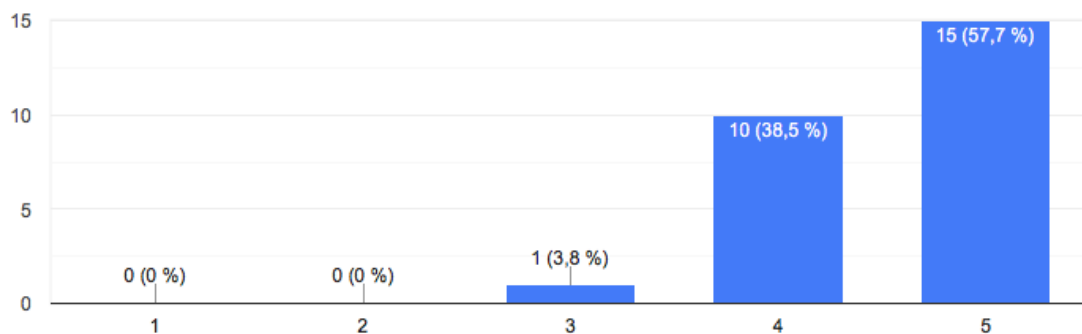
### 7.1 Results

The first question was about their previous studies, and as we can observe most of them, 38.5%, have studied biology.

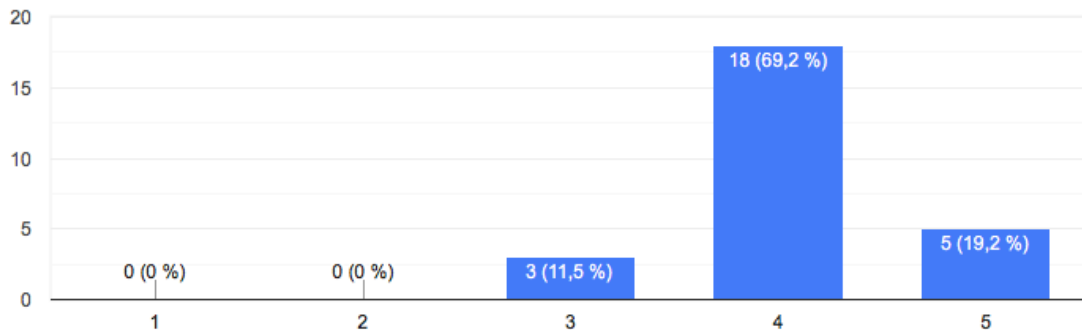
#### Seleccione su formación



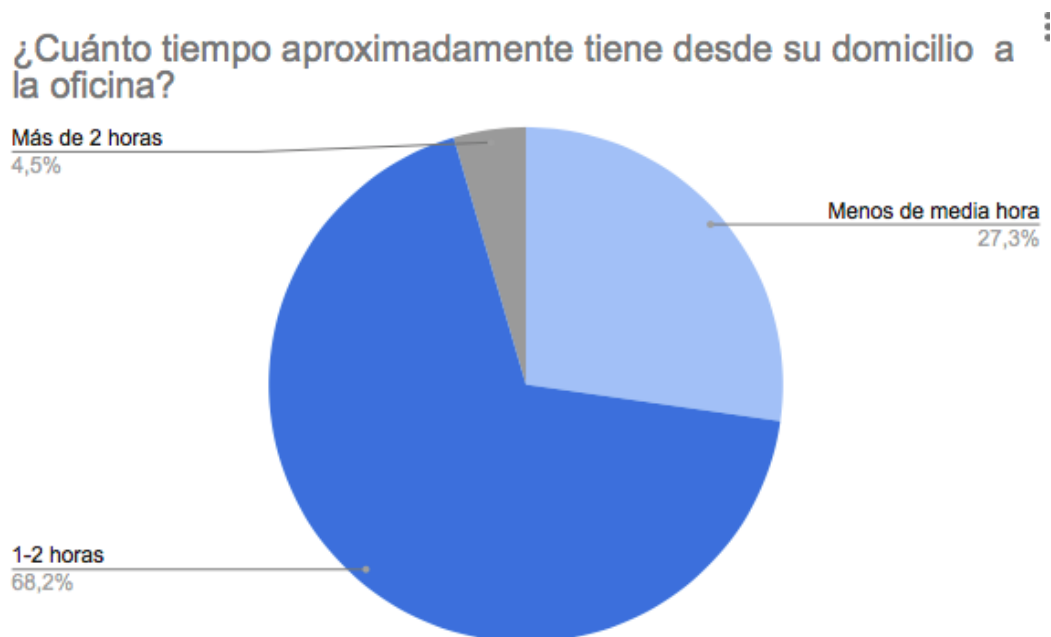
The second question was: on a scale from 1 to 5 how productive are you working from home. 1 being a little and 5 being a lot. And more than half of them answered with a 5.



Then we had the same question but instead of working from home, working in the office. Here the results change a little bit since in general people feel like they are not as productive. More than 60% said a 4.

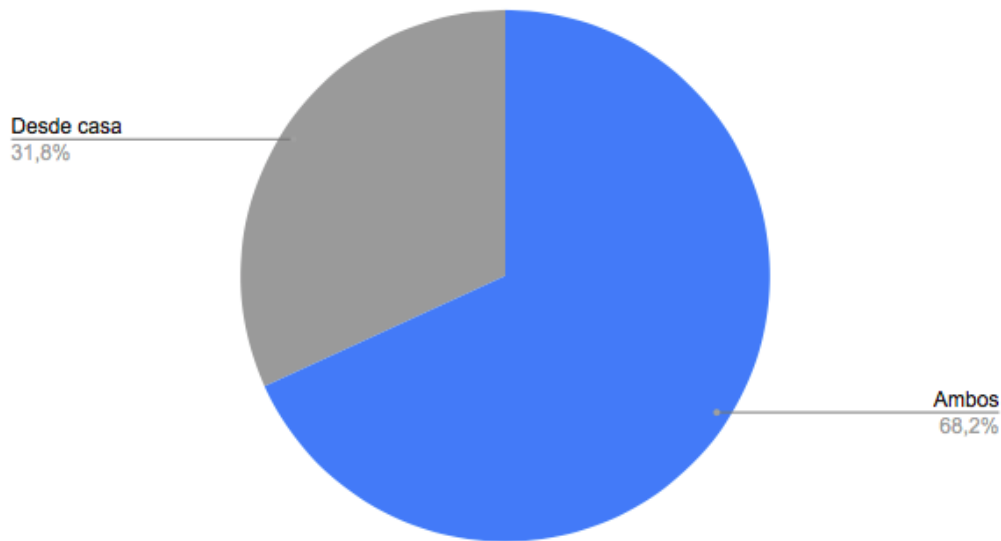


Following this, I asked how much time it cost them to get from their home to the office. And as in many other big cities, almost  $\frac{3}{4}$  of them have between 1 and 2 hours.

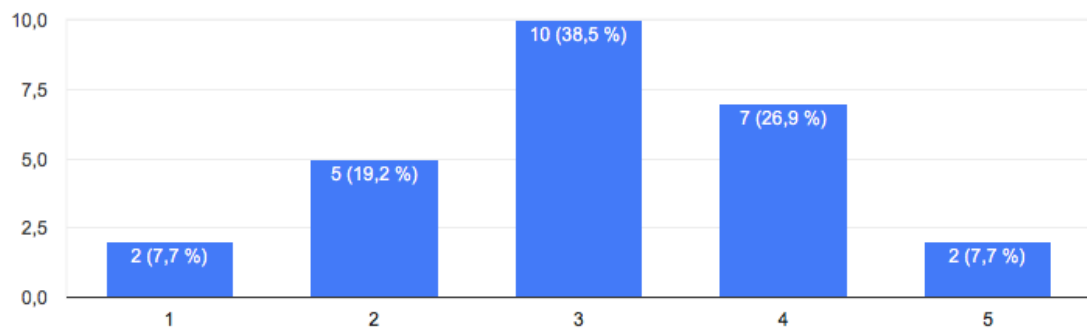


I was really eager to know the answers to the next question, which was how would they like to work in the future. The options given were from home, at the office or both. 68.2% of them answered both but none of them answered just at the office.

## ¿Cómo preferiría trabajar en el futuro?

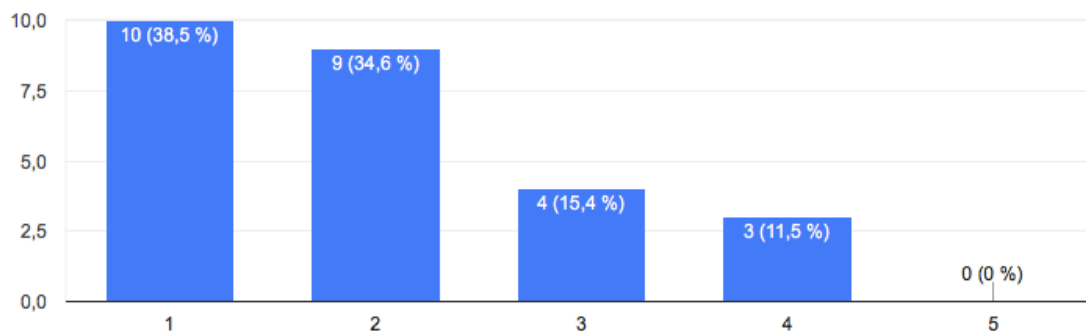


The next question was; how much did they think that working at an office benefits their work (by being surrounded by other colleagues for example) from 1 to 5. Here people seem to not really care since the most answered number was 3.



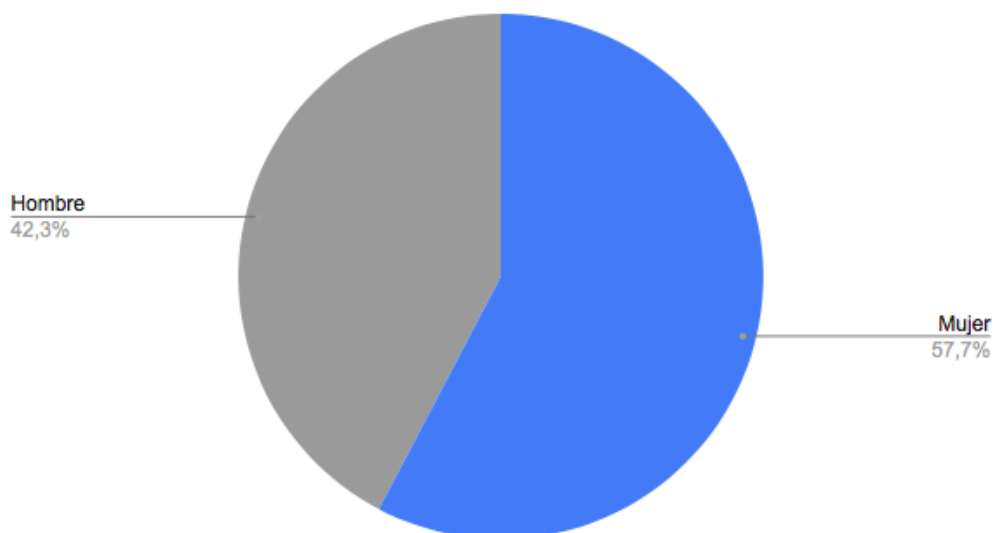
After that came a similar question but instead of being beneficial, how much did they think that being at home (an isolated from other workers) affected negatively their performance. And a high number of them thought that it did not affect them.



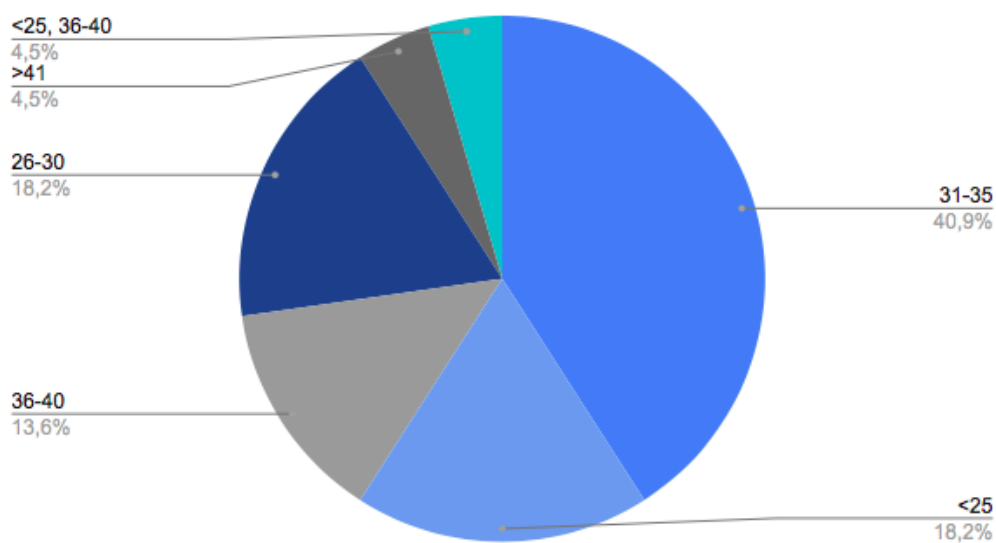


And the final two questions were the control questions about gender and age. There were more women than men and 40.9% of them were between the ages of 31 and 35.

### Seleccione su género



### Rango de edad



## 7.2 Conclusions

After taking into close consideration the results obtained in the previous survey we can come out with several conclusions. As the answers were anonymous, we cannot know for sure which answer is which, but we can deduce some of them, especially after studying all about Working from Home. We can assume that depending on their previous studies and the job they have now they are more or less able to work remotely, some of them may have to do more in-site work and some of them only do administrative work.

Most of them decided that they are more productive at home than at the office, they rated their productivity at home with a five out of five, while just four out of five at the office. This may be due to the answer of the next question about how much distance they have from home to the office, which most of them have between one and two hours, all that time lost could be used to work more from home or to rest and then be more productive working.

Nevertheless, I would think that people would feel more isolated working alone and they would prefer working in a shared space with others. But the answers for the question about how they would want to work in the future were a little surprising for me, since none of them answered that they would want to work at the office. Although almost  $\frac{3}{4}$  of them wanted to have a combination between the two options, and a little bit more than 30% wanted to work remotely.

But after seeing what they replied to the next two questions, I should not have been that surprised. The majority of them did not really care about being with other colleagues, since they rated it with three out of five. And they also said that working from home and being isolated did not affect their performance negatively.

Finally, thanks to the control questions we can say that the average worker is a woman between the ages of 31 and 35 since almost 60% of the workers were women and 40% of them were in that range of age.

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