



Discovering the Archaeologists of Norway 2012-14

Tine Schenck

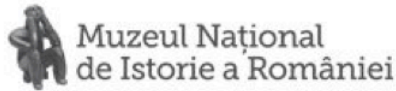
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1 Introduction

Discovering the Archaeologists of Norway is a subdivision of the overlying project *Discovering the Archaeologists of Europe 2012-2014 (DISCO 2012-2014)*. The project has been approved and partly financed by the Lifelong Learning Programme under the European Commission, and is coordinated by York Archaeological Trust. The project counts 22 partners from 21 nations. The main motive is developed to match the New Skills for New Jobs¹ initiative, which is part of the European employment strategy; a framework for EU countries for share information about their various employment policies.

New Skills for New jobs sets out to promote anticipation of future skills needed in the European labour market, so that there can be a better matching between skills and the labour market needs, and so that the gap between the realms of education and work is bridged. One of the practical measures developed for this initiative is The European framework for key competences, which identifies that everyone needs certain skill sets to achieve employment, personal fulfilment, social inclusion and active citizenship in today's global market.² The DISCO 2012-2014 project is developed to monitor the archaeological labour market in terms of these demands, and to catch trends that are evolving in relation to skills, vocational education and training, and transnational mobility.

The DISCO 2012-2014 project is focussed on the specific needs of the European archaeological practice, which at current is related to the global financial crisis. The crisis is affecting the ability of employers to invest in vocational education and training, and this is one challenge that the project will address through its results. Another obstacle that has been identified by the project is the difficulty for employees to move between European countries due to the fact that qualifications are not universally recognised. The project seeks to investigate the various required qualifications in the participating countries and create an overview for future reference. The end results will be used to inform and advise providers of vocational education and training in the respective countries and in Europe as a whole. This is intended to contribute to the stated difficulties on three levels:

- 1) Employers will be better informed, which will facilitate planning of future needs and issues that may arise with vocational education and training.

¹ More information on: <http://ec.europa.eu/social/main.jsp?catId=822&langId=en>

² More information on: http://ec.europa.eu/education/lifelong-learning-policy/key_en.htm

- 2) Individual employees in the archaeological sector will be better prepared to develop their careers through vocational education and training.
- 3) Providers of vocational education and training (including employers) will be able to target demonstrated needs of the labour market.

In order to address the issues that vocational education and training raise in a European, archaeological market, surveys have been undertaken in each of the participating countries. As a template, core areas were developed by the project, and attended to by each of the 20 national surveys. These core areas can be grouped into four topics:

- 1) The nature of the employees (archaeologists)
- 2) The nature of the employers in the archaeological sector
- 3) The ongoing trends in supply of and demand for archaeological work
- 4) The skills shortages and supply in vocational educational training within the archaeological sector.

In the following, the core areas will be presented by topic.

1.1 Norwegian participation and representation in the project

Norwegian Archaeology was represented in the project by The Norwegian Association of Researchers³ (NAR), a trade union which targets employees in research, higher education and knowledge dissemination, including the cultural heritage sector. NAR organises a large proportion of archaeologists in Norway – including individuals with employer’s responsibilities. This makes NAR a suitable organisation for undertaking research into employment issues, but also inevitably moves the focus to protecting the employees, and if conflicts of interest arise, the organisation must be considered partial to the welfare of archaeologists rather than archaeological employers.⁴

To accommodate for trade union policy, two surveys were ran simultaneously – one targeting employers and one targeting employees. This was done to ensure credibility of results, as employees would presumably report certain answers with more authority than their employers. It was also assumed this would counter the effect of temporary employment, which complicates estimation of numbers based on employers’ results alone. In the following, the surveys will be amalgamated into one analysis, to create a unified picture of Norwegian archaeology.

³ Norwegian: *Forskerforbundet*

⁴ See NAR’s *Forskerforbundet 2012*

1.2 Previous surveys

The Association for Temporarily Employed Archaeologists (MAARK), a subgroup to NAR, has performed annual surveys of their members since 2011, with numbers relating to 2010 onwards.⁵ As will be clarified below, there are particular challenges with regards to temporary employment of Norwegian archaeologists, and this will be addressed accordingly in the coming analysis with the previous surveys as reference material. The surveys were published in 2012 and 2013, and were executed by Tine Schenck with the aid of the board and general assembly of MAARK.

1.3 Method

To be in concurrence with the overlying project demands of data collection and core data sets, the Norwegian part of the project was a survey based analysis of the present situation for archaeologists working in the Norwegian labour market. The questions were mainly based on the core questions that arose from the DISCO project. At the same time, as NAR performed similar labour intelligence surveys among a population of temporarily employed archaeologists in 2010⁶ and 2011,⁷ the project also wanted to maintain the form of previous survey questionnaires in order to accommodate for trends in a larger, composited data set.⁸

The questions were created by Jon. W. Iddeng and Tine Schenck. Jon Wikene Iddeng was responsible for designing the electronic survey. The survey itself was set up as an electronic questionnaire provided by *Questback*. This solution allows for temporary storage, so that a respondent can return to their unique survey if they were invited to enter the survey by a unique link. However, a general link was also set up, to accommodate for a free distribution of the survey. This may open for a possibility to register multiple replies, but no one was suspected of having abused this set-up.

Two questionnaires were designed, of which one was distributed to employers and one to employees. The employers' survey was distributed to all the major employers of archaeologists, both to the head of department/institution/business and to the archaeologist in charge. The questions were related to the business of professional archaeology directly. This survey was not anonymous.

⁵ Schenck 2012, 2013

⁶ Schenck 2012

⁷ Schenck 2013

⁸ See appendix 1 for list of questions

The second questionnaire took the form of a personal query of the individual situation of employees. This questionnaire dealt with the issues relating to the employees directly, such as gender/age, seniority, income and education. This survey was fully anonymous. The unique identifier in the resulting data file was the date and time of the survey. The employees' survey was open to the individual employer (in charge) as well.

The data were collected in the summer 2013 and analysed in MS Excel 2011 by Tine Schenck, who also authored this report. With an estimated workforce of c. 1000 archaeologists, the response rate was around 33 % for the employees.

PART I –

Norway: the Scandinavian model on the top of Europe

2 Norwegian cultural heritage management

2.1 Structure

Norwegian cultural heritage management is regulated by the Cultural Heritage Act (CHA) from 1978. The act pronounces that the protection and maintenance of cultural heritage is a national responsibility. Furthermore, cultural heritage objects from before 1537⁹ are property of the Norwegian state if no owner can be determined.¹⁰ Immovable cultural heritage, such as monuments, settlement remains and natural features with cultural value, is the ground owner's property. However, if such date to before 1537 (or 1649 for standing buildings), they are automatically protected from intrusion of any kind.¹¹

The government of cultural heritage is the responsibility of the Ministry of the Environment. Its Department for Cultural Heritage Management is in charge of developing strategies and policies regarding cultural heritage in Norway and developing legal and economic instruments for its protection and management. The Directorate for Cultural Heritage¹² (DCH) is a directorate under the Ministry which takes care of the practical implementation of cultural heritage law and policies developed by the Ministry. The Directorate also provides counsel for the Ministry regarding cultural heritage policy issues.

The CHA is put to practice when cultural heritage is endangered in ways such as farming, developing or building on protected ground. The tasks of investigation and excavation are delegated to the counties, the Sami parliament and the Oslo city antiquarian, and the archaeological museums, which effectively divides the investigation into a preliminary investigation and, if necessary, separate, subsequent excavation. The polluter pays principle is incorporated in the CHA § 10, which states that any costs involved in the investigation shall be borne by the project initiator.

⁹ The date set is to limit *automatic* protection, and refers to the Reformation in Norway. This means that automatic protection concerns cultural heritage from Medieval periods and older, whereas younger cultural heritage will only be protected after individual evaluation.

¹⁰ CHA § 12

¹¹ CHA § 3 and § 4

¹² Norwegian: Riksantikvaren

To evaluate whether development will conflict with cultural heritage, the initiator must notify the local county administration, which then surveys the site according to topography, local archaeological trends and purpose of development. This usually involves archaeological

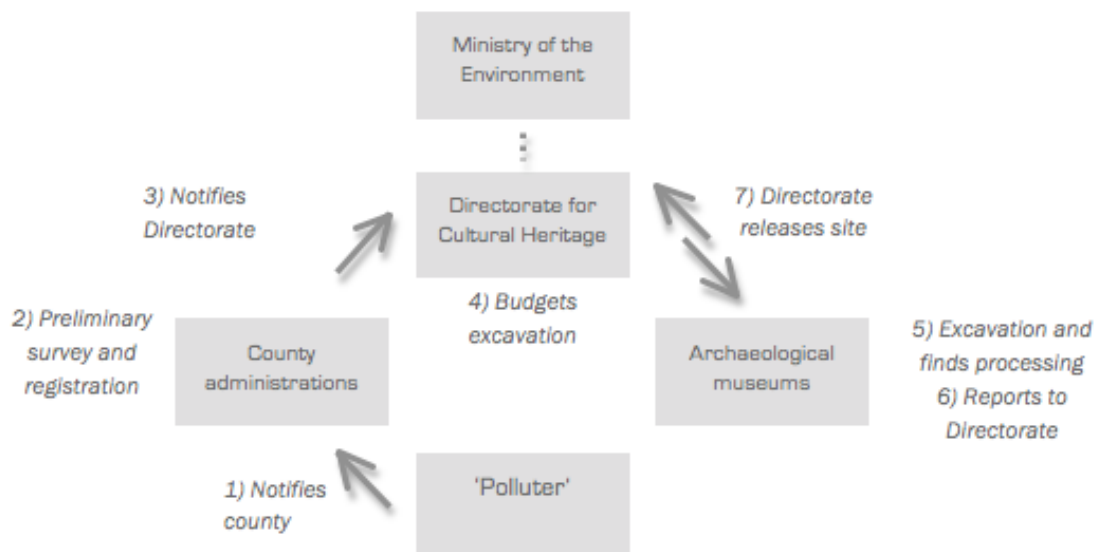


Figure 1 The structure of Norwegian cultural heritage management

archaeological fieldwork, which is incorporated into the normal and scheduled plan regulations procedure.¹⁵

The structure of the cultural heritage management system means that certain developments can take years to finish. This has partly to do with the long winter periods in Norway, which in large parts of the country will last at least 4 months. Norway spans 14 latitudes¹⁶ which results in less severe winters in the southernmost regions, and counties in the far south are sometimes able to proceed with fieldwork through the coldest months. However, the majority of the country suffers from ground penetrating frost, which makes most archaeological fieldwork very difficult. In addition, large amounts of snow cover the ground and inhibit surveying, and exposure to frost may damage uncovered structures. Around a third of Norway is situated North of the Arctic Circle, and the necessary daylight is very limited in winter months. Along with Finland and Sweden, this sets Norway apart from the rest of the European countries and creates particular, seasonal obstacles to the ordinary execution of

¹³ CHA § 9(2)

¹⁴ In certain instances, the state will pay for the excavation. This is usually the case if a plan area is smaller than 1,4 hectare and the developer is a small enterprise or a farm, ref CHA § 10(2).

¹⁵ See the Planning and Building Act of 2008.

¹⁶ 57°58' 57 N to 71° 8' 2 N

archaeological fieldwork. This bears major consequences for the employment situation of many Norwegian archaeologists.

2.2 Norwegian definition of 'archaeologist'

Norway has no official definition of the professional term archaeologist and the title is not protected or licensed. This is reflected in the description of an archaeologist offered by the Arctic University of Norway (UiT),¹⁷ which includes a long list of various tasks, jobs and titles an archaeologist can hold. However, some are under the impression that the title can only be achieved with a master's degree in archaeology, which is the unofficial truth. This is also stated in the UiT description.

The reality is that the title archaeologist is exclusively applied to and taken by people with a minimum of a master's degree in archaeology. If a person is a master's student of archaeology (but holds a bachelor), s/he will still be considered an archaeology student. The Norwegian interest organisation for archaeology, *Norsk Arkeologmøte (NAM)*, states that, as a main rule, only those with the equivalent to a master's or doctorate degree can be accepted as members.¹⁸

Traditional tasks for Norwegian archaeologists include research, cultural heritage management, museum work and fieldwork/excavation. As in certain other countries, archaeologists generally perform all the tasks related to archaeological excavations. Field workers/helpers, technicians or illustrators generally do not exist on a Norwegian excavation. Excavation and other field work is usually organised with a project manager in charge of the administrative procedures and a site director or field leader in charge of the fieldwork, reporting, sample processing and general fieldwork related tasks. On larger excavations, a second field leader is sometimes hired to assist, and/or another field leader will often be responsible for all the GIS and digital mapping of the site. Field assistants are archaeologists who perform all the various tasks related to the general excavation or survey, such as digging, documenting, and sampling. The field leader takes part in most or all of these tasks.

There has been a tradition for students to be employed as field assistants. However, with the increasing number of archaeologists that have entered the Norwegian labour market in recent years, assistants are now also mainly archaeologists with master's degrees.

¹⁷ UiT - Arkeolog (in Norwegian): http://uit.no/studietilbud/yrker/yrke?p_document_id=172304&yrkeskode=Arkeolog [Accessed on 26/12/13]

¹⁸ NAM's *Vedtekter* § 2

2.3 Norwegian education of archaeologists

2.3.1 Bachelor's and master's degrees

Norway began incorporation of the Bologna system¹⁹ in the academic year of 2002/2003, and the structure was fully integrated from 2003/2004 through the *Quality Reform*.²⁰ Archaeology studies, both bachelor and master degrees, are taught at four university departments.²¹ In addition, PhD degrees in Archaeology are available in the same four universities and their corresponding university museums, as well as the Museum of Archaeology at the University of Stavanger, a total of 9 institutions. Norway has no tuition fees for public sector higher education, which constitutes all universities and most of its colleges.

Norwegian bachelor degrees follow the ECTS,²² consist of 180 ECTS and are constructed so that a minimum of 80 ECTS consist of the chosen subject field, for instance Archaeology. 20 ECTS consist of entry courses in philosophy (*examen philosophicum* and *examen facultatum*), and the remaining 80 ECTS are composed of a variety of related or entirely free subjects. This leaves a Norwegian Bachelor graduate with a broad competence, and a student of archaeology often studies for instance geology, geography, social anthropology, sociology, history and medieval studies as supplementary subjects. To go on to do a master's degree of Archaeology, one can graduate with a bachelor of Archaeology, of Culture and Society, Antiquity, History or other, as long as 80 ECTS consist of obligatory Archaeology subjects. The bachelor degrees are intended to prepare the candidate for professional life.²³

Norwegian master degrees consist of 120 ECTS of which 30 or 60 ECTS are a master dissertation. For archaeology studies, the dissertation is 60 ECTS, and 60 ECTS normally consist of other archaeology subjects. In other words, this is often a pure archaeology degree, in contrast to the bachelor degrees. The master degrees are intended as a preparatory degree for academic research.²⁴

All of the universities provide fieldwork related modules as part of the education, however they are distributed at different levels of the studies. For instance, at the Norwegian University of Science and Technology (NTNU), students get two courses of 15 ECTS at bachelor level and a

¹⁹ Bachelor and Master degrees, and PhD degrees for doctorates.

²⁰ EHEA document: *NORWAY. Implementation of the elements of the Bologna Process*. Available on http://www.ehea.info/Uploads/Documents/NORWAY1_2003.PDF [Accessed on 26/12/13]

²¹ The Arctic University of Norway (Tromsø), the Norwegian University of Science and Technology (Trondheim), University of Bergen and University of Oslo.

²² European Credit Transfer and Accumulation System

²³ St.meld. nr. 27 (2000-2001) *Gjør din plikt – Krev din rett* pt. 6.3.1.[Parliamentary white paper]

²⁴ St.meld. nr. 27 (2000-2001) *Gjør din plikt – Krev din rett* pt. 6.3.1.

15 ECTS course at master level – a total of 45 ECTS. In comparison, at the University of Oslo (UoO) students only have access to fieldwork related courses at master level, consisting of a 10 ECTS field course and 10 ECTS of databases and GIS. As most archaeologists seem to enter into professional fieldwork after their studies, this leaves graduates with a varied level of relevant professional competence.

2.3.2 PhD and Dr. Philos

Norway, as one of few countries, offers PhD scholarships as employment contracts rather than student slots, and a PhD scholar is employed by the state for the duration of the scholarship.²⁵ These normally constitute of 3 years with fulltime research or 4 years with 25% obligatory work in the university, such as teaching, assisting in other research projects or research administration, usually relevant to the PhD project. A PhD scholar is part of a PhD programme, which consists of 30 ECTS coursework and 150 ECTS research project which leads to a doctoral thesis or published articles. The PhD programme is the sole way to achieve the degree of PhD in Norway, and the scholarships and programme slots are often interlinked. However, almost 30 % of PhD candidates in 2012 were funded by their employers (often higher education institutions, research institutes or hospitals) or external sources. Norwegian doctoral students are not considered students, but are given employee status with employee's benefits,²⁶ and salaries are based on public sector salaries for those who hold a master's degree. A PhD candidate is allowed maternity/paternity leave, sick leave and other social benefits to the same degree as any other Norwegian employee.

The PhD can only be achieved through an affiliation with a PhD programme. However, there is an independent route to a doctoral degree which leads to a Dr. Philos degree. After a candidate has independently written a thesis or equivalent publications, the work may be submitted to one of the universities for evaluation and award. If a candidate decides to follow this route, there is no affiliation with a university, and hence no supervision. A thesis can only be submitted to one institution for evaluation, even if it has been corrected based on previous evaluations.²⁷ The regulations for Dr. Philos. differ slightly between universities, but in general, the candidate must either be a Norwegian or Nordic citizen, or there must be other justifiable grounds for getting the degree approved, such as a thesis topic that relates specifically to Norway or the North, or other connections to Norway.

²⁵ Act relating to universities and university colleges § 6-4

²⁶ Thune et al. 2012, 11

²⁷ See for instance UoO's pages on Dr. Philos.: <http://www.uio.no/english/research/doctoral-degree-and-career/drphilos/> [Accessed the 27/12/13]

2.3.3 Postdoctoral fellowships

Norwegian postdoctoral fellowships are not considered an education, but an entry-level research position after the doctoral degree. However, it is defined and intended as a qualifying position for academic top-level positions.²⁸ In Archaeology, there seems to be a shortage of postdoctoral positions, and a recent count of the university and museum staff catalogues (December 2013) yielded just 7 identifiable post-doc. positions in Archaeology.²⁹ Other positions are known to have been in use for entry-level academic staff, such as temporary teaching positions when there is a need. Still, there are very few positions available for a post-doctoral candidate, as they are not likely to enter directly into permanent employment in universities.

2.4 Employment

Norwegian archaeologists typically work within the public sector, but in various subsectors. In addition, there are a very few private charities or institutions that have delegated authority to execute archaeological fieldwork, and a few private, local museums that can potentially house archaeologists. An unknown number of archaeologists with a master's degree work in non-archaeological jobs, and the number is expected to be higher for people with only a bachelor's degree in archaeology, who typically cannot achieve positions with classic, archaeological tasks. An overview of the archaeological labour market is shown in Table 1.

2.4.1 State sector

The Ministry of the Environment; the DCH; the Sami parliament; and the universities, including university museums, are state entities that manage, coordinate and execute cultural heritage management and archaeological fieldwork. In addition, the universities are in charge of much of the academic research and the Sami parliament bears a special responsibility for Sami cultural heritage. Employment in the state sector is regulated by the Working Environment Act and the Civil Service Act. Employee's rights and benefits are further expanded through the Basic Collective Agreement and the Basic Agreement for the state sector, which are negotiated in alternating years between the state and the four national confederations of unions and covers members and non-members alike.

In 2012, the state sector engaged 52 % of the archaeologists who responded to the survey performed as part of this study: 41 % of the permanently employed and 59 % of the

²⁸ Circular letter F-087-98 of 6/11/98

²⁹ Not all post doctors in the catalogues were tagged with field of interest

temporarily employed. The number of temporarily employed are generally high in the state archaeology, due to the tradition of hiring staff per project in stead of on fixed term contracts. As the state sector manages excavations down to a day's length, this can – and does – result in a very high number of people going in and out of the university museums in particular.

2.4.2 Municipal and county sector

Norway, as the rest of Scandinavia, is governed by the principle of municipal independence, under which the municipalities are only to be governed by the state in certain instances and through framework regulations. Counties have less authority, but govern particular areas that the municipalities are not involved in, such as local cultural heritage management. The counties are in charge of the initial phase of all archaeological surveying, which is usually carried out as part of a municipal development planning procedure.

Counties, municipalities and local public enterprises are grouped together under the sectoral label *KS* or *kommunesektoren*.³⁰ This local/regional sector has a varied scope, due to the highly diverse topography, climate and population density of Norway. Norway's largest and northernmost county (Finnmark) is larger than Denmark, the smallest county (Oslo) consists of a single municipality and measures 0,99 % of Finnmark's landmass, but has nearly 10 times its population. County size, topography, demography and climate all impact on the amount of cultural heritage and the seasonal character of cultural heritage management, amongst others, fieldwork.

2.4.3 Private sector

A few institutions under Norwegian cultural heritage management fall under the private sector, although they have a delegated official authority when it comes to archaeological excavations. Firstly, the Norwegian Institute for Cultural Heritage Research (NIKU), an independent, non-profit organisation that perform both cultural heritage management and research, have the delegated authority for medieval excavations in city- and townscapes. Secondly, many museums are private foundations. Some of these are maritime museums with a responsibility for underwater and maritime excavations and surveying and the protection and management of marine cultural environments.

³⁰ Translation: Municipal sector

In addition, many local cultural-historical museums, as well as ethnological museums, are private. However, these rarely employ archaeologists. There are also some companies working with public archaeology and illustration, and some freelance archaeologists with registered micro-companies..

Sector	Type of employer	Type of activity	Number
County/Fylkeskommune	County administration	Cultural heritage management (fieldwork), education/public outreach	19
State	University Museum	Cultural heritage management (fieldwork), research, public outreach	5
State	State Antiquarian	Cultural heritage management (providing advise, laying down policies, ultimate responsibility for Norwegian Cultural Heritage Management)	1
State	Ministry of Climate and Environment	Cultural heritage management (providing advise, laying down policies, ultimate responsibility for Norwegian Cultural Heritage Management and State Antiquarian)	1
State	Samí parliament	Cultural heritage management (providing advise, policies), public outreach	1
Private	Maritime museums	Cultural heritage management (maritime fieldwork), research, public outreach	3
Private	Independent research institute	Cultural heritage management (fieldwork), research	1
Municipal/kommunesektoren	Local museums	Public outreach	Not available ³¹

Table 1 Types of employer specific to Norwegian Archaeology.

Sector	No resp.	Total yr.equiv.
Municipal	20	200,5
State	3	20
Univ (state)	8	143,4
Private	5	52,6

Table 2 Distribution of respondents and yearly equivalents in the survey (2012).

The employers are of highly varied proportions. This becomes clear when one compares the number of employers with the yearly equivalent workload as reported in the survey and displayed in Table 2.

³¹ Local museums do not target designated professional fields; and only rarely employs archaeologists. This category was not surveyed apart from the few museums that sometimes employ archaeologists. Only 1 did, however, respond.

PART II – Survey results

3 Size of work force

Norwegian temporarily employed archaeologists are extremely mobile within the work force in the duration of one year, and as a result, are hard to count. This was also noted by Nilsen (2001), who put the estimated total workforce at 581 archaeologists, including postgraduate students, competing for 331 jobs within archaeology. However, these numbers should be expected to have changed in the last 12 years.³²

As will be described in detail later, the present survey showed that, in 2012, 62 % of working archaeologists were temporarily employed. In addition, 274 employees were registered as permanently employed with 35 employers (89,74 % response rate amongst the primary employers for archaeologists), producing 263 yearly equivalents. Although the archaeologists themselves were surveyed, the survey does not give an estimate of their total number. However, it does give us several useful data sets to work with in combination with the employers' survey. This has led to different estimated totals via different routes, as will be iterated below.

We did not set a census date as it is hard to calculate a total work force based on a set date in a seasonally fluctuating labour market. Also, although a particular time of year could have been chosen, it is possible that this would result in double counting, as employees may be registered with their employer for longer than they are actually employed, or they may not be registered yet.³³ Previous surveying in 2011 has also shown that almost a third of temporarily employed archaeologists may be working without a formal contract.³⁴ For this reason, the number of employed, temporarily employed archaeologists was not surveyed in the employers' survey. However, we did ask for the number of permanently employed archaeologists in the calendar year 2012. The list below recites data sets that were used in the different estimations of the total work force size.

- Number of permanently employed archaeologists in 2012 (employers' survey)
- Number of yearly equivalents worked by temporarily employed archaeologists in 2012 (employers' survey)
- Number of PhD candidates and postdoctoral employees (employer's survey)³⁵

³² See submission regarding strategic plan 2010-2020 from Museum of Cultural History to the DCH of 4/10/2010

³³ One reason for this may be the large size of most employers, in which big distances between HR and the employees themselves can cause information lags.

³⁴ Schenck 2012, 58, Figur 38

³⁵ PhD candidates are usually employed full time by their affiliated university.

- Percentage distribution permanently/temporarily employed (employees' survey)
- Total number of weeks worked in 2012 by temporarily employed archaeologists (employees' survey)
- Fieldwork announcements for 2012 by non-responding employers
- Websites of non-responding employers
- Number of students graduated with master degree or equivalent in the years since the last count (2001-2012)
- E-mails to local museums that were not targeted in the survey

Factor	Amount
AVG. yr. equiv./temp. arch.	0,72
NO yr. equiv./employers	147,5
NO temp. arch./employers	204*
NO PhD & post doc./employers	45
NO perm. arch./employers	280
NO arch./local mus.	25
NO additional	87*
Sum	641
NO non-active	99
SUM	740

Table 3 Estimate of work force size based on yearly equivalents *Estimations. Italics not counted.

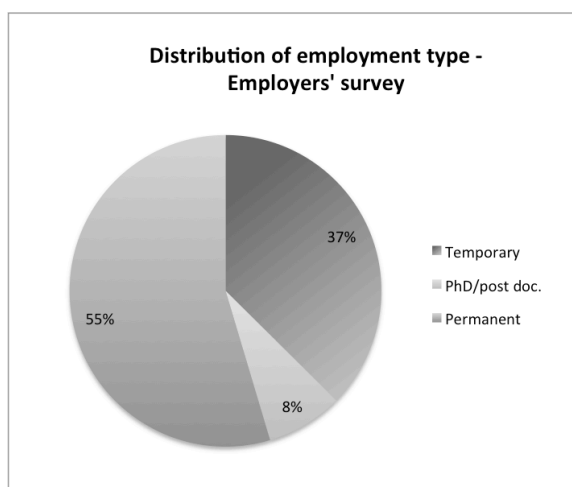


Figure 2 Distribution of types of archaeological employment in 2012 according to employers' survey.

3.1 Estimate 1: Yearly equivalents reported by the employers

One method to estimate the total number of Norwegian archaeologists was to use data from the employees' survey to calculate the average yearly equivalent worked by one temporarily employed archaeologist (0,72) and multiply this with the number of yearly equivalents worked by temporarily employed archaeologists (147,5)³⁶ as reported by the employers. In addition, an estimation of yearly equivalents, and thereby archaeologists, were made for the non-responding and otherwise missing employers, supplied with e-mail information from several local museums, public databases and websites.³⁷ This method of calculation resulted in an

³⁶ This is the only number that is decidedly fixed in the survey material.

³⁷ The local museums and websites gave amount of employed archaeologists per December 2013.

estimate of 641 working archaeologists in Norway in 2012, as seen in Table 3, distributed between types of employment as in Figure 2.

In addition to these 641 archaeologists should be considered the archaeologists who are not currently actively working, but are considering themselves archaeologists with a connection to the labour market as such. This group includes archaeologists who could not get employed, archaeologists on parental leave, and those who hold other positions while looking for more relevant work or better working conditions. The approximation of unconnected archaeologists is based on the ratio of non-working to working archaeologists from the employees' survey, which showed that 86,6 % of respondents were working in 2012. This yields a proportion of 13,4 % of non-working archaeologists, or a ratio of 1:0,15 for working to non-working,³⁸ and should result in an addition of 99 archaeologists, and a total sum of **740** archaeologists in Norway in 2012.

³⁸ Around a third of the non-working respondents were students (ordinary or PhD) in 2012. Of these, 20 % were employed in 2013. Apart from two respondents, the rest (27 respondents) did not comment on their situation, and we have no indication as to why they participated in the survey, as they were still not employed as archaeologists at the time of the survey.

3.2 Estimate 2: Distribution of permanently and temporarily employed archaeologists such as reported by the employees

A different method for estimating the number of temporarily employed archaeologists was based on the ratio between temporarily and permanently employed archaeologists as reported by the employees' survey. The ratio in the responses was calculated at 1,48, in other words almost 50 % more archaeologists were temporarily than permanently employed. This is not a surprising ratio for Norwegian archaeology. The number of permanently employed individual archaeologists as reported by the employers (280)³⁹, was then multiplied with this ratio. Additional numbers of archaeologists were added in, supplied by local museums, public databases and websites.⁴⁰ This resulted in an estimate of **918** active archaeologists in Norway, as seen in Table 4,⁴¹ with a proportional distribution as seen in Figure 3.

Factor	Amount
NO perm. arch./employers	280
NO perm. arch./additional ¹	70
NO PhD & post doc./employers	45
NO PhD & post doc./additional	6
NO est. temp.arch./ratio est. ¹	517*
Sum	918
NO non-active	114
SUM	<u>1032</u>

Table 4 Estimate of work force size based on ratio permanent/temporarily employed in employees' survey. *Estimations.

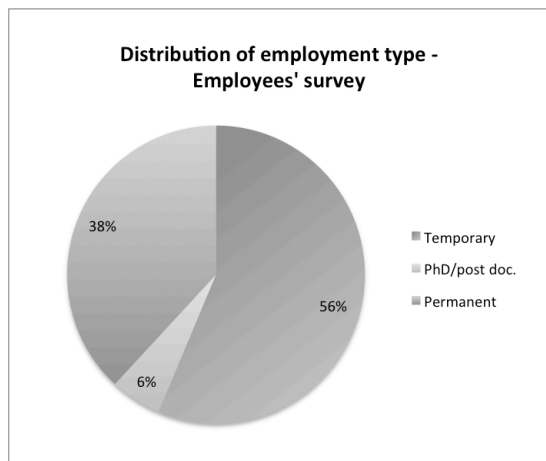


Figure 3 Distribution of types of archaeological employment in 2012 according to employees' survey

Adding in the non-active archaeologists by a ratio calculated from the survey material of 1:0,41,⁴² results in an additional 114 individuals and a total of **1032** archaeologists in Norway in 2012. The discrepancy between this estimate and Estimate 1 will be discussed in 3.4 below.

³⁹ This is the only number that is decidedly fixed in the survey material.

⁴⁰ The local museums and websites gave amount of employed archaeologists per December 2013.

⁴¹ Of which 59 refer to 2013.

⁴² Non-active from the employees' survey to *permanently* employed archaeologists from the employers' survey

3.3 Previous surveys and number of graduated students in the last 13 years (2001-2013)

In 2001, Gørill Nilsen published a study of the archaeological labour market, in which she estimated that 312 archaeologists had graduated between 1971 and 2000. She calculated that Norwegian archaeology had in the vicinity of 331 positions available and that, including graduate students, approximately 581 individuals would be competing for these jobs.⁴³ Since then, there has been a vast development in Norwegian archaeology, mainly in the cultural heritage management sector. From 2001 until 2013, a total of 745 students graduated with a postgraduate degree, an increase from an average of 19,7 students per year in the decade 1991-2000 to 58 in 2001-2010.

In total, this indicates that 1107 archaeologists have graduated with an archaeological Master's degree in Norway. The numbers can be seen in Table 5 and Figure 4. As in university studies in general, the increase in the amount of students has been enormous and almost 340 times as many archaeology students graduated in 2001-2010 as in 1961-1970 (see Figure 5).

	-> 1960	1961-1970	1971-1980	1981-1990	1991-2000	2001-2010	2011-2013
UIO	30	8	31	17	57	218	69
UIB	3	9	23	29	66	149	35
UIT			4	11	54	91	11
NTNU					20	121	51
Total	33	17	58	57	197	579	166

Table 5 Number of students graduated with postgraduate degree in Norway. Exclusive PhD.
Source: Nilsen 2001, DBH.

⁴³ Nilsen 2001, 91, Tabell I, Tabell V

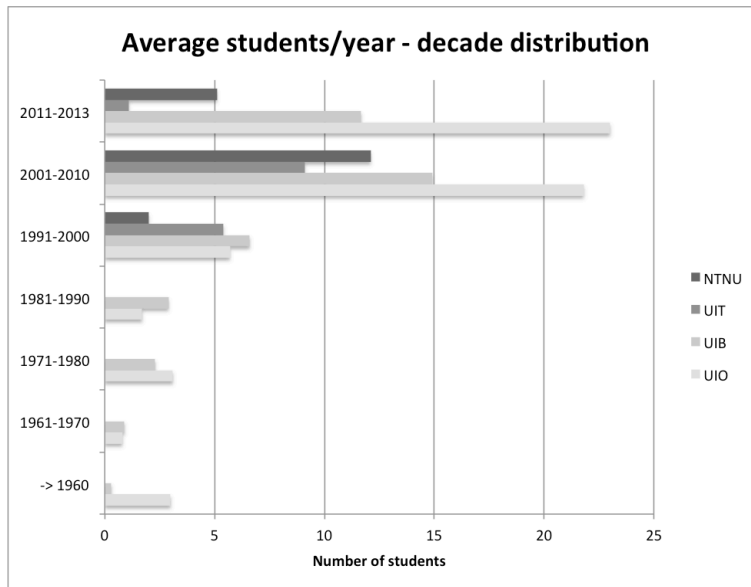


Figure 4 Amount of archaeology students (average) per decade. Source: Nilsen 2001, DBH

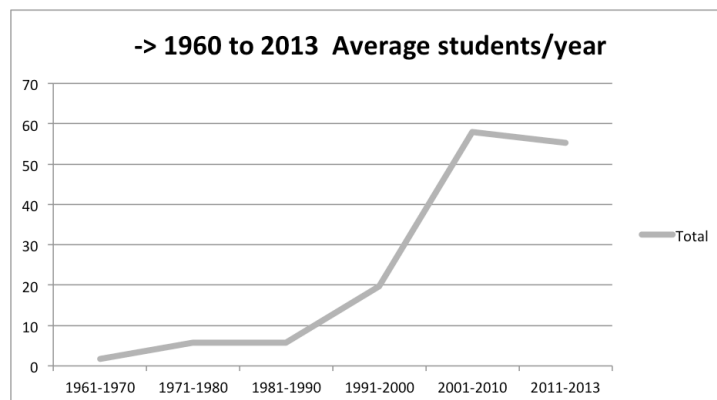


Figure 5 Distribution of archaeology students (average) per decade. Source: Nilsen 2001, DBH

3.4 Validity of estimates

As seen in Figure 2 and Figure 3, the distribution of permanent and temporary employees are almost exactly opposite in the two estimates above. This suggests that at least one of the data sets used in the calculations is not be representative. There can be several problematic situations that have influenced the results either way. Because these data are generated by people, the error is most likely to be found in the possible misrepresentation of a group of archaeologists, such as a certain age category, non-active or temporarily employed, or a category of data reported.

The yearly equivalent worked by each temporary archaeologist in estimate 1 and the proportion of temporarily employed archaeologists in estimate 2 both rely on representative data in the employees' survey. Biased data could potentially result in estimates very far from reality. As it is difficult to estimate the total amount of archaeologists in a labour market where employees have up to 6 employers in the course of a year, and will move far for a short time when necessary,⁴⁴ the validity of the calculations have to be considered. Different arguments regarding representativeness of survey population will be discussed below.

3.4.1 Representativeness of employees' survey

3.4.1.1 Representativeness based on period of education

For a trade union, it is often harder to reach the unorganised, which typically consist of the youngest members of a profession. To check for misrepresentation of the youngest archaeologists in the present material, one can refer to the number of recently educated archaeologists. If the proportion of respondents that were educated from 2001 onwards matches the proportion of total archaeologists educated within the same time span, the respondents should be representative. The same should occur in the respondents that were educated until 2000. These data were not queried, and must be deduced from other data sets.

When studies are began immediately after high school and completed in the assigned 5 years, 24 years would at present be the standard age for graduating with a master's degree.⁴⁵ If this is the fact for archaeologists, 47 % of the respondents would have been students in the years 2001-2012. This is approximately concurrent with the total median age of 35 that presented in the survey results, as the respondents who were 36 in 2013 would have been 24 in 2001. However, when considering that 745 archaeologists – 67 % of all educated archaeologists in

⁴⁴ See 5.2.4 and Schenck 2013, 41

⁴⁵ 3 of 4 respondents of 25 were not students. A Norwegian postgraduate degree would take 5 years to complete from the age of 19, which is when high school is normally completed. However, it is very common to take a gap year before entering universities.

Norway, and 70,5 % of those educated since 1970⁴⁶ – graduated in this period with a postgraduate degree, the proportion of respondents educated since 2001 should be about 20 % larger to be representative.

However, 24 is not a credible average age limit with regard to student/non-student for Norwegian archaeologists, as postgraduate students up until 2007⁴⁷ tended to spend more

Graduation age	2001-2012	1970-2000
24 years	21 %	37 %
27 years	26 %	31 %
28 years	27 %	22 %

Table 6 Proportion of total student mass pre- and post-2001 among respondents at given age thresholds (survey range)

than their allocated years as postgraduates⁴⁸ due to large amounts of fieldwork, and since it is very difficult to finish a postgraduate degree any sooner in practice. This would make 24 more suitable for a *minimum* age threshold. In general, if a student graduates at an average age of 27, an approximation of 67 % of the respondents would have been students in 2001-2012: the ideal proportion. This is concurrent with the ideal ratio pre- and post-2001. If

the age threshold is raised further, to 28, about 70 % of the respondents would have been studying between 2001 and 2012.

If the 27 year threshold is maintained, the survey will have reached about the same proportion of archaeologists educated pre- and post-2001. Comparisons of reach within age thresholds between pre- and post 2001 students are seen in Table 6.

It seems likely that the employee's survey has yielded representative results if about 67 % of the population were in fact educated from 2001 onwards. From experience, 27 should a realistic estimate for average graduation age in the last 12 years, but it is important to note that it is likely to be lowered in the years to come because of conversion to the Bologna system.⁴⁹ 27 years should not be considered a viable age threshold for graduation in the years to come without thorough analysis. Although it must be assumed that student age has varied since 1970, the younger age categories seem to not be misrepresented in the results.

⁴⁶ Respondents who were 67 (retirement age) in 2013 would have been 24 in 1970.

⁴⁷ Last possible graduation of postgraduates of the previous degree system. The Master program demands a steady rate of production and allows for maximum one additional year for a postgraduate degree of 2 years.

⁴⁸ See Glørstad (2006, 29). According to Nilsen 2001, the number of registered postgraduate students in 2001 was 264. Only 38,3 % of these students completed their studies by 2003, which would have been the normal time to complete a hovedfag. It was, however, reported by Statistics Norway that the normal completion was only achieved by 36,9 % of all Norwegian students in 2003-2004. Grolid 2011. This has resulted in a higher average age for postgraduate graduation overall.

⁴⁹ Master and Bachelor degrees.

Regarding archaeologists educated abroad, this concerns only 34 individuals.⁵⁰ These respondents must be assumed to fall within the aforementioned 4 % variation (about 41 archaeologists per estimate 2) from the total population of archaeologists.

As the younger archaeologists appear to be well represented in the survey population, this raises the question whether the older age groups have been misrepresented. However, the above discussion should also lead to the deduction that the older age categories have acquired the appropriate proportion, and are therefore likely to be representative. In addition, the older brackets of the general, Norwegian work force show a higher degree of trade union organisation than the younger.⁵¹ This makes the use of members' lists and trade union representatives seem plausible as recruitment strategies for the older age categories of archaeologists.

3.4.1.2 Representativeness based on ratio of temporary/permanent employment

The median age of permanently employed archaeologists as found in the employees' survey is 41 years old, and the youngest permanently employed are 29 years old. The older age brackets seem to be well represented in the third of the population that hold a permanent position. In comparison, the temporary employed have a median age of 31,5 years, with the youngest at 24, and 38 respondents (of 169) under 29 – the minimum for permanently employed. It should therefore be assessed whether there is a data error related to the temporary/permanent employment situation.

A common factor for Norwegian temporary workers with a higher education is their low degree of trade union organisation compared to permanently employed.⁵² From this, one would expect a low representation of temporarily employed, and hence the employees' survey estimate (estimate 2) would demand an even higher proportion of temporarily employed archaeologists.

Archaeologists have in recent years seen an extensive debate on the use of temporary employment in archaeological contracts take place. This is partly related to the official establishment in 2010 of a political subgroup to NAR that has formed as a members' group for temporarily employed archaeologists, MAARK.⁵³ The association has had an extensive programme of lobbying and campaigning since its very beginning, and is now established as consultative body regarding employment issues for hearings in the cultural heritage

⁵⁰ See Figure 10

⁵¹ Nergaard 2010, Tabell 3.5

⁵² Nergaard and Svalund 2009, 13, 44

⁵³ *Fagpolitisk forening for midlertidig ansatte arkeologer*. Initially established in 2008 as an independent organisation.

management sector. The member's rate has increased from 85 in 2010 to around 200 in 2014, and has recently increased their reach beyond its members through articles in several national media. There is reason to believe that MAARK alone has increased the awareness of employment issues and temporary employment amongst all categories of archaeological employees, and it is conceivable that a high number of temporarily employed archaeologists are zealous about the issue. In addition, NAR has had a steady focus on temporary employment for the last half decade, in general and in academia. This has led to multiple campaigns that have targeted both employers and employees, which includes union representatives in cultural heritage management. Based on this, it should be expected that the representation of temporarily employed archaeologists is broad enough in the survey material.⁵⁴

Since the common bias factors of age and temporary employment has been investigated, it seems likely that the population of the employees' survey is representative of Norwegian archaeologists as a whole, with the possible exclusion of the unknown factor of non-active archaeologists. Because Estimate 2 is based entirely on this material, the above discussion automatically leads to the conclusion that this estimate is valid.

3.4.2 Potential errors in Estimate 1

As the employees' survey seems to hold representative material for the archaeological population as a whole, the discrepancies between the two estimates must be sought elsewhere. It is not possible to identify the errors exactly, but there has been a discrepancy between reported workload from employers and employees also in previous surveys.⁵⁵ This discrepancy is also seen in the reported workload in this survey compared with an official report from the Museum of Cultural History,⁵⁶ which reports a higher amount of temporarily employed, non-academic archaeologists than the institution reported for this survey. This is the largest employer in the archaeological labour market, and their own numbers amount to an average of about 0,33 yearly equivalents per temporary archaeologist, not the estimated average of 0,72 from the employees' survey. It is likely that the usage of yearly equivalent is not a good measure for counting temporarily employed archaeologists. Previous surveys have also confirmed that as many as 31 % of temporarily employed personnel may be working without a valid contract.⁵⁷ At the extreme, this could hypothetically skew the numbers with

⁵⁴ This can be confirmed by the numbers: if temporary archaeologists were underrepresented, the estimations of archaeologist population is likely to be higher than in estimate 2 (1032 archaeologists), as it would indicate that there were even more archaeologists in Norway – which must be considered unrealistic compared to the 1107 archaeologists that were ever educated in this country.

⁵⁵ Schenck 2012, 66, 68

⁵⁶ Groseth et al. 2013

⁵⁷ Schenck 2012, 58

almost a third, which could result in the addition of 73,8 yearly equivalents or almost 100 additional temporarily employed archaeologists.

In addition to this problem, the estimation of additional archaeologists at employers that did not respond was very conservatively performed, and the amount of archaeologists working at these may be substantially higher. University institutions, who are responsible for most Norwegian excavations, have in recent years also failed to provide official numbers to the compulsory statistical database, DBH,⁵⁸ for the positions typically filled by field archaeologists. In addition, it is important to note that temporarily employed archaeologists span wider than only field personnel, and the two are sometimes mistakenly confused in the discourse.

3.4.3 Final comments on workforce estimates

If considering Estimate 2 and the final approximation of 1032 archaeologists in the 2012 workforce, it may seem unlikely that only 7 % of archaeologists have retired or left the archaeological labour market completely.

If the non-active archaeologists are taken out of the estimate, this number rises to 17 % which may still seem low. It must nevertheless be remembered that approximately 2/3 of presently active archaeologists studied between 2001 and 2013 and are likely to be younger than 40-45 years. If individuals who studied in 1970 and before are expected to have retired, these only amount to 40 archaeologists or 4 % of those ever educated in Norway. It should also be expected that all archaeologists working before 1960 amount to more than the 33 who were officially educated. This would indicate that the earliest numbers are less restrictive than they may appear.

Another perspective can be reached from the statistical conjuncture reported for the construction industry since 1998, which is seen in Figure 6. This reflects Norwegian development in the period, and can be said to reflect the amount of work found in the archaeological labour market, however a few years after. It is clear that development is still on the rise, and only a minor downturn was seen as a consequence of the global financial crisis (2009 – 2011 in the chart). This must necessarily factor into the total calculation of number of

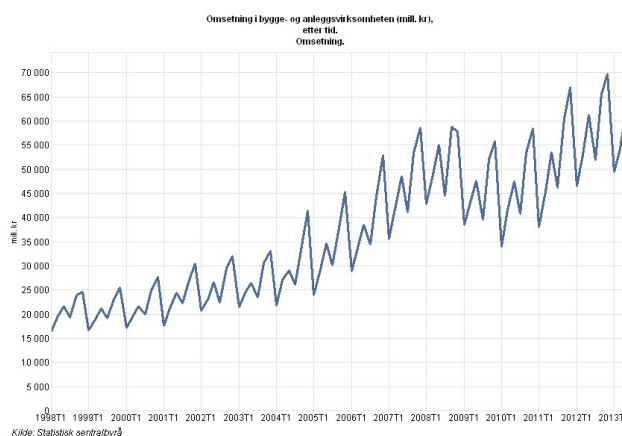


Figure 6 Development in the construction industry since 1st quarter of 1998. Source: Statistics Norway.

⁵⁸ Database for Statistics on Higher Education

archaeologists since 2001 and Nilsen's estimate of the then 581 active archaeologists.⁵⁹ If this was an accurate approximation and the increase in labour force correlated to the growth in the construction industry, this would equal 1259 archaeologists at present. This is an unlikely number considering that the total, ever educated number of archaeologists is 1107, but does provide perspective on the estimations, and makes the likelihood of 1032 individuals connected to the Norwegian, archaeological labour market seem less extreme.

⁵⁹ Nilsen 2001, 100

4 Norwegian archaeologists: basic data

4.1 Gender and age

The employees' survey gave a gender distribution of 62 % women and 38 % men amongst the respondents, and a median age of 35. The gender distribution across age categories up to 68+ years⁶⁰ is displayed in Table 7 and Figure 7. It becomes clear that women dominate the younger archaeologists, up until 40 years. After this, men become dominant, but the number of respondents is low for each category, and the results are not conclusive. In total, there are 19 men over 45 years in the data material, and 15 women.

The average age for the female respondents is 36 years, with a median of 34 and mode of 30. This means there are a substantial amount of young women among the respondents, and that the average is drawn up by a minority of older women. For male respondents, this also becomes prominent, with an average of 38 years, and a median of 36.⁶¹

Age	Women	Men
20-24	1	0
25-29	36	22
30-34	50	25
35-39	44	19
40-44	17	11
45-49	9	11
50-54	5	5
55-59	2	3
60-64	5	3
65-67*	2	2
>68	0	1
SUM	171	102

Table 7 Age distribution per category and gender

⁶⁰ The categories match the annual Labour Force Survey by Norway Statistics. *The category 65-67 is cut by the normal retirement age of 67 years.

⁶¹ The mode value of 27 is not representative, as almost all of the observations are in the very youngest bracket in the material.

4.2 Seniority within archaeological work

As well as in age, the respondents are generally young in their profession, with a median seniority of 8 years of archaeological work. Since the profession is now dominated by women, the gender was also added to the analysis. As can be observed in Figure 8, whilst women are generally of a low seniority, men are well dispersed amongst all seniority levels. This may indicate that the domination of the female gender is a newer trend.

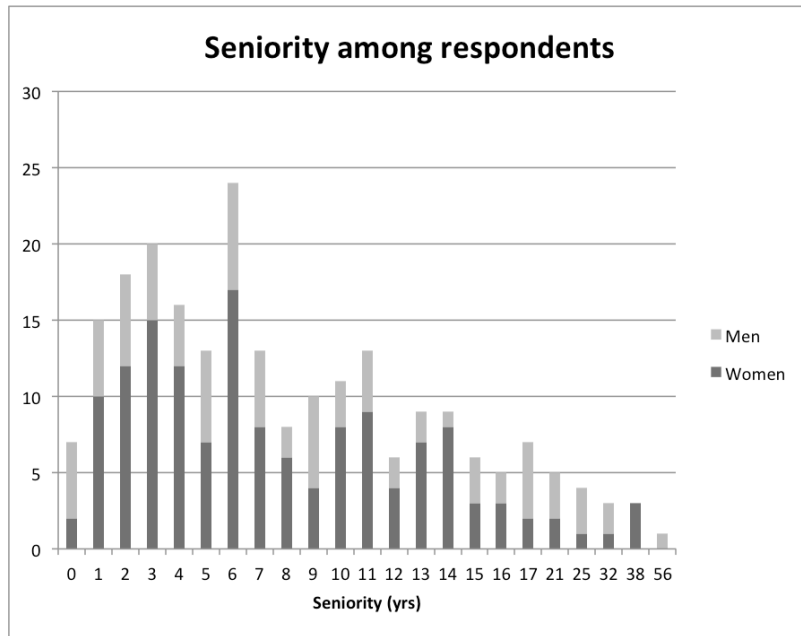


Figure 8 Seniority in archaeological work

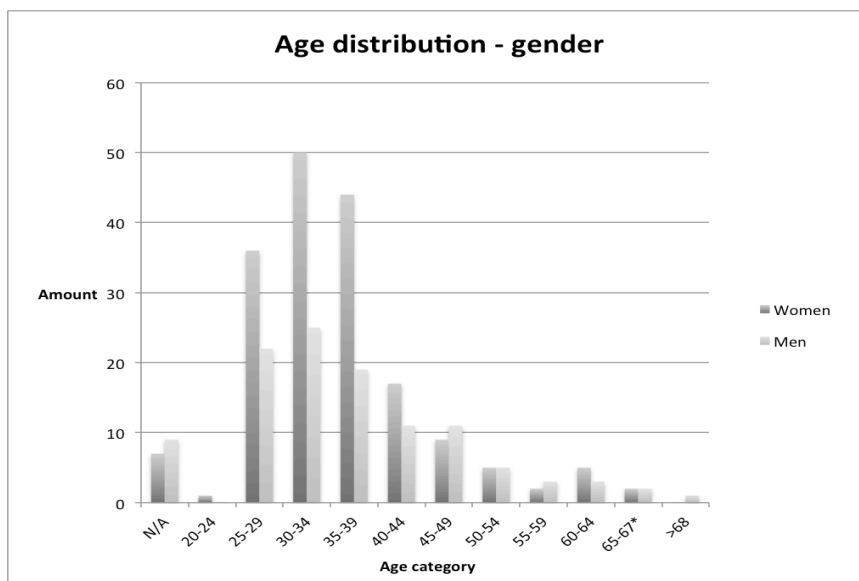


Figure 7 Gender distribution across age categories

4.3 Disability status

There are very few disabled individuals among Norwegian archaeologists. The employers were queried about the amount of disabled employees employed in 2012 who required adjustments in the workplace, as they are not allowed by law to ask for a person's disability status. Only 15 employers responded to this question, a response rate of 41,6 %. The question was queried separately by e-mail instead of in the digital survey. The total response was 1 out of a reported 125 permanent employees and an unknown, but presumably c. 1,5 times as large temporary labour force. This equals about 0,32%,⁶² but it should be noted that this percentage is not likely to be representative for two reasons: One is the high fluctuation of temporary staff which are employed too briefly to have the time to make any claims, and one is the tendency to under-report illness.

A Swedish study from 2009 has shown that temporary workers indeed do appear healthier than permanent workers, based on numbers of absenteeism.⁶³ In addition, the *healthy worker effect*, an over-representation of healthy employees, is likely to be a factor in archaeological, temporary employment. The effect has been documented in several, European studies of temporary employment and health conditions. It relates to the healthier employees seeking work to begin with and the less healthy leaving the work force sooner (*wearing off of selection*), a selection of healthy vs. non-healthy workers for employment by the employer (*healthy hire effect*), and the higher survival rate of healthy workers in the labour market (*healthy worker survivor effect*).⁶⁴ In total, this makes it hard to calculate the real number of disabled archaeologists in the Norwegian labour market.

⁶² See section 3.1 and 3.2. The actual number of temporary employees was not queried in the employers survey.

⁶³ Amilon and Walette 2009

⁶⁴ Virtanen et al. 2005

4.4 Country of origin and education

One of the core areas in the survey was to investigate in which countries the archaeologists originate and where they received their education. For Norwegian archaeologists, this is summarised in Figure 9 and Table 8.

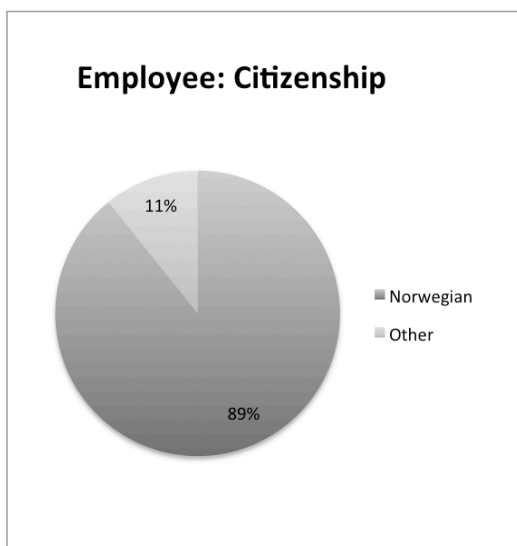


Figure 9 Citizenship/country of origin of employees

Country of origin	Number
Norway	255
Denmark	10
Sweden	3
Iceland	1
Germany	4
UK	3
Ireland	1
USA	2
Canada	1
Australia	1
N=	272

Table 8 Citizenship/country of origin of employees

The majority are Norwegian, but 11 % of the respondents originate from other countries, mainly in northern and western Europe. The two other Scandinavian countries are by far dominant with 10 Danish employees and 3 Swedish.

Concerning education, most respondents (87,5 %) received their education in archaeology in their country of origin (see Figure 10). 17 archaeologists did, however, study archaeology in another country, amongst them the most common combinations are Norwegian citizens studying in the UK (4) and Danish citizens studying in Norway (3). Four archaeologists received their education in two or more different countries. Only one employee did not receive an official archaeology education. This respondent did not originate in Norway.

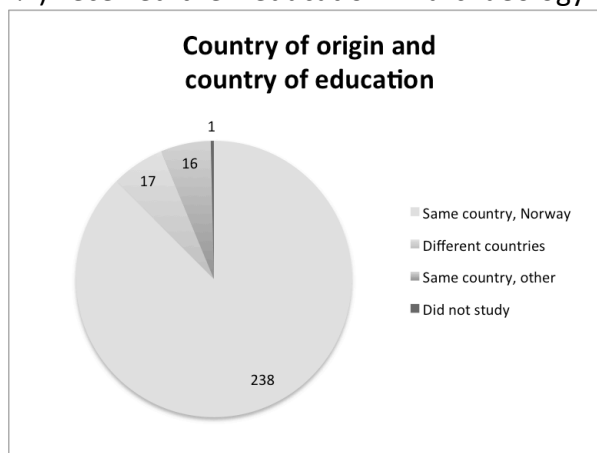


Figure 10 Country of origin in relation to country of education

4.5 Levels of education

Norwegian archaeologists generally hold a high level of education. Only one reported to not hold a degree in Archaeology, but this respondent did not specify educational level. The distribution of remaining respondents can be seen in Figure 11 and Table 9. Only 6,6 % had a lower⁶⁵ university degree, with 85,1 % having completed a higher⁶⁶ university degree, and 8.3 % a PhD.⁶⁷ None reported having a lower educational level than a lower university degree.

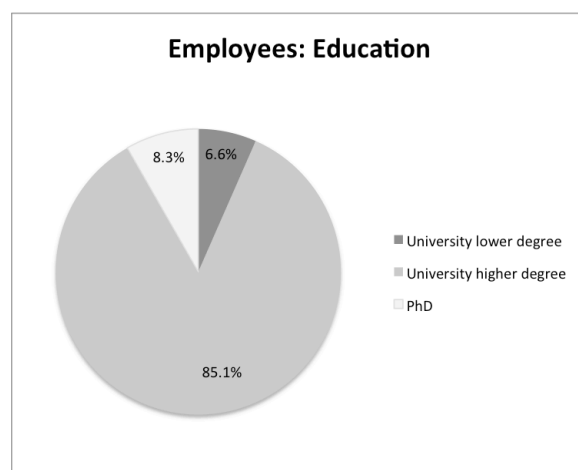


Figure 11 Educational level of employees

Level of education	Number
PhD	24
Higher education, higher degree (MA or equiv.)	246
Higher education, lower degree (BA-level)	19
N=	289

Table 9 Educational level of respondents. Employees survey.

⁶⁵ Bachelor's, cand. mag, grunnfag or corresponding degree

⁶⁶ Master, hovedfag, magistergrad eller tilsvarende

⁶⁷ PhD is the highest possible education in Norwegian academia

4.6 Sector distribution of employees

As stated in the introduction, Norwegian archaeology operates within three sectors: the state has the overall responsibility for the protection of cultural heritage, and the university museums take care of most of the excavation activity. The municipal sector includes the counties, which perform preliminary surveying, monument and site maintenance and local public outreach. Lastly, the private sector consists of museums and a private research institute with local departments, of which most perform excavations in addition to their other tasks.

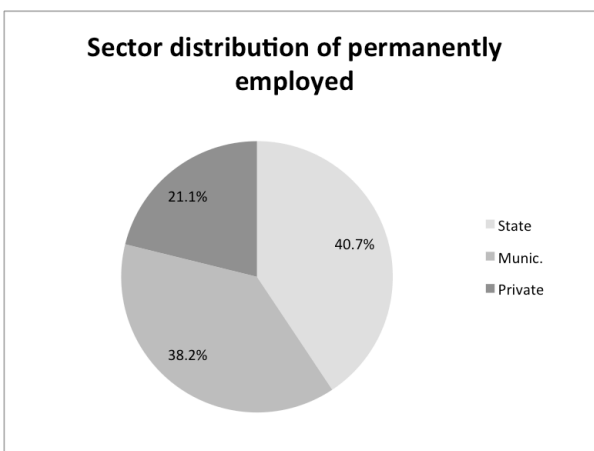


Figure 12 Sector distribution of permanently employed archaeologists. 2012. Employees. respondents), and so the results are presented in Figure 12 and Figure 13.

Permanently employed archaeologists are almost equally divided between the state (40,7 %) and municipal (38,2 %) sectors. The remaining 21,1 % work in the private sector (see Figure 12).

The employees were queried about in which sector(s) they worked in 2012. Very few responded more than one sector (7 of 333

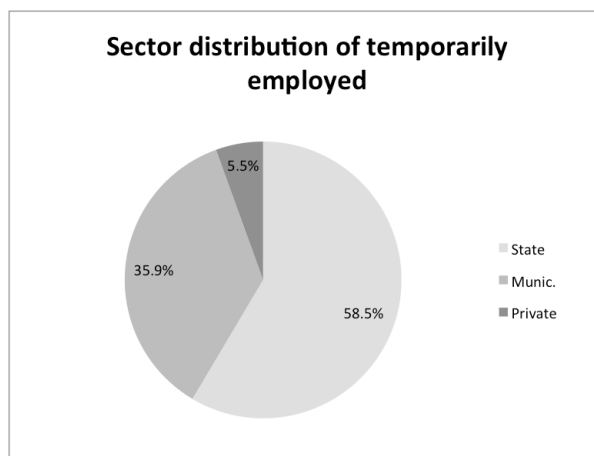


Figure 13 Sector distribution of temporarily employed archaeologists. 2012. Employees.

The temporarily employed are distributed quite differently, as can be seen in Figure 13. A majority of 58,5 % worked in the state, whereas a little over a third (35,9 %) were employed in the municipal sector. Only 5,5 % of the temporarily employed respondents worked in the private sector in 2012.

Based on these numbers, it may seem like the lowest need for temporary labour was found in the private sector in 2012. This appears to be confirmed by the distribution of permanent and temporary employment in the different sectors in 2012 (see Figure 14). These results shed some light on the employees' response. However, the numbers should not be directly referred, as the municipal sector is c. 22,7 % larger in yearly equivalents than the state sector, and a whopping 466,3 % larger than the private sector.

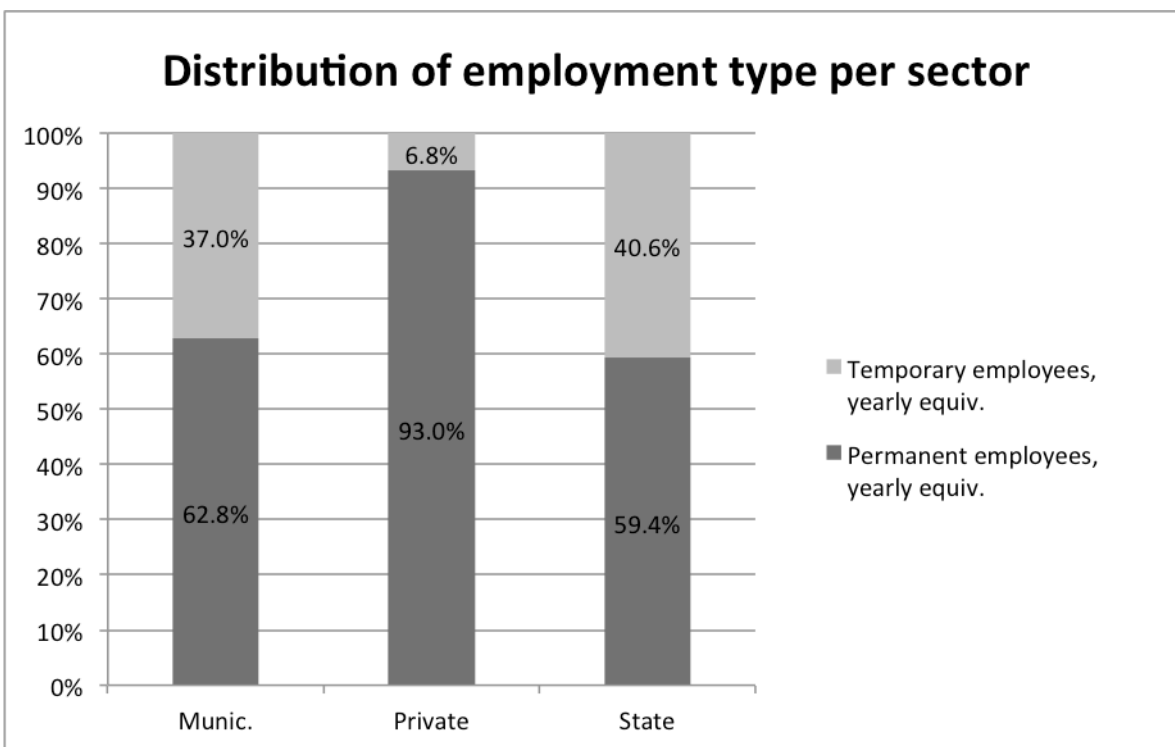


Figure 14 Distribution of employment type per sector. 2012. Employers.

4.7 Type of archaeological work

The employees were asked with which type of archaeological work they were working at the time the survey. Multiple answers were possible.

In total, 25,2 % of the respondents were employed in research. Over two thirds of the respondents (72 %) had worked within cultural heritage management, 14,7 % were involved in public outreach and 8 % were working with leadership or in an organisational position. The division between permanently and temporarily employed is shown Table 10 and in Figure 15.

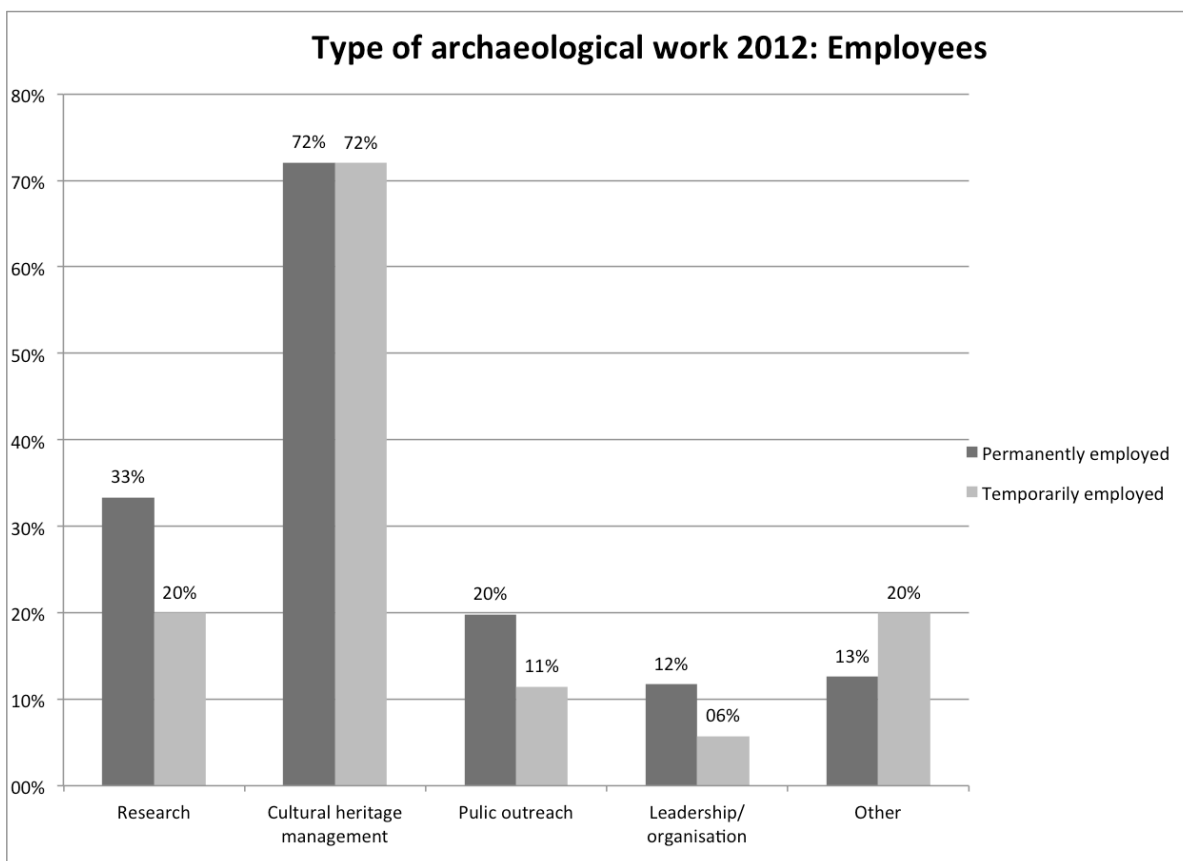


Figure 15 Type of archaeological work in at time of survey as reported by the employees. N=286

In the 'Other' category, most could be grouped under one of the four main categories. 5 respondents listed teaching, 2 responded that they were involved with impact assessments, 2 were working with documentation aspects, 4 worked specifically with museum collections and 1 was working as a consultant. 6 respondents were unemployed at the time of the survey.

Type of work	Permanently employed	Temporarily employed
Research	33,3%	20,0%
Cultural heritage management	72,1%	72,0%
Public outreach	19,8%	11,4%
Leadership/organisation	11,7%	5,7%

Table 10 Type of archaeological work at time of survey, by employment type. N=286

4.7.1 Type of archaeological work: Employers

The employers were asked to categorise the type of archaeological work that goes on in their institution. Multiple responses were possible. The results are presented in Figure 16.

80,6 % of the institutions replied that they were involved with cultural heritage management, whereas 75 % were working with public outreach and 47,2 % were involved in research. 16,7 % of the respondents were in institutions providing education.

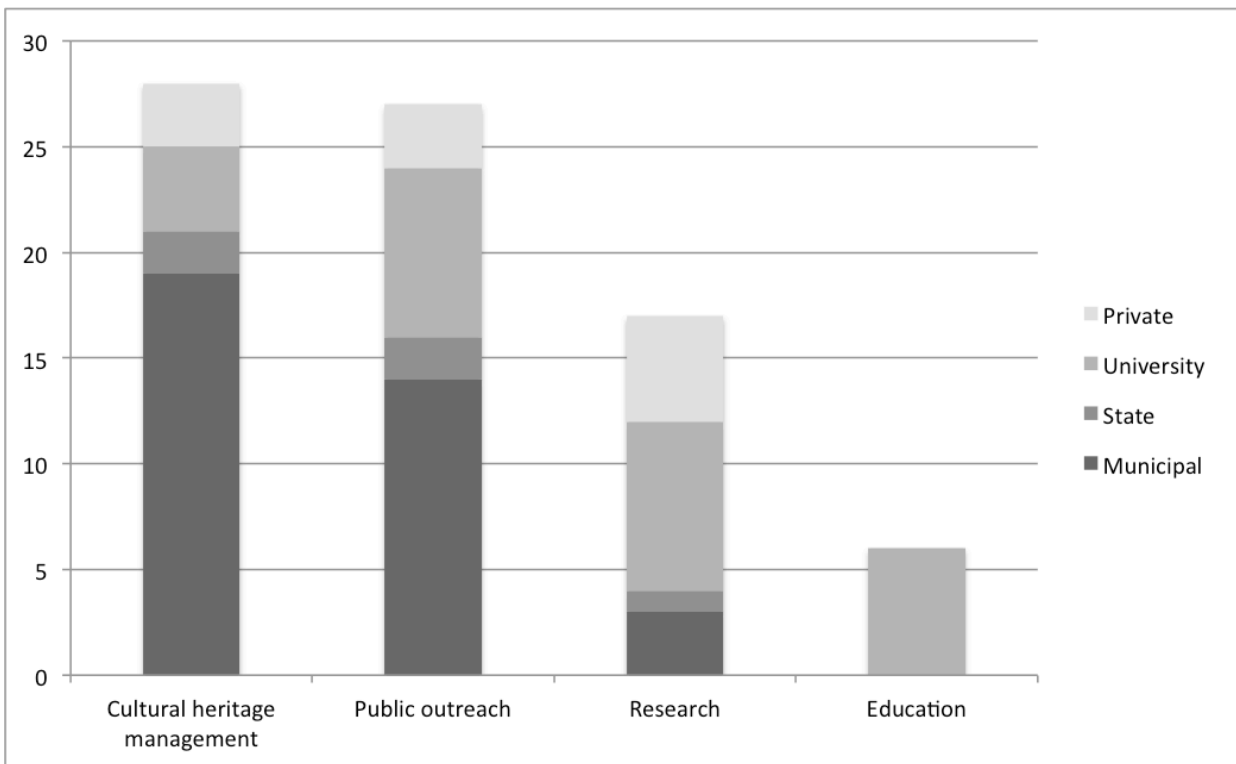


Figure 16 Type of archaeological work divided by sector. N=36

5 Employment

5.1 Full time and part time employment

This question was directed to the employers, who reported that a total of 91,7 % of their employed archaeologists were on full-time contracts.⁶⁸ The distribution was slightly skewed in relation to gender, as can be seen in Table 11 and Figure 17.

	Full time	Part time	N=
Women	89,7 %	10,3 %	204
Men	93,5 %	6,5 %	217

Table 11 Distribution of full time and part time employees per gender

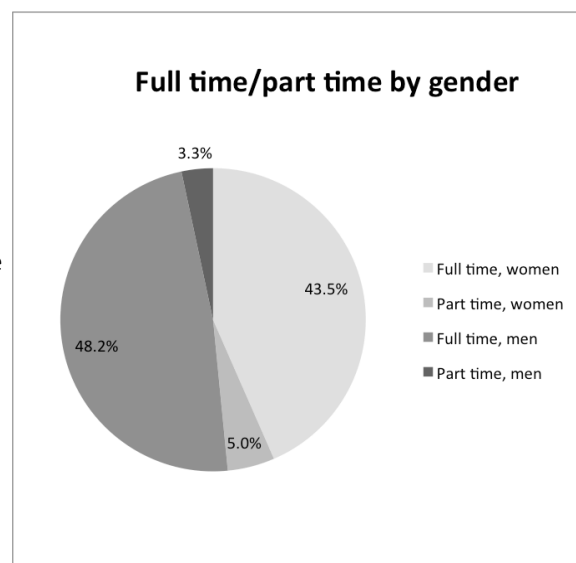


Figure 17 Full time and part time distribution by gender

The near equal gender distribution of full- and part time employees is not in correlation with the trends seen in the Norwegian population as a whole, where the amount of women in full time positions is 59,4 % and the amount of men is 85,7 %.⁶⁹ It becomes clear that very few female archaeologists work part time compared to women in the general labour market.⁷⁰

In total, only 10 % of archaeologists work part time, compared to 26,5 % of the general working population.

⁶⁸ Full time was defined as any position with a contractual agreement of less than 100 % (37,5 h/w). This is in accordance with the definition of the Basic Collective agreement in the state 2012-2014 § 2.10. The definition did not discriminate between permanent and temporary employees.

⁶⁹ Statistisk sentralbyrå/Modig 2013, Tabell 212

⁷⁰ Statistisk sentralbyrå/Modig 2013, Tabell 204

5.2 The nature of contracts

5.2.1 Permanent or temporary employment

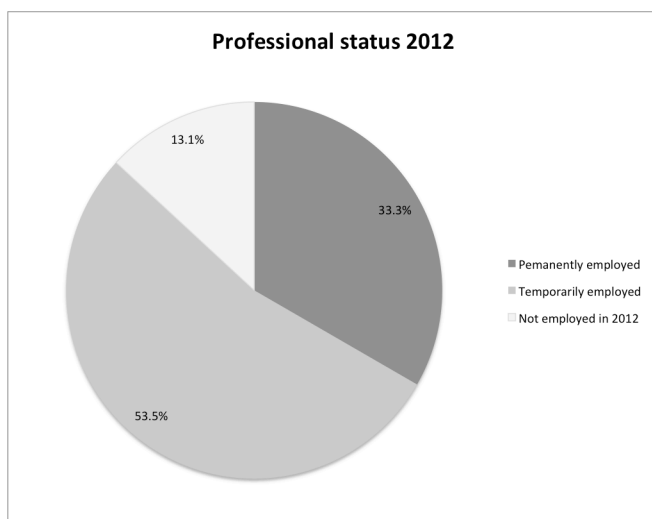
The issue of permanent/temporary employment has been widely discussed in the last few years, both in NAR and in the general political discourse,⁷¹ and temporarily employed archaeologists have their own association of interest within NAR – *MAARK*.⁷² The matter was therefore thoroughly addressed in the survey. However, the questions had to be formed differently in the two questionnaires, and so the type and amount of contracts were addressed in the employers' survey, while the employees' survey included questions about contract status in 2012, number of contracts and contract length. The results will be discussed in the paragraphs below.

⁷¹ See discussion in chapter 3. about size of work force.

⁷² Association for temporarily employed archaeologists

5.2.2 Distribution of permanently and temporarily employed in 2012

The employees' survey showed that 53,4 % of all respondents were temporarily employed in 2012, while 33,1 % were permanently employed and 13,4 % were not working as archaeologists that year. The distribution can be seen in Figure 18. Of the respondents who were working, 61,7 % were in temporary and 38,3 % in permanent contracts. The number of temporarily employed by far exceeds the levels of the general, Norwegian population, in which only 8 % were on temporary contracts in 2012, a level that has been stable since 1999.⁷³



Most temporary contracts in Norwegian archaeology are fixed term contracts, but a survey from 2010 showed that as many as 1/3 of temporarily employed archaeologists had been working without a contract at some course during the year,⁷⁴ which may indicate that the actual number of employment situations could have been higher.

Figure 18 Professional status amongst respondents in 2012

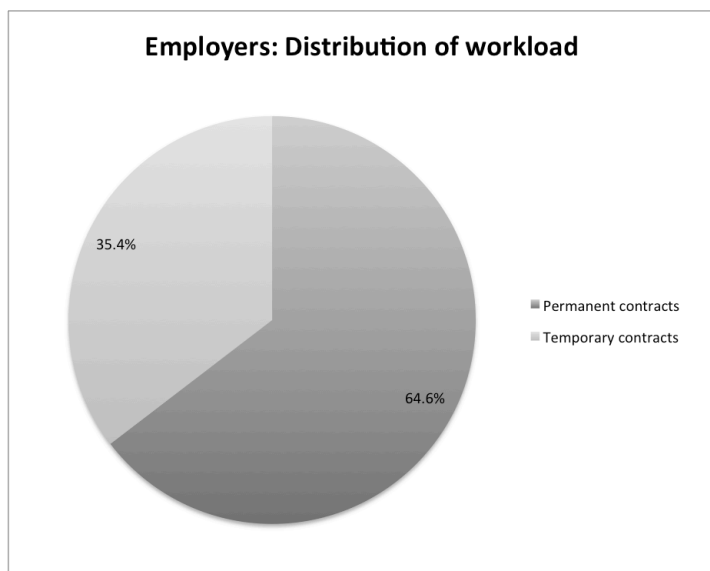


Figure 19 Distribution of workload per contract type in 2012, employers

5.2.3 Distribution of permanent and temporary workload at archaeological employers

The amount of workload, reported in yearly equivalents from 2012, was queried in the employers' survey. The results are displayed in Figure 19. More than a third (35,4 %) of the workload is performed by employees in temporary contracts. A survey amongst temporarily employed archaeologists and their employers from 2010⁷⁵ showed that the labour

⁷³ Statistics Norway, Arbeidskraftundersøkelsen tabell 05611.

⁷⁴ Schenck 2012, 58

⁷⁵ Schenck 2012

contracts mainly stated the legal grounds of extraordinary needs.⁷⁶ Phone interviews from 2012 among NAR representatives from various archaeological employers revealed that the most common reasoning for using temporary labour is

seasonal work; project work, and external source of funding. The distribution of workload should be seen in relation to the distribution of month-by-month activity amongst the temporarily employed respondents in 2012, which will be examined in 0.

5.2.3.1 Number of permanent and temporary contracts per yearly equivalent: Employers

A total of 274 permanently employed were registered with the responding employers in 2012, providing a workload of 263 yearly equivalents. This creates an average of 0,96 yearly equivalents, or a workload of **11,5 months/49,9 weeks** per permanent contract.⁷⁷ For permanently employed, one yearly equivalent of work is normally performed by one person in one contract.

The same year produced a total amount of 847 temporary contracts divided by 147,5 yearly equivalents of work. The resulting average workload per contract was 0,17 yearly equivalents, or a workload of 2 months/9 weeks per contract. In other words, it would take 5,7 contracts to fill up a yearly equivalent. A comparison is seen in Table 12. The distribution of number of contracts per yearly equivalent amongst the smaller employers can be seen in Figure 20.

⁷⁶ Working Environment Act § 14-9 and the Civil Service Act § 3.2

⁷⁷ The translation into months and weeks for comparison with workload of temporary contracts, which are usually counted in weeks.

	Average, months	Average, weeks	N=
Permanent contracts	11,5	49,9	263
Temporary contracts	2	9	147,5

Table 12 Average workload per contract type in 2012. N= yearly equivalents

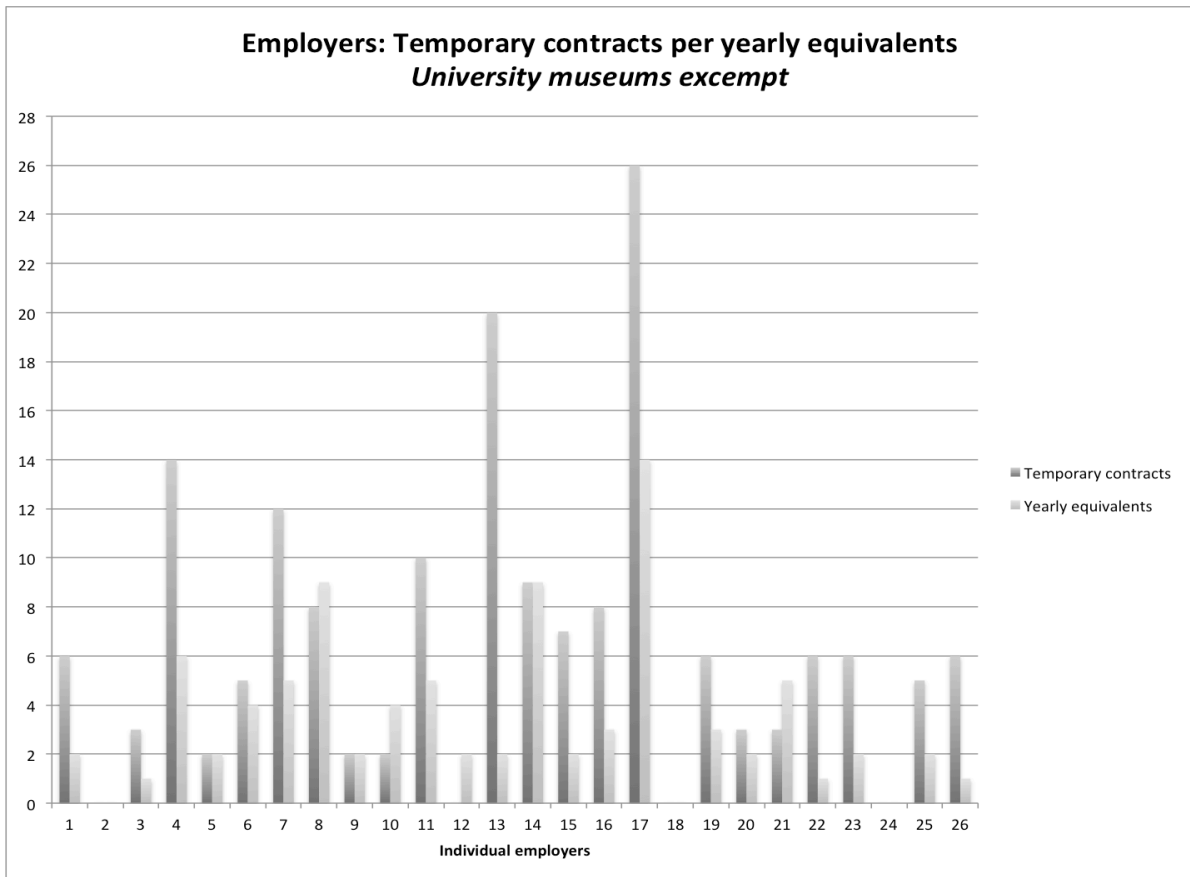


Figure 20 Amount of temporary contract per yearly equivalent. Smaller employers. Each pillar set amounts to one employer. Equal sized bars indicates one contract per yearly equivalent, the norm for permanently employed archaeologists.

5.2.4 Temporary contracts: average contract length and number of contracts in 2012

As seen in 5.2.3.1, 847 temporary contracts were created at the responding employers in 2012. These contracts totalled a workload of 147,5 yearly equivalents, or 9,1 weeks (0,174 yearly equivalents) per contract. This number is lower than the latest years' average contract length by approximately 2,5 weeks.⁷⁸ However, the responding employees report a substantially higher average workload per contract, with 19,3 weeks (0,22 yearly equivalents). This is probably due to the substantial skewing caused by the yearlong or longer contracts in the data material.

As will be displayed below, 19 weeks is not a representative contract length for most temporary contracts, and so an alternative calculation was made, in which all contracts longer than 50 weeks⁷⁹ were excluded. This was done due to the very high frequency of short-term contracts in Norwegian archaeology. The longest contracts proved to draw the average up by 8 weeks, and the average contract length for contracts up to 50 weeks of length, was 11,2 weeks (0,215 yearly equivalents), which would lead to **4,6 contracts** per year. This is a higher average than previous years, but the proportion of yearlong contracts is also higher. However, it should be noted that only 34 % of the temporarily employed respondents actually worked for an entire year. Together, this points to the considerable variation in contract lengths in Norwegian archaeology.

	2010	2011	2012
Average contract length*	11,5 weeks	11 weeks	11,2 weeks
Median contract length*	8 weeks	10,8 weeks	--
Year-long or longer contract	17,4 %	10,5 %	20,5 %
Average total weeks worked per year	39,8 weeks	35,7 weeks	37,6 weeks
Average no of contracts per year	4,3	3,3	4,6

Table 13 Contract trends since 2010. Comparison. *Year-long contracts exempt

⁷⁸ Schenck 2013, Tabell 2

⁷⁹ One year including obligatory, non-transferrable vacation. (Most temporary archaeologists will not have the rights to full vacations.)

An average of 11,2 weeks is approximately the same level as reported by temporarily employed archaeologists in 2010 (11,5 weeks) and 2011 (11 weeks). Due to an error in the data assembly a real median was not available, but an alternative calculation gives a maximum median contract length of 12,6 weeks for 2012.⁸⁰

Regardless of values, the large variation of real contract lengths⁸¹ show that both median and average values are hypothetical representations of contract lengths in Norwegian archaeology. This will be detailed in the next paragraph. Nevertheless, the numbers in Table 13 provide a general impression of trends from year to year when variables are viewed in isolation.

5.2.5 Shortest and longest temporary contract lengths in 2012

As a duplication of a question posed in 2010, the temporarily employed archaeologists were asked about the duration of their shortest and longest contracts in 2012. Rather than the average contract length, this will give a more representative image of the situation in Norwegian archaeology.

5.2.5.1 Shortest contract

The shortest contract lengths reported varied from 1 day to over 5 months in length. The results are seen in Figure 21.

Almost a third (30,1 %) experienced a contract of 1 week or less, and 45,9 % of 2 weeks or less. Only 17,3 % experienced a shortest contract of 3 months or longer. These results highlight the discrepancies between the average contract length and real contract lengths: If the average of 11,2 weeks was in

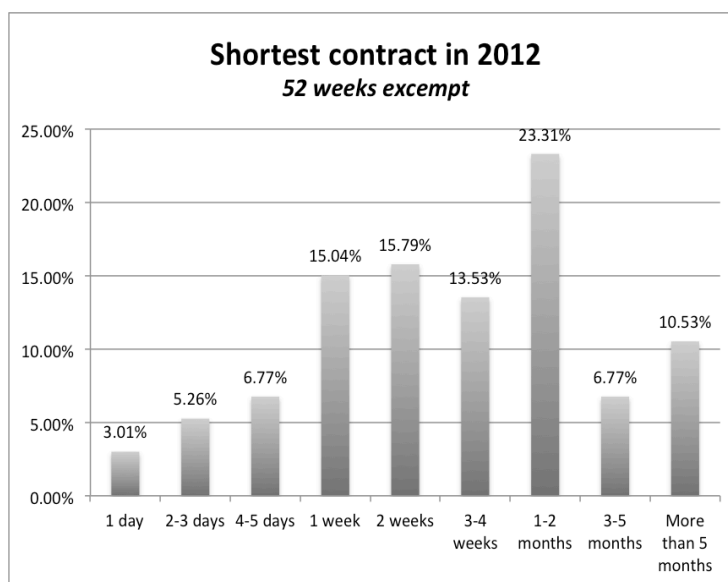


Figure 21 Shortest contract lengths in 2012

⁸⁰ The error was related to the question of number of contracts held in 2012, in which maximum was set to 10 or more rather than the actual number of contracts. This will be corrected for future surveys.

⁸¹ See section 5.2.5.1 on shortest contract lengths experienced in 2012

fact representative, most of the respondents should have experienced a shortest contract length of 2,5 months.⁸²

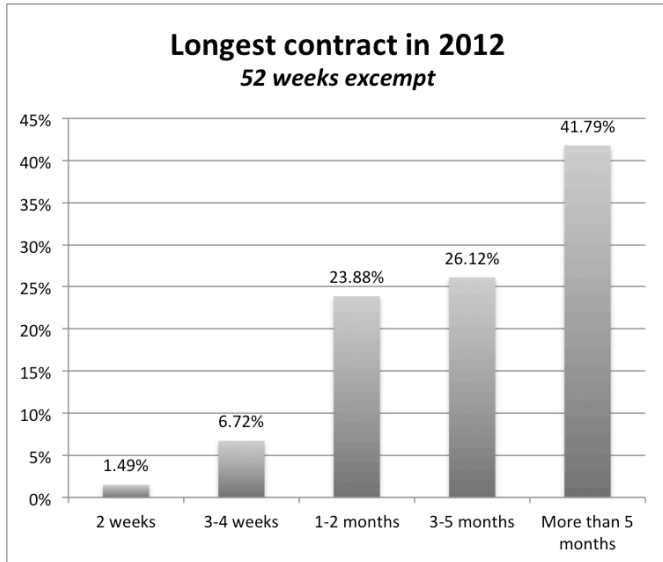


Figure 22 Longest contract length in 2012

5.2.5.2 Longest contract

The longest contract lengths in 2012 varied between 2 weeks (1,5 %) and 5 months or longer (41,8 %). The results can be seen in Figure 22.

For a proportion of 8,2 %, the longest contract had a duration of 4 weeks or less. Almost a third (32,1 %) experienced a longest contract of less than 2 months. About two thirds (67,9 %) saw their longest contract last 3 months or more.⁸³

⁸² Contracts of over a year long were taken out of this analysis because they represent a different bracket of temporary work and would severely skew the results.

⁸³ Contracts of over a year long were taken out of this analysis because they represent a different bracket of temporary work and would severely skew the results.

5.2.5.3 The conjunction of shortest and longest contract lengths

Comparisons were made between the occurrences of shortest and longest contracts to look for patterns and trends. Respondents with a shortest contract length up to 2 weeks were selected, and their longest cross-referenced with their longest contract lengths. The results can be seen in Figure 23.

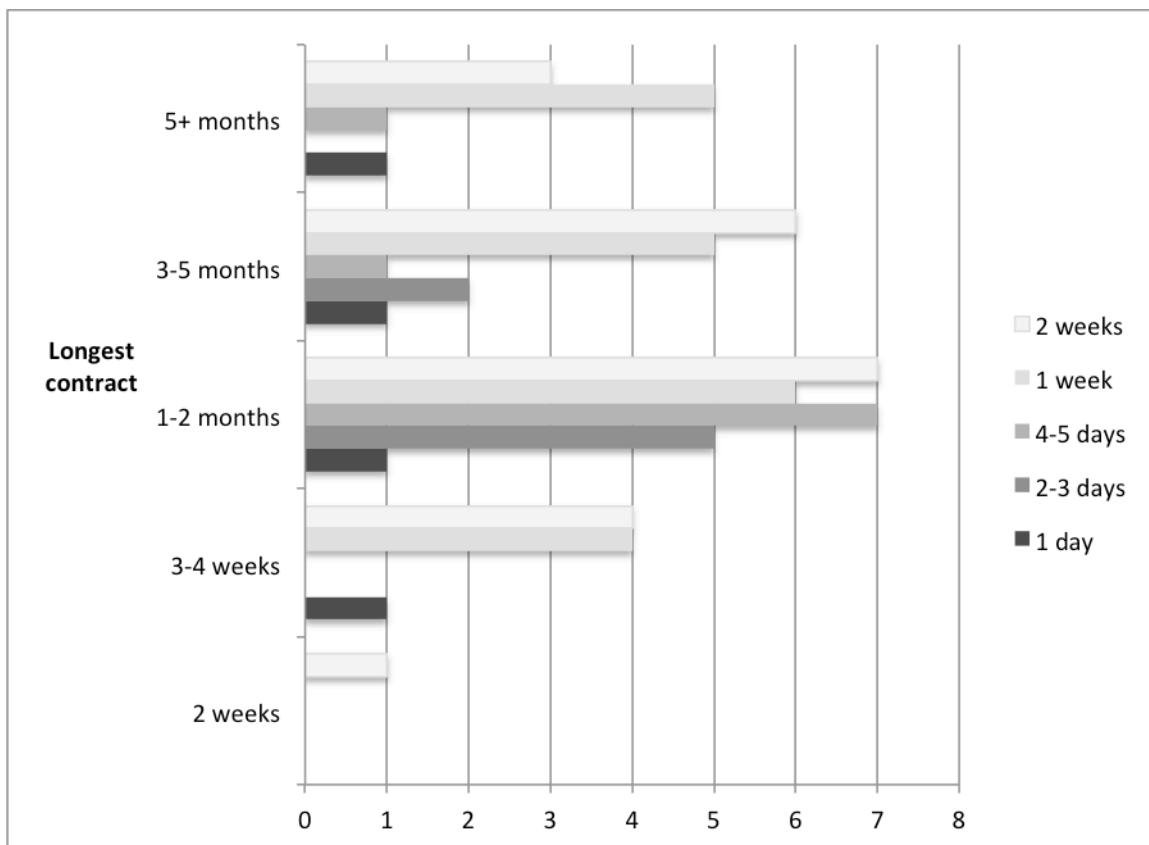


Figure 23 Shortest contracts and corresponding longest contract length. N=61

Although their longest contract lengths vary between 2 weeks and over 5 months, one trend becomes visible amongst the respondents with the shortest contract lengths: Most of the shortest term contract holders (42,6 %) also experience a longest contract of 1-2 months. Although this is not considered particularly short in Norwegian archaeological terms, it is normally regarded as very short for a labour contract. The second largest group (24,6 %) have a longest contract of 3-5 months.

A second cross-reference was made between respondents with the longest contracts and their corresponding shortest contracts. Respondents with a longest contract length over 3 months were selected. The results are displayed in Figure 24.

Here too, a trend appears. The respondents with the longest contracts (5 months or longer) generally hold a longer shortest contract than those who experienced 3-5 months as their longest contract length in 2012. Amongst the latter, the distribution is more dispersed. Nevertheless, the majority of both groups are clustered in the category 1-2 months; in total 30,6 % of the respondents. Almost as many have experienced a shortest contract of 2 weeks or less, though this category is dominated by the respondents whose longest contract length was between 3 and 5 months.

The very longest contract lengths for shortest contract in 2012 (5 months or longer) are only held by respondents who experience the longest contracts lengths in general.

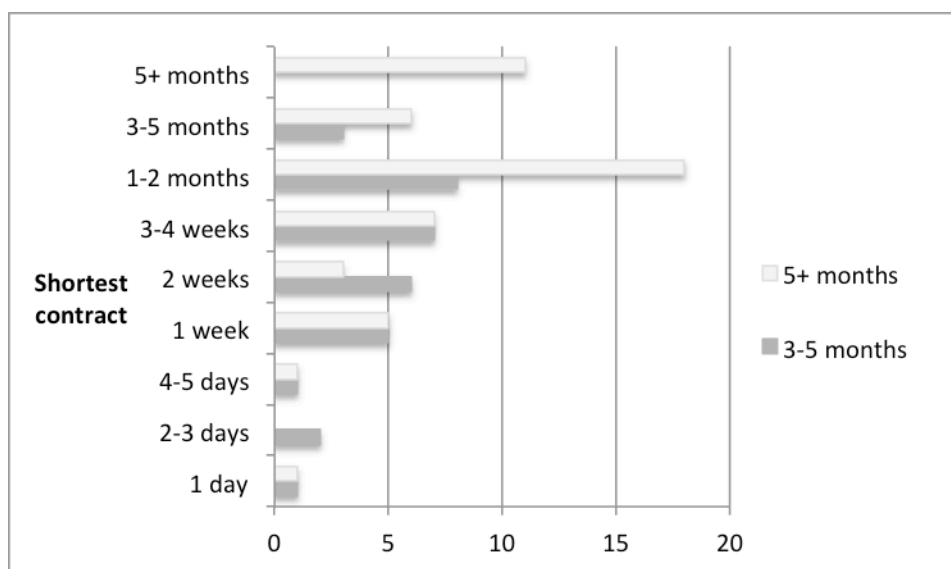


Figure 24 Longest contracts and their corresponding shortest contract length. N=85

All in all, 59 % of the holders of the shortest contracts experience a longest contract of less than 2 months. This indicates that archaeologists experience periods in which short contracts either is the only thing on offer, or that they have to be accepted due to life circumstances. As the last issue may be related to seniority, an analysis was done and is presented in 5.2.5.4.

5.2.5.4 Seniority and contract lengths

Average contract lengths are expected to increase with seniority. However, this is not a universal trend amongst Norwegian temporarily employed archaeologists. As can be seen in Figure 25, an increase in average contract length is visible, but not clear after the level of about 13 years of seniority. However, it should be noted that the number of respondents is low above 6 years of seniority, which may lead the averages to diverge substantially. It must also

be remembered that the averages do not necessarily represent the reality of extremely heterogenic contract lengths.

When crossing shortest and longest contract length with seniority, two trends become clear: The shortest contracts most frequently occur in the groups with lower seniority and the longest amongst those with the higher seniority (see Figure 26 and Figure 27). This is not surprising. However, it must be noted that the longest of the shortest contracts do not consistently fall to those with highest seniority, as can be seen in Figure 25. It should also be noted that by these data, the group of lower seniority stretches until around 8 years. A previous survey from 2010 mirrors these data almost exactly.⁸⁴

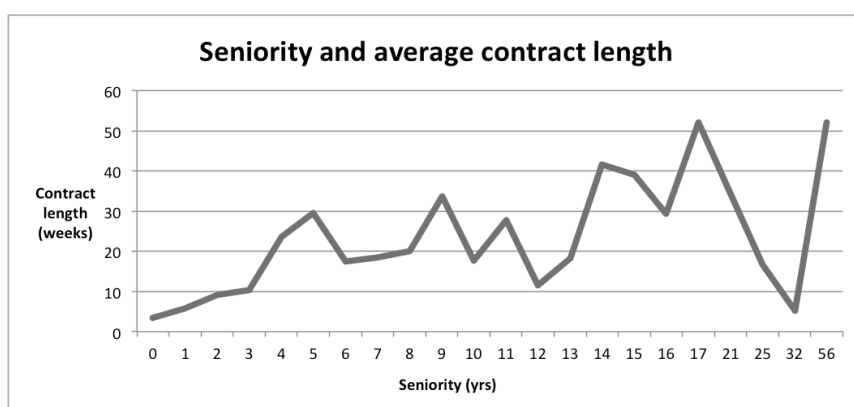


Figure 25 Seniority and average contract length in 2012.

The survey from 2010 also indicates that temporarily employed archaeologists seem to leave temporarily employment after around 9 years.⁸⁵ Whether they leave due to permanent employment, other employment, or because of their working situation as temporarily employed archaeologists, is not clear. From the present survey, it appears that up until that point in an archaeologist's career, the frequency of extremely short contracts is high: hardly any difference can be seen between a seniority of 4 and of 8 years.

Regarding the longest contracts, these fall into a markedly clear trend (see Figure 27). As seniority increases, so does the length of the longest contracts, whilst the shorter of these decrease. However, the longest contracts are still 1-2 months for the majority of respondents with 7 years of seniority. At 8 years, the contract length of the longest contracts seems to substantially increase.

⁸⁴ Schenck 2012, 82f

⁸⁵ Schenck 2012, 22-23

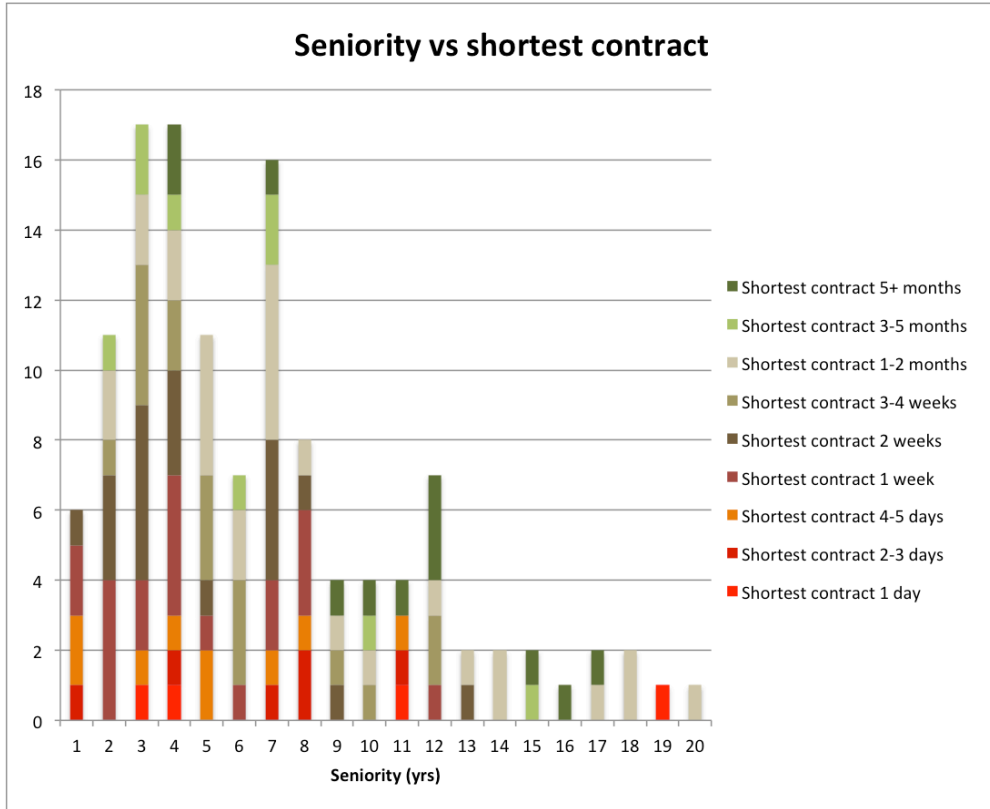


Figure 26 Seniority and shortest contract length

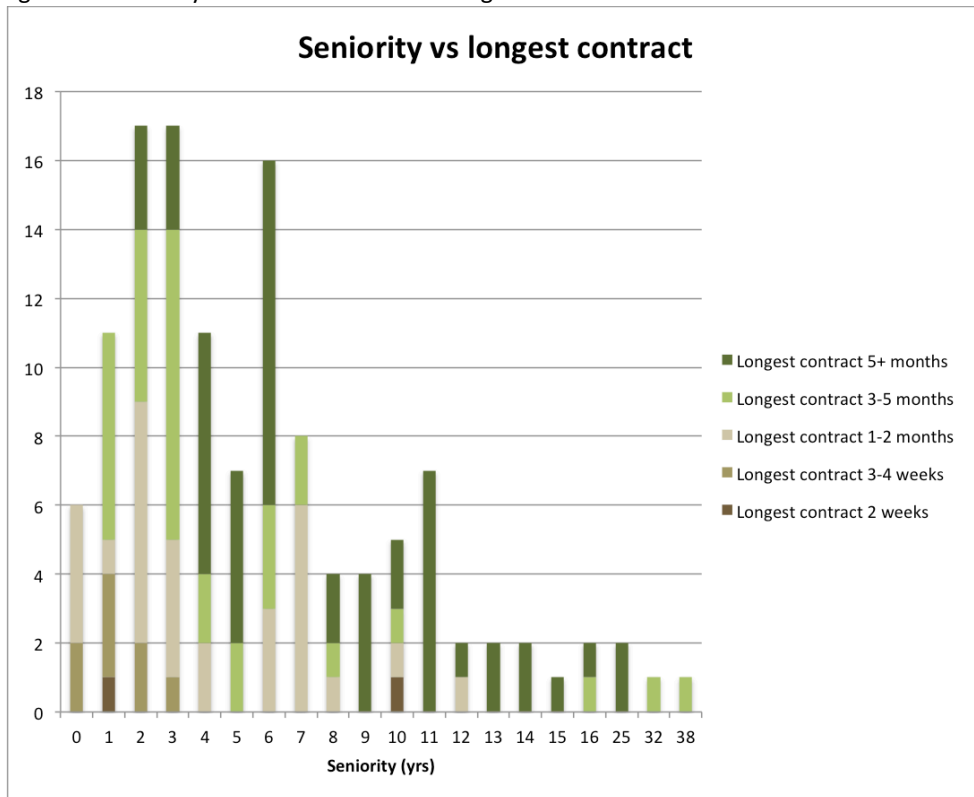


Figure 27 Seniority and longest contract length.

5.2.6 Temporary contracts: yearly distribution of archaeological work

As in 2010,⁸⁶ the temporarily employed respondents were asked in which months they were employed in 2012. The results can be seen in Figure 28 and Table 14.

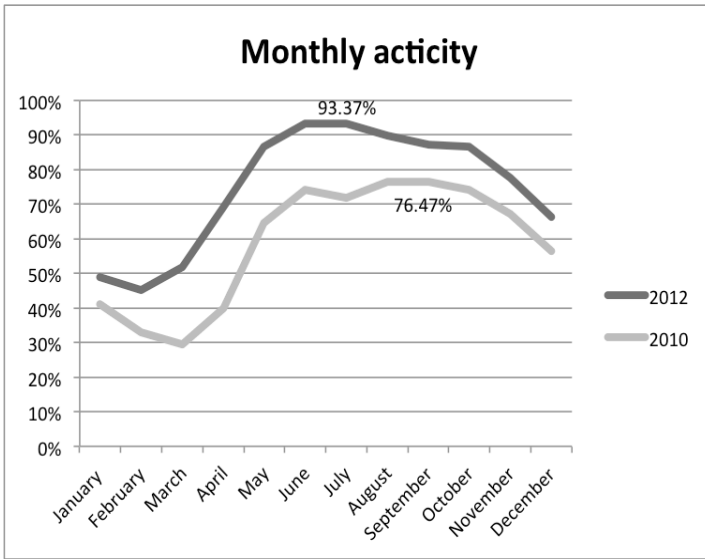


Figure 28 Distribution of archaeological work throughout the year.

	2010	2012
January	41,2%	48,8%
February	33%	45,2%
March	29,4%	51,8%
April	40%	69,3%
May	64,7%	86,8%
June	74,1%	93,4%
July	71,8%	93,4%
August	76,5%	89,8%
September	76,5%	87,4%
October	74,1%	86,6%
November	67,1%	77,7%
December	56,5%	66,3%

Table 14 Distribution of archaeological work throughout the year

As is clear, a higher proportion of temporarily employed archaeologists were active in all months of 2012 when compared with 2010. The reason for this is unknown. It is possible that this reflects the general conjuncture. The levels of unemployment were somewhat higher in 2010 (3,6 %) than in 2012 (3,2 %), but not enough to account for this difference.

The yearly distribution of work by categories of seniority can be seen in Figure 29. The graph displays how the chance of continuous work throughout a year increases with seniority.

⁸⁶ Schenck 2012, 32f

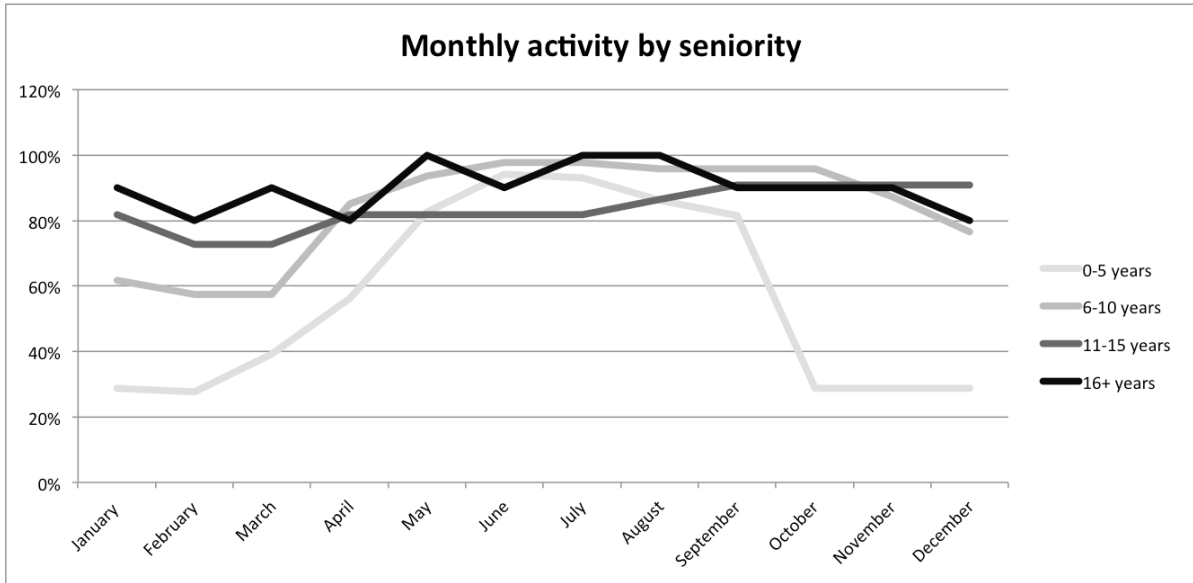


Figure 29 Distribution of archaeological, temporary work throughout the year. Seniority.

5.2.7 Involuntary unemployment

The temporarily employed respondents were asked whether they were involuntarily unemployed in 2012. Over half (54,2 %) replied that that had been the case. A majority had been unemployed for over 2 months (57,8 %), with 17,4 % being unemployed for over 4 months. The overall distribution can be seen in Table 15 and Figure 30.

Unemployment (duration)	%
2 weeks or less	5,5
2-4 weeks	14,7
1-2 months	22
2-4 months	40,4
More than 4 months	17,4

Table 15 Period of involuntary unemployment

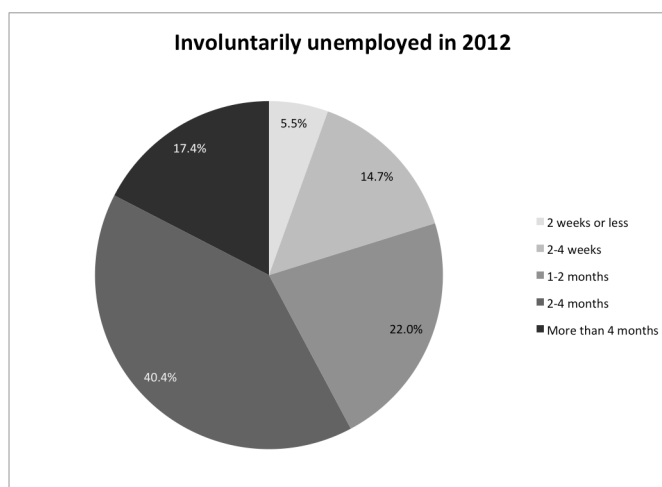


Figure 30 Involuntarily unemployed in 2012

5.2.8 Permanent contracts

5.2.8.1 Permanently and temporarily employed respondents: Age

	Permanent employees	Temporary employees
Average	43,8	33
Median	41	32

Table 16 Age: Permanent and temporary employees

The average age between permanently and temporarily employed respondents differed with over 10 years in 2012; 43,8 years for permanent employees and 33 for temporary employees. The medians are also 9 years apart, with 41 and 32 years respectively, which makes these numbers realistic. The comparison is seen in Table 16.

5.2.8.2 Time until permanent employment

The respondents were asked how many years passed until they reached permanent employment within archaeology. On average, 5,3 years went by for the respondents, with a median of 4 and mode of 3. In other words, the majority spent about 3 years after education before permanent employment. The time passed varying from 0 to 21 years. The distribution is shown in Figure 31.



Figure 31 Years passed before permanent employment was achieved

No trends appeared regarding age or gender (and see Figure 32).

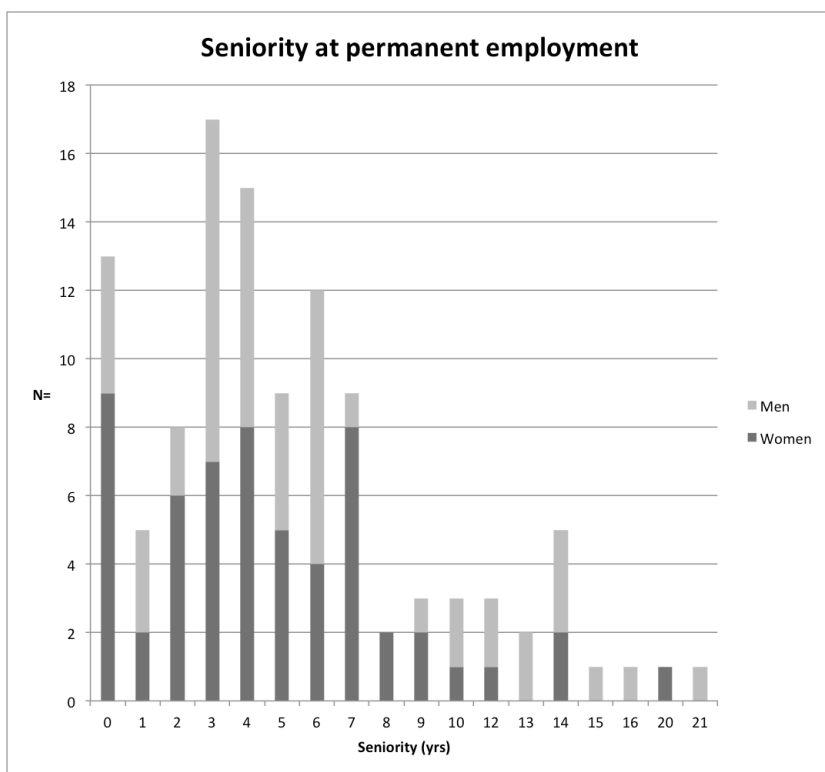


Figure 32 Seniority at permanent employment. Gender distribution.

The results are displayed in Figure 32, and show that anything up until 7 years of seniority is rather common amongst the respondents. The gender distribution shows no specific pattern,

This question originated in a previous survey indicating that temporarily employed archaeologists leave temporary employment rather abruptly after 10 years.⁸⁷ Why was not clear. It was thought that entry into permanent employment may be one of the reasons.

Based on the seniority level of each individual permanently employed respondent, their level of seniority at permanent employment could be calculated. This was done due to the fact that archaeologists sometimes gain several years of work experience during education.

⁸⁷ Schenck 2012, 22f

which indicates that gender discrimination generally does not seem to take place in this process. However, the results do show that it is possible to gain permanent employment without previous work experience in the archaeology field, which implies that the education does sometimes provide the necessary foundation.

The question of seniority when employed in the current position was asked to the respondents. The results varied substantially by year of employment, as can be seen in Figure 33. This may be for several reasons: The general economy of the archaeological/development field, the local economy in the business, the number of archaeologists educated one specific year, the number of applicants eligible for each position and so on. However, the last few years display a general trend towards requiring an increasing amount of experience, as shown in the excerpt in Figure 33. It is likely that this is related to a general demand in the field of archaeology itself.

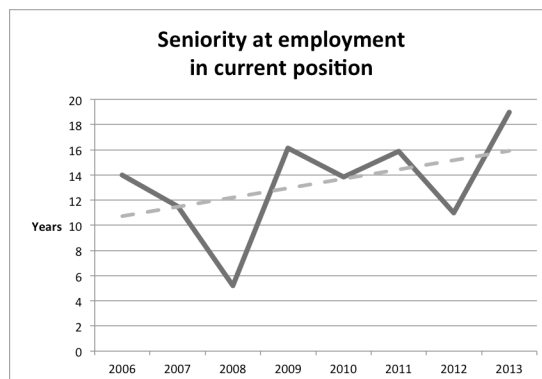


Figure 33 Seniority at employment in current position: 2006-2013

5.2.8.3 Time in present position (2013)

On average, in 2013⁸⁸ the permanently employed respondents had spent 6,2 years in their present position. However, the median value was 4 years, and the mode only 2 years. Together, this indicates that there is quite some mobility in the Norwegian archaeological labour market. However, the respondents were not asked how long they spent with the same employer, and positions could potentially be officially upgraded in order to increase salaries without changing tasks.

⁸⁸ The respondents were asked about their status at the time of the survey.

5.3 Income

The average income for the Norwegian population in 2012 was 470 900. For academic professions, which are generally located in the public sector, there was an average total income of 601 800 NOK. The average income for all employee respondents regardless of mode of employment, was 424 171 NOK and the median was 440 998 NOK. It is however important to note that these are *not* representative numbers, as the majority are temporarily employed and as such, on average earn 364 769 NOK whereas the minority of permanent employees earn 506 848 NOK on average. In other words, temporary workers earn a median of 79,1 % of the median income of the permanent employees. This includes income from other sources than archaeology.

All respondents were asked to provide numbers for their total gross income in 2012. In addition, the temporarily employed respondents were asked to provide the gross amount earned from archaeological work. This was done because a survey from 2011 showed that these two amounts can differ substantially.⁸⁹ Although around 9 % of permanently employed work part-time, this has not been considered in the following numbers, but it is presumed that part-time salaries will be ruled out by median and mode calculations. Students are excluded from the income calculations, although numbers were also collected for student respondents.

5.3.1 Income by type of employment

As was expected, permanently employed archaeologists earned more on average, median and mode than temporarily employed archaeologists in 2012. The different calculations can be seen in Table 17 and Figure 34.

	Permanent	Temporary	Temporary, archaeology
Average	506848,	364769	313733
Median	496136	390000	350000
Mode	500000	400000	400000

Table 17 Income by type of employment. NOK.

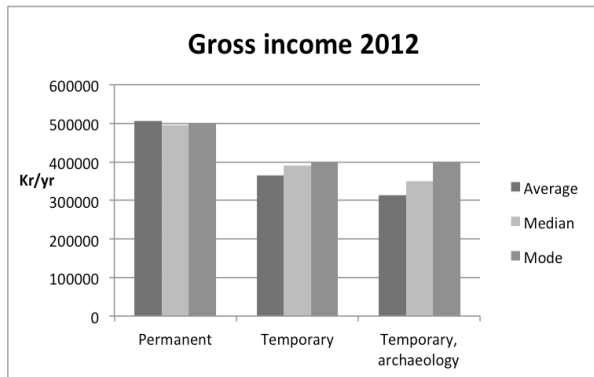


Figure 34 Income by type of employment. NOK (kr).

⁸⁹ Schenck 2013, 18

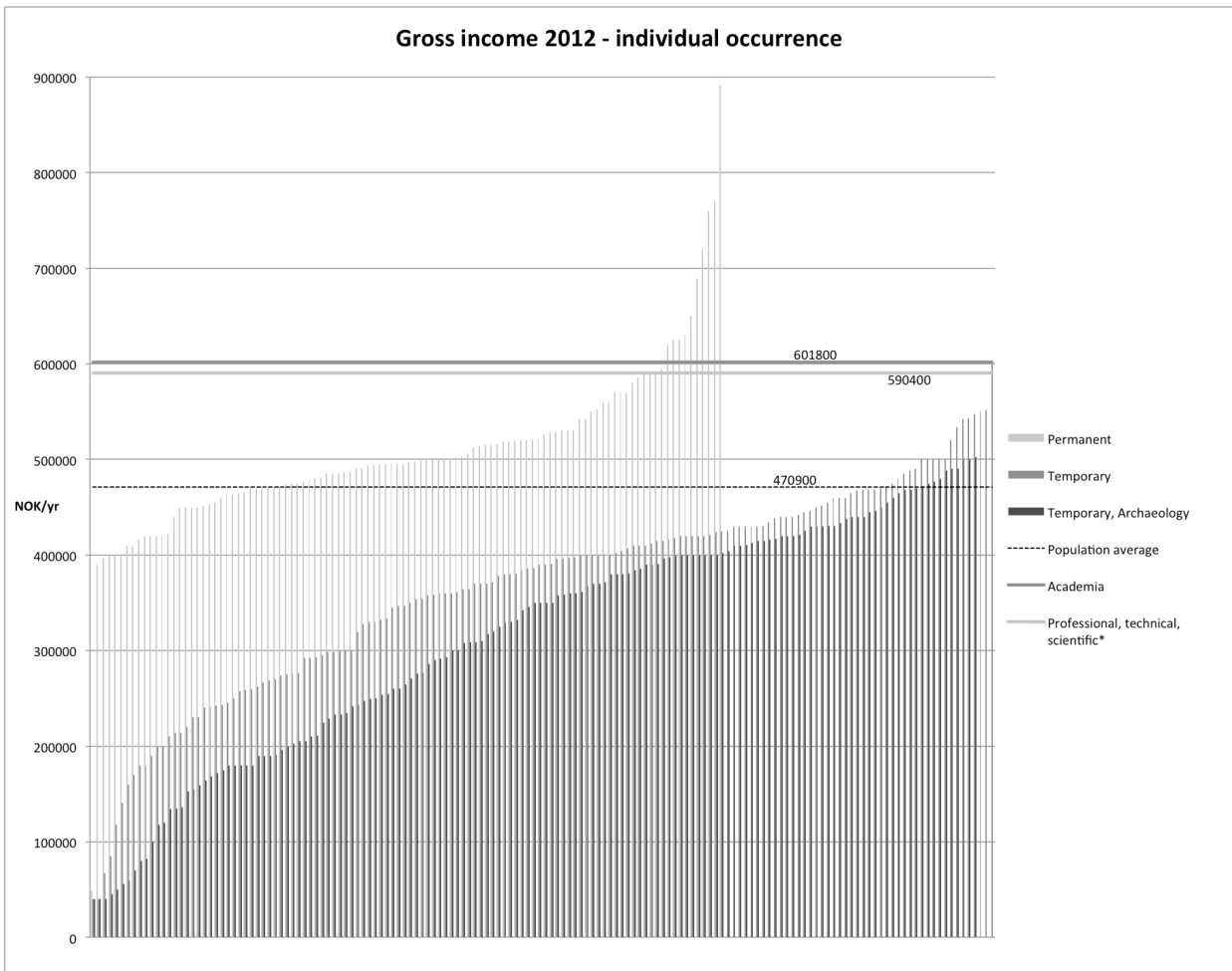
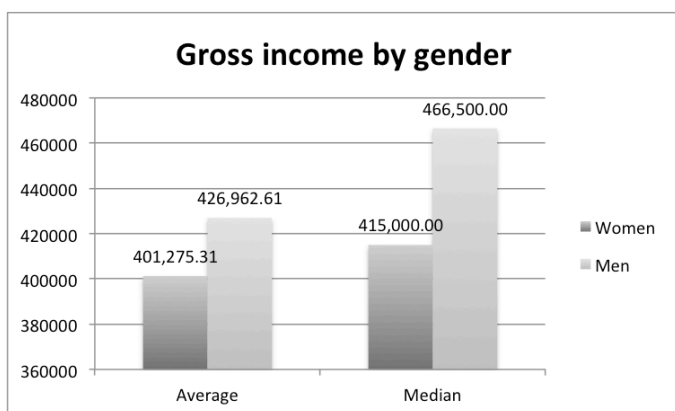


Figure 35 Gross income by employment type. Individual occurrences. NOK.
Each pillar entry equals one individual respondent. N=276

Permanently employed archaeologists earn 6,1 % more than the average Norwegian population. Temporarily employed archaeologists earn 22,5 % less than the average population. Individual occurrences are displayed in Figure 35. However, it should be noted that the Norwegian private sector generally provides higher salaries than the public sector in which most archaeologists work, and hence the discrepancies are likely to be larger between archaeologists and average income in the public sector.

As becomes visible in Figure 35, there are distinct differences between salary groups, and thus a total average cannot be viewed as representative for the reality of the Norwegian labour market. It is also important to note that as temporary workers usually do not work all year with archaeology, the income figure includes benefits, additional income and other sources. On average, temporary workers earn 67,4 % of permanent employees based on their income within archaeology alone. Separate numbers are calculated based on income in archaeology alone (see Table 17).

89 of 276 respondents (32 %) had an income above general population average in 2012. Of these, only 19 (7 %) were temporarily employed.



5.3.2 Income by gender

In the general Norwegian population, women earned less than men in 2012 by 87,8 %, or 88,3 % if full time employment is seen in isolation.⁹⁰ The differences are less severe in the archaeological profession, but is still mostly in favour of men, as can be seen in Table 18 and Table 19, and in Figure 36.

Figure 36 Gross income by gender in 2012, all employees. NOK. N=276

Interestingly, the mode values for temporarily employed men includes respondents ranging from 28 to 54 years in age, and with a seniority from 3 to 32 years. For women, there is less of an age difference with an age range of 28 to 40 at mode salaries. Among permanently employed women, the age difference at the mode salary is as high as 28 years, from 34 to 62 years old. However, the seniority range for permanently employed women (from 11 to 26 years) is not as significant as among the temporarily employed men.

In all cases, the mode values have few respondents, so are not representative of the real mode. However, the age differences do shed some perspective on the issue of seniority, which will be investigated in the next paragraph.

Traditionally, gender differences are often assumed to have connection to a younger generation of women entering into a male profession, and hence gaining a lower income due to seniority. It was shown in section 4.1 that this is in fact not an unambiguous trend for

	Women	Men
Average	504818	509212
Median	491800	500000
Mode	520000	500000

Table 18 Gross income by gender 2012, permanently employed. NOK.

	Women	Men
Average	366309	362515
Median	388074	400000
Mode	400000	500000

Table 19 Gross income by gender 2012, temporarily employed. NOK.

⁹⁰ Population and Housing Census, Table 09919, Statistics Norway.

women in the Norwegian, archaeological profession, and that the gender discrepancy is either in favour of women or near equalised across all age categories. The income data is not nuanced enough to make any conclusions, but the discrepancy of 51 500 NOK in median income between genders is still at 11 % and should be noted for future investigations.

5.3.3 Income by seniority

Seniority does not need to play into Norwegian salaries in archaeology, as most positions filled by archaeologists fall into occupation codes where salaries are pre-negotiated and reconsidered on a yearly basis. However, seniority is to be considered when an employee is hired,⁹¹ and certain occupation codes utilised in archaeology require that an employee receive pay rises with increased seniority.

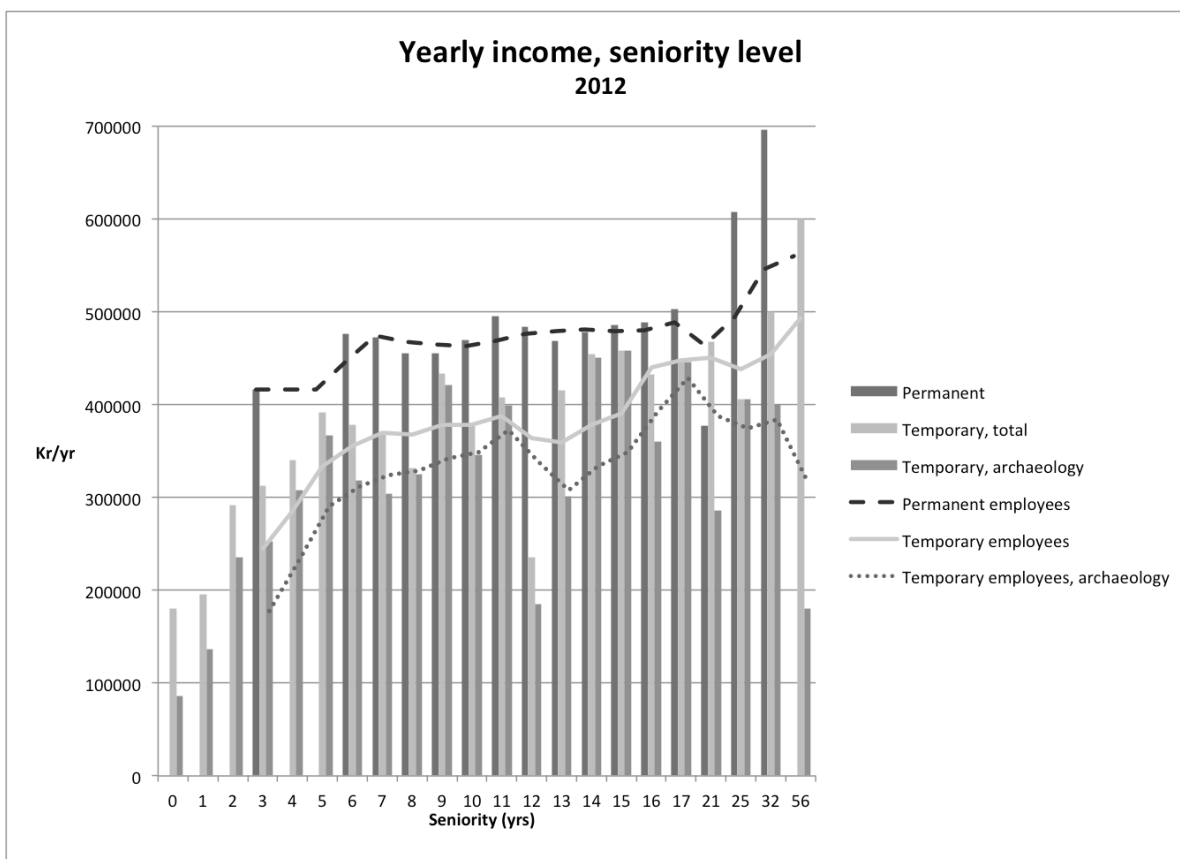


Figure 37 Average income in 2012 by seniority level, employment categories. Categories equal reported seniority.

⁹¹ Basic Collective Agreement for KS, chapter 1 §12 and chapter 4B 2, and Basic Collective Agreement for the state, chapter 3 §4.

As seen in Figure 37, it is clear that seniority affects the salaries of archaeologists, regardless of employment type. The effect is more prominent among temporarily employed archaeologists. This is likely to be because seniority increases the chances of year-round employment, and higher levels of seniority slightly increases the likelihood of escaping prolonged periods of unemployment benefits.

However, the higher seniority levels also increase the amount of respondents who choose to receive employment benefits altogether, although the periods are likely to be shorter. The percentage receiving employment benefits in each category of seniority can be seen in Table 20.

Seniority	Received unemployment benefit in 2012
0-10 yrs	62,5 %
11-20 yrs	63 %
21-30 yrs	100 %
31-40 yrs	85,7 %
40+ yrs	66,7 %

Table 20 Proportion per category of seniority receiving unemployment benefit in 2012. N=70 (39,1 %)

Previous surveys on wages and temporarily employed archaeologists have yielded ambiguous results: in 2010, seniority was shown to have a definite impact, whereas in 2011, tendencies were more unclear but still pointed to a weak trend in corresponding increase in wages with seniority. These surveys investigated slightly differing aspects of income,⁹² which may be why the results differ. The DISCO survey queries the same variables as the 2011 survey. It must also be noted that the DISCO survey has reached a population of respondents amongst temporarily employed archaeologists twice the size

than the previous two surveys. It is certain that income and seniority levels are factors to consider for future surveying, and that longer term trends must be developed before any general conclusions can be reached.

⁹² Agreed wage per labour contract in 2010 and actual income in 2011.

5.4 Vocational educational training and lifelong learning

Employers were asked about required qualifications for employment and subsequent training needs for their staff (2013). The results are measured in percentages, although the sectors have different sizes. It is also important to note that, although the university sector has few respondents, it is the sector that houses the most employees, due to its large amount of short term contracts. University employees also hold a large variety of positions. In contrast, the municipal sector has the highest amount of respondents, but in general has rather small archaeological teams per employer in comparison with the university and general state sector (as seen in Table 2). The numbers below therefore do not refer the total size of the sectors.

5.4.1 Employers: Required qualifications for employment

The employers were queried about qualifications required to work at their workplace. A list was provided and could be checked, and further comments were made in a comment field if necessary. The results reflect different needs with different employers, and can be seen grouped into sectors below (Figure 38).⁹³

Knowledge of databases; laws, regulations and proceedings; local situations; field techniques; GIS and surveying; public outreach, and to possess social competence are wanted to a large extent by all the employers. Least important are knowledge of geophysics and a good physical condition.

⁹³ 'State' include state institutions except universities, although the universities are in the state sector. This was done due to the fundamental difference in tasks between research and cultural heritage management. Although they also perform cultural heritage management tasks, university museums were too few to provide trends alone, and so were grouped together with their universities.

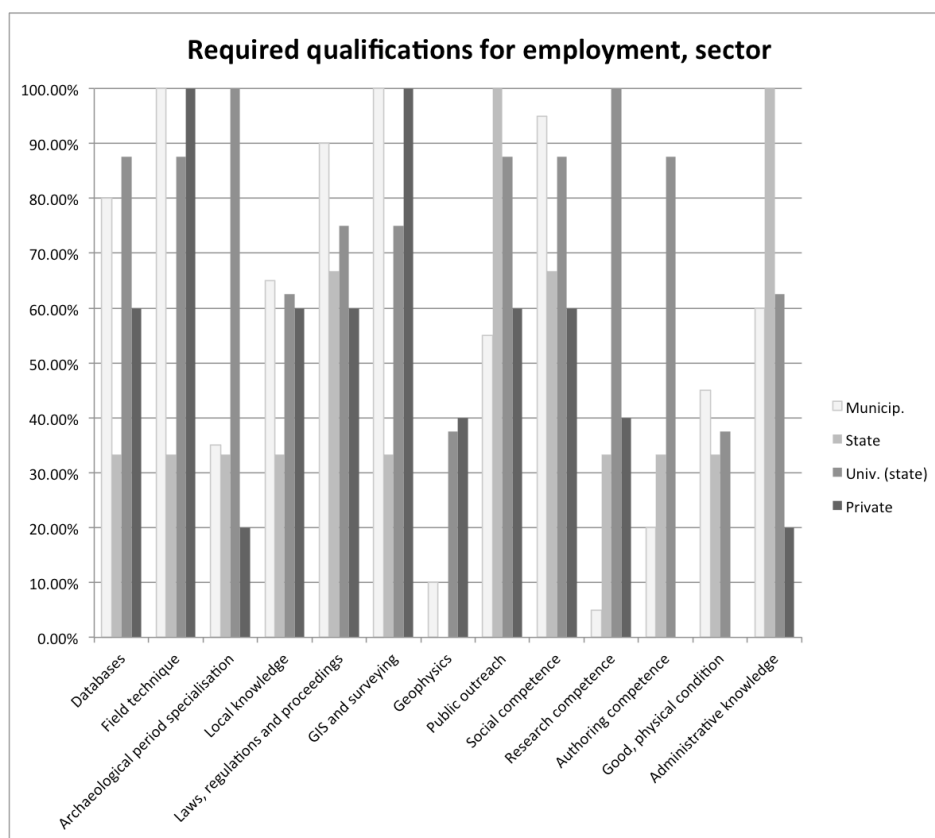


Figure 38 Required qualifications for employment as reported by employers. Sector distribution.

Additional requirements reported were a driver's license, ability to write in Norwegian, diving experience, experience with archaeological surveying and a general insight into the place of archaeology in society. Some employers reported that they were seeking a broad knowledge of status quo in the entire field of archaeology, whereas one university department was after more research specific qualifications such as chemistry, osteology, geology and anthropology. One museum employer confirmed that the more qualifications that could be checked on this list, the higher the chance of gaining employment with them.

5.4.2 Employers: Training needs in employed staff

It is stated in the Working Environment Act, § 4-2(1) that employees must be given the necessary training to enable them to familiarise and use the systems used in planning and performing the work in the workplace. The employers were queried about qualifications in which they were required to provide training for their employees. A list was provided and could be checked, and further comments were made in a comment field if necessary. As above, the results reflect different needs with different employers, and can be seen grouped into sectors below (Figure 39).

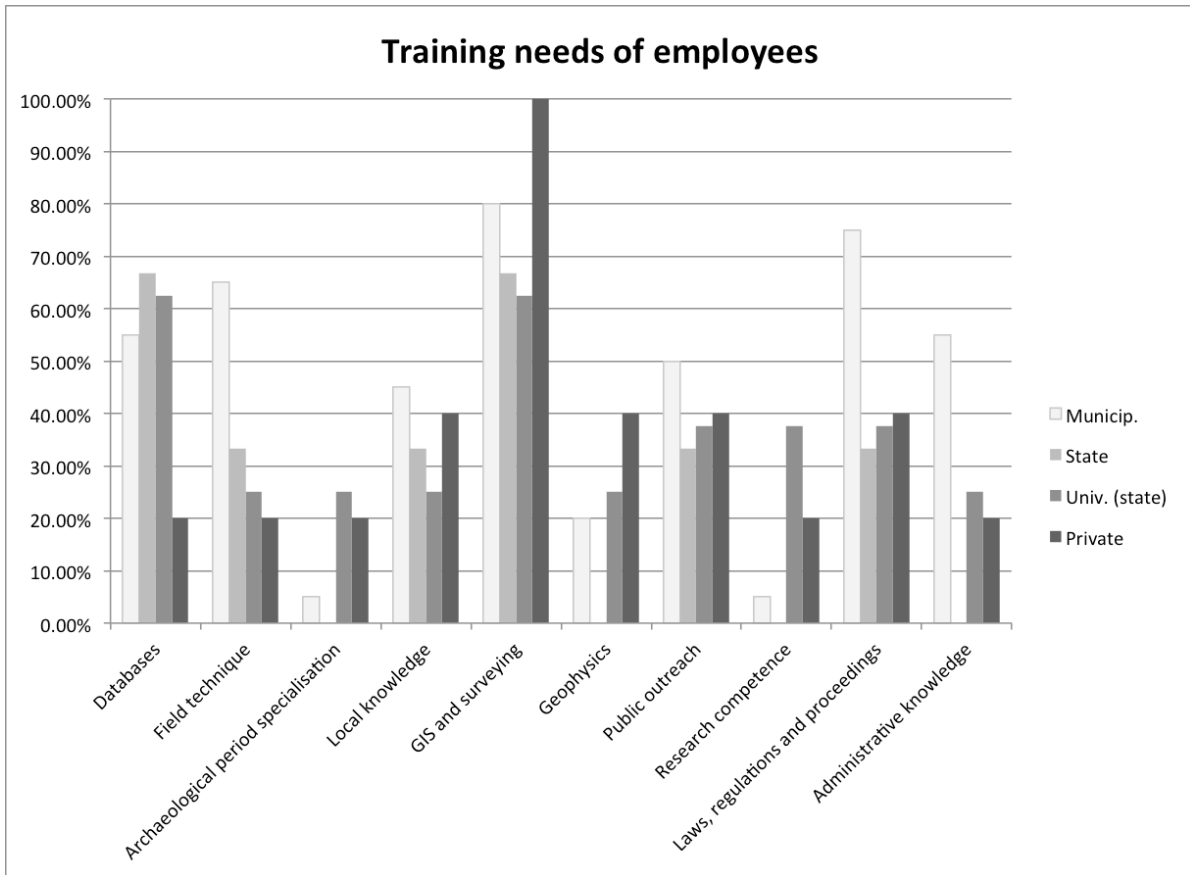


Figure 39 Training needs in new employees as reported by employers.

A majority of the employers had to provide training in databases, and GIS and surveying. Knowledge of these is often linked, such as with the central mapping database over Norwegian archaeological sites, *Askeladden*. Furthermore, field technique, public outreach and laws and regulations were also mentioned by all sectors. From the chart above, it seems that the private sector, which for the most perform excavations in city centres and marine environments; and university sector, where archaeological research is performed, hire the most qualified employees with the least needs for additional training. These are likely to be the sectors in which the most specialised archaeologists work. The municipal sector (counties) seem to overall have to provide a lot of training at time of employment. This may be related to the need for local knowledge, in addition to specific methods for differing topography.

5.4.3 Employees: Training received at time of employment

The employees were asked if they received satisfactory training at the time of the employment in their present position. The results are presented as a whole in Figure 40.

Only a total of 28,3 % received satisfactory training at the time of their employment. 22,6 % did not receive satisfactory training. A majority of 37,8 % received only a partly satisfactory

training. We also included a category for not applicable, which 11,3 %, agreed with. This may be due to their previous employment with the employer, their knowledge of the work or other reasons they did not feel the question applied to them.

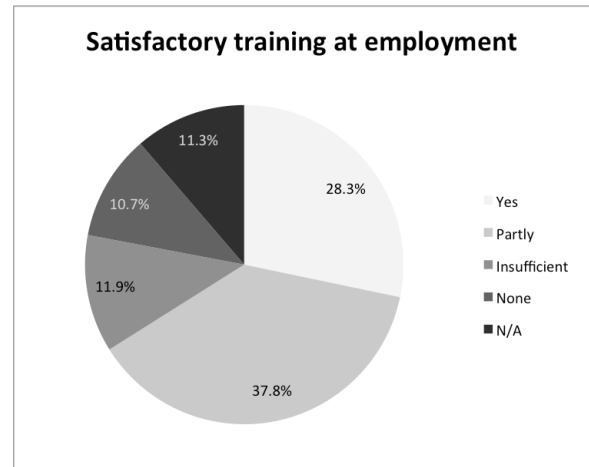


Figure 41 shows the distribution in each sector, and Table 21 shows the distribution of permanently and temporarily employed within each category in each sector.

Figure 40 Satisfactory training received at the time of employment. Employees. N=336

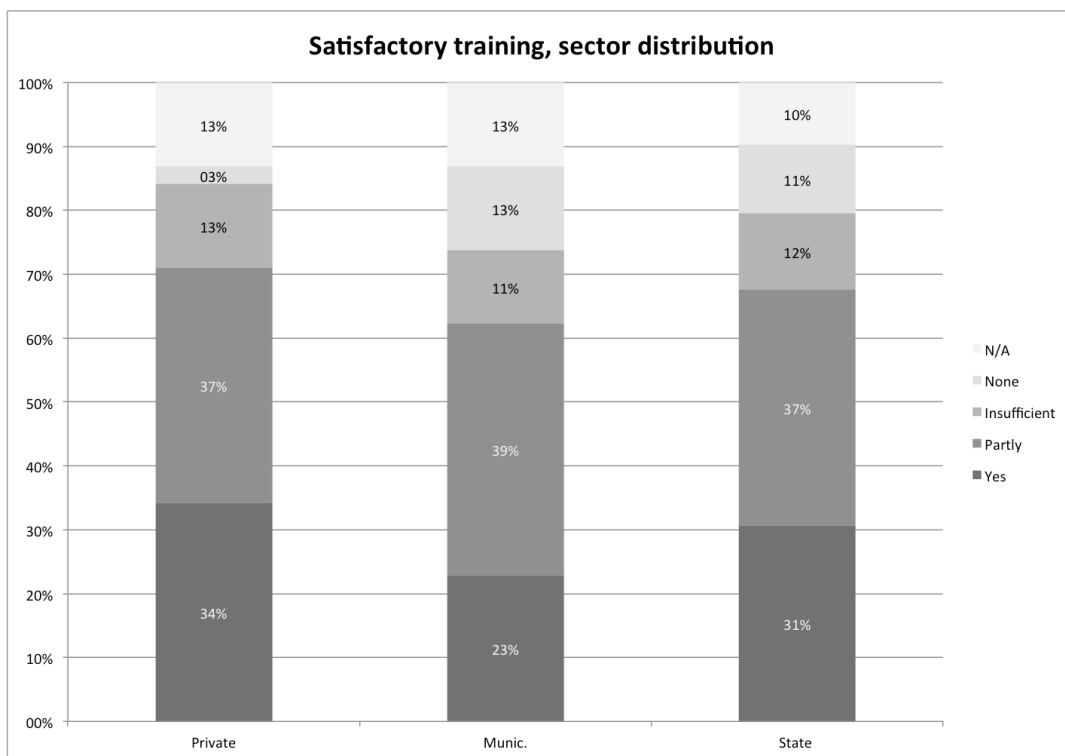


Figure 41 Satisfactory training received at the time of employment per sector. Employees. N=336

It appears that employees are most satisfied with the training they received in the private sector, where 15,8 % received insufficient training, and the least with the municipal, where 24,6 % received insufficient training, in addition to 39 % receiving only partly sufficient and just 23 % receiving sufficient training. This is in contrast to the fact that the municipal sector reports a high level of training needs in their employees (see 5.4.2).

	Yes		Partly		Insufficient		None		N/A	
	Perm. empl	Temp. empl	Perm. empl	Temp. empl	Perm. empl	Temp. empl	Perm. empl	Temp. empl	Perm. empl	Temp. empl
Private	53,8%	42,9%	78,6%	21,4%	100,0%	0,0%	0,0%	100,0%	60,0%	40,0%
Municip.	21,4%	45,8%	41,7%	58,3%	28,6%	71,4%	31,3%	68,8%	56,3%	43,8%
State	27,8%	60,0%	23,1%	76,9%	38,1%	61,9%	31,6%	68,4%	29,4%	70,6%

Table 21 Satisfactory training received at time of employment. Employees. N=336

5.4.4 Employees: Vocational development

It is stated in the Working Environment Act, § 4-2(2)a) that "arrangements shall be made to enable the employee's professional and personal development through his or her work."⁹⁴ The government maintains that this is an important factor in the economic growth, employment and ability to partake in global cooperation and competition in Norway.⁹⁵

At the same time, the *Education, Audiovisual and Culture Executive Agency* (EACEA) under the European Commission administered the Lifelong Learning Programme (LLP) which ran from 2007 to 2013, and this was integrated into Norwegian law via the Agreement on the European Economic Area. The *European Quality Assurance in Vocational Educational Training* (EQAVET) was incorporated in the LLP. In 2009, EU adopted the *Education and Training 2020* (ET2020) framework to promote and support training and education from early childhood to adult learning, including vocational, educational training.⁹⁶

Together, this highlights the important role of vocational, educational training in Norwegian labour law. The question of received opportunities for professional development was therefore significant in the survey and for the NAR as a trade union. It is also a key question for the overlying project.

⁹⁴ Official translation of April 2013 by the Directorate of Labour Inspection

⁹⁵ See www.regjeringen.no/en/dep/kd/Selected-topics/livslang-laring (Governmental webpage, [accessed 31/1/14])

⁹⁶ Council conclusions of 12 May 2009 on a strategic framework for European cooperation in education and training ('ET 2020') (2009/C/119/02)

The question was designed to resemble question 28 in the survey of MAARK members from 2010, by which it became clear that only 13,5 % of temporarily employed respondents could access seminars and conferences to the same extent as their permanently employed colleagues,⁹⁷ and which indicated a discrimination of temporarily employed that is prohibited by the Working Environment Act § 13-1(3).⁹⁸

In addition to seminars and conferences, the present survey queried the employees whether had the opportunity to keep up to date by reading relevant literature during working hours in 2012. The overall results are displayed in Figure 42.

47,6 % respondents replied that they received the opportunity to pursue seminars and courses and read relevant literature for professional development during working hours. Almost a quarter of the respondents, 24,4 %, replied that they did not. For 15,9 %, the opportunity for professional development was dependent on whether their were qualified by their contract length, and 2,9 % did not know whether they had the opportunity. 2,1 % felt that the question was not applicable. For the 7,1 % who fell under the 'other' category, the answers could mainly be classified into a very limited opportunity for professional development while on the job.

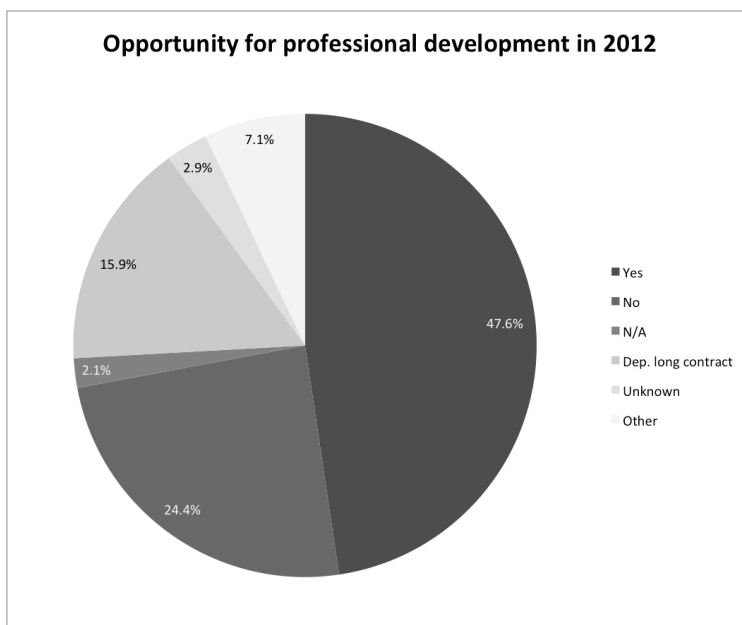


Figure 42 Opportunity for professional development in 2012. All respondents. N=290

As above, the different sectors provided different opportunities. The distribution across sectors is displayed in Figure 43. Table 22 shows the distribution of permanently and temporarily employed for each category across sectors.

⁹⁷ Schenck 2012, 61

⁹⁸ § 13-1(3)

Once again, it appears that the private sector have the most satisfied employees overall. An entire 73,7 % of the total population in the private sector had the opportunity for professional development in 2012. Only 13,2 % did not get that opportunity, and 7,9 % responded that the opportunity was dependent on long contracts.⁹⁹ 2,6 % reported under 'Other', and the categories 'N/A' and 'Unknown' had no respondents. Surprisingly, more permanent than temporarily employed respondents did *not* have the opportunity in the private sector (see Table 22).

The municipal sector provided the opportunity for courses, seminars and relevant reading to a much lesser extent, to only 47,2 % of their responding employees. Compared to the private sector, almost twice the amount of respondents (25,6 %) did not have this opportunity, and for 14,4 % it was dependent on long contracts. 0,8 % responded that the question was not applicable, and 3,2 % were unclear as to whether such opportunities were offered. For 9,6 %, none of the alternatives were suitable, so they responded individually under 'other' – mostly that the possibilities were very limited.

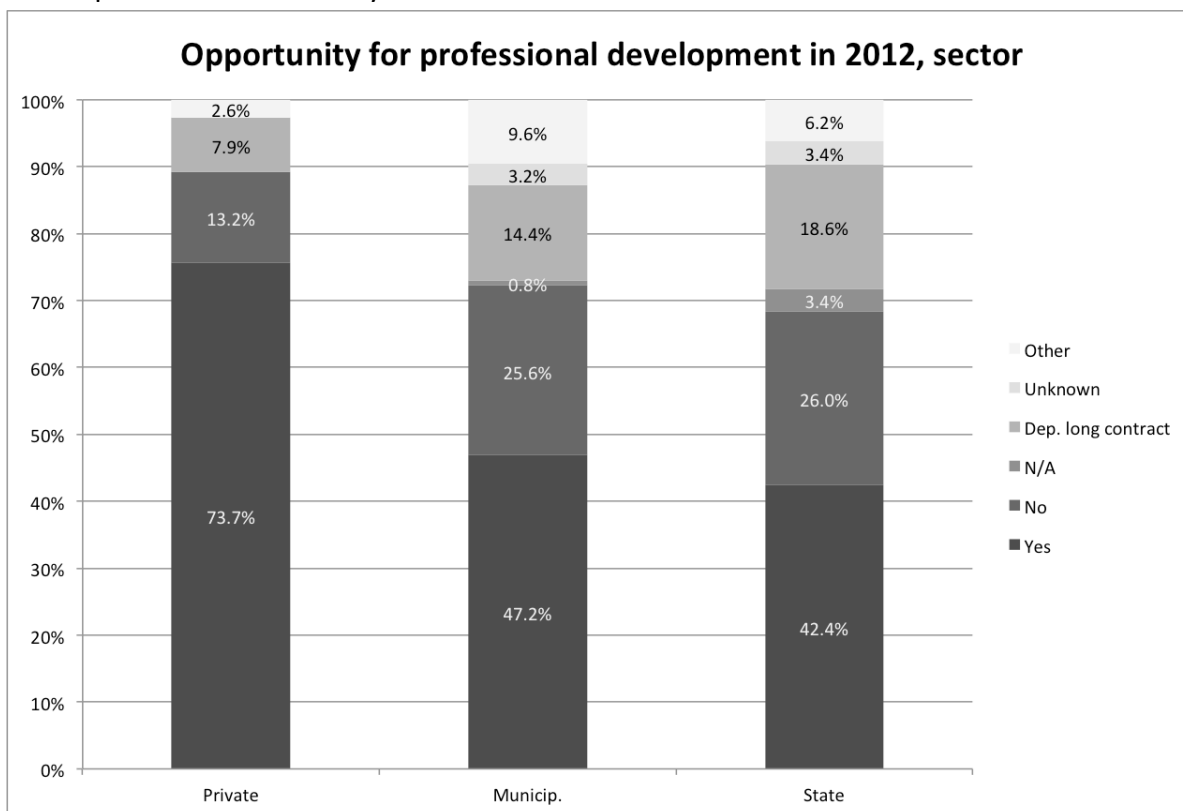


Figure 43 Opportunity for professional development in 2012, sector distribution.

⁹⁹ "Long" contracts were not defined beyond the respondents' individual interpretations.

The municipal sector did not fare so well with regards to the legal prohibition against discrimination, which specifically protects the temporarily employed. Of the respondents who did not receive the opportunity for professional development, a majority of 78,1 % were temporarily employed. Most and all of the respondents who either did not know or felt that the question was inapplicable were temporarily employed.

The state sector provided the least opportunities for professional development, although this largely consists of universities. Only 42,4 % had the possibility of attending courses and seminars or read relevant literature on the job. 26 % did not have such possibility, and 18,6 % responded that this was dependent on contract length. The largest proportion of respondents who did not find the question applicable, were found in the state sector (3,4 %). An equally sized proportion (3,4 %) did not know if they could get access to professional development, and 6,2 % responded individually under 'Other', of which most could be grouped under a very limited access.

	Yes		No		Dep. long contract		Unknown		N/A	
	Perm. empl	Temp. empl	Perm. empl	Temp. empl	Perm. empl	Temp. empl	Perm. empl	Temp. empl	Perm. empl	Temp. empl
Private	82,1%	17,9%	60,0%	40,0%	-	100,0%	-		-	
Municip.	57,6%	42,4%	21,9%	78,1%	-	100,0%	25,0%	75,0%	-	100,0%
State	57,3%	42,7%	10,9%	89,1%	-	100,0%	-	100,0%	-	100,0%

Table 22 Opportunity for professional development in 2012 per employment type, across sectors. N=290

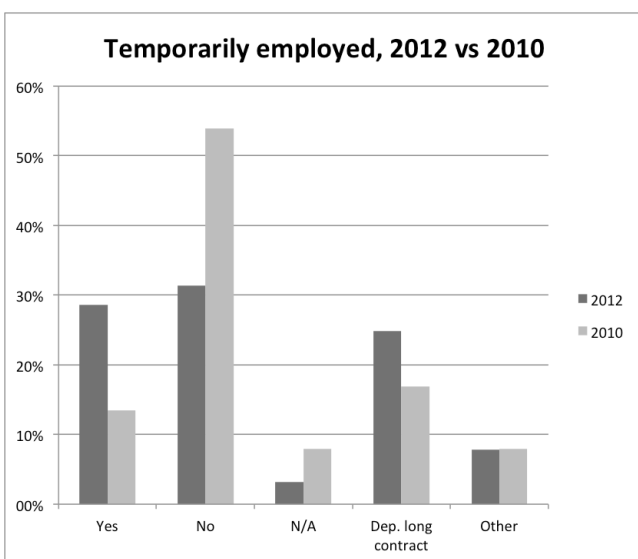


Figure 44 Opportunities for professional development, temporarily employed. 2010 vs 2012.

Here too, a discrepancy between permanent and temporary employees become apparent. Of people who did not have access to professional development, an entire 89,1 % were temporarily employed. Of respondents who did not know or felt the question was inapplicable, everyone was temporarily employed. It is likely that this can all be seen in conjunction with the extremely short contract lengths that may transpire in state archaeology sector due to the practice of hiring project-by-project, and the

sometimes very short excavations that occur.

When compared with the survey from the 2010, the total proportion of temporarily employed respondents who could access opportunities for professional development was more than doubled - from 13,5 % to 28,6 %. Also, the proportion of temporarily employed who could not access such opportunities decreased from 53,9 % to 31,3 %. The comparative results can be seen in Table 23 and Figure 44.

Although the tendencies move in the right direction, it should still be noted that the right to professional development is a legal right for each individual employee. Though contracts are short, this does not liberate the employer from providing these opportunities.

	Yes	No	N/A	Long contr.	Other
2012	28,6%	31,3%	3,2%	24,9%	7,8%
2010	13,5%	53,9%	7,9%	16,9%	7,9%

Also, to see the changes over time, longer trends need to be created before any conclusions can be made.

Table 23 Opportunities for professional development, temporarily employed. 2010 vs 2012.

5.5 The future size of the workforce

A core part of the DISCO 2012-2014 survey was to take a look at the size of the workforce within a comparative timeline. The employers were asked whether they had more, equal numbers or less employees in the years 2007, 2009 and 2011 compared to the surveyed year of 2012. They were also asked to predict whether there would be a decrease or increase in demand, or if the size of the workforce would stay the same in 2013, 2015 and 2017. In light of the global, financial crisis, these prognoses can be highly meaningful in a long term perspective.

	Less	Equal no	More
2007	64,7 %	26,5 %	8,8 %
2009	55,9 %	32,4 %	11,8 %
2011	35,3 %	52,9 %	11,8 %

Table 24 Approximation of employees last 5 years. N=31

	Less	Equal no	More
2013	0 %	79,4 %	20,6 %
2015	14,7 %	64,7 %	20,6 %
2017	14,7 %	52,9 %	32,4 %

Table 25 Approximation of employees next 5 years. N=31

The proportional answers are assembled in Table 24 and Table 25. In addition, an average of each sector was calculated by coding the responses in 1=Less, 2=Equal and 3=More. However, this average can only function as a conceptual representation, as the categories were not originally numeric. The results are displayed in Figure 45.

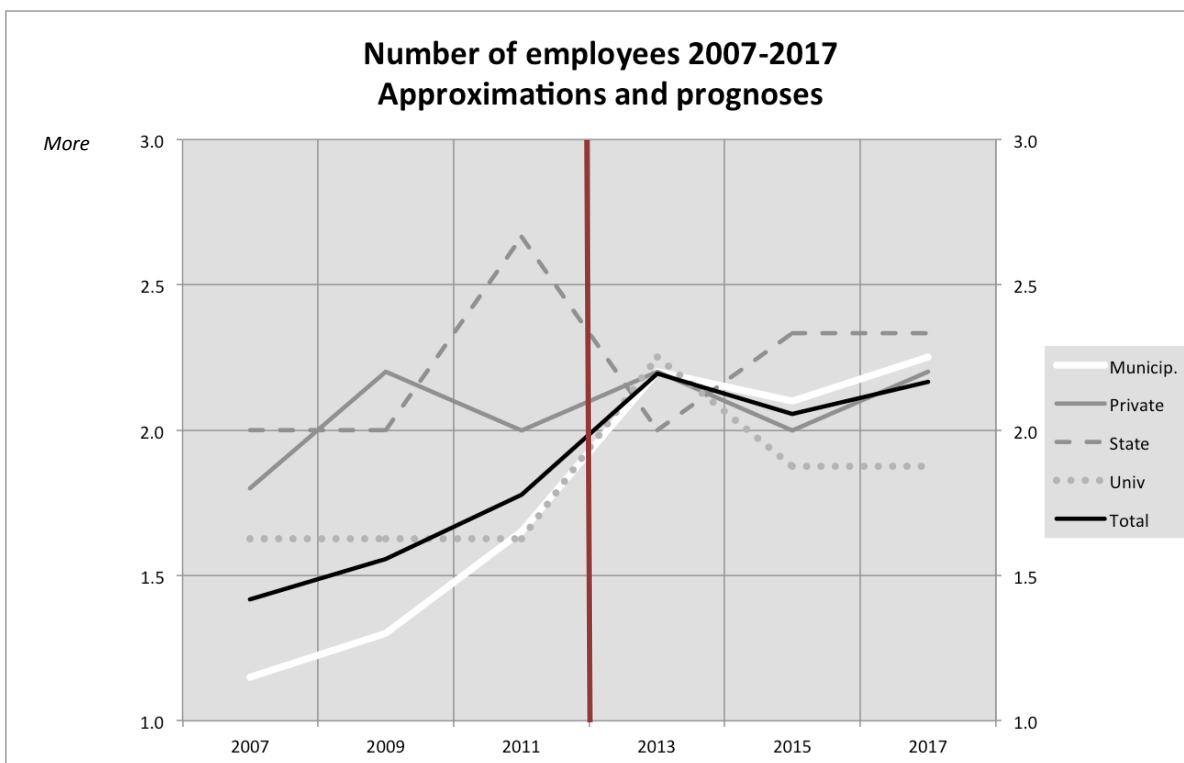


Figure 45 Number of employees 2007-2017: Approximated trends and prognoses

The chart shows a clear and general trend, with an increase in employees. Both the universities and the private sector, which are responsible for excavations, saw less of an increase than the state and municipal sector in the years before 2012, though it must be noted that one major university employer is not included in the survey material. All in all, 64,7 % of the respondents experienced fewer employees in 2007 than in 2012, 55,9 % saw fewer employees in 2009, and in 2011, a little over a third, 35,3 % of the employers had fewer employees than in 2012.

The image is slightly changed for the future prognosis. The constructed average across all sectors indicate that the amount of employees in 2013, 2015 and 2017 will fluctuate less than leading up to 2012. However, both Table 25 and Figure 45 show that there is a trend in all sectors bar the universities towards an expected increase in demand of workforce in the years

to come. This is in line with the general trend in construction and development in Norway over the last years, as presented in section 3.4.3.¹⁰⁰ Nevertheless, the expectations are modest. Whether this is a realistic, or rather a careful, prediction is hard to assess, but in general it is likely that Norwegian archaeologists can expect more jobs to come on the market in the near future.

¹⁰⁰ See Figure 6

6 Summary

The analysis above is the first survey of the entire archaeological profession in Norway, and provides a detailed picture of the situation in 2012. A brief summary follows below.

According to the present analysis, the workforce of Norwegian archaeology consists of about 1000 individuals. In 2012, a majority of 62 % were women, and 38% were men. Their median age was 35 and they had a median experience level of 8 years in the profession. Most originated from Norway and had a master's degree or equivalent in Archaeology. Their work was distributed over 3 different sectors; private, municipal and state, and they were typically working within cultural heritage management. They mainly worked full-time.

A majority of 61,7 % were temporarily employed. On average, they held 4-5 contracts of around 11 weeks, but almost half had experienced at least one contract of 2 weeks or less in 2012. A majority were employed from May to November, and more than half were unemployed for more than 2 months. Most had to receive employment benefit at some point in 2012. A typical temporarily employed archaeologist was 32 years old.

The permanently employed archaeologists had a median age of 41 years. Most of them spent 3-4 years before permanent employment was achieved, and in 2012 they had spent around 4 years in their present position. Their income was 6,1 % higher than that of the average Norwegian employee, and 23,5 % higher than a temporarily employed archaeologist, who earned 22,5 % less than the Norwegian average. Female archaeologists earned somewhat less than their male colleagues, but the discrepancy was less than in the general, Norwegian population.

The general Norwegian archaeologist did not fulfill the demands of their employers with just their education. In addition, most had to be trained in GIS and surveying; the use of databases; local knowledge, and laws and regulations, upon employment. However, in the majority of cases, the training was not considered to be to a satisfactory standard by the employee. Still, almost half had the opportunity to add to their training with further professional development situated in the workplace.

The recent global financial crisis did not affect Norway to any large degree, and the employers reported that the demand for personnel had increased since 2007. They also predicted that it was likely to increase more in the future five years, although moderately. In addition, the increase in student mass has been substantial for the last 10-15 years, which may lead to a further increase in the total archaeologist population in the labour market.

This report has shown that there are a lot of issues that need consideration on Norwegian, professional archaeology. NAR is working towards resolution of many of these issues, but it may be that the real, future challenge will be the rising number of archaeologists and the proportionally less amount of jobs available. Whether or not that is the case is not a conclusion that can be made within the frames of this survey, and further investigations of this and some of the other issues should be pursued in the future.

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