Discussion Paper

Employment & Skills in Gozo

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Disclaimer

The contents of this discussion paper are presented to foster a wider discussion on this topic and to help formulate research-based policy recommendations. This paper represents the opinions of the authors and is the product of professional research. It is not meant to represent the position or opinions of the Gozo Regional Development Authority. Any errors are the fault of the authors. This discussion paper will be used as a basis for GRDA policy position on employment and skills in Gozo.

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Employment & Skills in Gozo

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In recent years, Gozo's dynamic labour market has performed remarkably well by most traditional indicators, approaching almost full employment. At the same time, Gozo's labour market has experienced material changes; most notably is the rapid rise in migrant worker inflows which it successfully absorbed and which mirrors a similar phenomenon in mainland Malta. Despite these significant achievements in terms of quantity, persistent structural weaknesses, largely in relation to labour quality represented by skills levels, may be responsible for Gozo's performance gap vis-a-vis mainland Malta.

The paper argues that, based on several indicators, Gozo may be locked in a relatively low-skills equilibrium trap. This consideration takes on an added importance in the context of the unfavourable demographic dynamics projected to occur in Gozo in the next 15 years or so and the risks posed by expected transformations in the future of work, such as automation. Targeted action on employment and skills to break out from these low skills equilibria and unlock Gozo's growth potential is imperative if the wider vision set by the Regional Development Strategy around sustainable and balanced territorial development achieved by enhancing human capital with a skilled workforce is to be realised. Although building and furthering skills capacities (supply) should remain an ongoing pursuit, the need and scope for interventions on the demand side of skills seem to be more pressing - not so much in terms of magnitude of demand as type.

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Ivan Ebejer is an economist, consultant and foresight strategist with over 25 years' public and private sector experience in economics, finance and EU affairs. As a European Commission official, he served in different economist roles carrying out numerous studies as part of the design, formulation and evaluation of EU policy strategies and funding programmes, including those related to skills and training. He taught the course on the Economics of European Integration as visiting lecturer at the University of Malta.

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Employment and Skills in Gozo

1. The Regional Landscape

Despite undergoing important changes in recent years, Gozo's labour market maintains a number of unique features that, in many respects, distinguish it from that of mainland Malta. The island's small size, peripherality and double insularity raise a number of unique challenges that call for a specific and tailored set of policy interventions.

Demographic developments, which saw the population increase by an annual average of 1.6% over the period 2015-2020, had a favourable bearing on Gozo's labour market performance; the employment rate jumped from an estimated 57% in 2015 to 71% in 2020, slightly below the national level of 73.8%.[1] These results were mainly driven by a strong inflow of migrants, which led to an increase in the proportion of non-Maltese employees in total employment from 7% in 2015 to 19% five years later.[2] At the same time, the number of unemployed persons fell sharply reaching around one-sixth of the 2015 levels.[3] This shows that the Gozitan economy has been effective in getting people into work, with the labour market absorbing the rapid rise in the working age population (15-64 years), which averaged 2% annually in the past 5 years.

Despite these favourable developments, Gozo's inactivity rate (i.e. persons of working age who are either not employed or unemployed), although declining in recent years, remains high (estimated at 29% in 2020) when compared to mainland Malta (23%). Although this could partly reflect unreported activity, it nonetheless suggests that there is scope for policy levers to activate idle human resources to increase Gozo's potential economic growth. Simulations show that closing Gozo's unfavourable activity gap with the national rate would translate in around a 10% increase in labour market participation.

In terms of employment status, the private sector accounts for the bulk of full-time employment (68%) and is the main driver of job creation, adding almost 3,000 jobs in the period 2013-20 (Chart 1). Most of this increase relates to employees, while the number of people in self-employment also grew steadily in the same period. The number of people in part-time employment as a primary source of income has become an important contributor to job creation in Gozo over the years with part-time self-employment accounting for the largest increase in this category. In

[1] There are no published official statistics for the employment rate in Gozo. The estimate is calculated as the number of people in full-time employment by place of residence as a proportion of the population aged 15-64 years.

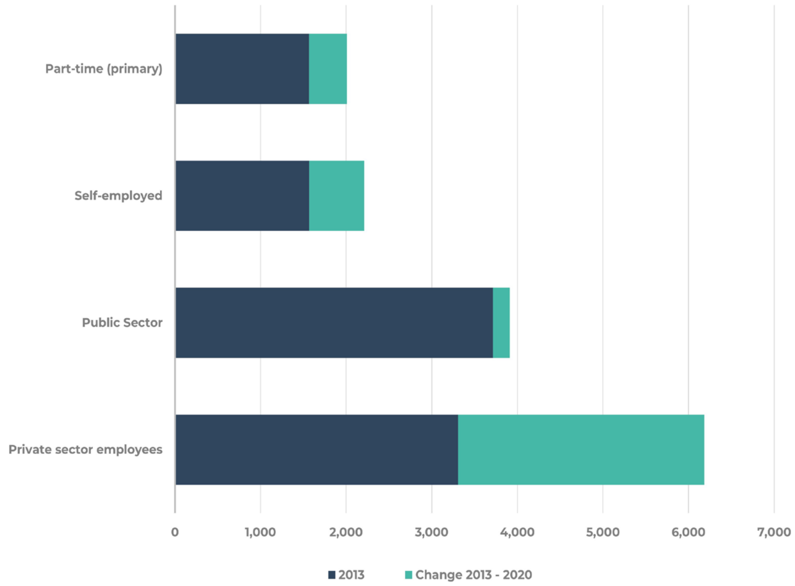
[2] Excluding the public actor, foreign workers account for almost half of the private sector employment in Gozo.

[3] The number of jobless persons in general held up well during the pandemic years partly reflecting a substitution effect as Maltese travelled to Gozo in response to the restrictive measures which disrupted international flights.

contrast with the developments in mainland Malta, part-time primary occupations in Gozo are mostly prevalent among females which could be explained by the flexibility such work arrangements allows for work-life balance.

Chart 1 - Employment Status

(2020)



Data Source: Author's calculations

1.1 Business base

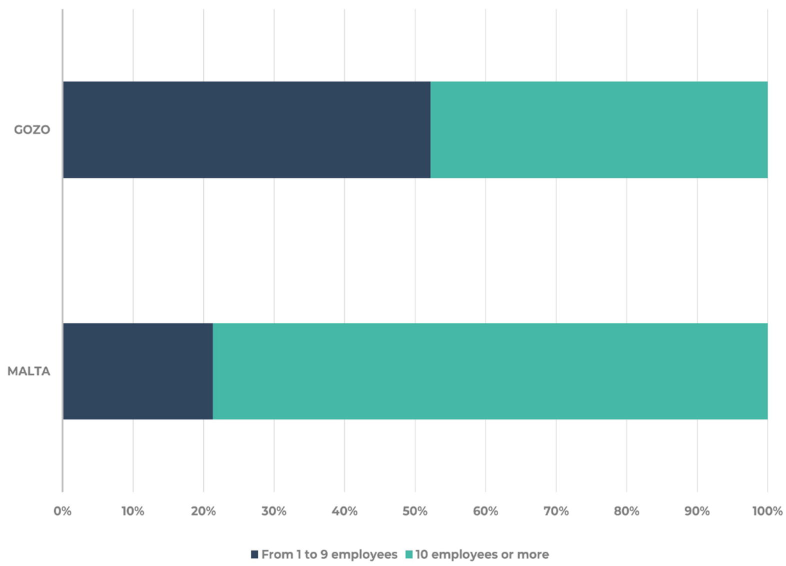
Local skills needs and business attitudes towards investment in training and skills, and therefore the region's economic performance, is influenced by the size and sectoral profile of the local business.

Gozo's business base and structure faces peculiar challenges. Its 3,321 enterprises equate to 96 businesses per 1,000 population, compared with a national average of 140. This means there are some 1,500 less enterprises compared with what would be the case if Gozo's business density matched the national average.

Gozo's business profile also differs significantly from that of mainland Malta (Chart 2). Micro enterprises (between 1 and 9 employees) constitute slightly more than half of the business population against one-fifth for Malta, making upskilling and reskilling the workforce more challenging given the inverse relationship between company size and participation rates of employees in learning opportunities caused by capacity constraints such as lack of resources and training difficulties typically faced by micro enterprises.[4] This situation renders both employees and the companies in Gozo even more vulnerable in times of rapid change and economic uncertainty.

Chart 2 - Profile of Enterprises by size

(2019)



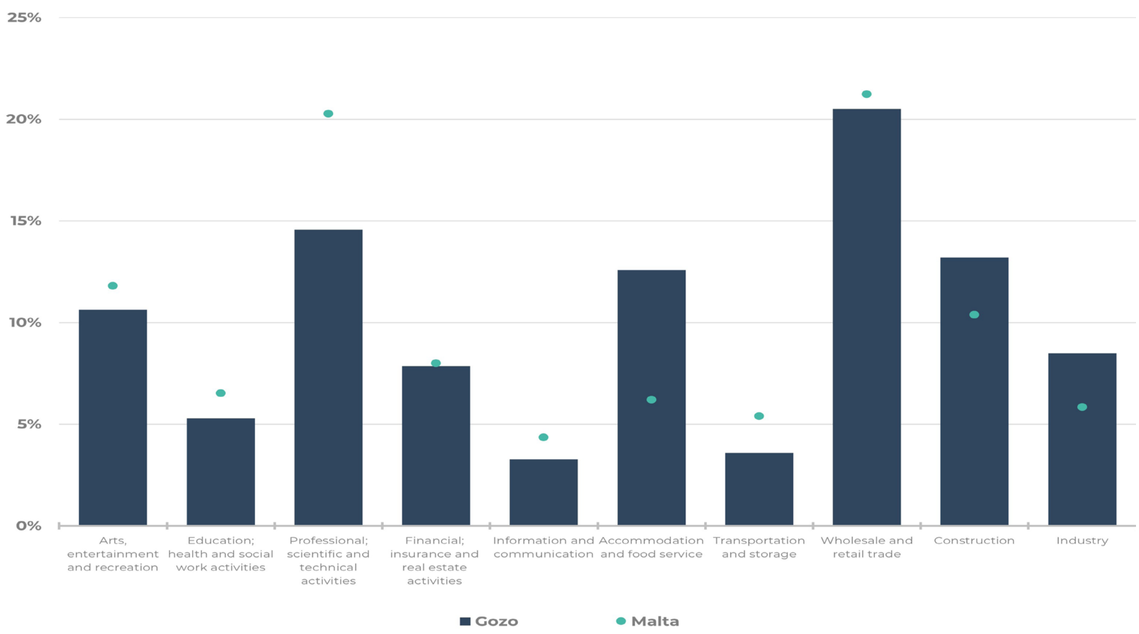
Data Source: Eurostat

Enterprises operating in wholesale and retail, professional, scientific and technical activities,

[4] European Commission. (2018). Annual report on European SMEs 2017/2018: SMEs growing beyond borders.

Chart 3 - Profile of Enterprises by sector

(Share of total, 2019)



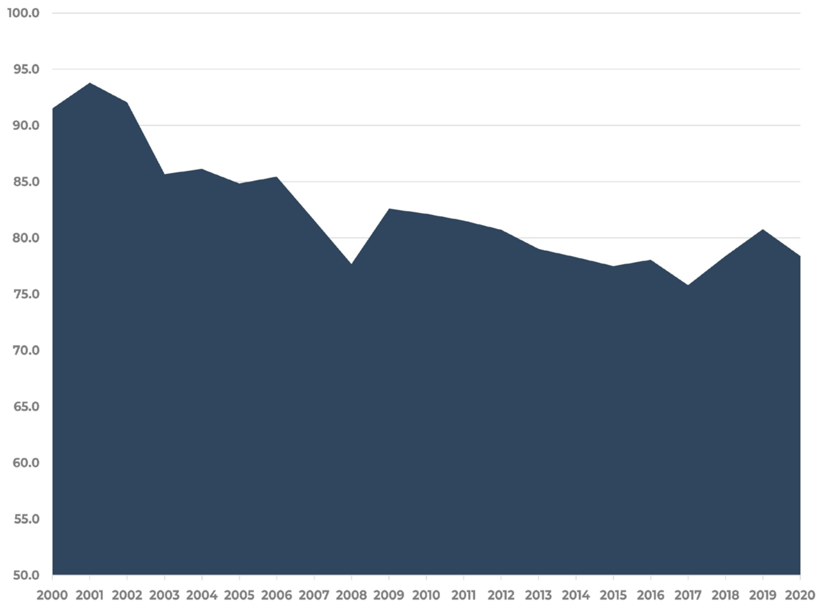
Data Source: Eurostat

accommodation and construction are strongly represented in Gozo (Chart 3). In aggregate, enterprises in these sectors account for more than three-fifths of the total business population. Although strongly represented in both islands, accommodation and food service displays the highest difference in terms of shares in total enterprises with the proportion of businesses operating in this sector in Gozo being twice the national average.

1.2 Productivity

Chart 4 - Productivity Index

(Gozo indexed against mainland Malta; Malta = 100)



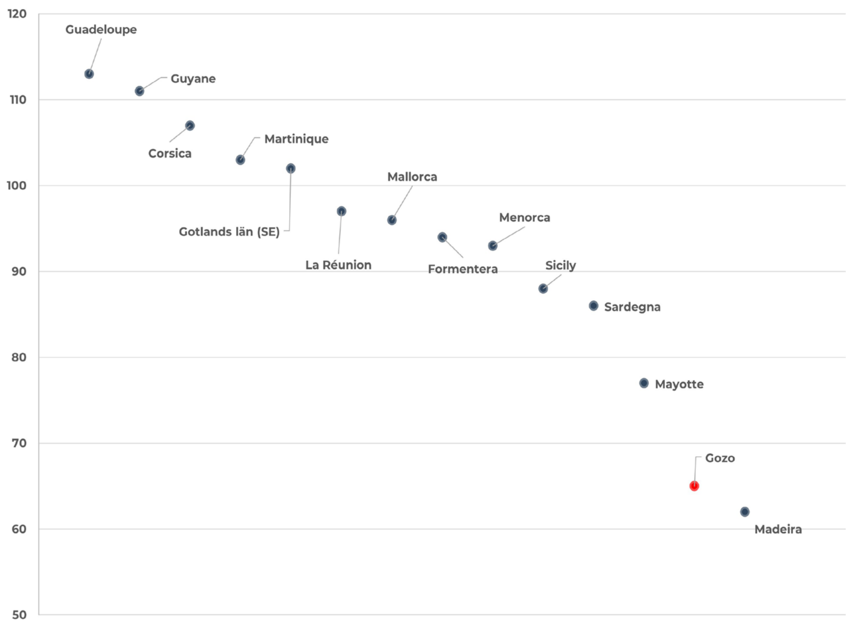
Data Source: NSO, Authors' calculations

Productivity is a key measure of the local economy's performance because it is the main driver of economic growth, prosperity and living standards. Estimates of productivity measured by gross value added per full-time equivalent suggest that Gozo's labour productivity lags behind that of mainland Malta (Chart 4). Over the period 2015-2020, Gozo's productivity hovered around 78% that of the national average. Estimates on a sectoral level suggest that whereas productivity in public administration, construction and real estate (which account for almost half of Gozo's GVA) are comparable to those in Malta, the productivity gap widens significantly in the case of wholesale and retail and accommodation and food service, professional services, financial services and manufacturing (with an aggregate share of almost 40% of GVA).[5] This productivity deficit has important consequences. Estimates show that the local economy would be around €75 million larger, an increase of 15%, if its productivity performance converged with the national average. This is important because prosperity in Gozo is relatively low.

Compared to a selection of islands in the EU (at NUTS 3 level) also characterised by having links to and dependency on their respective mainland, Gozo's labour productivity, indexed with the EU27 average, displays a relatively large gap (Chart 5). In 2019, Gozo's productivity stood around 60% that of the EU average. Madeira, which is more than ten times larger than Gozo's surface area ranks slightly below in terms of productivity. On the other hand, at 83 km squared, Formentera which is the closest in terms of size to Gozo has a productivity which is only 7 points below the EU average.

Chart 5 - Labour Productivity Index

(2019, Indexed against EU27; EU27 = 100)



Data Source: Eurostat

1.3 Pay performance and gender pay gap

Productivity is linked closely to pay and therefore to living standards. Typically, enterprises that are more productive pay higher salaries. Pay is also an important indicator of job quality and of the skill levels deployed within a region. Gozo's underperformance on productivity is reflected in its pay performance. In the past five years, the average gross annual basic salary in Gozo fluctuated around 90% of mainland Malta (Chart 6). Since this relates to salaries at the place of residence, and given that one-fifth of Gozitan employees commute to work in Malta, the gap between the average pay of persons working in Gozo and that for employees in the mainland could be even wider. Lower pay in Gozo could in fact be another indicator, apart from limited job opportunities, that explains the relatively significant number of commuter workers in search of better remuneration. Indeed, the highest ratio of commuter workers to those who work in Gozo are employed in financial services, information

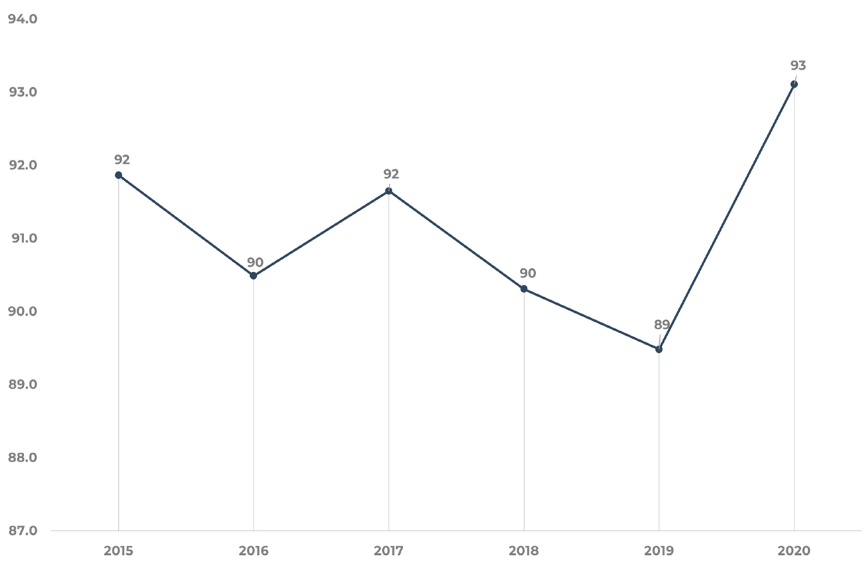
[5] It is noteworthy that official data for wholesale and retail and accommodation and food service, two major sectors in Gozo's economy, are not published separately.

and communication and professional services - three sectors which pay the highest salaries at a national level but which, as will be argued below, are underrepresented in Gozo.

In addition, these sectors are characterised by high skills occupations which suggests that Gozo is not benefitting fully from its higher quality human resources and higher income potential. In contrast, Gozo has a relatively large share of its employment in low-paid occupations. Around 6,070 persons, equivalent to 43% of employment in Gozo, fall within the three lowest paid sectors - manufacturing, construction and wholesale and retail. This is higher than the national average of 40% and is significant because the level of pay provides a rough indication of the level of skill required to perform a job and its contribution to productivity.

Chart 6 - Pay Performance Index

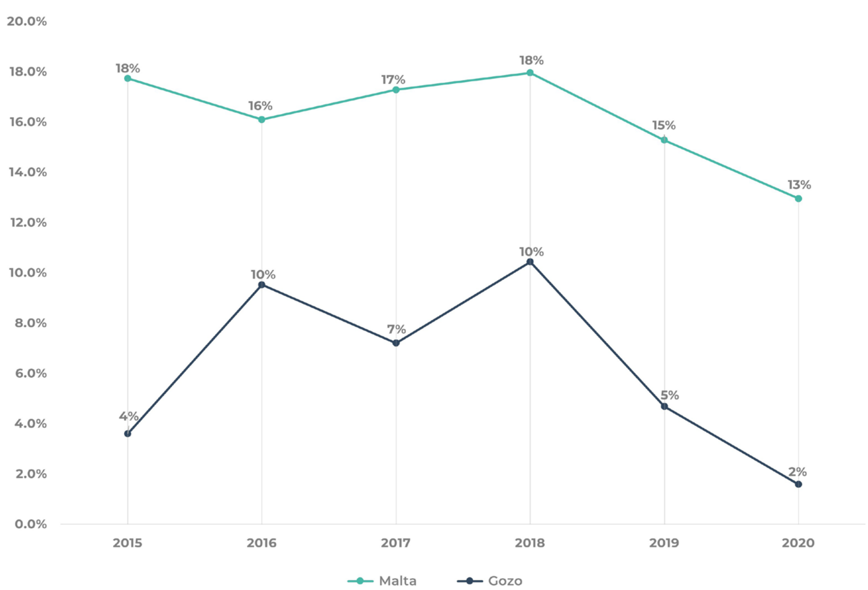
(Gozo indexed against mainland Malta; Malta = 100)



Data Source: NSO, Authors' calculations

Gozo faces a lower gender pay gap than the national average (Chart 7). Although volatile, regional level data suggests an underlying downward trend in the gender pay gap for Gozo, in line with national trends. The pay gap has declined sharply in Gozo since 2018, and stood at 2% in 2020. One reason for the lower gender pay gap seems to be related to the structure of economic activity and the prevalence of the manufacturing and wholesale and retail sectors in employment in Gozo. Both sectors display a smaller difference in national average basic salaries between males and females.

Chart 7 - Gender Pay Gap



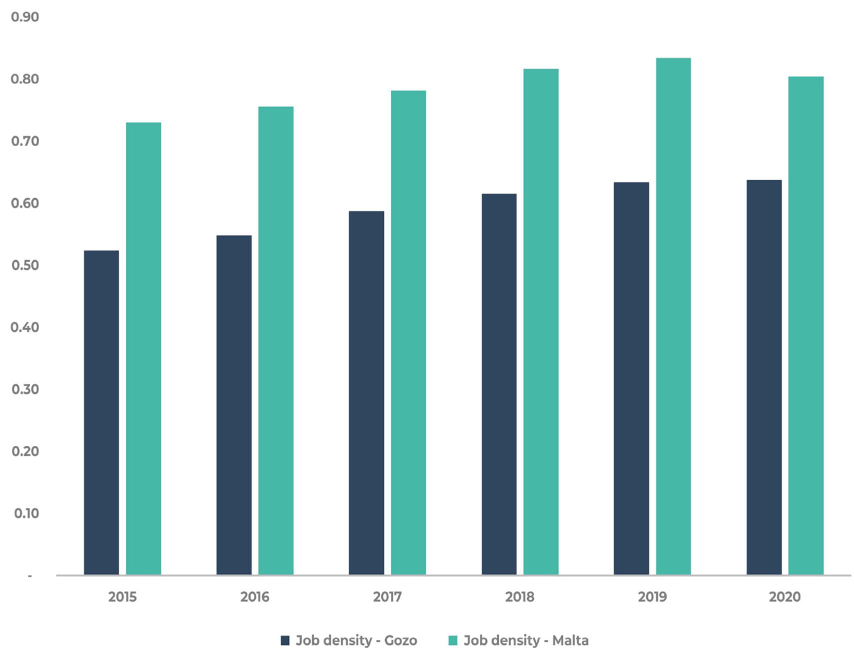
Data Source: NSO, Authors' calculations

2. Skills demand

Improved labour market outcomes require the identification of skills that contribute most in the workplace, resulting in increased employability, higher wages and productivity gains. These should be the skills that most closely match the current and future needs of employers and the local economy. The demand for skills is determined by the combination of the aspirations of individual learners, the requirements of the economy, and, since the latter is a 'derived demand' based on the skills enterprises require to produce goods and services, the product market strategies of employers.

Chart 8 - Job Density

(Ratio of jobs to working population)



Data Source: NSO, Authors' calculations

2.1 Job density

An overall key indicator of the strength of labour demand in a region is provided by jobs density, defined as the ratio of jobs to the resident population of working age in the same region. Job density accounts for the localised effects of commuter patterns on a region that serves a residential role, an important aspect for Gozo. Although increasing between 2015 and 2020, Gozo's job density remains below that of mainland Malta reflecting the relatively significant outward commuting for work purposes (Chart 8). Job density figures show that Gozo has a weak supply of jobs overall, relative to its population.

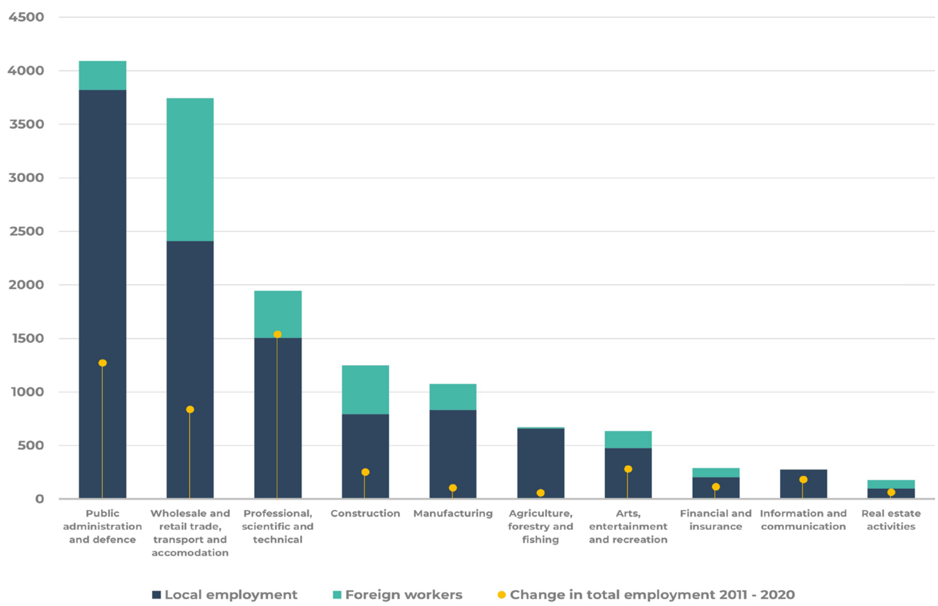
2.2 Sectoral employment structure

A region's sectoral structure of employment provides an indication of the sort of skills needs of employers (Chart 9). In 2020, there were 14,313 jobs in total in Gozo. Focusing on the profile of these jobs in absolute terms, two of the largest sectors are in the field of consumer-facing services in the form of wholesale and retail and accommodation and food services (3,743 jobs; 26%). These two sectors employed the highest number of migrant workers in 2020.

A long-standing feature of Gozo's labour market is the high dependency on public sector employment, which accounts for almost one-third of total employment compared to two-fifths in mainland Malta. This could be partly explained by the relative stability and security public sector employment offers in the context of volatile fortunes which Gozitans historically faced. It also reflects the limited job opportunities available in Gozo. As mentioned earlier, a key characteristic of Gozo's labour market is the significant number of commuter workers who cross to Malta for work - an indication of better opportunities on the main island. In 2020, the number of Gozitan full-time workers in Malta amounted to 21% of total employees. Irrespective of the underlying reason(s), the high public sector employment may be holding back important resources from being deployed to generate higher economic growth.

Chart 9 - Employment by Economic Activity

(Levels, Gozo)



Data Source: NSO, Authors' calculations

Professional services represents the third largest economic activity by employment (14%; 1,994) and accounted for the highest increase in the number of jobs created in Gozo over the ten years to 2020. Much in line with the patterns in mainland Malta, employment in so-called traditional economic activities including construction, manufacturing and agriculture and fisheries (21%) experienced a decline in relative terms over the years. Other high skills/high income activities, including financial and insurance and information and communication, remain relatively small in terms of employment especially when compared to mainland Malta, suggesting that ample scope exists to target and attract these high value added activities and improve Gozo's economic performance.

2.3 Localisation economies

A closer look at Gozo's sectoral specialisms is provided by so-called location quotients (LQ).[6] Being a ratio of ratios, LQs can reveal what makes a region distinct in comparison to the national average. This gives an insight into the characteristics of local labour and skills demand and of specialist requirements. Typically, location quotients higher than 1.2 mean that a region specialises in a sector, which in turn implies that localisation economies may be present. In Table 1, values marked in red represent the sectors in which Gozo shows strong localisation economies (LQ greater than 1.2). Those marked in green are under-represented (LQ below 0.8).

[6] Employment location quotients, a ratio of ratios denotes the relative distributions or relative calculations of a region to the country as a whole and are derived using the following formula:

$$\frac{\text{Percentage of a region's employment in sector i}}{\text{National percentage of employment in sector i}}$$

Gozo has significant specialisations in agriculture and fishing, construction, real estate activities and public administration. Being proportionately three and half times larger than the national average, Gozo has significant specialisation in agriculture and fishing. Despite their notorious importance, Gozo seems to show weak specialisation in wholesale, retail and accommodation and manufacturing.

Table 1: Sectoral employment location quotients

NACE Sectors		
A	Agriculture, forestry and fishing	3.45
C	Manufacturing	0.83
F	Construction	1.43
G+H+I	Wholesale and retail trade, transportation, accommodation and food service	1.04
J	Information and communication	0.55
K	Financial and insurance	0.41
L	Real estate activities	1.27
M+N	Professional, scientific and technical	0.79
O+P+Q	Public Administration and defence	1.22
R+S+T+U	Arts, entertainment and recreation	0.59

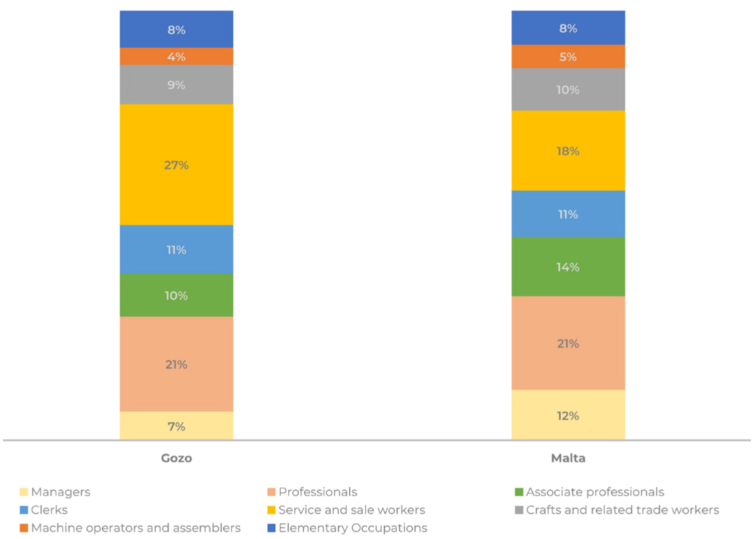
Data Source: Authors' calculations

In line with was argued earlier, under-represented sectors include finance and insurance and information and communication, which account for half or less the respective national share of employment. Table 1 shows that Gozo has a low representation of knowledge-intensive services, when high-technology services (sectors J & M), financial services (sector K) and knowledge-intensive market services (sectors H, M & N) are taken into account. These activities employ 2,509 persons locally and their combined location quotient is 0.69, meaning their share of total employment locally is less than 70% of the national average.

2.4 Occupational profile of employment

Chart 10 - Employment Profile by Occupation

(2020, Share to total)



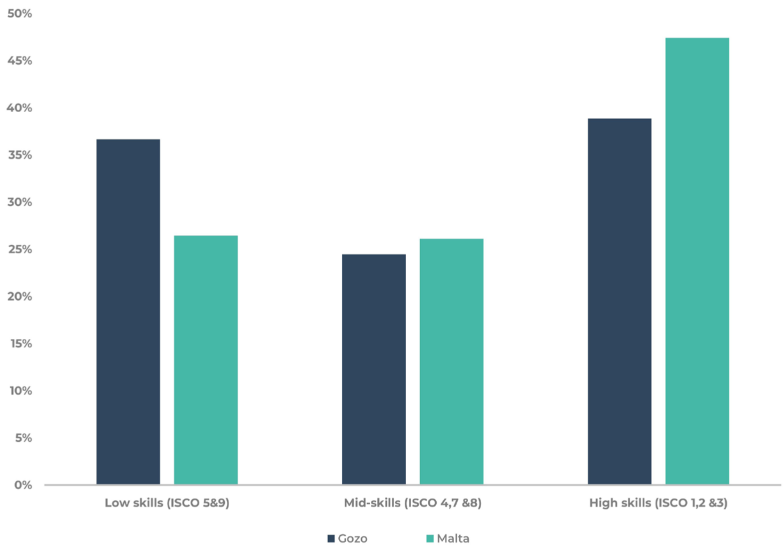
Data Source: NSO

The occupational profile of employment provides an insight into the skills people need in order to do their jobs and reflect aspects of job quality like pay. The distribution of occupations in Gozo's labour market is largely similar to that in the mainland. The main differences lie in a higher share of services and sales workers in total employment (+9 p.p.) which is compensated by a lower proportion for associate professionals and managers (Chart 10).

In terms of skills, employment in higher skilled management, professional and associate professional / technical occupations accounts for a smaller proportion of the total in Gozo compared with the national average (Chart 11). 39% of Gozo's residents are in higher skilled roles, versus a national average of 47%. The gap between the two islands closes for the middle-skilled but low skill roles account for a larger share in Gozo than nationally.

Chart 11 - Skills Distribution by Occupation

(Share to total)

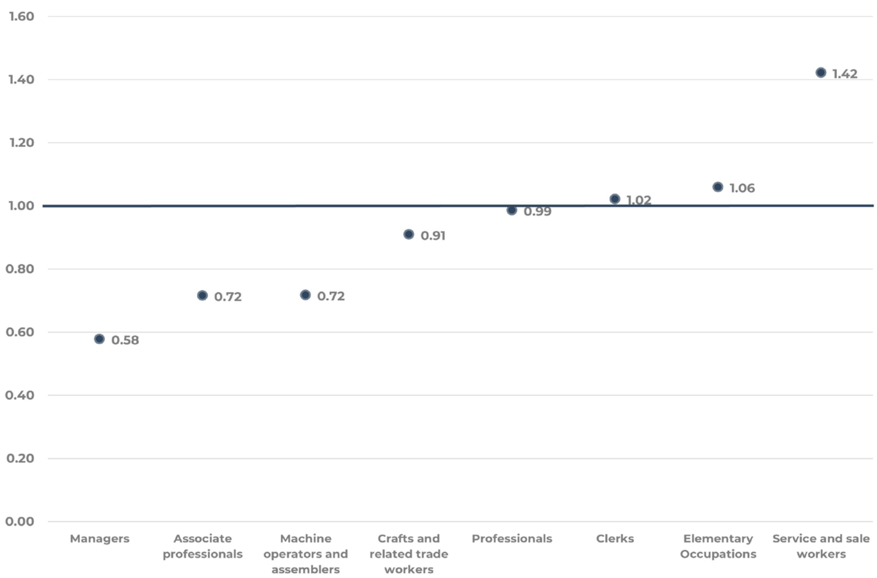


Data Source: NSO, Authors' calculations

It is also useful to understand the distinctive features of occupational employment in Gozo, to gain an insight into specific skill requirements. Chart 12 provides a comparison of the occupational distribution of local employment relative to the national picture. Location quotients of 1 indicate parity with mainland Malta's average with regard to each occupation's employment share. The chart confirms the strong presence of service and sales workers and, to a lesser extent, elementary occupations and clerks in Gozo. On the other hand, compared to mainland Malta, Gozo is under-represented for all the remaining occupations.

Chart 12 - Location Quotients for Occupational Employment in Gozo

(Benchmark area Malta; Malta = 1)

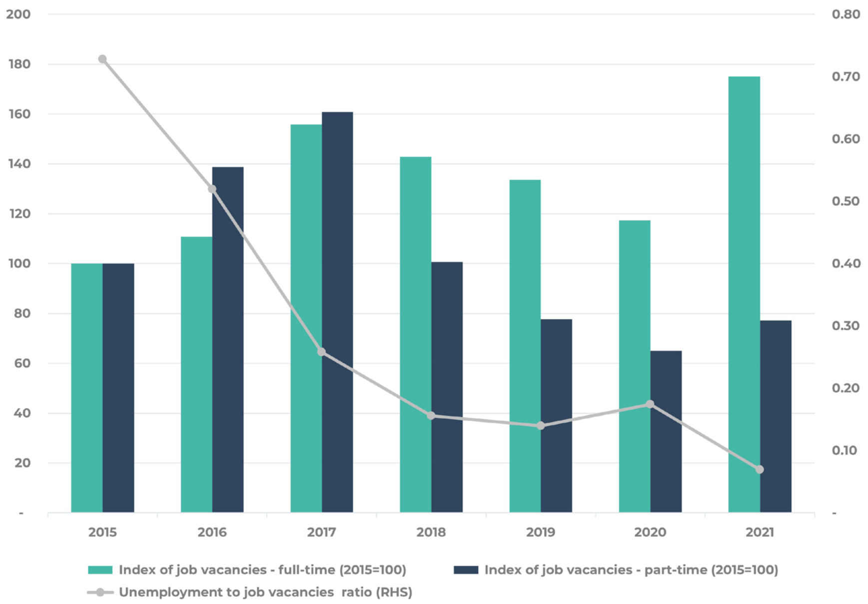


Data Source: NSO, Authors' calculations

2.5 Job vacancies

Another way of understanding demand is by examining job vacancies. Statistics on job openings provide information on unmet labour demand. Typically, higher job vacancies indicate frictions in the labour market and signal that enterprises are facing challenges in recruiting employees. Overall, full-time job vacancies have increased in Gozo between 2015 and 2021 (Chart 13). This period is characterised by a fall in job openings during the three years to 2020 before a steep rise in 2021, possibly effected by the decline in the population of working age caused by the pandemic. Nevertheless, the number of unemployed per vacancy (which tells how many unemployed individuals are available for each vacant position and is a measure of the labour market tightness) followed a sharp downward trend during this period, indicating that labour demand is higher than supply even if the latter increased significantly in recent years. Consequently, labour market conditions tightened as a result of enterprises having more job openings than there are people looking for work. Job vacancies among part-timers fell significantly post-2017, indicating that in this case, the labour market was more effective in filling openings.

Chart 13 - Job vacancies in Gozo

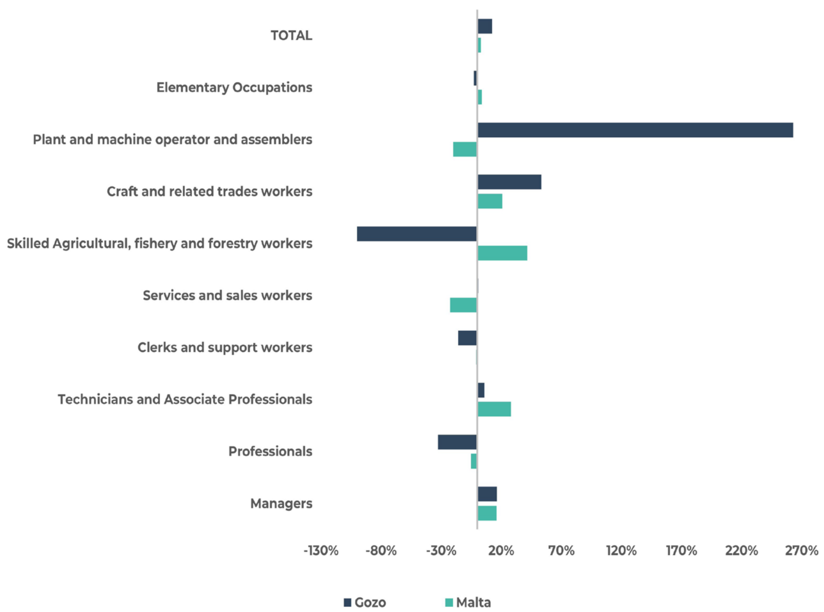


Data Source: Jobsplus

By occupational group, the largest proportion of job vacancies in Gozo are in low-skill occupations (48%) followed by the mid-skilled (36%), while high-skill job openings account for 17% in 2021. Despite the still high share of low-skill vacancies, there are encouraging signs showing an evident shift from low- to mid-qualified openings in the past five years (54% and 27% in 2017, respectively). A look at the changing patterns in the occupational profile of job openings over the 5 years to 2021, shows an almost equal number of occupational groups that registered increases and declines in Gozo (Chart 14). Some differences in the patterns of recruitment demand in Gozo and mainland Malta also emerge. For Gozo, the largest percentage increase in job vacancies is concentrated in low-skilled occupations, mostly plant and machine operators, followed by crafts and trade workers. In contrast, job openings for these occupations declined in Malta. Instead, the highest percentage increase in demand in the mainland is in skilled agriculture and fisheries workers and technical professionals. Other high-skilled occupations saw a drop in job openings for professionals and an increase for managers in both Gozo and mainland Malta.

Chart 14 - Profile of Job Vacancies

(% Change; 2017 - 2021)



Data Source: Jobsplus

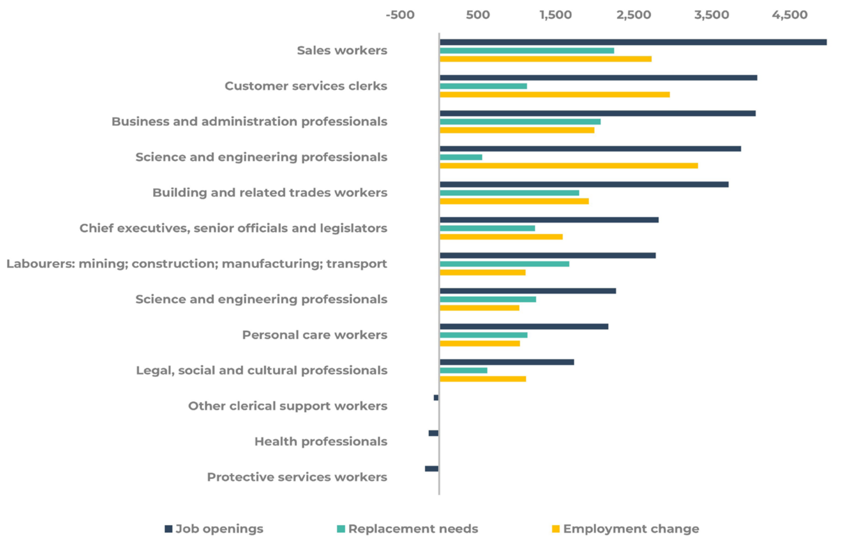
2.6 Working futures

Given the significant investment and lead time necessary for skills development, a forward-looking perspective of skills demand becomes crucial to anticipate future employment needs. The following analysis is based on skills forecasts prepared by Cedefop which allows for an assessment of future sectoral and occupational employment prospects.[7] Although the forecasts are for the Maltese islands as a whole, they represent a valid starting point to evaluate the future skills needs for Gozo.

According to projections up to 2030, the primary source of increase in job openings in Malta, which captures the gross change in employment, will be mainly concentrated in services-based occupations namely, sales and customer services employees and professional roles including chief executives and business, science and engineering professionals (Chart 15). Around 40% of the occupations for which forecasts anticipate the highest job openings in the coming years are considered to be high skilled jobs (business, legal and engineering professionals and chief executives and senior officials).

Chart 15 - Jobs Opening, Employment Change & Replacement Demand

(2021 - 2030)



Data Source: Cedefop

The projections anticipate significant recruitment needs by 2030 linked with replacement demand, which consists of jobs arising as a result of people leaving the workforce or their occupation. Workers leave the labour market for a variety of permanent and temporary reasons including retirement, family (e.g. maternity leave) and mortality. These outflows have a significant influence on job opportunities. The highest number of replacement jobs will be among sales workers and business and administrative professionals. Replacement jobs are expected to account for around half of the job openings for building and related trade occupations. The latter, together with labourers in mining, construction, manufacturing and transport are the only two primary sector occupations projected to experience the highest demand until the end of this decade.

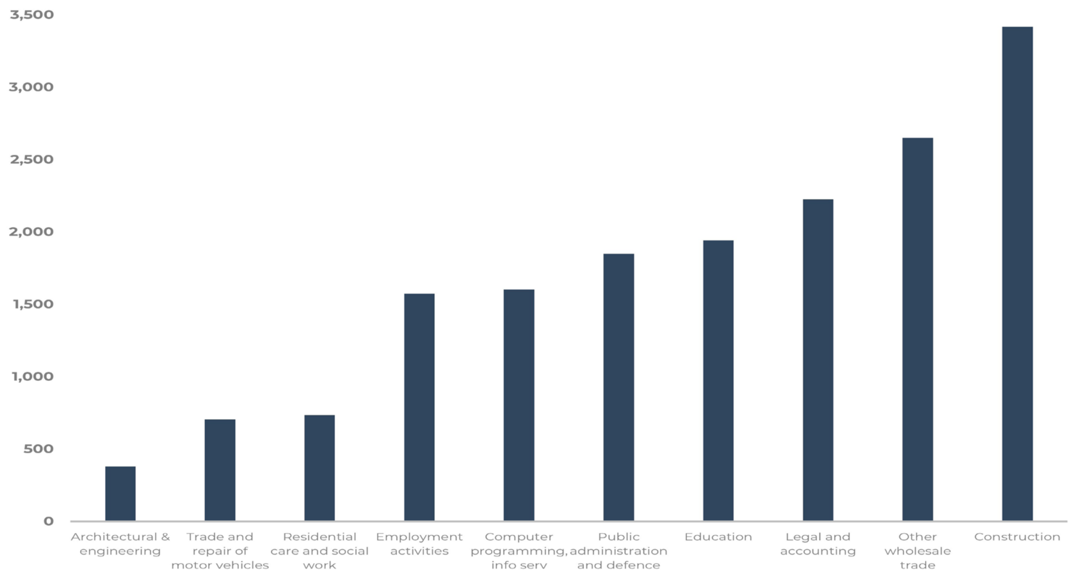
Netting out replacement demand from job openings leaves the net employment change which is forecast to be the largest for science and engineering professionals, sales and customer service workers and business professionals. Projections show that, when considering the ten job openings expecting to experience the highest increase until 2030, of every 5 additional jobs, approximately 3 will be new jobs. The remainder will meet replacement demand. In terms of employment changes by sector, construction is anticipated

[7] Cedefop is an EU agency which amongst others provides evidence and identifies trends in and challenges for European vocational education and training policy. See *https://www.cedefop.europa.eu/en/tools/skills-forecast.*

to experience the highest increase (3,417), followed by service-oriented sectors including professional, wholesale, public administration, education and social work and computer programming (Chart 16).

Chart 16 - Employment Change in highest 10 Sectors

(Change; 2021 - 2030)



Data Source: Cedefop

2.7 Dynamic perspectives and future trends

The foregoing analysis reflects a rather static appreciation of future skills demand since it is based on projections grounded in past patterns of performance and behaviour of the Maltese labour market. In reality, structural changes, disruptive new trends, as well as new strategic and policy choices, could potentially frustrate these projections.[8] Other structural transformations could have deep implications on the future demand of certain occupations such as sales and customer service workers as presented here due, for instance, to further shifts to online shopping as well as technological change in the form of automation and artificial intelligence.

The possible effects of automation on jobs has been extensively documented. There is a broad consensus among future of work researchers that many workers may need to reskill and retrain for new roles as a result of automation. In choosing alternative career paths, individuals need to understand how susceptible to automation a particular occupation may be. The chart below illustrates the current profile of occupational employment in Gozo alongside the risk of automation for each occupation. Figures for automation risk are adapted from an OECD paper by Nedelkoska and Quintini (Chart 17).[9]

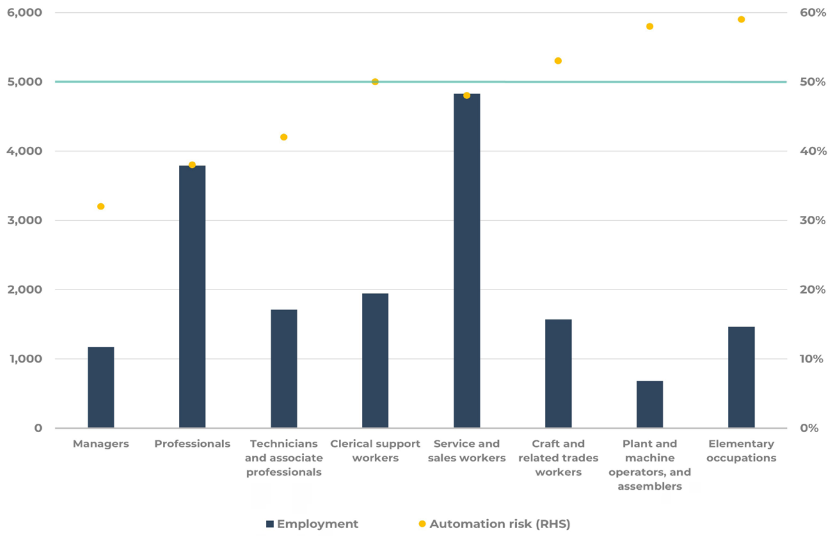
The overall pattern of automation risk that emerges is one in which occupations comprised mainly of lower level, routine or physical skills have the highest exposure to new technology. Occupations least susceptible are those requiring more analytical and interpersonal skills. Taking 50% as a benchmark for high automation risk, around 33% of the Gozitan workforce, in line with that of mainland Malta, could

[8] For instance, the effects of the pandemic and its ramifications are not fully reflected in the projections.

[9] Nedelkoska, L. and G. Quintini (2018), "Automation, skills use and training", OECD Social, Employment and Migration Working Papers, No. 202, OECD, Paris.

Chart 17 - Automation Risk by Occupation in Gozo

(2021)



Data Source: NSO, Nedelkoska and Quintini (2018), Authors' calculations

be exposed some way or another to the effects of automation.[10] Elementary occupations are most at risk, while clerical workers is the category with the largest number of jobs affected (1,946). Adding service and trade workers, whose risk is estimated at just below the 50% threshold, would bring the share of jobs vulnerable to automation up to 61% of Gozo's current workforce, vis-a-vis 53% for Malta.

To give a flavour of occupational areas judged to be at high risk of automation and their current levels of recruitment demand, Chart 18 plots current volumes of job vacancies in Gozo for different occupational groups against their corresponding risk of automation. Using 50% as the threshold above which risk is considered high, the occupations which are most exposed include elementary occupations, craft and trade workers, plant operators and clerical workers. In aggregate, these occupations accounted for 944 vacancies or roughly 60% of the total openings in 2021. Adding service and trade workers, whose risk is estimated at just below the 50% threshold, would bring the proportion of job vacancies exposed to risk of automation up to 83%.

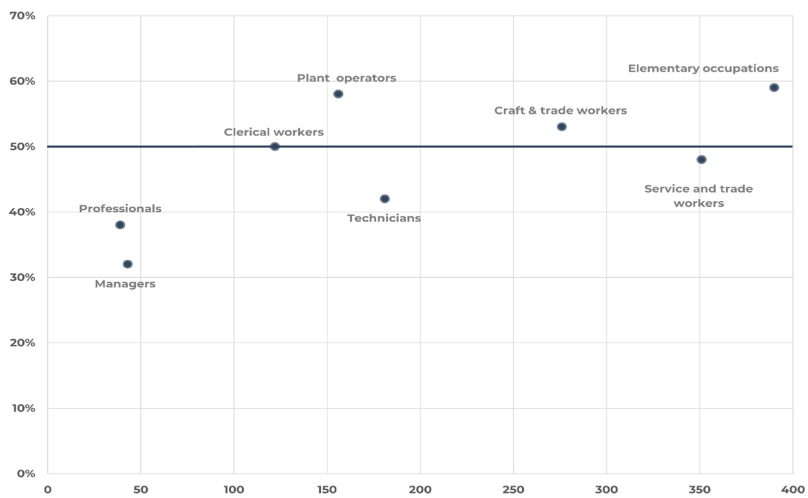
3. Supply of skills

Ensuring skill levels that satisfy the present and future needs of enterprises and that, at the same time, enable people to progress by meeting their aspirations for happier, healthier and more fulfilling lives is a critical driver for prosperity for all.

The supply of skills is driven by the degree of effectiveness of the local skills pipeline comprising the formal education and training

Chart 18 - Occupations at High Risk of Automation

(Ranked by volume of job vacancies, Gozo)



Data Source: NSO, Nedelkoska and Quintini (2018), Authors' calculations

[10] It is noteworthy that the exposure of a particular occupation to automation can vary from what is reported here depending on the organisation of job tasks within economic sectors. Occupations were some adoption of labour-substituting technologies has (not)/taken place would have a structure of job tasks that is (more)/less prone to automation.

institutions and employers' own investment in workforce development through the provision of training and on-the-job learning as well as by demographic changes, including migration flows.

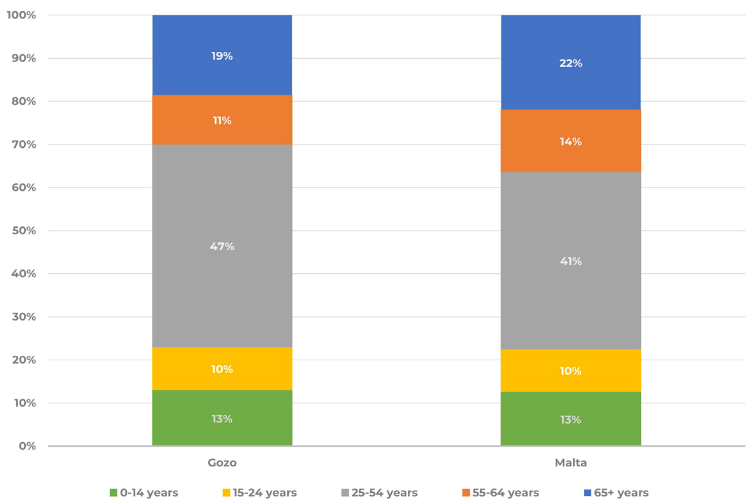
3.1 Supply of labour inputs

Changes in the structure of the local population have an important influence on the available skills of the labour force. As argued earlier, Gozo's working age population grew by a robust 7% over the seven years to 2021, largely explained by immigration inflows.

In terms of age profile, Gozo's population shows similarities with that of mainland Malta (Chart 19). According to the 2021 Census of the population, Gozo's population is in-line with that of mainland Malta for the 0-24 years bracket. Meanwhile the share of individuals age 25-54 is higher than that of Malta. On the other hand the proportion of persons in Gozo aged 55 and above is lower than that of Malta.

Chart 19 - Population Profile

(2021)

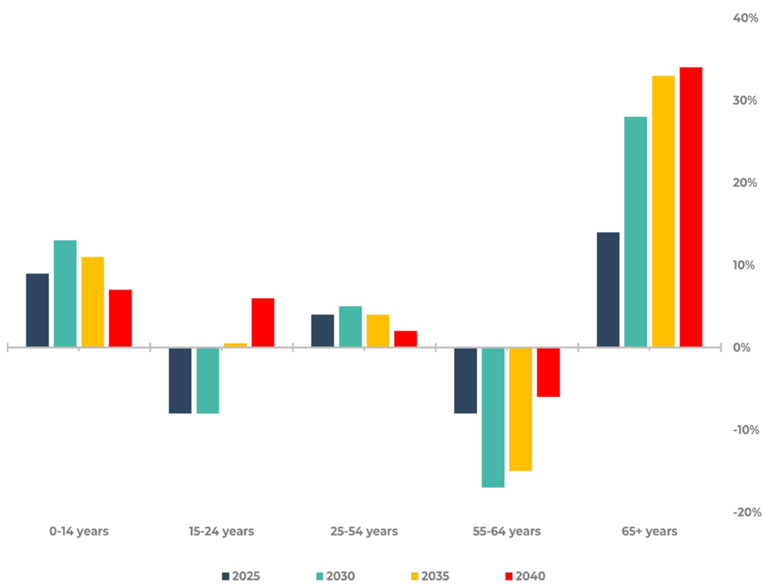


Data Source: NSO Census of the Population

Looking forward, population projections by Oxford Economics suggest that Gozo's population will continue to grow up to 2040. This increase largely reflects a rise in the 65+ age cohort as the latter is set to increase over the forecast horizon (see chart). Meanwhile, when compared to the levels registered in 2021, the number of people of working age is set to decline up to 2030 and is subsequently set to increase by around 1.0% by the end of the projection horizon.

Chart 20 - Gozo's Projected Population

(% Change from 2021)



Data Source: Oxford Economics

Labour market outcomes and hence the wider economic performance is not only dependent on the quantity of human resources available in a region but also on their quality as represented by the supply of skills. It is therefore important to analyse both the skills of the current workforce as well as of those who will join the labour market in the future and who are currently engaged in education and training.

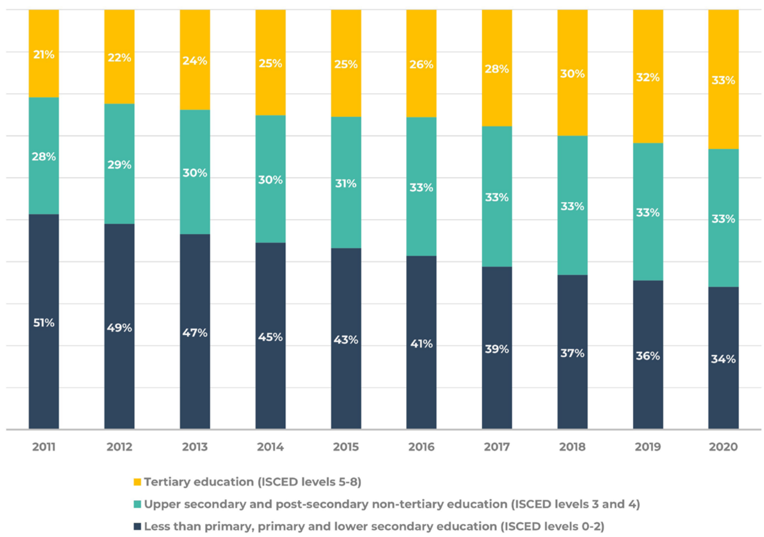
3.2 Qualification profile of the workforce

The qualification profile of the population of working age is a key indicator of the quality of local skills supply. Since education attainment statistics at a regional level are not officially published, this section is based on author's estimates for Gozo derived based on national data.[11]

The estimates show that the proportion of low-skilled persons in Gozo (those with less than primary education) has declined in the ten years to 2020 (Chart 21). During the same timeframe, the share of the mid-skilled and high-skilled has steadily increased.

Chart 21 - Profile of Qualifications held by Working Age Population

(Gozo)



Data Source: Eurostat, Authors' Calculations

When compared with mainland Malta, although closing slightly along the years, an unfavourable gap persists with respect to the proportion of low-skilled persons in Gozo. On the other hand, indications suggest that the share of mid-skilled (upper secondary and post-secondary qualified persons) is above that in Malta while those with a tertiary education is broadly similar.

3.3 Digital literacy skills

Digital skills are important not just for individuals but also for the economy since they boost the productivity of people in work and thereby their income potential. For the unemployed, digital literacy helps improve the chances of employability. Training those lacking basic digital skills far outweigh the costs involved, and such an investment would generate a substantial return to society.

Data about the extent of digital skills amongst the Gozitan population is not available. At a national level, 61% of people have at least basic digital skills. In digital content creation, 71% of people in Malta possess at least basic skills. The share of ICT graduates increased to 6.5%, while 28% of

[11] The number of persons in each of the three education attainment levels (ISCED levels 5-8, 3-4 and 0-2) for the years 2011-2020 was calculated by applying Gozo's proportion for each level in the corresponding figure for the Maltese islands as reported in the 2011 Census of Population, to each year's total education attainment level of the working age population as reported in the Labour Force Survey. This assumes that the relationship between the number of persons in Gozo and Malta for each education attainment level remains constant throughout the years.

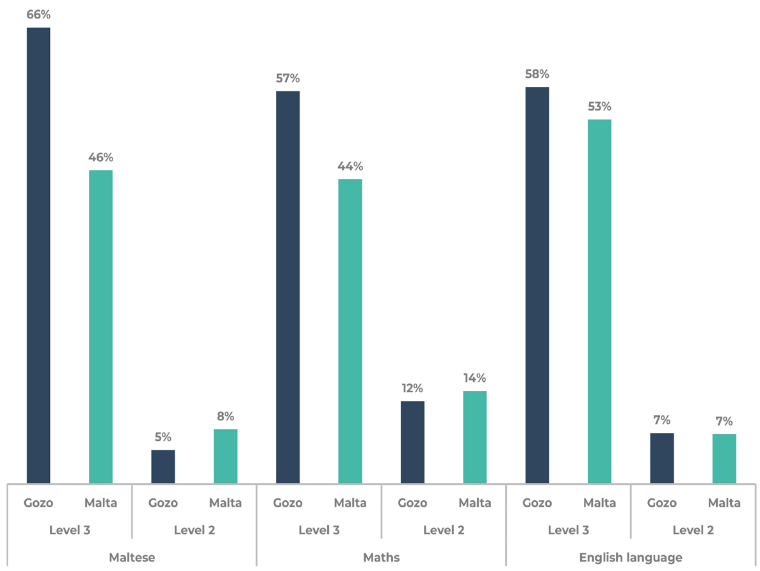
Maltese enterprises provide ICT training to their employees. The proportion of ICT specialists in the workforce is relatively high at 4.9%, while at 26% the share of female ICT specialists is relatively well represented. It is not readily clear to what extent the foregoing favourable performance indicators in digital literacy also reflect Gozo's realities. A survey that determines the population's state of digital skills is essential to identify gaps, uncover digitally underserved cohorts and digital skills mismatches.

3.4 Educational attainment of the future workforce

In the case of compulsory education, results for the 2021 round of the Secondary Education Certificate (SEC) examinations show that the proportion of 16 year-old Gozitan pupils obtaining level 3 is higher than their Maltese peers in all of the three main subjects (Maltese, Maths and English language). The largest difference in the proportions is for the Maltese language and to a lesser extent, Maths (Chart 22).[12] The situation reverses for level 2, where the share of Maltese pupils obtaining the certification is higher than the corresponding figure for Gozo. It is also important to highlight that, according to a study by Eivers, the school drop-out rate for Gozitan students (7%) is significantly below the average for Maltese pupils (19%).[13][14]

Vocational education and training (VET) is regarded as particularly suitable to promote regional growth since it provides individuals with skills that are more or less directly applicable in the workplace. In this context, VET is likely to have direct and immediate effects on productivity and consequently upon economic growth. In addition, by reducing barriers to education and training, VET represents an alternative educational path for individuals averse to academic learning and therefore improves access to the labour market. This, together with the fact that it promotes socialisation i.e. preparing students for participation in society as adults, makes VET conducive to social inclusion and cohesion. The socialisation effect is particularly due to learning courses being offered in combination with work-based learning opportunities (apprenticeship, internship or work exposure).

Chart 22 - Proportion of 16 years old with secondary Qualifications at Level 2 and Level 3
(2021)



Data Source: MATSEC Examination Board

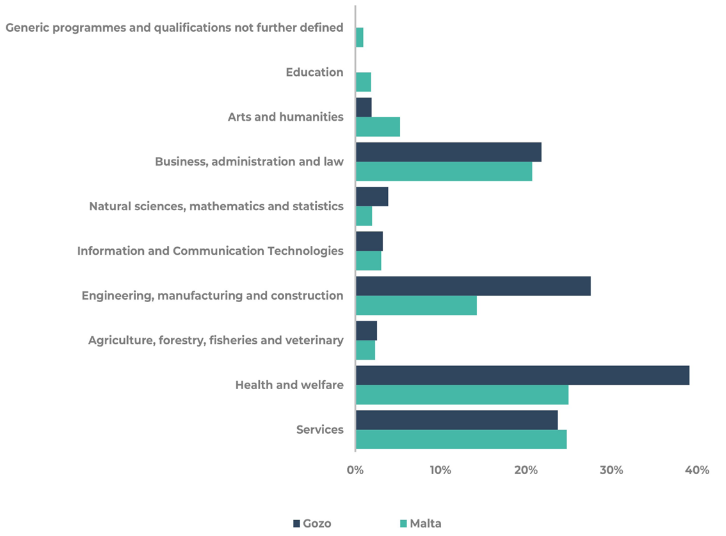
[12] Upon completion of compulsory education, students can sit for the SEC examination for various subjects and obtain certification. SEC grades 1 to 5 are considered to be level 3 according to the Malta Qualifications Framework (MQF), while SEC grades 6 and 7 are regarded as level 2 on the same scale. Grades 1 to 5 allow students access to sixth form education.

[13] Eivers, Eemer. (2020). Identification of students at risk of early school leaving in Malta: Report for the Ministry of Education and Employment.

[14] School drop-out rate is defined as Form 5 students who failed to achieve MQF level 3.

Chart 23 - Profile of Apprenticeship starts by subject

(Scholastic year 2020/21)



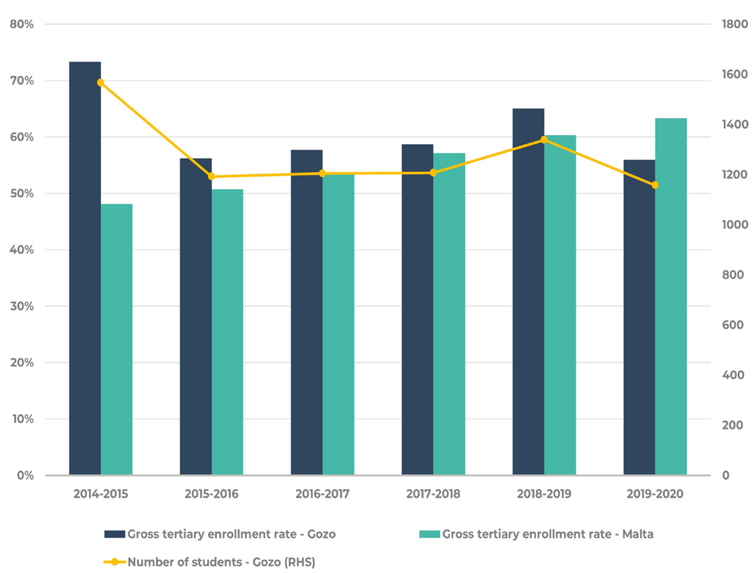
Data Source: NSO

Participation in vocational education by Gozitan students lags behind that of their Maltese peers. In 2020, the share of learners enrolled in upper secondary VET (ISCED 3) out of total learners in upper secondary education stood at around 21% in Gozo, against 27% in the mainland. And although participation has declined during the 5 years to 2020 in both islands, Gozo has recorded the largest drop. On the positive side, in 2020/21, take-up by Gozitan students of VET courses with a work-based learning component were significantly higher than the national average (73% vs 59% of total vocational upper-secondary learners). A closer look at the subject areas of apprenticeship starts offered in all higher education institutes in 2020/2021 shows that, similar to the national profile, health and welfare is the most dominant study field among Gozitan learners followed by engineering and manufacturing, services and business, administration and law (Chart 23). The largest increases in the take-up of apprenticeships over the 5 years to 2020 were for services, business, administration and law and health and welfare. Apprenticeship starts in engineering and manufacturing declined during the same period.

Gozo residents face a physical hurdle to access further and higher education studies and other training provision. Although physically present in Gozo, the University of Malta, the Malta College for Arts, Science and Technology and the Institute of Tourism Studies offer only a limited number of courses on the island's campuses. Most of the students wishing to pursue tertiary studies have to either commute or relocate to the mainland. Similarly, the local infrastructure of private learning and training provision remains weak, giving rise to high, so-called, 'skills miles' that limits accessibility for Gozitans to upskilling and reskilling opportunities.

Enrolment in tertiary education among Gozitans seems to have stabilised around the 1,200 mark in recent years, in contrast with a steady increase in mainland Malta (Chart 24). The gross tertiary enrolment rate shows that, for the years 2014-2018, Gozo had a higher intensity of

Chart 24 - Tertiary Education Enrolment

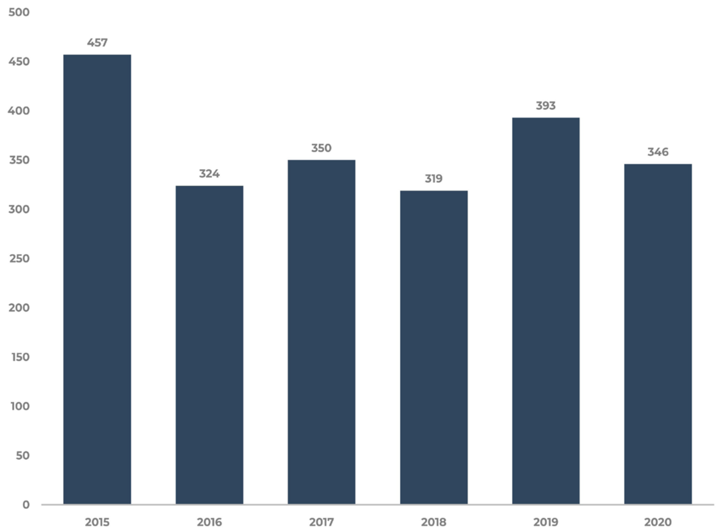


Data Source: NSO, Authors' calculations individuals following a tertiary course per head compared to Malta.[15] This advantage seems to have been lost in 2019 reflecting mostly a drop in enrolment while the corresponding numbers for mainland Malta continued to rise.

The number of persons in Gozo successfully completing and achieving the learning objectives set for their tertiary studies has fluctuated around 350 for the past seven years (Chart 25). Students in business, administration and law constitute by far the largest proportion (38%) of graduates among all the fields of study followed by health and welfare (30%). Engineering and information and communications technologies each account for a lower 15% of the number of graduates in Gozo. There are encouraging signs around the level of qualifications being achieved. According to a Graduate Tracer Study, attainment by Gozitan tertiary graduates show above average performance compared with peers from most of the other regions in mainland Malta. In addition, NSO data show that the number of Gozitan female graduates is higher than in Malta for MQF levels 2, 3, 6 and 7, with those at MQF level 6 being 40% more than Maltese female graduates.[16]

Chart 25 - Tertiary Graduates

(Gozo)



Data Source: NSO

In terms of migration after completing the studies, the graduate tracer study shows that as Gozitans pursue more advanced levels of education, more tend to relocate to mainland Malta - from 29% for those completing further education the proportion rises to 50% for higher education graduates. As argued in earlier sections, this reflects the limited job opportunities available in Gozo, especially for high skilled individuals. It represents a loss of talent and missed potential for increasing the island's economic prosperity.

3.5 Adult education and workforce development

Adult education is important for economic growth and also for social and personal development. It is a key mechanism for upskilling and reskilling adults, to support them into work or to enable employees to progress within work. Despite these obvious benefits, participation in adult learning remains insufficient. When it does happen, it is generally concentrated among the young, the more educated, or those working in large enterprises. Disadvantaged groups typically participate less in adult learning due to a number of barriers including lack of motivation, time and financial limitations and lack of access to quality education programmes. Encouraging adult learning

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[15] Expressed as the total enrolment, regardless of age, to the population in the 5-year age group immediately following upper secondary education.

[16] Malta Further and Higher Education Authority. (2016). *Graduate Tracer Study.*

becomes even more important in the context of a relatively large proportion of low-qualified adults in employment.

According to NSO data, the share of employees in the 25-64 years bracket with a lower secondary education or less stood at 36.6% in mainland Malta. For Gozo, the corresponding rate reached 44.3% in 2021. Although declining over the years, both these shares of low-qualified adults are significantly high compared to the EU average of 21%. In addition, by adopting a more rounded definition of low skills to include basic digital skills and cognitive skills aside from educational attainment, a study by Cedefop estimates that the share of adults with potential for upskilling and reskilling ranges between 65.6% and 71.5% of the total adult population in Malta.[17] In contrast, only one in 10 persons in Gozo's population aged 25-64 participated in adult learning in 2021.

Employers' own investment in workforce development through the provision of training and on- and off-the-job learning is crucial to ensure a competitive workforce, increased employee retention and engagement while guaranteeing that organisations' evolving product market strategies are met. Indeed, training can play a critical role in equipping people with the skills and knowledge they need to help that strategy succeed.

Employers' attitudes and behaviour about employee training and development is typically captured through specific surveys. Unfortunately, there is a lack of such recent surveys for the Maltese islands. A national skills survey is being currently conducted by the National Statistics Office and is therefore outside the scope of this analysis. A partial glimpse of employers' attitudes and behaviours on training can be obtained from the national skills study published in 2017.[18] Among the responses collected from firms in Malta it transpires that only around 39% of employers provide on-the-job training and that this is mostly common among firms employing between 2-9 persons. Employees within wholesale and retail trade and public administration are more likely to undergo on-the-job training. The same sectors are also more likely to provide off-the-job training to employees. Some 36% of all employers offer off-the-job training. Employers seem to hold a relatively low view of investment in employee training as also captured by their responses to the survey. Training the existing workforce and low qualified employees ranks fifth by employers as a solution to skills needs, after recruiting migrant workers, spending more on advertising, raising salaries and adopting new recruitment methods. The usefulness of apprenticeship (53%) and traineeships (57%) is considered to be relatively strong among Maltese firms. Worryingly, roughly 76% of employers state that they do not allocate any annual training budget. For employers who do have a training budget, the study does not provide an estimate of the spend per employee on workforce training and development.

4. Skills mismatches

Skill mismatches reflect an imbalance between supply and demand in the labour market, between the skills available and the skills needed by employers. This inability to obtain the skilled people that are required constitutes a key barrier to business productivity and expansion and, in turn, to a region's economic growth. Skills mismatches are often short lived, as typically in the longer-term

[17] Cedefop. (2021). *Adult population with potential for upskilling and reskilling in Malta.*
[18] National Commission for Further and Higher Education. (2017). *National Employee Skills Survey.*

the pricing mechanism (through expected wage returns and premia) leads to an increase in the supply of people with the necessary skills. However, often, weak or distorted pricing signals and other market imperfections give rise to acute and persistent skills deficiencies, with significant implications for business performance. This kind of market failure presents a policy priority but also offers an opportunity for individuals considering their career options to focus on areas of unmet demand.

There are different forms of skills mismatches including, skill gaps (qualitative skills deficiencies internal to an enterprise), skill shortages (quantitative shortages in external labour markets), vertical mismatch (usually measured in terms of overeducation, undereducation, overskilling and underskilling), horizontal (or field of study) mismatch and skill obsolescence. The term is generally restricted to mismatches impacting workers in employment, or firms currently employing or seeking to employ workers.

Despite persistent and growing concerns, in primis by employers, about the acute difficulties they face in hiring the kind of workers they need, the dearth of recent evidence-based assessments that examine skills mismatches and its root causes in Malta and Gozo is particularly surprising. In this light, this section attempts to shine a light on this important phenomenon by drawing on the most recent available public information for Malta. The usual caveats apply - given that most of the data refers to distant years and provides little specific focus on Gozo, the analysis should be treated as indicative. Nevertheless, it provides an overall understanding of a key aspect of the labour market's dynamics and a strong direction for policy.

4.1 Skill shortages

Skill shortages arise when employers find it difficult to fill vacancies because of a lack of candidates with the necessary skills, qualifications and experience. According to the latest findings of the business dialogue published by the Central Bank of Malta, enterprises across all sectors are finding it very difficult to recruit new workers and/or retain their current workforce.[19] In some instances, shortages have exceeded pre-pandemic levels, partly due to limited access to foreign employees caused by lengthy permitting procedures for new migrant workers. Jobsplus data show that for some sectors, such as accommodation and food service and professional services sector, another factor that contributed to this shortage relates to a number of foreign workers leaving to their home country during the pandemic and not returning to Malta.

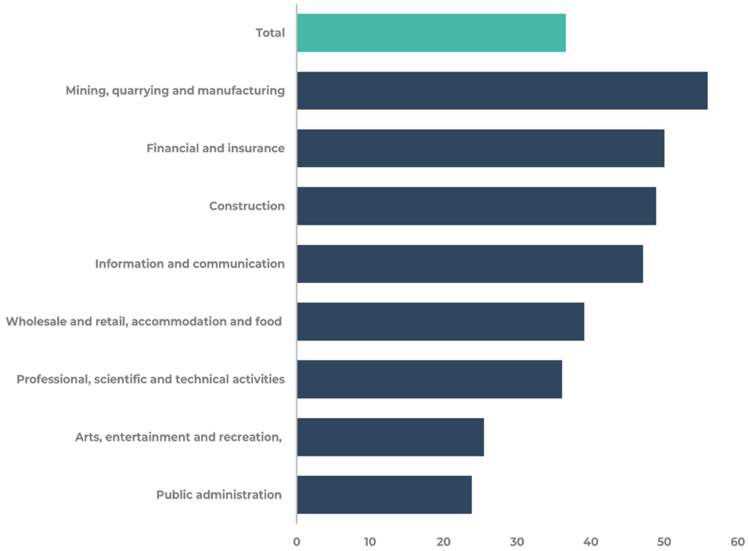
Skill shortages are usually measured in terms of unfilled and hard-to-fill vacancies. Hard-to-fill vacancies arise because of a number of reasons including, special skillset needs of certain jobs, inconvenient job location, supply of labour and certain skills unable to satisfy the demands of a growing economy and unattractive salaries. According to the 2017 National Employee Skills Survey, almost two in every five vacancies constitute hard-to-fill jobs in Malta. While skill shortages are evident across all economic activities, two sectors - the primary sectors and manufacturing as well as wholesale, retail and accommodation - account for half of the total hard-to-fill openings in Malta. A similar pattern emerges in terms of occupations. More than half

[19] Central Bank of Malta. (2022). Business dialogue. Vol.2 no.3.

of the shortages are concentrated in three occupations, with clerical support workers (22.2%), followed by service and sales workers (15.3%) and plant and machine operators (14.7%) accounting for the largest shares. Given Gozo's economic and occupational structure reviewed in the sections above, it would be reasonable to conclude that employers in Gozo also face similar skill shortages.

Chart 26 - Density of skill shortage vacancies by economic activity

(Malta)



Data Source: National Employee Skills Survey, 2017.

On a sectoral level, as illustrated in Chart 26, skill shortages in Malta are most acute in the mining, quarrying and manufacturing sectors (56% of the sector's job vacancies), followed by financial and insurance activities (50%) and construction (49%). The most hard-to-fill jobs in the primary industries and manufacturing are plant and machine operators, while in the financial and insurance activities skill shortages are evenly distributed among professionals and clerical support workers.

The occupational pattern of shortages provides an insight into the particular types of jobs that are most affected by a lack of candidates with the right skills. The largest skill shortage densities (proportion of hard-to-fill to total vacancies) relate to skilled agricultural, forestry and fishery workers (80%), elementary occupations (61%) and craft and trade workers (56%). This could be relevant for Gozo's labour market, since more than two-fifths of job vacancies in 2021 were concentrated in the latter two occupations implying that businesses could face challenges when filling these positions.

The top most reasons employers identify as making it difficult to fill a vacancy is low number of applicants with the required skills (70%), followed by low number of applicants with necessary attitude, motivation or personality (53%) and low number of applicants generally (46%). This suggest that shortages relate to both quantity and quality, although the latter seems to be more prevalent. Quality deficiencies seem to be mostly concentrated in wholesale, retail and accommodation as well as professional, scientific and technical. Low number of applicants is typically more prevalent in primary industries and manufacturing and wholesale, retail and accommodation.

Looking forward, the situation is anticipated to remain challenging in terms of skill shortages in Malta. According to the National Employment Policy 2021, projections until 2030 show that positive skills shortages will remain for all occupational groups, except plant and machinery operators.[20] Elementary and clerical occupations are anticipated to experience the largest shortages during this decade.

[20] Ministry for Finance and Employment. (2021). *The National Employment Policy 2021-2030.*

4.2 Skill gaps

Skill gaps are another form of skills mismatch and occur when existing employees within an organisation are not fully proficient in their job and therefore unable to make the required contribution to achieving business objectives. Skill gaps have the potential to harm employee, and therefore, firm productivity. Moreover, skill gaps also tend to inflate average labour costs as organisations require more workers per unit of output.

The 2017 National Employee Skills Survey provides some evidence on employers' perception of missing skills within their workforce. Although deficiencies in proficiency levels is found across all occupations, employers indicate the highest shares are among technicians and associate professionals, plant and machine operators and elementary occupations. However, differences depending on the size of the enterprise were evident. Micro, small- and medium-sized firms witness skills deficiencies mostly among the high and mid-skilled occupations. In comparison, large enterprises report the highest share of skill gaps among low- and mid-skilled occupations.

Top reasons for the skill gaps mentioned by employers include lack of motivation, employees being new to their role, lags in performance despite training and introduction of new technology. Skills employers find lacking in their workforce include problem solving (43%), customer handling (38%), team-work (35%) and oral communication (32%).

5. Way Forward

The foregoing analysis has identified various challenges to Gozo's labour market that need focused and tailored policy interventions. It has also highlighted a number of strengths and opportunities that Gozo could build upon to achieve the ambitions and aspirations set out in the Regional Development Strategy. Gozo's economy and labour market is characterised by unique features which require appropriate responses. Although challenges can be found both on the demand for and supply of skills, it appears that on balance, current and especially in the future, the harder challenges appear to be skewed towards the demand side.

A number of indications seem to suggest that the supply of skills manifests strong potential but that the type of skills demanded leads to missed opportunities, especially for highly qualified individuals, which forces them to commute or migrate. As a host of indicators witness, this implies that Gozo may be hung in a predominantly low skills equilibrium - one in which demand for mostly low skills coexists with supply of mostly low skills. Whilst skills and employment are generally matched, and enterprises may generate adequate profits, the situation gives rise to a number of problematic outcomes. These include low productivity, low wages and employability risks, particularly among sectors that are vulnerable to automation and/or external competition. It leads to suboptimal economic performance and a persistent gap vis-a-vis mainland Malta and other European islands of similar size.

It is therefore important to break out of a low skills equilibrium trap to unlock Gozo's growth potential and shift away from the reliance on seasonal, low-wage and low-skill jobs. Although increasing the supply of high skills is important, focusing solely on supply-side measures without addressing the demand for skills would risk skills surpluses and underutilisation and consequently lead to a higher number of worker migration or commuting. The demand for skills is determined by existing employers and thus internal business decision making as well as on attracting businesses in new sectors. The sectors and products that employers focus on, and the extent to which they innovate or invest, will determine which skills are required. If enterprises move into higher value-added markets and new high value-added sectors are established, the levels of skills that they require tend to increase. Policy intervention can enable a shift away from low skills equilibrium towards high skills equilibrium.

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