Understanding and managing gender differences in the recruitment, retention and support of Mathematics and Statistics Associate Lecturers

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Executive Summary

In the School of Mathematics and Statistics Associate Lectures (ALs) work across a wide range of modules both at undergraduate and postgraduate level. This study was undertaken before the faculty of Mathematics, Computing and Technology (MCT) merged with the faculty of Science. At the start of the study roughly 43% of ALs in Mathematics and Statistics were female compared to 34% in the faculty of MCT overall.

Associate lecturers are part of the Mathematics and Statistics academic community and are therefore covered by the School's Athena SWAN action plan. This study aimed to understand why ALs are attracted to the role and what support the institution should be providing to these groups of staff in terms of their career development.

For many students their main link to the OU is their associate lecturer so the role played by the AL is of utmost importance for student retention. It is particularly important to provide ALs with appropriate staff development and to understand what attracts people to the role. This understanding will ensure that we recruit well-informed and well-motivated staff to undertake this vitally important work.

The analysis was constructed to investigate why ALs were attracted to the role and if there was a difference in respect of gender – this indeed appears to be the case. There are a number of female ALs for which the flexibility of the role allows them to combine it with other responsibilities; this appears to be less important for men, many of whom have been in the role longer than their female counterparts.

There is a strong feeling amongst ALs regarding their insecurity over future employment but also concern, in the midst of negotiations about a new AL contract, that the flexibility of small contracts is retained as the majority of mathematics and statistics ALs tutor 60 credits or 2 modules.

Associate lecturers feel hugely valued and supported by their staff tutor, but ALs consider the wider Open University to be distant. There is a real need to ensure the staff tutor and AL relationship is maintained in order to both facilitate an AL academic community to avoid isolation and to provide professional support for this highly skilled group of staff. However ALs also express a feeling that the wider university does not value their professionalism and, as such, there is a need articulate the wider role that ALs play in the organisation.

1 Aims and scope

The Athena SWAN Charter was established in 2005 to encourage and recognise a commitment of higher education and research employers with respect to the advancement of the careers of women in science, technology, engineering, mathematics and medicine. Individual schools or departments, together with the institute as a whole, can apply for Athena SWAN chartered status. The school of Mathematics and Statistics has a very active AL body which contributes in a variety of ways to the mathematics and statistics academic community outside of their core AL role. As Athena SWAN has become an integral part of the school's strategies, it was important to ensure that ALs who are the largest body of staff within the school were included in this work.

Students at the Open University learn at a distance using module materials that are developed by a team comprising mainly of centrally based academic staff. Each module counts towards a substantial portion of a degree, either 15 or 30 ECTS points. Several ALs are contracted to each module and support a small group of students, usually 20, throughout their study of that particular module, providing tutorials, correspondence tuition (via feedback on continuous assessment which they mark) and one to one support via email and telephone. The role is highly flexible and therefore suited to staff who have caring responsibilities; this is possibly why it is more attractive to women. Indeed the Associate Lectures in Science project (Donovan et al, 2005) showed that the OU is a major employer of women teaching at HE level in science and technology. They argued that the role not only combines flexible employment and developmental opportunities in HE but also helps to restore women's confidence following a career break. As such a large proportion of mathematics and statistics ALs are female. One of the aims of this project is to understand what motivates potential ALs to apply for this particular teaching position. To better understand the potential pool of applicants when recruiting these staff it would be particularly useful in ensuring that adverts are appropriately targeted.

Career development for ALs is relatively problematic as they are contracted to each individual module, so many hold multiple contracts over a variety of modules and geographical areas. There are opportunities for ALs to apply for additional work such as moderating forums (spaces on the virtual learning environment for students, tutors and module teams to discuss problems associated with each individual module), monitoring assessment feedback (monitoring the feedback given by other ALs), exam marking, critical reading of module material, membership of university committees, etc. However some of these additional opportunities are only available to a selection of ALs depending on the module on which they teach, e.g. exam marking for some modules is wholly undertaken by central academic staff. Associate Lecturers receive a Career Development and Staff Appraisal (CDSA) from their line manager. In mathematics and statistics staff tutors line manage ALs, these staff are academic members of staff who have a proportion of their time dedicated to managing and developing Associate Lecturers together with providing direct support to students, whilst the remainder of their time is spent in the equivalent activities associated with a central academic role, that is the running and development of modules, research, scholarship, knowledge exchange and department/faculty roles. Staff Tutors carry out CDSA for the ALs they line manage every two years and additional opportunities for ALs to engage in other OU related work is discussed in these sessions. If ALs are using the role as a route to other careers it is important that the correct development is offered to not only enable them to do the best job possible whilst working as an AL but to also progress with their wider career aspirations.

The university is currently re-evaluating the contract for ALs and this research provides some timely feedback from ALs both in terms of where they are in their career path but also which aspects of the current role they would like to be preserved.

2 Activities

At the time of the full study, May 2016, there were 176 (40%) female and 261 (60%) male ALs in mathematics and statistics. The study commenced in April 2015 when 43% of mathematics and statistics ALs were female compared to 34% females in MCT overall. The initial aim of the study was to understand what motivated ALs to apply for the role, their career aspirations and what support the OU could provide in order to help them achieve these goals. It was also important to understand what support these staff need to fulfil their current role and gain their views as to how tutorial provision and support should be provided in the future. The research aimed to address the following questions:

- Why do ALs take up the role and is there a difference in expectations of the role based on gender and career aspirations within the mathematics and statistics disciplines?
- Do ALs take up the post in a particular point in their career trajectory?
- Do the needs of ALs change throughout their time with the OU and what should we do to support them?
- What career and professional development is needed to provide ALs with the appropriate skills to enable them meet the challenges of their role, and therefore have a positive impact on their teaching, whilst also furthering their career aspirations?
- How can knowledge from this study be used to inform decisions around tutorial provision and student support in the future?

The questionnaire was devised by a team of staff tutors in mathematics and statistics and contained a mixture of closed and open ended questions. The open ended questions were analysed by a qualitative research expert and used to construct themes which were then followed up in focus groups. All mathematics and statistics ALs in the East Midlands region were used for the pilot sample, 29 in total, during April 2015. Of these 11 provided full responses (of whom 36% were female) with one further incomplete response. The questionnaire was revised in the light of this pilot, but the focus remained the same.

The revised questionnaire was sent on 5th May 2016 to 437 mathematics and statistics ALs and closed on 3rd June. This timing is important as the way in which tutorials were delivered by tutors changed for the October 2016 module start date, the questionnaire responses therefore pre-date this change. There were 189 complete responses (43% response rate) and a further 49 incomplete responses. Qualitative comparative analysis, using a modified NVivo type classification, was used to analyse the open ended responses to the questionnaire, this resulted in the following themes which were of particular concern to participants and explored in the focus groups:

- To gain more knowledge about the role of the Associate Lecturers in the OU
- To identify issues around their motivation, career progression and aspiration
- To identify best ways to provide ALs with the support to reach their goals

The ALs were invited to participate in focus groups as part of the questionnaire, 18 ALs actively took part in these groups which were held on 27th and 28th June and 5th July, a further 9 ALs provided written responses to the focus group questions via email. The discussion topics evolved into three main areas: Motivation, Progression and Support.

The data finding from the questionnaire and focus groups were triangulated to assess the consistency of the statements (Figure 1). All of the subjects who took part in the study gave their consent to use the information from the questionnaire and focus groups, and a confidentiality clause was provided.

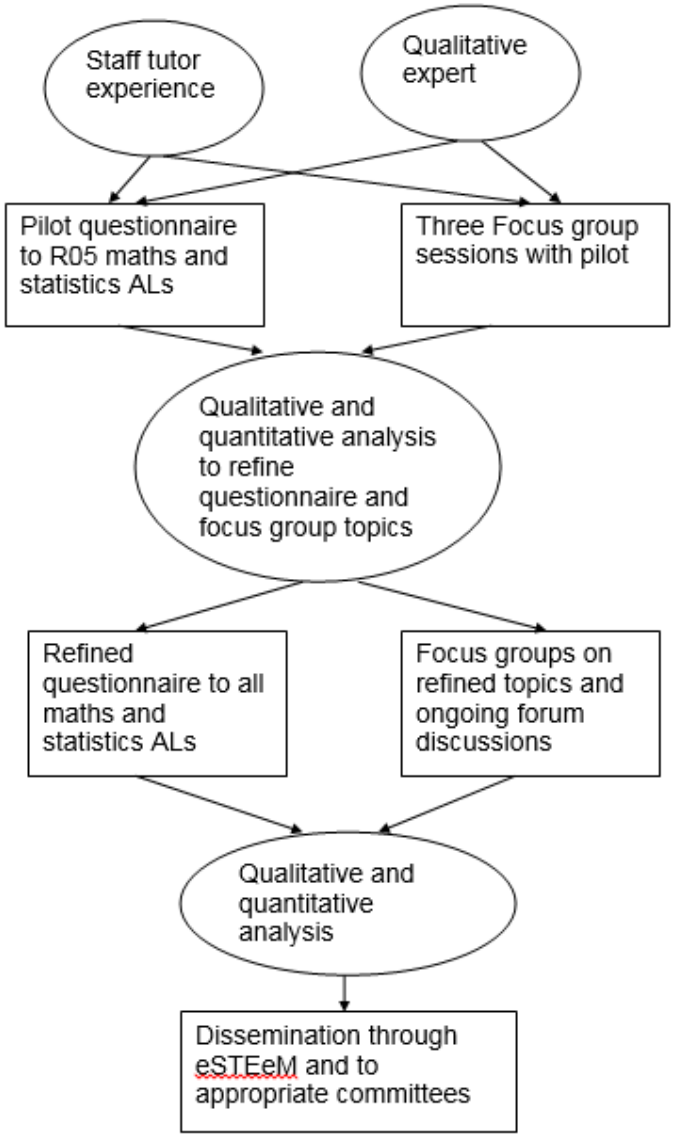


Figure 1. Study design and methodology

3 Findings

3.1 Demographics

Of the complete questionnaires 58.1% were male and 41.9% female, compared to the full cohort of 60% male and 40% female, hence the sample is a good representation with respect to gender. Of the respondents 185 worked on the October module start date and 53 on the February module start date. The range of modules tutored ranged across all levels both undergraduate and post-graduate and across all areas of pure and applied mathematics, mathematics education and statistics, Figure 2, see appendix for the modules codes and titles.

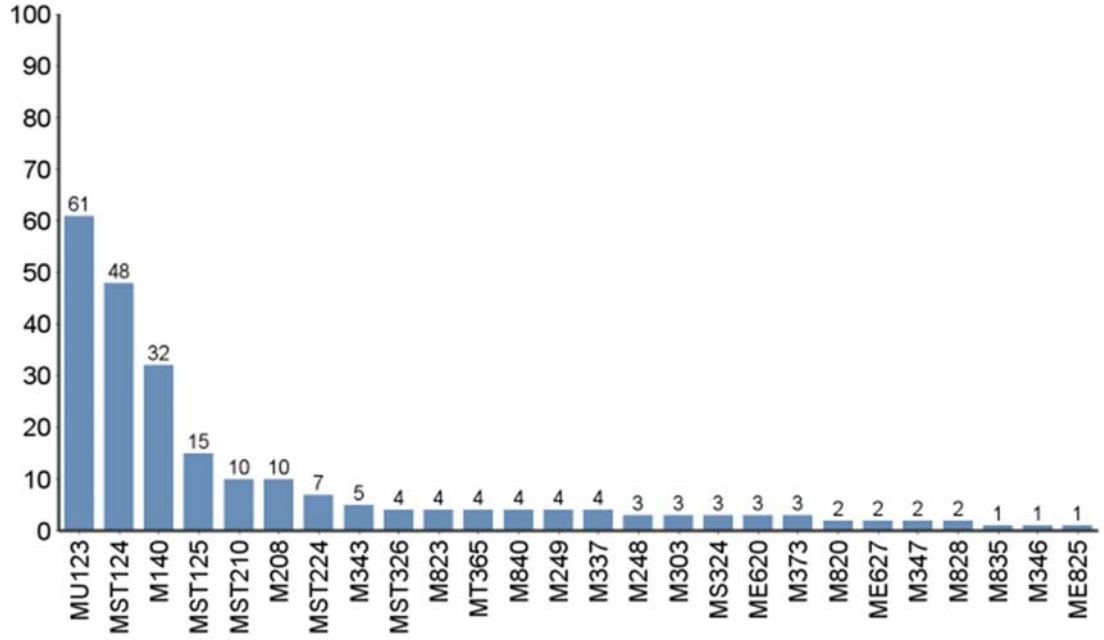


Figure 2: Mathematics and Statistics modules tutored by respondents

3.1.1 Years of Experience as an AL

There was a wide range of years of experience as an AL in the sample with females averaging 13 years' experience compared to 19 years for their male counter parts, Table 1.

	All	Female	Male	% Female
Number answering question	187	78	109	42%
Missing Values	2			
Min	1	2	1	
Max	46	45	46	
Mean	16.6	13.3	19.0	
Median	12	10	16	

Table 1: Number of respondents to the question – How many years of experience of working as an Associate Lecturer with the OU do you have?

It is interesting to note that just over half the ALs who had less than 10 years' experience are female compared to nearly three quarters of the ALs with more than 25 years' experience who are male. This reflects the male-female split in ALs that joined more recently compared with ALs that have been with the OU for many years, indeed some since the OU started, Table 2 and Figure 3. Clearly there are more females than males attracted to the AL role in recent years. However teaching longevity of the male ALs may be attributed to either the fact that there were more male AL than female AL over 25 years ago or that female ALs see the role as a stepping stone to other positions. In the past many ALs have taken positions as staff tutors; currently there are 13 female staff tutor in the school of whom 12 were ALs, compared to the 4 male staff tutors only one of which was an AL prior to appointment as a staff tutor

	All	Female	Male	% Female
< 5 years	26	14	12	54%
5 to < 10 years	36	19	17	53%
10 to < 15 years	40	18	22	45%
15 to < 20 years	24	9	15	38%
20 to < 25 years	14	6	8	43%
Over 25 years	47	12	35	26%

Table 2: Count of responses by level of experience

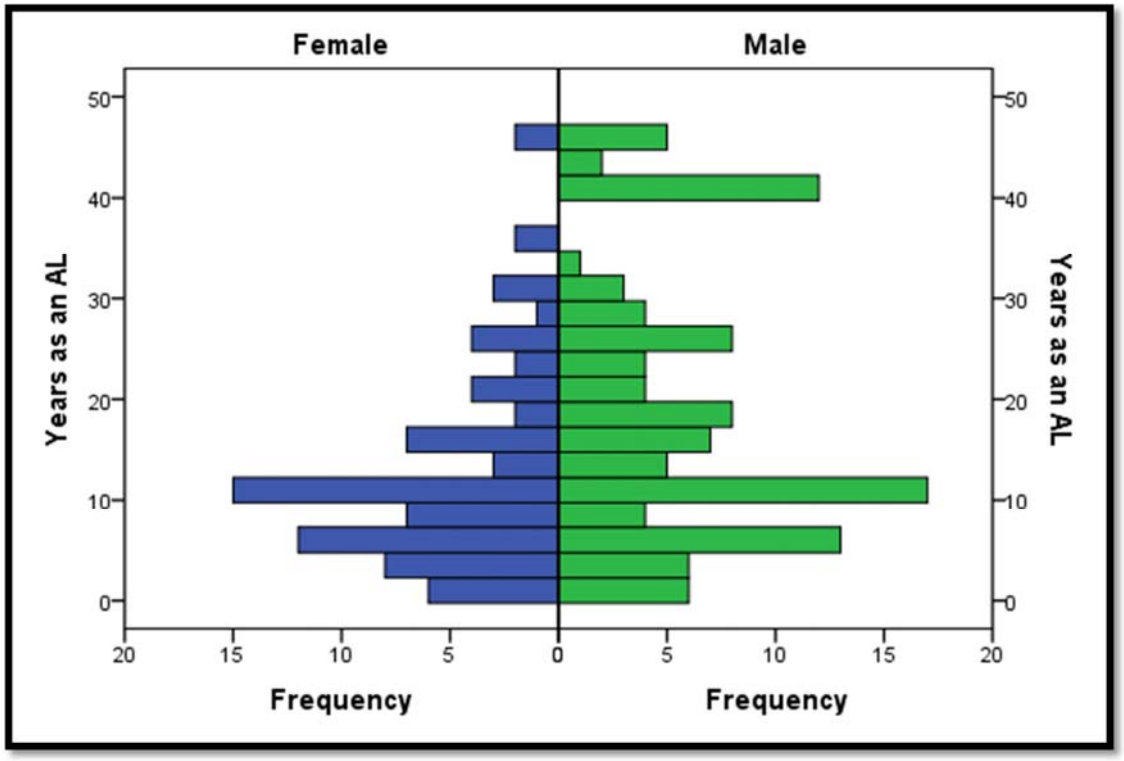


Figure 3: Years of experience with the OU as an AL by gender

3.1.2 Number of contracts

At the time of the survey roughly three quarters of the respondents were working on one or two mathematics or statistics modules, with slightly more males than females involved in four or more modules, Figure 4. The university is currently negotiating a new AL contract and exploring the size of fractional contract that should be offered. The finding of this survey is an important finding as the majority of ALs in mathematics and statistics have 1 or 2 module contracts, Figure 5.

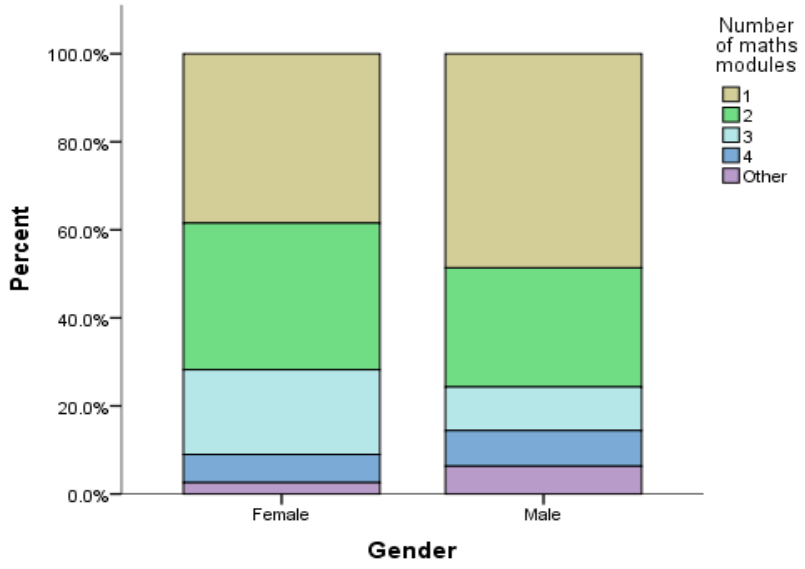


Figure 4: Number of AL contracts split by gender

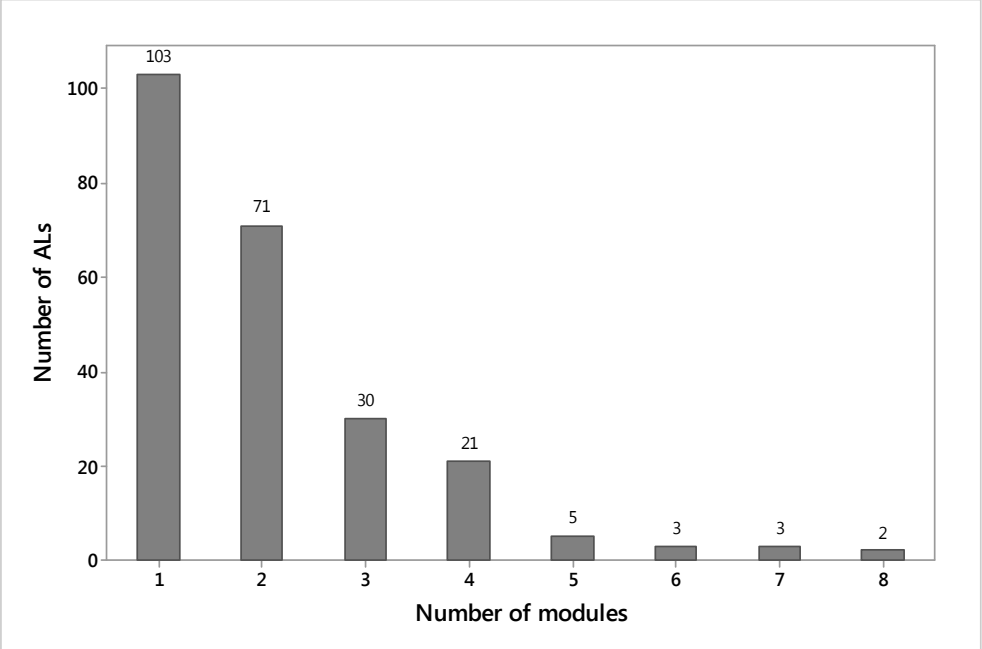


Figure 5: Number of modules taught by each of the 238 ALs who fully or partially responded to the survey

Male ALs have in general taught a greater number of different modules during their time as an AL than their female counterparts, with 57% of males having taught 3 or more mathematics compared to 44% of females, Table 3. This could be attributed to the average length of service being, on average, longer for males than females.

	All		Female		Male		
Number of modules	Count	% of all	Count	% of female	Count	% of male	% female
1	37	20%	21	27%	16	14%	57%
2	23	12%	9	12%	14	13%	39%
3	32	17%	14	18%	18	16%	44%
4	24	13%	4	5%	20	18%	17%
5	23	12%	14	18%	9	8%	61%
6	12	6%	6	8%	6	5%	50%
7	12	6%	3	4%	9	8%	25%
Over 7	26	14%	7	9%	19	17%	27%
Total	189		78		111		41%

Table 3: The number of mathematics and statistics modules taught whilst employed as an AL

As outlined in section 1, in addition to individual module contracts, ALs may hold contracts for other types of work in the OU. The number of 'types' of consultancy work have been analysed here, regardless of how many days or number consultancy contracts they held. For examples if an AL listed mentor, monitor and forum moderator as additional roles they would have three types of contracts. Just over 30% of females do not have another OU contract compared with 17% of males, Table 4 and Figure 6. This again could be related to length of service but there may be other important factors indicating possible barriers. The type of additional contract held by ALs does differ slightly with gender with a higher proportion of females holding monitoring contracts, compared to a higher proportion of males involved in staff development, Table 5. This is should be taken into account when awarding contracts and ensure that unconscious bias is not being applied. When viewing this data it is important to note that only the type is counted here, not the number of contracts, so an AL with two monitoring contracts is only counted once against monitoring. It will be important to carry out an equality analysis exploring this aspect further prior to the agreement of the AL contract, as any new contract should not disadvantage female ALs.

	All		Female		Male		
Number of other OU contracts	Count	% of all	Count	% of female	Count	% of male	% female
0	43	23%	24	31%	19	17%	56%
1	33	17%	7	9%	26	23%	21%
2	31	16%	11	14%	20	18%	35%
3	24	13%	13	17%	11	10%	54%
4	15	8%	7	9%	8	7%	47%
Over 4	16	8%	8	10%	8	7%	50%
Total	162		70		92		43%
Missing Values	27						

Table 4: Number of other OU contracts held

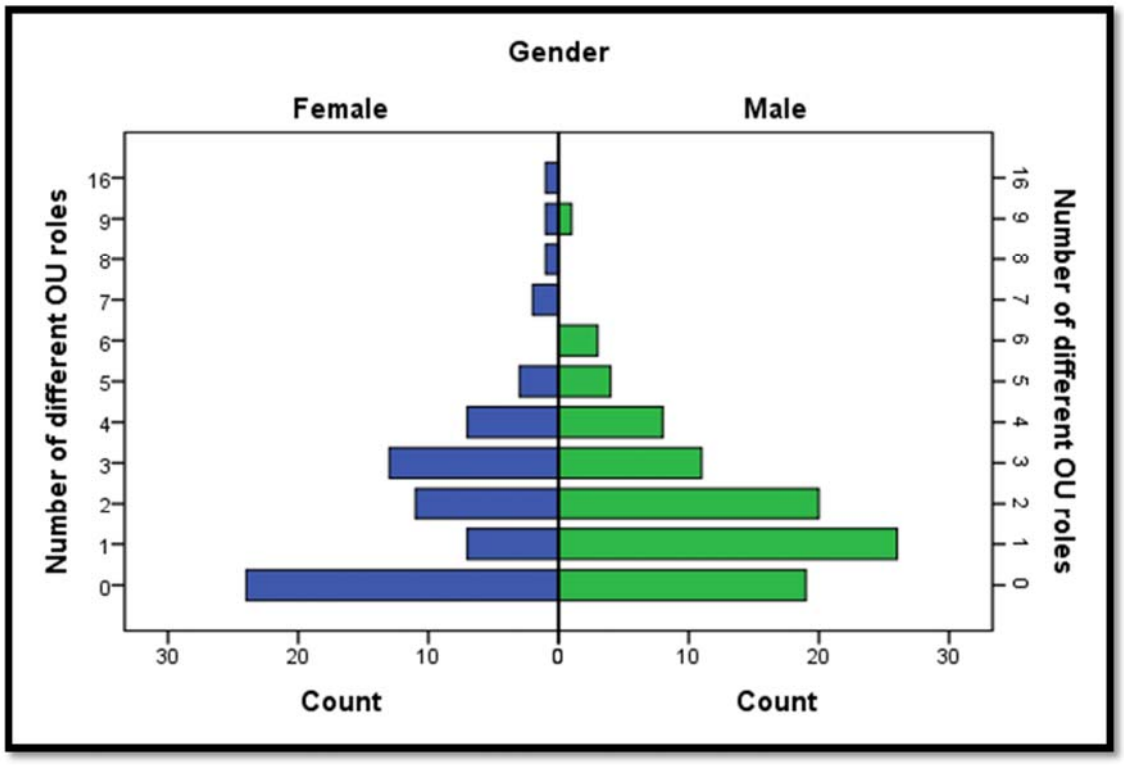


Figure 6: Number of different other OU contracts split by gender

	All	Female	Male	% female
Exam or EMA marking	26	9	17	35%
Contributing to modules (2)	33	13	20	39%
Residential or day schools (3)	14	5	9	36%
Monitoring	49	26	23	53%
Mentoring	27	11	16	41%
Moderating forums	29	13	16	45%
Staff development and training	16	5	11	31%
Exam invigilator, amanuensis	14	6	8	43%
Other	62	27	35	44%

Table 5: Type of additional contract by gender

3.2 Motivation

3.2.1 Reasons for becoming an Associate Lecturer

Associate Lecturers were asked to identify events in their career path which were critical to them in deciding to become an Associate Lecturer. There were a number of career events identified - such as redundancy, retirement and completion of studies; these seem to be key events leading to people becoming ALs which are common to both genders. The most noticeable career event difference in choosing to become an AL for women linked to the impact of family changes; 10% of females compared with 1% of males. Reasons due to contract changes at other universities played a role for 22% of males but only 10% of females, Table 6.

	All		Female		Male		
	Count	% of all	Count	% of female	Count	% of male	% Female
Number answering Q9	171		73		98		43%
Missing Values	18						
Career	48	28%	18	25%	30	31%	38%
Challenge	5	3%	3	4%	2	2%	60%
Family	8	5%	7	10%	1	1%	88%
OU / Uni Contract	29	17%	7	10%	22	22%	24%
Studies	64	37%	32	44%	32	33%	50%
Vacancy advertised	11	6%	4	5%	7	7%	36%
Other	6	4%	2	3%	4	4%	33%

Table 6: Events which were critical to Associate Lecturers considering the role

There are a variety of reasons why Associate Lecturers take up the role. Many of the suggested options were considered to be important or very important, Table 7. The flexibility of the role was given as a priority for females compared to a range of other issues which male ALs cited as important. When 'very important' and 'important' categories are conflated flexible working and maintaining or enhancing subject knowledge were priorities for females, whilst opportunities to gain new skills, flexible working and maintain or enhance subject knowledge were the key priorities for males. Table 8. Several responses re-iterated these points:

"*The AL role offers me a great degree of flexibility whilst also giving me career development in teaching and education which is a sector I have always wanted to work in"*

"I am not in the industry so teaching the module material keeps my knowledge fresh."

Female	Very important (1)	Important (2)	Neutral (3)	Not important (4)	Not at all important (5)	Count
Additional income (1)	26	28	15	5	2	76
To enable a career change (2)	13	19	23	8	9	72
Flexible work to fit with work/life balance/family commitments etc (3)	50	20	4	1	0	75
Opportunity to develop new skills/train/study (4)	20	38	12	3	2	75
Opportunity to maintain/enhance subject knowledge (5)	32	36	6	1	0	75
Association with a respected HEI (6)	20	24	21	4	5	74

Male	Very important (1)	Important (2)	Neutral (3)	Not important (4)	Not at all important (5)	Count
Additional income (1)	16	43	28	12	0	99
To enable a career change (2)	16	21	21	18	0	76
Flexible work to fit with work/life balance/family commitments etc (3)	37	40	15	4	0	96
Opportunity to develop new skills/train/study (4)	30	52	17	2	0	101
Opportunity to maintain/enhance subject knowledge (5)	38	51	16	2	0	107
Association with a respected HEI (6)	27	40	17	7	0	91

Table 7: Reasons for becoming an AL

Very Important and Important	Female	% of Female	Male	% of Male
Additional income (1)	54 (71)	71%	59 (60)	60%
To enable a career change (2)	32 (44)	44%	37 (49)	49%
Flexible work to fit with work/life balance/family commitments etc (3)	70 (93)	93%	77 (80)	80%
Opportunity to develop new skills/train/study (4)	58 (77)	77%	82 (81)	81%
Opportunity to maintain/enhance subject knowledge (5)	68 (91)	91%	89 (83)	83%
Association with a respected HEI (6)	44 (59)	59%	67 (74)	74%

Table 8: Very important and important reasons for becoming an AL

One AL clarified issues regarding 'income' in a wider context - *"….additional income is not quite correct. This is my only source of income. I strongly feel that referring to it as 'additional' belittles the importance of the OU AL role as a proper job for so many of us."* This perception of the AL role as a secondary job is a theme throughout the discussions and 60% of ALs questioned noted that their main job was with the OU with roughly 10% of both genders stating a main job not in education, Table 9.

Main job

	All		Female		Male		
	Count	% of all	Count	% of female	Count	% of male	% female
With the OU as an AL	114	60%	48	62%	66	59%	42%
In HE	21	11%	12	15%	9	8%	57%
In other education	27	14%	9	12%	18	16%	33%
Not in education	19	10%	7	9%	12	11%	37%
Total	181		76		105		42%
Missing Values	8						

Table 9: Main job split by gender

Whilst working for the OU as an AL is the main job for 60% of respondents it is worth noting that nearly half the ALs balance their role with other paid employment, Table 10. The majority of ALs balance their role with at least one or two other responsibilities. Males are most likely to balance their AL work with one other activity, often paid work or other activities including retirement or unpaid work. The fact that more males than females gave 'other' as a balancing item, which often included retirement or unpaid work, could reflect the higher number of male ALs who have been with the OU for a long time. Paid employment, together with caring responsibilities and children, were important for females.

How many things to you have to balance against your AL work?

Number of things to balance	All Count	All % of all	Female Count	Female % of female	Male Count	Male % of male	% female
0	16	8%	6	8%	10	9%	38%
1	108	57%	36	46%	72	65%	33%
2	48	25%	25	32%	23	21%	52%
3	14	7%	9	12%	5	5%	64%
4	3	2%	2	3%	1	1%	67%
Total	189		78		111		41%

What things to you have to balance against your AL work?

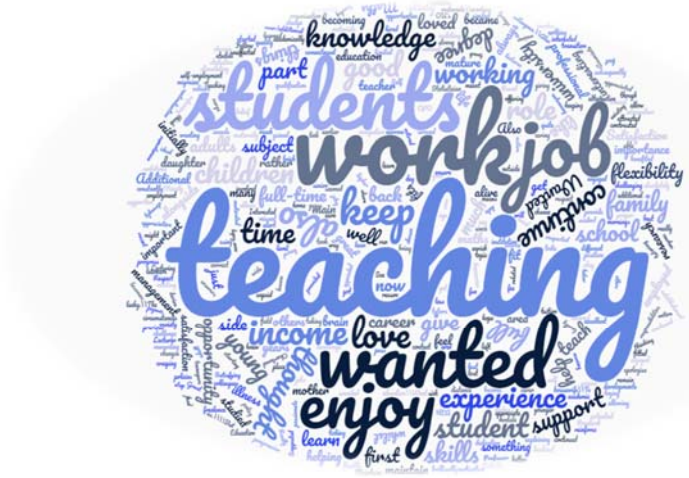
What has to be balanced with AL work	All Count	All % of all	Female Count	Female % of female	Male Count	Male % of male	% female
Other paid employment	84	44%	37	47%	47	42%	44%
Children	35	19%	22	28%	13	12%	63%
Caring responsibilities	24	13%	15	19%	9	8%	63%
Study - with OU	28	15%	13	17%	15	14%	46%
Study - not with OU	15	8%	8	10%	7	6%	53%
Own business	18	10%	11	14%	7	6%	61%
Other	54	29%	15	19%	39	35%	28%
Respondents	189		78		111		

Table 10: Balancing AL work with other areas

The reasons for becoming an AL were explored further both in qualitative responses and in the focus groups. Figure 7 highlights the overwhelming joy that this group of staff has for supporting students, seeing them progress and enjoying teaching, these are encapsulated in the following quotes:

"I love helping OU students to learn and progress"

I have always felt it is a privilege to work for an institution which offered such valuable possibilities to those who otherwise would not have the opportunity."



Female

Male

Figure 7: Reasons for becoming an Associate Lecturer

Enjoyment appeared repeatedly in questionniare responses together with working for a respectable organization. As a number of ALs had been OU students this was also a chance to 'give something back' -

"Having benefited from the OU myself, I wanted to give something back, which sounds trite, but was the case. The OU meant so much to me as a student and I wanted to stay part of it."

3.3 Support and career progression

3.3.1 Support in the role

Associate Lecturers in mathematics and statistics are line managed by staff tutors. It is worth noting that both genders feel very supported by their staff tutors, but were less impressed with support from the wider OU staff community, Figure 8. This was re-iterated in the focus groups:

- *My staff tutor is excellent. She is always on hand to help me.*
- *The level of support from all my staff tutors is excellent*
- *I have a good relationship with my staff tutors. The OU I regard as distant and unhelpful.*
- *I receive immediate support from my staff tutor when it is requested.*
- *My staff tutor is at hand to help or give a listening ear*

The research was undertaken prior to the changes in how tutorial provision was delivered for the October 2016 module start and was based on established ways of working. The change in working practice was extremely disruptive for both students and tutors, however even prior to this change associate lecturers were unhappy with the support provided by the wider university.

"All staff tutors have been extremely supportive and show spades loads of common sense. The OU as a whole lacks a collegiate feel and is driving in a worryingly corporate direction – HR and admin departments treat ALs like children and central policy/strategy seem to be wholly unaware of the realities of teaching."

"I can't fault my staff tutor. As to the OU, where do I start? The inability to provide systems that would help us to do our job better (e.g. a view of StudentHome) but a willingness to use unsuitable systems (e.g. TMA turnaround) to monitor our performance. The way that ALs do not appear to be considered in decisions e.g. the effect that closing regional centres will have on our opportunities to meet with our staff tutor and the lack of acknowledgement that this matters."

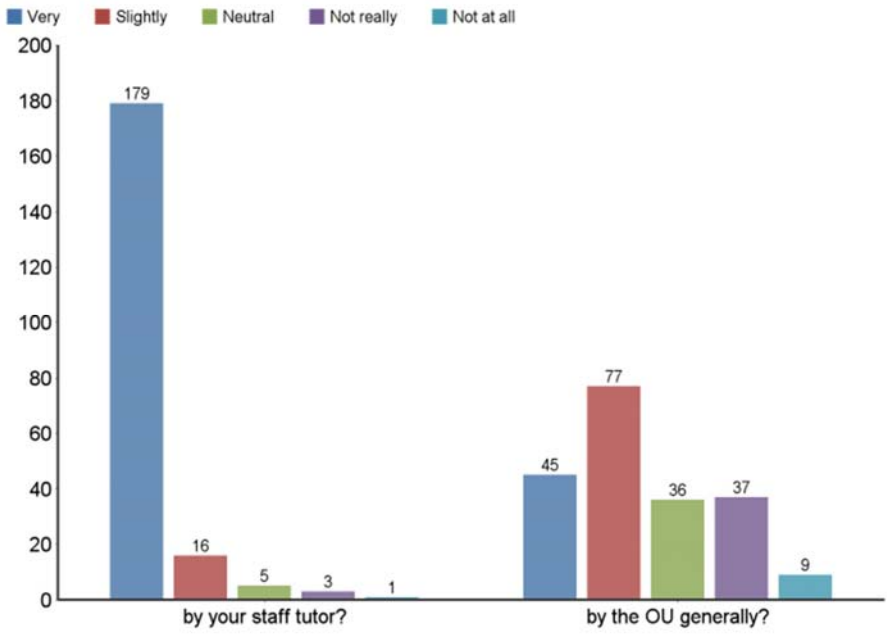


Figure 8: How valued and supported do you feel?

Associate Lecturers were very appreciative and complimentary about staff development sessions. These sessions were delivered both face to face and online and it was noted in particular how these sessions provided an opportunity to feel 'like a member of a community' together with a place to discuss best practice with colleagues.

3.3.2 CDSA and career development

As many associate lecturers regard the AL role as their main job (section 4.1), CDSA is an important aspect to career development. However only a third of respondents said they had used their CDSA to help with their career; the proportion being slightly lower for females (at 28%) than males (at 35%).

	All		Female		Male		
	Count	% of all	Count	% of female	Count	% of male	% female
Yes	56	32%	20	28%	36	35%	36%
No	117	68%	51	72%	66	65%	44%
Total	173		71		102		41%
Missing values	16						

Table 11: Have you used your CDSA for career development?

There were mixed reactions to CDSAs; in general they were thought to be a useful exercise and were a way of potential opportunities for further work with ALs. However, for many ALs, their main concern was uncertainty regarding whether or not their current module contract would be renewed, as this is based on there being sufficient students to fill all the contracted tutor groups. There was a lot of negative feeling over the need to constantly re-apply for AL roles and go through additional interviews either for new or existing modules; this generated a feeling of poor role stability and security. However there was also concern that without the flexibility to tutor on one or two modules many would be unable to carry on with what they viewed as a personally rewarding role and one of great importance to students. One area which was discussed with a number of ALs at CDSA was HEA accreditation and this was explored in the questionnaire.

3.3.3 HEA accreditation

A quarter of ALs either had, or were working towards, HEA accreditation, Table 12. It is interesting that half of the female ALs already had another teaching qualification compared with 36% of males. A quarter of females said they did not intend to work towards HEA accreditation compared with 38% of males.

All complete responses (total = 189)

	All		Female		Male		
	Count	% of all	Count	% of female	Count	% of male	% Female
Number answering Q5	179		72		107		40%
Missing Values	10						
1: Has HEA accreditation	28	16%	10	14%	18	17%	36%
2: Working for HEA acc.	18	10%	8	11%	10	9%	44%
3: No intention to go for HEA	59	33%	18	25%	41	38%	31%
4: Has other teaching qual.	74	41%	36	50%	38	36%	49%
5: Working for other teaching qual.	0	0%	0	0%	0	0%	

Table 12: Teaching qualifications and HEA accreditation

The relationship and support from staff tutors, in the aspiration of ALs to gain accreditation, is clear from responses and ALs were concerned that if communications between ALs and staff tutors were severed then the tacit knowledge of skills and abilities of each AL would go untapped. The expertise, including gaining a teaching qualification, combined with academic and industry knowledge, is wide ranging so recording this resource within the CDSA procedure was thought to be one of the main benefits.

The survey also asked if ALs had taken the opportunity to study with the OU whilst an AL. For both genders about 60% had studied whilst nearly all the ALs who had not studied with the OU whilst an AL stated 'lack of time' as the reason. Personal interest or career development were given as the main reasons amongst those who had studied.

3.3.4 Future work

Associate lecturers were asked about their ideal future workload, both in terms of the number of credits and number of modules. Roughly a third of the ALs who specified their ideal workload would like a workload of 60 credits or 2 modules; this did not differ with gender, Table 13. Again this has implications for the new AL contract in terms of the work portfolio for mathematics and statistics ALs.

Number of module credits preferred

	All		Female		Male	
	Count	% of All	Count	% of females	Count	% of males
Not specified	26	14%	9	12%	17	15%
30	21	11%	7	9%	14	13%
60	55	29%	22	28%	33	30%
90	33	17%	12	15%	21	19%
120	23	12%	13	17%	10	9%
150 or more	31	16%	15	19%	16	14%

Number of modules preferred (any combination of 30 and 60 point modules)

	All		Female		Male	
	Count	% of All	Count	% of females	Count	% of males
Not specified	36	19%	14	18%	22	20%
1	26	14%	7	9%	19	17%
2	62	33%	27	35%	35	32%
3	29	15%	11	14%	18	16%
4	17	9%	9	12%	8	7%
5 or more	19	10%	10	13%	9	8%

Table 13: Ideal number of modules for future work

In addition only 35% of ALs would be interested in other types of work with the OU (for example exam marking, module development, monitoring, mentoring new ALs, moderating forums, staff development, invigilating exams, research, providing student advice, etc.) with a higher proportion of females (44%) in this group than males (30%), Table 14.

Other types of OU work?

	All		Female		Male	
	Count	% of All	Count	% of females	Count	% of males
Yes	67	35%	34	44%	33	30%
No	122	65%	44	56%	78	70%

Table 14: Interested in other OU work

4 Impact

Throughout the survey and focus groups ALs showed their significant and invaluable commitment to students and to the values of the institution. Whilst ALs clearly appreciated the support from their staff tutors, there was a feeling that the wider OU did not respect the knowledge and expertise that ALs bring. There is an urgent need for the OU to clarify the role that ALs are to play within the organization and an even more urgent need to acknowledge the commitment and professionalism which they bring to the institution and its students.

The AL community is diverse and, whilst ALs would like stability in their contract, the flexibility to have permanent small contracts is crucial. Many ALs regard the OU as their main employer but need the role to maintain the flexibility as it needs to balance alongside other responsibilities.

There was a clear and strong appreciation for the professional and academic support that staff tutors provided for ALs and strong pointers to the need for this relationship to be maintained and strengthened in order for ALs to fulfil their role effectively.

5 List of deliverables

1. R. Hilliam, C. Calvert and A. Bromley 'Understanding and supporting the career pathways of Mathematics and Statistics Associate Lecturers' eSTEeM conference (2017), The Open University (contributed talk)
2. R. Hilliam, K. Chicot, M. Gibbons and C. Calvert 'Enabling Mathematics and Statistics ALs to achieve their potential', eSTEeM conference (2015), The Open University (Poster).
3. R. Hilliam, A. Bromley and C. Calvert. 'Understanding and managing gender differences in the recruitment, retention and support of mathematics and statistics associate lecturers' – Report for Mathematics and Statistics and University Athena SWAN groups, departmental meetings, PVCs, AL services director, Academic Services Director, Strategy Office.

6 Figures ad tables

Appendix A – Module codes and titles

MU123	Discovering mathematics
M140	Introducing statistics
MST124	Essential mathematics 1
MST125	Essential mathematics 2
MST210	Mathematical methods, models and modelling
M208	Pure mathematics
MST224	Mathematical methods
M248	Analysing data
M249	Practical modern statistics
M343	Applications of probability
M346	Linear statistical modelling
M347	Mathematical statistics
M337	Complex analysis
M373	Optimization
MS324	Waves, diffusion and variational principles
MST326	Mathematical methods and fluid mechanics
MT365	Graphs, networks and design
M303	Further pure mathematics
ME620	Developing algebraic thinking
ME627	Developing geometric thinking
ME825	Researching mathematics learning
M820	Calculus of variations and advanced calculus
M823	Analytic number theory I
M828	Applied complex variables
M835	Fractal geometry
M840	Dissertation in mathematics