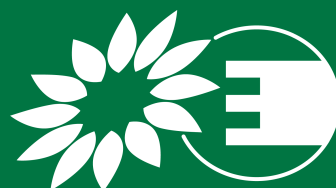


Gender Impact Evaluation

Recovery, Resilience and
Transformation Plan Spain

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THE GREENS/EFA
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Executive Summary

This study quantifies the impact of the Spanish Recovery and Resilience Facilities (RRF) funds on gender equality. The Spanish government has received €69.5 Billion that will be devoted to 108 investment projects with the aim of recovering and transforming the economy and the society from the devastating effects of the COVID-19 pandemic. These projects seek four main objectives: green transformation, digital transition, social and territorial cohesion and gender equality.

There is substantial evidence that the outbreak and subsequent developments of the pandemic may have worsen the situation of women, adversely affecting the path towards gender convergence. On the one hand, the measures adopted to contain the expansion of the virus may have been more severe for the high-contact services such as personal care, tourism, retail, and hospitality sectors where women are overrepresented. On the other hand, women have absorbed a disproportionately larger amount of the household needs resulting from school lockdowns and the impossibility to out-source domestic services. As a result, the pandemic has exacerbated the “double shift” phenomena among working women, making it more difficult to advance in their professional careers.

The RRF could be a powerful tool to correct and compensate the gender asymmetric effects of the pandemic on the economy and the society. However, the gender assessment of the Spanish plan does not suggest that the funds will fully succeed

in achieving this goal. This study identifies that a 0.8% of the RRF will be invested in projects targeted directly to improve the employability and living conditions of women (see Table 1 in the report). However, the other remaining projects, that we refer as Gender Blind Investment, are expected to have only a limited impact on women’s prospects.

The study follows the input/output methodology to assess the effect of the Gender Blind Investment projects. Both approaches conclude that less than 40% of the RRF funds will revert directly on women. The reason is that most of the investment projects will be devoted to the green and the digital transformation and will maintain or create employment mostly in sectors where women are underrepresented (i.e. construction, information and communication, transport and energy).

Finally, the evaluation of the RRF funds from the outcome perspective indicate that €4.999,68 Million will contribute to reduce gender inequality across the different domains in the Gender Equality Index. A large fraction of these funds, a 59%, will revert in the Time and Knowledge domain, which in Spain are the less gender egalitarian domains.

This assessment indicates that the impact of the funds on gender equality will be rather moderate. The study also indicates that the “new economy”, after COVID-19, will be more skilled, digital and

green. Accordingly, new employment opportunities will appear in sectors such as information and communication, energy, science and technology. To prevent the current economic transformation from hindering gender convergence, it will be extremely important to devote efforts and resources to incentive the participation of women in these sectors, which currently are highly male dominated.

1. Need for a Gender Impact Evaluation

The measures adopted to contain the expansion of the COVID-19 pandemic have severely affected the economies and societies all over the globe.

The European Commission has raised funds to help member states implement reforms and investment to recover from the sanitary crisis.

The Recovery and Resilience Facility (RRF) is the largest component of funding in the form of grants and loans of the Next Generation EU (NGEU), a temporary instrument designed to help repair the immediate economic and social damage caused by the COVID-19 pandemic. With these funds, Europe wants to be greener, more digital, and more resilient to better adapt to current and future challenges.

The Recovery and Resilience Facility provides grants amounting to € 390 Billion to the European economies. Member states have to submit national recovery and resilience plans that describe the reforms and public investment projects to be implemented.

The Spanish Recovery and Resilience Plan traces the roadmap for the reconstruction and modernization of the economy and the society after the Covid-19 sanitary crisis, and to respond to the challenges of the next decades. To this end, the plan consists of 108 investments and 102 reforms. The European Commission has endorsed Spain with €69.5 Billion to finance investment projects

that seek four main objectives: green transformation, digital transition, social and territorial cohesion and gender equality.

The plan includes measures in a total of ten “lever policies” with the following breakdown of funds: Urban and rural agenda (20.7%); Infrastructures (15%); Green transition (9.2%); Modernization of the public administration (6.2%); Companies digitalization (23.1%); Science and innovation (7.1%); Education (10.5%); Care of people and employment policies (7%); Culture and sports (1.2%); Modernization of the tax system (7%).

The current study quantifies the impact of the Spanish RRF plan on gender equality. The last decades have witnessed important advances in terms of gender equality, however, there is the suspicion that the pandemic may have reverted this trend (Alon et al. 2020). On the one hand, the measures adopted to contain the expansion of the virus may have affected more severely high-contact services such as personal care, tourism, retail, and hospitality sectors where women are overrepresented. On the other hand, women have absorbed a disproportionately larger amount of the household needs resulting from school lockdowns and the impossibility to outsource domestic services. As a result, the sanitary crisis may have adversely affected the employment prospects and living conditions of women (Farré et al. 2020).

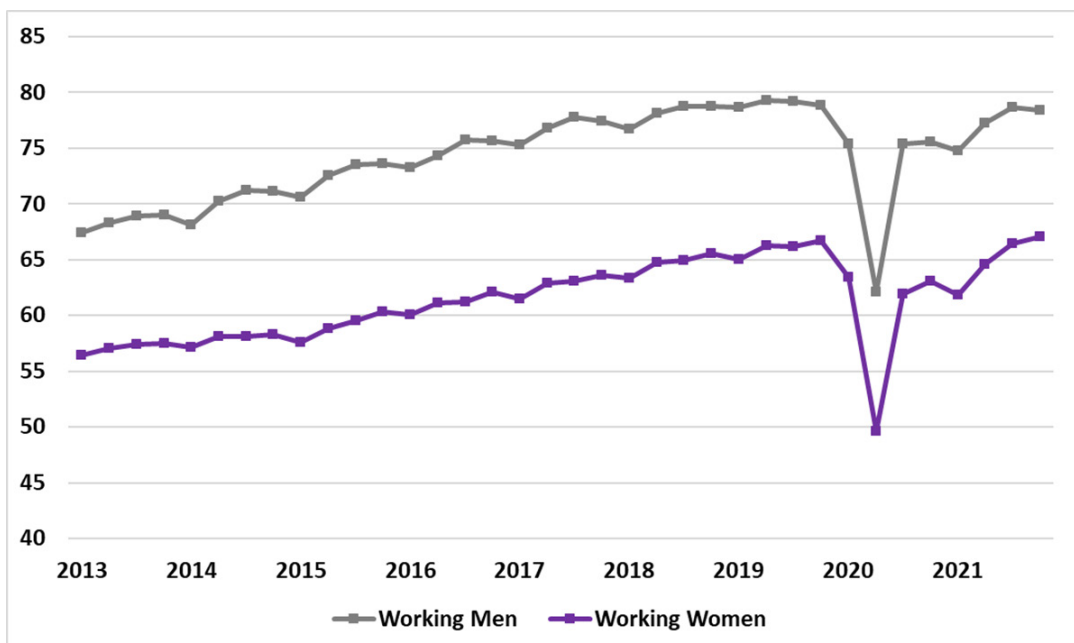
This study revises the different investment pro-

jects in the Spanish RRF plan to assess their implications on the evolution of gender inequality. It first identifies the projects directly targeted at improving the employability and well-being of women. Then, it identifies projects that directly or indirectly may affect the gender gap from an economic and social point of view. In doing so, it evaluates the RRF plan from three different perspectives: input, output and outcome. The input side perspective focuses mainly on the short-term impact on the employment level of the sectors of activity involved in the implementation of the different investment projects. The output perspective takes a longer-term horizon as it considers the impact on the employment across the sectors of activities involved in running the infrastructures resulting from the different investment projects. Finally, the outcome perspective classifies the investment projects considering their impact on

different socioeconomic domains where men and women are differently positioned.

Evaluating the impact of the Recovery and Resilience Plan from a gender perspective is crucial given the devastating effects that the pandemic has had on the labor market prospects of workers and the society. The measures adopted by the Spanish government to contain the expansion of the new virus resulted in large employment losses, of about 20% points, both for men and women (see solid lines in Figure 1). However, the impact of the crisis on employment levels have been largely mitigated by the short-term work schemes or furloughs (ERTE's). As can be seen in Figure 1, dashed lines, almost 80% (50%) of employed loses in the second (third) quarter 2020 were covered by furloughs.

Figure 1 – Evolution of employment



Source: Spanish Labor Force Survey. Several years. The figure displays the percentage of workers who declare to be working the week before the survey over the total working age population. The sample is restricted to respondents 25 to 55 years old.

While the effects on the level of employment have been similar for both men and women, the impact of the pandemic on the amount of time devoted to unpaid work have been largely asymmetric. Women have supported a larger burden of the household needs during the pandemic resulting from the closure of schools and the inability to outsource domestic services.

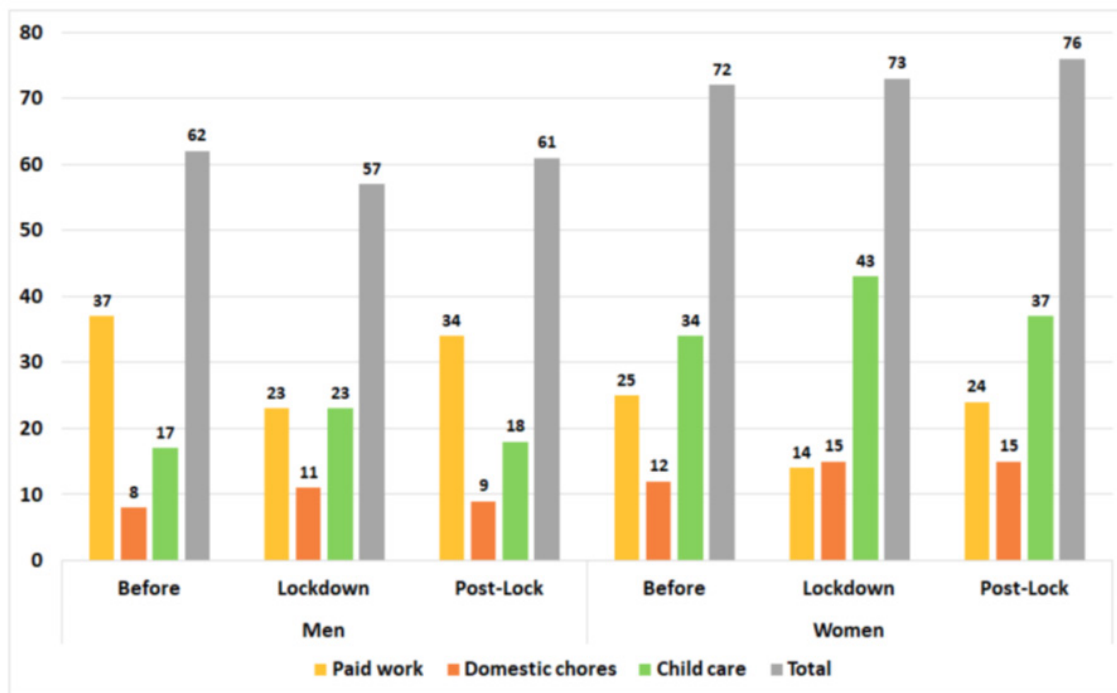
Before the lockdown in March 13, 2020, women devoted more (less) time than men to unpaid (paid) work. Unpaid work represented a 63% of the weekly hours worked by women. During the lockdown (March to June, 2020), both men and women increased their time devoted to unpaid work (women by more) and decreased it in paid work (women by less). As a result, the gender gap in total hours worked widened from 10 hours to 16 hours (see Figure 2). After the lockdown (November and December, 2020), both men and women recovered their pre-lockdown time in paid work, but women still devoted more time to unpaid work. Accordingly, the increased gender gap in total hours worked per week persisted at 15 hours. The numbers in Figure 2 suggest that the pandemic may have exacerbated the “double shift” phenomena among working women, that is the household and childcare duties that follow the day’s work for pay outside the home. The increased participation of women in unpaid work resulting from the pandemic may have pervasive effect on their employment prospects if the trend is not reverted.

The gender assessment of the Spanish RRF plan conducted in this study identifies some investment projects targeted directly to improve the employability and living conditions of women (i.e. 0.8% of the funds). There are also some investment

projects that will directly revert on domains where women are disadvantaged such as the care and knowledge domains (i.e. 7% of the funds). However, a large share of the funds will be devoted to the green transition (i.e. 40% of the funds) and the digital transformation (i.e. 28% of the funds). These funds will have a large short-term impact on the employment level of the Construction and the Information and Communication sector that are clearly male dominated. In the longer-term, part of the investment projects in the Spanish RRF plan will demand for implementation workers from the Education sector and the Professional, Scientific and Technical sectors, with a higher percentage of female workers.

To sum up, we can conclude that the Spanish RRF plan will have a mild effect on gender equality. The large fraction funds devoted to infrastructures to achieve a green transformation and a digital transition will have a small effect on women’s employability. We are more optimistic about the longer-term effect that the functioning of these infrastructure may have on the employment outcomes of women.

Figure 2 – Weekly hours in paid and unpaid work



Source: The figure shows the number of hours in paid and unpaid work of men and women with children. Before refers to the period just before the lockdown in March 13, 2020. During refers to the period May 2020. After refers to the period November-December 2020. The data have been collected from a household survey analyzed in Farré and González (2021).

2. Gender Impact Evaluation of the Recovery and Resilience Facility

This section analyzes the different investment projects of the Spanish RRF plan from a gender perspective. We will first describe the investment projects that are targeted to women. Next, we move to the analysis of gender blind investment projects. To assess the gender impact of the different projects we will follow the gender budgeting methodology described in Sharp (2003). Accordingly, we evaluate the content of the RRF plan from three different perspectives: the input, the output and the outcome side.

The **input side** perspective concerns the production factors, capital and labor, that will be used to achieve the objectives of the RRF plan. To investigate the impact on gender equality from the input side, we first classify the different investment projects according to the sector of activity (NACE classification¹) that will employ workers in the implementation. Then, we reweight the total amount of funds allocated to each sector by the share of females employed reported by the Eurostat. For example, the investment project “Digitalization Investments for Public Administration” are supposed to employ workers from the “Information

and Communication” sector (classified as NACE: J - Information and Communication). The share of females in this sector is 32.2% in Spain in 2020. The investment project “Building kindergarten” concerns workers from the construction sector (classified as NACE: F – Construction), which employed a 8,2% of female workers in 2020.

The input perspective assesses mainly the short-term impact of the RRF plan on the labor market opportunities of men and women as it focuses on the demand of workers required to implement the different projects. For example, the green transformation, which concentrates a 40% of the RRF funds, requires the construction of new energy-efficient buildings and new transport infrastructures that will employ workers mainly from the construction sector. The digital transition, that comprises a 28% of the RRF funds, involves the modernization and digitalization of the public administration and the private sector and will increase the demand of workers in the information and communication sector. Since these sectors are highly male dominated, the RRF plan is expected to have a limited effect on gender equality in the

1 A Agriculture, forestry and fishing. B Mining and quarrying. C Manufacturing. D Electricity, gas, steam and air conditioning supply. E Water supply, sewerage, waste management and remediation activities. F Construction. H Transportation and storage. I Accommodation. J Information and communication. K Financial and insurance activities. L Real estate activities. M Professional, scientific and technical activities. N Administrative and support service activities. O Public administration and defense; compulsory social security. P Education. Q Human health and social work activities. R Arts, entertainment and recreation. S Other services activities.

short-term.

To evaluate the RRF plan from the **output side** perspective we focus on the infrastructures and services achieved through the different investment projects. In this case, the impact of the plan will materialize in the short/medium-run in the form of labor demands required to operationalize the results of the different investment projects. To quantify the gender impact from the output side we will again classify the different investment across sectors of activity (NACE classification) according to the output achieved and reweight the amount of funds allocated to each sector by the share of female workers in the sector reported by the Eurostat.

Using the same examples above, the investment project “Digitalization Investments for Public Administration” will impact on a more efficient Public Administration, a sector with a 42.9% of female workers. New kindergartens will offer work opportunities in the education sector that employs a 65.9% of female workers. From the output side perspective, the RRF funds may have a stronger impact on gender equality as several investment projects revert in the education as well as the professional, scientific and technical sectors, which have a higher concentration of women. However, from the output perspective, there are still many projects that involve the transportation and the energy sector, where male workers are the majority.

The **outcome side** perspective evaluates the gender impact of the investment projects by considering their implications on different socioeconomic

domains, where male and female citizens are differently positioned. These domains are determined by the Gender Equality Index (GEI). The GEI ranks member states based on the size of the gender gap in the domain of work, money, knowledge, time, power and health.² The gender gaps are computed from several indicators that consider the relative position of men and women. In the construction of the index, an indicator with a good score is the reflection of both low gender gaps and high levels of achievement. The GEI represents a reliable composite indicator to measure gender equality in the EU context and provides a guideline to support the assessment of policy outcomes on gender equality.

Accordingly, from the outcome side perspective, investments in “Digitalization Investments for Public Administration” may result in a more efficient and competitive country that increases job opportunities for both female and male workers but keeps the gender gap constant. In contrast, investments in new kindergarten may boost the career prospects of female workers who are the main providers of care in the family. This investment will directly revert in the care domain and reduce gender inequality.

2 <https://eige.europa.eu/gender-equality-index/2021>

2.1. Gender Targeted Investments

From the 108 investment projects detailed in the RRF plan, 6 of them have women as direct beneficiaries either from the output or the outcome side perspective. These investment projects are design to improve the employability and living conditions of women. The six gender targeted investments amount to a total of €565.52 Million and represent a 0.8% of the total RRF plan. The different investment projects targeted at women are detailed in Table 1.

Among the women targeted investment, 3 of them (C13.I1, C20.I1, C23.I2) are designed to improve the employability of women by offering reskilling, upskilling and new employment opportunities. During the last decade, the gender gap in employment was above 10 percentage points (see Figure 1). In the first quarter of 2020, just before the outbreak of the pandemic, a 75% of men and 65% of women were working. These figures were 79% and 65% in the first quarter of 2019. During the second quarter of 2020, when the confinement measures were more severe, the percentage of men and women working decreased to 62% and 50% respectively. In Spain, differently from other countries, the drop in employment was similar for both men and women (Alon et al. 2020). Moreover, the generous public policies in the form of short-term work schemes (ERTE's or furlough) substantially mitigated the effects of the pandemic in the labor market. As a result, in the second quarter of 2020 the percentage of workers with a job or furloughed was 78% among men and 66% among women.

Despite the efforts devoted to mitigating the

impact of the pandemic in the labor market, the employment prospects of women may have worsened as they have been the main providers of care during the confinement and subsequent periods. Women have absorbed a much larger percentage of the household needs resulting from the closure of schools and the restrictions imposed on the outsourcing of domestic services (see for instance Farré et al. 2021 for Spain). As a result, investment projects devoted to foster the employment prospects of women will alleviate the negative effects of the pandemic on female employment.

Table 1 – Gender targeted investments projects

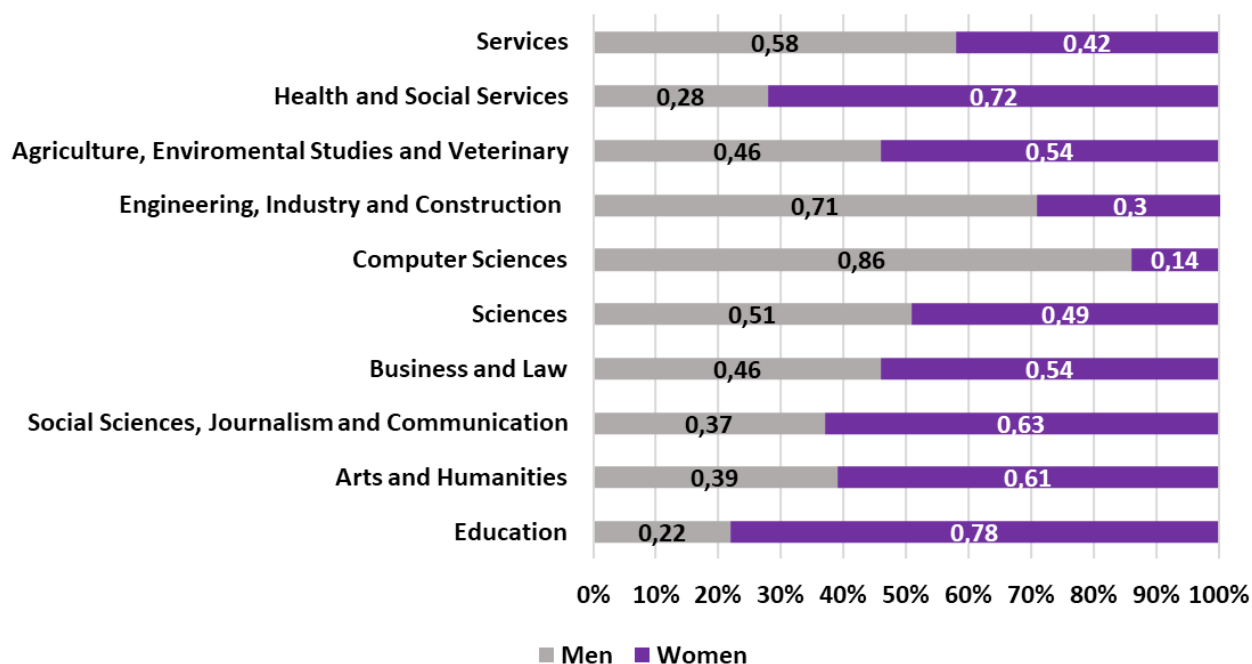
Description of the investment	RRF M€
C13.I1 Entrepreneurship: Program to support women’s entrepreneurship and Program to attract female talent	82.20 ⁽¹⁾
C19.I1 Digital competences: Program to promote digital training for women and scientific and technological vocations at school	183.75 ⁽²⁾
C20.I1 Reskilling and Upskilling of the workforce: Flexibility and accessibility to professional training through the creation of “Mentor Classrooms”	2.25 ⁽³⁾
C22.I4 Plan Spain protects you against sexist violence	153.40
C23.I2 Work and women and gender mainstreaming in public policies to support employment activation	105.00
C26.I3 Social Plan of the Sports Sector: Promotion of equality in sports, especially aimed at reducing gender inequality	38.93 ⁽⁴⁾
TOTAL Gender Targeting investments	565.52
TOTAL ES RRF	70,384.73
% Gender Targeting investments / TOTAL ES RRF	0.80%

Note: (1) Investment C13.I1 amount to 329M€ and includes 4 projects, one specific to women. (2) Investment C19.I1 amounts to 735 M€ and includes 4 projects, one specific to women. (3) Investment C20.I1 amounts to 9M€ and includes 4 projects, one specific to women. (4) Investment C26.I3 amounts to 38.93M€ and includes 4 projects, one specific to women.

Investment C19.I1 is meant to improve the digital competence of women and promote scientific and technological vocations at school. This can reduce the important digital gender gap in Spain and increase the participation of women in STEM (i.e. Science, Technology, Engineering and Maths) degrees. Figure 3 shows the percentage of men and women enrolled at university by field of study during the academic year 2020/2021. The figure reveals important gender gaps in Computer Science and Engineering degrees, where women represent a 14% and 30% of the student body

respectively. In Science, women are a 49% of the students. Increasing the participation of women in STEM degrees may reduce gender disparities in the labor market as STEM related occupations are more egalitarian in terms of earnings and employment opportunities (Goldin 2014).

Figure 3 – Enrollment rate at university by field of study



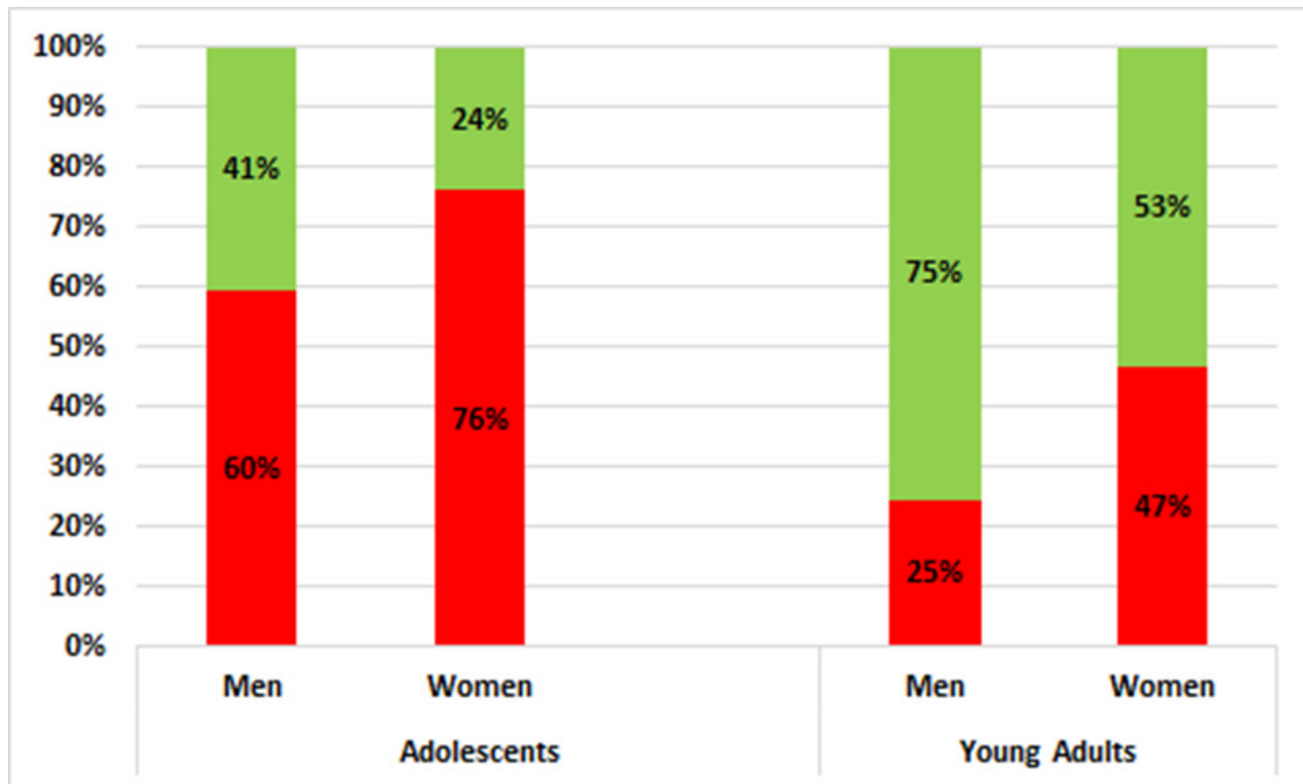
Source: Spanish Ministry of Education. Academic year 2020/2021.

Investment C26.I3 is devoted to reducing the gender gap in Sports. At the professional level, gender gaps in earnings are large. Gender gaps in participation are also important in the population. Physical activity is extremely beneficial for health and very important among children and adolescent. A recent study for Spain reveals important gender gaps in sports practices. Figure 4 shows that among adolescents, only a 24% of females meet the recommendations of daily physical activity by the WHO (i.e. 60 minutes of moderate or vigorous physical activity). This figure is a 41% among males. Gender differences persist among young adults as only 53% of females (as opposed to 75% of males) report to satisfy the WHO recommendation of 150 weekly minutes of physical activity. Thus, measures to promote gender equality in sports participation may be highly beneficial for

the society.

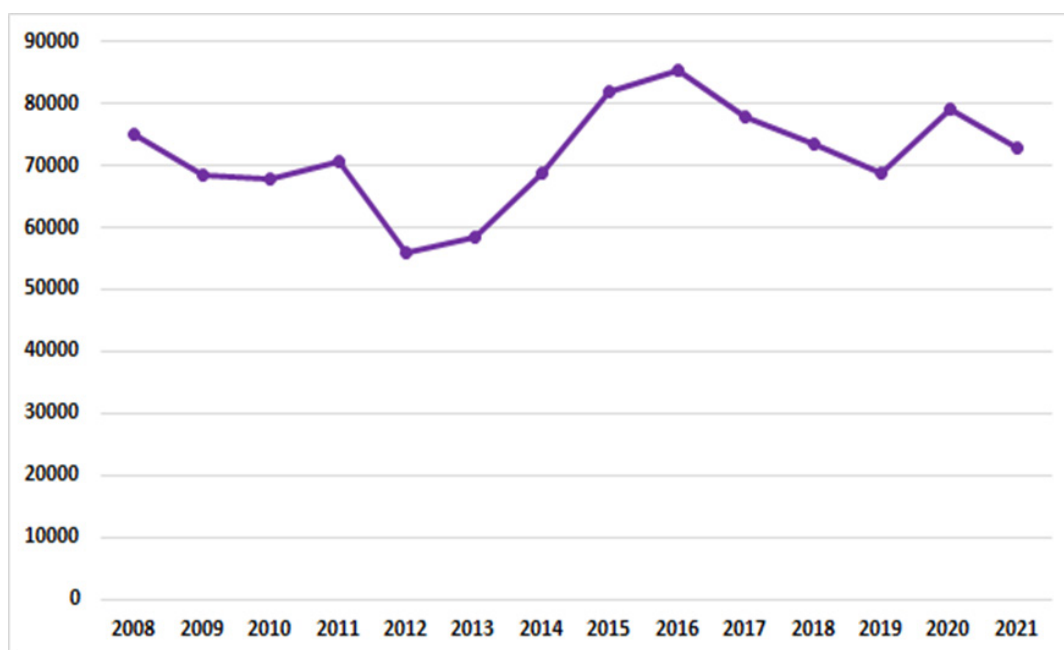
Finally, investment C22.I4 seeks to reduce gender violence by providing support to the victims and helping them to reinforce their employability and living conditions. Gender violence represents a structural problem all over the globe. In Spain, the number of calls to report gender violence cases remains high (see Figure 5), and the number of female deaths resulting from Gender violence amounted to 47 in 2020.

Figure 4 – Participation in recommended physical activity



Note: The WHO recommends 60 minutes per day of moderate or vigorous physical activity to adolescents and 150 minutes per week to young adults. Source: Fundación Mapfre (2019).

Figure 5 – Calls to public assistance service to report gender violence



Source: Spanish agency against Gender Violence.

2.2. Gender Blind Investments – Input Side

This section focusses on investment projects that ex-ante do not have a defined gender target. These projects are meant to foster economic activities in the different areas of the recovery plan. To evaluate the gender impact of the RRF Plan from the input side perspective, the 112 investment projects are classified by sector of activity mainly involved in their implementation. The classification responds to the author's criteria based on the sector where the investment has the largest impact in terms of employment demands. In a second stage, the funds allocated to each sector of activity are reweighted by the share of female workers in the sector according to the Eurostat in 2020 for Spain. Following this procedure, we estimate that €24,111.51 Million, a 34.3% of the Spanish RRF funds, will benefit the employment opportunities of female workers in the short-term. Table 2 summarizes the results of the gender impact evaluation from the input perspective.

A large fraction of the Spanish RRF investment projects are devoted to the green transformation and the digital transition. As for the green transformation, over €7.8 Billion will be invested in promoting more energy efficient buildings, both private and public, including building rehabilitation and the construction of new social housing. About €13.2 Billion will be invested in sustainable urban and long-distance mobility, which involves improving the railway infrastructure, creating low-emission zones, deploying electric charging stations, and implementing a network of sustainable urban mobility that includes the construction of new pedestrian and bike paths. The plan also supports the decarbonization of the energy sector by investing €6.1 Billion in clean technologies and infrastructure (including storage

and electricity grids) and accelerating the development and use of renewables, including renewable hydrogen. Some investment projects will also represent a boost to the circular economy by improving water and waste management in the country. Finally, the plan includes measure to mitigate the adverse effects of climate change by preserving coastal spaces, ecosystems and biodiversity.

Most of the investment projects related to the green transformation will create employment demands in the constructions sector (i.e. building rehabilitation, construction of new houses, renewal of transport infrastructures, and development of new energy storage and waste management systems). The construction sector is highly male dominated in terms of employment, with only a 8.2% of female workers. Thus most of the green transformation investment projects will mainly revert on male employment.

The second main target of the RRF plan is the digital transition. The Spanish RRF plan supports the digital transformation of the public administration with about € 10 Billion devoted to the modernization and digitalization of the justice, health care, employment, education and social service systems. The plan also includes investment projects that amount to €4.9 Billion to promote the digitalization of the industrial sector and the SMES, € 0.5 Billion to develop projects related to artificial intelligence, €4.7 Billion to the digitalization of tourism and cultural systems, and €4 Billion to support 5G connectivity, data infrastructure and the related ecosystem.

The investment projects to support the digital transition will create employment demands mostly

in the information and communication sector of activity where women represent a 32.2% of the workforce.

From the input side perspective, a large fraction of the investment projects will not have a gender blind impact on the workforce and will largely benefit the employment and labor market opportunities of male workers. A large percentage of the funds, 56%, will revert in the Construction and the Information and Communication sector

with a scarce share of female workers, of 8% and 32% respectively. Figure 6 illustrates the gender asymmetric impact of the RRF investment projects from the input side perspective. The Figure displays the percentage of female workers in each sector (purple bar) and the share of RRF funds by sector of activity from the input perspective (grey bar). The Figure is restricted to the 5 sectors that receive the largest amount of RRF funds from the input perspective.

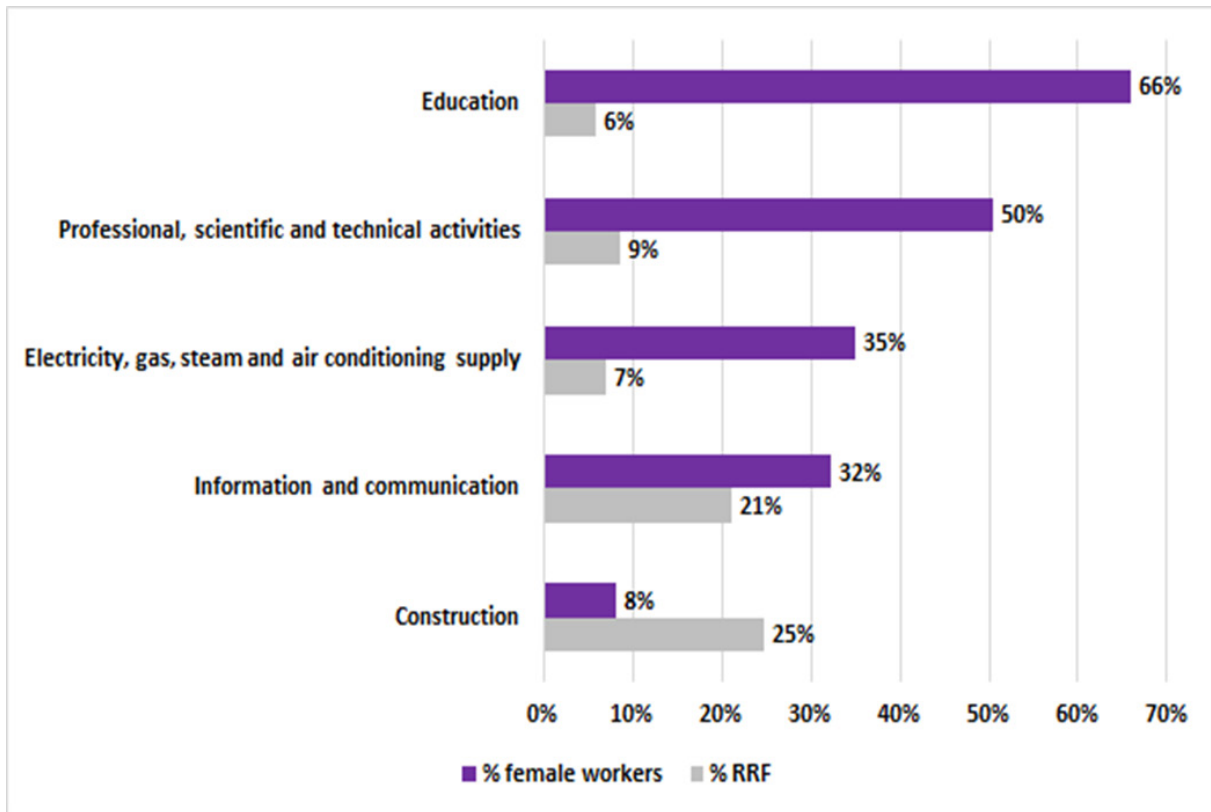
Table 2 – Gender blind investment projects – Input side assessment

ES RRF by Nace sector - INPUT SIDE	RRF M€	Share of females	Gender Impact
A Agriculture, forestry and fishing	38.00	22.4%	8.51
C Manufacturing	965.10	27.8%	268.30
D Electricity, gas, steam and air conditioning supply	4,892.00	34.9%	1,707.31
E Water supply; sewerage, waste management and remediation activities	850.00	18.8%	159.80
F Construction	17,339.88	8.2%	1,421.87
I Accommodation and food service activities	100.00	51.6%	51.60
J Information and communication	14,817.47	32.2%	4,771.23
K Financial and insurance activities	525.50	51.6%	271.16
M Professional, scientific, and technical activities	6,038.30	50.4%	3,043.30
N Administrative and support service activities	784.19	54.1%	424.25
P Education	4,156.57	65.9%	2,739.18
Q Human health and social work activities	534.56	76.3%	407.87
R Arts, entertainment, and recreation	74.59	42.1%	31.40
Uncategorized	19,268.57	45.7%	8,805.74
Total	70,384.73		24,111.51

Note: Gender Impact is RRF M€ x Share of females. The share of female workers in the uncategorized group corresponds to the share of female workers in the Spanish labor market in 2020.

% ES RRF Gender Blind – Input side	34.3%
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Figure 6 – Gender impact of RRF investment projects – Input side



Source: % of female workers is obtained from EUROSTAT, 2020. The percentage of RRF funds by sector of activity are obtained from author's calculation.

2.3. Gender Blind Investments – Output Side

To assess the gender impact of the RRF funds from the output perspective I rely on the classification of the different investment projects by sector of activity conducted by Brugel think tank.³ The funds are then reweighted by the share of female workers in each sector. Project C13 (Boost to the SMEs) and Project C23 (New public policies for a dynamic, resilient and inclusive labor market) have not been identified with a specific sector of activity and have been reweighted by the share of female workers in the Spanish economy in 2020 (i.e. 45.7%).

This classification results in € 28,652.41 Million, a 40.7%, of funds, allocated to projects that will benefit female employment in the short/medium-term. Table 3 summarizes the results of the gender impact evaluation from the output perspective.

From the this perspective, the gender impact of the investment projects in the RRF plan is slightly more optimistic. Several projects in the plan require workers from the educational sector as well as the professional, scientific and technical sector for their implementation. The plan will devote €3.6 Billion to digital skills training, €2 Billion to foster vocational training, and €1.6 Billion to the modernization and digitalization of the educational system. Another €3.5 Billion are reserved to conduct institutional reforms and strengthening the capacities of the national science, technology and innovation system.

Nonetheless, many other investment projects will require for implementation workers from sectors with a high presence of male workers. These projects are related to innovations in the transport sectors, the implementation of new and renewable energies as well as the modernization of the agriculture and the fishing sectors. Figure 7 displays the 5 sectors of activities that will receive the largest amount of RRF funds from the output perspective together with the share of females in each sector. The figure shows that the education sector and the professional, scientific and technical sector receive a 10% and an 11% of the RRF funds and employ a 66% and a 50% of female workers respectively. The figure also reveals that a big percentage of the RRF funds will revert in the transport and energy sector, 35% and 21% respectively. These sectors are highly male dominated. This explains the mild effect on gender equality of the output perspective

³ Brugel is an independent EU think tank specialized in economics that has created a very detailed database of all the EU RRF national plans at project level (https://www.bruegel.org/wp-content/uploads/2021/07/Bruegel_RRP_dataset.zip). All national projects are classified homogeneously by NACE sectors of activity according to the expected final output.

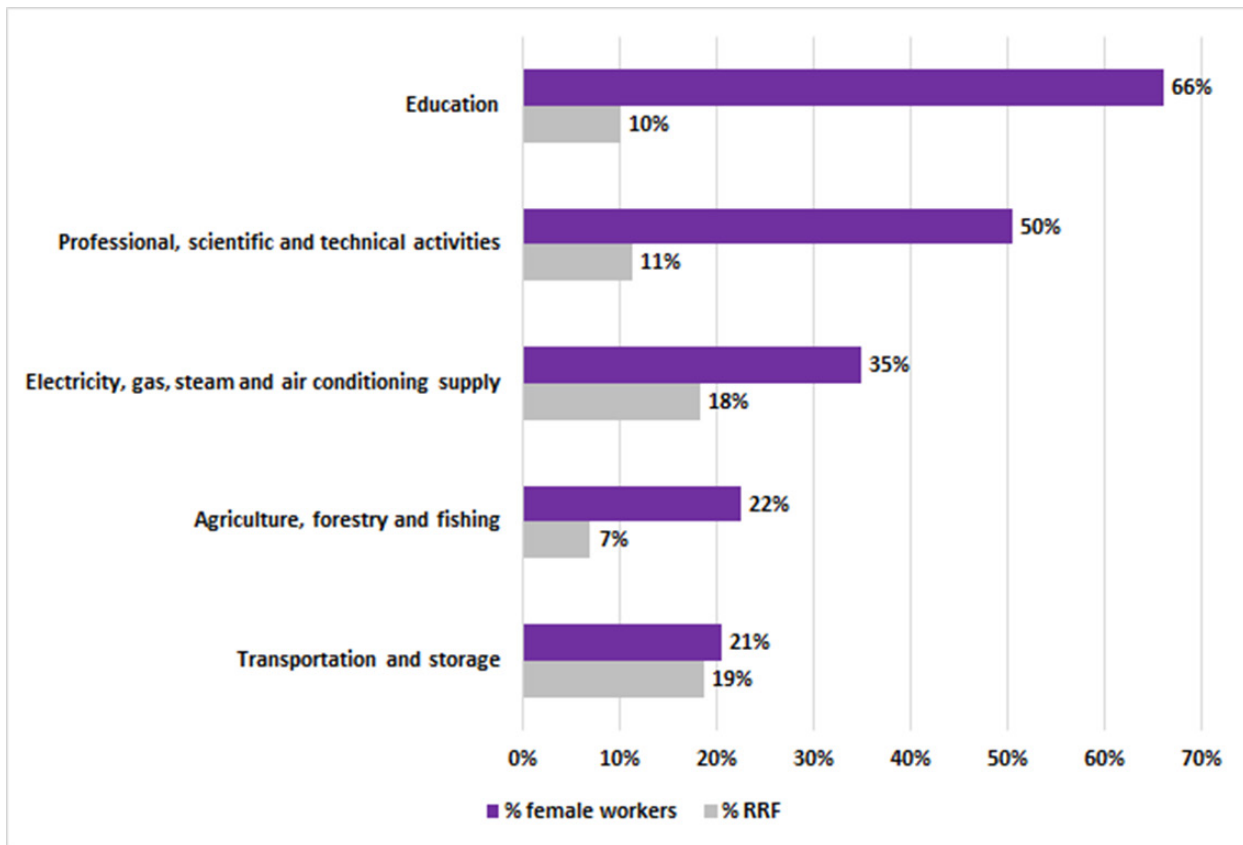
Table 3 – Gender blind investment projects – Output side

ES RRF by Nace sector - OUTPUT SIDE	RRF M€	Share of females	Gender Impact
A Agriculture, forestry and fishing	4,925.00	22.4%	1,103.20
B Mining and quarrying	3,781.50	18.7%	707.14
D Electricity, gas, steam and air conditioning supply	12,805.00	34.9%	4,468.95
H Transportation and storage	13,189.00	20.5%	2,703.75
I Accommodation and food service activities	3,400.00	51.6%	1,754.40
M Professional, scientific, and technical activities	7,937.69	50.4%	4,000.59
O Public administration and defense; compulsory social security	4,235.70	42.9%	1,817.12
P Education	7,167.19	65.9%	4,723.17
Q Human health and social work activities	4,865.00	76.3%	3,712.00
R Arts, entertainment, and recreation	825.00	42.1%	347.33
Uncategorized	7,253.35	45.7%	3,314.78
Total	70,384.42		28,652.41

Note: Gender Impact is RRF M€ x Share of females. The share of female workers in the uncategorized group corresponds to the share of female workers in the Spanish labor market in 2020.

% ES RRF GENDER BLIND – OUTPUT SIDE	40.7%
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Figure 7 – Gender impact of RRF investment projects – Output side



Source: % of female workers is obtained from EUROSTAT, 2020. The percentage of RRF funds by sector of activity are obtained from Brugel dataset.

2.4. Gender Blind Investments – Outcome side

The gender impact of the different investment projects from the outcome perspective will be evaluated using the Gender Equality Index (GEI). The GEI ranks the 27 EU countries in terms of gender equality using a composite of indicator. Spain is the country with the sixth highest value of the index, 73.7, after Sweden (83.9), Denmark (77.8), The Netherlands (75.9), France (75.5) and Finland (75.3).

Regarding the different domains, Spain scores the highest in health, 90.3. The health domain includes measures of self-perceived health, life expectancy, healthy styles of life and access to medical services. The money domain receives a score of 78.4 and it includes measures of earnings and financial resources as well as indicators of income inequality. The power domain has a score of 76.9 and uses for construction alternative indicators of women empowerment such as the share of female ministers, the share of females who are member of the parliament or regional assemblies, and the share of females in large company boards or the central bank. The work domain receives a score of 73.7 based on measures related to labor market participation, full-time employment, duration of working life, segregation, and quality of work and career prospects. The knowledge domain scores 67.9 based on attainment and participation in education, graduates of tertiary education and people participating in formal and non-formal training. Finally, the time domain receives the lowest score, 64, measured by participation in care and domestic tasks, social activities, and voluntary work.

After revising the 112 investment projects in the Spanish RRF plan, we identify €17,723.20 Million that revert on different domains of the GEI.

To evaluate the impact of the different projects on gender equality we assume that investment projects that revert on domains that are less gender egalitarian, such as time, may play a larger role in reducing disparities between men and women. Accordingly, the funds allocated to the different domains will be reweighted by the gender gap in each domain, computed as the difference between 100% (full gender equality) – X% (the value of the index in the domain).

Following this procedure, Table 4 indicates that €4,999.68 Million will contribute to reduce gender disparities in the Spanish economy and society. This represents a 7.1% of the total RRF funds. Despite the small fraction of funds identified by the outcome perspective as having an impact on gender equality, it should be highlighted that a large percentage of them, a 59%, will target Knowledge and Time, which are the most gender unequal domains (see Figure 8).

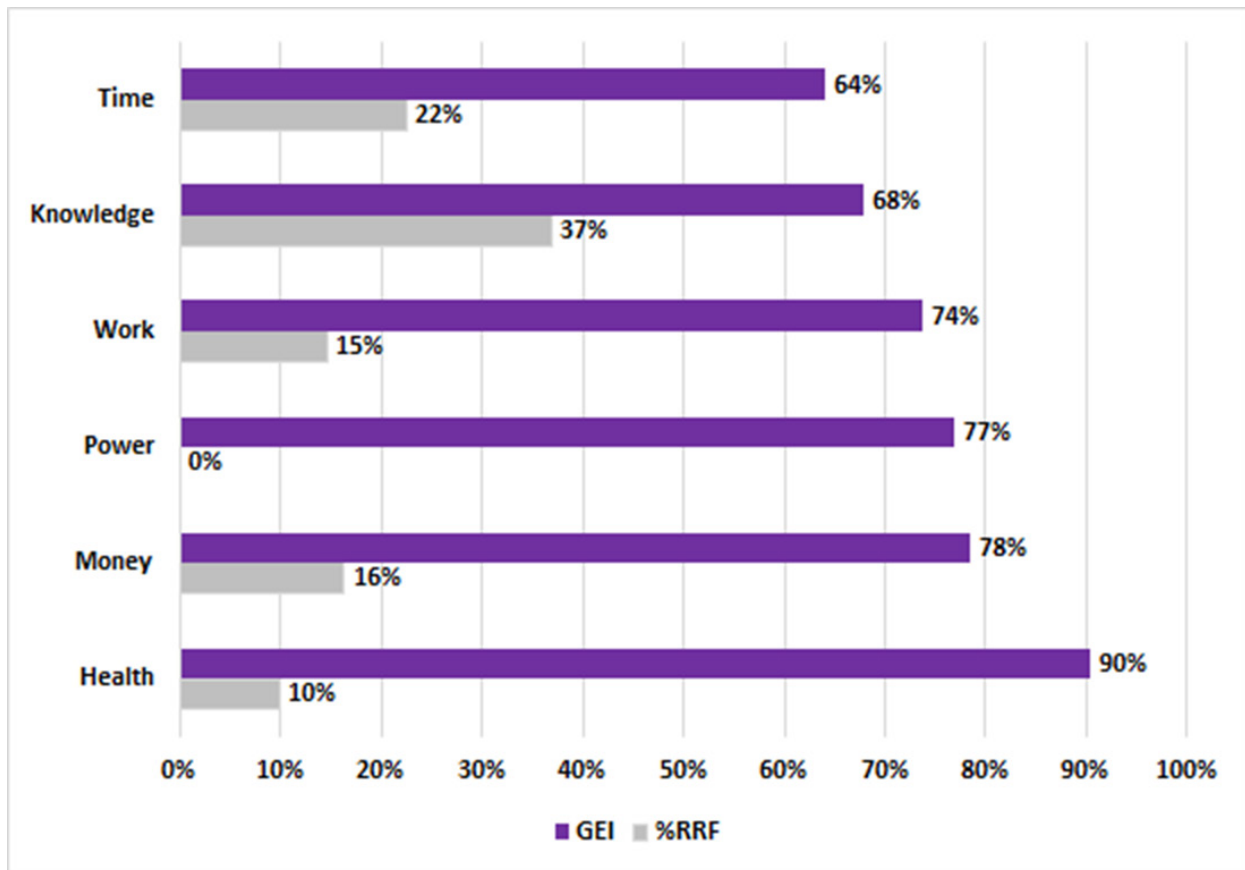
Table 4 – Gender blind investment projects – Outcome side

ES RRF by GEI Domain – Outcome side	RRF M€	GEI	GEI GAP	RRF M€x GEI GAP
Work	2,594.13	73.7	26.3	682.26
Money	2,877.71	78.4	21.6	621.59
Knowledge	6,526.17	67.9	32.1	2,094.90
Time	3,975.63	64	36	1,431.23
Health	1,749.56	90.3	9.7	169.71
Power	-	76.9	23.1	-
Total GEI Domain	17,723.20			4,999.68
Gender Blind	52,661.54			
Total	70,384.73			

Note: Gender Impact is RRF M€ x Share of females. The share of female workers in the uncategorized group corresponds to the share of female workers in the Spanish labor market in 2020.

% ES RRF GENDER BLIND – OUTCOME SIDE	7.1%
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Figure 8 – Gender impact of RRF investment projects – Outcome side



Source: GEI: Gender Equality Index. The percentage of RRF funds by GEI domain are obtain from the author’s calculation.

3. Discussion and Conclusions

The European Commission has granted Spain €69.5 Billion in the framework of the Recovery and Resilience Facility (RRF) program to recover the devastating economic and social effects of the Covid-19 pandemic. Although the execution of the investments contemplated in the RRF plan will last until 2026, 70% of the funds have to be committed in 2021-2023. Thus, the investment projects in the RRF plan are expected to have a relative short/medium-term impact in the labor market and the society.

This study evaluates the impact of the RRF plan on gender equality from the input, output and outcome perspective. While some of the projects included in the Spanish plan have women as a target, we estimate that the percentage of funds that will directly revert on the employability and well-being of women is rather small.

A 40% of the funds in the Spanish RRF are devoted to the green transformation. These investment projects include measures to promote urban and long-distance sustainable mobility, increase the energy efficiency of building, foster the decarbonization of the industry, reduce the energy dependency of the economy as well as deploy new technologies such as hydrogen and other renewables. The plan also includes measures to help mitigate the adverse effects of the climate change by preserving coastal spaces, ecosystems and biodiversity, and promote the circular economy by improving water and waste management.

Another large amount of the RRF funds will be devoted to the digital transition (28%), including measures to digitalize the public administration, and the industry and the tourist sector, including a specific program for the digitalization of SMEs. There are also investments in digital equipment for education and in improving digital skills and competences.

The investment projects devoted to the green transformation and digital transition will have a direct effect on the construction sector (i.e. building renewal and creation and transport infrastructures) and the information and communication sector (i.e. digitalization of the public sector services and the industry, business and the tourist sector). These two sectors are highly male dominated in terms of their workforce, a 92% and 68% of male workers respectively. As a result, the gender assessment from the input side of the RRF plan estimates that only a 34.3% of the funds will directly revert on the employment opportunities of women.

The plan also includes investment projects that seek to modernize the education sector (10%), in particular the vocational training itinerary, and the science and innovation system (7%). These projects will have a longer-term impact on the employment opportunities in the education sector and the professional, scientific and technical sector. As a result, the gender assessment from the output perspective has a slightly more optimistic view and estimates that a 40.7% of the RRF funds

may benefit the employability and labor market perspective of women.

In terms of the outcomes expected from the different investment projects, we estimate that €4.999,68 Million will contribute to reduce gender inequality across the different domains in the Gender Equality Index. A large fraction of these funds, a 59%, will revert in the Time and Knowledge domain, which in Spain are the less gender egalitarian domains.

Finally, a 0.8% of the RRF funds will be devoted to investment projects targeted specifically to women. These projects include reskilling and training of women and actions to reduce and support victims of gender violence.

To sum up, we can conclude that the Spanish RRF plan does take into account the gender dimension with some investment projects directly targeted to women and others that will contribute to reduce gender inequality in important domains such as the care services and the digital knowledge. However, given the large component of funds devoted to the green transformation and the digital transition, in the short-term, the RRF funds will mainly benefit the employment opportunities of male workers in the construction and the communication and information sector.

The Spanish economy is undergoing an important transformation after the outbreak of the pandemic. The evidence presented at the end of this assessment suggests that the “new economy” will be more skilled, digital and green. Economic activities in sectors related to the information and communication, energy and science and technology are expanding. Thus, important employment opportunities will appear in these sectors.

In addition, the large amount of resources in the RRF plan will further boost this trend. As discussed along this assessment, the most prominent sectors in the “new economy” are highly male dominated. In Spain, the share of women in the information and communication sector is 31%, it is 24% in the energy sector and 50% in the sector related to professional, scientific and technological activities. To prevent the current economic transformation from hindering gender convergence, it will be extremely important to devote efforts and resources to incentive the participation of women in these sectors. Public policies such as information campaign about the expected economic developments can be useful to increase the participation on young female in STEM degrees that facilitate access to the most buoyant sectors. In addition, it also seems necessary to implement policies to re-tool workers and update their skills to take advantage of the employment opportunities that may appear in the growing sectors. These policies should give priority to unemployed female workers or to those females employed in declining sectors such as hospitality and the household service.

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APPENDIX

An alternative approach based on Frey (2021)

This study aims at being informative about the impact of the Spanish RRF on gender equality. However, a cross-country comparison is also of interest. With this aim, the researchers responsible for each country under study have agreed on using a common methodology described in Frey (2021).

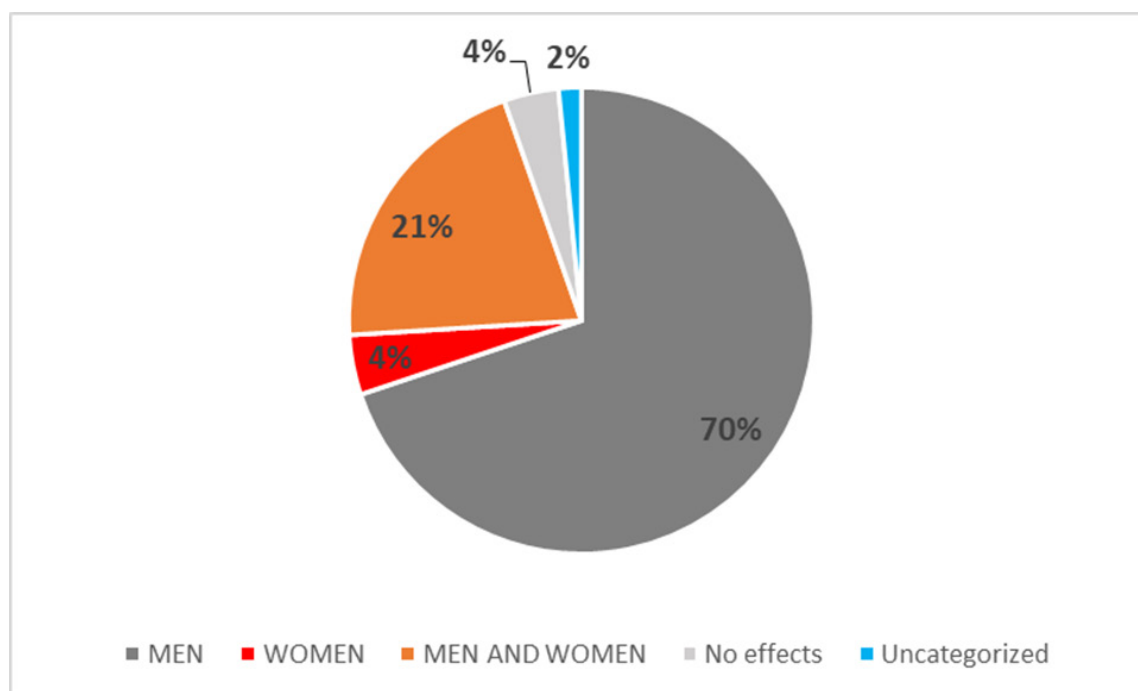
This approach focuses on the employment effects expected from the implementation of each investment project. To analyze the gender dimension of the RRF program from this perspective we classify the 108 investment projects according to their employment effect on male- or female dominated sectors of activity. We define a sector as being male-dominated if the percentage of women in the sector is below 35%. Accordingly male-dominated sectors are Agriculture (22%); Mining (18%); Manufacturing (28%); Energy (35%); Water Supply, Sewerage and Waste Management (19%); Construction (8%); Transportation and Storage (21%) and Information and Communication (32%). We define a sector as being female-dominated if the percentage of women in the sector is above 65%. Female-dominated sectors are Education (66%) and Human health and Social Work Activities (76%). Finally, sectors of activity with a percentage of women between 35 and 65% are considered as gender neutral sectors. These sectors are Wholesale and Retail Trade (50%); Accommodation and Food Service (52%); Financial and Insurance Activity (52%); Real State Activity

(56%); Professional, Scientific and Technical Activities (50%); Administrative and Support Service Activities (54%); Arts and Entertainment (42%) and Public Administration and Defense (43%). Table A1 and Figure A1 shows the gender impact of the RRF from the employment creation perspective. According to this classification, a 70% of the investment projects in the Spanish RRF plan are expected to create or secure employment only on men, a 4% of the investment projects only on women, and a 21% on both men and women. A 4% of the funds in different investment projects are not expected to have any employment effect. Finally a 2% of the funds cannot be categorized due to the complexity and heterogeneity of the components of the investment projects involved.

Table A1 – Classification of Spanish RRF Investment projects according to expected effects by gender

Investment projects with the effect of securing / creating employment primarily on	RRF M€	% of RRF
Men	49,178.02	69.9%
Women	2.913,63	4.1%
Men and Women	14.498,86	20.6%
No expected employment effects	2.681,06	3.8%
Uncategorized	1.112,85	1.6%
Total	70,384.42	

Figure A1 – Classification of Spanish RRF Investment Projects according to expected effects by gender



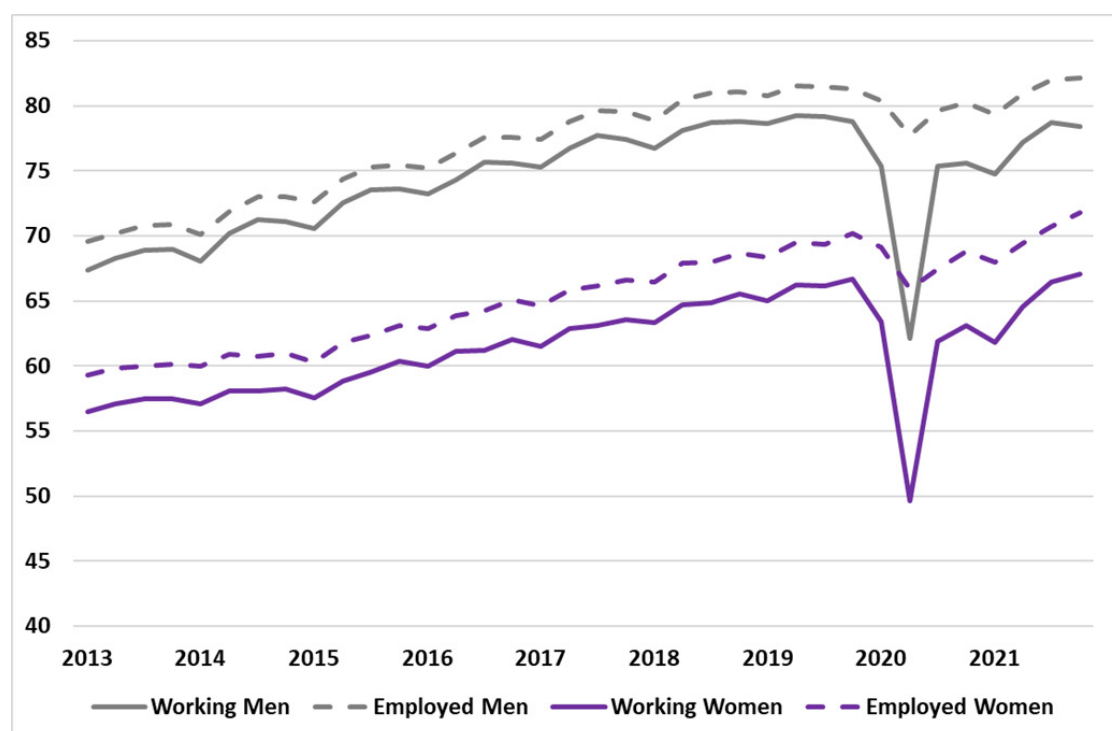
A note on the impact of the Covid-19 crisis on gender inequality in the labor market – Spain

This appendix employs data from the Spanish Labor Force Survey (Encuesta de Población Activa) to study the changes in the labor market resulting from Covid-19 pandemic and the implications of the RRF funds for the evolution of gender inequality during the upcoming years.

As shown in Figure S1 employment trends for both men and women display an increasing trend during the last decade. However, female employment remains substantially below that of men for the whole period, a difference of about 12

percentage points. The figure also shows that the pandemic negatively affected the employment rate of both men and women. According to the data from the Labor Force Survey, the percentage of respondents who declared having a job the week before the interview dropped by about 16 percentage points both for men and women in the second quarter of 2020 relative to the same quarter in 2019 (see Figure S2, solid line).

Figure S1. Employment rates for men and women



Source: Spanish Labor Force Survey. Quarterly Data. Solid lines: percentage of individuals who reported to be working on the week before the interview over the total working age population. Dashed lines: percentage of individuals who reported to be working or furlough on the week before the interview over the total working age population. Sample: individuals aged 25 to 55.

Both Figure S1 and S2 show that the impact of the Covid-19 crisis on employment levels have been largely mitigated by the short-term work schemes or furloughs (ERTE's). As a result, the percentage of individuals who reported being working or furlough on the week before the interview dropped by less than 5 percentage points in the second quarter of 2020 relative to the same quarter in 2019 (see Figure S2, dashed line).

Figure S2. Changes in employment relative to the same quarter in 2019.



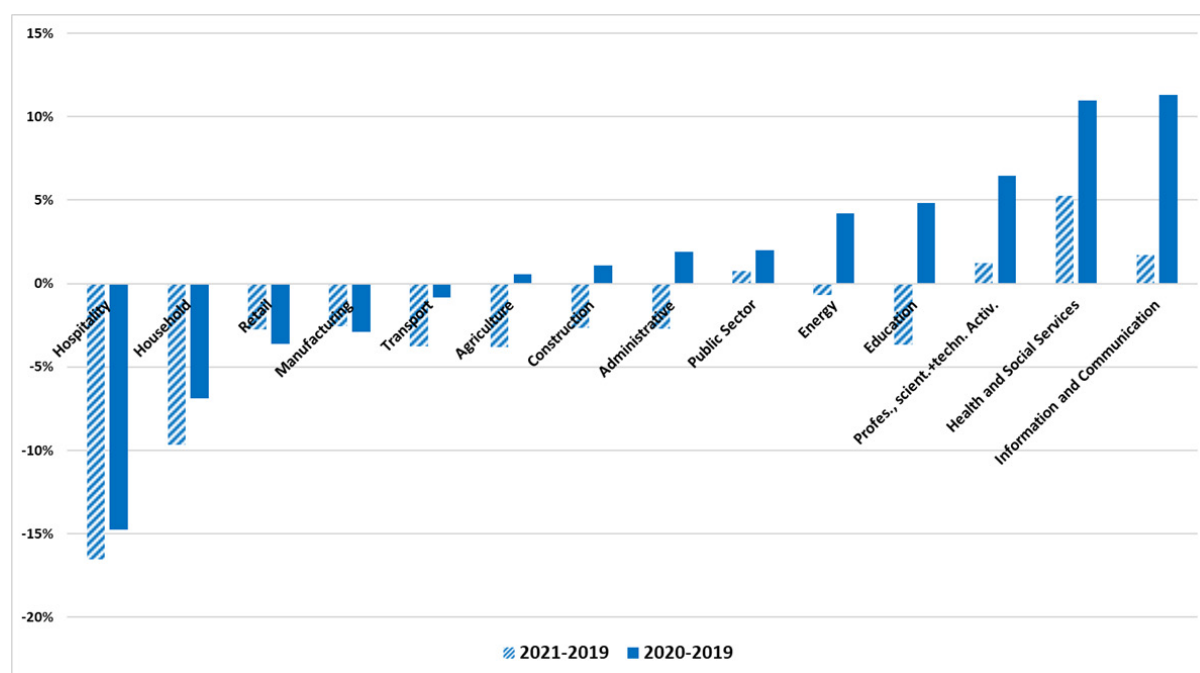
Source: Spanish Labor Force Survey. Quarterly Data. Solid lines: change in the share of working individuals relative to the same quarter in 2019. Dashed lines: change in the share of employed individuals (including furloughs) relative to the same quarter in 2019. Sample: individuals aged 25 to 55.

Despite the dramatic effect of the pandemic lockdown (March 13, 2020 to June 20, 2020) in the labor market of both men and women, Figure S2 shows that the employment level by the end of 2021 recovered the pre-crisis levels. Thus after the pandemic the pre-existing gender differences that characterized the Spanish labor market in terms of employment rates persist, and the employment rate of females is still more than 10 percentage points lower than that of males.

The pandemic has however resulted in important changes in the sectoral composition of the Spanish economy that may have important consequences

for the evolution of gender inequality in the future. Economic sectors with a high concentration of women such as the Hospitality, with a share of females of 25% in 2019, and the Household Service sector, with a share of females of 54% in 2019, have substantially shrunk. Figure S3 shows that the Hospitality sector has lost a 17% of the jobs in 2021 relative to 2019, and the Household Service sector a 14% over the same period.

Figure S3. Changes in employment by sector of activity relative to 2019

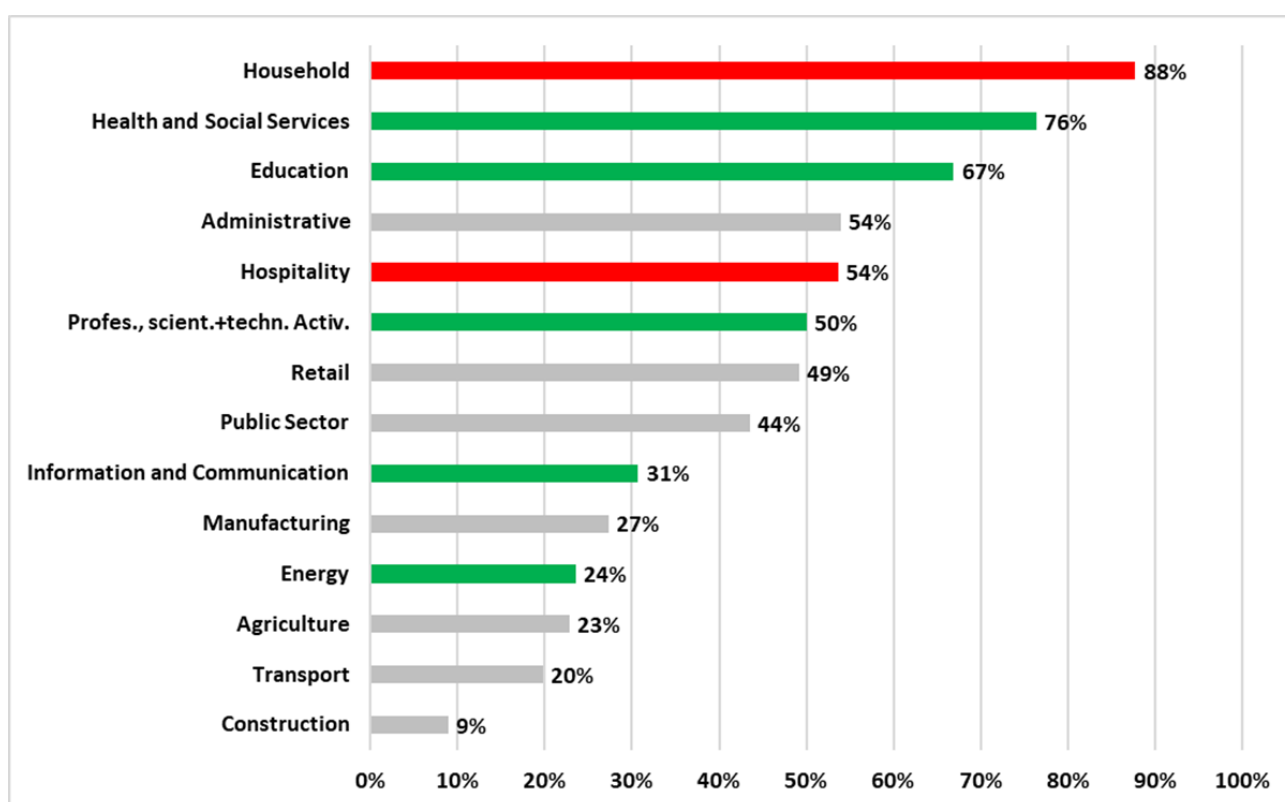


Source: Aggregate data from the INE (National Institute of Statistics). The bars show the percentage change in the annual number of workers employed in each sector in 2021 (solid bar) and 2020 (dashed bar) relative to 2019.

In contrast, male dominated sectors such as the Information and Communication sector, with a share of women of 31% in 2019, or the Energy sector, with a share of women of 24% in 2019, are expanding. According to Figure S3, employment in these sectors have increased by a 11% and a 4% in 2021 relative to 2019. Employment has also grown in the Education and the Health and Social Service sector by a 5% and an 11% respectively. As can be seen in Figure S4 these sectors

are highly feminized. However, the employment growth in these sectors may have resulted from the specific demands of the sanitary crisis and may not be sustained over time. Employment in the Professional, Scientific and Technical Activities, a gender blind sector (see Figure S4), has also increased by a 6% in 2021 relative to 2019.

Figure S4. Share of women by sector of activity in 2019.



Source: Aggregate data from the INE (National Institute of Statistics) constructed from the Spanish Labor Force Survey. The bars show the percentage of women over total employment by sector in 2019. In red are the sectors where employment decreased by more than 4 percentage point; in green are the sectors where employment increased by more than 4 percentage points; in grey are the other sectors with an employment growth larger than -4 percentage points and smaller than a 4 percentage points.

Table S1 shows that a significant fraction of the Spanish RRF funds will be devoted to creating or maintaining employment in the growing sectors identified in Figure S3. In particular, considering the input perspective discussed in this report, a 21% of the RRF funds will revert in the Information and Communication sector; a 9% in the Professional, Scientific and Technical Activities sector; and a 8% in the Energy sector.

All in all, the results in this study suggest that the new Spanish economy after the Covid-19 pandemic may become more skilled, green and

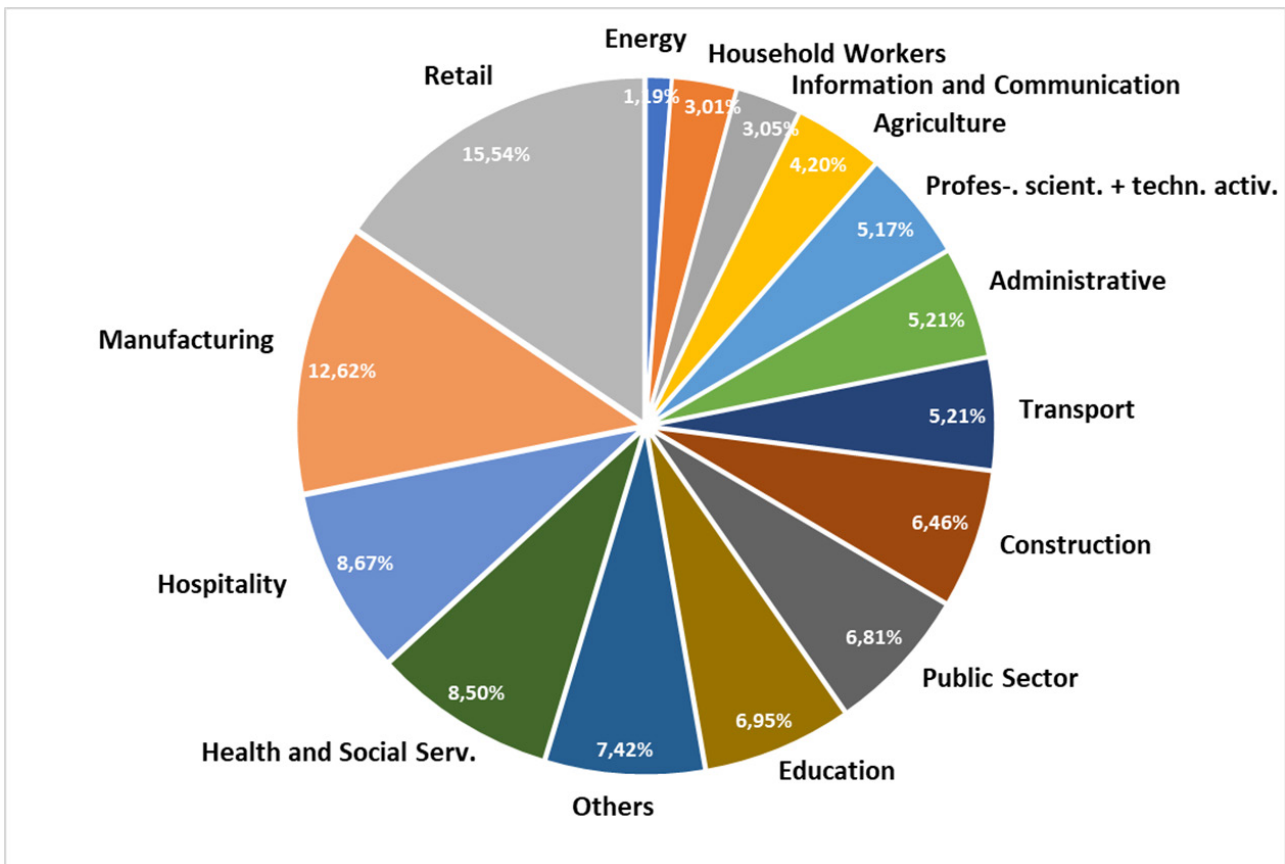
digital. To adjust the labor supply to the new labor demand requirements it will be necessary to provide workers with the appropriate skills. Moreover, women are underrepresented in the growing green and digital sector. To foster and guarantee gender equality in the new labor market it will be necessary to engage more women into STEM degrees and occupations. Therefore, educational and training policies should seriously consider the gender dimensions to equalize the employment opportunities of men and women in the future labor market.

Table S1. The new economy more skilled, digital and green

Sector of activity	Changes in employment in 2021 relative to 2019	Share of females (2019)	Share of females (2021)	% RRF Spanish funds (70.000€ Millions)
Information and Communication	+11%	31%	31%	21%
Health and Social Services	+11%	76%	77%	1%
Profes., Scient. + Techn. Activ.	+6%	80%	80%	9%
Education	+5%	67%	68%	6%
Energy	+4%	24%	23%	8%
Household Workers	-7%	88%	88%	0%
Hospitality	-14%	54%	53%	0.1%

Source: Spanish Labor Force Survey, Spanish Institute of National Statistics and RRF assessment report by Farré (2022). In green are the sectors with an increase in employment above a 4 percentage points in 2021 relative to 2019. In red are sectors with a decline in employment above a 4 percentage in 2021 relative to 2019.

Additional Figure - Structure of the Spanish economy by sectors in 2019



Source: Aggregate data from the INE (National Institute of Statistics) constructed from the Spanish Labor Force Survey. Share of employment by sector of activity in 2019.



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