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DENMARK

Aalborg Universitet

Where do they go?

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WHERE DO THEY GO?

A COMPARATIVE ANALYSIS OF THE CAREER PATHS
OF PHD GRADUATES FROM HUMANITIES AND SOCIAL SCIENCES
AT AALBORG UNIVERSITY, 1994-2012

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AALBORG UNIVERSITY
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WHERE DO THEY GO?

FORORD

I lighed med en række andre lande har der i Danmark gennem de seneste 10 år været en markant stigning i ph.d.-optaget. Dette blev ikke mindst udmøntet med globaliseringsaftalen fra 2006, men også efter globaliseringsaftalens udløb i 2012 er den ambitiøse satsning på forskeruddannelse blevet fastholdt.

Det stigende antal ph.d.-studerende er blevet betragtet som et væsentligt løft til videnssamfundet, hvor formålet har været at sikre både højt kvalificerede forskere til universiteterne og arbejdskraft med højt vidensniveau og kompetencer til private virksomheder og offentlige institutioner.

I det seneste år er der både nationalt og internationalt kommet et stigende fokus på ph.d.-dimittendernes karriereprofiler. Hvad er beskæftigelsesmønsteret og hvilke særlige kvalifikationer har ph.d.erne? Er det lykkedes at udvikle såkaldte 'transferable skills', der gør det muligt at kombinere højt specialiserede forskerkompetencer med brede og brugbare samfundsmæssige kvalifikationer?

På de Humanistiske og Samfundsvidenskabelige Ph.d.-skoler ved Aalborg Universitet har arbejdet med ph.d.-dimittendernes karriereprofiler været et strategisk satsningsområde. Ét af initiativerne har været at foretage denne karriereundersøgelse, som kortlægger den særlige karriereprofil, som kendetegner de ph.d.er, som har modtaget en grad fra enten humaniora eller samfundsvidenskab på Aalborg Universitet. Undersøgelsen er foretaget i et landsdækkende sammenlignende perspektiv.

Denne undersøgelse, som er baseret på kvantitative, registerbaserede data, vil blive fulgt op af en kvalitativ undersøgelse, som vil gøre det muligt at komme dybere ned i bl.a. karrierevalg såvel som efterspørgsel og anvendelse af de særlige kompetencer, som ph.d.erne har erhvervet.

Vi vil gerne takke Ina Drejer, Jacob Rubæk Holm og Christian Richter Østergaard fra Institut for Økonomi og Ledelse ved Aalborg Universitet for det solide analysearbejde, de har leveret.

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WHERE DO THEY GO?

PREFACE

Over the past 10 years, the intake of PhD students has increased significantly in Denmark as well as in other countries. This is not least a result of the globalization agreement from 2006, and the ambitions for the doctoral programme continues after the agreement expired in 2012.

The growing number of PhD students is considered a significant contribution to the knowledge economy. The objective is to produce highly qualified researchers for the universities and a workforce with a high knowledge level and competences for private businesses and public institutions.

In recent years, PhD graduates' career profiles, i.e. their employment patterns and special qualifications, have come into focus nationally as well as internationally. Have we succeeded in developing so-called transferable skills that make it possible to combine highly specialized research competences with broad and useful societal qualifications?

At the Doctoral Schools of Humanities and Social Sciences at Aalborg University, PhD graduates' career profiles have been a strategic focus area. One of the initiatives is this career survey, which maps the special career profiles that characterizes PhDs with a degree in Humanities or Social Sciences at Aalborg University. The survey was conducted in a nation-wide comparative perspective.

This survey, which is based on quantitative, register-based data, will be followed up by a qualitative survey, which will make it possible to study in more detail, for example, career choice, demand and use of the special competences the PhDs have acquired.

We want to thank Ina Drejer, Jacob Rubæk Holm and Christian Richter Østergaard from the Department of Business and Management at Aalborg University for their solid analytical work.

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The analysis is conducted on behalf of the Doctoral School of Social Sciences and the Doctoral School of the Humanities at Aalborg University



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Aalborg Universitet

Fibigerstræde 14
Pontoppidanstræde



RESUMÉ

Gennem de seneste år er antallet af ph.d.-dimitterede¹ steget markant. Dette gælder ikke kun Danmark, men afspejler en international tendens, hvor der fokuseres på sikring af tilstrækkelig med forskningstalenter inden for videnøkonomien fremover. Denne udvikling giver offentlige og private virksomheder nye muligheder for at ansætte ph.d'er og kan medføre, at flere humanistiske og samfundsvidenskabelige ph.d'er vil søge beskæftigelse uden for universitetsverdenen, hvilket ellers har været mest udbredt blandt ph.d'er inden for det tekniske område. Der er dog blevet stillet spørgsmålstegn ved, om der reelt findes et ikke-akademisk arbejdsmarked for humanistiske og samfundsvidenskabelige ph.d'er, eller om deres kompetencer er for akademisk orienterede til at kunne anvendes i mere praktisk orienterede sammenhænge.

På denne baggrund har Den samfundsvidenskabelige og Den humanistiske ph.d.-skole ved Aalborg Universitet undersøgt beskæftigelsen blandt deres ph.d'er.

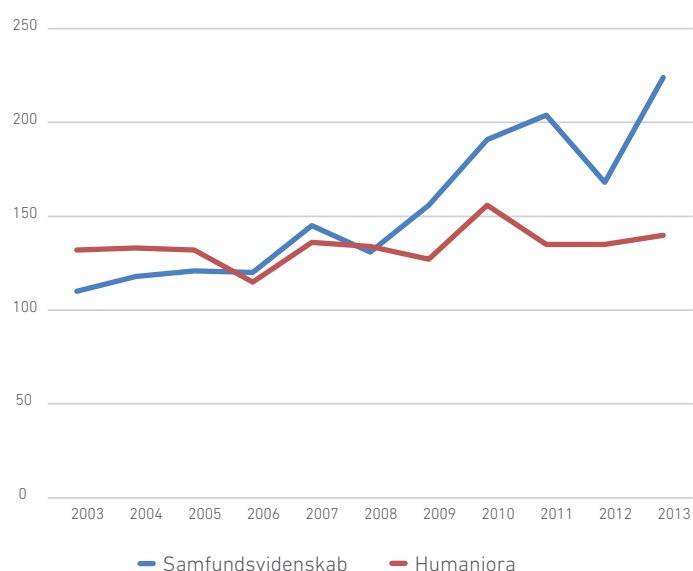
Undersøgelsen er baseret på detaljerede registerdata for 1994-2012 fra Danmarks Statistik og omfatter ph.d'er, der har modtaget en ph.d.-grad inden for humaniora eller samfundsvidenskab fra Aalborg Universitet i perioderne 1994-1999, 2000-2005 og 2006-2011. Der sammenlignes med humanistiske og samfundsvidenskabelige ph.d'er fra Aarhus Universitet, Syddansk Universitet, Roskilde Universitet, Copenhagen Business School (CBS) og Københavns Universitet. Supplerende data for ph.d'er fra humaniora og samfundsvidenskab ved Aalborg Universitet, der har afsluttet deres forskeruddannelse i perioden januar 2012-september 2015, er indsamlet gennem ph.d.-skolernes PhdManager-system.

De registerbaserede data omfatter ph.d'er, som er i beskæftigelse i Danmark i henholdsvis 2000, 2006 og 2012, og omfatter 79 procent² af de ph.d'er, der har modtaget deres grad i den undersøgte periode. De resterende ph.d'er er ikke registreret som

aktive på det danske arbejdsmarked, hvilket primært skyldes, at de opholder sig/arbejder i udlandet, ikke er i beskæftigelse eller er uden for arbejdsmarkedet.

ANTAL PH.D.ER I DANMARK

Antallet af ph.d'er i Danmark, på tværs af alle hovedområder, er steget med 91 procent i perioden 2003-2013. De tekniske og sundhedsvidenskabelige hovedområder tegnede sig for 52 procent af de i alt 1.949 ph.d'er, som modtog deres grad i 2013, mens humaniora og samfundsvidenskab tegnede sig for henholdsvis 7,2 procent, dvs. 140 ph.d'er, og 11,5 procent, dvs. 224 ph.d'er. De resterende knapt 30 procent af ph.d'erne var inden for naturvidenskab samt landbrugs- og veterinærvidenskab. Antallet af samfundsvidenskabelige ph.d'er er steget med 103,6 procent i perioden 2003 til 2013. Stigningen inden for humaniora er på mere beskedne 6,1 procent (se figur I).



Figur I: Tildelte ph.d.-grader inden for humaniora og samfundsvidenskab ved danske universiteter, 2003-2013.

Kilde: Danmark Statistik, 2014.

¹ Ph.d.-dimitterede betegnes i det efterfølgende som ph.d'er.

² Dækningsgraden er beregnet for perioden 2000-2011 pga. begrænsede oplysninger om antal tildelte grader for 2000.

WHERE DO THEY GO?

Aalborg Universitet er blandt de danske universiteter, der har haft den største stigning i antallet af ph.d.er inden for humaniora og samfundsvidenskab med mere end en fordobling i antallet af tildelte grader inden for begge hovedområder fra den første periode (1994-1999) til den sidste undersøgte periode (2006-2011).

KARAKTERISTIK AF HUMANISTISKE OG SAMFUNDSVIDENSKABELIGE PH.D.ER

På kandidatniveau er humaniora et kvindedomineret område, mens kønsfordelingen er mere ligelig på det samfundsvidenskabelige område. Dette mønster ændrer sig imidlertid, når man ser på kønsfordelingen blandt de, der afslutter en ph.d.-uddannelse inden for de to hovedområder. På landsplan er der en overvægt af mænd blandt humanistiske ph.d.er. Aalborg Universitet og Roskilde Universitet skiller sig ud ved, at der i perioder har været en overvægt af kvinder blandt ph.d.erne inden for humaniora. Eksempelvis udgør kvinder 57 procent af de humanistiske ph.d.er fra Aalborg Universitet i perioden 2006-2011, og overvægten af kvinder ser ud til at fortsætte efter 2011.

Inden for samfundsvidenskab er der på landsplan en mere udtalt overvægt af mænd blandt ph.d.erne, end det er tilfældet på humaniora. Dog har kvindernes andel været generelt stigende gennem hele den undersøgte periode. Ved Aalborg Universitet er sket en betydelig udligning i kønsfordelingen blandt samfundsvidenskabelige ph.d.er, bl.a. er kønsfordelingen stort set ligelig for perioden 2006-2011 med 51 procent mænd og 49 procent kvinder. Data efter 2011 viser, at antallet af kvinder nu har overhalet antallet af mænd blandt samfundsvidenskabelige ph.d.er fra Aalborg Universitet.

Ph.d.er inden for humaniora er generelt ældre end ph.d.er inden for samfundsvidenskab. Dette er ikke udelukkende et dansk fænomen, men kan genfindes i andre OECD-lande. Gennemsnitsalderen var 41,5 år for humanistiske ph.d.er fra Aalborg Universitet i perioden 2006-2011. I samme periode var gennemsnitsalderen

37,5 år for samfundsvidenskabelige ph.d.er fra Aalborg Universitet. Sammenlignet med ph.d.er fra de øvrige universiteter var humanistiske ph.d.er fra Aalborg Universitet markant ældre end ph.d.er fra Københavns Universitet (36,9 år) og Aarhus Universitet (37,3 år). Inden for samfundsvidenskab var ph.d.er fra Aalborg Universitet ældre end ph.d.er fra Aarhus Universitet (35,1 år) og markant yngre end ph.d.er fra Roskilde Universitet (40,5 år).

Gennemsnitsalderen og median-alderen ligger relativt tæt på hinanden, hvilket indikerer, at der er ikke er skævhed i aldersfordelingen, hvor eksempelvis en lille gruppe betydeligt ældre ph.d.er har en markant indflydelse på gennemsnitsalderen.

I forhold til nationalitet udgør danske statsborgere cirka 90 procent af de ph.d.er inden for både humaniora og samfundsvidenskab, som bliver i Danmark og finder beskæftigelse efter ph.d.-graden. Der er ikke markante forskelle mellem universiteterne på dette område og heller ikke nogen tydelig ændring over tid, hvilket betyder, at den stigende internationalisering af ph.d.-området ikke er slået igennem med hensyn til hvor stor en andel ph.d.er med udenlandsk baggrund, der finder beskæftigelse i Danmark efter erhvervet ph.d.-grad.

HUMANISTISKE OG SAMFUNDSVIDENSKABELIGE PH.D.ERS ARBEJDSMARKED

Inden for det samfundsvidenskabelige område var 95 procent af ph.d.erne fra 2006-2011 på tværs af alle danske universiteter i beskæftigelse i november 2012. Samfundsvidenskabelige ph.d.er fra Aalborg Universitet ligger med en beskæftigelsesgrad på 91 procent under gennemsnittet, hvilket sandsynligvis kan tilskrives karakteristika ved et begrænset nordjysk arbejdsmarked, hvor der er færre jobmuligheder for højtuddannede end i eksempelvis hovedstadsregionen. De senest tilgængelige data indikerer en forbedret beskæftigelsessituation for de samfundsvidenskabelige ph.d.er fra Aalborg Universitet, idet der stort set ingen ledighed er blandt ph.d.erne fra perioden 2012-2015.

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Andelen af samfundsvidenskabelige ph.d.er i beskæftigelse er generelt højere end humanistiske ph.d.er. Dog er humanisternes beskæftigelsessituation forbedret i løbet af den undersøgte periode. Eksempelvis var 92 procent af de humanistiske ph.d.er fra 2006-2011 i beskæftigelse i november 2012. Humanistiske ph.d.er fra Aalborg Universitet ligger i den forbindelse over gennemsnittet, da alle med en ph.d.-grad fra 2006-2011 var i beskæftigelse pr. november 2012.³

Ph.d.er ansættes typisk i jobkategorien "lønmodtager på højeste niveau", hvilket omfatter jobtyper, der som minimum kræver kvalifikationer på kandidatniveau. Der er få ph.d.er ansat i lederstillinger, og ligeledes et fåtal selvstændige. Der er også registreret ph.d.er i jobkategorier, som formelt er klassificeret til at forudsætte kvalifikationer under kandidatniveau. Det gælder dog kun i meget få tilfælde ph.d.er fra Aalborg Universitet, mens det er mere udbredt for ph.d.er fra andre danske universiteter. I forhold til lønniveau ligger de humanistiske ph.d.er som hovedregel lavere end de samfundsvidenskabelige. De indbyrdes forskelle mellem universiteter varierer meget over tid for de humanistiske ph.d.ers vedkommende. I 2012 ligger de humanistiske ph.d.er fra Aalborg Universitet blandt de humanistiske ph.d.er, der har det højeste lønniveau. For de samfundsvidenskabelige ph.d.ers vedkommende er lønforskellene på tværs af universiteter begrænsede i 2000 og 2006, mens der er større forskelle i 2012, hvor samfundsvidenskabelige ph.d.er fra Aalborg Universitet har en gennemsnitlig bruttoindkomst, som ligger markant under niveauet for samfundsvidenskabelige ph.d.er fra Syddansk Universitet, Aarhus Universitet og ikke mindst CBS. Her spil-



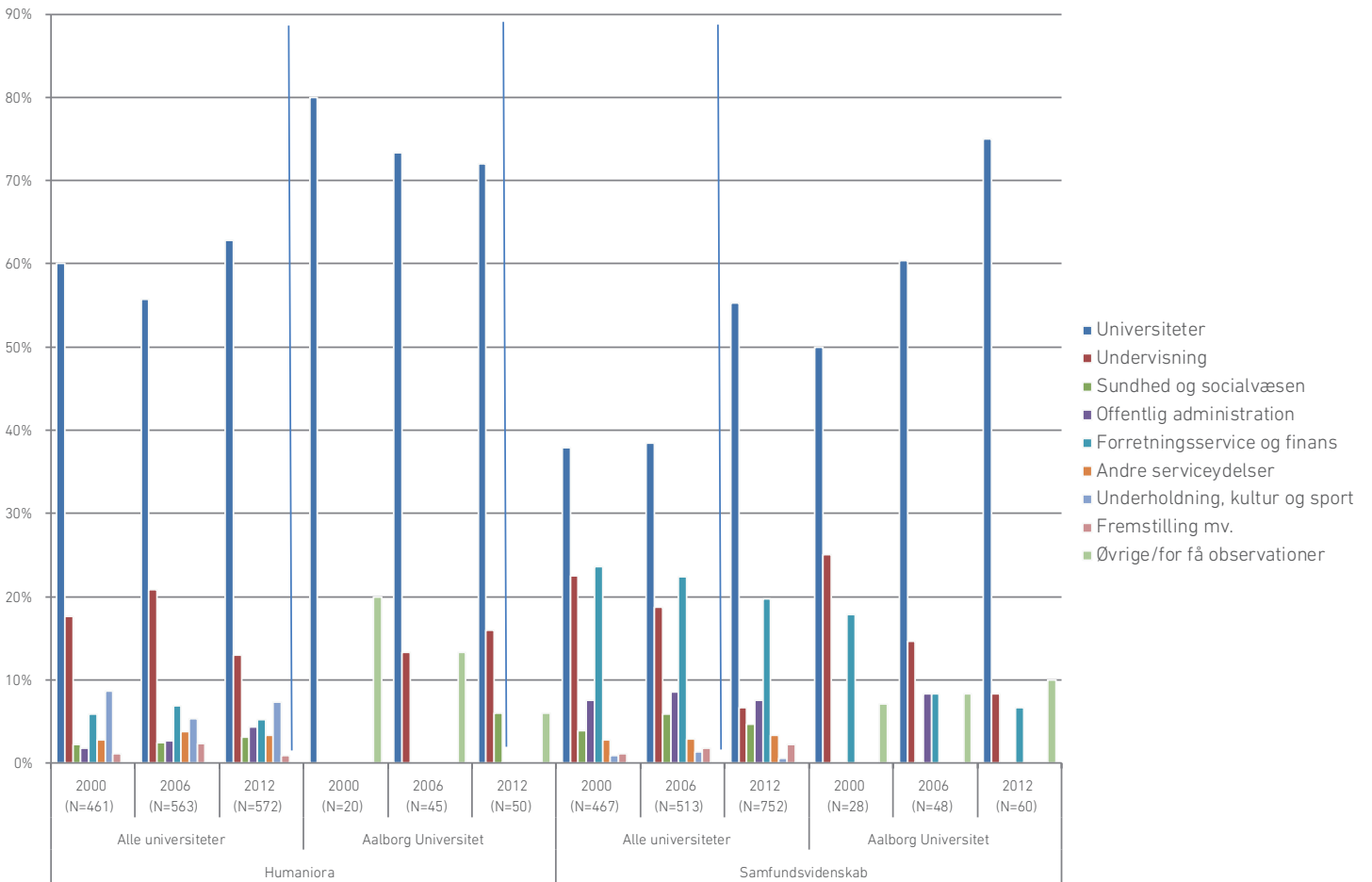
ler karakteristika ved det nordjyske arbejdsmarked sandsynligvis igen ind, idet Nordjylland generelt har et lavere lønniveau end resten af landet.

For humanistiske ph.d.er er der sjældent signifikante lønforskelle mellem mænd og kvinder fra samme universitet. Inden for det samfundsvidenskabelige område er det mere udtalt, at mandlige ph.d.er har højere løn end kvinder, der har en ph.d.-grad fra samme universitet. Her skiller Aalborg Universitet sig ud ved, at der ikke er signifikante forskelle i det gennemsnitlige lønniveau for mandlige og kvindelige ph.d.er på det samfundsvidenskabelige område i 2012.

Ph.d.er er typisk bosat i den region, hvor de har gennemført deres ph.d.-uddannelse. Aalborg Universitet hører dog, sammen med Syddansk Universitet og Aarhus Universitet, til den gruppe af universiteter, hvor den laveste andel af ph.d.er bliver boende i uddannelsesregionen. I 2012 boede 51 procent af de humanistiske ph.d.er fra Aalborg Universitet fra perioden 2006-2011 i Region Nordjylland. For de samfundsvidenskabelige ph.d.ers vedkommende var det 58 procent. De humanistiske ph.d.er fra Aalborg Universitet, som ikke bor i Region Nordjylland, bor typisk i Region Midtjylland. Blandt de samfundsvidenskabelige ph.d.er fra Aalborg Universitet er der relativt mange, som er bosat i såvel Region Hovedstaden som Region Midtjylland. Den begrænsede geografiske mobilitet blandt nye ph.d.er er ikke overraskende, når man tager deres alder i betragtning: Mange ph.d.er må antages at have stiftet familie i den region, hvor de har gennemført deres ph.d.-uddannelse.

³ På grund af diskretionshensyn indgår grupper med under 3 personer ikke i resultaterne. Det betyder, at der, på trods af, at der findes fuld beskæftigelse, kan være op til 2 personer, som er arbejdsløse/uden for arbejdsstyrken.

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Figur II. Branchefordelt beskæftigelse for ph.d.erne fra Aalborg Universitet sammenlignet med alle danske universiteter

OBS: Ph.d.er fra Aalborg Universitet indgår også i opgørelserne for alle universiteter

WHERE DO THEY GO?

Det primære arbejdsmarked for ph.d.er inden for både humaniora og samfundsvidenskab skal for hele undersøgelsesperioden findes inden for universitetssektoren. I 2012 var 63 procent af de humanistiske ph.d.er og 55 procent af de samfundsvidenskabelige ph.d.er, der havde modtaget deres grad fra et dansk universitet i perioden 2006-2011, ansat i universitetssektoren (se figur II – samt figur III og IV for mere detaljerede oversigter).

Ph.d.er fra Aalborg Universitet er mere tilbøjelige end ph.d.er fra de øvrige universiteter til at finde beskæftigelse ved et dansk universitet: I 2012 var 72 procent af de humanistiske ph.d.er fra Aalborg Universitet fra 2006-2011 ansat ved et dansk universitet. For de samfundsvidenskabelige ph.d.er fra Aalborg Universitet var det 75 procent for samme periode.

Mens andelen af universitetsansættelser er faldende over tid fra et meget højt niveau for de humanistiske ph.d.er fra Aalborg Universitet, er den relativt stabil på tværs af universiteterne. De seneste data viser, at andelen af humanistiske ph.d.er fra Aalborg Universitet, som finder beskæftigelse ved et dansk universitet, fortsætter med at falde efter 2012.

Næst efter universitetssektoren er undervisning det vigtigste beskæftigelsesområde for humanistiske ph.d.er. Dette gælder også for humanistiske ph.d.er fra Aalborg Universitet i 2006 og 2012. I 2012 er sundhed og socialvæsen desuden blandt de sektorer, der beskæftiger humanistiske ph.d.er fra Aalborg Universitet. Dermed adskiller ph.d.er fra Aalborg Universitet sig fra det generelle

billede af humanistiske ph.d.er i Danmark, hvor underholdning, kultur og sport samt forretningsservice og finans⁴ er større beskæftigelsesområder end sundhed og socialvæsen.

Andelen af universitetsansættelser er stigende for de samfundsvidenskabelige ph.d.er, både på tværs af alle universiteter og for Aalborg Universitet. Betragtet over den samlede periode fra 2000 til 2012 har stigningen dog været større for ph.d.er fra Aalborg Universitet end for de øvrige universiteter. Dette kan til dels forklares ved en ekspansion inden for de samfundsvidenskabelige uddannelser på Aalborg Universitet i denne periode. De seneste data indikerer imidlertid, at for de samfundsvidenskabelige ph.d.er fra Aalborg Universitet er der efter 2012 et fald i den andel, som er beskæftiget i den danske universitetssektor.



For de samfundsvidenskabelige ph.d.er er forretningsservice og finans på landsplan det næst vigtigste beskæftigelsesområde efter universiteter. Undervisning fremstår i 2000 og 2006 som en lige så stor aftager af ph.d.er inden for samfundsvidenskab som forretningsservice og finans, hvilket sandsynligvis skyldes, at CBS i disse perioder er klassificeret som tilhørende undervisningssektoren. I 2012 er CBS en del af universitetssektoren i beskæftigelsesopgørelserne.

For de samfundsvidenskabelige ph.d.er fra Aalborg Universitet tegner undervisningssektoren sig for en større andel af beskæftigelsen end forretningsservice og finans i både 2000, 2006 og 2012.

⁴ Forretningsservice og finans omfatter blandt andet de brancher, som ofte betegnes "vidensservice", som eksempelvis rådgivnings- og konsulentvirksomhed.



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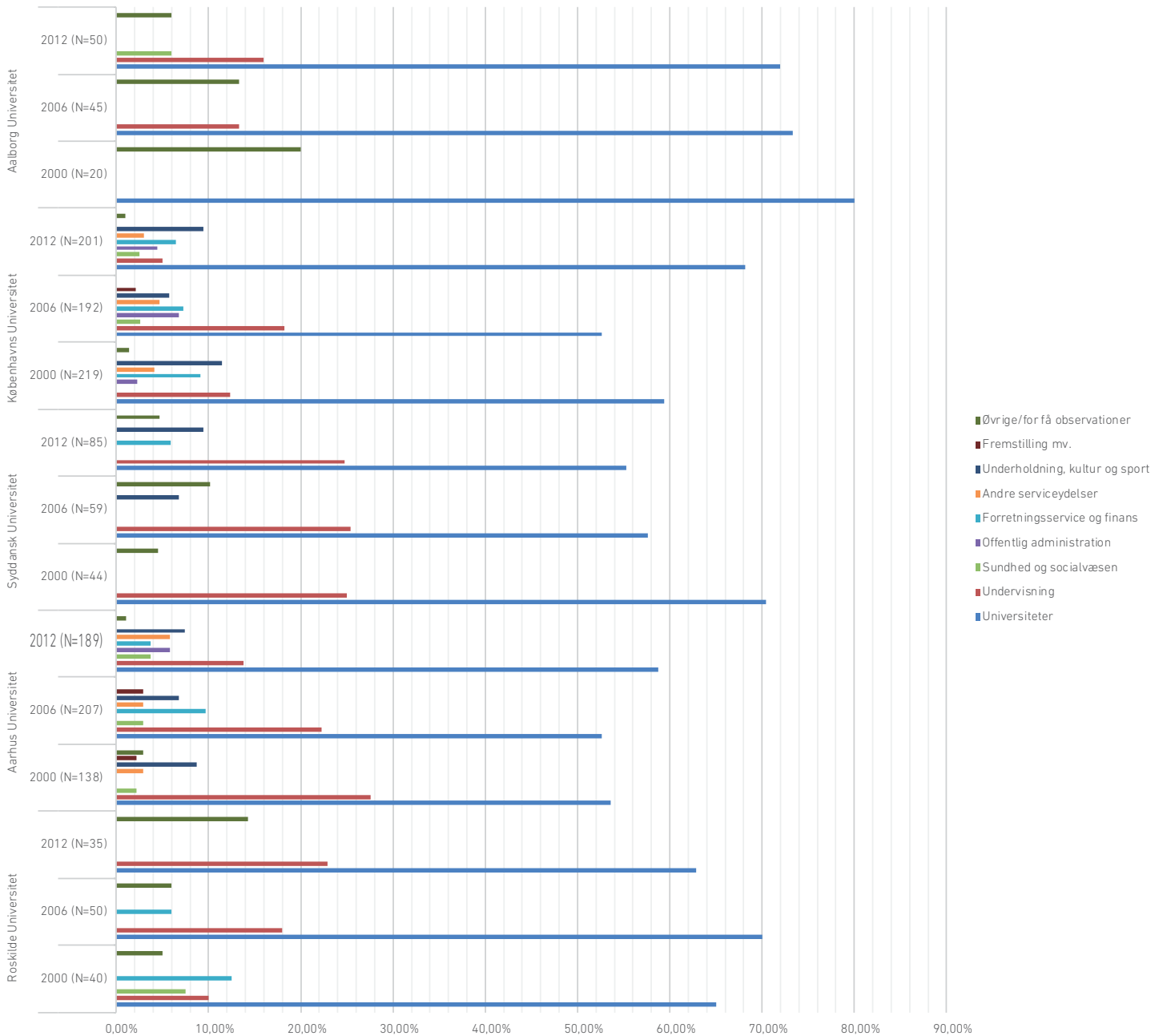
Det gælder for Aalborg Universitet, og i svagere grad for alle universiteter betragtet under ét, at forretningservice og finans relativt set mister betydning som beskæftigelsesområde for samfundsvidenskabelige ph.d.er.

Det overordnede indtryk er, at ph.d.er fra Aalborg Universitet har et mere snævert afgrænset arbejdsmarked end ph.d.er fra alle de danske universiteter betragtet under ét. Det begrænsede antal ph.d.er fra Aalborg Universitet, kombineret med restriktionen om at brancher med under tre ansatte fra et givent universitet automatisk klassificeres under "Øvrige/for få observationer", påvirker dog dette resultat. Arbejdsmarkedet for ph.d.er fra Aalborg Universitet kan derfor se mere snævert ud, end det reelt er. Derudover spiller det ind, at selvom der er en høj vækst i antallet af ph.d.er fra især det Samfundsvidenskabelige Fakultet i den samlede undersøgelsesperiode, så er de samfundsvidenskabelige

uddannelser ekspanderet meget i samme periode, hvilket har givet ph.d.er mulighed for at blive i universitetssektoren, fordi de har været efterspurgt som arbejdskraft i denne.

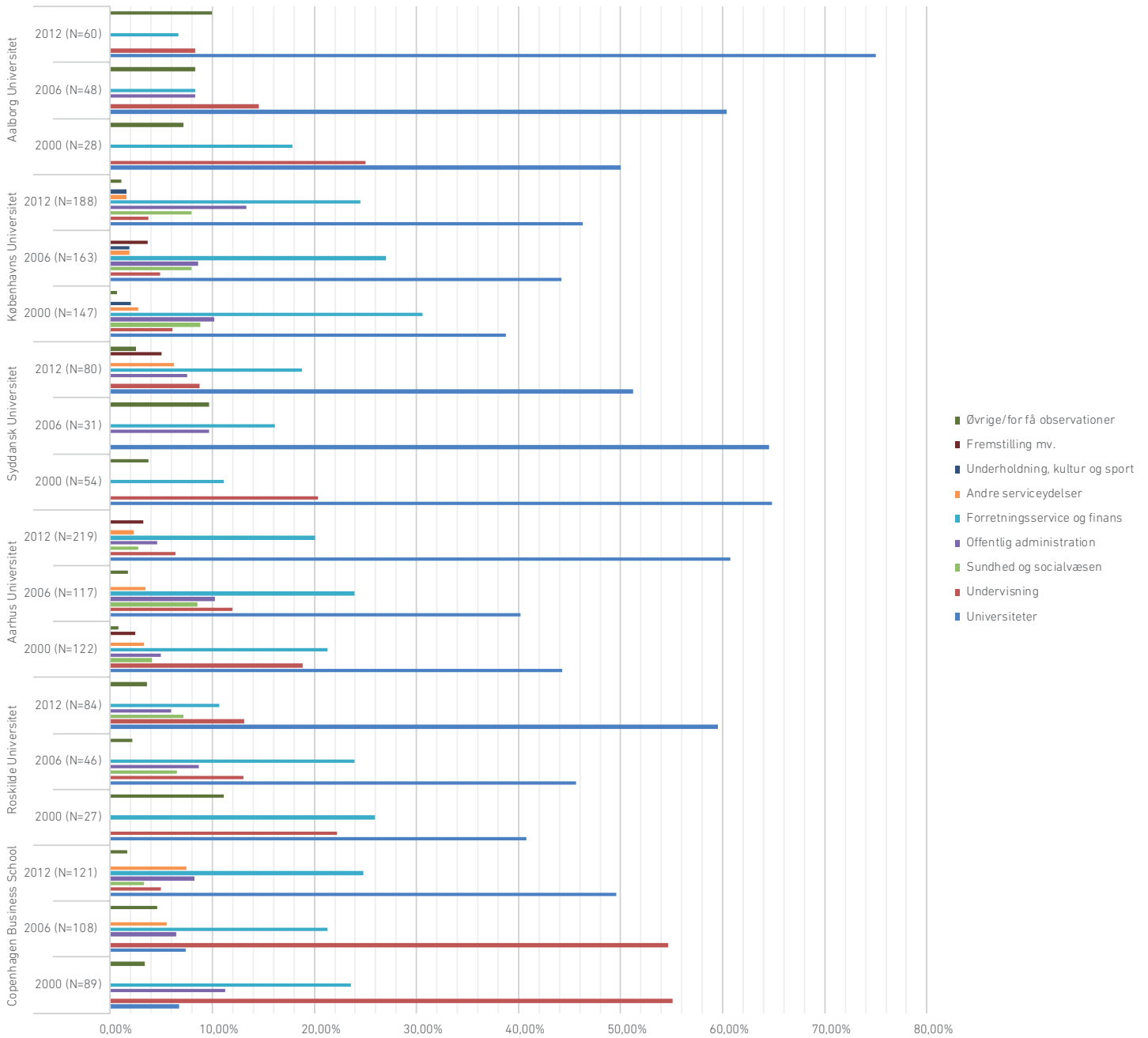
I forhold til den debat, der blev omtalt indledningsvis, om hvorvidt der reelt findes et ikke-akademisk arbejdsmarked for humanistiske og samfundsvidenskabelige ph.d.er i Danmark, så er budskabet fra nærværende undersøgelse, at et sådant arbejdsmarked findes, men det er begrænset, og universitetssektoren har stadig en meget dominerende rolle. Dette kan dog ændres, når antallet af studerende på de humanistiske og samfundsvidenskabelige uddannelser på danske universiteter stagnerer, hvorved universiteternes efterspørgsel efter ph.d.er vil falde. Dermed vil der komme et pres på ph.d.er for i højere grad at finde jobs i andre brancher.

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Figur III. Humaniora. Branchefordelt beskæftigelse for de enkelte universiteters ph.d.er

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Figur IV. Samfundsvidenskab. Branchefordelt beskæftigelse for de enkelte universiteters ph.d'er



WHERE DO THEY GO?

1. INTRODUCTION

Over the last years, there has been a large growth in the supply of PhDs graduates⁵ in Denmark, following an international trend to secure the future supply of research talent for the knowledge economy (Enders and de Weert, 2004; Neumann and Tan, 2011). This development has provided new opportunities for public and private firms to hire PhDs, and may have induced especially PhDs in humanities and social sciences - who traditionally have been more oriented towards university employment than e.g. PhDs in technical sciences - to find new types of jobs rather than pursuing a traditional university career. But the extent to which there is a non-academic labour market for PhDs has been questioned, based on the assertion that non-academic employers find that PhDs are too academically oriented and not well-equipped to solve practical problems (Kyvik and Olsen, 2012). Therefore, the Doctoral Schools at the Faculties of Social Sciences and Humanities at Aalborg University want to explore the employment of their PhD graduates in further detail.

There is an increasing awareness at universities to make sure that PhDs achieve more general competences during their PhD study and that they prepare for non-university jobs (Golovushkina and Milligan, 2013). Some education researchers detect a pressure to redefine the role of doctoral training "away from its historic purpose as the exclusive instrument for renewing the academic profession" (Enders and de Weert, 2004, p. 130).

However, little is still known about where the PhDs go after they graduate and whether career choices and wages differ according to discipline, university, and over time between different cohorts

of PhDs. The purpose of this report is to investigate where the PhDs who received their degrees in humanities and social sciences from Aalborg University during the period 1994-2011 went and to reveal potential differences between PhDs from Aalborg University and other Danish universities. The report also includes background information on changes in gender distribution, nationality and age of the PhDs among cohorts and universities. The analyses are based on detailed registry data for the period 1994-2012.

THE SUPPLY OF PHDS IN DENMARK

The supply of PhDs has increased by 91 per cent across all disciplines from 2003 to 2013 (Statistics Denmark, 2014). Denmark thus follows the international trend across OECD countries (Auriol et al., 2013).⁶

Technical and health sciences account for more than half of the 1,949 PhD graduates in Denmark in 2013, and humanities and social sciences add to up 18.7 % of the total number of PhDs. The growth in the number of PhDs has accelerated after 2006 due to an infusion of additional funds to PhD training at the Danish universities (DEA, 2014). With the increased intake of PhD students, Denmark has caught up with other Nordic countries in terms of the percentage of a youth cohort entering PhD studies (Epinion, 2012). In 2012, 2.2 per cent of young people in Denmark graduated from an advanced research program compared with 2.1 per cent in Norway, 2.5 per cent in Finland and 2.8 per cent in Sweden (OECD, 2014).

5 In the following PhD graduates will be referred to as PhDs.

6 Auriol et al. (2013) report a 38 per cent increase in the number of new doctoral graduates from universities in OECD countries between 2000 and 2009.

WHERE DO THEY GO?

Table 1. PhD degrees awarded in Denmark by year and discipline, 2003 and 2013

	2003	2013	Increase 2003-2013
Natural sciences	201	361	79.6%
Technical sciences	220	460	109.1%
Health sciences	269	553	105.6%
Agricultural and veterinarian sciences	89	211	137.1%
Social sciences	110	224	103.6%
Humanities	132	140	6.1%
Total	1,021	1,949	90.9%

Source: Statistics Denmark, 2014

Social sciences and humanities account for 364 awarded PhD degrees in Denmark in 2013, which represents an increase of 50 per cent since 2003. However, the share of humanities and social sciences out of the total number of PhDs has dropped from 23.7 per cent in 2003 to 18.7 per cent in 2013. This is caused by two very different development paths by the two disciplines: Social sciences have had an increase in awarded PhD degrees of 103.6 per cent over the period 2003-2013, whereas the increase for humanities is at a more modest 6.1 per cent (see figure 1).

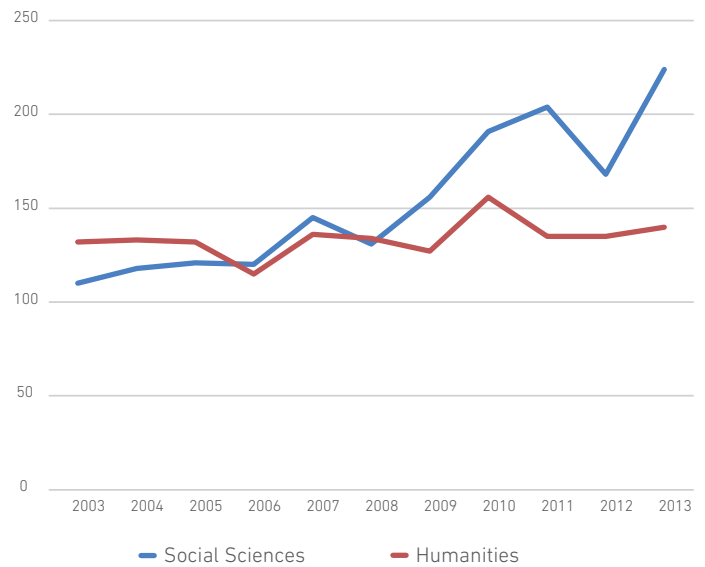


Figure 1. Awarded PhD degrees in Social sciences and Humanities in Denmark, 2003-2013.

Source: Statistics Denmark, 2014

Although the increase in number of PhDs in Denmark is accompanied by an increase in number of students at Danish universities (see e.g. Universities Denmark, 2013 and 2014) and an associated increase in demand for academic university staff, PhDs are to an increasing extent expected to find employment outside the university sector (DEA, 2014). Denmark, together with Belgium and the United States, are among the OECD countries with the highest fraction of PhDs – more than one out of three – employed in the private sector (Auriol et al., 2013). However, PhDs from humanities and social sciences have relatively low frequencies of employment in the private sector, as well as in other non-university sectors, compared to other disciplines in Denmark. DEA (2014) finds that 20-25 per cent of PhDs within humanities and social sciences are employed in the private sector five years after completing their PhD. PhDs from technical sciences are most likely to find employment in the private sector, with 59 per cent being private-sector employed five years after receiving their PhD degree (DEA, 2014).



WHERE DO THEY GO?

OUTLINE OF THE REPORT

The drastic increase in supply of PhDs in Denmark has only to a limited extent been followed by analyses of the effects of the considerable investment that this increase represents. In 2011, this prompted the National Audit Office of Denmark to recommend that in particular the development of the private sector's demand for PhDs should be monitored closely (The National Audit Office of Denmark, 2011). Following the recommendations of the National Audit Office, the Danish Ministry of Science, Innovation and Higher Education in 2012 published a foresight-analysis of the demand for PhDs (Epinion, 2012). This analysis presents four different scenarios for the development in the demand for PhDs in the coming years (2015-2030). Only one, the so-called "maximum scenario", finds that there will be a deficit of PhDs. In this scenario, it is assumed that PhDs will increasingly replace master level graduates due to a general deficit of the latter.

The three other scenarios find that if the development in supply of PhDs across all disciplines stabilizes with a yearly intake of approximately 2,600 PhD students, there will be a surplus of PhDs in the short as well as the long run. The "user scenario", which is based on surveys among potential employers, finds that for humanities and social sciences there will be an approximate balance between supply and demand, especially in the long run. Even though the user scenario finds a reasonable balance between the supply and demand of PhDs, the analysis stresses that such a balance requires considerable flexibility from employers as well as PhDs. It is also assumed that more PhDs will be employed in functions that do not require PhD level qualifications (Epinion, 2012). This is in accordance with an analysis including several OECD countries, which finds that a considerable fraction of PhDs regard their job functions to be only partially or not at all related to their PhD degree (Benito and Romera, 2013).

The present analyses map PhDs who received their PhD degree from Aalborg University in humanities and social sciences during the period 1994-2011. The PhDs are divided into three cohorts, and their employment situation is analysed in 2000, 2006 and 2012 respectively. The applied data and method – including the analysed periods – are described in section 2. Section 3 presents the overall characteristics of the PhDs, more specifically gender distribution, nationality and average age at graduation. Next follows a section on the employment situation of the PhDs, including employment status, industry of employment, and job position. Special attention is given to whether any differences can be detected between the proportion of male and female PhDs who find employment at a Danish university. Section 5 analyses whether there are differences in gross income between PhDs from the different universities, as well as between male and female PhDs from the same university. Finally, section 6 describes the regional distribution of the PhDs. Section 7 concludes on the analysis.

Throughout the report, PhDs from Aalborg University are compared to PhDs from Copenhagen University, University of Southern Denmark, Aarhus University, Roskilde University and Copenhagen Business School⁷. Between sections individual PhD profiles are inserted to supplement the registry-based analyses with concrete examples of the careers of social sciences and humanities PhDs from Aalborg University.

7 PhDs from humanities at Copenhagen Business School are only included to a limited extent due to very low numbers.



WHERE DO THEY GO?

2. DATA AND METHOD

The analyses are based on registry data spanning the population of employed individuals and their workplaces in Denmark.⁸ Therefore, the analyses focus on PhDs who are in employment. PhDs who are registered as unemployed or who are outside of the labour force are only included in figures showing employment status. The analyses are limited to PhDs in humanities and social sciences, and the analyses refer to recent PhDs' status at specific moments in time. The focus is on PhDs from Aalborg University compared other Danish universities.

The analysed registry data pertain to the first week of November in the years 2000, 2006 and 2012. The analyses presented in this report compare the characteristics of recently graduated PhDs in these three years. In each instance recent PhDs will be defined as PhDs who received their degree during the preceding six years (1994-1999; 2000-2005; 2006-2011). This entails that tables and figures referring to data at the point of graduation (e.g. age) will refer to data ending in 2011, while those referring to data on employment (e.g. sector) will refer to data ending in 2012. Because the analyses are based on registry data, which are only made available with some time delay, 2012 is the latest year available for the analysis. In order to explore whether any significant changes have occurred after 2012 in the characteristics of the PhDs (in terms of age and gender distribution) and in their employment pattern (industry of employment), PhDs from humanities and social sciences graduating from Aalborg Univer-

sity during the period January 2012–September 2015 have been identified manually from the universities' PhdManager system in order to explore whether there are indications of considerable shifts in e.g. employment patterns after 2012. The results of data extractions from PhdManager – which are not directly comparable with the analyses based on the register data – are reported in text boxes in the relevant sections throughout the report.

The register-based analyses are supplemented with illustrative profiles of PhD graduates from humanities and social sciences at Aalborg University. These profiles are not selected to be representative of the analysed PhD cohorts – in fact PhDs employed outside the university sector are overrepresented in the profiles. The purpose of the profiles is, thus, to show the variety of possible career opportunities of PhDs rather than to show their most typical employment positions.

The structure of the register data entails that only PhDs employed in Denmark in the first week of November of the analysed years are included in the registry-based analyses.⁹ As the data are classified, it is necessary to censor some results from the report. This primarily implies that values referring to less than three individuals have been excluded. The specific form of the censoring is made apparent in the description of the variables in the textbox below.

⁸ The registry data are combined in Statistics Denmark's IDA database. When no other sources are mentioned, tables and figures are based on own calculations based on the IDA database.

⁹ Exceptions are figures 4, 5A and 5B, which also include PhDs who are unemployed or outside the labour force.



WHERE DO THEY GO?

DATA AND VARIABLES

The following data are produced for each of the PhDs employed in the first week of November in the respective years:

- **University.** The university that has awarded the PhD degree. Only universities offering degrees in humanities and social sciences are included.
 - o Aalborg University. For the period concerned AAU Copenhagen and AAU Esbjerg are not relevant.
 - o Copenhagen University including the Royal School of Library and Information Science.
 - o Copenhagen Business School.
 - o Aarhus University including the former Danish Pedagogical University campus in Copenhagen.
 - o University of Southern Denmark.
 - o Roskilde University.
- **Labour market status.** This variable distinguishes between PhDs that are employed in November but also received unemployment benefits during the year and those that are employed in November and did not receive employment benefits during the year. The variable also contains a category for PhDs residing in Denmark that are not employed in November. It is not possible to say whether this last class consists of PhDs that are registered as unemployed or are outside of the labour force. People registered as being outside the labour force e.g. include those that receive other types of public relief than unemployment benefits or social security, such as old age pensioners and people on long-term sick leave (see Statistics Denmark., 2015). If any group of PhDs contains less than three individuals then this group is omitted from the figures.
- **Gender.** Gender is included both as part of a general description of the PhDs as well as in relation to employment at university and gross income after receiving the PhD degree. To test the statistical significance of differences across universities, a chi squared test is used to test whether it can be rejected that row and columns of the underlying tables are independent. If any group contains less than three observations then the information is reported as not available (n.a.) in the figures and tables.

- **Industry of employment.** A transition from the classification system NACE Rev. 1 to NACE Rev. 2 in 2008 entails that industries are classified somewhat differently in 2012 than in 2000 and 2006 (NACE= Nomenclature statistique des activités économiques dans la Communauté européenne – a statistical classification of economic activities in the European Community). For all three years, workplaces are grouped into the following eight industries, albeit the industries are defined slightly differently in 2012 than in 2000 and 2006:

- o Manufacturing etc. (also contains agriculture, fishing, mining, utilities and construction)
- o Business services and finance
- o Entertainment, culture and sports
- o Other services
- o Teaching
- o Universities
- o Healthcare and social services
- o Public sector administration

The main differences between on the one side 2000 and 2006 and on the other side 2012 is that Copenhagen Business School is classified as "Teaching" in 2000 and 2006, but as "Universities" in 2012. If there are less than three PhDs employed in an industry, they will be reassigned to an industry labelled "Other/ too few to specify".

[Continues on next page]

WHERE DO THEY GO?

DATA AND VARIABLES, CONTINUED

- **Employment position.** Employment position refers to the type of occupation that an individual has, while industry of employment refers to the classification of the workplace of the individual. Industry reflects the activities, technology and output of firms, while occupation follows from a combination of field and length of education together with position in the hierarchy of the workplace's organisation. Four categories of employment position are considered in the analyses: Self-employed (including employers), management, high-level wage earners, and other wage earners. High-level wage earners are defined as people employed in positions that require the highest level of qualifications, which in practice means qualifications equivalent to at least a master's degree. The final category, other wage earners, includes middle and lower level wage earners as well as the PhDs that cannot be classified into any of the first three categories. If there are less than three individuals in a given category, then this category is left out of the figures.
- **Age when receiving the PhD degree.** This variable is continuous and is registered at the time of receiving the PhD degree. Thus, this is the only variable that does not refer to 2000, 2006 and 2012 respectively. Average age at the time of receiving the PhD degree will be compared for each university relative to Aalborg University using a regular t-test. When using the t-test to compare sample means it is assumed that the two samples have equal variance but we know this is not true in most cases in our data. In order to correct for non-equal variance of age across the universities the Satterthwaite correction is used. As the difference in variance between two universities approaches zero the correction approaches zero as well.
- **Gross income.** The gross income for the year of the analysis is measured in current DKR. Gross income includes domestic taxable income as well as capital earnings and foreign-generated income. Average gross income for PhDs from Aalborg University is compared to PhDs from other Danish universities using the same test procedure as outlined above for the age variable. Differences in domestic taxable income only have also been explored, leading to similar relative results as gross income (these results are not reported but are available upon request).
- **Region.** This variable reflects the region of residence in the three years of the analysis. Denmark is divided into five administrative regions: North Denmark, Central Denmark, South Denmark, Zealand, and the Capital Region. If less than three PhDs are residing in a region then these are excluded from the figures.
- **Nationality.** This variable refers to country group of origin (based on citizenship). A distinction is made between the following countries and country groups: Denmark, EU countries, other European countries, North America, Asia, and other countries. If there are less than three individuals within a given country group these are assigned to an "Other/Too few to specify" category.

The analyses are mostly based on comparisons of means and proportions. It is important to keep in mind that observed differences in means and proportions may be reflecting a common underlying cause and not necessarily university-specific effects. If for example it is observed that PhDs from humanities from Aalborg University in 2006 have a lower gross income than PhDs

from humanities from other Danish universities, this may be associated with the fact that the cohort from Aalborg University is employed in industries and geographical areas where the wage level is relatively lower, which again may reflect the limited geographical mobility of people in their late 30s.

WHERE DO THEY GO?

Statistics Denmark has registered a total of 3,138 awarded PhD degrees within humanities and social sciences in Denmark during the period 2000-2011.¹⁰ The present analyses include 2,489 new PhDs¹¹ from the same period, which corresponds to coverage of 79 per cent of all new PhDs. The remaining PhDs are either working abroad or are outside the labour market. The coverage is higher for social sciences than for humanities, and the coverage decreases over time.

The percentage of international PhD students in Denmark has increased significantly over the last decades: 9.8 per cent of the newly admitted PhD students in 1995 were foreign-born compared to 32.9 per cent in 2012 (DEA, 2014). Denmark has thus seen a considerably higher increase in foreign-born PhDs than in native-born. At the Scandinavian level, the same is the case for Finland, whereas the opposite is the case for Sweden (Auriol et al., 2013).

Table 2. Overall data coverage of the analyses

		Total number of awarded degrees	PhDs included in analyses	Coverage
Humanities	1994-1999	n.a.	477 (477)	n.a.
	2000-2005	730	567 (557)	78% (76%)
	2006-2011	803	589 (576)	74% (72%)
Social Sciences	1994-1999	n.a.	484	n.a.
	2000-2005	658	568	86%
	2006-2011	947	765	81%
Total	2000-2011	3,138	2,489 (2,466)	79% (79%)

Figures in brackets are exclusive of PhDs from Humanities at Copenhagen Business School.

Source: Statistics Denmark's Databank (data extracted 26 June 2015) and own calculations on the IDA Database

¹⁰ Statistics Denmark does not publish data on awarded PhD degrees for 1994 and 1995, therefore it is not possible to calculate the analyses' coverage for the period 1994-1999.

¹¹ PhDs who are unemployed or not active on the labor market – see figures 4, 5A and 5B – are not included in this number.

WHERE DO THEY GO?

Across all disciplines, 37 per cent of the international PhDs have left Denmark one year after completing their PhD. This is considerably higher than for native-born PhDs where less than 10 per cent have left Denmark one year after graduating. Native-born PhDs who have left Denmark are also much more likely to migrate back to Denmark within five years after completion of their PhD than international PhDs (DEA, 2014).

Even though international PhDs within humanities and social sciences are more likely to stay in Denmark than international PhDs in general (DEA, 2014),¹² international PhDs are also underrepresented in the present analyses. The registry-based analyses are therefore supplemented with a manual collection of information of place of employment for international PhDs from Aalborg University for the period 2008-2011 using the universities PhdManager system as the point of departure for an



internet based search of these international PhDs' current place of employment. During this period, 20 per cent of the PhDs from The Faculty of Humanities at Aalborg University were foreign nationals, and only a single international PhD stayed and found employment in Denmark after graduation.

At Aalborg University's Faculty of Social Sciences 25 per cent of the PhDs for the period 2008-2011 were foreign nationals. Of these 46 per cent stayed and found employment in Denmark. The international PhDs who are employed in Denmark are included in the following analyses. Among the foreign nationals who graduated from Aalborg University during the period 2008-2011 and found employment outside Denmark, 57 per cent of the PhDs from humanities and 67 per cent of the PhDs from social sciences are employed at a university. However, these percentages are based on very low numbers.

¹² According to DEA (2014), 21 per cent of international PhDs within humanities and 32 per cent of international PhDs within social sciences have left Denmark within one year after being awarded the PhD degree.

WHERE DO THEY GO?

**PHD PROFILE**

Thomas Fredholm, Head of Risk Management and Quantitative Analytics at Neas Energy, Aalborg

PhD graduate from Department of Economics, Politics and Public Administration, Faculty of Social Sciences, 2010

One month after Thomas Fredholm handed in his PhD dissertation entitled "Essays on the theory of production – an algorithmic and empirical approach to classical economics", he landed a job at Neas Energy, an international energy asset management company.

- I had stayed in contact with two fellow students, who worked here. They gave me an idea about what it is like to work in the business world. I found it interesting and applied for a job at Neas Energy. In the beginning my job was to solve complex issues within energy trading by IT programming, but today my job is primarily about management. I am among other things building a strong cross-disciplinary group with different specialists, who share a common basis within mathematics.

**PHD PROFILE**

Pennie Foght Henriksen, Project Manager at Thisted Municipality

PhD graduate from Department of Culture and Global Studies, Faculty of Humanities, 2012

In 2012 Pennie Foght Henriksen completed her PhD degree with a dissertation entitled "Small Tourism Firms' Inter-organisational Relations and Knowledge Processes".

- My study investigates the inter-organisational relations and knowledge processes of small tourism firms (STFs), and how this interaction influence STFs' business activities, Pennie F. Henriksen explains.

Today she works at the technical administration at the municipality of Thisted as a project manager of the municipality's Energy and Resource Policy. Here she primarily deals with topics like energy screenings, green transportation and marketing of the municipality's green agenda and initiatives and to a lesser degree with tourism activities.

WHERE DO THEY GO?

3. CHARACTERISTICS OF THE PHDS

The proportion of female students at Danish universities increased rapidly during the last decades (Munk, 2009). In 2008, 70 per cent of the graduates from master programmes at the Faculty of Humanities at Aalborg University were female, whereas there was an equal gender balance among graduates from master programmes at the Faculty of Social Sciences. These proportions are in accordance with the gender distributions of master level graduates across all the Danish universities (Danish Ministry of Higher Education and Science, 2009).¹³

The large female dominance among master level graduates in humanities is not continued at PhD level. However, females do account for the largest proportion of PhDs from humanities at Aalborg University in the periods 1994-1999 and 2006-2011. In 2000-2005 there is an equal balance between the two genders. Roskilde University is the only other Danish university where females account for the majority of PhDs from humanities in two of the three periods studied. At Copenhagen University, University of Southern Denmark and Aarhus University males dominate among the humanities PhDs.

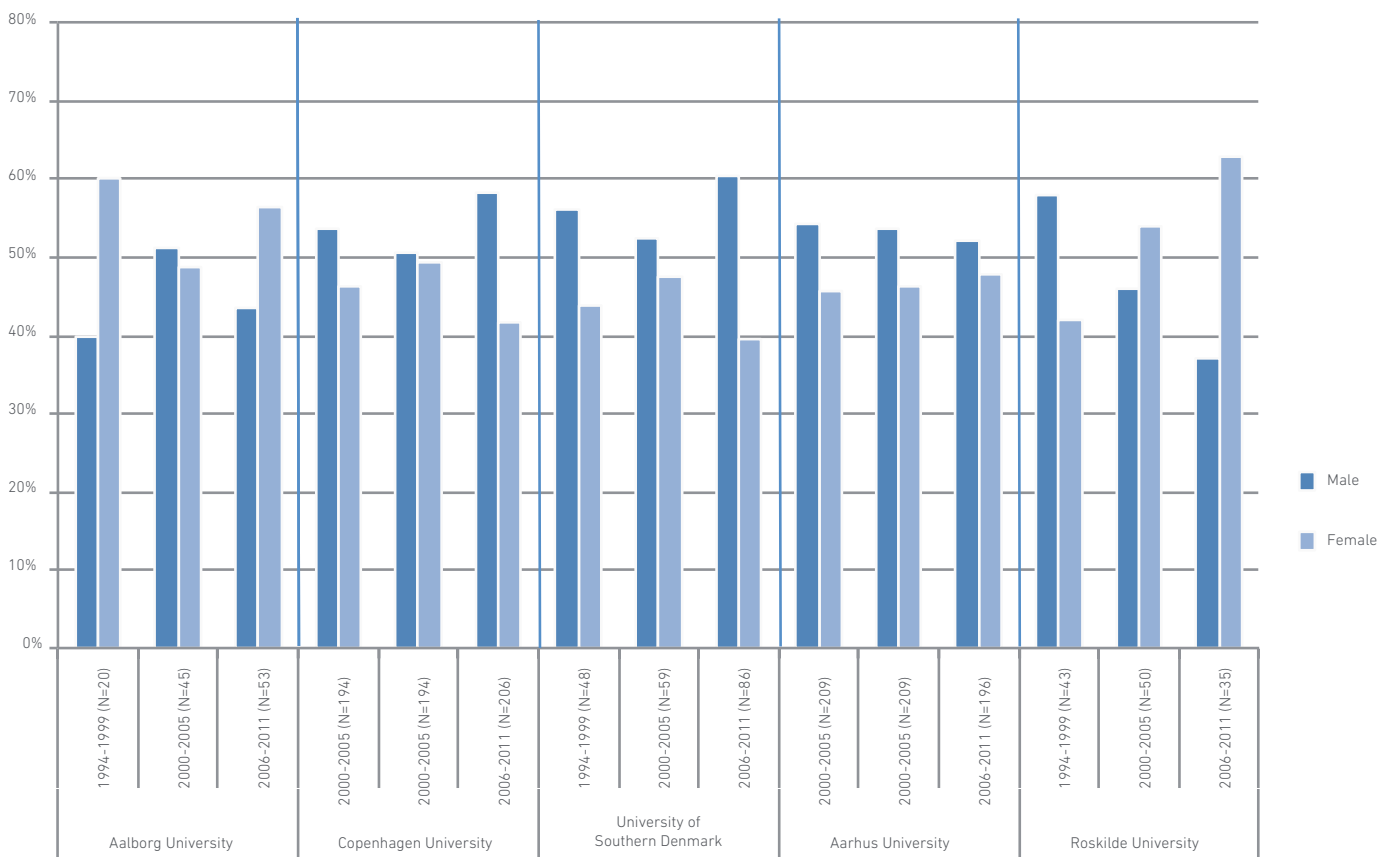


Figure 2A. Humanities. Gender distribution of PhDs by university
Copenhagen Business School is not included due to a low number of observations.

13 www.ufm.dk, extracted 1 July 2015.

WHERE DO THEY GO?

Turning the attention towards social sciences, there is a relatively widespread male dominance, especially in the two first periods. This is in accordance with the general situation among PhDs across the OECD, where women are generally underrepresented, although female participation in doctoral training has increased (Auriol et al., 2013).

At Aalborg University, a more even gender balance is emerging over time for social sciences PhDs, and for the period 2006-

2011 there is an equal balance between male and female PhDs. At most other Danish universities gender imbalances are also reduced over time. The exception is University of Southern Denmark, where the proportion of male PhDs is above 60 per cent for all three periods. At Copenhagen University and Roskilde University, the gender balance shifts between the last two periods, making women the dominant gender among PhDs during the period 2006-2011.

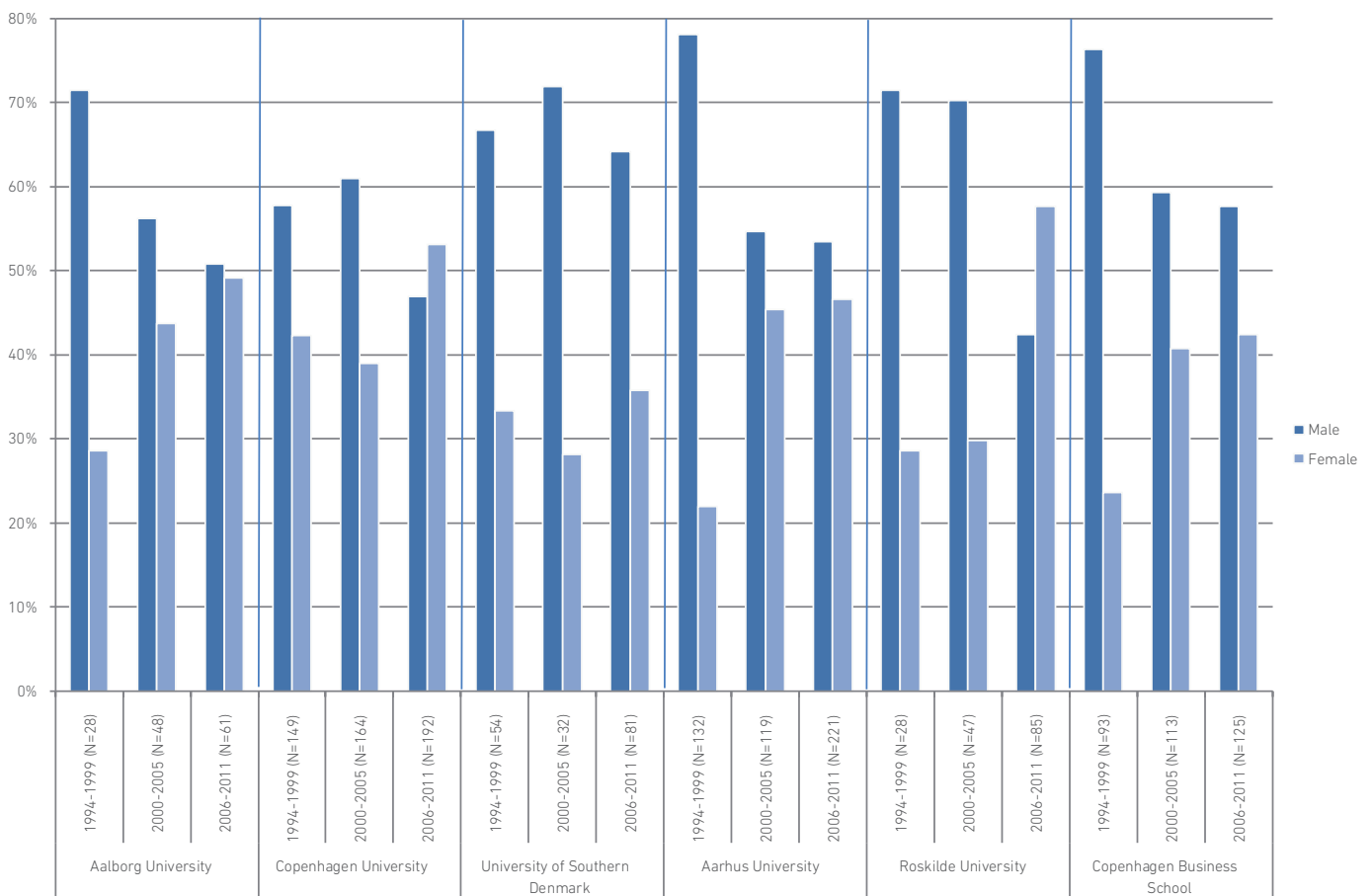


Figure 2B. Social Sciences. Gender distribution of PhDs by university

WHERE DO THEY GO?

The average age graduation varies across OECD countries. In 2009 the median age for Danish PhD graduates was around 34. This is considerably higher than in Belgium, where the median age is 27 years, and considerably below Malta, which tops the list with a median age of 41 (Auriol et al., 2013). The average age at graduation also varies across disciplines, and especially PhDs in humanities are relatively old when they graduate (Auriol et al., 2013).



Table 3 confirms the international findings that PhDs in humanities are relatively old. The PhDs in social sciences are, thus, generally younger than PhDs in humanities. During the period 2006-2011 the PhDs in social sciences at Aalborg University were on average four years younger (37.5 years of age) than the PhDs within humanities (41.5 years).

WHERE DO THEY GO?

Table 3. Age at receiving PhD degree by university

			Mean	Median	N
HUMANITIES	1994-1999	Aalborg University	39.2	38.5	20
		Copenhagen University	39.1	38	224
		University of Southern DK	40.1	38.5	48
		Aarhus University	39.9	38	142
		Roskilde University	39.5	40	43
		Copenhagen Business School		None	
	2000-2005	Aalborg University	37.7	37	45
		Copenhagen University	38.4	36.5	194
		University of Southern DK	<u>41.1</u>	39	59
		Aarhus University	37.9	36	209
		Roskilde University	<u>40.7</u>	38	50
		Copenhagen Business School	38.8	38.5	10
	2006-2011	Aalborg University	41.5	38	53
		Copenhagen University	<u>36.9</u>	36	206
		University of Southern DK	39	36.5	86
		Aarhus University	<u>37.3</u>	35	196
		Roskilde University	39.1	37	35
		Copenhagen Business School	39.4	38	13
SOCIAL SCIENCES	1994-1999	Aalborg University	36.5	37	28
		Copenhagen University	36.4	35	149
		University of Southern DK	36.2	32.5	54
		Aarhus University	34.9	34	132
		Roskilde University	36	35.5	28
		Copenhagen Business School	35.8	34	93
	2000-2005	Aalborg University	35.3	33	48
		Copenhagen University	35	34	164
		University of Southern DK	34.1	32	32
		Aarhus University	<u>33.1</u>	32	119
		Roskilde University	<u>39</u>	38	47
		Copenhagen Business School	35.8	34	113
	2006-2011	Aalborg University	37.5	35	61
		Copenhagen University	35.8	35	192
		University of Southern DK	36.6	34	81
		Aarhus University	<u>35.1</u>	33	221
		Roskilde University	<u>40.5</u>	38	85
		Copenhagen Business School	36.9	36	125

Statistical significance is calculated for differences between PhDs from Aalborg University and PhDs from each other Danish university. An underlined mean indicates that it is significantly different from the mean for Aalborg University at the 10% level or lower.

WHERE DO THEY GO?

The age dispersion between universities has increased over time. Looking at the most recent period, in social sciences PhDs from Aalborg University (37.5 years) are older than the PhDs from Aarhus University (35.1 years) but younger than the PhDs from Roskilde University (40.5 years). In humanities, the PhDs from Aalborg University are the oldest of all, whereas from PhDs from Aarhus University (37.3 years) and Copenhagen University (36.9 years) are the youngest.

In most cases the median age is lower than, but close to, the mean age, indicating that the distribution is only slightly skewed right. This implies that most PhDs are younger than the mean, but the small difference does not indicate that few relatively old PhDs inflate the mean. The finding that the mean and median are practically equal indicates that the age distribution of the PhDs is close to being symmetrical.

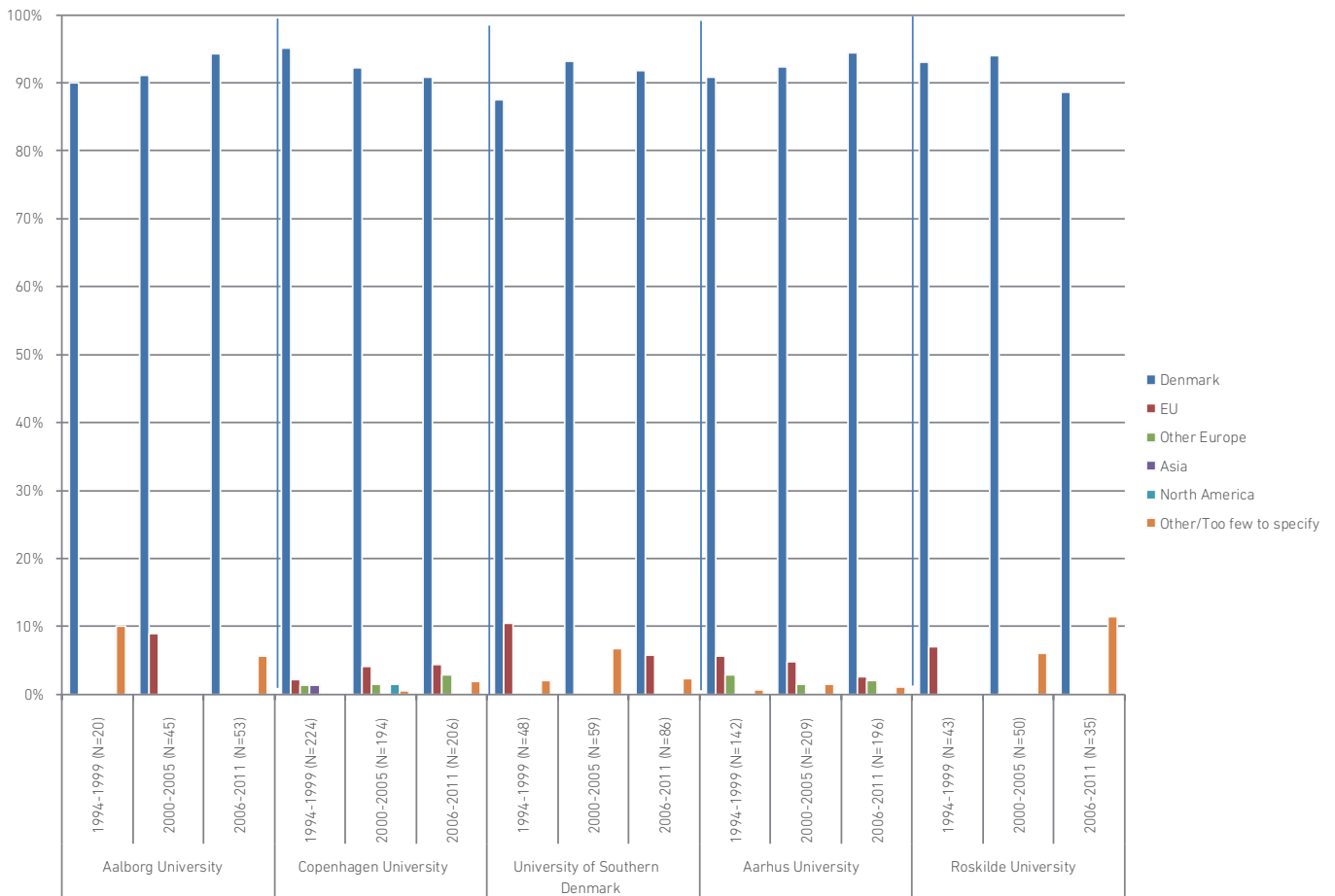


Figure 3A. Humanities. Nationality of PhDs by university

WHERE DO THEY GO?

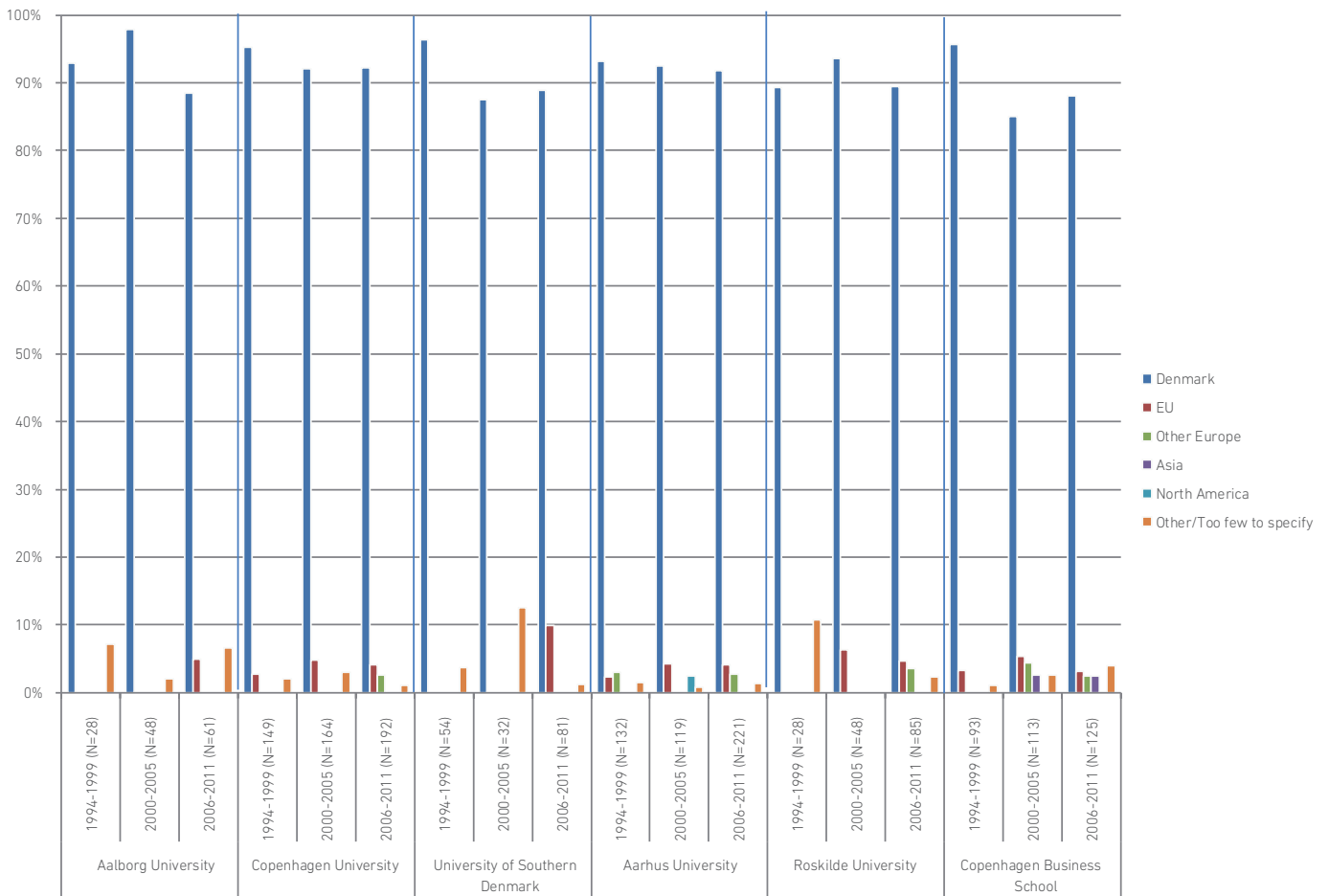


Figure 3B. Social Sciences. Nationality of PhDs by university

As mentioned in section 2, there has been a considerable increase in the proportion of international PhD students in Denmark over the last decades. However, Danish nationals clearly dominate the PhDs from social sciences and humanities who are employed in Denmark at the three points of analysis. As illustrated in figures 3A and 3B, this is the case for PhDs from all the Danish universities. There are no signs of this changing considerably over the analysed period, although for social sciences there may be a weak tendency for more non-Danish PhDs to find employment in Denmark.

Summing up, the characteristics of the PhDs from humanities and social sciences at Aalborg University who are employed in Denmark after receiving their PhD degree are that they, compared to PhDs from other Danish universities, are more likely to be female, and – in case of humanities – are older. Despite an increase in international PhDs, those who remain and find employment in Denmark are predominantly Danish nationals, which is also true for PhDs from the other Danish universities.



WHERE DO THEY GO?

THE MOST RECENT DEVELOPMENTS

In order to test whether the gender distribution and age at graduation have changed significantly since 2012, PhDs who graduated from Aalborg University during the period January 2012-September 2015 have been identified manually through the PhdManager system. Slight increases in mean ages can be detected with a mean age of 42 for PhDs graduating in humanities within this period, compared to 38.1 for PhDs in social sciences. For the 2006-2011 cohorts, the mean age for humanities PhDs was 41.5 years, and 37.5 for social sciences PhDs. In terms of gender distribution, the pattern for PhDs during the period 2012-2015 resembles the pattern for 2006-2011 for humanities at Aalborg University with female PhDs accounting for 53 per cent. Within social sciences the tendency towards relatively more female PhDs continues: During the period 2012-2015 females outnumber males and account for 58 per cent of the social sciences PhDs from Aalborg University.

WHERE DO THEY GO?

**PHD PROFILE**

Jacob Davidsen, Assistant Professor at Department of Communication and Psychology, Aalborg University

PhD graduate from Department of Communication and Psychology, Faculty of Humanities, 2014

In November 2014 Jacob Davidsen submitted his PhD dissertation entitled "Second graders' collaborative learning around touchscreens in their classroom: Micro-studies of eight and nine year old children's embodied collaborative interactions in front of a touchscreen".

- In my dissertation I worked with children's cooperation on touch screens. In doing so I included how children use their language and body when working with touch screens. The study suggests that we both need to reorient the learning tools that we use in primary schools and the role of teachers.

Jacob Davidsen is now employed as an assistant professor at Aalborg University.

**PHD PROFILE**

Merete Monrad, Assistant Professor at Department of Sociology and Social Work at Aalborg University Copenhagen

PhD graduate from Department of Sociology and Social Work, Faculty of Social Sciences, 2012

Merete Monrad is employed as an assistant professor at Aalborg University, where she among other things studies the attitudes of students of welfare professions towards poverty and inclusion of children in the Danish school system.

This work is an extension of her PhD dissertation entitled "Caring with Co-Workers".

- In the dissertation my focus was on childcare in day care institutions and eldercare in nursing homes, and I examined relationships between emotional labour and collective processes among co-workers and the impact of these collective processes and emotional labour on the well-being of workers. The reason for this topic was that it is really important to me to conduct research that can be applied in reality, Merete Monrad explains.

4. EMPLOYMENT

The main purpose of the present report is to explore where the PhDs from social sciences and humanities find employment because the labour market for PhDs is assumed to have changed with the increased supply of PhDs over the last years.

However, not all PhDs are in employment. Employment is registered in Statistics Denmark's databases for all PhDs residing in Denmark during the first week of November of the analysed year. Figures 4, 5A and 5B illustrate the employment status of the PhDs in humanities and social sciences for the three cohorts studied.

If the employment rate is defined as the proportion of PhDs with no registered unemployment during the year in question, then, according to Figure 4, PhDs in social sciences generally have a higher employment rate than PhDs in humanities. From 2006 to 2012, there has been a decrease in the proportion of PhDs who are employed at the end of each of the two years, but have been affected by unemployment at some point in the respective year. This is the case for humanities as well as social sciences. Also for both areas there is a weak tendency towards more PhD being unemployed or outside the labour market, but especially for social sciences the proportion is still relatively low (5 per cent).¹⁴

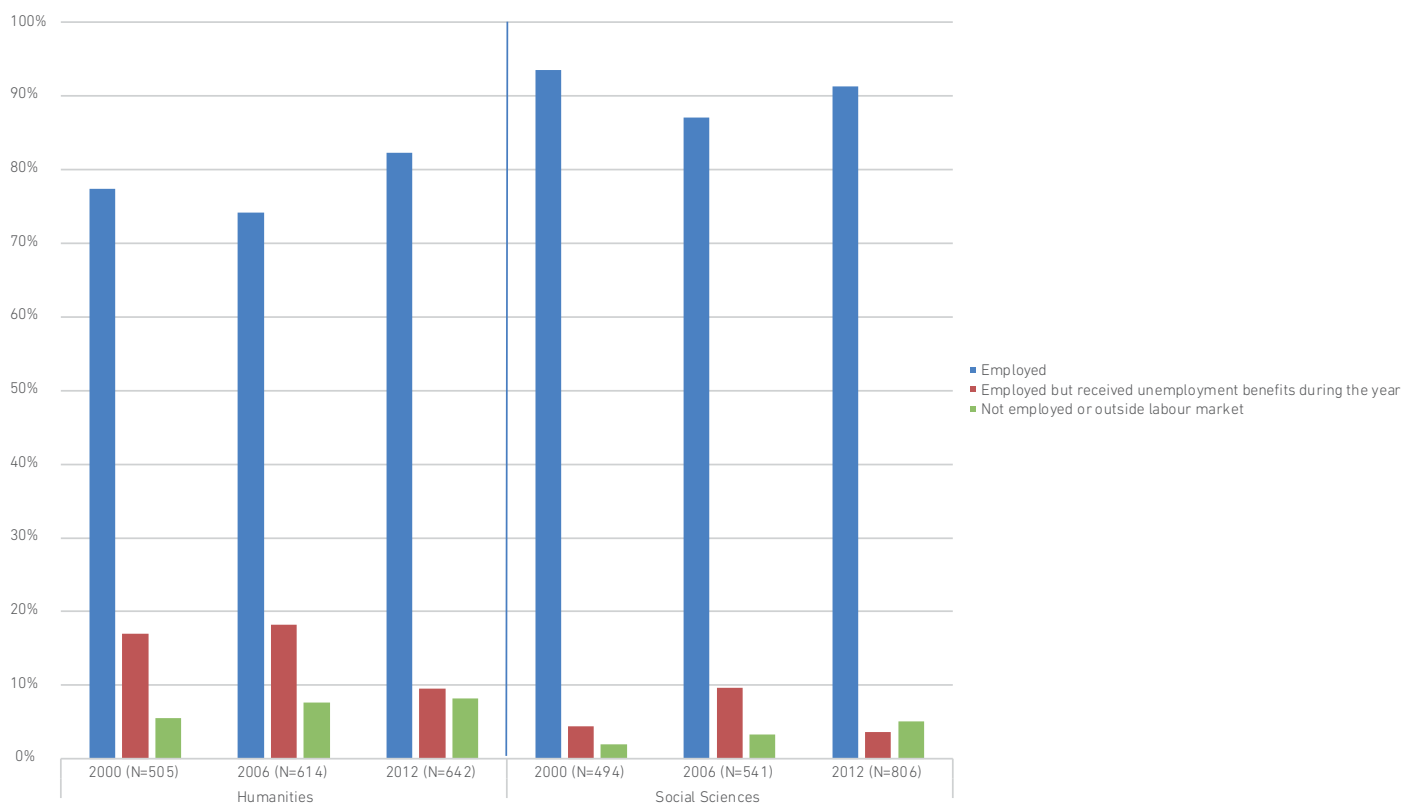


Figure 4. Employment status for PhDs, Humanities and Social Sciences

¹⁴ For graduates from master's programmes in Denmark the unemployment rate is approximately 5 per cent after a phasing-in period of 2-3 years with considerably higher employment rates (Universities Denmark, 2014).

WHERE DO THEY GO?

Turning to the individual universities, the employment situation for the PhDs from humanities at Aalborg University has generally improved over time, and no unemployment is registered in 2012 for the 2006-2011 cohort.¹⁵ The employment situation for humanities PhDs from Aalborg University is generally good compared to the PhDs from other Danish universities, not least PhDs from Copenhagen University, who show employment rates around 70-75 per cent for all three cohorts.

In social sciences, PhDs from Aalborg University have employment rates just below 90 per cent in all three years studied, which places Aalborg University among the universities with the lowest employment rates. Aarhus University and Roskilde University have high employment rates in 2000 and 2012, but especially Roskilde University experienced a dramatic drop in the employment rate for the social science PhDs in 2006. Thus, there is no clear pattern with one university showing consistently higher employment rates than the other universities.

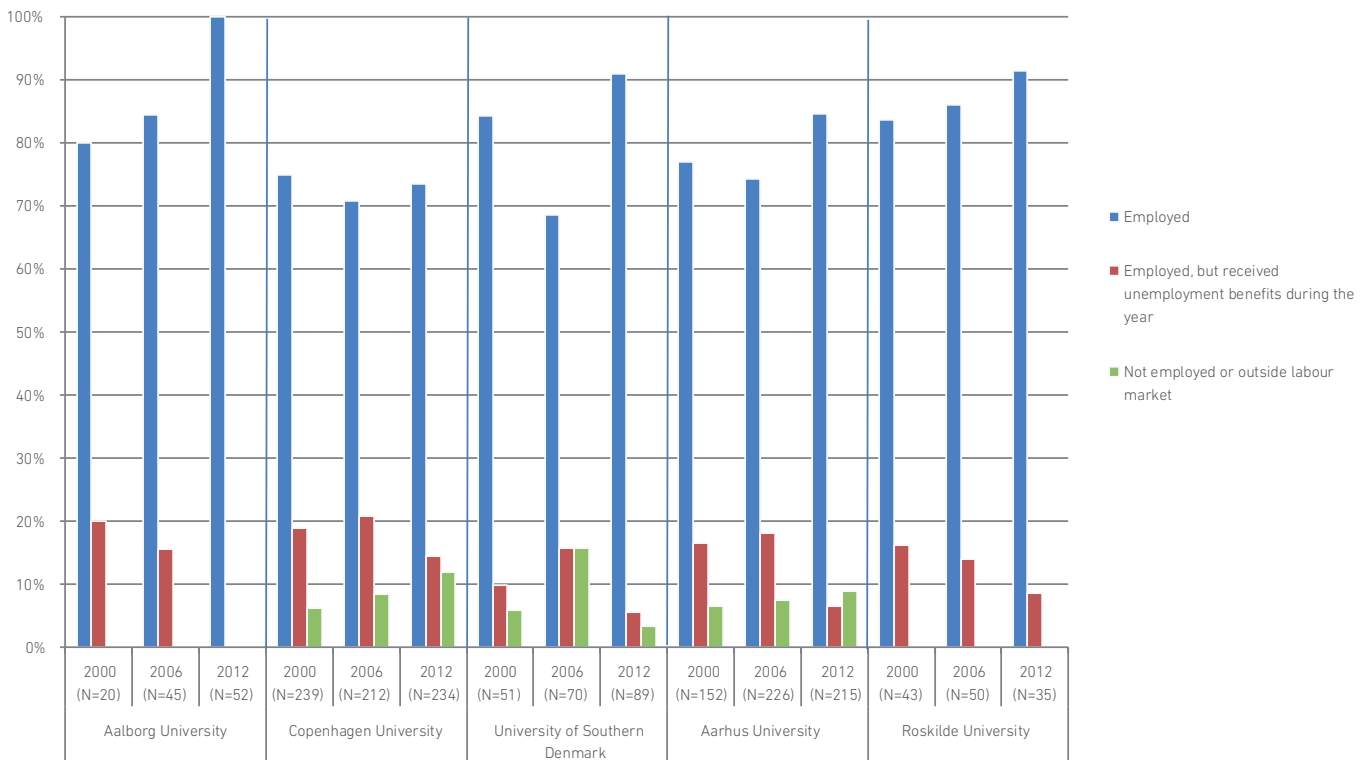


Figure 5A. Humanities. Employment status for PhDs by university

Copenhagen Business School is not included due to a low number of observations.

15 As mentioned in section 2, values referring to less than three individuals are not included in the figures. Thus, in cases where no unemployed PhDs are shown in figure 5A, this can in reality mean that there may be up to two unemployed PhDs from that specific university in the given year.

WHERE DO THEY GO?

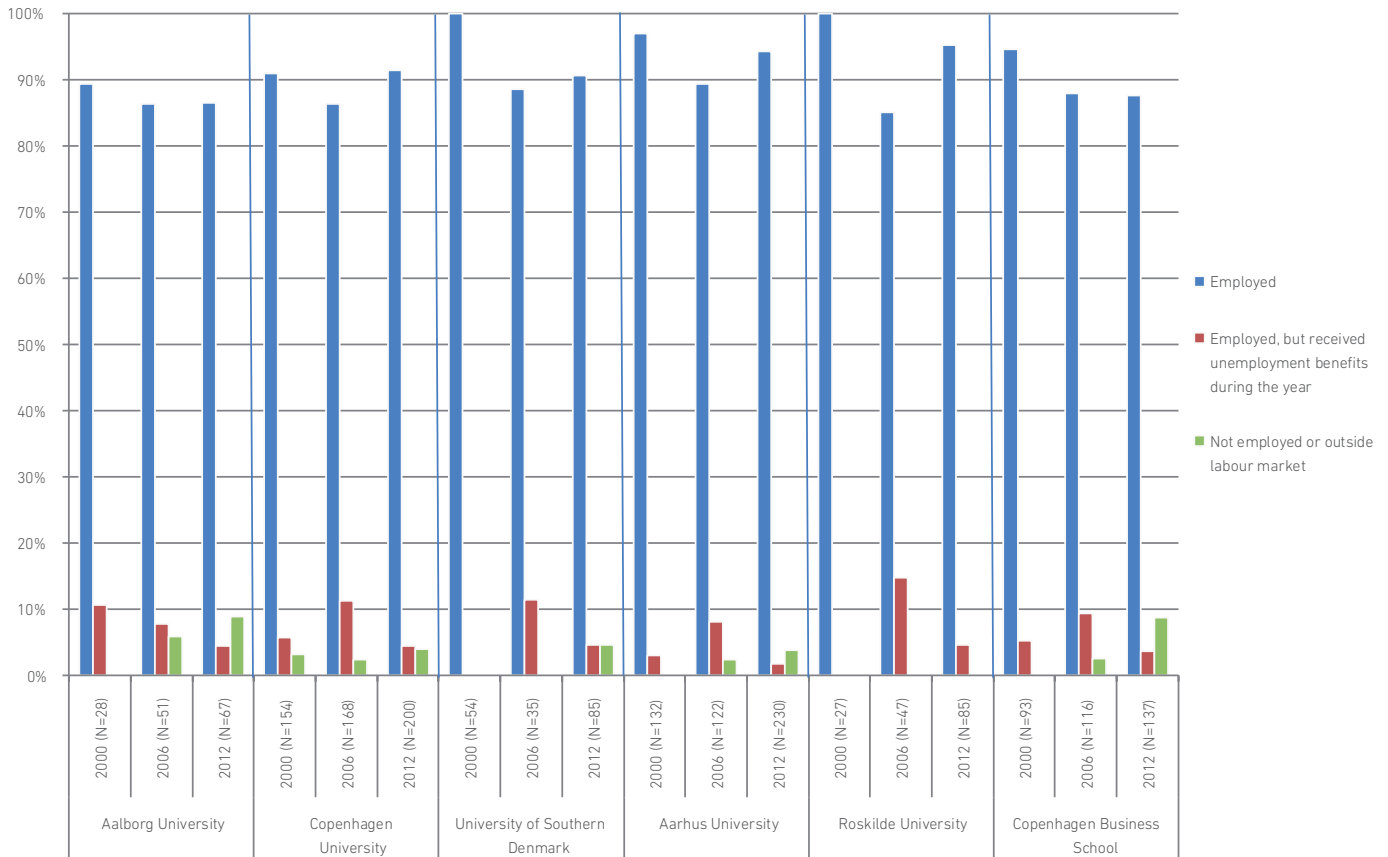


Figure 5B. Social Sciences. Employment status for PhDs by university

The following analyses include all PhDs who are employed in the first week of November of the relevant year, regardless of whether they have been unemployed at some point leading up to November. PhDs who are not employed or are outside the labour market in November are not included in the following analyses. As illustrated in figures 6A and 6B, the PhDs are generally employed as high-level wage earners with only very small proportions being self-employed or in management positions in the first years after receiving their PhD degree. No PhDs from

Aalborg University – humanities or social sciences – are employed in management positions in the three years analysed.¹⁶

There are no large differences across universities or between humanities and social sciences with regard to the employment positions of the PhDs.

A small proportion of PhDs are employed as lower level wage earners, which indicates job functions that require formal quali-

16 The same reservation applies as for figure 5A, see footnote 15.

WHERE DO THEY GO?

fications below master's level. No PhDs from humanities at Aalborg University and only a small proportion of the 2000-2005 cohort of PhDs from social sciences at Aalborg University are employed in positions that are classified as wage earners below

the highest level. Employment as a lower level wage earner appears to be more frequent for PhDs from Copenhagen University and Aarhus University.

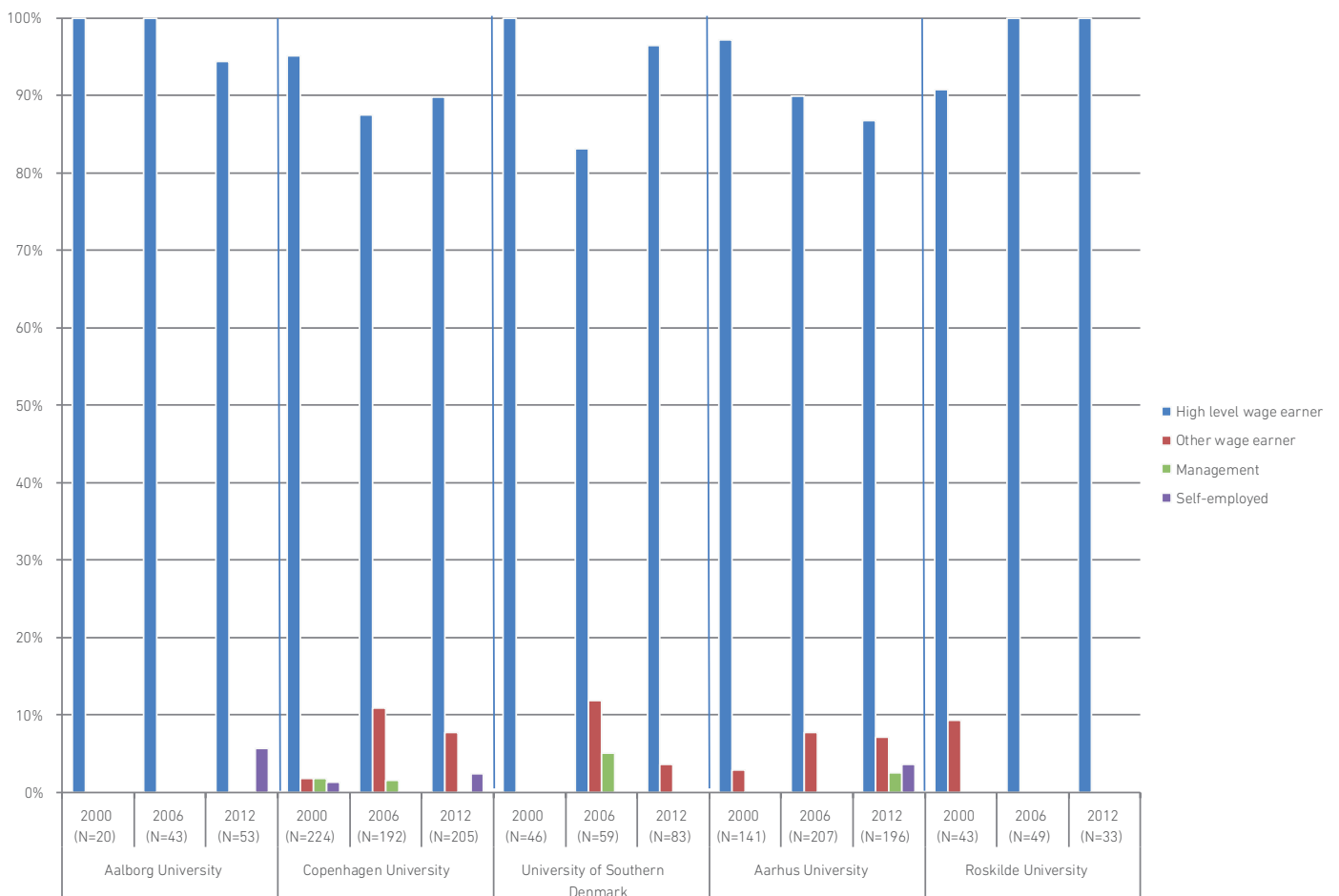


Figure 6A. Humanities. Employment position for PhDs by university

Copenhagen Business School is not included due to a low number of observations.

WHERE DO THEY GO?

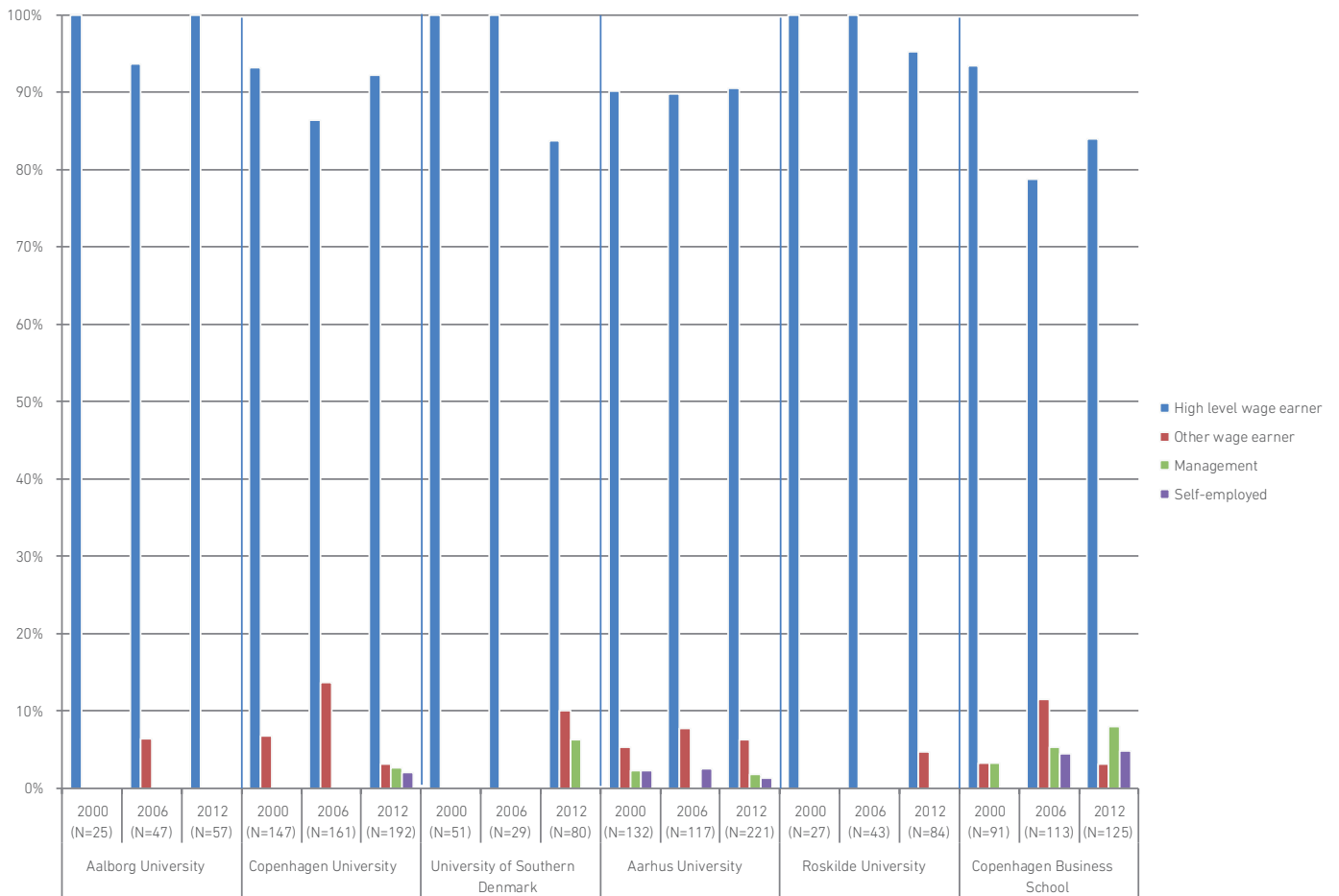


Figure 6B. Social Sciences. Employment position for PhDs by university

Compared to technical and natural sciences, PhDs from humanities and social sciences are generally perceived to be more oriented towards employment at universities or other institutions of higher education. A recent Norwegian study finds that especially PhDs from humanities have relatively few relevant job opportunities outside academia (Kyvik and Olsen, 2012). Figure 7 presents an overall comparison of the Danish labour market for PhDs from humanities and social sciences, regardless of university of graduation. The majority of PhDs find employment in

the university sector. This is particularly the case for PhD graduates in humanities, and the findings are generally in accordance with the Norwegian study, since teaching is the second most frequent sector of employment. Other industries only account for very small proportions of employment of PhDs from humanities. Among these industries are entertainment, culture and sports - which among other things include museums - and business services and finance.

WHERE DO THEY GO?

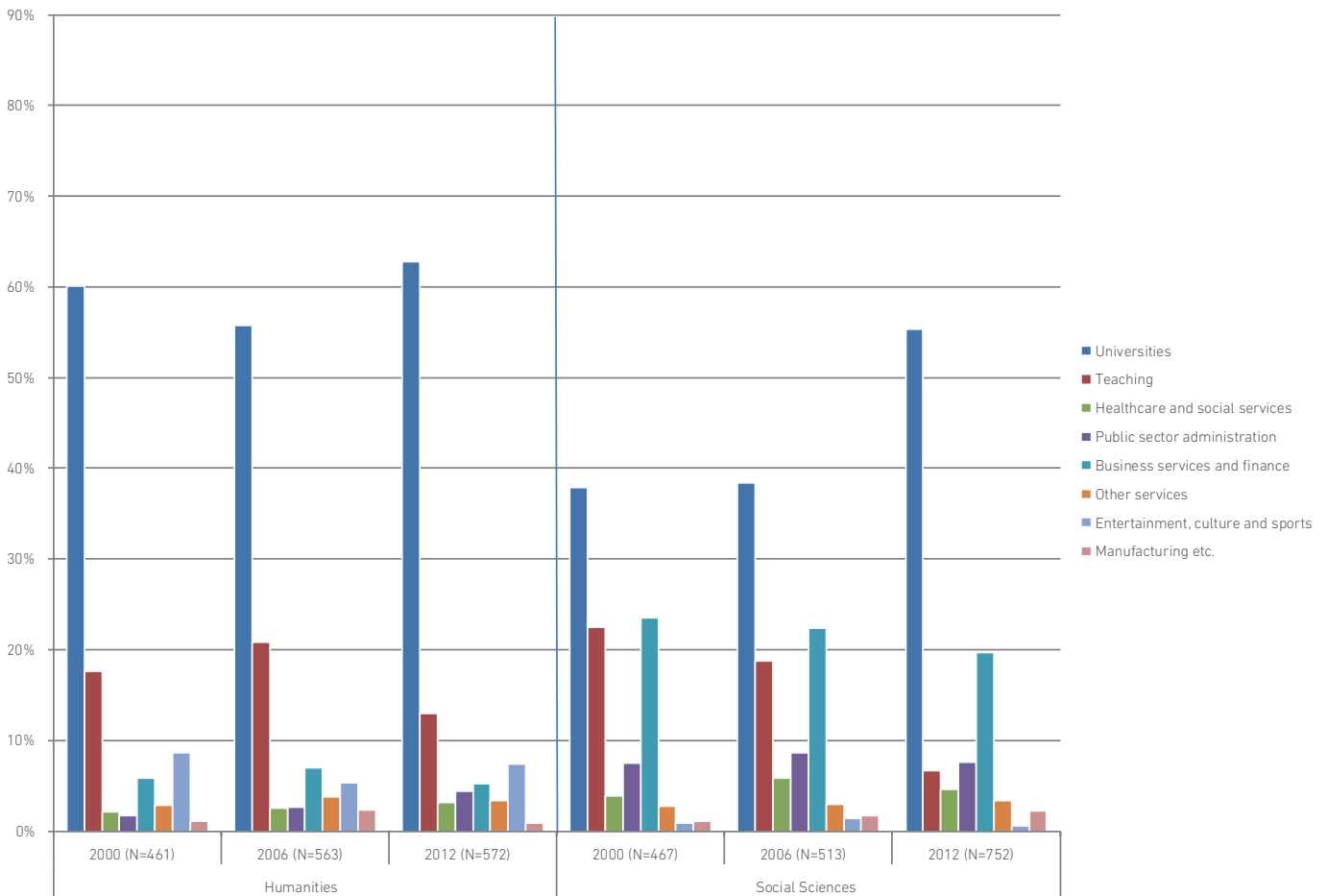


Figure 7. Industry of employment for PhDs, Humanities and Social Sciences

For PhDs from social sciences the employment pattern is affected by the change in industry classification that occurs between the two first periods and the third period: Copenhagen Business School is classified as “Teaching” in the classification scheme applied during the two first periods, and it is only in the most recent classification scheme that it is regis-

tered as belonging to the university sector. This change of classification¹⁷ to a large extent explains the considerable increase in the proportion of social sciences PhDs being employed in the university sector in 2012 compared to the two previous times of measurement.

17 That is, the move from NACE Rev. 1 to NACE Rev. 2 in the European Union.

WHERE DO THEY GO?

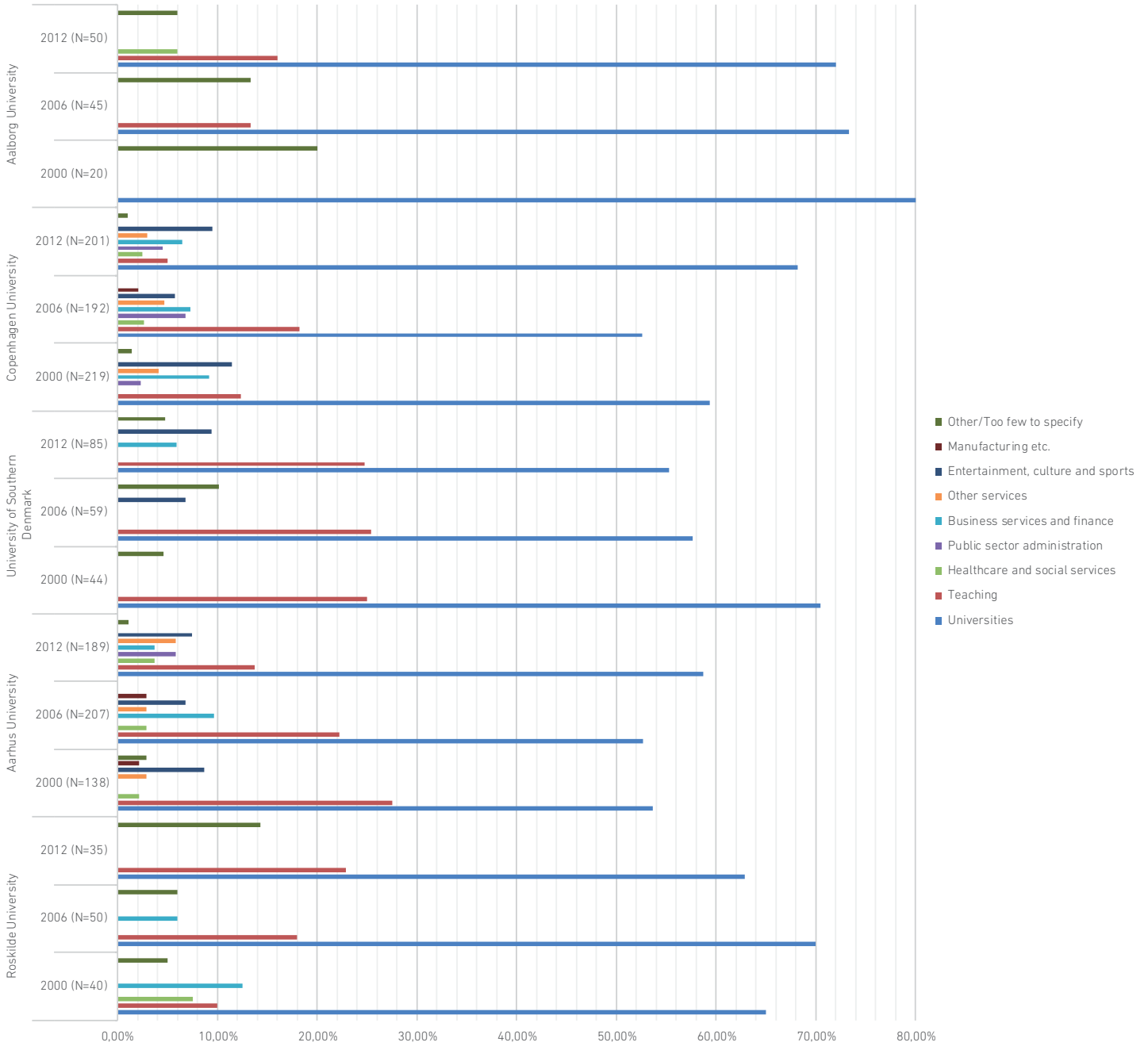


Figure 8A. Humanities. Industry of employment for PhDs by university

WHERE DO THEY GO?

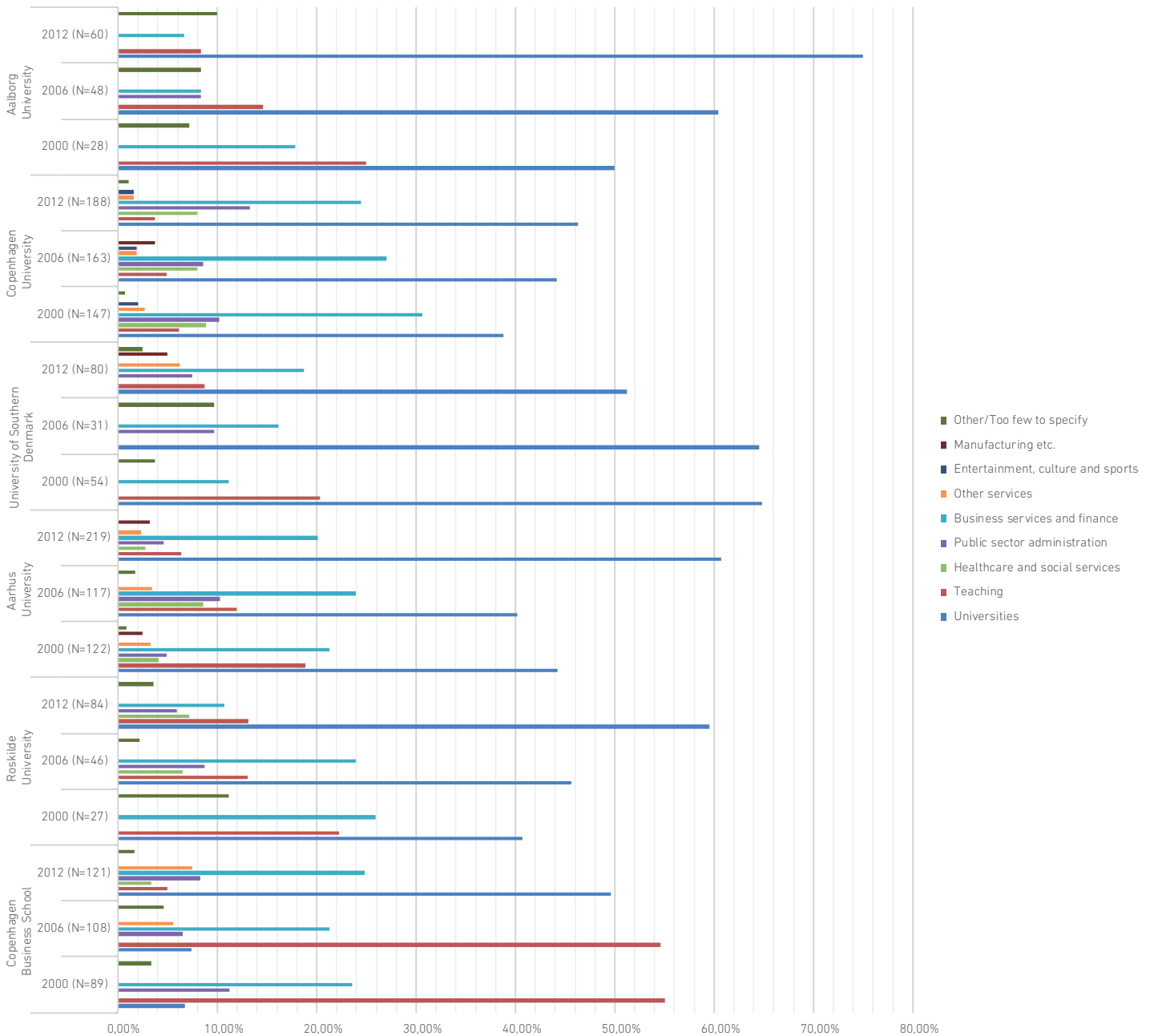


Figure 8B. Social Sciences. Industry of employment for PhDs by university

NB: In the applied industry classification (NACE Rev. 1), Copenhagen Business School (CBS) is not classified as a university, but as teaching in 2000 and 2006 – thus explaining the large proportion of PhDs from CBS being employed in “teaching” rather than “university” in these two years.

WHERE DO THEY GO?

For PhDs from social sciences, the major industry of employment, besides universities, is business services and finance. When Copenhagen Business School is classified as teaching, this sector appears to be equally important as a sector of employment for PhDs in humanities and social sciences. But when Copenhagen Business School is re-classified as a university it becomes apparent that teaching is a more frequent sector of employment for PhDs from humanities than for PhDs from social sciences. The increase in output of PhDs over the last decade has not to any large extent changed the employment structure of the PhDs from humanities and social sciences over time.

Figures 8A and 8B break down the information from Figure 7 and show the employment patterns of the PhDs from the individual universities. Starting from a very high level, where 80 per cent of the cohort of PhDs from Aalborg University in humanities during the period 1994-1999 were employed in the university sector in 2000, there has been a relative decline over time to 72 per cent for the last cohort in 2012. Throughout the period, Aalborg University remains the Danish university where the largest proportion of PhDs from humanities finds employment in the university sector. Teaching appears to have become a more important sector of employment for humanities PhDs from Aalborg University over time. However, due to the low number of PhDs in the first cohort, too few find employment outside the university sector to show these distributed by industry, and they are thus all gathered in the group "Others/too few to specify". Copenhagen University and Aarhus University, due to their large production of PhDs, display the largest diversity in their PhDs' employment patterns.



When we look at the last cohort of PhDs only, also in social sciences, Aalborg University is the Danish university where the largest proportion of PhDs finds employment in the university sector. Contrary to humanities, however, this proportion has increased for the PhDs from Aalborg University.

The increase in employment in the university sector occurs at the expense of in particular teaching and business services and finance, which both lose importance over time as sectors of employment for PhDs from social sciences from Aalborg University. Business services and finance is in general a less important sector of employment for PhDs from Aalborg University compared to PhDs from the other Danish universities. The overall impression of the labour market for PhDs from social sciences at Aalborg University is one of less diversity than the universities of a comparable size (i.e. University of Southern Denmark and Roskilde University). It should be taken into account that up to 10 per cent of the PhDs from social sciences at Aalborg University are placed in the category "Other industries/too few to specify", which could contain several industries where less than three PhDs from social sciences at Aalborg University are employed.

Several studies have identified challenges regarding gender equality at universities, with women to a larger extent than men experiencing discrimination based on gender (Högskoleverket, 2008) and with the proportion of women decreasing as one moves up the academic career ladder (Emerek and Larsen, 2011; Nielsen et al., 2015). In the following, it is therefore explored whether there are marked differences in the proportions of male and female PhDs who find employment in the Danish university sector.

WHERE DO THEY GO?

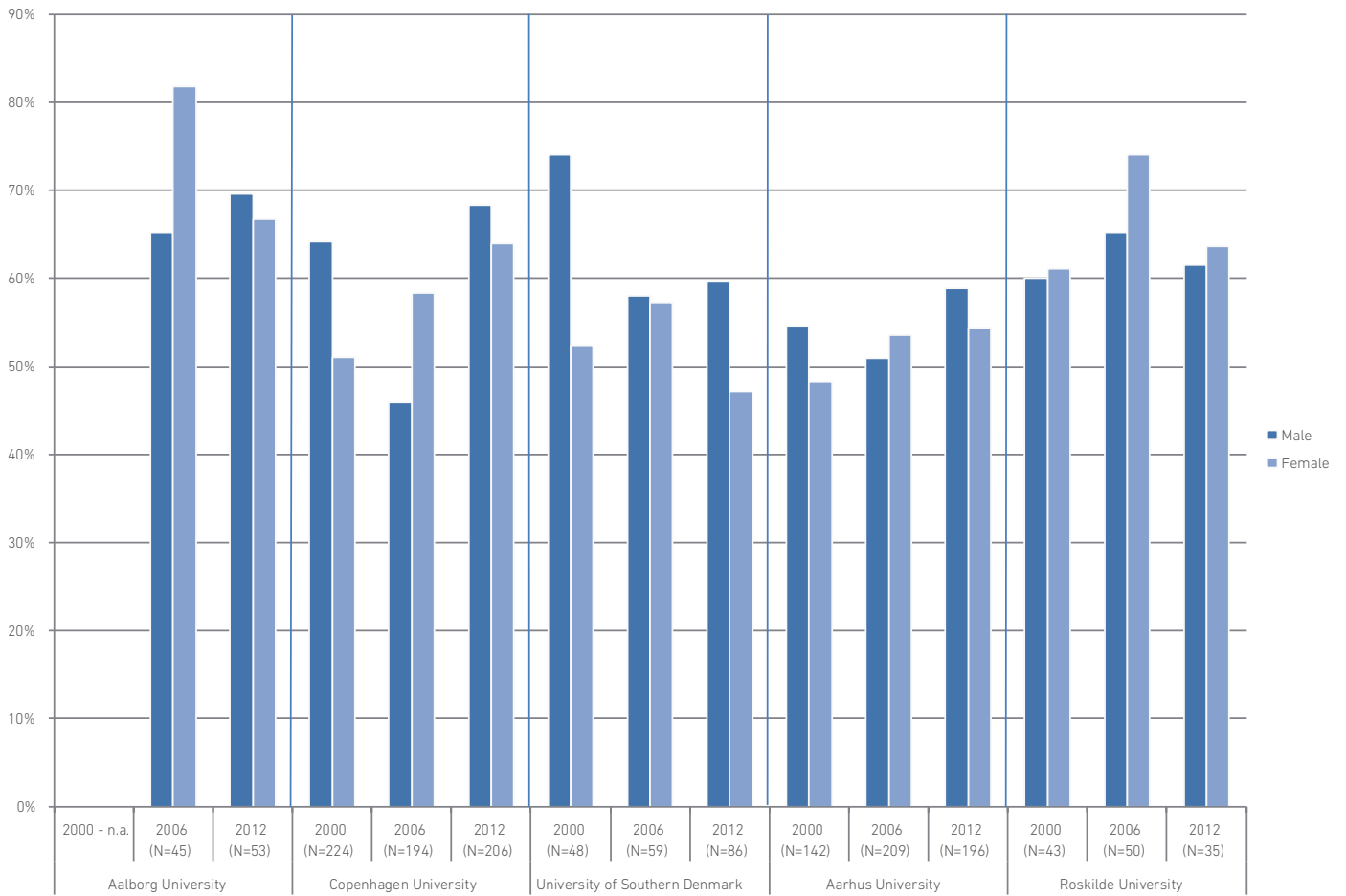


Figure 9A. Humanities. Percentages of male and female PhDs respectively employed at a Danish university – by PhD degree awarding university

WHERE DO THEY GO?

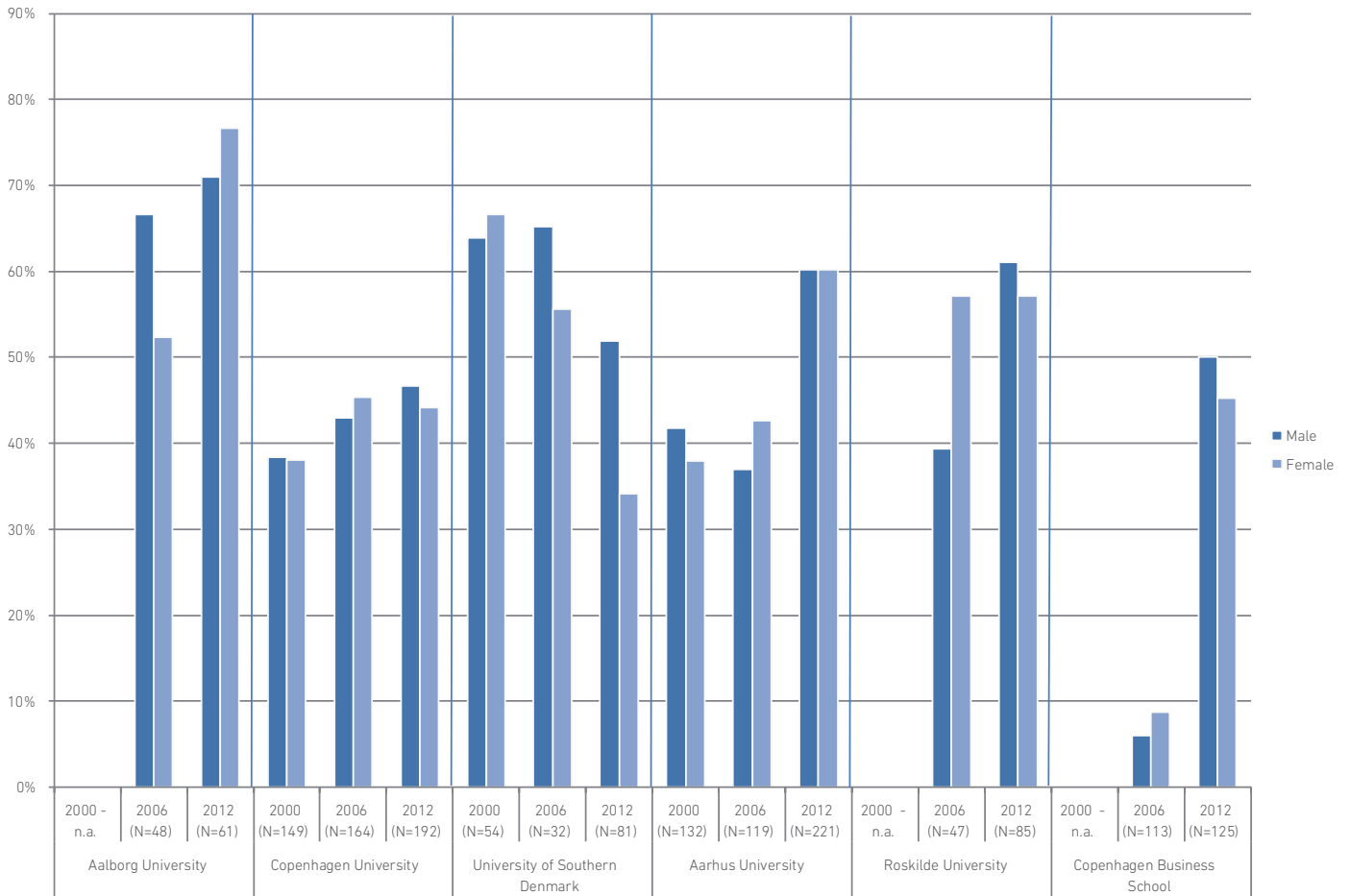


Figure 9B. Social Sciences. Percentages of male and female PhDs respectively employed at a Danish university - by PhD degree awarding university



WHERE DO THEY GO?

Figure 9A shows the percentages of male and female PhDs respectively in humanities who are employed at a Danish university. There is no clear tendency across universities that male or female PhDs in humanities are more likely to find employment in the university sector, and only in two cases are the differences across gender statistically significant: for Copenhagen University in 2000, where a larger proportion of male than female PhDs are employed at a university, and in 2006, also for Copenhagen University, where the opposite is the case.

Figure 9B illustrates that social sciences shows the same gender balance as humanities when it comes to the proportion of male and female PhDs respectively who find employment at a Danish university. In the case of social sciences, there are no statistically significant gender differences at all. These findings do not necessarily contradict previous findings of a 'leaky pipeline' in academia where women 'drain' from the career ladder, since 'leaks' are primarily identified from master's level to enrolment in a PhD programme and from PhD degree to associate professorship (Emerek and Larsen, 2010). Because the present study looks at employment one to six years after graduation, the majority of the PhDs employed at Danish universities will be employed at post.doc.-level.

Summing up, the PhDs from Aalborg University who reside in Denmark after receiving their PhD degree generally have a high labour market participation rate and are not seriously affected by unemployment. PhDs from Aalborg University are to a larger extent than PhDs from other Danish universities employed in the university sector. For social sciences the proportion of PhDs employed at a Danish university has increased over the analysed period. This applies to PhDs from Aalborg University and across all universities and most likely reflects an increasing demand due to a larger number of social science students. For humanities the proportion of PhDs across all universities who find employment at a Danish University is more stable over the period studied, whereas it is declining for PhDs from Aalborg University. There are no clear gender differences – neither at Aalborg University nor at other Danish universities - with respect to the tendency to enter a university career after completing the PhD.



WHERE DO THEY GO?

THE MOST RECENT DEVELOPMENTS

The most recent development in employment patterns for PhDs from Aalborg University indicates that for humanities as well as social sciences there is a decrease in the proportion who finds employment at a Danish university after graduation.

PhDs who completed their degree from the Faculty of Humanities at Aalborg University during the period 2012-September 2015 – identified through PhD-Manager – still have universities as their main sector of employment. But the proportion is down to 60 per cent compared to 72 per cent for the 2006-2011 cohort.

11 per cent of the humanities PhDs who graduated from Aalborg University during the period 2012-2015 are employed in teaching, whereas healthcare and social services has increased to 19 per cent. Public sector administration accounts for 4 per cent of total employment.

Turning to the PhDs from social sciences at Aalborg University, 60 per cent of those who graduated during the period January 2012-September 2015 are employed at a Danish university. This indicates a downturn after a considerable expansion between 2006 and 2012. For the 2006-2011 cohort the proportion of university-employed PhDs from social sciences at Aalborg University was 75 per cent. Among the PhDs who graduated during the period 2012-2015, teaching has gained importance again, now accounting for 15 per cent. Public sector administration also appears to be on the rise, accounting for 10 per cent of the employment, whereas business services and finance only account for 4 per cent of the employment among the most recent social sciences PhDs. Concerning the employment rates for the PhDs who completed their degree at Aalborg University during the period 2012-2015, things look very positive, with close to full employment for PhDs from humanities as well as social sciences.

WHERE DO THEY GO?

**PHD PROFILE**

Anders Ramian Trillingsgaard, partner, head of research and chairman at UKON

PhD graduate from Department of Communication and Psychology, Faculty of Humanities, 2010

In 2005 Anders Ramian Trillingsgaard was employed at DevelopmentConsultants Ltd (today UKON), which specializes in organizational psychology and management. The aim was already then to complete an industrial PhD, and two years later he joined the Department of Communication and Psychology at Aalborg University where he wrote his PhD dissertation on "Development episodes in management teams".

- In my project I studied episodes that lead management teams to begin new patterns of interaction that in the end enable them to more successfully accomplish their goals. Practitioners can use the framework I developed to facilitate the solution to the challenges that management teams face, such as deficient teamwork skills, rivalries, group thinking and fragmentation, Anders Ramian Trillingsgaard explains.

PHD PROFILE

Nanna Friche, senior researcher at KORA

PhD graduate from Department of Learning and Philosophy, Faculty of Social Sciences, 2010



After Nanna Friche completed her PhD dissertation entitled "Evaluation and assessment practices in Danish vocational colleges", she helped start up postgraduate and master's degree programs at Aalborg University's former campus in Ballerup. She has also been employed at Roskilde University. Since 2015 Nanna Friche has been a senior researcher at KORA, the Danish Institute for Local and Regional Government Research.

- I'm working on a project in collaboration with people from The Danish Evaluation Institute on the new vocational education reform and how it is implemented. I meet with and interview school managers, teachers and students at local schools of vocational education and training all over the country.

WHERE DO THEY GO?

5. INCOME

Previous studies find that the initial wage levels of PhDs in Denmark are generally lower than the corresponding wage level of master level graduates when adjusted for seniority. The PhDs generally catch up in the longer run, but for PhDs in humanities the wage level remains below that of masters with the same level of seniority (DEA, 2014). In the present study we do not explore the wage differences between PhDs and masters further, but focus on possible income differences between PhDs from different universities (Table 4) and between male and female PhDs from the same university (Table 5).



In humanities, there are no statistically significant differences in income levels, measured as gross income, between PhDs from Aalborg University and the other Danish Universities for the first cohort studied. This has changed for the second cohort, where the PhDs from humanities at Aalborg University receive a significantly lower income than PhDs from all other Danish universities. But the situation reverses for the third cohort, where PhDs from Aalborg University now belong to the group of highest earners, with income levels significantly above PhDs from Copenhagen University and Aarhus University. The relative distribution of income for PhDs in humanities from different universities thus appears to be quite volatile over time.

In social sciences the first cohort of PhDs from Aalborg University generates a significantly lower income than PhDs from Aarhus University and Copenhagen Business School. The second cohort of PhDs from Aalborg University generates an income which, when statistical uncertainty is taken into account, is at

the same level as the income for PhDs from all other Danish universities, except PhDs from Roskilde University, who generate a significantly lower income. For the third cohort differences in income have increased, with social science PhDs from Aalborg University generating a significantly lower income than PhDs from University of Southern Denmark, Aarhus University and Copenhagen Business School. Especially the PhDs from Copenhagen Business School generate a very high income in 2012. These differences in income are potentially explained by the differences in sectors of employment demonstrated in the previous section, and by the differences in the proportions residing in the high-wage Capital region, as demonstrated in section 6.

Comparing across humanities and social sciences, gross income levels for PhDs from social sciences are generally above those of PhDs within humanities.

Turning from differences in income between PhDs from the different universities to possible differences between male and female PhDs from the same university, we find very few cases of significant differences in humanities. For the first cohort, male PhDs from Copenhagen University generate a higher income than female PhDs, although the difference is only statistically significant at a 10 per cent level. And for the second cohort, male PhDs from University of Southern Denmark generate a significantly higher income than female PhDs from the same university. For the last cohort of humanities PhDs, there are no statistically significant income differences between males and females.

WHERE DO THEY GO?

Table 4. Gross income in 2000, 2006 and 2012 respectively for PhDs from the preceding 6 years, by university, DKR (current prices)

			Mean	Standard dev.	N
HUMANITIES	2000	Aalborg University	352,134	91,533	20
		Copenhagen University	342,809	102,088	224
		University of Southern DK	348,767	53,254	48
		Aarhus University	363,713	163,700	142
		Roskilde University	413,309	134,440	43
		Copenhagen Business School		n.a.	
	2006	Aalborg University	377,353	69,365	45
		Copenhagen University	<u>406,903</u>	159,499	194
		University of Southern DK	<u>405,624</u>	87,375	59
		Aarhus University	<u>439,297</u>	220,050	209
		Roskilde University	<u>412,183</u>	104,073	50
		Copenhagen Business School	<u>446,299</u>	90,988	10
	2012	Aalborg University	523,475	270,873	53
		Copenhagen University	<u>428,432</u>	103,787	206
		University of Southern DK	492,682	165,798	86
		Aarhus University	<u>451,221</u>	122,484	196
		Roskilde University	483,198	156,717	35
		Copenhagen Business School	580,580	618,302	13
SOCIAL SCIENCES	2000	Aalborg University	423,565	84,620	28
		Copenhagen University	419,990	130,643	149
		University of Southern DK	409,280	110,934	54
		Aarhus University	<u>475,684</u>	219,977	132
		Roskilde University	460,214	147,029	28
		Copenhagen Business School	477,124	167,098	93
	2006	Aalborg University	442,613	105,395	48
		Copenhagen University	473,143	237,439	164
		University of Southern DK	481,001	273,913	32
		Aarhus University	474,508	173,837	119
		Roskilde University	<u>384,493</u>	159,492	47
		Copenhagen Business School	485,609	302,241	113
	2012	Aalborg University	487,346	135,745	61
		Copenhagen University	522,360	168,613	192
		University of Southern DK	<u>568,180</u>	221,764	81
		Aarhus University	<u>562,148</u>	243,187	221
		Roskilde University	465,806	111,341	85
		Copenhagen Business School	<u>593,764</u>	233,083	125

Statistical significance is calculated for differences between PhDs from Aalborg University and PhDs from each other Danish university. An underlined mean indicates that it is significantly different from the mean for Aalborg University at the 10% level or lower.

WHERE DO THEY GO?

Table 5. Gross income in 2000, 2006 and 2012 for male and female PhDs respectively from the preceding 6 years, by university, DKR (current prices)

			Mean	Standard dev.	Mean	Standard dev.	N
			FEMALE		MALE		
HUMANITIES	2000	Aalborg University	359,028	102,636	341,793	77,355	20
		Copenhagen University	<u>328,994</u>	83,779	<u>354,783</u>	114,646	224
		University of Southern DK	356,577	55,364	342,693	51,780	48
		Aarhus University	377,865	209,515	351,774	111,517	142
		Roskilde University	403,712	57,332	420,218	170,829	43
		Copenhagen Business School			n.a.		
	2006	Aalborg University	378,131	75,861	376,609	64,253	45
		Copenhagen University	402,262	180,617	411,448	136,475	194
		University of Southern DK	<u>375,347</u>	52,256	<u>432,971</u>	103,314	59
		Aarhus University	433,458	187,263	444,354	245,667	209
		Roskilde University	403,841	91,446	421,976	118,557	50
		Copenhagen Business School	464,048	100,025	419,675	81,155	10
	2012	Aalborg University	473,628	81,726	588,493	395,997	53
		Copenhagen University	438,164	85,813	421,455	114,799	206
		University of Southern DK	474,613	98,357	504,497	197,978	86
		Aarhus University	458,134	139,439	444,850	104,768	196
		Roskilde University	467,818	116,194	509,226	211,643	35
		Copenhagen Business School	390,777	113,974	664,936	736,585	13
SOCIAL SCIENCES	2000	Aalborg University	432,202	122,256	420,111	68,006	28
		Copenhagen University	<u>375,668</u>	87,031	<u>452,668</u>	147,097	149
		University of Southern DK	<u>354,417</u>	61,465	<u>436,711</u>	120,327	54
		Aarhus University	<u>375,639</u>	60,528	<u>503,852</u>	239,781	132
		Roskilde University	466,563	134,429	457,674	155,043	28
		Copenhagen Business School	<u>392,419</u>	102,557	<u>503,370</u>	<u>174,890</u>	93
	2006	Aalborg University	432,497	93,343	450,482	115,026	48
		Copenhagen University	<u>427,730</u>	152,037	<u>502,207</u>	275,549	164
		University of Southern DK	424,265	78,882	503,201	318,790	32
		Aarhus University	<u>412,633</u>	88,527	<u>525,911</u>	208,118	119
		Roskilde University	403,282	145,928	376,522	166,421	47
		Copenhagen Business School	<u>405,000</u>	194,201	<u>540,952</u>	348,806	113
	2012	Aalborg University	467,540	117,880	506,513	150,496	61
		Copenhagen University	<u>492,619</u>	148,855	<u>556,066</u>	183,589	192
		University of Southern DK	<u>508,186</u>	161,435	<u>601,638</u>	244,229	81
		Aarhus University	<u>495,514</u>	145,117	<u>620,311</u>	292,444	221
		Roskilde University	<u>448,010</u>	98,392	<u>490,028</u>	124,213	85
		Copenhagen Business School	<u>527,415</u>	138,901	<u>642,605</u>	273,947	125

Statistical significance is calculated for differences between male and female PhDs from the same university. Underlined means indicate that the means across genders are significantly different at the 10% level or lower.



WHERE DO THEY GO?

There are more frequent differences in income levels between male and female PhDs in social sciences. For all three cohorts studied, male PhDs from Copenhagen Business School, Aarhus University, and Copenhagen University generate higher income than the female PhDs from the same universities. For two of the three cohorts, male PhDs from Southern Denmark University also generate a higher income than females. And for the third cohort only PhDs from Aalborg University do not generate significantly different incomes across gender. Aalborg University is thus the only Danish university without statistically significant differences in income levels between male and female social sciences PhDs for any of the three cohorts.



Summing up, PhDs in humanities from Aalborg University have moved from the group with the lowest level of income in 2006 to the highest income-generating group in 2012. With the exception of 2006, PhDs in social sciences from Aalborg University belong to the lowest income generating group of universities. Whereas there are very few significant differences in income levels between male and female PhDs in humanities, there are more outspoken differences for PhDs in social sciences where male PhDs often generate a higher income. This is, however, not the case for social sciences PhDs from Aalborg University where no statistically significant gender specific differences can be detected.

WHERE DO THEY GO?

**PHD PROFILE**

Sanne Storm, Music Therapist at the Psychiatric Center, the National Hospital of Faroe Islands

PhD graduate from Department of Communication and Psychology, Faculty of Humanities, 2013

Sanne Storm's PhD dissertation is entitled "Research into the Development of Voice Assessment in Music Therapy". During her PhD study Sanne Storm was partly employed as a music therapist at her current workplace, The National Hospital of Faroe Islands, partly as a researcher at Aalborg University.

- It has always been important to me that my research has been based in the clinical world. The positive thing about it is that the PhD dissertation didn't become too theoretical, but was practical and useful in real life, says Sanne Storm. I developed a test tool which indicated it was possible to measure and evaluate on the basis of the voice. This means that it is possible to measure on a patient's voice if he or she is depressed, Sanne Storm explains.

In December 2014, Sanne Storm received 1.5 million Danish kroner from the Sick Treasury Fund in the Faroe Islands for a project which offers music therapy to women with postpartum depression.

**PHD PROFILE**

Hu (Heidi) Yan, Assistant Professor at the Business School of Shanghai University

PhD graduate from Department of Business and Management, Faculty of Social Sciences, 2012

Hu (Heidi) Yan's PhD dissertation deals with innovation within the telecom industry in China and is entitled "Standard-setting in Innovation Policy and Industry's Competence Building - A Study of the Chinese Telecom Industry".

Hu Yan still carries out research within the field of innovation, but now at a Business School in the Chinese metropolis Shanghai.



WHERE DO THEY GO?

6. REGION OF RESIDENCE

This final section explores where the PhDs from the different universities reside after graduating. A previous study of the migration patterns of university graduates in Denmark has shown that North Denmark is the Danish region with the largest out-migration of university graduates to other regions and that it attracts very few university graduates from other regions in Denmark (Drejer et al., 2014). As far as attracting PhDs from other Danish regions, figures 10A and 10B illustrate that this pattern is replicated at doctoral level in humanities as well as social sciences. In 2012 only 51 per cent of humanities PhDs from Aalborg University resided in North Denmark, while the corresponding proportion for social sciences is 58 per cent. Moreover, very few social sciences and humanities PhDs from other Danish Universities – none from Copenhagen University, Copenhagen Business School and Roskilde University – reside in North Denmark.¹⁸

Although some PhDs may reside in other regions and commute to work in North Denmark, this implies that when it comes to supplying the regional labour market with PhDs, then the North Denmark region is to a large extent – here disregarding PhDs from universities outside Denmark – dependent on the production of PhDs at Aalborg University.

Concerning the proportion of PhDs who reside in their university region after graduating, Aalborg University is comparable to Aarhus University and, in the case of humanities, University of Southern Denmark. In social sciences, Southern Denmark retained a high proportion of PhDs from University of Southern Denmark in the region in 2000, but this proportion has decreased considerably during the last decade.

¹⁸ The same reservation applies as for figure 5A, see footnote 15.

WHERE DO THEY GO?

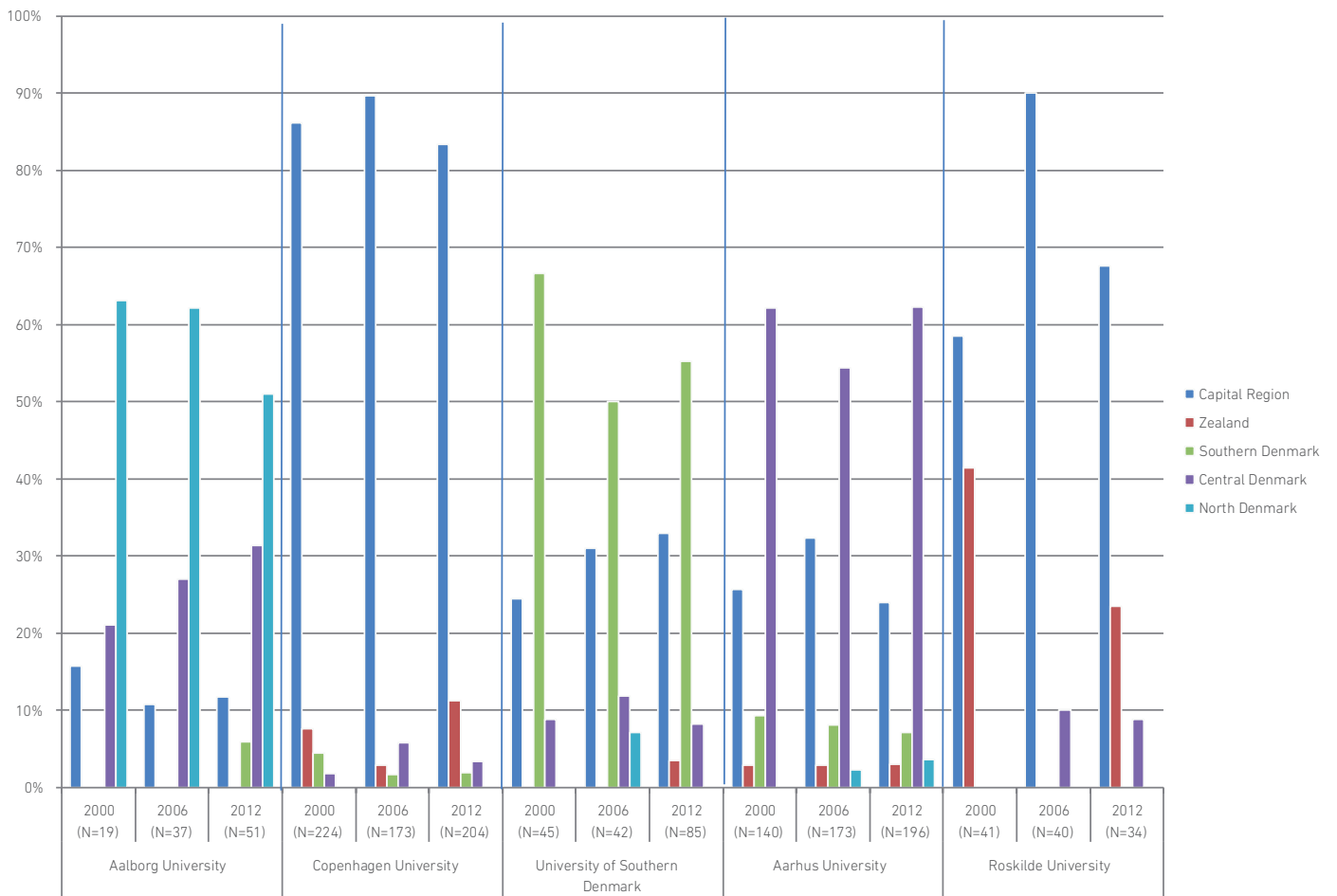


Figure 10A. Humanities. Region of residence for PhDs by university

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In humanities, the PhDs from Aalborg University who do not reside in the North Denmark Region after graduating tend to live in Central Denmark. In social sciences the Capital Region has attracted a significant proportion of PhDs from Aalborg University, but this has decreased over time, and in 2012 the Capital Region and Central Denmark region housed equal proportions of social science PhDs from Aalborg University.

Summing up, the majority of PhDs reside in their university region after graduating, although more PhDs from Aalborg University, Aarhus University and University of Southern Denmark reside in other Danish regions than PhDs from the universities in the Capital Region, who to a very large extent tend to stay in their university region.

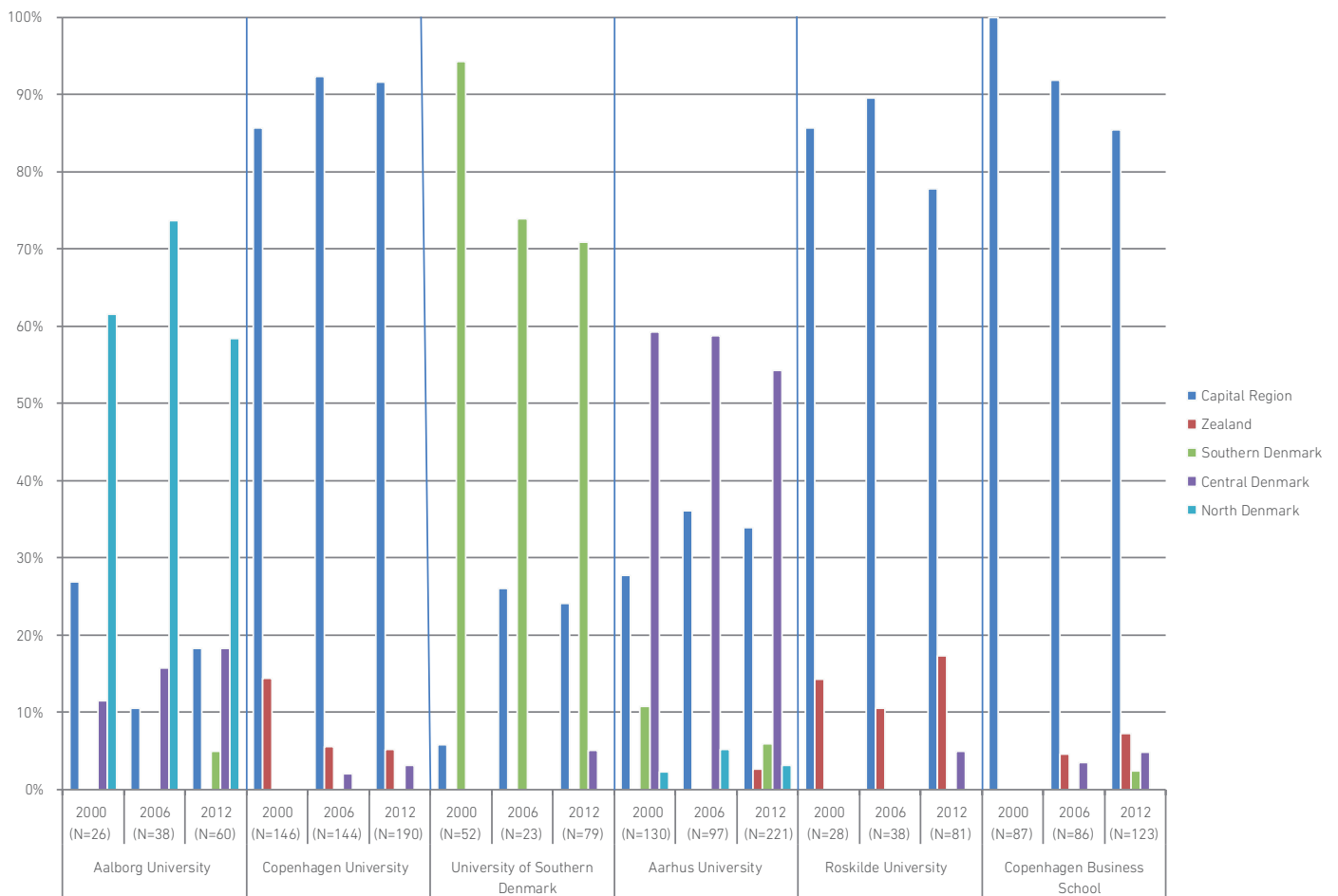


Figure 10B. Social Sciences. Region of residence for PhDs by university

7. CONCLUSION

The purpose of this report has been to explore the labour market for PhDs from humanities and social sciences at Aalborg University in light of the considerable increase in the intake of PhD students at Danish universities over the last years. Aalborg University is among the Danish universities that have had the largest relative increase in their production of PhDs in humanities and social sciences during the analysed period (1994-2011). In order to detect whether PhDs from Aalborg University have a distinct employment profile in a national setting, they have been compared with PhDs from the other Danish universities throughout the report.¹⁹

The particular interest in the labour market for PhDs in humanities and social sciences is due to the fact that these PhDs have a weaker tradition for finding employment in the private sector or in other non-university sectors compared to especially PhDs from technical sciences. This has raised questions as to whether a non-academic labour market exists for PhDs from humanities and social sciences.

The register-based analyses are limited to PhDs graduating during the period 1994-2011 who are employed in Denmark at three points of time: 2000, 2006 and 2012. A comparison of the number of PhDs identified in the Danish registry data used in the present analyses with statistics of awarded PhD degrees in Denmark reveals that the analyses cover 79 per cent of all PhDs who graduated from Danish universities in humanities and social sciences in the relevant period.

Although the supply of PhDs from humanities and social sciences at Danish universities has increased over the last decades, only few changes can be detected in the employment patterns of PhDs who find employment in Denmark after graduating. Labour market participation rates remain high over the period. PhDs from

social sciences have a higher employment rate²⁰ than PhDs from humanities, but the employment situation has improved for PhDs from humanities between 2006 and 2012. In November 2012 the employment rate for PhDs graduating from humanities during the period 2006-2011 was 82 per cent, compared to 91 per cent for PhDs from social sciences. When PhDs who received employment benefits during the year but were employed in November 2012 are added to those who have had no registered unemployment in 2012, the total employment rates increase to 92 and 95 per cent respectively.

Comparisons of PhDs from Aalborg University and PhDs from other Danish universities show that employment rates for PhDs from humanities at Aalborg University are generally above the average for humanities across all universities, whereas employment rates for PhDs from social sciences at Aalborg University are below the average for social sciences across all universities. This can be explained by the characteristics of the local labour market, which is thinner in North Denmark with fewer jobs for highly educated people compared to the Capital Region.

Despite the increasing supply of PhDs during the last decade, universities remain the largest sector of employment for PhDs from humanities and social sciences throughout the analysed period. This may to some extent be explained by the large increase in intake of students at universities and other institutions of higher education during the same period, which has increased the demand for teaching staff. In 2012, 63 per cent of the PhDs who graduated from humanities during the period 2006-2011, and 55 per cent of the PhDs from social sciences, were employed at a Danish university. Thus, a non-academic labour market for PhDs from humanities and social sciences does exist to some extent, although universities still have a very dominant position as the main type of employer.

¹⁹ The Technical University of Denmark and the IT University of Copenhagen are not included in the analyses since they do not offer PhD programs in humanities and social sciences.

²⁰ The employment rate is defined as the proportion of PhDs who have no registered periods of unemployment during the year in question.



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PhDs from Aalborg University are more likely to find employment at a Danish university than PhDs from the other universities: In 2012, 72 per cent of the 2006-2011 cohort of PhDs from humanities and 75 per cent from social sciences at Aalborg University were employed at a Danish university. The high proportion of social science PhDs from Aalborg University who continue their career at university may be explained by the expansion of social sciences studies at this university.

For PhDs in humanities, the second-most important sector of employment is teaching. This is also the case for PhDs from Aalborg University. In 2012, healthcare and social services also emerges as an employment sector for PhDs from humanities at Aalborg University.²¹ Across all universities, sectors such as entertainment, culture and sports and business services and finance - which are not identified as employing humanities PhDs from Aalborg University - account for a larger proportion of the employment of PhDs in humanities than healthcare and social services, thus indicating a particular employment profile for PhDs from Aalborg University in 2012.

For PhDs in social sciences, business services and finance is the second-most important sector of employment. Only in the two periods where Copenhagen Business School is classified as teaching rather than universities is teaching as important as business services and finance as a sector of employment for PhDs from social sciences. However, for PhDs from social sciences at Aalborg University, teaching is more important as a sector of employment than business services and finance. For Aalborg University in particular – and to a lesser extent for all universities combined – business services and finance has lost relative importance as a sector of employment over time for social sciences PhDs. Social sciences PhDs from Aalborg University appear to have a less diverse labour market than PhDs from the

other Danish universities, but here the limited number of observations, and the associated need to censor values including less than three individuals, may have influenced the findings. This can make the labour market look more narrow than it might be in reality. As mentioned above, the high growth of PhDs in social sciences in the period coincides with a rapid expansion of students in social sciences. Therefore, the PhDs who aspire to remain in the university sector have had the opportunity to do so because there has been a high demand for PhDs in this sector.

Across all universities the PhDs are typically employed as high level wage earners with only few entering management positions and even fewer self-employed. Some PhDs also enter job functions that require formal qualifications below a master's level. This is rarely the case for PhDs from Aalborg University, but more common for PhDs from other universities.

There has generally been a development towards a more equal gender distribution among humanities and social sciences PhDs in Denmark and especially at Aalborg University. However, in relation to income for PhD graduates, gender related differences occur within social sciences, where male PhDs to a large extent generate higher income levels than females. The exception is Aalborg University where statistically significant gender related differences in wages cannot be detected.

Due to data availability, the present analyses end in 2012. The obvious question is therefore whether the employment patterns described in this report are still relevant, and whether the PhDs graduating from humanities and social sciences in the coming years will follow similar patterns. Data generated from the universities' PhdManager system for PhDs graduating from Aalborg University during the period January 2012–September 2015 do not reveal any drastic changes in employment patterns.

²¹ There may also be some PhDs from humanities at Aalborg University entering the healthcare sector in the two previous periods, but if this is the case, the numbers are less than three for each of the two periods, which places them in the category "Other/too few to specify".

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There are, however, some indications that a decreasing – although still relatively high – proportion of PhDs from Aalborg University find employment at a Danish university. For humanities this would be a continuation of the downward sloping tendency observed throughout the analysed period. For social sciences it would indicate a turn in what has been an upward sloping tendency throughout the analysed period. Whether this will actually be the case is for future studies to show. The data from Phd-Manager also indicates an improved employment situation for PhDs from social sciences, leading to almost no unemployment for humanities and social sciences PhDs who graduated from Aalborg University during the period January 2012-September 2015.



The analysis raises questions about why more PhDs from Aalborg University find employment in the university sector compared to PhDs from other universities. Is it because the PhDs generally prefer to work at university, and those who graduate from Aalborg University have had better opportunities to find employment in this sector? Or is it because PhDs from Aalborg University have fewer alternative job opportunities than PhDs from other Danish universities – and if so why? If the job opportunities at universities diminish in the coming years, there will be a pressure on the PhDs to look for jobs in other sectors. This accentuates the question of which transferable skills to include in the PhD education in order to support alternative job opportunities for PhDs. The answers to such questions are, however, beyond the scope of the present report.



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