Tracking Career Pathways of PhD Holders

2020 Survey Project Report

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Executive Summary

Doctorate holders are particularly important to research and innovation because of their deep, field-specific knowledge and advanced training in the analytical skills necessary to push knowledge beyond its current boundaries. Over the past decade, Malta has invested tens of millions of euro to support students reading for doctorate degrees. This study was undertaken by the Malta Council for Science and Technology in 2020 to understand the career paths and trajectories of PhD holders. The aim of the study is to provide decision makers, policy makers and science stakeholders, with a better evidence base in terms of research and non-research careers and to collect evidence which will help funding organisations evaluate the impact of schemes supporting research career development.

The target population of this study is PhD holders working in Malta and PhD holders who have studied in Malta or are Maltese citizens currently living and working abroad. Data was collected through an online questionnaire, which includes six sections: (1) demographic details; (2) doctorate education; (3) post-doctoral position; (4) employment situation and career related experience; (5) international mobility and (6) future career plans. The questionnaire builds on the 2017 Career Tracking Survey of Doctorate Holders published by the European Science Foundation. Data collection was carried out for the period of eight weeks, and dissemination of the questionnaire was carried out through social media, MCST and University of Malta newsletters, portals and mailing lists.

Data was analysed, and the main outcomes and conclusions are presented in Chapter 3 of this report. Recommendations are made regarding how often the survey to track careers of PhD holders could be conducted and further analyses, as identified from the conclusions of this study, with the aim of improving the career profile and prospects of PhD holders.

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1. Introduction

1.1 OBJECTIVES AND SCOPE

Doctorate holders are particularly important to research and innovation because of their deep field-specific knowledge and advanced training in the analytical skills necessary to push knowledge beyond its current boundaries. Holders of doctorate degrees or other research qualifications are crucial to the creation, commercialization and dissemination of knowledge, and to innovation.[1] A doctorate is generally considered as the starting point for a career in research. Malta has invested tens of millions of euro supporting students reading for doctorate degrees over the past decade or so. Understanding the career trajectories of doctorate holders is essential to assess the impact of investment in research career development.

Knowledge about doctorate holders' labour market and career paths is very limited. A survey on careers of doctorate holders was carried out in 2009 by the National Statistics Office (NSO).[2] The target population consisted of persons who had an education at ISCED 6 level (doctorates) obtained anywhere in the world and were resident in Malta. A census aiming for full coverage of the target population was carried out. According to this study, only 18.3% of doctorate holders received their degree from Malta. The number of doctoral degrees conferred by the University of Malta has not increased significantly in the past 5 years, as shown in Table 1. However, the number of PhD holders in Malta has increased significantly in the last decade. Figure 1 shows the total number of PhD holders in Malta per year for the period 2012 to 2019. These estimates were extracted from the Labour Force Survey.[3] The number of PhD holders was stable from 2012 to 2016 with a significant increase in the number of PhD holders in 2017, reaching a total value of 2,012. The latest value available indicates that there were 2,170 PhD holders in Malta in 2019.

Table 1: Number of Doctoral Degrees conferred by the University of Malta for the period starting 2011 till 2019[4]

Year of Award	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Male	9	14	27	14	24	20	20	18
Female	10	12	37	19	15	18	18	13
Total	19	26	64	33	39	38	38	31

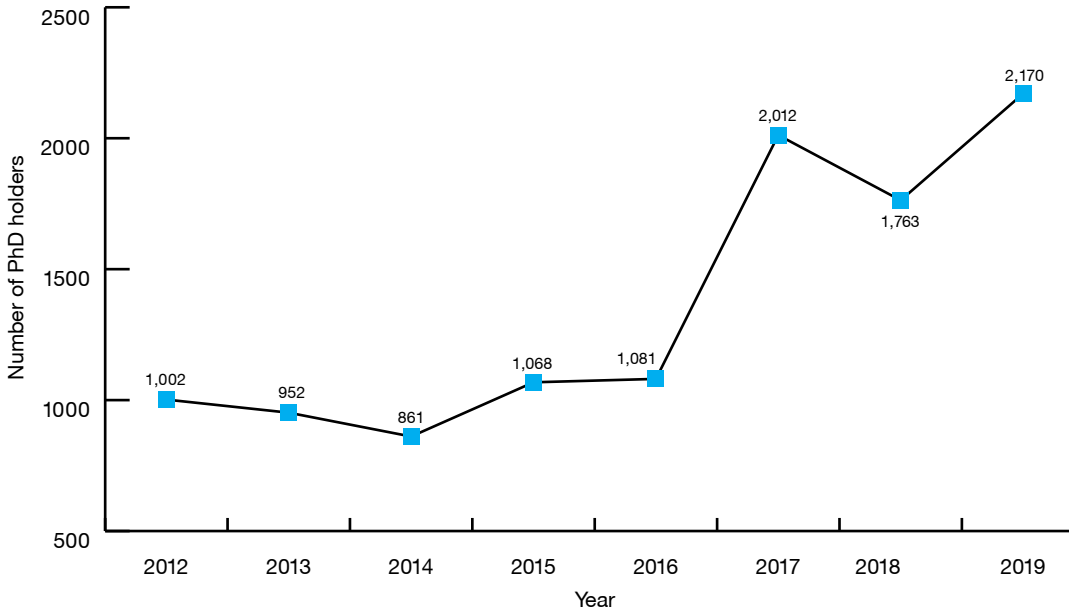
1 Eurostat Statistics Explained. (2012). *Careers of doctorate holders*. https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Archive:Careers_of_doctorate_holders.

2 National Statistics Office, Malta (NSO). (2011, October 26). *News Release 205/2011* [Press release]. https://nso.gov.mt/en/News_Releases/Archived_News_Releases/Documents/2011/News2011_205.pdf.

3 Source: NSO (bilateral correspondence, October 2020). Absolute changes between one survey estimate and another must be treated with caution since minor changes (i.e. less than 2,100 persons) might be the result of sampling error.

4 Data retrieved from the University of Malta Annual Reports. L-Università ta' Malta (UM). (n.d.). University of Malta Annual Reports. https://www.um.edu.mt/about/facts/annualreports.

Figure 1: Total number of PhD holders in Malta for the period 2012 to 2019



ISCED 8: Doctoral or equivalent level, *underrepresented between 20 to 49 sample counts. Source: Labour Force Survey, NSO.

In most countries the share of doctorate holders in the population is rather low. Across OECD countries, in 2018, on average 1.1% of persons aged 25 to 64 held a doctoral degree, according to the organisation's Education at a Glance 2019 report.[5] In Malta, the number of PhD holders as a percentage of the active population was 0.84% in 2019.[6] The 2020 target for this indicator as set in the National R&I Strategy 2020 (i.e. 0.6%), has thus been reached.

The objective of this study is to understand the career paths and trajectories of PhD holders working in Malta and PhD holders who have studied in Malta or are Maltese citizens currently living and working abroad. Doctoral students and doctorates other than the Doctor of Philosophy are outside the scope of this study. The aim is to provide decision-makers, policy makers and science stakeholders with a better evidence base in terms of research careers and to collect evidence which will help funding organisations evaluate the impact of schemes supporting research career development. A better understanding of how doctorate holders transition to the labour market, whether they have achieved the career they desired and whether they are satisfied with their contributions to research and innovation processes, both in and outside academia, would be of considerable value. This study sought to collect evidence on the challenges, bottlenecks and opportunities encountered by doctorate holders interested in research careers. Universities and research institutes are also interested in knowing if, through their doctoral programmes, they are giving doctoral students the skill-set necessary for them to achieve their desired jobs with adequate responsibilities after PhD completion, within or outside academia. The results of this study should help universities better tailor their doctoral programmes and career advice services.

An online questionnaire was designed as part of this study. The questionnaire included 6 sections: (1) demographic details; (2) doctorate education; (3) post-doctoral position; (4) employment situation and career related experience; (5) international mobility and (6) future career plans. The second section addresses the experiences of doctorate holders during their doctoral studies. The third section addresses doctorate holders who went on to take a post-doctorate position. The fourth section addresses where doctorate holders move in their careers, both research and non-research careers as well as occupational

5 Organisation for Economic Co-operation and Development (OECD). (2019). *2019 Education at a glance: OECD indicators*. https://read.oecd-ilibrary.org/education/education-at-a-glance-2019_f8d7880d-en#page1.

6 Population data sourced from the Eurostat Database https://ec.europa.eu/eurostat/databrowser/bookmark/a6316520-5057-4007-a508-162b5e8174a5?lang=en.

patterns of researchers, not only in academia but also in industry, health and the public sector. This section also explores the skills doctoral researchers claim to have acquired and to what extent these are needed for their current occupation. The fifth section assesses to what extent people with a doctoral degree are mobile in the international labour market. The sixth section examines what the potential reasons could be for a career change.

1.2 METHODOLOGY

An online questionnaire and a dissemination methodology were developed. The questionnaire builds on the 2017 Career Tracking Survey of Doctorate Holders[7] published by the European Science Foundation. An extensive literature review, including similar studies conducted in other countries, was undertaken prior to designing the questionnaire. Relevant stakeholders were consulted during the drafting of the questionnaire. The questionnaire was further developed, revised and streamlined, keeping it as short and concise as possible to minimise burdens for the respondent. It included skip logic, and the number of questions varied depending on the profile of the respondent. Most of the questions were obligatory. The final questionnaire was around 25 minutes long and responses were kept anonymous. The questionnaire and survey logic can be found in Annex 3. Respondents had the option to provide their contact details to be used solely for case study purposes. The target population were PhD holders working in Malta and PhD holders who have studied in Malta or are Maltese citizens currently living and working abroad. The following dissemination methods were used: MCST Facebook and LinkedIn pages, Plumtri and MCST Newsletter and portals, MCST mailing list and DOI Government Intranet Information Dissemination. University of Malta Doctoral School also disseminated the questionnaire via portals, social media and a mailing list.

The survey was launched on 18 September, 2020 using Survey Monkey. Data collection was carried out for the period of 8 weeks, until 13 November, 2020. The data collected via the survey form, as submitted by the data subject, was retained for a period of one calendar year from the closure of the survey. The response rate was closely followed on a regular basis during the response time window. When necessary, measures for improving the response rate were applied, e.g. by extending the deadline for submission and boosting targeted social media posts. A total of 192 completed responses were submitted. By way of comparison, according to estimates extracted from the Annual Labour Force Survey, in 2019 there was a total of 2,170 PhD holders in Malta.[8] The estimated total population for this study cannot be calculated since the Labour Force Survey only collects data for PhD holders residing in Malta, whereas the questionnaire sought to additionally capture an international mobility dimension by targeting Maltese PhD holders living abroad and foreign PhD holders who read for their doctorate in Malta and are currently living abroad.

The following chapter provides a general overview of the survey results obtained.[9] Some questions were not applicable to all respondents and therefore the number of respondents included in the analyses vary between questions. Percentages were calculated relative to the number of applicable respondents. Results obtained from questions which were applicable to a low number of respondents need to be interpreted even more cautiously. Throughout the report, the terms *respondent* and *doctorate holder* are used interchangeably. However, this does not imply an extrapolation of respondent (sample) results to all doctorate holders. Key stakeholders were consulted during the drafting of the report.

7 European Science Foundation. (2017). *2017 Career tracking survey of doctorate holders.* https://www.esf.org/fileadmin/user_upload/esf/F-FINAL-Career_Tracking_Survey_2017__Project_Report.pdf.

8 Source: NSO (bilateral correspondence, October 2020).

9 The data obtained from question 57 of the questionnaire could not be analysed due to a regrettable error in the question.

2. Results

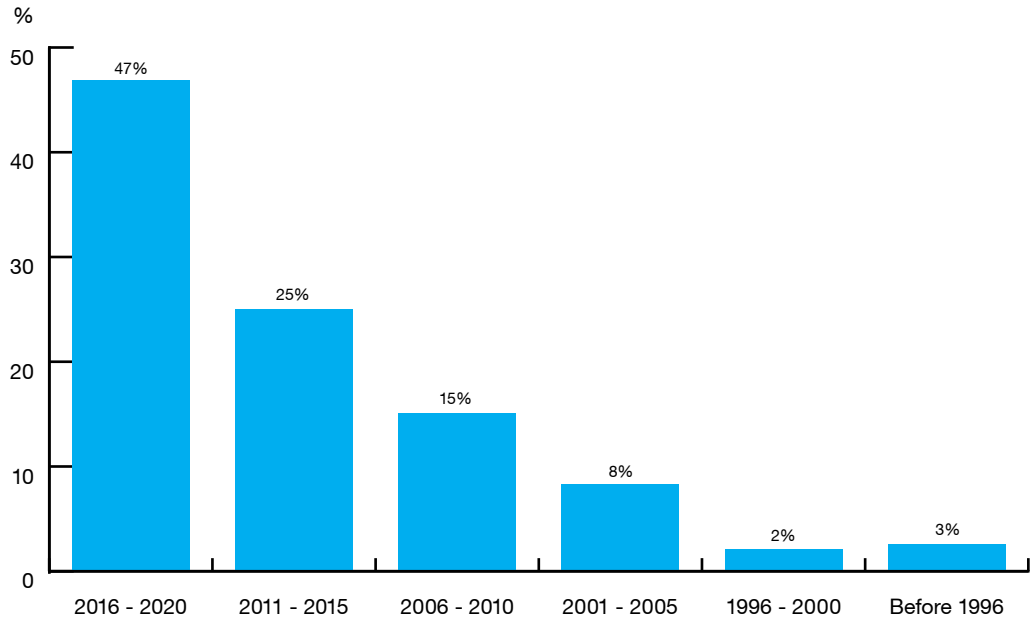
2.1 DEMOGRAPHIC DETAILS

Among respondents participating in the survey, 66% were men and 34% were women (Table 2). There were a total of 192 respondents, 20% of which were awarded their doctorate in the past two years (2019 – 2020). Figure 2 shows how the other 80% are distributed.

Table 2: Gender of Respondents

	N	%
Gender		
Male	127	66
Female	65	34

Figure 2: Year of award of doctorate of respondents

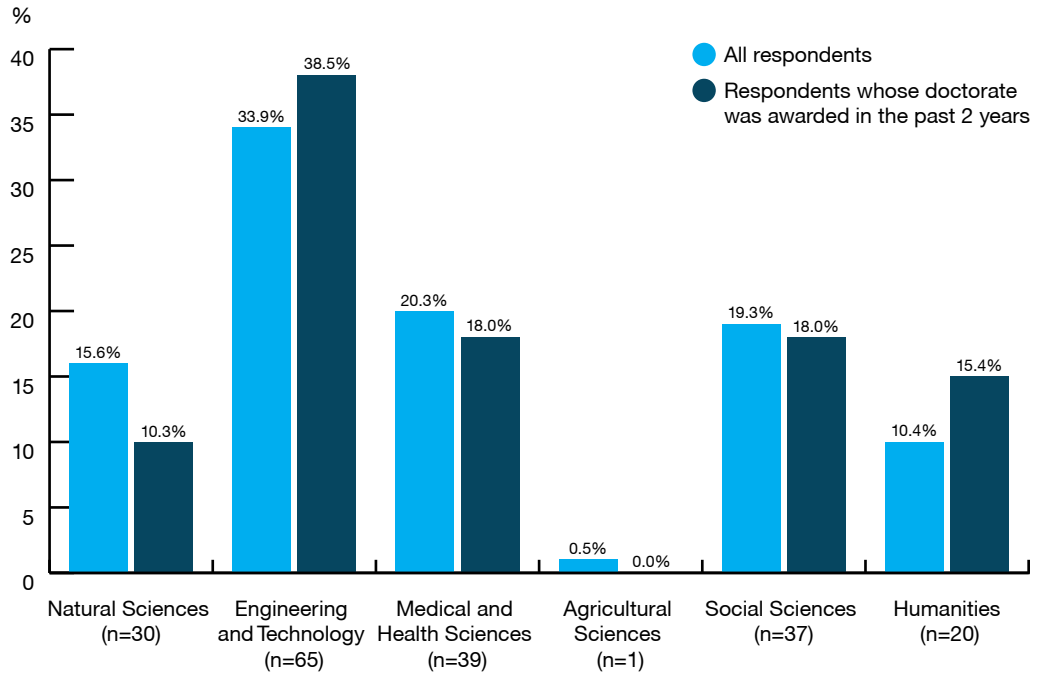


94% of respondents are currently living in Malta. Maltese respondents who are currently living abroad are in the United Kingdom, United States of America (USA), Italy, Canada, Spain and Sweden. The large majority of doctorate holders currently living in Malta are Maltese citizens (87%), followed by Italians (4%) and British (1%). In total, 88% of respondents are Maltese citizens, including those currently living in Malta and those living abroad.

Most of the respondents (34%) obtained their degree in Engineering and Technology (Figure 3). They were followed by those who received degrees in the Medical and Health Sciences (20%), Social Sciences (19%), Natural Sciences (16%), and Humanities (10%). The fewest doctorate holders had degrees in agricultural sciences (0.5%). Most of the recent doctorate recipients, those who received their doctoral degrees in

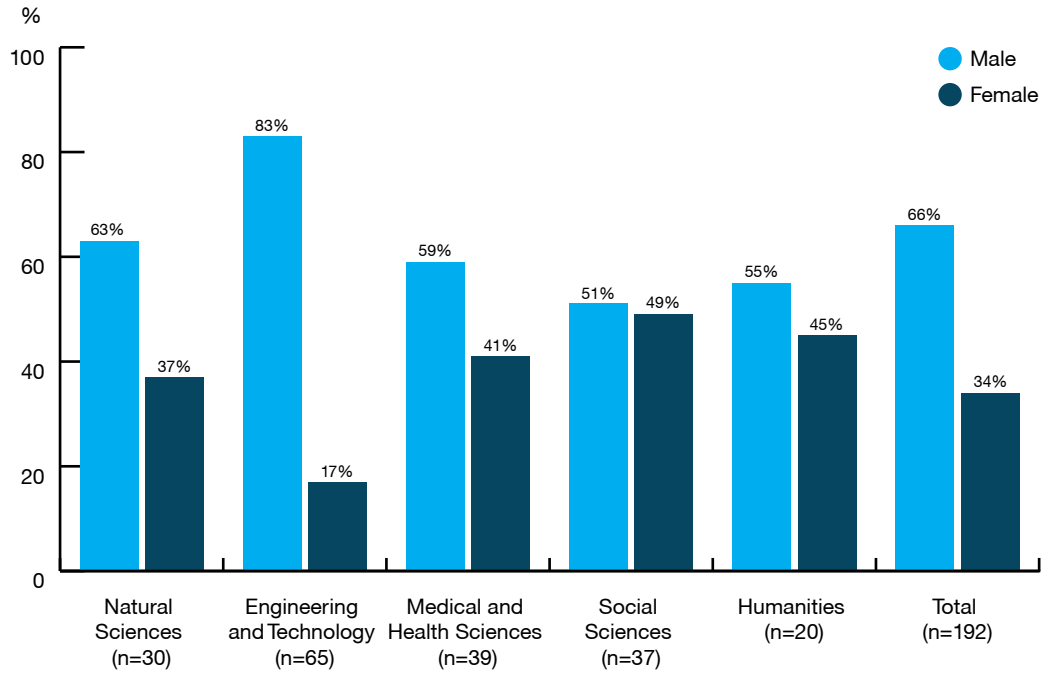
2019 and 2020, also received their doctorate in Engineering and Technology (39%). Doctorate recipients in Natural Sciences decreased by 5.3% and in Humanities, this has increased by 5%. Agricultural sciences represent only 0.5% of respondents. Thus, the results of the latter cohort are not interpreted in this report.

Figure 3: Respondents by doctorate field



Male doctoral holders prevail in all fields (Figure 4). The lowest share of female doctorate holders received their degrees in Engineering and Technology; women represent only 17% of all doctorate holders in this field. This is followed by Natural Sciences (37%). The highest share of female doctoral graduates was recorded in Social Sciences (49%).

Figure 4: Doctorate field by gender

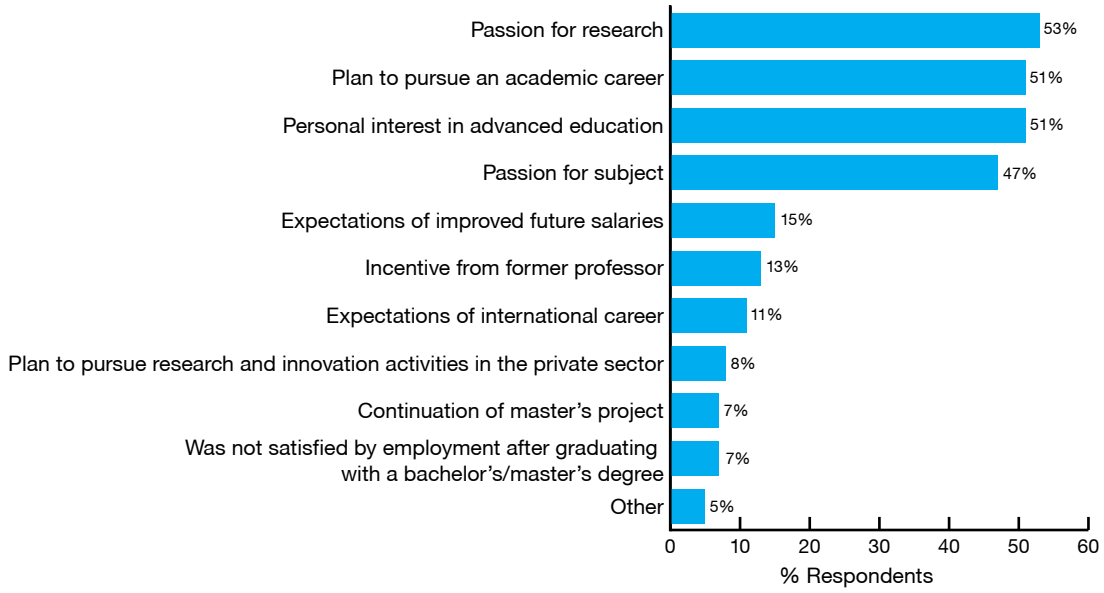


2.2 DOCTORATE TRAINING AND TRANSITION TO FIRST POSITION

Reasons for pursuing a doctorate degree

The most popular reason for pursuing a doctorate degree was passion for research (53%), followed by plans to pursue an academic career (51%), and personal interest in advanced education (51%) (Figure 5). The least popular reasons for pursuing a doctorate were continuation of master's project (7%), and dissatisfaction by employment after graduating with a bachelor's/master's degree (7%).

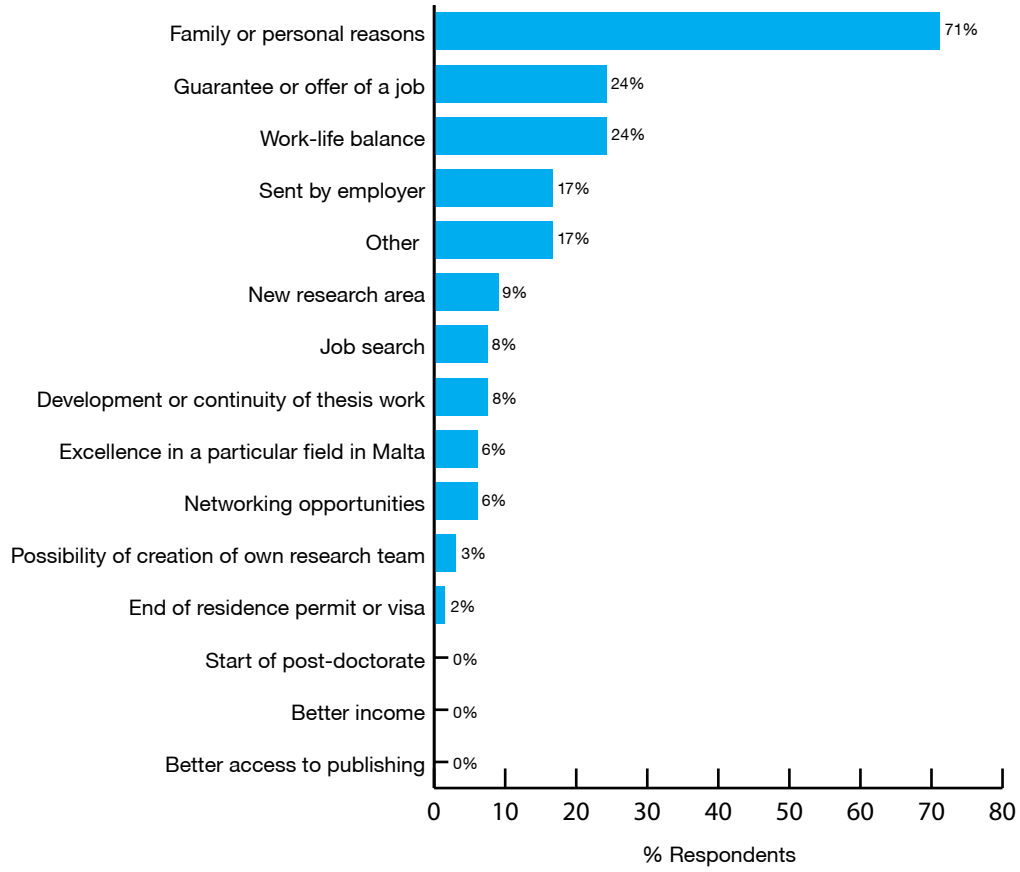
Figure 5: Main reasons for pursuing a doctorate degree



Of all doctorate holders, 41% were awarded their doctoral degrees by a local University (Malta) and 59% were awarded their doctoral degrees by a foreign University. The most frequent foreign country being the United Kingdom, followed by Italy, the United States, Germany, and France. 58% of those who were awarded their doctoral degree by a foreign University, moved to Malta on completion of their doctorate. This percentage includes respondents who were awarded their doctoral degree by a foreign University and resided in Malta during their doctoral studies.

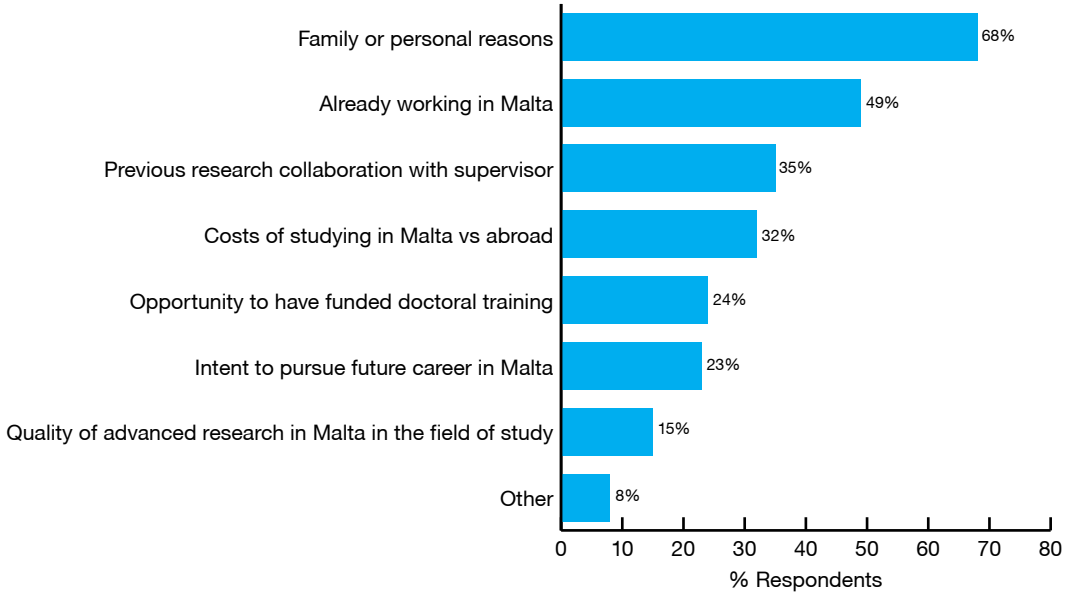
The most popular reason for returning to Malta on completion of the doctorate, was family or personal reasons (71%), followed by work-life balance (24%), and guarantee or offer of a job (24%) (Figure 6). The least popular reasons for returning to Malta were better income (0%) and better access to publishing (0%). Other reasons mentioned were to set up one's own start-up, a previous work contract in Malta, and having received funding for their PhD by the employer in Malta.

Figure 6: Main reasons for moving to Malta on completion of doctorate



Doctoral holders who received their doctoral degree in Malta, did so mainly due to family or personal reasons (68%), and previous employment in Malta (49%) (Figure 7). Quality of research in Malta in the field of study was the least popular reason (15%).

Figure 7: Main reasons for pursuing doctoral studies in Malta



Almost half the respondents (48%) completed a part-time doctorate degree course while 52% took on a full-time doctorate degree course. For 30% of respondents, the doctorate degree course included collaboration with industry. Of the respondents, 76% were involved in teaching activities during their doctorate degree.

Age at award of doctorate

The mean age of all respondents is 35.2 years. The mean age of recent graduates (respondents who have graduated in the past 2 years) is 36.0 years. Doctorate holders in Engineering and Technology had the lowest mean age at award of doctorate (32 years), followed by Natural Sciences (34 years) (Table 3). Doctorate holders in Humanities had the highest mean age at award of doctorate (40 years).

Figure 8: Age at award of doctorate

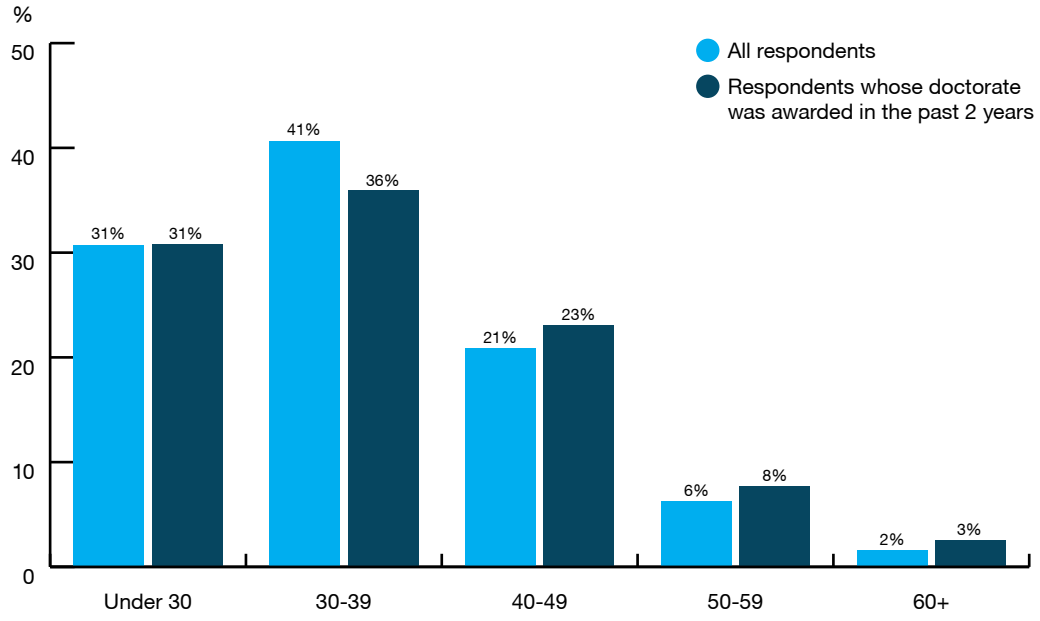
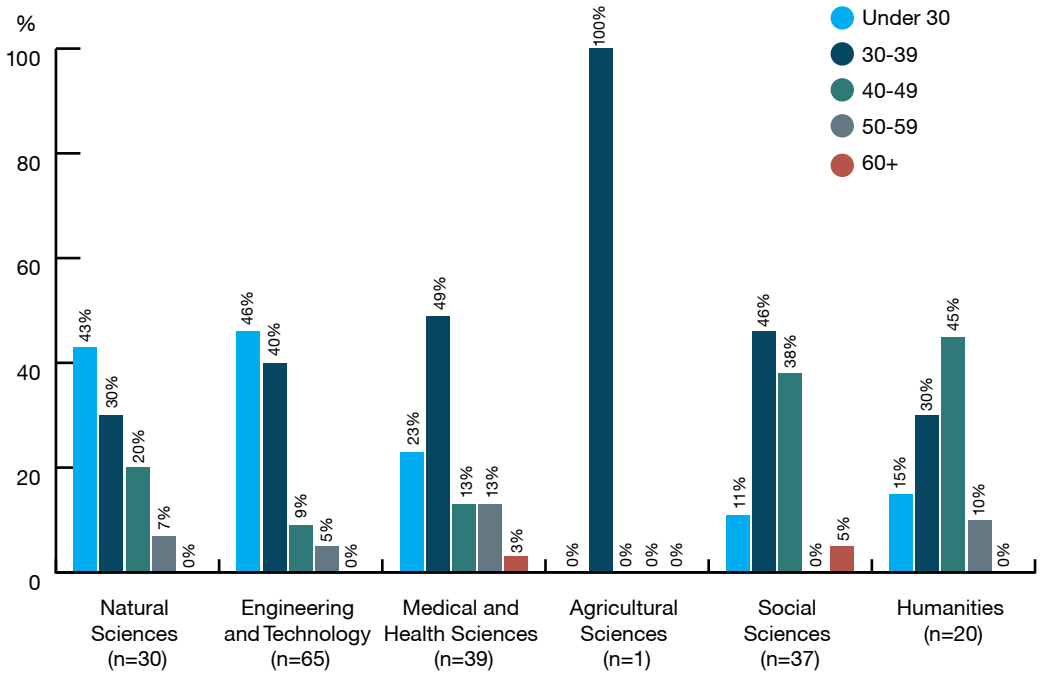


Table 3: Mean age at receiving doctorate by field

Doctorate Field	Age at award of doctorate (years)
Natural Sciences (n=30)	33.5
Engineering and Technology (n=65)	31.7
Medical and Health Sciences (n=39)	36.8
Social Sciences (n=37)	38.8
Humanities (n=20)	39.5

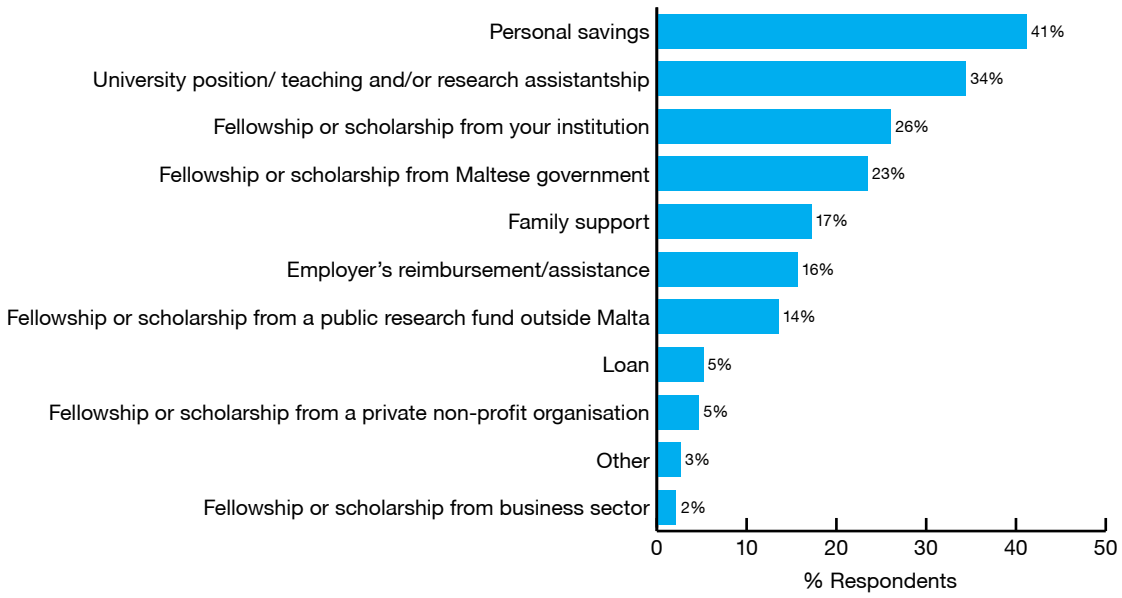
Figure 9: Age at award of doctorate by field



Sources of funding

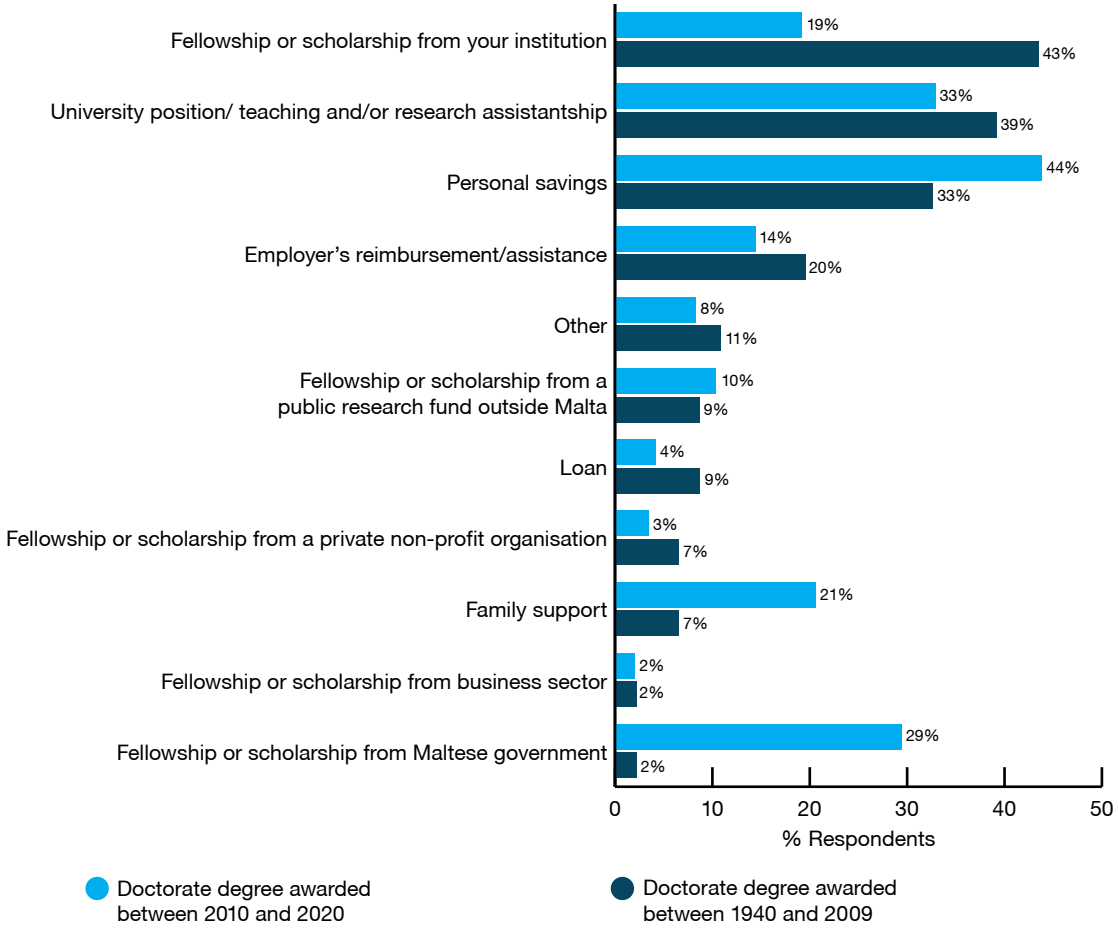
Personal savings emerged as the most popular (41% of respondents) source of financing for doctoral studies (Figure 10). For 34% of doctorate holders the primary source of financing their doctoral studies was a university position/teaching/research assistantship, followed by fellowship or scholarship from the institution (26%). Another important source of financing was fellowship or scholarship from the Maltese government (23%). Only a very small share of respondents was funded by a scholarship from the business sector during their doctoral study (2%).

Figure 10: Sources of funding during doctorate degree



A significant difference can be seen in the percentage of respondents who funded their doctoral degree using a fellowship or scholarship from the Maltese government before 2010 and after 2010. Only 2% of respondents who were awarded their doctoral degree before 2010 made use of scholarships from the Maltese government to fund their doctoral degree (Figure 11). This percentage increased to 29% for those who received their doctoral degree in 2010 or later. The Malta Government Scholarship Scheme for Post Graduate Studies (MGSS-PG) officially commenced in 2006[10], resulting in this increase.

Figure 11: Sources of funding during doctorate degree for PhD holders who were awarded their doctoral degree before 2010 vs 2010 or later



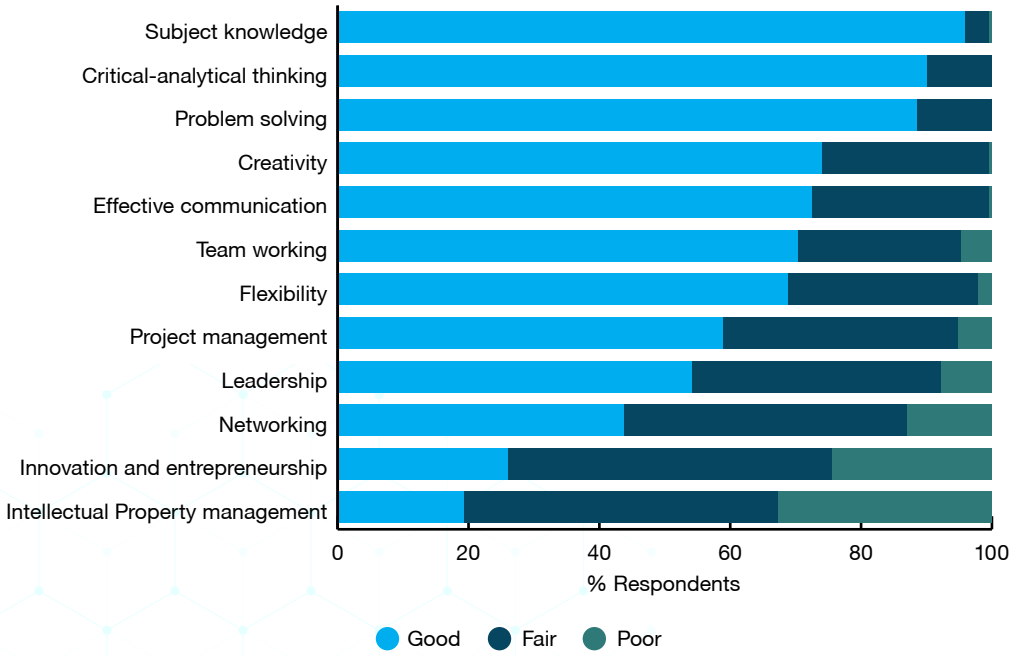
Competences

Respondents were asked to rate their competences at the time they completed their doctorate, as well as the importance of the same competences in their current job. The list of competences and personal attributes from the OECD survey, *Careers of Doctorate Holders* was used as the basis for this list.

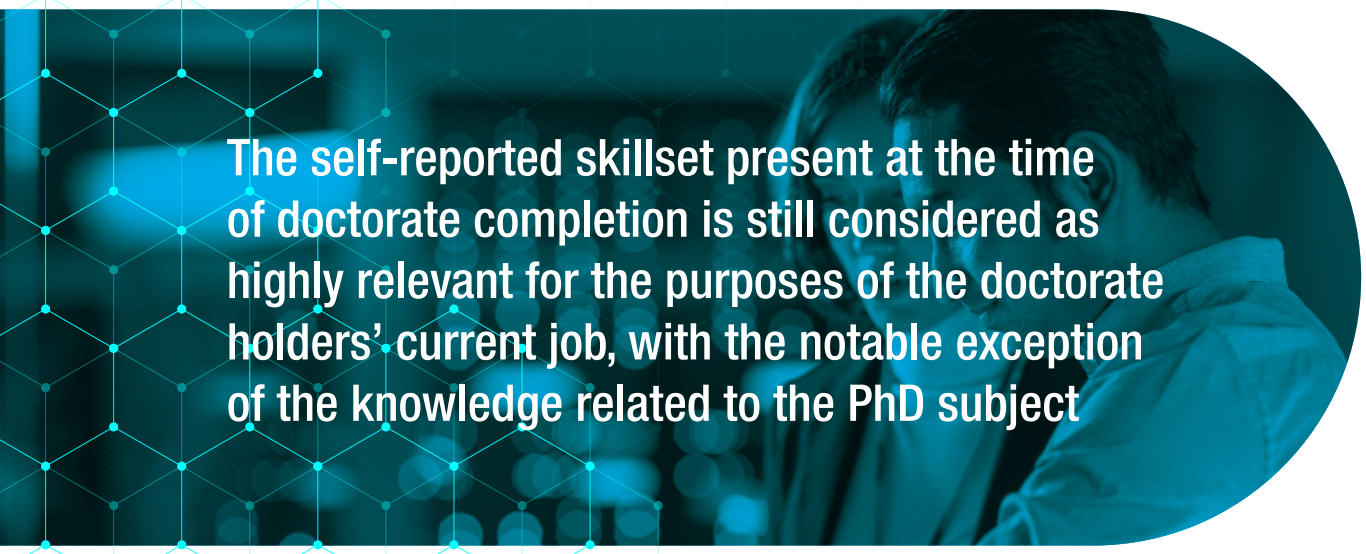
More than 80% of doctorate holders thought that they had good subject knowledge, critical-analytical thinking and problem-solving skills at the time of doctorate completion (Figure 12). Doctorate holders thought there were some deficiencies in networking, innovation and entrepreneurship, and intellectual property management; more than half of the respondents assessed their skill level in these categories as fair or poor.

10 Horizon 2020 Policy Support Facility. (2019). *Peer Review – Maltese Research and Innovation system.* https://ec.europa.eu/research-and-innovation/sites/default/files/rio/report/PR%2520Malta_%2520Final%2520Report.pdf.

Figure 12: Self-reported level of competences at the time of doctorate completion



There are no significant differences in self-reported level of competences between those who were awarded their doctoral degree locally and those abroad. The deficiencies which were noted by PhD holders who were awarded their degree in Malta – that is in networking, innovation and entrepreneurship and intellectual property management – were also noted to a lesser degree by PhD holders who were awarded their degree by a foreign university (Figure 13).



The self-reported skillset present at the time of doctorate completion is still considered as highly relevant for the purposes of the doctorate holders' current job, with the notable exception of the knowledge related to the PhD subject

Figure 13: A comparison of the self-reported level of competences of PhD holders who were awarded their doctoral degree by a local university and by a foreign university

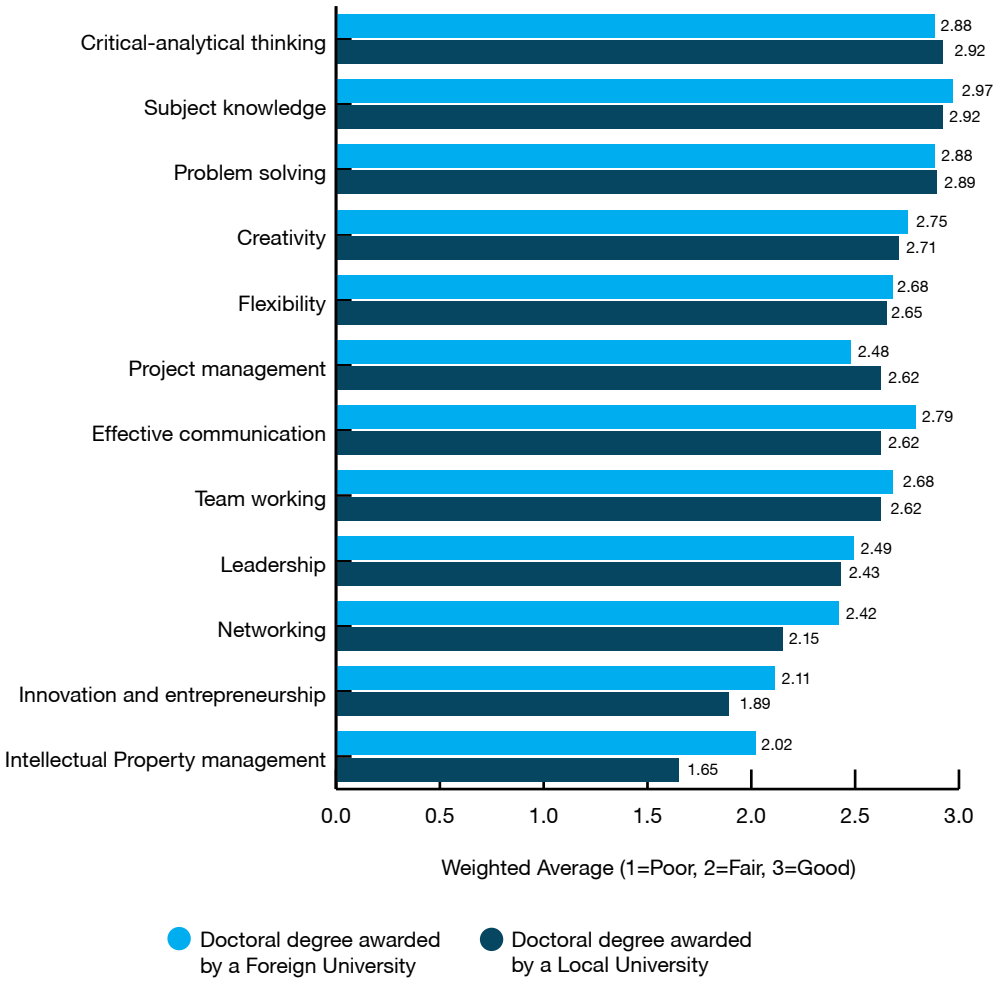
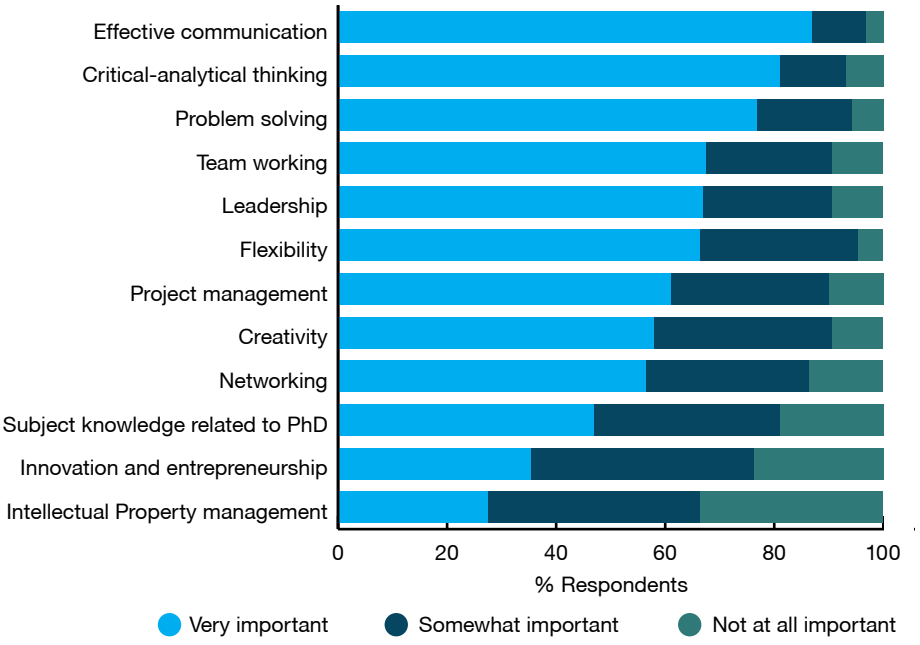
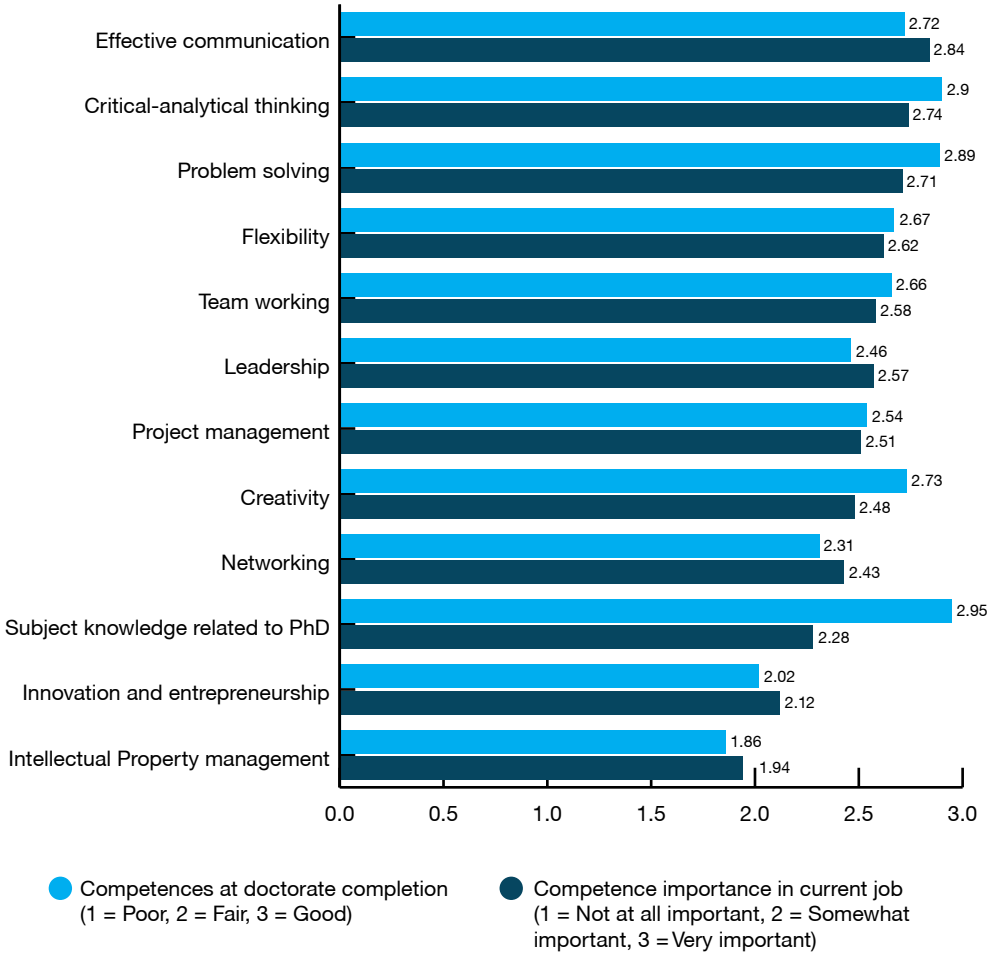


Figure 14: Level of importance of competences in current job



The most important competences in the job the respondents held at the time of the survey response are effective communication (2.84), critical-analytical thinking (2.74), and problem solving (2.71) (Figure 15). The least important are innovation and entrepreneurship (2.12) and intellectual property management (1.94). The self-reported skillset present at the time of doctorate completion is still considered as highly relevant for the purposes of the doctorate holders' current job, with the notable exception of the knowledge related to the PhD subject.

Figure 15: A comparison of the self-reported level of competences at the time of the doctorate completion and their importance in the current job



Job search

At the time they completed their doctorate, 77% of respondents were already employed. The majority of the remaining 23% of respondents who were looking for a job after completing their doctorate spent less than 6 months to find one. 14% of respondents who were looking for a job after completing their doctorate spent more than one year to find one (Figure 16). 70% of Natural Sciences graduates looking for a job, spent one month or less to find one, while 75% of Social Sciences graduates spent more than a year (Figure 17).

Figure 16: Time spent looking for a job after completion of doctorate

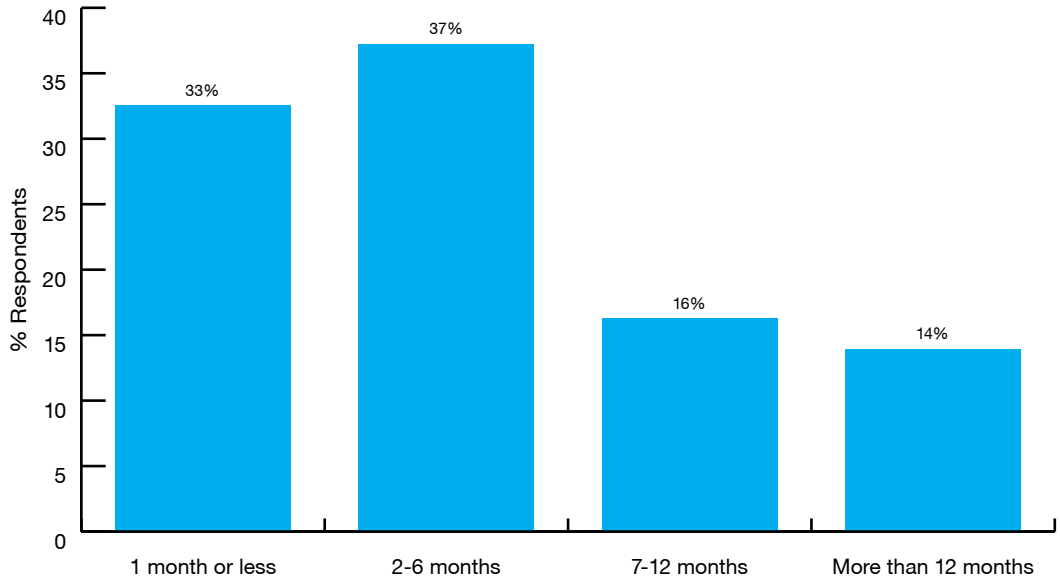
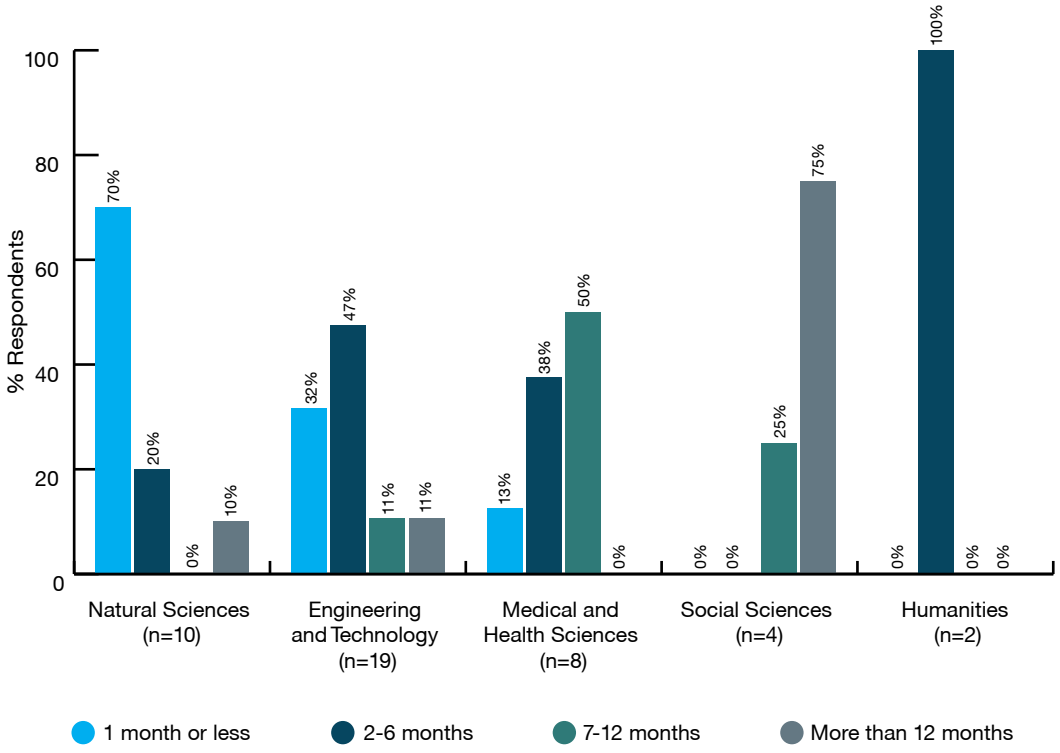
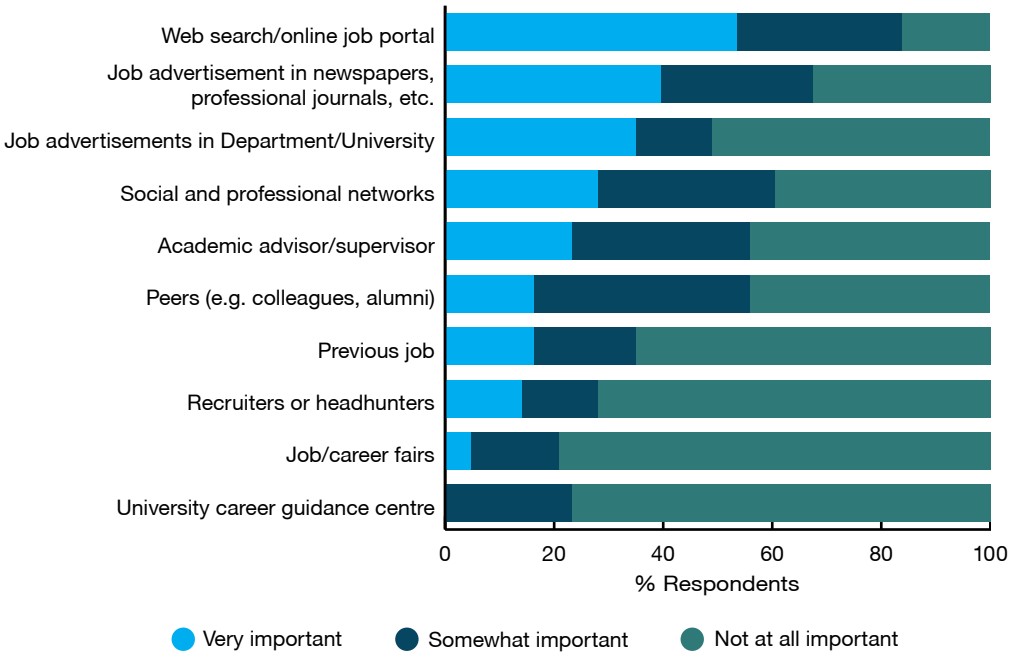


Figure 17: Time spent looking for a job after completion of doctorate by field



The most popular resources for job searches after completing a PhD, were web searches/online job portals, and job advertisements in newspapers and journals. University career guidance centres were the lowest rated resource for job search with 77% of respondents rating it as not at all important (Figure 18).

Figure 18: Importance of different resources when looking for a first job after completion of the doctorate

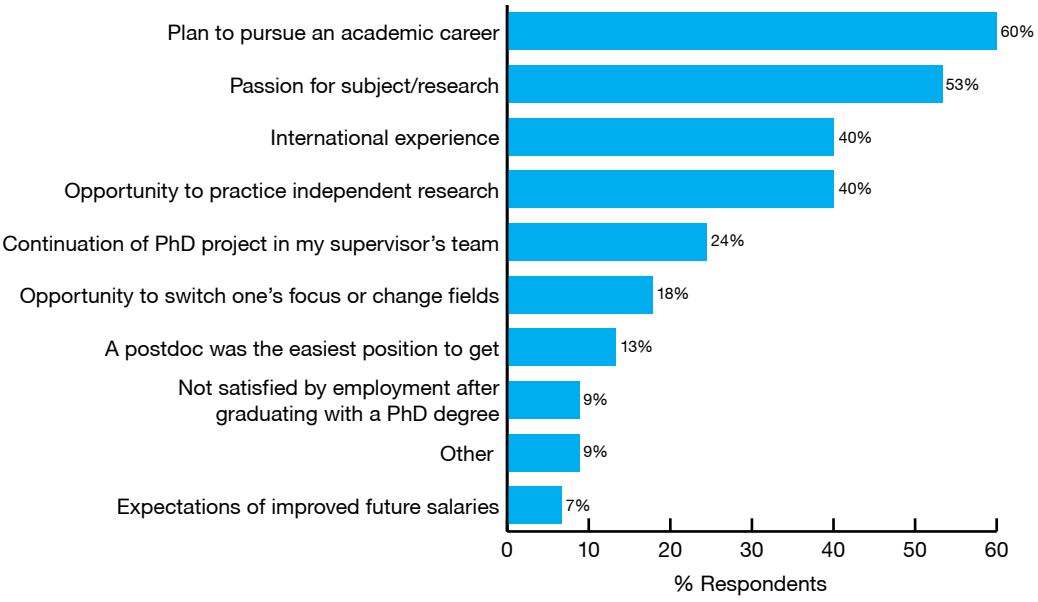


Post-doctorate positions

23% of respondents took a post-doctoral position (or equivalent) at a university or a research performing organisation after obtaining their doctorate. 25% of male PhD holders pursued a post-doc position in contrast to 20% of female PhD holders. 56% of the respondents who took a post-doctoral position, did so abroad. The most frequent foreign country for post-doc positions was the United Kingdom, followed by Italy.

The most popular reason for pursuing a post-doctoral position was a plan to pursue an academic career (60%), followed by passion for the subject/research (53%) (Figure 19). The least popular reason to accept a post-doctoral position was expectations of improved future salaries (7%). Other reasons mentioned were no academic openings in Malta at the time and very limited opportunities beyond academia.

Figure 19: Importance of reasons for taking a post-doctorate position



Transition to the first position and added value of the doctorate

On average, respondents view their doctoral studies as a positive experience and added value (Figure 20). Respondents engaged in research are more positive regarding their doctoral study (Figure 21). Researchers felt that their doctorate allowed them to offer more added value to the organisation/company they work in (4.4) compared to non-researchers (3.5) and they felt that it enabled them to progress towards their desired career (4.1) more than non-researchers (3.0). In most cases, both researchers and non-researchers would still do a doctorate again if they had to restart their career.

Figure 20: The benefits of a doctorate degree for career development

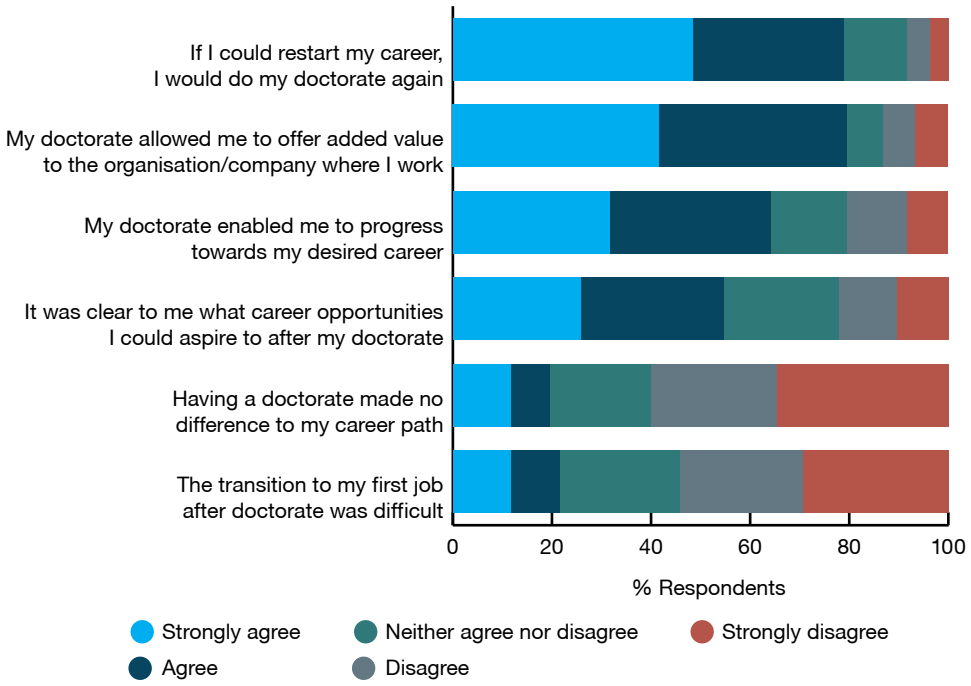
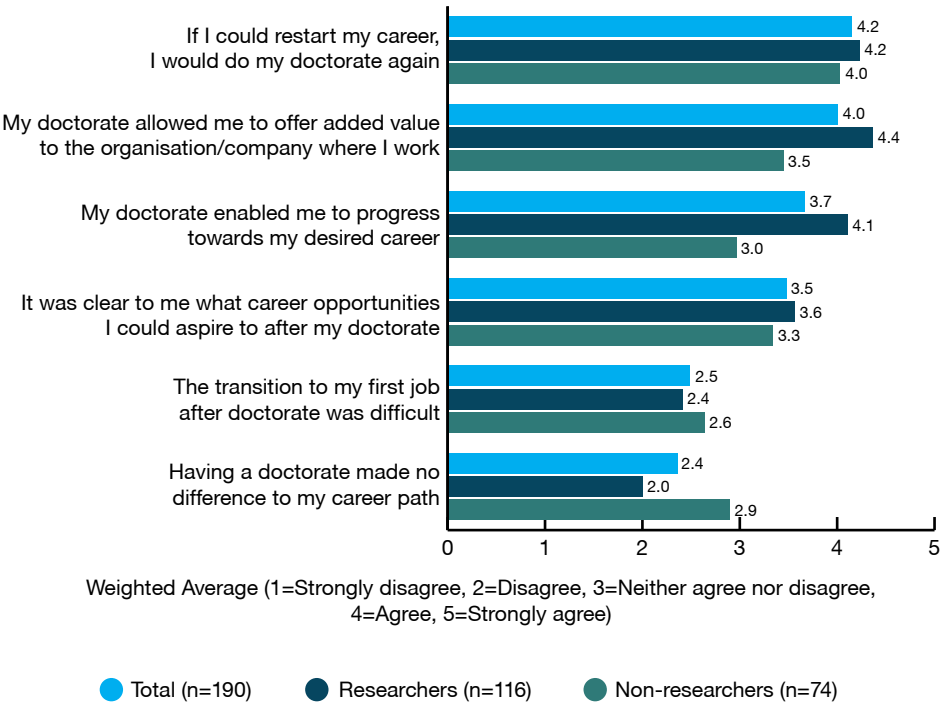


Figure 21: The benefits of a doctorate degree for career development (researchers vs non-researchers)

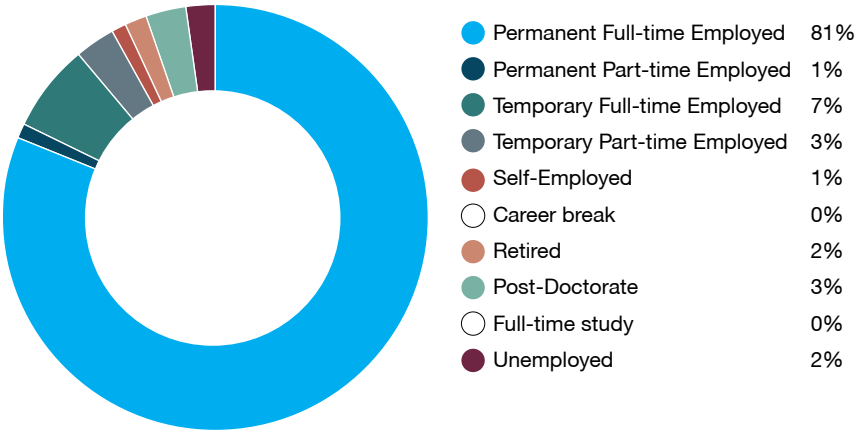


2.3 EMPLOYMENT SITUATION

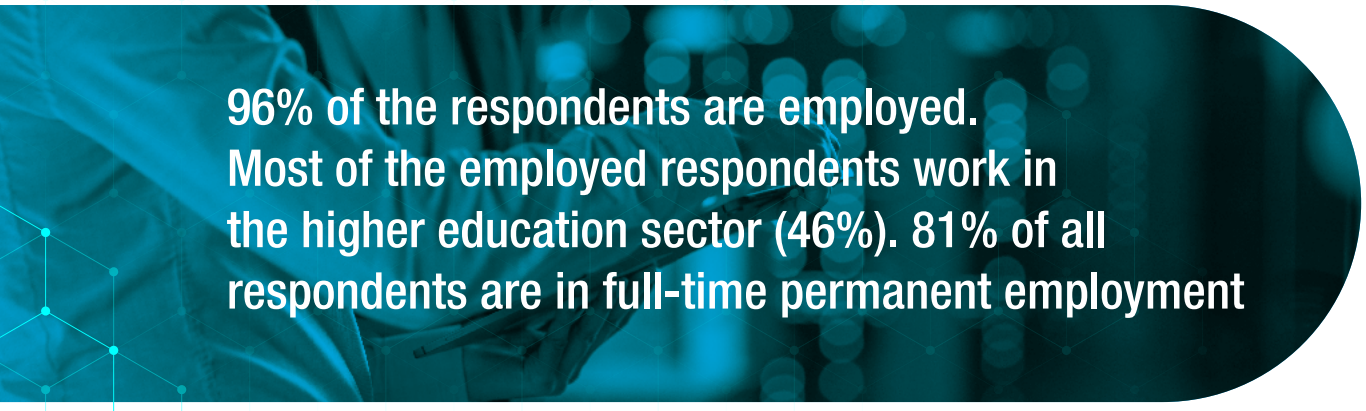
Employment status

Most respondents are employed (96%). 81% of all respondents are in full-time permanent employment, 7% are in full-time temporary employment, 1% are in part-time permanent employment and 3% are in part-time temporary employment. 1% of respondents are self-employed. The 4% who are not in employment are either retired (2%) or unemployed (2%). On average across OECD countries, the employment rate rises to 92% with a doctoral or equivalent degree. Young doctorate holders have strong employment outcomes, with employment rates at 90% or higher in 16 of the 26 countries with available data.[11]

Figure 22: Current employment status

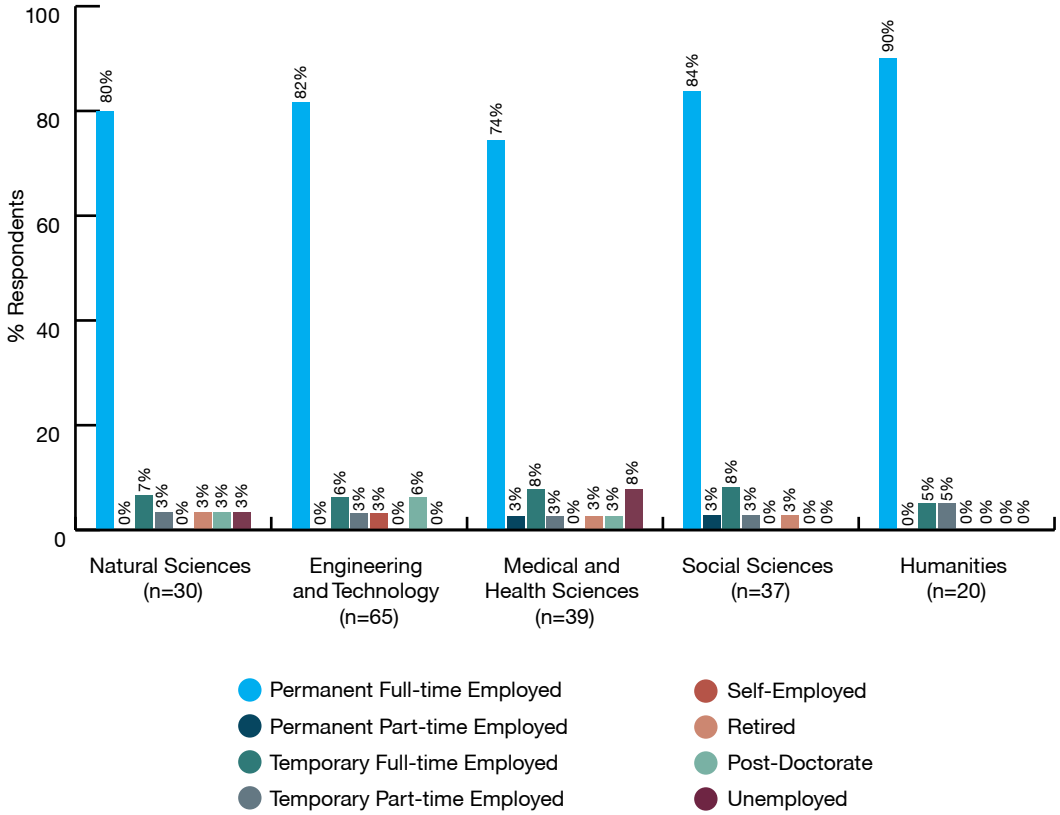


Employment status varies by doctorate field. The highest share of permanently full-time employed is in the group of respondents who studied humanities (90%) (Figure 23). All doctorate fields have a high share of permanently full-time employed respondents, the lowest being the Medical and Health Sciences field (74%). The highest share of unemployed (8%) is observed in the group of respondents with a doctorate in Medical and Health Sciences. Due to the low number of respondents with a doctorate in Agricultural Sciences, these results are not interpreted.



11 Organisation for Economic Co-operation and Development (OECD). (2019). *2019 Education at a glance: OECD indicators*. https://read.oecd-ilibrary.org/education/education-at-a-glance-2019_f8d7880d-en#page1.

Figure 23: Employment status according to doctorate field



Public/private research institutes have the lowest percentage of permanently employed doctorate holders (16.7%) followed by the private non-profit sector (67%) (Table 4). In the government/public sector and in the business enterprise sector, the vast majority of respondents are permanently full-time employed (92% and 89% respectively). This also applies to the higher education sector and other education sector (84% and 86% respectively). The highest percentage of temporary full-time employed doctorate holders is observed in the private non-profit sector (33%), followed by the higher and other education sectors.

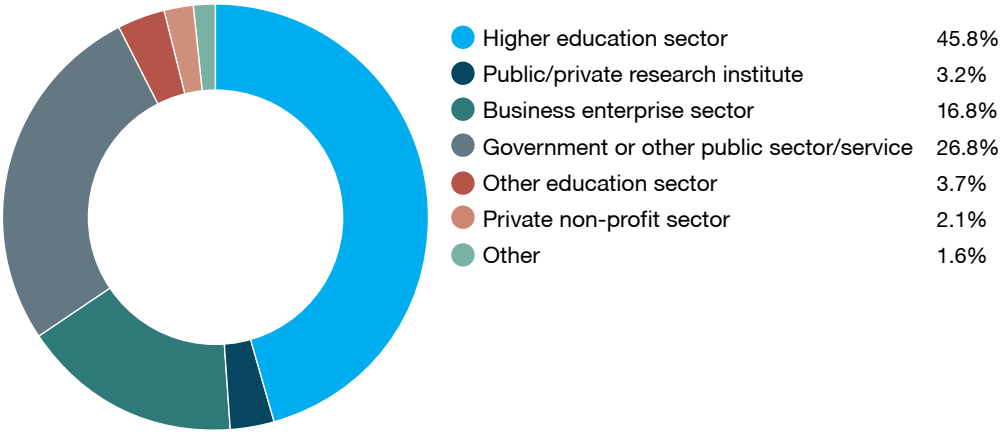
Table 4: Employment status according to sector of employment

Sector of Employment	Employment Status (% Respondents)					
	Permanent Full-time Employed	Permanent Part-time Employed	Temporary Full-time Employed	Temporary Part-time Employed	Self-Employed	Post-Doctorate
Higher education sector (n=86)	83.7%	1.2%	9.3%	3.5%	0.0%	2.3%
Public/private research institute (n=6)	16.7%	0.0%	0.0%	16.7%	0.0%	66.7%
Business enterprise sector (n=26)	88.5%	0.0%	3.8%	3.8%	3.9%	0.0%
Government or other public sector/service (n=50)	91.8%	2.0%	4.1%	2.0%	0.0%	0.0%
Other education sector (n=7)	85.7%	0.0%	14.3%	0.0%	0.0%	0.0%
Private non-profit sector (n=3)	66.7%	0.0%	33.3%	0.0%	0.0%	0.0%

Sector of employment

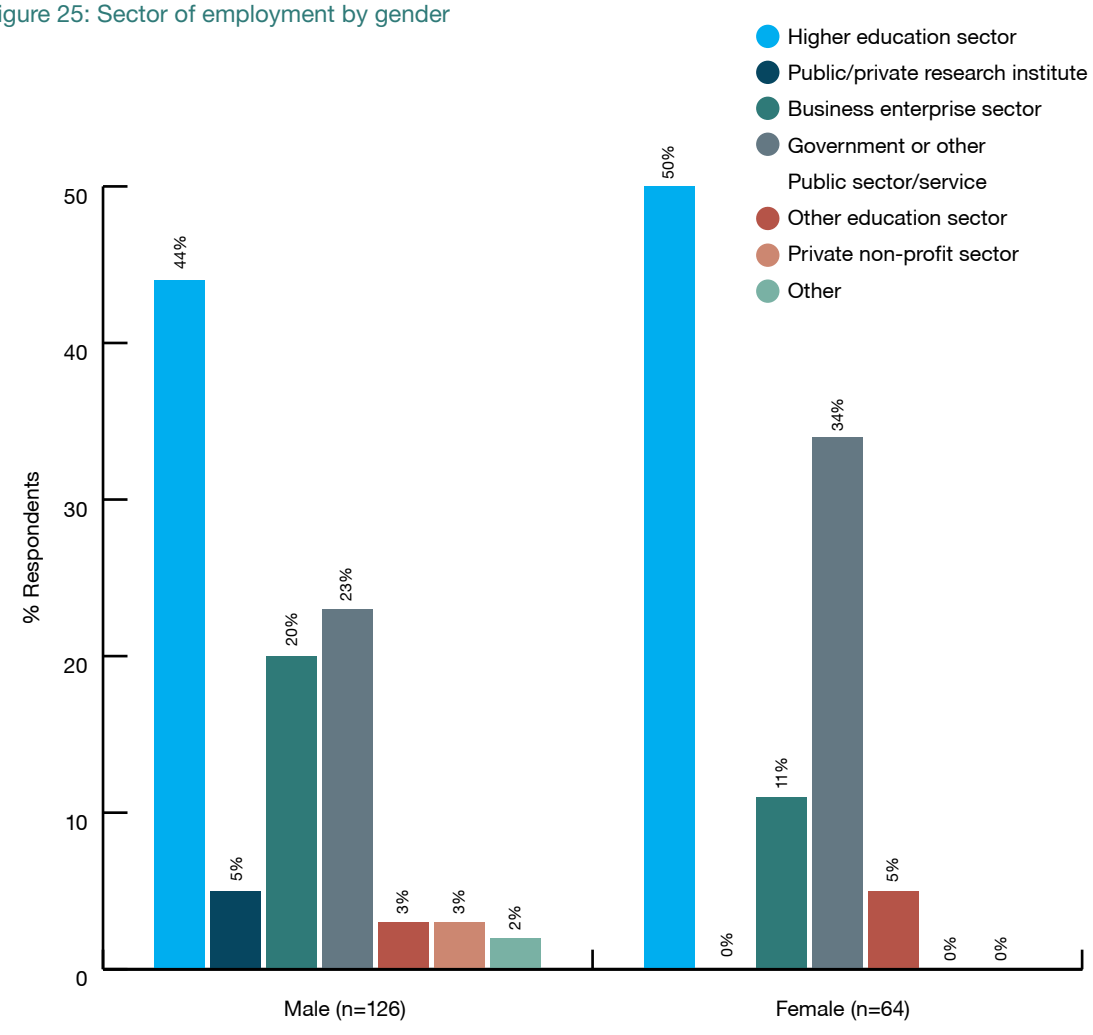
The majority of employed respondents work in the higher education sector (46%), followed by the Government or other public sector/service (27%), the business enterprise sector (17%) and other education sector (4%) (Figure 24). Only 2% are employed in the private non-profit sector and 3% work at private/ public research institutes.

Figure 24: Employed doctorate holders by sectors of employment



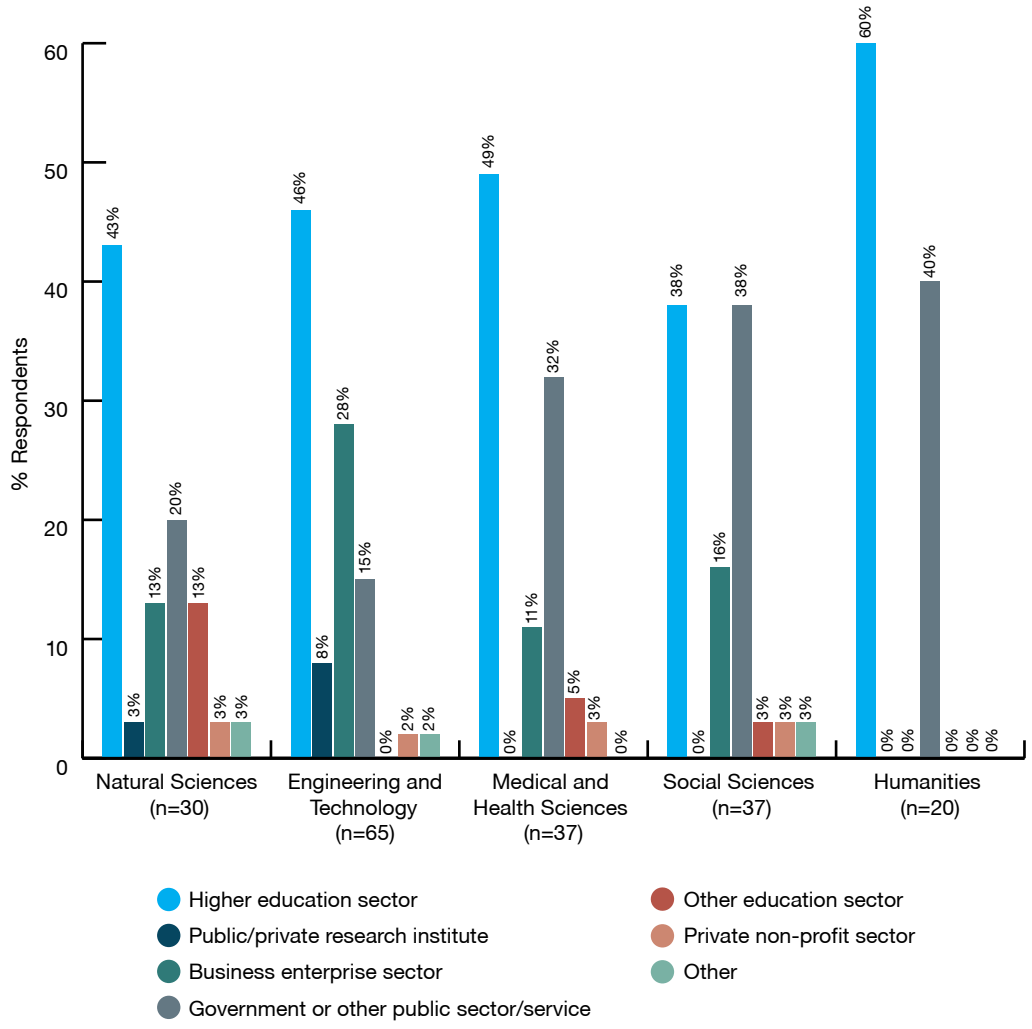
Women work in the education sector and the government or other public sector more often than men, while men work in the business enterprise sector, research institutes and private non-profit sector more often than women (Figure 25).

Figure 25: Sector of employment by gender



Doctorate holders of all fields mainly work in the higher education sector (Figure 26). The business enterprise sector is the second most common sector among doctorate holders in the engineering and technology field (28%), whereas government or other public sector employment is the second most common sector in the fields of natural sciences (20%), medical and health sciences (32%), social sciences (38%) and humanities (40%). A small percentage of respondents in the natural sciences (3%) and engineering and technology (8%) sectors, are employed by public and private research institutes.

Figure 26: Sector of employment by doctorate field



Relation of employment with doctoral degree

Most respondents (83%) see their PhD as at least partly related to their work (Figure 27). As expected, the relation between employment and doctoral degree differs between sectors. Respondents working in the higher education sector and research institutes, in most cases, see their doctorate as being closely related to their work (Figure 28). Among respondents working in the business enterprise sector, only 19% see their doctorate as being closely related to their work. This same response is higher for those working in government (41%). Of the respondents working in the business enterprise sector, 37% find their doctorate not related to their work.

Figure 27: Relation of employment with doctoral degree

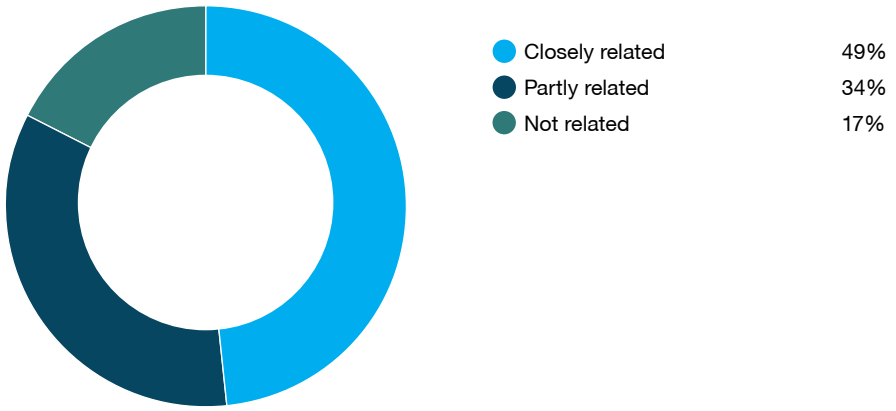
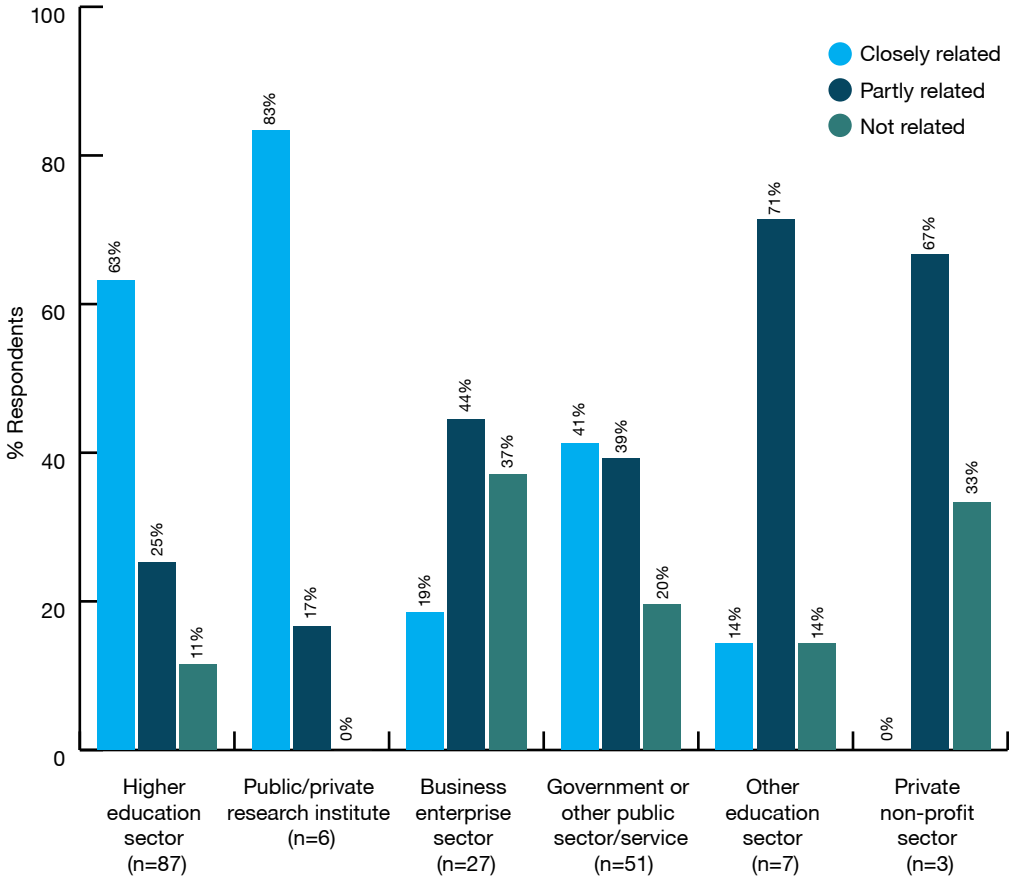
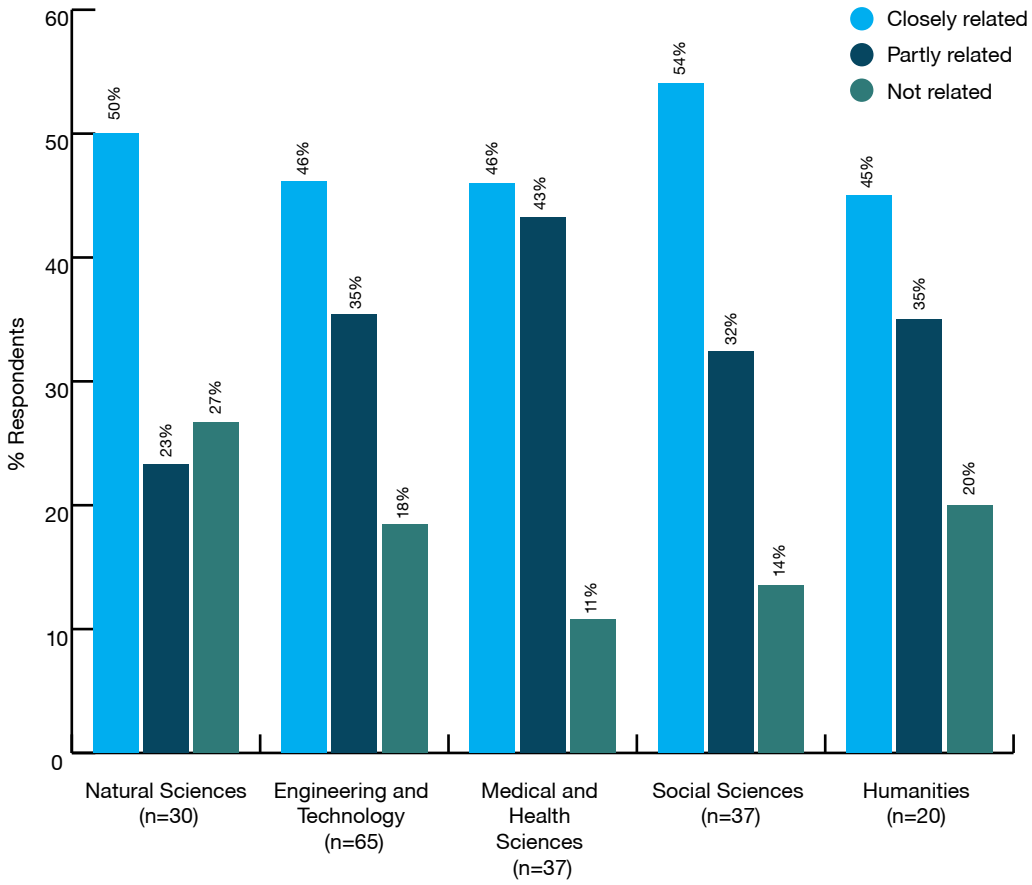


Figure 28: The relationship between work and doctorate by sector of employment



11% of respondents with a doctorate degree in medical and health sciences see their doctorate as not related to their work (Figure 29). This share is highest for respondents with a doctorate degree in natural sciences (27%), followed by humanities (20%) and engineering and technology (18%).

Figure 29: The relationship between work and doctorate by doctorate field



Level of qualification

The minimum education level for the current employment of 59% of respondents is a master's level degree or lower (Figure 30). In the higher education sector and public/private research institutes, the majority of respondents (60% and 67% respectively) work in jobs requiring a PhD or higher (Figure 31). In the business enterprise sector and the government/public sector 19% and 12% of respondents respectively are employed in jobs requiring a PhD or higher. In the business enterprise sector 74% of respondents are employed in jobs requiring no more than a master's level degree. In the government/public sector 82% of respondents are employed in jobs requiring no more than a master's level degree. A doctorate level degree is least required in the private non-profit sector. Therefore, most doctorate holders in non-academic sectors are formally overqualified for their job.

Figure 30: Minimum education level for current employment

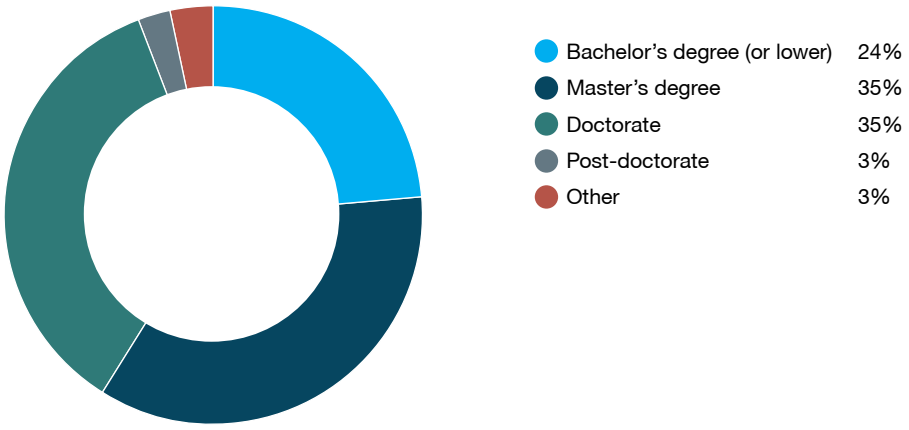
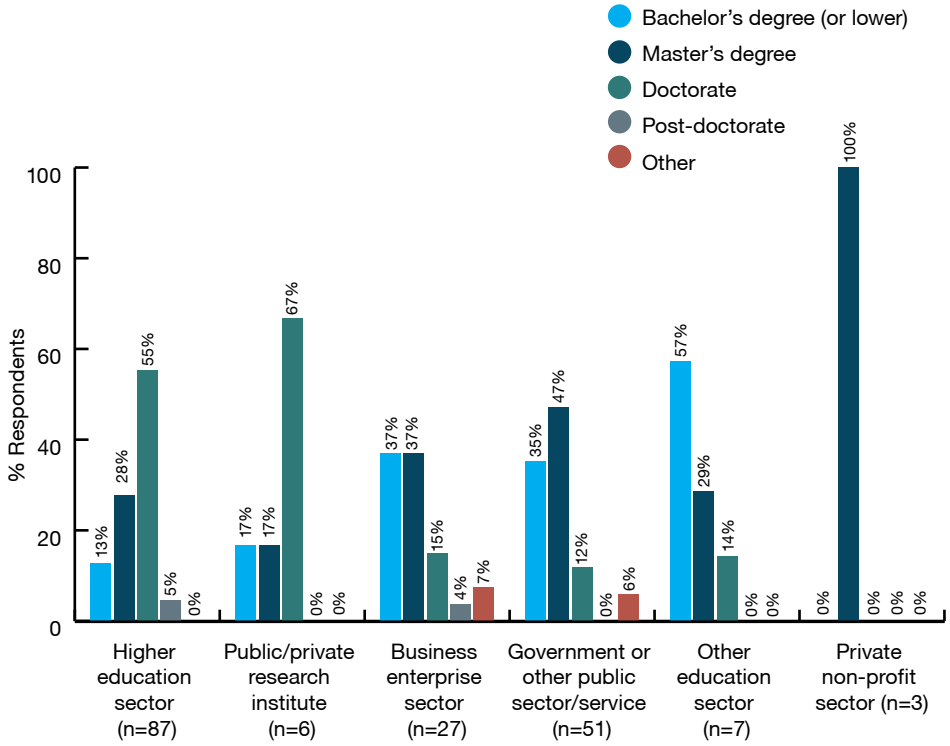


Figure 31: Minimum education requirement for current job by sector of employment



Teaching and staff management responsibilities

In their employment, 69% of doctorate holders were teaching, 18% of them were teaching for more than 75% of their working time and 24% for less than 25% of their working time (Figure 32).

Figure 32: Involvement in teaching activities in current employment

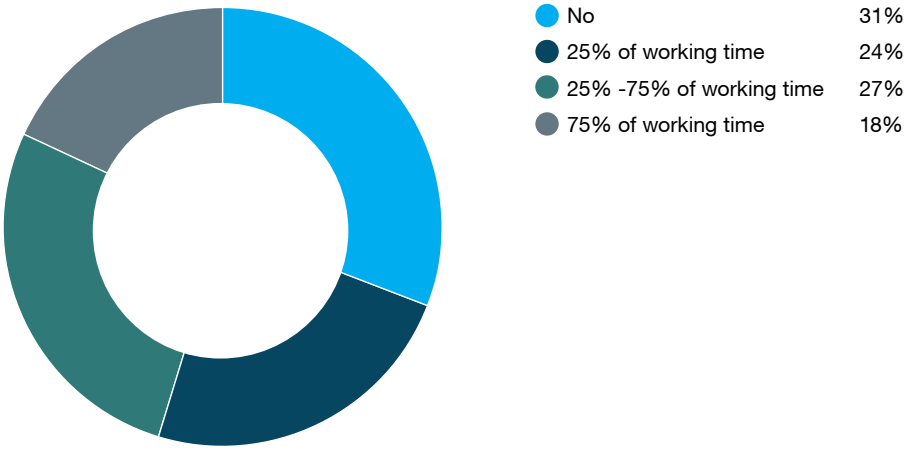
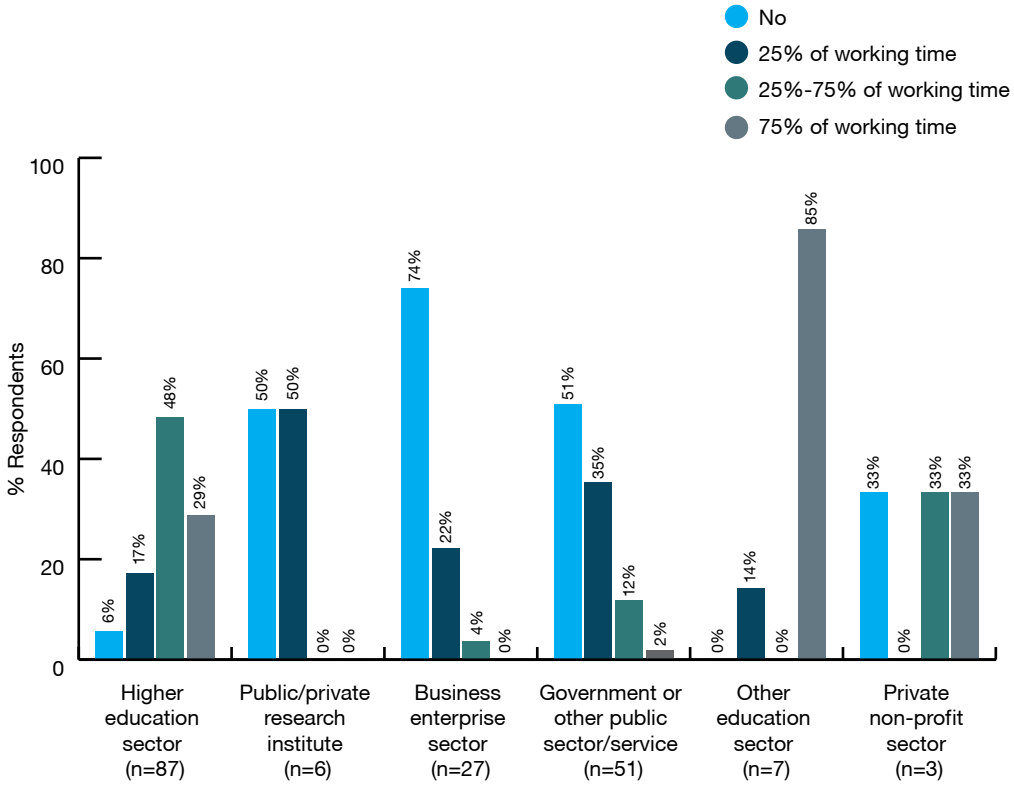


Figure 33: Involvement in teaching activities by sector of employment



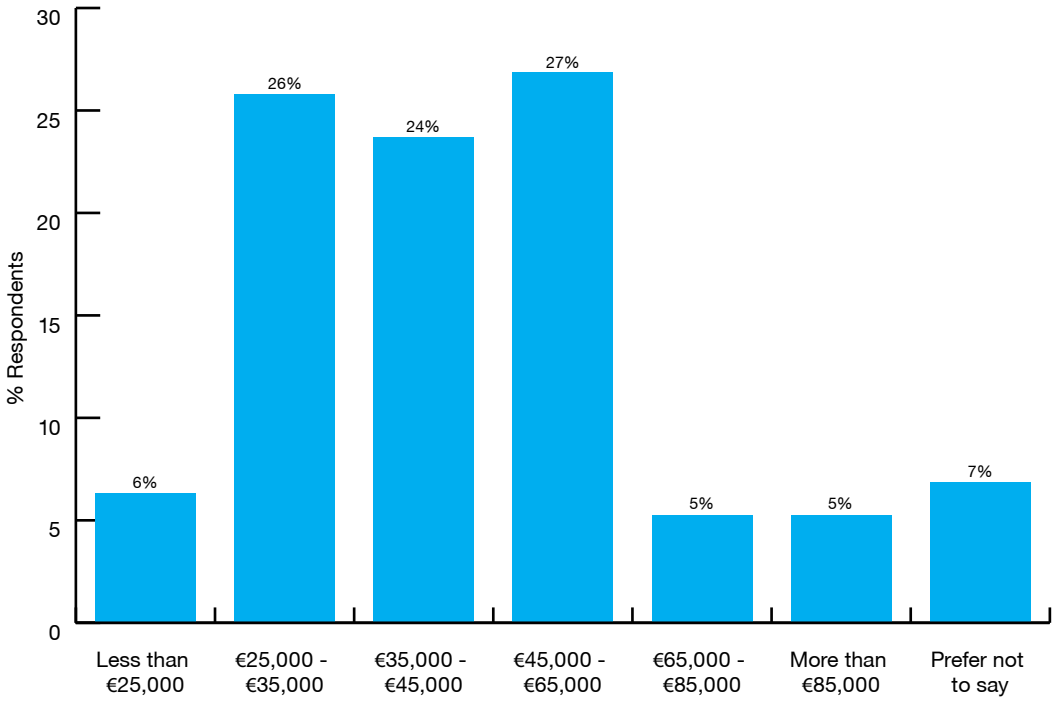
58% of employed respondents have staff management responsibilities, 61% among researchers and 53% among non-researchers. 62% of employed men in this investigation have staff management responsibilities whereas among the employed women, 50 % have staff management responsibilities.

Additional jobs

43% of employed doctorate holders had at least one second job in addition to their principal jobs. 70% of these were men.

Annual earnings of doctorate holders

Figure 34: Annual gross income (before deductions) of doctorate holders



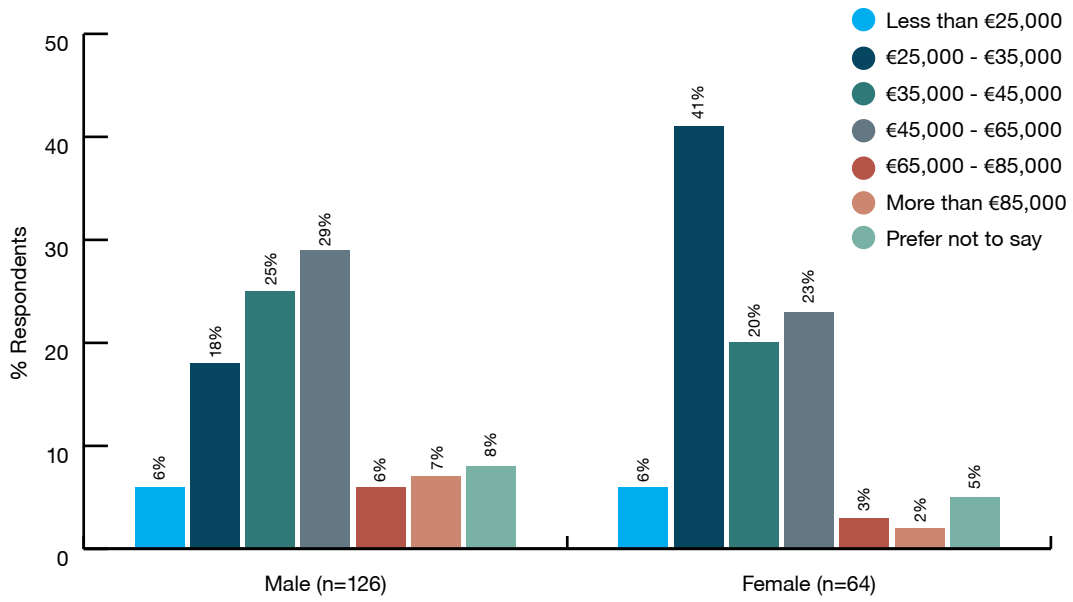
The average gross income of respondents amounted to €45,282, while the average gross income of respondents who are currently residing in Malta amounted to €44,851. (Further data on average gross income of respondents who are currently residing in Malta can be found in Annex 2). The average gross annual earnings of male doctorate holders amounted to €47,974 and of female doctorate holders to €40,164 (Table 5). Gross annual earnings of female doctorate holders were 84% of their male colleagues. In monetary value, they were on average more than €7,000 lower. Therefore, the difference between average annual gross income of male and female employees as a percentage of male gross income, is 16.3%. For respondents who are currently residing in Malta, the difference between average annual gross income of male and female employees as a percentage of male gross income, is 20.5%. This is significantly higher than the gender pay gap of the labour market in general in Malta. In 2019, women's gross hourly earnings were on average 14.1% below those of men in the European Union (EU-27) and 11.6% in Malta.[12]

Table 5: Average Gross Income by Gender

Gender	Average Gross Income
Men	€47,974
Women	€40,164

12 Retrieved from https://ec.europa.eu/eurostat/databrowser/view/sdg_05_20/default/table?lang=en on May 6th 2021.

Figure 35: Annual gross income by gender



The highest gross annual earnings were received by doctorate holders working in the business enterprise sector (€53,043), followed by those working in the government/public sector (€43,723) and the higher education sector (€43,393) (Table 6). The lowest gross annual earnings were paid in public/private research institutes (€30,000). The highest gender pay gap is noted in the Government/public sector (26.6%), followed by the higher education sector (13.6%). While the average annual gross income of female employees is significantly higher than male employees in the 'other education' sector (28.2%), the results for this sector are not reliable due to the low number of respondents. The gender pay gap in the Government/public sector (23.8%) and the business enterprise sector (23.5%), for respondents who are currently residing in Malta is significantly higher than the gender pay gap of the labour market in general in Malta (11.6%).

Table 6: Average Gross Income by Sector of Employment

Sector of Employment	Average Gross Income	Average Gross Income for Men	Average Gross Income for Women	Gender Pay Gap[13]
Higher education sector (n=84)	€43,393	€45,769 (n=52)	€39,531 (n=32)	13.6%
Public/private research institute (n=6)	€30,000	€30,000 (n=6)	N/A (n=0)	N/A
Business enterprise sector (n=23)	€53,043	€53,684 (n=19)	€50,000 (n=4)	6.9%
Government or other public sector/service (n=47)	€43,723	€49,615 (n=26)	€36,429 (n=21)	26.6%
Other education sector (n=7)	€36,429	€32,500 (n=4)	€41,667 (n=3)	-28.2%
Private non-profit sector (n=3)	€38,333	€38,333 (n=3)	N/A (n=0)	N/A

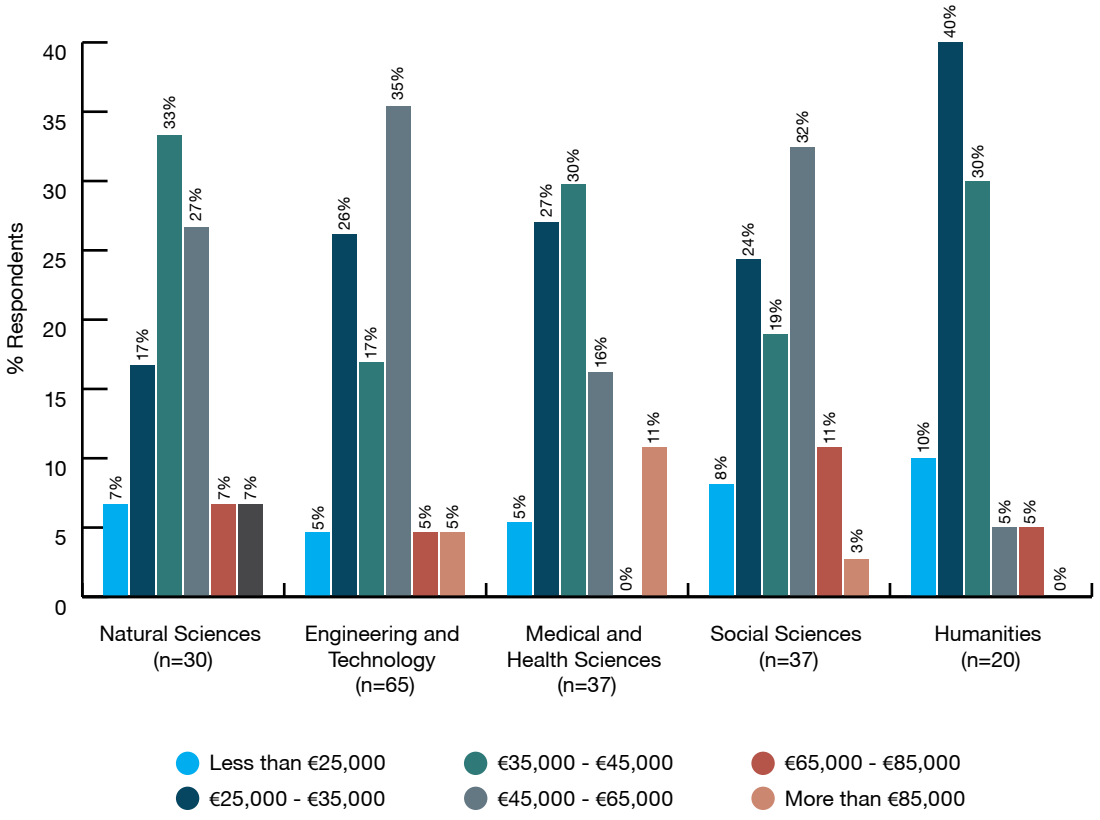
13 Difference between average annual gross income of male and female employees as a percentage of male gross income.

Doctorate holders with degrees in natural sciences had the highest average gross annual income (€47,241), followed by engineering and technology degree holders (€46,417) (Table 7). The lowest average gross annual income was received by doctorate holders with degrees in humanities (€36,111). For respondents who are currently residing in Malta, doctorate holders with degrees in engineering and technology had the highest average gross annual income (€47,105), followed by doctorate holders with degrees in natural sciences (€45,600).

Table 7: Average Gross Income by Doctorate Field

Doctorate Field	Average Gross Income
Natural Sciences (n=30)	€47,241
Engineering and Technology (n=65)	€46,417
Medical and Health Sciences (n=37)	€45,152
Social Sciences (n=37)	€46,250
Humanities (n=20)	€36,111

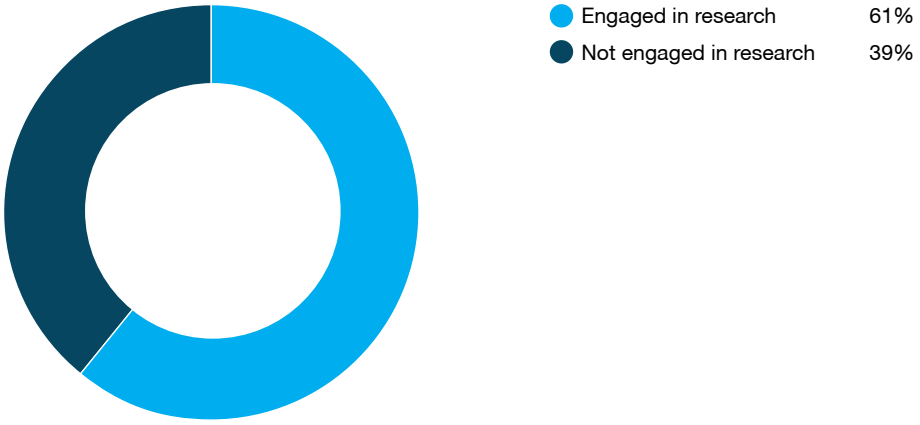
Figure 36: Annual gross income by doctorate field



Engagement in research

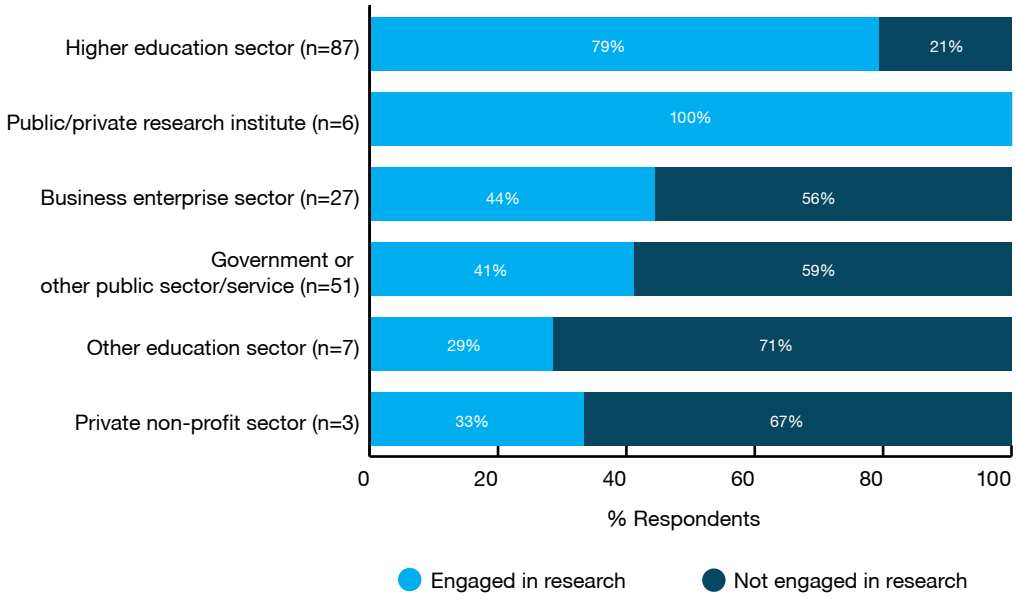
Among the respondents, the majority (61%) are engaged in research in their current job (Figure 37). 63% of male respondents are engaged in research whereas 56% of female respondents are engaged in research.

Figure 37: Share of researchers and non-researchers



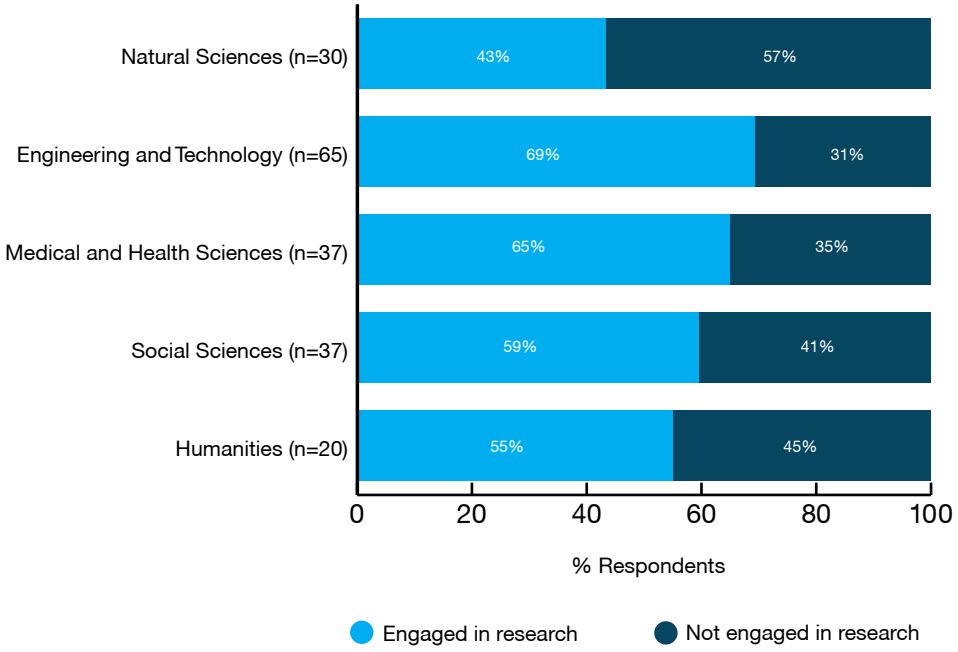
As expected, in the higher education sector and research institutes most doctorate holders are engaged in research (Figure 38). In the other sectors, the largest shares of researchers are working in the business enterprise sector (44%), followed by the government/public sector (41%). The sector with the lowest share of researchers is the other education sector (29%).

Figure 38: Engagement in research in current job by sector of employment



There are also differences in the share of researchers by field of doctorate (Figure 39). The highest share of researchers is in the field of engineering and technology (69%), followed by medical and health sciences (65%). The lowest share of researchers is in the field of natural sciences (43%).

Figure 39: Engagement in research in current job by doctorate field



The average gross annual earnings of researchers amounted to €46,193 and that of non-researchers to €43,824 (Table 8). Gross annual earnings of non-researchers were 95% that of researchers. In monetary value, they were on average €2,000 lower. Gross annual earnings of non-researchers currently residing in Malta were 96.7% that of researchers currently residing in Malta. In monetary value, they were on average €1,500 lower.

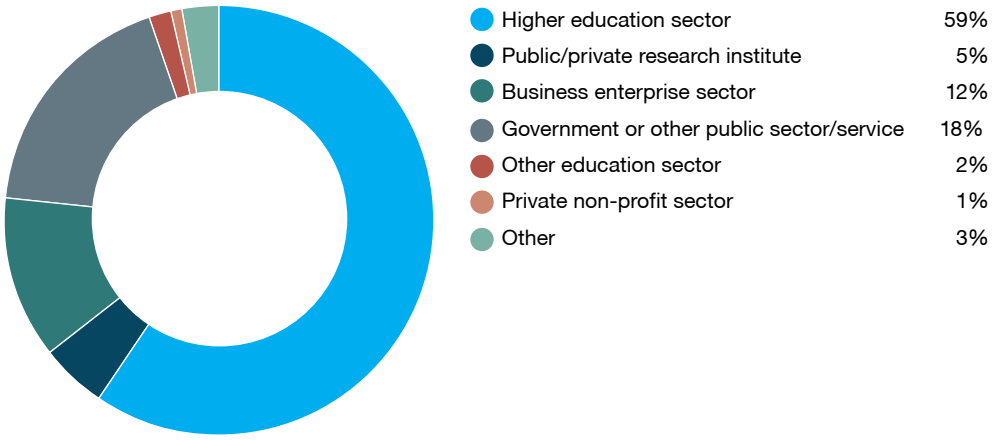
Table 8: Average Gross Income by Engagement in Research

Engagement in Research	Average Gross Income
Engaged in Research	€46,193
Not Engaged in Research	€43,824

Researchers: activities, outputs and motivation

The higher education sector is the main employer of researchers (Figure 40). 59% of researchers work in the higher education sector, followed by the government or public sector (18%), and the business enterprise sector (12%).

Figure 40: Researchers by sectors of employment



Most researchers are in senior lecturer positions (22%), with significant shares also working as directors/heads of unit (14%) (Figure 41). Men, more often than women work as post-doctorate researchers, senior lecturers, engineers and associate professors, while women, more often than men work as directors/heads of unit, specialists and project managers (Figure 42).

Figure 41: Researcher positions

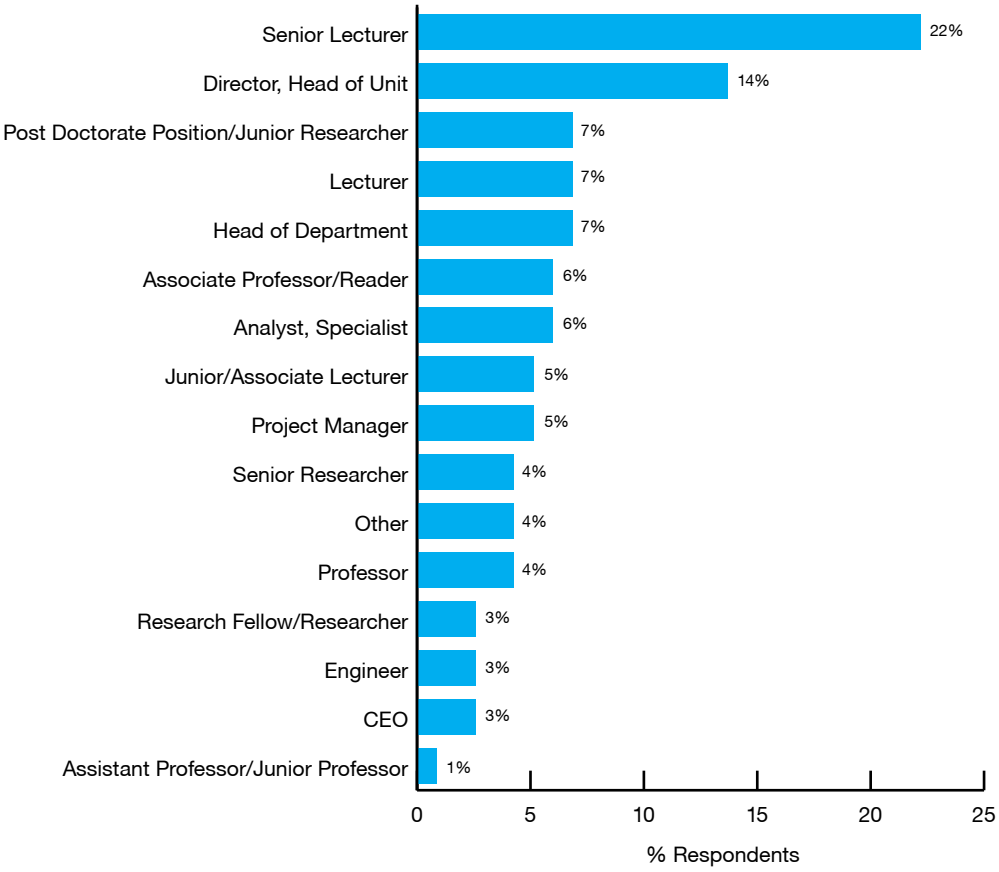
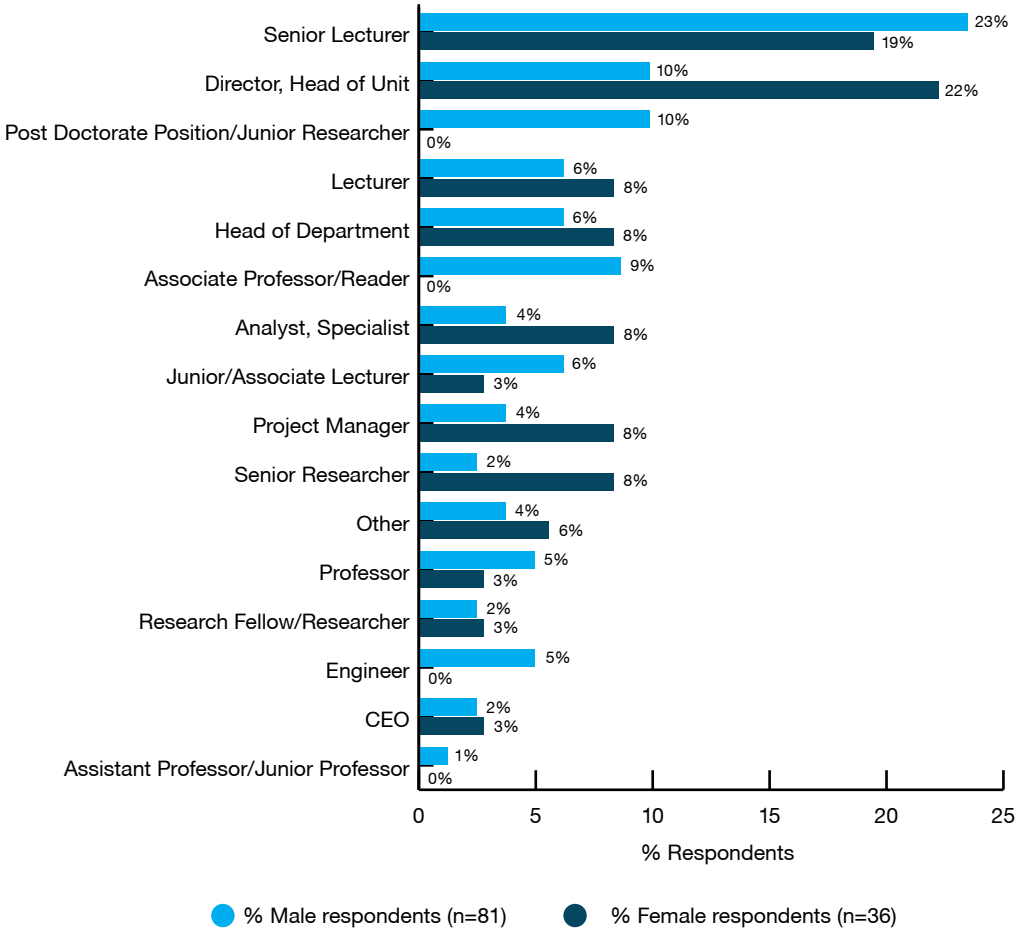


Figure 42: Researcher position by gender



The majority of the researchers are involved in teaching activities and knowledge transfer, authored a peer reviewed article and performed peer reviews in the last 12 months (Figure 43). Fewer respondents were engaged in entrepreneurship/start-up activities, have filed a patent, or published a book. 75% of researchers have conducted research with researchers based in another country in the last 3 years. The majority are researchers working in the higher education sector (68%), followed by the government/public sector (17%) and the business enterprise sector (7%) (Figure 44).

Figure 43: Researchers' outputs in the last 12 months/3 years

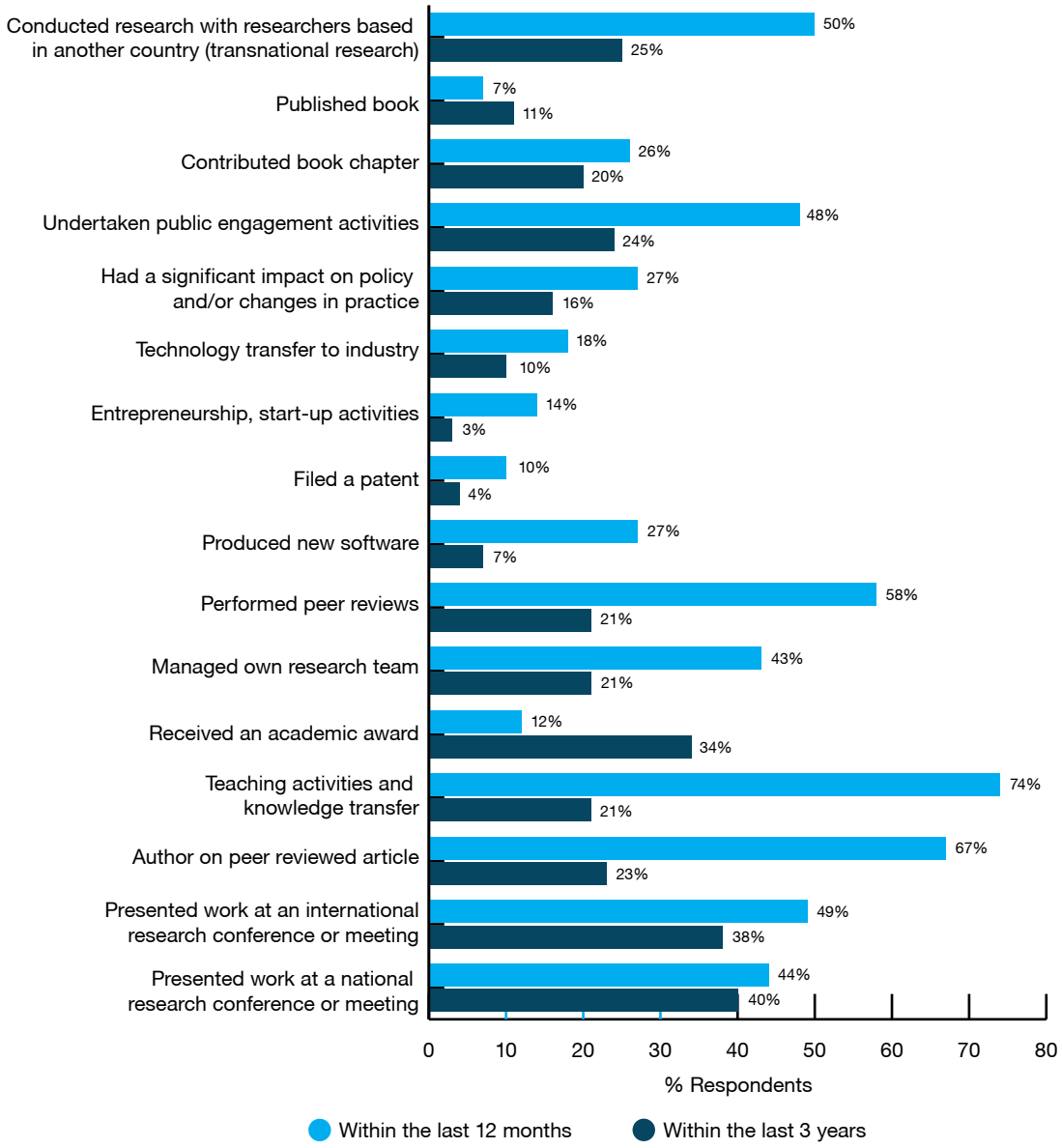
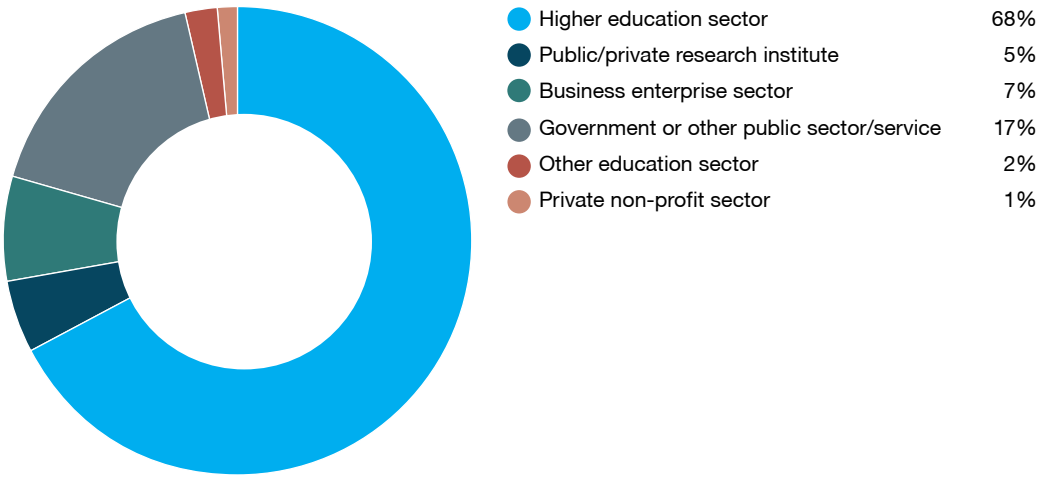
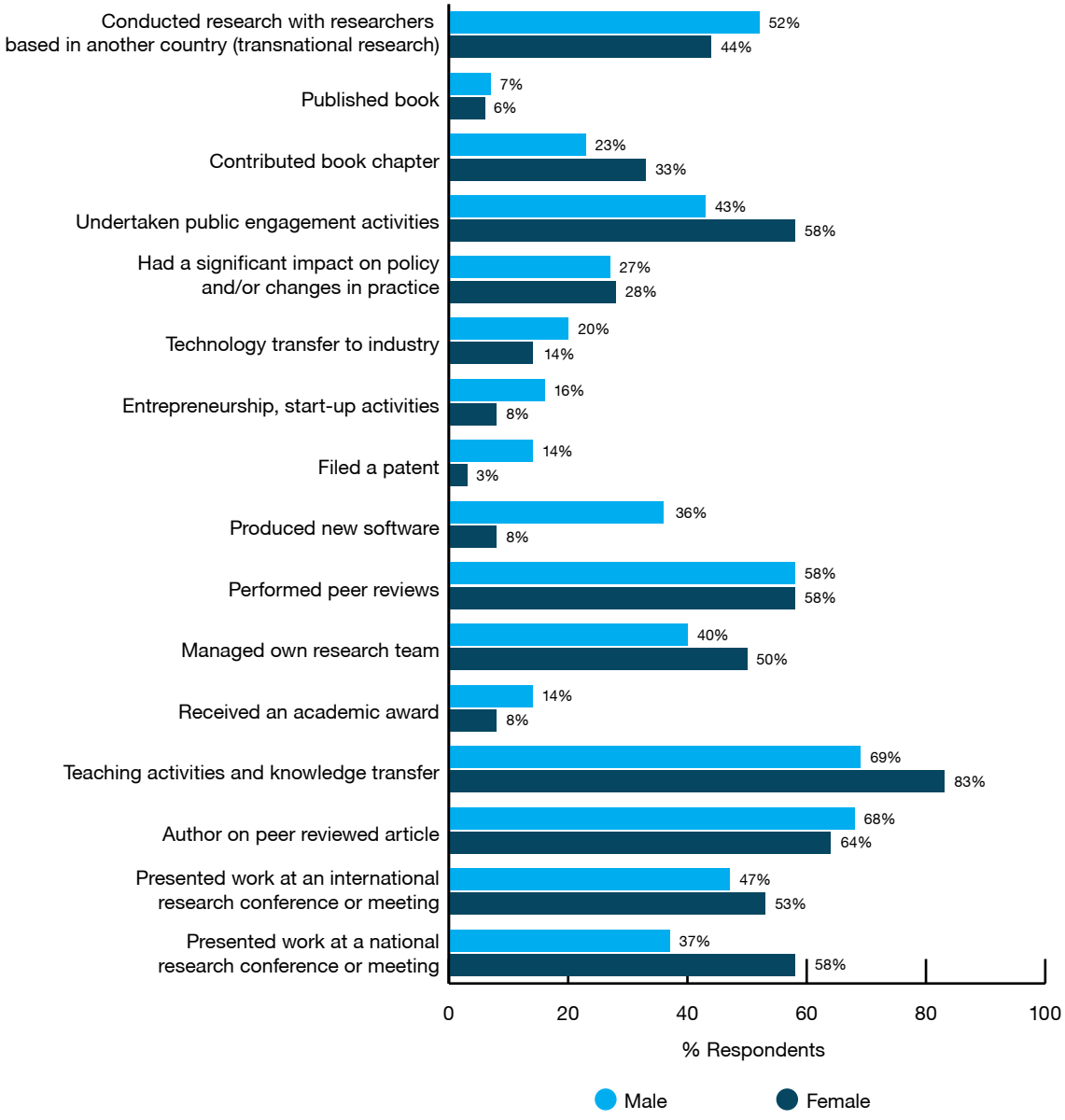


Figure 44: Transnational Research in the last 3 years by sector of employment



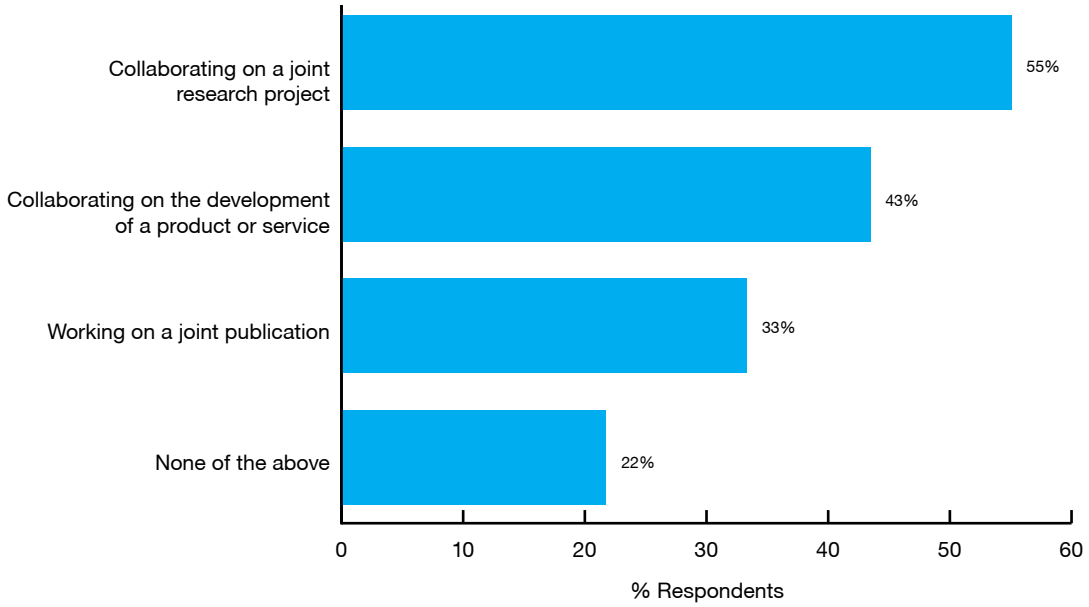
In terms of differences in research outputs (Figure 45), men tend, more often than women, to produce new software, receive an academic award, file a patent and conduct research with researchers based in another country. Women, more often than men, undertake public engagement activities, manage own research team, are involved in teaching activities and knowledge transfer, and present work at research conferences or meetings.

Figure 45: Researchers' outputs by gender



More than half of the researchers working in the higher education sector have been collaborating on a joint research project with non-academic entities, such as private or public entities, hospitals, etc. in the past 12 months (Figure 46). 43% have been collaborating on the development of a product or service and 33% have been working on a joint publication with non-academic entities.

Figure 46: Higher education sector collaboration with non-academic entities in the past 12 months



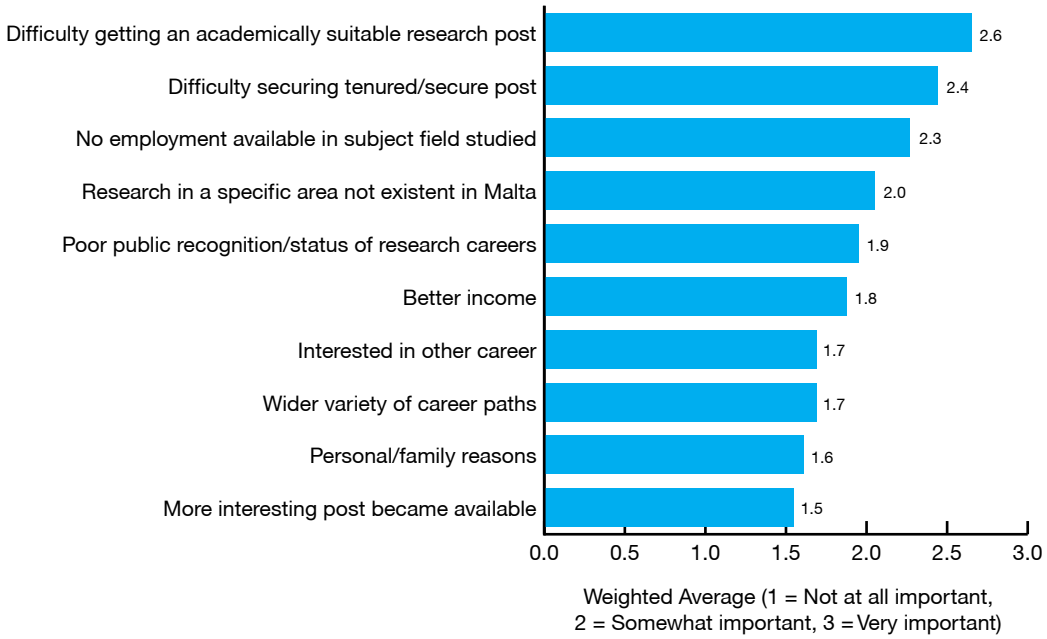
Motivation for taking current job: researchers and non-researchers

The most popular reasons for taking a research job were that the job was on their desirable career path, the desire to continue research in their PhD field, good work conditions (other than salary), and a desire to carry out independent research (Figure 47). Spouse/personal reasons and the unavailability of other employment were the least popular reasons.

Figure 47: Reasons for taking research job

The most popular reason given by non-researchers was difficulty getting an academically suitable research post (2.6), followed by difficulty securing tenured/secure post (2.4), no employment available in the subject field studied (2.3), and difficulty conducting research in a specific area not existent in Malta (2.0) (Figure 48). It would, therefore, seem that for many doctorate holders, a non-research career is a choice made due to lack of positions in academia and lack of secure employment.

Figure 48: Reasons for taking non-research job



Satisfaction with current working environment

68% of doctorate holders are overall satisfied or very satisfied with their job. In general, respondents are most satisfied with job security/stability, followed by the degree of independence. Doctorate holders are least satisfied with research facilities, organisational culture, and career growth opportunities (Figure 49). Men and women have similar levels of satisfaction with the different job aspects (Figure 50).

Figure 49: Satisfaction with current working environment

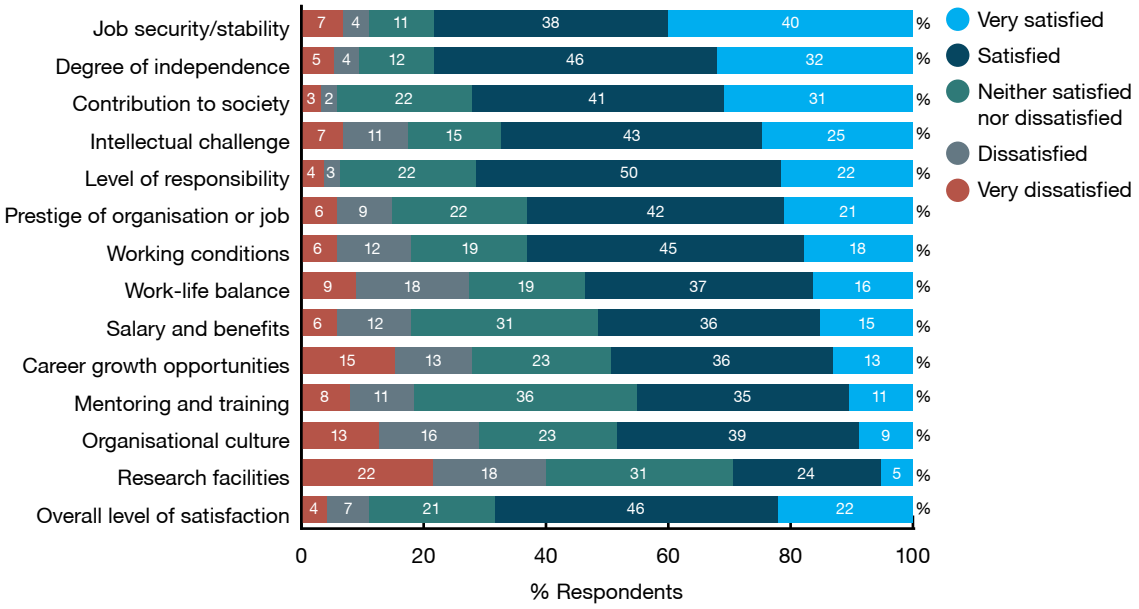
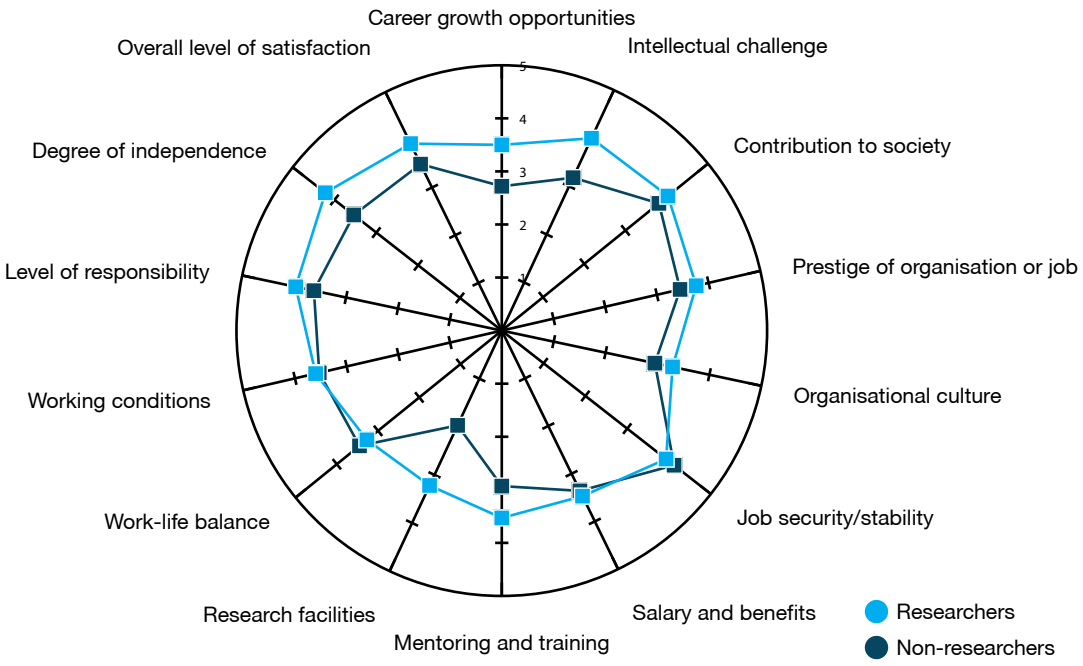


Figure 50: Job satisfaction by gender (Weighted Average: 1 = Very dissatisfied, 2 = Dissatisfied, 3 Neither satisfied nor dissatisfied, 4 = Satisfied, 5 = Very satisfied)

There are some marked differences in satisfaction levels between researchers and non-researchers (Figure 51). Researchers appear to be more satisfied with most aspects of the job. Non-researchers appear more satisfied with job security/stability and work-life balance but less satisfied with all other aspects of job satisfaction considered in this investigation.

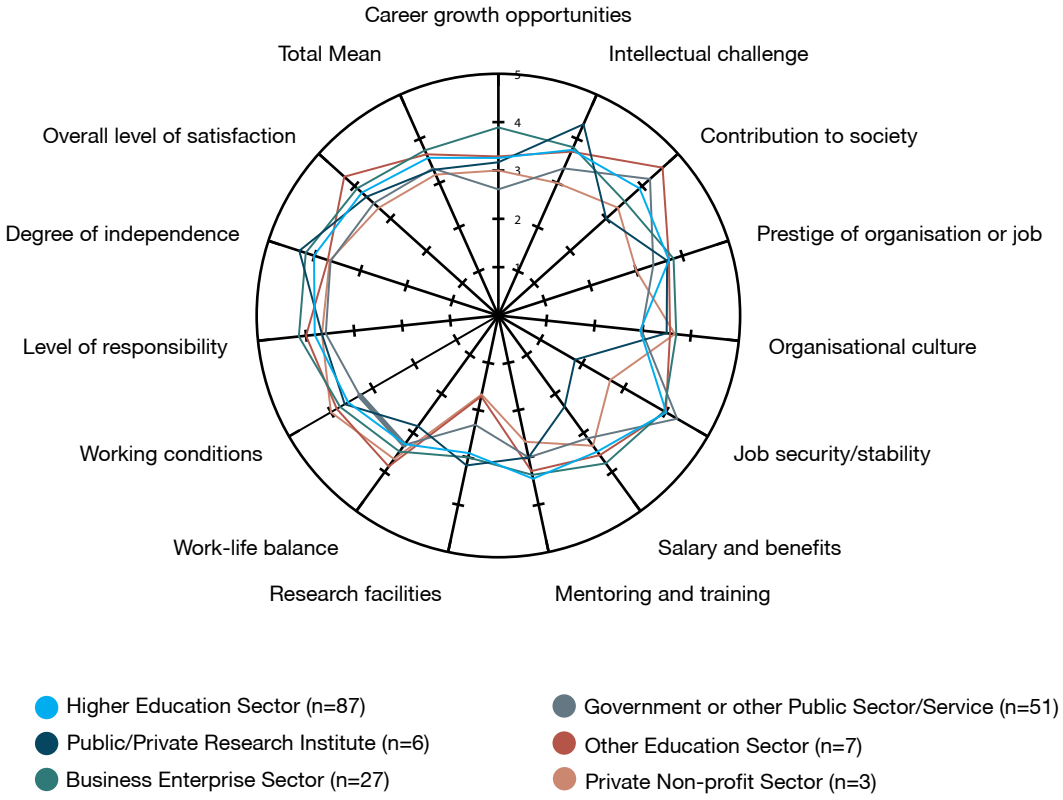
Figure 51: Job satisfaction: researchers vs. non-researchers (Weighted Average: 1 = Very dissatisfied, 2 = Dissatisfied, 3 Neither satisfied nor dissatisfied, 4 = Satisfied, 5 = Very satisfied)



Respondents working in the business enterprise sector are the most satisfied with all aspects of employment (total mean satisfaction 3.74), and respondents working in private non-profit sector are the least satisfied

(total mean satisfaction 3.19) (Figure 52). Respondents working in the higher education sector are most satisfied with degree of independence (4.01) and job security/stability (4.01) and least satisfied with research facilities (2.91). Respondents working in the business enterprise sector are most satisfied with degree of independence (4.19) and level of responsibility (4.15), and least satisfied with research facilities (3). Respondents working in the government or public sector are most satisfied with job security/stability (4.27) and contribution to society (4.22) and least satisfied with research facilities (2.31) and career growth opportunities (2.61).

Figure 52: Work satisfaction according to sector of employment (Weighted Average: 1 = Very dissatisfied, 2 = Dissatisfied, 3 Neither satisfied nor dissatisfied, 4 = Satisfied, 5 = Very satisfied)



Changing career

55% of employed respondents have not changed job within or between sectors in the last 5 years. Doctorate holders working in the business enterprise sector change job between sectors more often (48%) than within the same sector (22%), unlike the other sectors of employment (Figure 54). Doctorate holders working in the government or public sector change job between sectors as often as within the same sector.

Figure 53: Change in job within/between sectors in the last 5 years

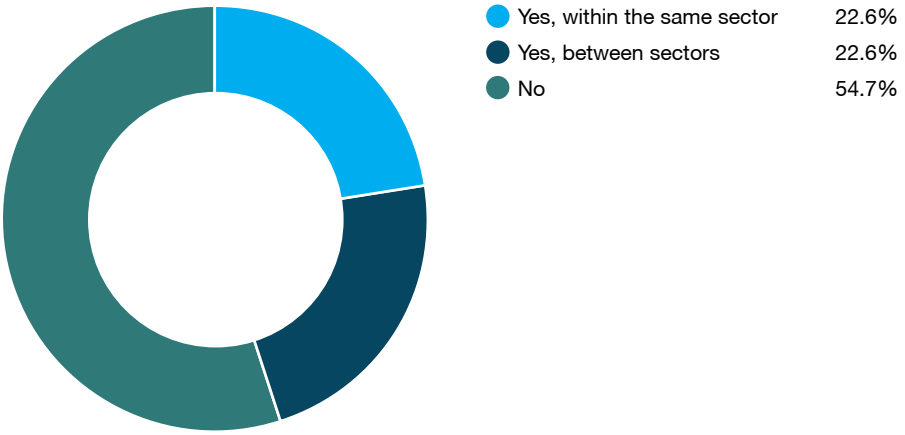
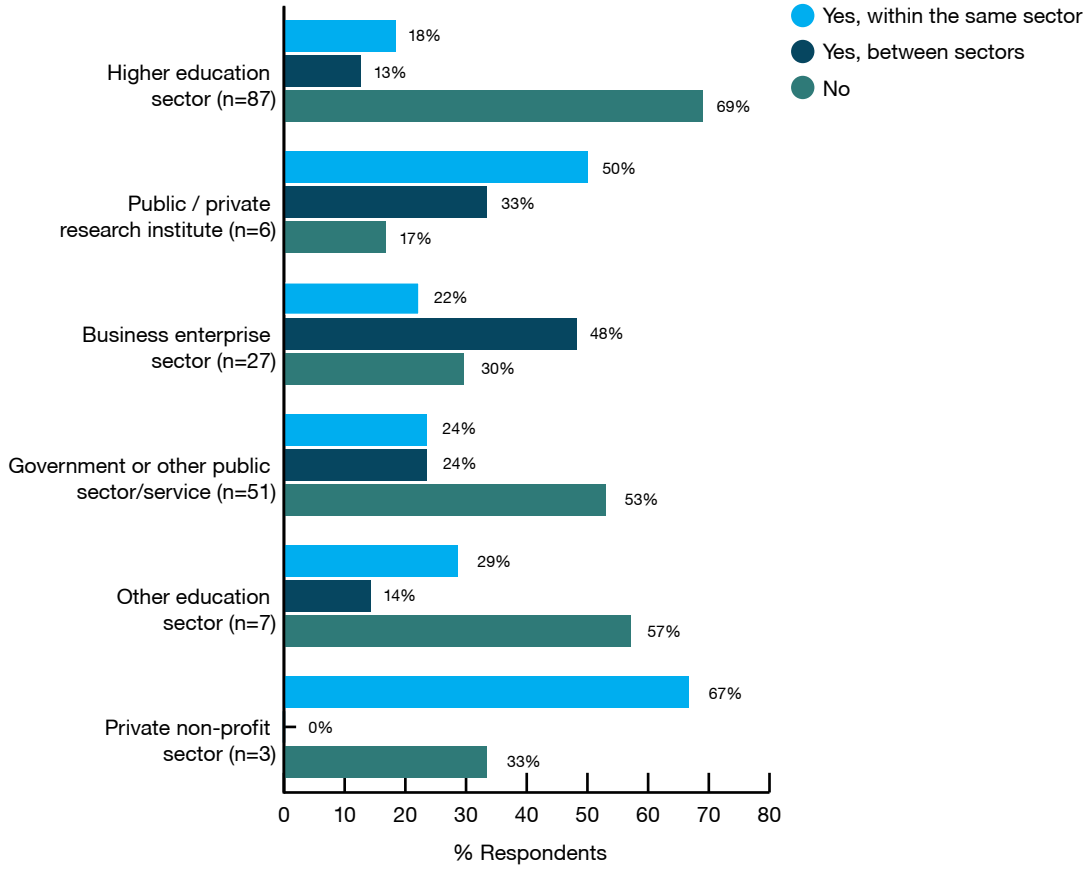


Figure 54: Change in job within/between sectors in the last 5 years by sector of employment



48% of employed respondents have changed their job at least once since the completion of their doctorate (Figure 55) since the completion of doctorate) and 29% of employed respondents plan to embark on a new job within the next 12 months. Half of these respondents plan to embark on a new job within the same sector while the other half plan to change job in different sector. Of the respondents working in the government/public sector, 24% plan to embark on a new job in a different sector. 19% of respondents working in the business enterprise sector and 9% of respondents working in the higher education sector also plan to embark on a new job in a different sector. The most popular reason given for planning to embark on a new job in a different sector was the need for new challenges (61%), followed by better income (54%) (Figure 56).

Figure 55: Change in employer (including post-doc positions) since the completion of doctorate

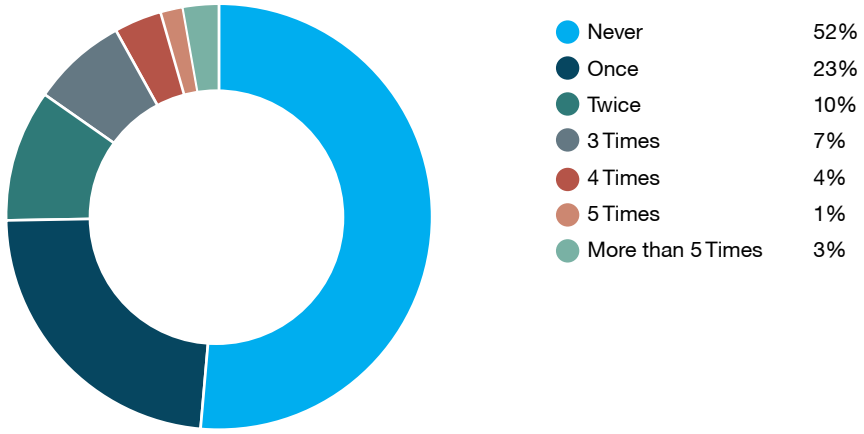
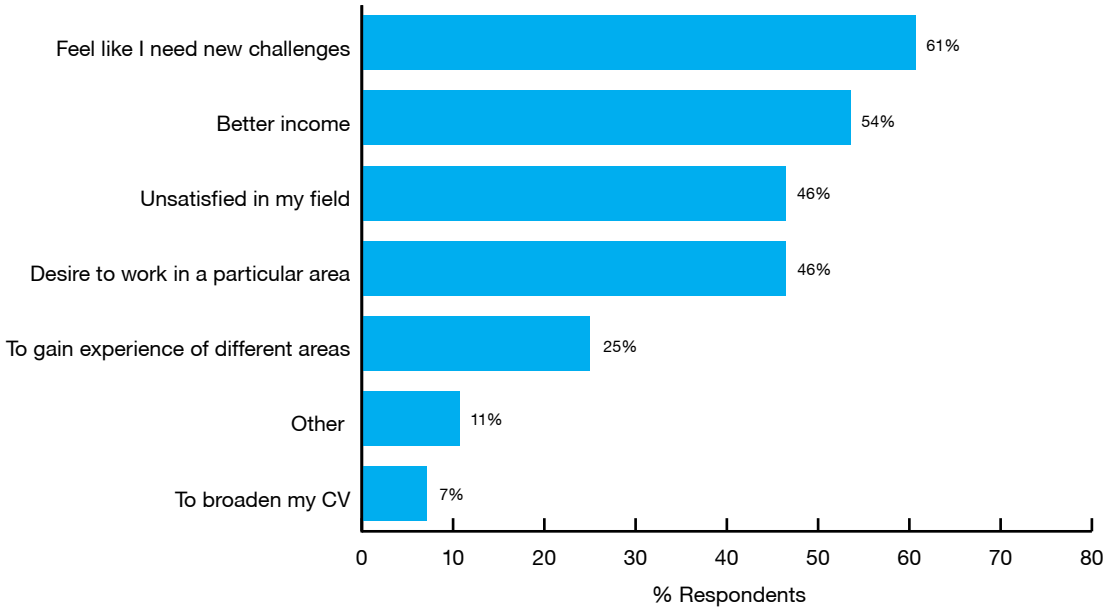
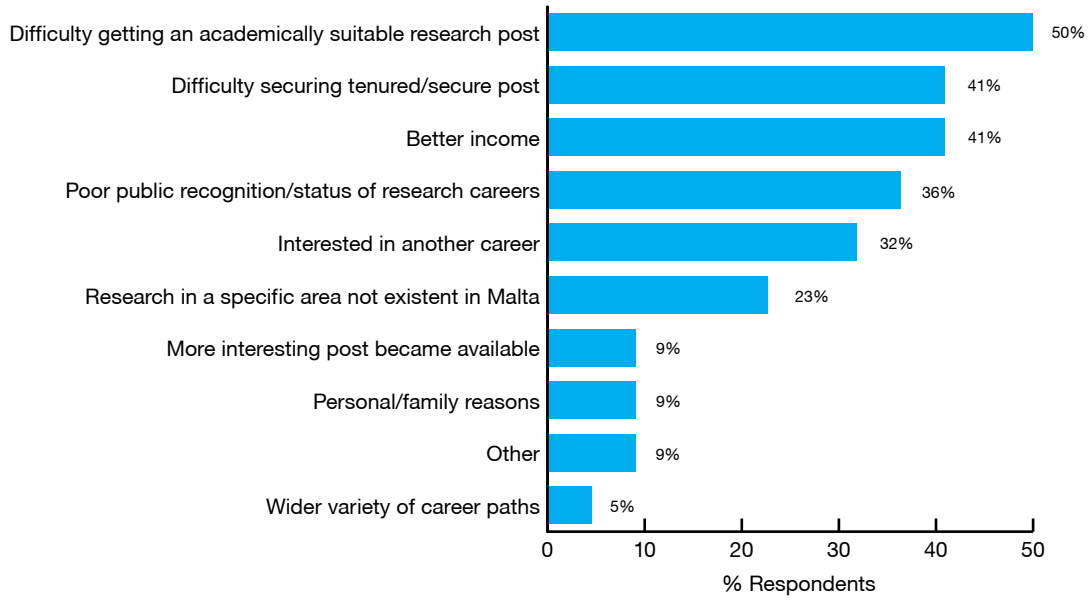


Figure 56: Main reasons for planning to embark on a new job in a different sector



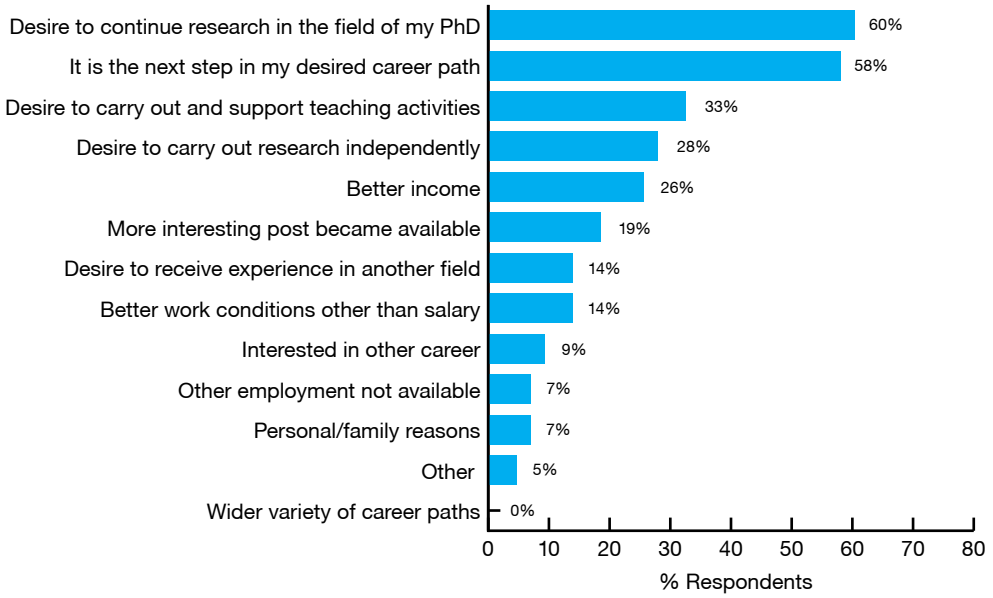
More non-researchers are planning to change their careers to a research career in the next three years (57%) than vice-versa. Among those engaged in research 19% are considering changing their current career for a non-research career in the next three years. The most popular reason given by researchers who are considering changing their current career for a non-research one was difficulty getting an academically suitable research post (50%), followed by difficulty securing tenured/secure post (41%), and better income (41%) (Figure 57). A wider variety of career paths was of lesser importance (5%). Better work environment was an additional reason given.

Figure 57: Main reasons for considering changing current career for a non-research career in the next 3 years



The most popular reason given by non-researchers who are considering changing their current career for a research one was desire to continue research in the field of their PhD (60%), followed by it being the next step in their desired career path (58%) (Figure 58). A wider variety of career paths was of least importance (0%).

Figure 58: Main reasons for considering changing current career for a research career in the next 3 years



Career break

Among employed respondents, 6% took a career break since their doctorate completion. 7% of male respondents took a career break and 5% of female respondents took a career break (Figure 59). The main reason for taking a career break is personal circumstances (58%), while travelling is of least importance (0%) (Figure 60).

Figure 59: Employed respondents who took a career break since doctorate completion by gender

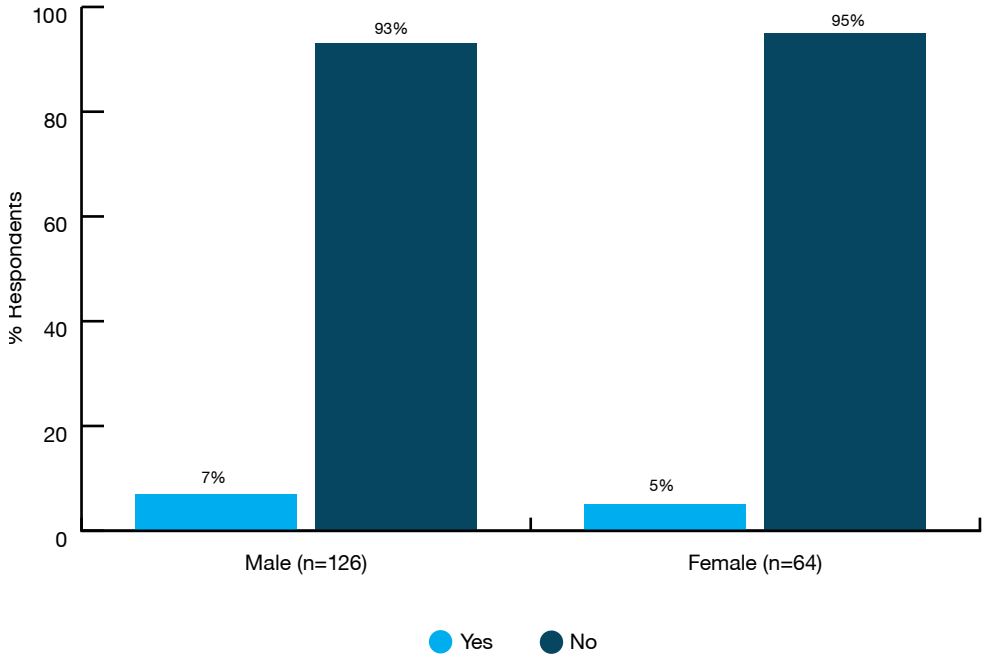
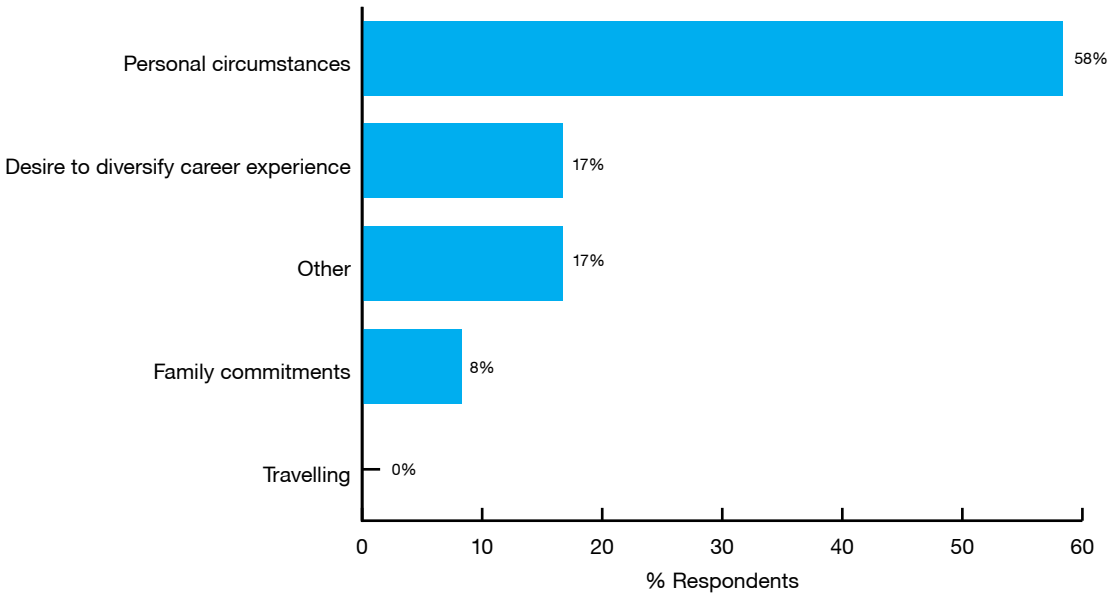


Figure 60: Reasons for taking a career break



On average, 41% of respondents who took a career break found it difficult to return to their previous position or find a new one after the career break (Figure 61). The difficulty varied substantially between men and women (Figure 62). 66% of women found it easy/very easy to return to their previous position or find a new one. Among men this share was less (22%).

Figure 61: Ease of return to previous or new position after career break

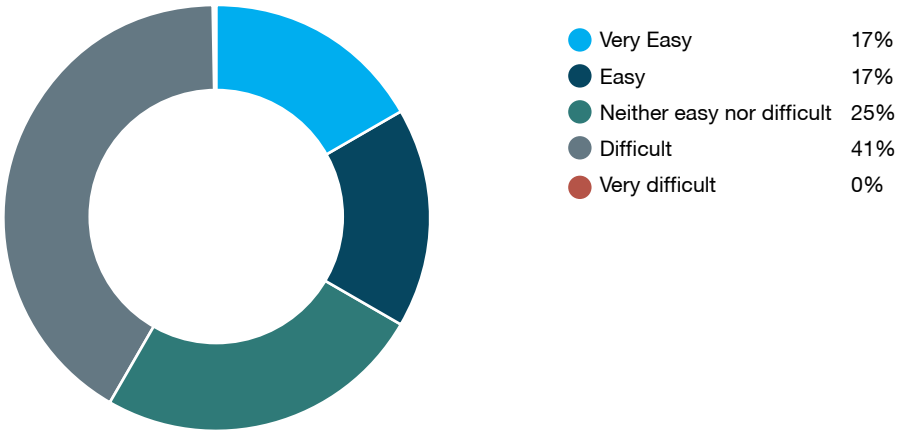
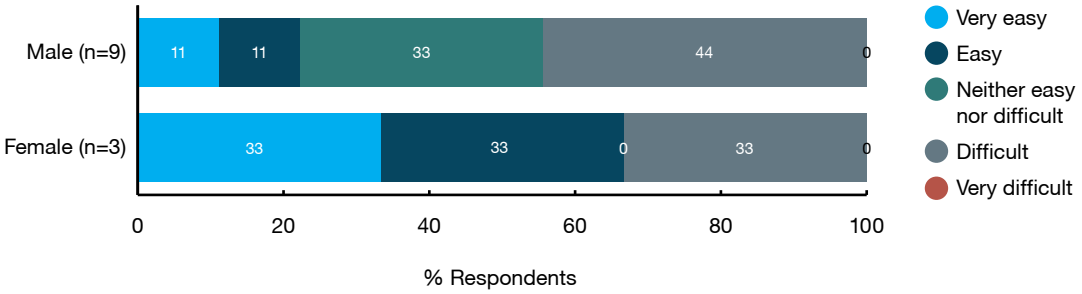


Figure 62: Ease of return to previous or new position after career break by gender

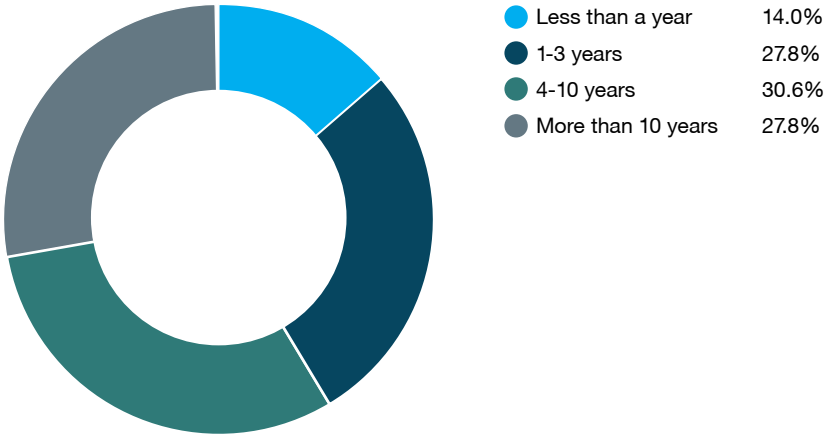


2.4 INTERNATIONAL MOBILITY

Internationally mobile are those doctorate holders who after having received a doctorate worked or were engaged in research/experimental work abroad for more than three consecutive months. Only 23% of respondents have lived in a foreign country for more than three months since completion of their doctorate. 27% of doctorate holders in the field of natural sciences are internationally mobile, followed by engineering and technology (25%), and those in the medical and health sciences (24%). The percentages are lower for doctorate holders in the fields of humanities (20%) and social sciences (14%). The share of internationally mobile doctorate holders is higher for men than women – 25% of male respondents are internationally mobile whereas 19% of female respondents are internationally mobile. Researchers are more mobile (28%) than non-researchers (14%).

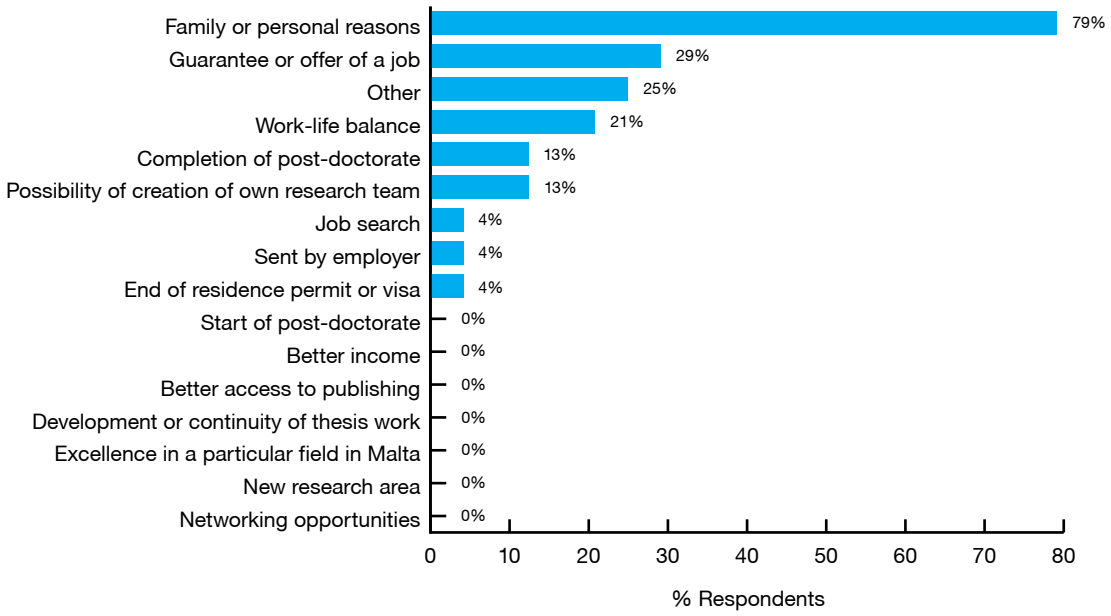
Most doctorate holders go to European countries. 44% of internationally mobile doctorate holders went to the United Kingdom, followed by USA with 16% and Italy with 12%. 28% of internationally mobile doctorate holders with Maltese citizenship stayed abroad for more than 10 years, while 14% stayed abroad for less than a year (Figure 63).

Figure 63: Length of stay abroad for Maltese nationals



67% of Maltese nationals who have left Malta for more than three months returned to Malta. The main reasons for returning were family or personal reasons (79%), followed by guarantee or offer of a job (29%) (Figure 64). Other reasons mentioned were end of sabbatical, language barriers, dissatisfaction with academic life abroad and low income compared to other jobs.

Figure 64: Main reasons for returning to Malta (Maltese nationals only)



Respondents were asked if they were planning to leave Malta within the next year. 8% are considering moving to another country (Figure 65), their main reason being economic/financial factors (38%), followed by work in a specific area not existent in Malta (31%) (Figure 66).[14] Other reasons mentioned were a healthier environment and the development of existing research work.

14 Data to be treated with caution due to low number of respondents.

Figure 65: Plans to move to another country to live or work within the next 12 months (only respondents currently living in Malta)

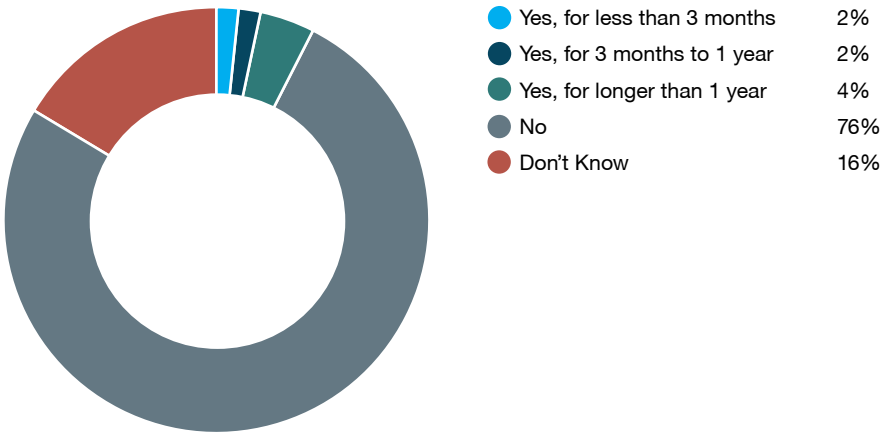
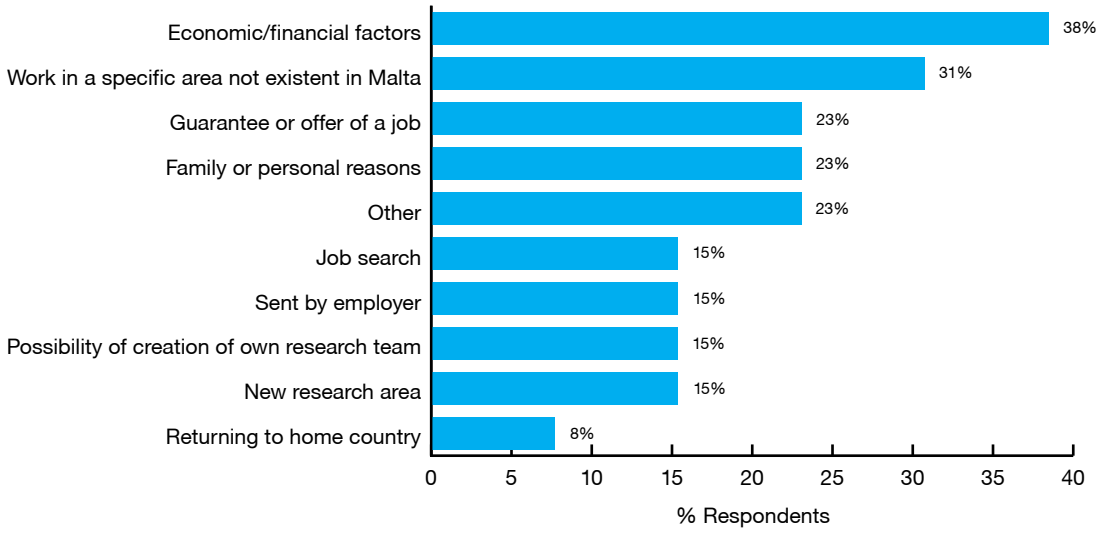


Figure 66: Main reasons for planning to leave Malta within the next 12 months



3. Main Outcomes and Conclusions

3.1 DEMOGRAPHIC DETAILS

More men than women replied to this survey; 66% of respondents were male. A large majority of respondents are citizens of Malta (87%), and 94% of respondents are currently living in Malta.

3.2 EDUCATIONAL CHARACTERISTICS

Around 60% of respondents received their doctoral degrees in a foreign university, 58% of whom returned to Malta on completion of their doctorate. Family or personal reasons was the most popular reason for returning to Malta and the most popular reason for pursuing doctoral studies in Malta. Quality of research in Malta in the field of study was one of the main reasons for pursuing doctoral studies in Malta for only 15% of respondents. Most respondents have doctorates in engineering and technology (34%), followed by medical and health sciences (20%), social sciences (19%), natural sciences (16%), humanities (10%) and agricultural sciences (0.5%). The gender structure of doctorate holders shows an unequal distribution among the fields of engineering and technology and natural sciences. Men outnumbered women in these fields. The highest share of female respondents was recorded in social sciences (49%). Passion for research, plan to pursue an academic career and personal interest in advanced education are the most popular reasons for pursuing a doctorate degree according to the survey respondents.

The doctorate degree course of 30% of respondents included collaboration with industry and 76% of respondents were involved in teaching activities. Personal savings emerge as the most popular source of financing for doctoral studies (41% of respondents). For 34% of respondents the primary source of financing their doctoral studies was a university position/teaching/research assistantship, followed by fellowship or scholarship from the institution (26%). 23% listed a fellowship or scholarship from the Maltese government as a source of financing. Self-assessment of knowledge, attributes and behaviours at the end of doctoral studies were mostly good. Lower self-assessment regarding networking, innovation and entrepreneurship, and intellectual property management was recorded. The self-reported skillset present at the time of doctorate completion is still considered as highly relevant for the purposes of the respondents' current job, with the notable exception of the knowledge related to the PhD subject.

3.3 LABOUR MARKET

77% of respondents were already employed at the time they completed their doctorate. 23% of respondents took a post-doctoral position (or equivalent) at a university or a research performing organisation after obtaining their doctorate. More than half the respondents who took a post-doctoral position, did so abroad. Among men there is a slightly higher share of those who took a post-doctorate position (25%) compared to women (20%). Doctorate holders demonstrate high rates of employment, with the majority working on permanent contracts. 96% of respondents are employed, with 81% having full-time permanent employment. The higher education sector is the major employer of doctorate holders, followed by the Government or other public sector/service.

More than half (69%) of the respondents teach in their work and 58% have staff management responsibilities. 43% of employed respondents have at least one second job in addition to their principal job. The average

gross income of respondents amounted to €45,282. The highest average gross annual earnings were received in the business enterprise sector and by respondents with degrees in natural sciences. There is an income gap between female and male respondents. On average, gross annual earnings of female respondents were 84% that of their male colleagues.

Work of almost half the respondents is closely related to their doctoral degree. Work of over a quarter of respondents with a degree in natural sciences is not related to their doctoral degree. Overall, 68% of respondents are satisfied or very satisfied with their principal jobs. Respondents are most satisfied with job security/stability, followed by degree of independence, and least satisfied with research facilities, organisational culture and career growth opportunities. Non-researchers appear more satisfied with job security/stability and work-life balance but less satisfied with all other aspects of job satisfaction considered. Jobs performed by respondents mostly require lower qualifications, with the exception of the higher education sector and research institutes. The minimum education level for the current employment of 59% of respondents is a master's level degree or lower.

Almost half the respondents changed their principal jobs at least once in the last 5 years and 29% of employed respondents plan to embark on a new job within the next 12 months. The need for new challenges and better income are the most popular reasons given for planning to embark on a new job in a different sector.

3.4 DOCTORATE HOLDERS AS RESEARCHERS AND NON-RESEARCHERS

The majority (61%) of respondents are engaged in research. The most popular reasons for taking a research job were that the job was on their desirable career path, and desire to continue research in their PhD field. The higher education sector is the main employer of doctorate holders undertaking research activities. The highest share is in the field of engineering and technology (69%) and the lowest share is in the field of natural sciences (43%). Doctorate holders engaged in research earn on average 5% more than those who are not. More than half of those working in the higher education sector have worked on a joint research project with non-academic entities, such as private or public entities, hospitals, etc. in the 12 months preceding the survey. In response to the survey, a number of respondents mentioned the need for increased transparency in the appointment and promotion process in the higher education sector.

For most respondents, not working in research is not a voluntary choice. Difficulty getting an academically suitable research post, difficulty securing tenured/secure post, no employment available in the subject field studied, and research in a specific area not existent in Malta were the main reasons for taking a non-research job. More non-researchers are planning to change their careers to a research career in the next three years (57%) than vice-versa. Difficulty getting an academically suitable research post, difficulty securing tenured/secure post and better income are the most popular reasons given by those working in research who are considering changing their current career for a non-research one. On average, respondents view their doctoral studies as a positive experience having added value. In most cases, respondents would still read for a doctorate again if they had to restart their career.

3.5 INTERNATIONAL MOBILITY

Internationally mobile are those doctorate holders who after having received a doctorate worked or were engaged in research/experimental work abroad for more than three consecutive months. Only 23% of respondents were internationally mobile. Most of the respondents went to European countries. More than a quarter of internationally mobile respondents with Maltese citizenship stayed abroad for more than 10 years. The share of internationally mobile respondents is higher for men than for women and is higher for respondents working in research than those who are not. 67% of Maltese nationals who have left Malta for more than three months have returned to Malta. Family or personal reasons was the main reason for

returning for most respondents. 8% of respondents currently living in Malta, are considering moving to another country mainly due to economic/financial factors and work in a specific area not existent in Malta.

3.6 COMPARISON TO 2009 NSO STATISTICAL PROFILE OF DOCTORATE HOLDERS[15]

Comparing the data collected through this study to the results of the survey conducted by NSO in 2009 on careers of doctorate holders, some differences can be observed taking into account that different methodologies were used for the two surveys. NSO survey results revealed that 78% of doctorate holders were male in 2009. The results obtained in this study indicate that the share of female doctorate holders has increased over the last decade, with 34% of respondents being female. The majority (60%) of respondents in this study received their doctoral degrees from a foreign university. According to the 2009 NSO study, only 18.3% of doctorate holders received their degree from Malta. This indicates that a higher proportion of doctorate holders are opting to receive their doctoral degree in Malta. The proportion of doctorate holders who have degrees in engineering and technology has increased significantly. An increase is also noted in the medical and health sciences. On the contrary, the proportion of doctorate holders who have degrees in social sciences and humanities has decreased. The average gross income of respondents who are currently residing in Malta amounted to €44,851 in this study. In the 2009 NSO study, the gross annual earnings of employed doctorate holders were estimated to be around €33,000. Whilst over the 11-year period salaries of PhD holders increased by 35.9%, due to increased costs of living[16], in real terms they increased by 14.9%. This amounts to an annual average increase of 1.3% per annum.

3.7 RECOMMENDATIONS FOR ACTIONS TO BE TAKEN

- Tracking career pathways of PhD holders survey should be conducted every 5 years, in order to support decision makers effectively, while avoiding interviewee fatigue. Focus groups can be organised in order to achieve a deeper analysis of the situation. A dedicated budget for dissemination of the questionnaire will be necessary.
- Respondents working in the public sector are least satisfied with most aspects of their employment. This merits further understanding and insight with the aim of improving the career profile and prospects of PhD holders working in the public sector/service.
- The gender pay gaps reported should also be analysed in more detail to understand and address the sources of this discrepancy.
- Fellowships targeted at Maltese expats returning to Malta could be considered.

15 National Statistics Office, Malta (NSO). (2011, October 26). *News Release 205/2011* [Press release]. https://nso.gov.mt/en/News_Releases/Archived_News_Releases/Documents/2011/News2011_205.pdf.

16 The HICP index was used to deflate the salary. Data for HICP sourced from the Eurostat Database https://ec.europa.eu/eurostat/databrowser/bookmark/f50e883c-bd65-45df-a675-4de53887b880?lang=en. The support of the Economic Policy Department within the Ministry for Finance and Employment in compiling this statistic is hereby gratefully acknowledged.

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Annex 1:
Calculations

WEIGHTED AVERAGE

Weighted averages are calculated as follows, where:
w = weight of answer choice
x = response count for answer choice

$$\frac{x_1 w_1 + x_n w_n}{total}$$

MEAN AGE

For the purpose of calculating an average, a bracket of age 20-29 was used for the under 30 cohort and a bracket of age 60-69 was used for the 60+ cohort. The median of each age range was multiplied by the response count for that age range. The sum of these values was divided by the total response count.

AVERAGE GROSS INCOME

For the purpose of calculating an average, a bracket of €15,000 to €25,000 was used for the less than EUR 25,000 cohort and a bracket of €85,000 to €105,000 was used for the more than EUR 85,000 cohort. The median of each income cohort was multiplied by the response count for that cohort. The sum of these values was divided by the total response count.

Annex 2:
Annual earnings of doctorate holders currently residing in Malta

The average gross income of respondents who are currently residing in Malta amounted to €44,851. Table 9 shows the average gross annual earnings of male and female doctorate holders. Gross annual earnings of female doctorate holders were 79.5% of their male colleagues. In monetary value, they were on average more than €9,000 lower. Therefore, the difference between average annual gross income of male and female employees as a percentage of male gross income, is 20.5%.

Table 9: Average Gross Income by Gender (Respondents currently residing in Malta)

Gender	Average Gross Income
Men	€48,198
Women	€38,333

The highest gross annual earnings were received by doctorate holders working in the business enterprise sector (€52,619), followed by those working in the higher education sector (€43,537) and the government/public sector (€42,609) (Table 10). The lowest gross annual earnings were paid in public/private research institutes (€30,000). The highest gender pay gap is noted in the Government/public sector (23.8%), followed by the business enterprise sector (23.5%). While the average annual gross income of female employees is significantly higher than male employees in the other education sector (30.8%), the results for this sector are not reliable due to the low number of respondents.

Table 10: Average Gross Income by Sector of Employment (Respondents currently residing in Malta)

Sector of Employment	Average Gross Income	Average Gross Income for Men	Average Gross Income for Women	Gender Pay Gap[17]
Higher education sector (n=82)	€43,537	€46,275 (n=51)	€39,032 (n=31)	15.7%
Public/private research institute (n=4)	€30,000	€30,000 (n=4)	N/A (n=0)	N/A
Business enterprise sector (n=21)	€52,619	€54,444 (n=18)	€41,667 (n=3)	23.5%
Government or other public sector/service (n=46)	€42,609	€47,800 (n=25)	€36,429 (n=21)	23.8%
Other education sector (n=6)	€35,833	€32,500 (n=4)	€42,500 (n=2)	-30.8%
Private non-profit sector (n=3)	€38,333	€38,333 (n=3)	N/A (n=0)	N/A

17 Difference between average annual gross income of male and female employees as a percentage of male gross income.

Doctorate holders with degrees in engineering and technology had the highest average gross annual income (€47,105), followed by natural sciences (€45,600) (Table 11). The lowest average gross annual income was received by doctorate holders with degrees in humanities (€36,111).

Table 11: Average Gross Income by Doctorate Field (Respondents currently residing in Malta)

Doctorate Field	Average Gross Income
Natural Sciences (n=25)	€45,600
Engineering and Technology (n=57)	€47,105
Medical and Health Sciences (n=32)	€44,844
Social Sciences (n=35)	€44,857
Humanities (n=18)	€36,111

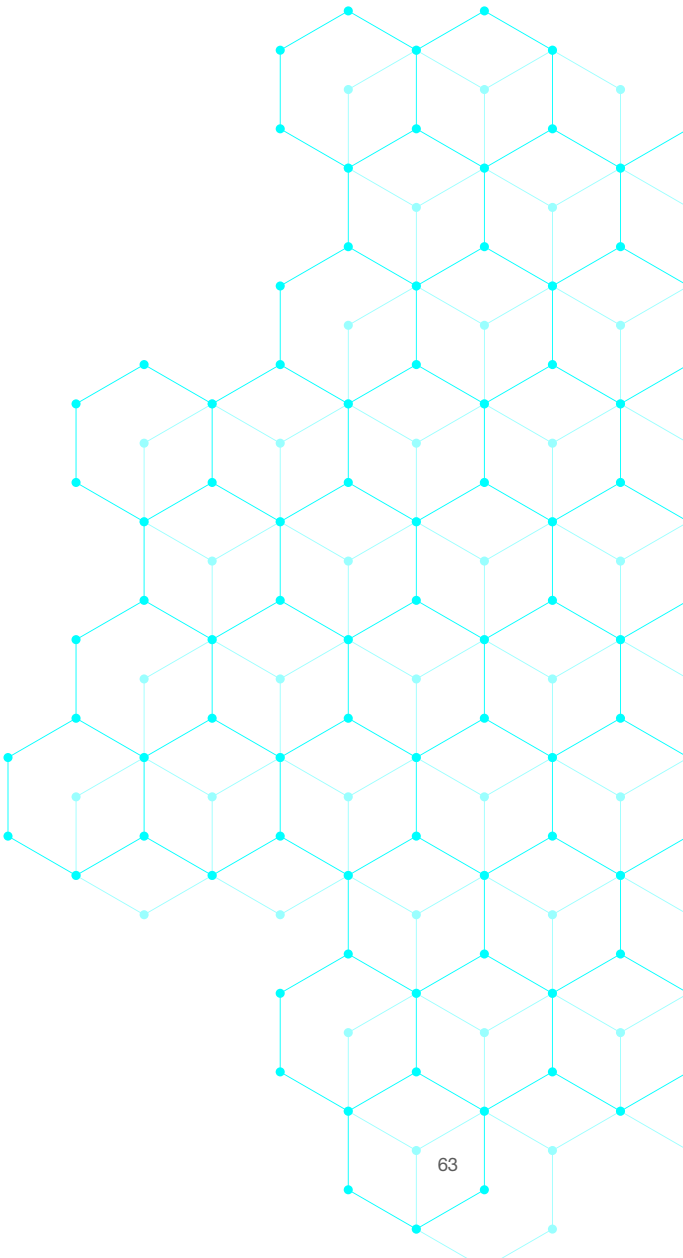
The average gross annual earnings of researchers amounted to €45,441 and that of non-researchers to €43,939 (Table 12). Gross annual earnings of non-researchers were 96.7% of those of researchers. In monetary value, they were on average €1,500 lower.

Table 12: Average Gross Income by Engagement in Research (Respondents currently residing in Malta)

Engagement in Research	Average Gross Income
Engaged in Research	€45,441
Not Engaged in Research	€43,939

Annex 3:
Questionnaire and Survey Logic

QUESTIONNAIRE



Tracking Career Pathways of PhD Holders

Doctorate holders are particularly important to research and innovation because of their deep field-specific knowledge and advanced training in the analytical skills necessary to push knowledge beyond its current boundaries. A doctorate is generally considered as the starting point for a career in research. Malta has invested tens of millions of euros to support students to read for doctorate degrees over the past decade or so. The Malta Council for Science and Technology (MCST) is conducting a study to understand the career paths of PhD holders working in Malta and PhD holders who have studied in Malta or are Maltese citizens currently living and working abroad. Doctoral students and doctorates other than the Doctor of Philosophy are outside the scope of this study.

The survey should take around 25 minutes, and your responses are completely anonymous. You can only take the survey once, but you can edit your responses until the survey is submitted. The deadline to submit the survey is November 13, 2020. Questions marked with an asterisk (*) are mandatory.

If you have any questions about the survey, please contact us by sending an email on strategy.mcst@gov.mt

Tracking Career Pathways of PhD Holders

Protection of your Personal Data

This privacy statement explains the reason for the processing, the way to collect, handle and ensure protection of all personal data provided, how that information is used and what rights you may exercise in relation to your data.

The legal basis and purpose of processing:

The data collected by the Malta Council for Science and Technology (hereinafter 'the Council') via this survey form is in line with Data Protection Act, Chapter 586 of the Laws of Malta and the General Data Protection Regulation (EU) 2016/679 (GDPR).

The legitimate basis to process personal data submitted by the data subject by virtue of his/her written application is Regulation 6 (1)(a) of the General Data Protection Regulation ("GDPR"), "as the data subject has given consent to the processing of his or her personal data for" survey analytics.

Data retention period:

The data collected by the Council as submitted by the data subject via this survey form will be retained for a period of one (1) calendar year from the closure of this survey.

Pursuant to the Regulation, you have the right to access the personal data, rectify inaccurate personal

data, request to erase personal data and request the Council to restrict the processing of personal data.

To exercise such rights, you are to submit a written request to the Data Protection Officer via the contact e-mail address.

The Council employees are bound by specific contractual clauses for any processing of data on behalf of the Council and by confidentiality obligations. The data received will also be accessible to the Council employees.

The Council is collecting the data via Survey Monkey.

If you feel that your data protection rights have been infringed, you have the right to lodge a complaint with the Information and Data Protection Commissioner.

Contact Information

If you have comments or questions, any concerns or complaints regarding the collection and use of your personal data, please contact the Data Protection Officer on doyle.abela@gov.mt.

* 1. I confirm that I have read and agree with the above "Protection of your Personal Data" statement.

☐ Yes

Tracking Career Pathways of PhD Holders

Demographic Details

* 2. What is your gender?

* 3. In which country are you currently living?

* 4. What is your nationality?

Tracking Career Pathways of PhD Holders

Doctorate Education

* 5. What was your age at award of doctorate?

* 6. Please select the year of award of doctorate?

* 7. What was the gross time to completion of doctorate, in months?

* 8. Was your doctorate degree course part-time or full-time?

- ( ) Part-time
- ( ) Full-time

* 9. Please select **up to three** main reasons for pursuing a doctorate degree.

- [ ] Continuation of master's project
- [ ] Incentive from former professor
- [ ] Plan to pursue an academic career
- [ ] Expectations of international career
- [ ] Personal interest in advanced education
- [ ] Plan to pursue research and innovation activities in the private sector
- [ ] Passion for subject
- [ ] Passion for research
- [ ] Expectations of improved future salaries
- [ ] Was not satisfied by employment after graduating with a bachelor's/master's degree
- [ ] Other (please specify)

* 10. Was your doctorate degree awarded in Malta or in a foreign country?

- ( ) Local University
- ( ) Foreign University (please specify which country)

Tracking Career Pathways of PhD Holders

Doctorate Education

* 11. Did you move to Malta on completion of your doctorate?

- [ ] Yes
- [ ] No

Tracking Career Pathways of PhD Holders

Doctorate Education

* 12. Please select **up to three** main reasons for moving to Malta on completion of your doctorate.

- [ ] Job search
- [ ] Sent by employer
- [ ] Guarantee or offer of a job
- [ ] Start of post-doctorate
- [ ] Better income
- [ ] Better access to publishing
- [ ] Development or continuity of thesis work
- [ ] Other (please specify)
- [ ] Excellence in a particular field in Malta
- [ ] Possibility of creation of own research team
- [ ] New research area
- [ ] Networking opportunities
- [ ] Family or personal reasons
- [ ] Work-life balance
- [ ] End of residence permit or visa

Tracking Career Pathways of PhD Holders

Doctorate Education

* 13. Please select **up to three** main reasons for pursuing doctoral studies in Malta.

- [ ] Family or personal reasons
- [ ] Quality of advanced research in Malta in the field of study
- [ ] Costs of studying in Malta vs abroad
- [ ] Already working in Malta
- [ ] Opportunity to have funded doctoral training
- [ ] Previous research collaboration with supervisor
- [ ] Intend to pursue future career in Malta
- [ ] Other (please specify)

Tracking Career Pathways of PhD Holders

Doctorate Education

* 14. Please select the field that best corresponds to your doctorate.

* 15. Did your doctorate degree course include any collaboration with industry?

- [ ] Yes
- [ ] No

* 16. During your doctorate degree course, were you involved in teaching activities?

- [ ] Yes
- [ ] No

* 17. Which of the following were sources of funding during your doctorate degree? Please select all that apply.

- [ ] Fellowship or scholarship from your institution
- [ ] Employer's reimbursement/assistance
- [ ] Fellowship or scholarship from business sector
- [ ] Fellowship or scholarship from a private non-profit organisation
- [ ] Fellowship or scholarship from Maltese government
- [ ] Fellowship or scholarship from a public research fund outside Malta
- [ ] University position/ teaching and/or research assistantship
- [ ] Loan
- [ ] Personal savings
- [ ] Family support
- [ ] Other (please specify)

* 18. How would you rate your own competences at the time you completed your doctorate?

	Poor	Fair	Good
Subject knowledge	○	○	○
Team working	○	○	○
Critical-analytical thinking	○	○	○
Creativity	○	○	○
Problem solving	○	○	○
Effective communication	○	○	○
Flexibility	○	○	○
Project management	○	○	○
Leadership	○	○	○
Networking	○	○	○
Innovation and entrepreneurship	○	○	○
Intellectual Property management	○	○	○

Tracking Career Pathways of PhD Holders

Post-Doctoral Position

* 19. Did you take a post-doctoral position (or equivalent) at a university or a research performing organisation after obtaining your doctorate?

- [ ] Yes
- [ ] No

Tracking Career Pathways of PhD Holders

Post-Doctoral Position

* 20. Please select **up to three** main reasons for taking a post-doctoral position.

- [ ] Continuation of PhD project in my supervisor's team
- [ ] Opportunity to practice independent research
- [ ] International experience
- [ ] Opportunity to switch one's focus or change fields
- [ ] A postdoc was the easiest position to get
- [ ] Plan to pursue an academic career
- [ ] Expectations of improved future salaries
- [ ] Was not satisfied by employment after graduating with a PhD degree
- [ ] Passion for subject/research
- [ ] Other (please specify)

* 21. Was your post-doc position in Malta or in a foreign country?

- ( ) Malta
- ( ) Foreign country (please specify which country)

* 22. What type of post-doctorate was it?

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

* 23. Please select your current main employment status.

- ◯ Permanent Full-time Employed
- ◯ Permanent Part-time Employed
- ◯ Temporary Full-time Employed
- ◯ Temporary Part-time Employed
- ◯ Self-Employed
- ◯ Career break
- ◯ Retired
- ◯ Post-Doctorate
- ◯ Full-time study
- ◯ Unemployed

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

* 24. Were you employed at any time after completing your doctorate?

- ☐ Yes
- ☐ No

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

* 25. Were you already employed at the time you completed your doctorate?

- ☐ Yes
- ☐ No

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

* 26. Approximately how many months passed between the time you completed your doctorate and your first paid job after completion of the doctorate?

* 27. How important were the following resources when looking for your first job after completion of your doctorate?

	Not at all important	Somewhat important	Very important
Academic advisor/supervisor			
University career guidance centre			
Peers (e.g. colleagues, alumni)			
Web search/online job portal			
Job advertisement in newspapers, professional journals, etc.			
Job/career fairs			
Job advertisements in Department/University			
Previous job			
Social and professional networks			
Recruiters or headhunters			

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

If you are retired / on a career break / unemployed / studying full-time, the following questions refer to when you were last employed.

* 28. Please indicate the sector of your current employment.

- ◯ Higher education sector
- ◯ Public research institute
- ◯ Private research institute
- ◯ Business enterprise sector
- ◯ Government or other public sector/service
- ◯ Other education sector
- ◯ Private non-profit sector
- ◯ Other (please specify)

* 29. In the last 5 years, have you changed jobs within and/or between sectors? (Sectors refer to Higher education sector, Public/Private research institutes, Business enterprise sector, Government or other public sector/service, Other education sector, Private non-profit sector)

- ◯ Yes, within the same sector
- ◯ Yes, between sectors
- ◯ No

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

If you are retired / on a career break / unemployed / studying full-time, the following questions refer to when you were last employed.

* 30. How many times have you changed employer (including post-doc positions) since the completion of your doctorate?

* 31. How long have you been in your current employment?

* 32. Are you involved in teaching activities in your work?

* 33. Do you have staff management responsibilities in your current position?

- [ ] Yes
- [ ] No

* 34. Do you have a second job in addition to your main job?

- [ ] Yes
- [ ] No

* 35. What was the **minimum** education level for your current main job?

- ( ) Bachelor's degree (or lower)
- ( ) Master's degree
- ( ) Doctorate
- ( ) Post-doctorate
- ( ) Other (please specify)

* 36. To what extent is the content of your work in your current main job related to your doctorate degree?

* 37. To what extent are the following competences important in your current main job?

	Not at all important	Somewhat important	Very important
Subject knowledge related to PhD	○	○	○
Team working	○	○	○
Critical-analytical thinking	○	○	○
Creativity	○	○	○
Problem solving	○	○	○
Effective communication	○	○	○
Flexibility	○	○	○
Project management	○	○	○
Leadership	○	○	○
Networking	○	○	○
Innovation and entrepreneurship	○	○	○
Intellectual Property management	○	○	○

* 38. In your current main job are you engaged in research?

- [ ] Yes
- [ ] No

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

If you are retired / on a career break / unemployed / studying full-time, the following questions refer to when you were last employed.

* 39. Please indicate your position.

- Post Doctorate Position/Junior Researcher
- Research Fellow/Researcher
- Junior/Associate Lecturer
- Senior Researcher
- Senior Lecturer
- Assistant Professor/Junior Professor
- Associate Professor/Reader
- Professor
- Head of Department
- Director, Head of Unit
- Analyst, Specialist
- Technician
- Engineer
- Project Manager
- Other (please specify)

* 40. How important were the following reasons for taking your current position?

	Not at all important	Somewhat important	Very important
It was the next step in my desired career path			
I wanted to continue research in the field of my PhD			
I wanted to receive training/experience in another field			
I wanted to carry out research independently			
I wanted to work with a specific person, organisation or company			
I wanted to carry out and support teaching activities			
Other employment not available			
Good salary available			
Good work conditions other than salary			
Spouse/personal reasons			

Other (please specify)

* 41. Which (if any) of the following activities did you perform within the last 12 months or the last 3 years?

	Within the last 12 months	Within the last 3 years
Presented work at a national research conference or meeting		
Presented work at an international research conference or meeting		
Author on peer reviewed article		
Teaching activities and knowledge transfer		
Received an academic award		
Managed own research team		
Performed peer reviews		
Produced new software		
Filed a patent		
Entrepreneurship, start-up activities		
Technology transfer to industry		
Had a significant impact on policy and/or changes in practice		
Undertaken public engagement activities		
Contributed book chapter		
Published book		
Conducted research with researchers based in another country (transnational research)		
None of the above		

* 42. In the past 12 months, have you been involved in a collaboration with non-academic entities in any of the following ways?

- [ ] Working on a joint publication
- [ ] Collaborating on a joint research project
- [ ] Collaborating on the development of a product or service
- [ ] None of the above

* 43. Are you considering changing your current career for a non-research career in the next three years?

- [ ] Yes
- [ ] No
- [ ] N/A as I am retired

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

If you are retired / on a career break / unemployed / studying full-time, the following questions refer to when you were last employed.

* 44. Please select **up to three** main reasons for considering changing your current career for a non-research career in the next three years.

- [ ] Interested in another career
- [ ] Difficulty getting an academically suitable research post
- [ ] Research in a specific area not existent in Malta
- [ ] Difficulty securing tenured/secure post
- [ ] Bigger variety of career paths
- [ ] Better income
- [ ] More interesting post became available
- [ ] Poor public recognition/status of research careers
- [ ] Personal/family reasons
- [ ] Other (please specify)

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

If you are retired / on a career break / unemployed / studying full-time, the following questions refer to when you were last employed.

* 45. How important were the following reasons for not working as a researcher.

	Not at all important	Somewhat important	Very important
Interested in other career			
Difficulty getting an academically suitable research post			
Research in a specific area not existent in Malta			
No employment available in subject field studied			
Difficulty securing tenured/secure post			
Bigger variety of career paths			
Better income			
More interesting post became available			
Poor public recognition/status of research careers			
Personal/family reasons			

Other (please specify)

* 46. Are you considering changing your current career for a research career in the next three years?

- [ ] Yes
- [ ] No
- [ ] N/A as I am retired

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

* 47. Please select **up to three** main reasons for considering changing your current career for a research career in the next three years.

- [ ] It is the next step in my desired career path
- [ ] Desire to continue research in the field of my PhD
- [ ] Desire to receive experience in another field
- [ ] Desire to carry out research independently
- [ ] Desire to carry out and support teaching activities
- [ ] Other employment not available
- [ ] Interested in other career
- [ ] Bigger variety of career paths
- [ ] Better income
- [ ] Better work conditions other than salary
- [ ] More interesting post became available
- [ ] Personal/family reasons
- [ ] Other (please specify)

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

If you are retired / on a career break / unemployed / studying full-time, the following questions refer to when you were last employed.

* 48. What is your annual gross income (before deductions)?

* 49. How satisfied are you with the following aspects of your main current host/working environment?

	Very dissatisfied	Dissatisfied	Neither satisfied nor dissatisfied	Satisfied	Very satisfied
Career growth opportunities	○	○	○	○	○
Intellectual challenge	○	○	○	○	○
Contribution to society	○	○	○	○	○
Prestige of organisation or job	○	○	○	○	○
Organisational culture	○	○	○	○	○
Job security/stability	○	○	○	○	○
Salary and benefits	○	○	○	○	○
Mentoring and training	○	○	○	○	○
Research facilities	○	○	○	○	○
Work/life balance	○	○	○	○	○
Working conditions	○	○	○	○	○
Level of responsibility	○	○	○	○	○
Degree of independence	○	○	○	○	○
Overall level of satisfaction	○	○	○	○	○

* 50. Did you take a career break for a year or more since the completion of your doctorate?

- [ ] Yes
- [ ] No

Tracking Career Pathways of PhD Holders

Employment Situation and Career Related Experience

* 51. What was your main reason for taking a career break?

- [ ] Desire to diversify career experience
- [ ] Family commitments
- [ ] Personal circumstances
- [ ] Travelling
- [ ] Other (please specify)

* 52. After your career break, how easy or difficult was it to return to your previous position or find another suitable one?

- [ ] Very easy
- [ ] Easy
- [ ] Neither easy nor difficult
- [ ] Difficult
- [ ] Very difficult

* 53. To what extent do you agree or disagree with the following statements?

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
My doctorate enabled me to progress towards my desired career	○	○	○	○	○
My doctorate allowed me to offer added value to the organisation/company where I work	○	○	○	○	○
It was clear to me what career opportunities I could aspire to after my doctorate	○	○	○	○	○
If I could restart my career, I would do my doctorate again	○	○	○	○	○
The transition to my first job after doctorate was difficult	○	○	○	○	○
Having a doctorate made no difference to my career path	○	○	○	○	○

Tracking Career Pathways of PhD Holders

International Mobility

* 54. Have you left Malta for more than three consecutive months since the completion of your doctorate?

- [ ] Yes
- [ ] No

Tracking Career Pathways of PhD Holders

International Mobility

* 55. In which countries did you live for more than three consecutive months since the completion of your doctorate (excluding your home country)?

* 56. How long did you stay abroad in total?

* 57. Please select **up to three** main reasons for leaving Malta for more than three months.

- [ ] Completion of doctorate
- [ ] Completion of post-doctorate
- [ ] Job search
- [ ] Sent by employer
- [ ] Guarantee or offer of a job
- [ ] Start of post-doctorate
- [ ] Returning to home country
- [ ] Better income
- [ ] Other (please specify)
- [ ] Better access to publishing
- [ ] Development or continuity of thesis work
- [ ] Work in a specific area not existent in Malta
- [ ] Possibility of creation of own research team
- [ ] New research area
- [ ] Family or personal reasons
- [ ] End of residence permit or visa

* 58. Have you returned back to Malta?

- [ ] Yes
- [ ] No

Tracking Career Pathways of PhD Holders

International Mobility

* 59. Please select **up to three** main reasons for returning to Malta.

- [ ] Completion of post-doctorate
- [ ] Job search
- [ ] Sent by employer
- [ ] Guarantee or offer of a job
- [ ] Start of post-doctorate
- [ ] Better income
- [ ] Better access to publishing
- [ ] Development or continuity of thesis work
- [ ] Other (please specify)
- [ ] Excellence in a particular field in Malta
- [ ] Possibility of creation of own research team
- [ ] New research area
- [ ] Networking opportunities
- [ ] Family or personal reasons
- [ ] Work-life balance
- [ ] End of residence permit or visa

Tracking Career Pathways of PhD Holders

Future Career Plans

* 60. Within the next 12 months, do you plan to embark on a new job? (Sectors refer to Higher education sector, Public/Private research institutes, Business enterprise sector, Government or other public sector/service, Other education sector, Private non-profit sector)

Tracking Career Pathways of PhD Holders

Future Career Plans

* 61. Please select **up to three** main reasons for changing job in a different sector.

- [ ] Unsatisfied in my field
- [ ] Feel like I need new challenges
- [ ] To broaden my CV
- [ ] To gain experience of different areas
- [ ] Desire to work in a particular area
- [ ] Better income
- [ ] Other (please specify)

* 62. Within the next 12 months, do you plan to move to another country to live or work?

- ( ) Yes, for less than 3 months
- ( ) Yes, for 3 months to 1 year
- ( ) Yes, for longer than 1 year
- ( ) No
- ( ) Don't Know

Tracking Career Pathways of PhD Holders

Future Career Plans

* 63. Which country do you plan to move to?

* 64. Please select **up to three** main reasons for moving.

- [ ] Completion of post-doctorate
- [ ] Job search
- [ ] Sent by employer
- [ ] Guarantee or offer of a job
- [ ] Start of post-doctorate
- [ ] Returning to home country
- [ ] Economic/financial factors
- [ ] Better access to publishing
- [ ] Development or continuity of thesis work
- [ ] Work in a specific area not existent in Malta
- [ ] Possibility of creation of own research team
- [ ] New research area
- [ ] Family or personal reasons
- [ ] End of residence permit or visa
- [ ] Other (please specify)

Tracking Career Pathways of PhD Holders

Future Career Plans

* 65. Within the next 12 months, do you plan to embark on a new job?

- [ ] Yes
- [ ] No

Tracking Career Pathways of PhD Holders

Future Career Plans

* 66. If you had a choice, would you go for a job that would involve research?

- [ ] Yes
- [ ] No

Tracking Career Pathways of PhD Holders

Future Career Plans

* 67. How important are the following reasons for choosing to work as a researcher?

	Not at all important	Somewhat important	Very important
It is the next step in my desired career path	○	○	○
Desire to continue research in the field of my PhD	○	○	○
Desire to receive training/experience in another field	○	○	○
Desire to carry out research independently	○	○	○
Desire to work with a specific person, organisation or company	○	○	○
Other employment not available	○	○	○
Good salary available	○	○	○
Good work conditions other than salary	○	○	○

Other (please specify)

Tracking Career Pathways of PhD Holders

Future Career Plans

* 68. How important are the following reasons for choosing not to work as a researcher?

	Not at all important	Somewhat important	Very important
Interested in other career	○	○	○
Difficulty getting an academically suitable research post	○	○	○
Research in a specific area not existent in Malta	○	○	○
No employment available in subject field studied	○	○	○
Difficulty securing tenured/secure post	○	○	○
Bigger variety of career paths	○	○	○
Better income	○	○	○
More interesting post became available	○	○	○
Poor public recognition/status of research careers	○	○	○

Other (please specify)

Tracking Career Pathways of PhD Holders

Future Career Plans

* 69. Within the next 12 months, do you plan to move to another country to live or work?

- ○ Yes, for less than 3 months
- ○ Yes, for 3 months to 1 year
- ○ Yes, for longer than 1 year
- ○ No
- ○ Don’t Know

Tracking Career Pathways of PhD Holders

Future Career Plans

* 70. Which country do you plan to move to?

* 71. Please select **up to three** main reasons for moving.

- [ ] Completion of post-doctorate
- [ ] Job search
- [ ] Sent by employer
- [ ] Guarantee or offer of a job
- [ ] Start of post-doctorate
- [ ] Returning to home country
- [ ] Economic/financial factors
- [ ] Other (please specify)
- [ ] Better access to publishing
- [ ] Development or continuity of thesis work
- [ ] Work in a specific area not existent in Malta
- [ ] Possibility of creation of own research team
- [ ] New research area
- [ ] Family or personal reasons
- [ ] End of residence permit or visa

Tracking Career Pathways of PhD Holders

Thank you for your response.

In order to be updated with the latest developments, funding opportunities, and events, MCST invites you to register on our website www.mcst.gov.mt. There are no obligations for registration and you can unsubscribe at any time in accordance with GDPR rules.

We also recommend that you visit PlumTri (https://www.plumtri.org/) if you are interested in R&I collaborations in Malta and the Mediterranean to be kept up to date with opportunities or if you would like to participate in future studies.

72. You may be contacted again for case study purposes. If you wish to be contacted for this purpose, kindly write your contact details below.

Name

Email Address

SURVEY LOGIC

P4 Q10
- Local University Top of P7 Q13
- Foreign University P5 Q11

P5 Q11
- Yes Top of P6 Q12
- No Top of P8 Q14

P6 (Q12) after current page skip to P8 Q14

P9 Q19
- Yes Top of P10 Q20
- No Top of P11 Q23

P11 Q23
- Permanent FTE P13 Q25
- Permanent PTE A2 P13 Q25
- Temporary FTE A3 P13 Q25
- Temporary PTE P13 Q25
- Self-employed P13 Q25
- Career Break P13 Q25
- Retired P13 Q25
- Post-Doctorate P13 Q25
- FT Study P12 Q24
- Unemployed P12 Q24

P12 Q24
- Yes P13 Q25
- No Top of P29 Q65

P13 Q25
- Yes P15 Q28
- No P14 Q26

P15 Q29
- Yes, within the same sector P16 Q30
- Yes, between sectors P16 Q30
- No P16 Q30

P16 Q38
- Yes Top of P17 Q39
- No Top of P19 Q45

P17 Q43
- Yes Top of P18 Q44
- No Top of P21 Q48
- N/A as I am retired Top of P21 Q48

P18 (Q44) after current page skip to P21 Q48

P19 Q46
- Yes Top of P20 Q47
- No Top of P21 Q48
- N/A as I am retired Top of P21 Q48

P21 Q50
- Yes P22 Q51
- No P22 Q53
-

P23 Q54
- Yes Top of P24 Q55
- No Top of P26 Q60

P24 Q58
- Yes Top of P25 Q59
- No Top of P26 Q60

P26 Q60
- Yes, within the same sector P27 Q62
- Yes, in a different sector P27 Q61
- No P27 Q62
- No, I am retired/will be retiring Top of P35 (Q72 final page)

P27 Q62
- Yes, for less than 3 months P28 Q63
- Yes, for 3 months to 1 year P28 Q63
- Yes, for longer than 1 year P28 Q63
- No Top of P35 (Q72 final page)
- Don’t know Top of P35 (Q72 final page)

P28 (Q63-64) after current page skip to P35 (Q72 final page)

P29 Q65
- Yes P30 Q66
- No P30 Q66

P30 Q66
- Yes P31 Q67
- No P32 Q68

P31 (Q67) after current page skip to P33 Q69

P33 Q69
- Yes, for less than 3 months P34 Q70
- Yes, for 3 months to 1 year P34 Q70
- Yes, for longer than 1 year P34 Q70
- No Top of P35 (Q72 final page)
- Don’t know Top of P35 (Q72 final page)

P35 (Q72 final page) after current page skip to end of survey

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