



Research Article

Educational attainment and gender gaps in the Maltese labour force

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Abstract. The aim of this study is to analyse the main trends in educational attainment in Malta during the decade between 2010 and 2021 and to discuss factors that affect gender gaps in the Maltese labour force. Data show that the educational attainment in Malta has improved substantially during the period under consideration, but pronounced gender gaps remain. The paper considers two major factors that would seem to affect gender gaps in labour force participation rates, namely parenthood obligations and choice of study areas at tertiary level by women. The paper derives a number of policy implications from these findings, including that women should be encouraged to follow STEM subjects and that work-life balance initiatives are crucial for decreasing the gender gap in the labour force.

Keywords: educational attainment, STEM, labour market, parenthood, occupational structure

1 Introduction

The aim of this study is to analyse the main trends in educational attainment in Malta during the decade between 2010 and 2021 and to discuss factors that affect gender gaps in the Maltese labour force including educational attainment, fields of study at tertiary level and parental obligations of the individual. The topic is of special interest considering the persistent under-representation of women in managerial roles, as well as in other leadership positions, despite the continuous efforts to promote gender equality at the workplace.

Figures on educational attainment show that, in the period under consideration, Malta has registered a significant improvement in educational attainment, in part due to the rising role of women in society, though challenges remain. The rise in female education attainment follows the number of policy initiatives implemented by

the Maltese government with the aim of increasing the female participation rate, to address the objectives of the Europe 2020 strategy.

Apart from the intrinsic value of being educated, education has long been viewed as a major determinant of economic well-being (Hanushek & Wößmann, 2010). The relationship between education and labour market outcomes has been documented in various studies with data showing that there are improved labour market outcomes for the individual as educational attainment rises (Ionescu, 2012; OECD, 2012).

Through education, individuals gain skills which enhance their productivity at the workplace. This is usually associated with enhanced job opportunities. Apart from the improved access to employment, as well as protection against unemployment, a higher level of education is associated with higher salaries and more satisfactory terms of employment (Gammarano & Perardel, 2016). Schultz (1975) also notes that education increases individual's ability to deal with changing conditions, thereby enhancing employability in times of rapid technological changes.

The economic benefits are not limited to individuals. It is generally agreed that several positive externalities are associated with education with benefits spilling-over to benefit others in the society (Draghi, 2006; McMahon, 2010). Woessmann (2014) notes that education is bound to alleviate poverty, reduce social exclusion and cut inequality in society. On the other hand, empirical evidence on the impact of education on economic growth is more mixed, often reflecting measurement problems (Hanushek & Wößmann, 2010). In case of Malta, Pirootta et al. (2022) believe that economic growth is intrinsically linked to human resources given the absence of natural resources on the island.

To attain the objective of this paper, statistical evidence is presented to capture the changes in the Maltese labour market and to illustrate the factors that led to

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gender gaps. When appropriate, reference to the literature on these issues is made to support the arguments put forward. The data used in this study are mainly sourced from the Labour Force Survey (LFS), a quarterly survey carried out by the National Statistics Office (NSO). The survey is carried out in all European Union (EU) countries with the aim of providing a continuous assessment of the labour market, including information on employment trends and occupational structure. It also provides information on socio-demographic characteristics such as sex, educational attainment and household characteristics. Data from LFS are comparable across EU countries, and over time, and are sourced from Eurostat.

The article is organised in four sections as follows. Section 2, which follows the introduction, presents an overview of the main trends in educational attainment between 2010 and 2021, outlining the significant improvement recorded by females. Section 3 analyses how educational attainment influences labour market decisions. Furthermore, it seeks to evaluate the effects of parenthood on employment rates for men and women, respectively. At the same time, it will look at the developments in the occupational structure over the past decade. Section 4 concludes the study and puts forward some implications derived from the results presented in the previous sections.

2 An overview of the main trends in educational attainment

2.1 Student enrolment and graduates

Figures on the educational attainment of the Maltese population, obtained from the LFS, show that Malta's educational attainment has improved substantially since 2010, in some cases exceeding the national targets as part of the Europe 2020 strategy.¹ By 2021, the share of the population, aged between 15 and 64 years, having a low level of education decreased to 34.0%, from 59.6% in 2010. At the same time, the share of the population with a tertiary level of education has increased to 29.3%, from 14.2%. Nonetheless, Malta still lags in educational attainment when compared to most other EU member states in

¹As part of Europe 2020 strategy, the EU set-out two education-related targets to be reached by 2020 – (i) for the share of early school leavers to be reduced to 10% and (ii) for at least 40% of people aged 30 to 34 to have completed tertiary or equivalent education. These targets were then translated into national targets, reflecting different situations and circumstances. Malta adopted the same target in respect of early school leavers but set out the target in respect of tertiary educational attainment for 30- to 34-year-olds to 33% which it exceeded in 2017. For further information see Gauci (2021). In 2021, a new set of targets were set with the aim that, by 2030, the share of early school leavers should be less than 9% and the share of 25- to 34-year-olds with tertiary education attainment being at least 45%.

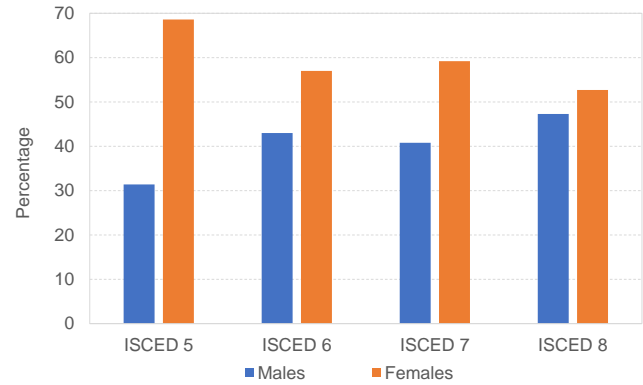


Figure 1: Percentage distribution of tertiary students by ISCED level and sex for academic year 2020-2021. *Source:* NSO - Education Statistics.

terms of tertiary education with countries such as Ireland, Luxembourg and Cyprus having more than 40% of their population with a high level of education.

In general, females tend to do better than males at almost every educational level (Buchmann & DiPrete, 2006; van Hek et al., 2016). This is also the case in Malta. For example, the latest OECD's Programme for International Student Assessment (PISA) which measures 15-year-olds' ability to use their reading, mathematics and science knowledge and skills to meet real-life challenges shows that girls in Malta outperform boys across all three categories (OECD, 2019).² While there is a tendency for girls to outperform boys in reading and in science across the OECD countries, Malta proves to be an interesting case whereby girls outperform boys across all three categories and often at a greater margin than the OECD average. Females are also less likely to leave school early, again a common characteristic amongst EU countries, with the early school leaving rate for girls in Malta standing at 9.3% in 2021, as opposed to 12.0% for boys (Eurostat, 2022).

The reasons behind early school leaving are various. Studies have found that the unemployment rate has a positive impact on enrolment in post-secondary education (Clark, 2011; Pissarides, 1981). This is in line with the opportunity cost argument whereby high rates of unemployment reduce the cost of remaining in education and

²PISA assesses the extent to which students, near the end of their compulsory education, have acquired key knowledge and skills that are essential for full participation in modern societies (OECD, 2016). The assessment focuses on the core school subjects of science, reading and mathematics. In general, the 2018 study shows that Maltese students attain lower scores than the OECD average in the three subjects. When analysing scores by gender, the study shows that girls outperformed boys in reading literacy by 49 score points, in mathematics by 13 score points and in science by 21 score points.

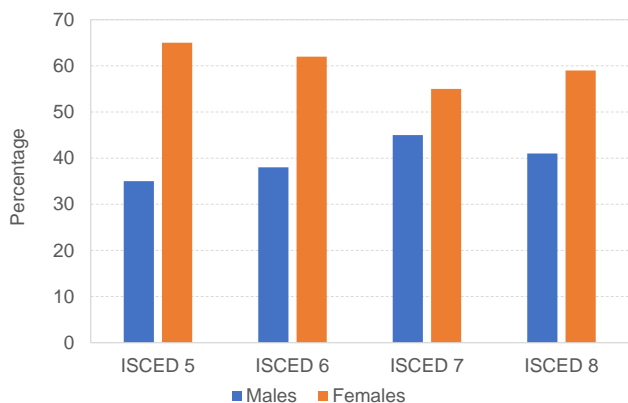


Figure 2: Percentage distribution of tertiary graduates by ISCED level and sex for academic year 2020-2021. *Source:* NSO - Education Statistics.

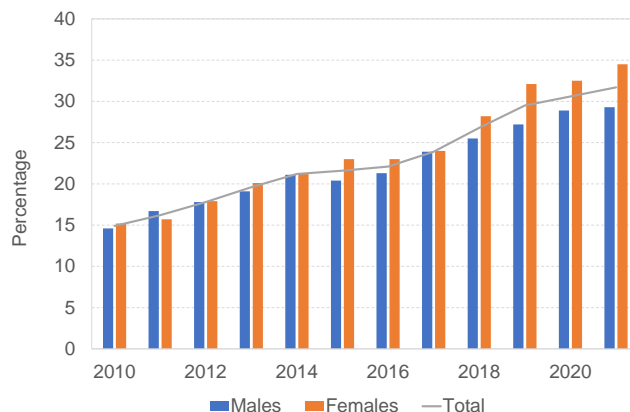


Figure 3: Share of population aged 25 to 64 years with a tertiary level of education for the period 2010-2021. *Source:* Eurostat - LFS Statistics.

so increase post-compulsory enrolment. In recent years, unemployment rates in Malta fell to record lows given the strong growth experienced by the Maltese economy. In such circumstances, the incentive to invest in one’s education may have declined, in part explaining why the rate of early school leavers has remained high in Malta. Even though leaving school with a basic level of education, which has economic and social costs, most early school leavers in Malta were still employed suggesting that early school leavers may still possess skills that are relevant for the labour market (Gauci, 2021).

It is not yet clear why there are gender differences in early school leaving. Literature shows that there are two sets of determinants in understanding this phenomenon, what are described as “push” and “pull” factors, introduced by Jordan et al. in 1994. “Push factors” originate from the school itself while “pull factors” operate from outside the school (Portela-Pruaño et al., 2022). In a study on Italy, a typical Southern-European country which is also characterized by high early school leaving rates, Borgna and Struffolino (2017) found that boys’ higher propensity to drop out is due to scholastic performance at school (push factor) but also due to better employment opportunities in the formal and informal labour market (pull factor).

At the tertiary level, the number of female students enrolled in higher education in Malta has consistently exceeded that of males since at least 2013. Students enrolled in tertiary level courses amounted to 18,336 during academic year 2020-2021, with females comprising over 59% of total students. Figure 1 shows the distribution of tertiary level students across ISCED levels, using education statistics sourced from the NSO. The share of female students outnumbered their male counterparts at all levels with gender parity achieved even at a doctoral level (ISCED 8) where the number of male students has

traditionally exceeded that of females.

Around two-thirds of students were enrolled in a full-time course with the remaining third opting for a part-time course, with most of these part-time students being females. Whilst the reasons for choosing to follow a part-time course may be various, it may indicate that there is a larger tendency for females to combine studies with other work-life commitments. As more females invested in their education, the country has benefited from a surge in female graduates enlarging the country’s pool of graduate talent. In fact, in 2021 females accounted for 60% of all tertiary graduates, an increase of 4 percentage points since 2013. Figure 2 shows the distribution of tertiary graduates. Similar to the distribution of tertiary students, the largest difference amongst genders is observed for short-cycle studies (ISCED 5) with the gap between the genders narrowing as ISCED level increases.³

Figure 3 shows that the share of women aged between 25 and 64 years with a tertiary level of education has more than doubled between 2010 and 2021, reaching 34.5% up from 15.2%. Since 2012, the share of females with a tertiary level of education has consistently exceeded the male counterpart, with the gap between the two genders widening even further in recent years. The improvement in educational attainment of females stems from the younger cohorts, namely those aged between 25 and 44 years old, in line with the emancipation of women with the most significant changes occurring in the past 20 years.

Indeed, Chircop (2020) notes that that the new millennium acted as a catalyst of change in Maltese society with many Maltese acquiring more liberal views. In

³Given that the absolute number of Doctoral graduates in Malta is low, careful attention must be paid when analysing these numbers as small changes in numbers can translate to large changes in percentage terms.

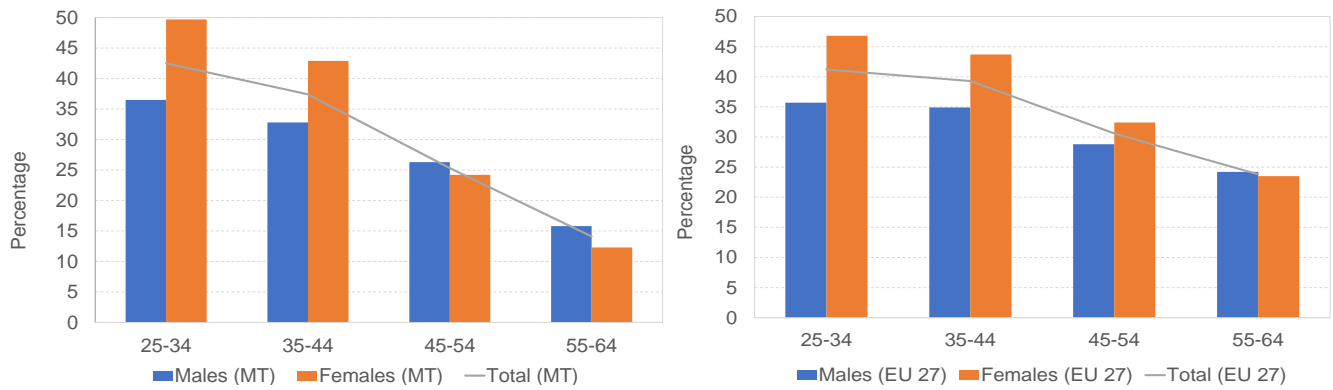


Figure 4: Tertiary educational attainment by gender and age in Malta and in EU 27 in 2021. Source: Eurostat - LFS Statistics.

this context, social norms began to change moving away from the traditional patriarchal society. The advancement of females' educational attainment, and consequently the increase in female employment, was facilitated by several government policies including fiscal incentives, longer maternity and adoption leave, the introduction of free-child care facilities as well as the provision of after-school care services.⁴

In fact, almost half of females aged between 25 and 34 years are tertiary graduates. This contrasts sharply with the share of male graduates in that same age bracket which stands at 36.5% (see Figure 4). The share of female graduates in this age cohort also exceeds the share of female graduates in the EU27 which stands at 46.8%. For those aged between 35 and 44 years, the share of female graduates is close to the EU 27 average at around 43%. For older cohorts, those aged 45 years and over, the share of men with a high level of education exceeds that of females. On the other hand, in the EU27, the share of female graduates exceeds, or is at par with, that of males even in older age groups.

2.2 Fields of study and gender gaps

Despite the progress in educational attainment, gender gaps persist in terms of the fields of study pursued. It is noted in OECD (2017) that even though young females obtain more years of schooling than young men, they are less likely to study science, technology, engineering and mathematics (STEM) subjects, a situation which is also prevalent in Malta. Although there has been a decline in the gender differential in the take-up of medical sciences and law, as noted by Reimer and Pollak (2010), differences in the mathematics-oriented STEM fields are still striking (Legewie & DiPrete, 2014; Mostafa, 2019). Stoet and Geary (2018) believe that students may choose

⁴For an exhaustive list of the main government policies implemented to raise the female participation see Micallef (2018) and Borg Caruana (2023).

their field of study based on their comparative strengths, rather than on their absolute strengths.⁵

Education statistics also give information about the number of graduates by their field of study. Figure 5 shows that the share of female graduates in computer studies, engineering and natural sciences in Malta, in 2021, stood at 7.2% whilst the respective figure for males was 27.0%. For the EU 27 countries, the share of female graduates in these fields amounted to 14.1% while that of males to 39.4%. Thus, while gender differences are a common occurrence in several countries, such disparity is larger in Malta. In 2021, over 70% of female graduates graduated in business, administration & law (27.3%), education (24.5%) and health (18.6%). Almost 19% graduated in social sciences, arts and humanities. In the case of males, the largest share of graduates was also in business studies (35.8%). However, these were followed by graduates in ICT (13.6%). The share of male graduates in engineering, manufacturing & construction amounted to almost 10%, which by European standards is also low.

The share of female graduates in STEM fields has declined over time, a drop of 5.9 percentage points between 2013, the first data point available for Malta, and 2021, although this also holds true for men with the drop being even higher for males. The European Commission (2022) notes that the Maltese public research system suffers from under-funding while research & innovation by firms remains limited. Consequently, attracting and retaining skilled talent for research and development is a key challenge which may partly explain the drop in STEM graduates.

Data shows that business studies remain the most pop-

⁵According to Stoet and Geary (2018), many high-performing girls may not pursue a career in science, even if they have the capability to do so, because they are likely to be top students in other non-science subjects too. Consequently, they believe that tackling boys' under performance in reading may be just as important

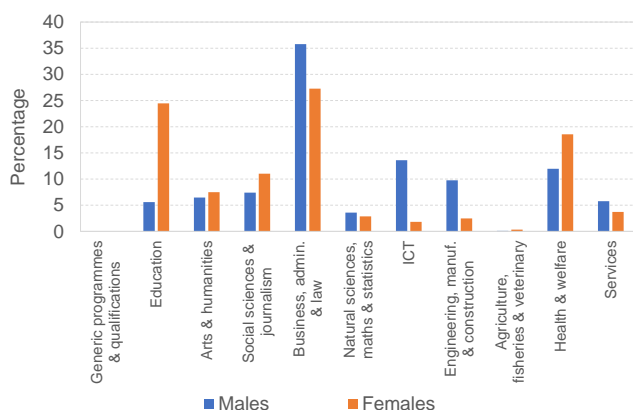


Figure 5: Share of graduates in Malta by field of education in 2021. *Source: NSO - Education Statistics, author's calculations.*

ular field amongst tertiary students, accounting for almost a third of all graduates. These trends are also apparent in the number of students registered as at scholastic year 2020-2021, giving an indication of future graduates, with almost 68% of female students enrolled in business studies, education and health and less than 9% enrolled in STEM subjects.

The difference in educational choices pursued by males and females is likely to play a significant role in the choice of occupations pursued by the two genders. As a result of the under-representation of women in STEM fields of study, women tend to remain under-represented in scientific and technical fields in the labour market (European Commission Directorate-General for Research and Innovation, 2021). The low proportion of women in these fields translates into biased research output together with a loss of talent and of growth opportunities (Gabriel, 2021). Women still account for a minority of researchers, and, in Europe, most countries are still far from reaching gender parity. In case of Malta, data as of 2018 show that less than one in three researchers were females (UNESCO Institute for Statistics, 2020). This negatively affects the labour market making it harder for companies to fill high-demand positions in IT and engineering and may also lead to differences in pay between genders (European Institute for Gender Equality, 2017).

In view of the globalization and technological change going on in advanced economies, including Malta, the structure of labour markets and skills requirements are rapidly changing, requiring the workforce to be adaptable and flexible. Going forward the demand for low-skilled employees is set to decline further, in part due to the on-going automation of occupations, while more opportunities will exist for those with medium and high qualifications (CEDEFOP, 2023). Moreover, advanced

technologies propel the need for advanced IT and programming skills accompanied with higher cognitive skills such as creativity, critical thinking and complex information processing (Bughin et al., 2018). Firms in Malta have often highlighted their difficulties in finding skilled workers (Central Bank of Malta, 2023) and resorted to importing foreign talent to fill-in vacant positions. To minimize these mismatches, an appropriate skills governance is necessary including regular skills forecasting exercises and greater coordination among stakeholders amongst others (M. Debono, 2017).

3 Educational attainment and labour market participation

3.1 Educational attainment and gender gaps

The factors behind the increase in female participation rate are various, reflecting both policy initiatives, as mentioned earlier, as well as other structural factors. Micallef (2018) notes that higher education, lower fertility, changes in social norms and the availability of more flexible work practices have all contributed to the increase in the female participation rate. In this paper, the focus is on educational attainment, tertiary education study options pursued by women and parental obligations.

While better educational levels help employability for both men and women, the influence of education on employment participation is particularly strong for women (Thewlis et al., 2004). This is likely to be related to the persistence of traditional gender roles with women who are expected to stay home with the aim of taking care of a family having less incentive to obtain formal education and thus being more likely to have a low level of education. The more investment a woman makes in study, the more likely she is to exploit that investment in work in the labour market (Woodhall, 1973). Eckstein and Lifshitz (2011) posit that education possesses the capacity to augment an individual's earning potential in contrast to other obligations, such as domestic tasks, consequently enhancing the probability of labour force participation. This point is also made by Pissarides et al. (2005) who notes that the employment rate of highly educated women is higher than for those with a lower level of education. Moreover, it is also acknowledged that while gender employment gaps exist across all levels of education, they are the widest among men and women with low levels of education (OECD, 2017).

Figure 6 shows that the gender gap in employment rates in Malta for two different age groups - those aged between 25 and 54 years, considered the prime working age, and those over 55 years of age. While a gender gap is present across all levels of education, it narrows as educational

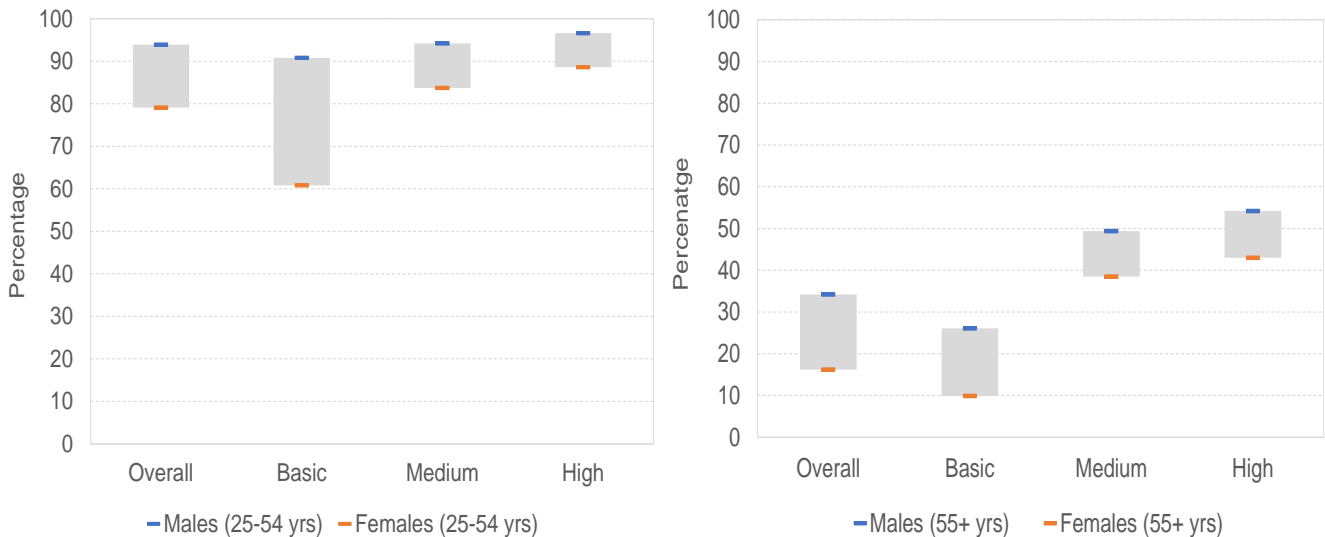


Figure 6: Employment rates by gender and educational attainment for prime-age workers and older workers in 2021. *Source: Eurostat - LFS Statistics.*

attainment increases. LFS data shows that employment rate, for those aged between 25 and 54 years of age and with a low level of education, stood at 90.8% for men in 2021 while that of women was 60.8%. This implies that the gender employment gap among men and women, aged between 25 and 54 years, with low educational attainment stood at 30.0 percentage points in 2021, more than three times the gap among highly educated men and women (8.0 percentage points). For older workers, the gender gap by educational attainment is less pronounced.

So far, the analysis has mainly focused on the educational aspect to explain gender gaps in employment. However, other factors are at play which will be reviewed in the coming section.

3.2 Effects of parenthood on labour market decisions

While educational attainment is an important factor in labour market decisions, demographic factors also play a crucial role. Marital status, childbearing and caring for the elderly raise the value of home production, relative to market work (Christiansen et al., 2016). Parenthood and related obligations tend to affect the employment rates of men and women differently. LFS data show that, in all EU countries, the employment rate for men with children is higher than that of those without indicating that the presence of children seems to positively impact the employment of men (see Figure 7). This is not reflected in the case of women as in most countries there's a higher employment rate for women without children than for those with children. It is acknowledged that motherhood can lead to interruptions in career paths for women

and increased time spent on unpaid work at home (Pew Research Center, 2013).

Figure 7 shows that the employment rate for women in Malta aged between 25 and 54 years with children, stood at 71.3% in 2021, 15.7 percentage points below the employment rate of women without children (87.0%). The difference varies significantly between countries, with the widest variances recorded in Eastern European countries and in Malta. Although Malta has recorded a remarkable increase in the employment rate of women in the 25 to 54 years cohort, from 47.5% in 2010 to 79.1% in 2021, the gap between working women with and without children remained large.

On the other hand, Figure 7 shows that Sweden, Portugal, Croatia, Slovenia, Denmark and Netherlands recorded a higher employment rate for women with children as opposed to those without. The vast availability of family-friendly measures in these countries played an important role in this regard with Sweden, Portugal, Denmark and Slovenia being ranked amongst the top ten countries in the league table of national, family-friendly policies (Chzhen et al., 2019).

Looking at the family-friendly measures of these countries, one notes that in Slovenia fathers have the right to 30 days of paternity leave. This contrasts with the situation in Malta with paternity leave remaining limited at 10 working days. In case of Portugal, the country has moved from the concept of maternity and paternity leave to parental leave. It ranges between 120 and 150 days and can be taken either by the mother or father or shared between them. In Sweden, parental leave is also the most relevant type with each parent being eligible for up to 240 days

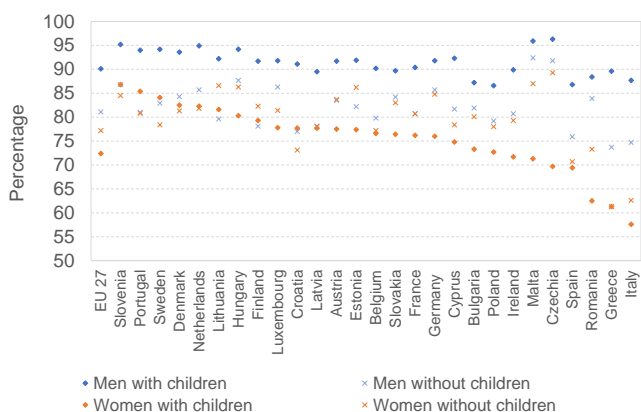


Figure 7: Effects of parenthood on employment rate of prime-aged workers in 2021. *Source: Eurostat - LFS Statistics.*

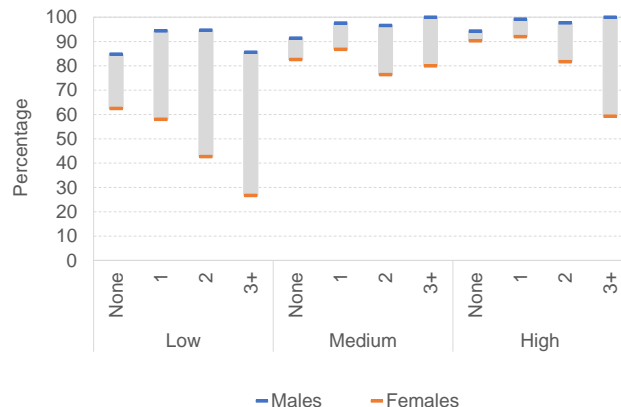


Figure 8: Employment rates by gender, educational attainment and number of children in 2020. *Source: Eurostat - LFS Statistics.*

parental leave. Parental leave in Malta currently stands at four months per parent.

Another factor worth noting is that, in Portugal, employees with children under eight years of age are entitled to request a telework arrangement though subject to work type and the employer’s ability to accommodate the request. This is also the case in Sweden which also allows for the care of sick family members.

3.3 Methodology

Figure 8 shows the employment rates by gender, educational attainment and number of children.⁶ While, in general, the employment rates of women are lower for those with children across all categories of educational attainment, the decline is larger for those women with a low level of education. For example, the employment rate for a female with a low level of education and having two children goes down to 42.7%, a drop of almost 20 percentage points, compared to women with the same level of educational attainment but without children. On the other hand, for those females with a medium and high level of education the drop is smaller at 6.2 percentage points and 8.6 percentage points, respectively.

As mentioned above, there is a higher opportunity cost for those who invested in their self- development through education leading them to retain their jobs. Another possible reason for the higher employment rates of women with higher levels of education may be related to the advantages that arise with further educational attainment including greater job flexibility. In most instances, work of employees with a high level of education can be done remotely making it easier to combine work and family commitments. On the other hand, occupations which require only a basic level of education often entail workers to

⁶Data refers to 2020 as data for 2021 was marked as unreliable in some instances.

be physically present at the workplace making it more difficult to combine motherhood and employment. Debono (2021) notes that employees working in low-skilled jobs, most often having relatively low levels of education, tend to work the highest number of overtime hours making it even more difficult to ensure a work-life balance.

3.4 Gender gaps and the occupational structure

Data from the LFS, on the occupational structure of Malta shows that the composition of the workforce has changed considerably over the years. Higher educational attainment has contributed to a more educated pool of employees resulting in a greater share of workers occupying professional and managerial positions. Whereas in 2010, 36.1% of all workers were employed as managers, professionals and technical staff, the share of workers employed in these occupations stood at 46.1% in 2021. At the same time, there was a decline in the percentage of workers working in elementary occupations, as well as a drop in machine operators and craft and related trades workers. Indeed, the share of those engaged in elementary occupations, machine operators and craft and related trades dropped by 9.4 percentage points to 22.8%.

Looking at the occupational structure by gender shows that more than half of female workers were employed either as services and sales workers (27.5%) or professionals (26.7%). The share of the latter has increased markedly over a decade ago, rising by 9.4 percentage points up from 17.3% in 2010 (see Figure 9). Around 16% of the female workers were employed as clerical support workers while technicians account for around 11% of workers. These four occupations employed over 80% of females. The occupational structure of males was more diversified than that of females. Whilst the largest share

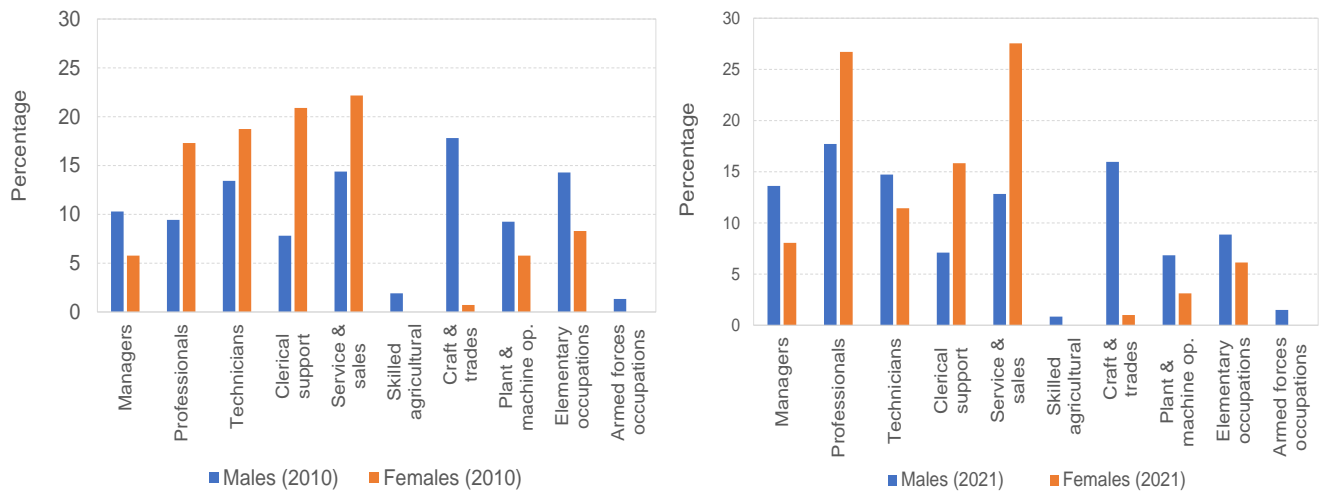


Figure 9: Employment by occupation and sex in 2010 and 2021. Source: Eurostat - LFS Statistics, author's calculations.

of males were also employed as professionals (17.7%), almost one in six males was employed in the craft and related trades sector. Technicians accounted for 14.7% of all those employed while 12.8% were service and sales workers.

Despite the ever-increasing pool of female graduates, gender parity has not yet been reached when it comes to managerial positions. The share of women occupying managerial positions is still low, compared to that of males, at 8.1% in 2021 up from 5.8% in 2010, whilst the share of men occupying the top position stood at 13.6%. Studies, such as for example that by the European Commission (2018), have shown that higher education is a necessary, but not sufficient, condition for good labour market performance. In several instances, the female advantage in education fails to translate into more favourable labour market performance for women with females unable to advance past a certain point in their occupations and professions, or unable to break through the glass-ceiling, regardless of their qualifications or achievements (Purcell et al., 2010).

4 Conclusion and policy considerations

As explained above, Malta has registered significant improvement in tertiary education with the number of graduates growing steadily over the years. In general, women have outperformed men when it comes to higher educational attainment. As a result, there has been convergence in employment rates between the genders but pronounced gender gaps still exist in the Maltese labour force. In this paper, two major factors that would seem to effect gender gaps in labour force participation rates

were considered, namely parenthood and related obligations and choice of study areas at tertiary levels.

One implication of this study is that women are more likely to experience longer out-of-work spells than men, because of the unbalanced division of housework and care activities between men and women in households (Ferrant et al., 2014; Pew Research Center, 2013). Consequently, differences in human capital between the genders are bound to increase with age. Moreover, career interruptions may entail negative consequences for females' careers paths, although the repercussions of these decisions vary depending on the length of the interruptions (Aisenbrey et al., 2009; Bächmann & Gatermann, 2017). It has also been observed that after childbirth, men and women often return to a more traditional division of roles (Bühlmann et al., 2010; Drobníč et al., 1999).

It follows, therefore that work-life balance initiatives are crucial for decreasing the gender gap in the labour force. Such initiatives should not only focus on women with young children but rather should be more open to encompass both men and women in fulfilling their caring responsibilities. While it is widely acknowledged that the number of measures introduced by the Maltese government to entice women to remain in the labour market, including the availability of free child-care for parents who are either in employment and/or in education, were beneficial, some limitations remain. In this regard, further effective measures to address the gender gap in the labour force are needed and these may include the availability of free child-care irrespective of parents' employment status, more flexible work arrangements and the availability of leave for parents when a child is sick. Ideally, such measures are designed for all workers irrespective of gender.

As explained above, despite the considerable progress in educational attainment, the pool of STEM graduates in Malta remains limited, indicating the need to steer education and training provision towards these areas of study. This is even more so for women, with female graduates from STEM fields being less than 9% of total female graduates. Progress can be achieved by addressing the issue of gender division across study-fields as early as possible, while facilitating women's transition to the labour market in STEM related occupations.

Given that the changes in the labour market are largely technologically-driven, females who follow non-technical study areas tend to find themselves at a disadvantage when it comes to career advancement possibilities. The share of women in STEM occupations is often depleted even further through what is known as the "leaky pipeline" syndrome whereby women move away from STEM jobs, and opt for teaching professions for example, because of challenges such as finding a work-life balance, amongst others (European Institute for Gender Equality, 2017).⁷

One solution to encourage women to opt for STEM areas of study is to move towards more flexible and less segregated study options. It is suggested that STEM subjects are merged with the arts and humanities (STE(A)M) with the objective of making STEM studies and careers more attractive for women (European Institute for Gender

Equality, 2017). Supporters of STEAM education posit that adding the art component responds to industry's need for creativity and innovation in STEM fields which may strengthen the appeal of scientific careers.

Also, providing opportunities to students to change their core subjects as they progress in their education pathway could possibly widen their career choices as too often education systems direct students onto a certain educational path for a specific job, which might turn to be too costly to change.

Finally, it is important to note that while the EU-LFS statistics have overall high quality, like any survey, they are based upon a sample of the population. Consequently, the results are subject to the types of errors associated with random sampling. Future research could provide further insights on the extent educational attainment affects gender disparities by incorporating a higher level of analytical analysis, as this study has focused on statistical evidence. Another possible strand of research would be to analyse how careers, and job characteristics such as working hours, industry or sector, differ before parenthood and after giving birth.

⁷The authors note that the ease of finding a work-life balance between STEM and the more traditional fields differs as women in STEM fields tend to work longer hours than women in other occupations.

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