Research Administration around the World

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ABSTRACT

The purpose of the Research Administration as a Profession (RAAAP) project was to obtain a snapshot of the research management and administration (RMA) profession around the world. This included collecting basic demographics, which is the focus of this paper.

Here, we present the results of a worldwide survey of RMAs conducted in 2016. We compare and contrast the demographics of RMAs across different regions of the world. Findings from previous national surveys, such as those by Roberts & House (2005), and Shambrook et al (2015), are upheld and expanded in an international context—for example, that the profession is predominantly female. In addition, a high level of academic attainment is also reported, in line with findings from D'Agostino et al. (1991). There are some significant differences in responses between regions of the world which reflect the differential maturity of the profession. For example, the U.S. has by far the highest number of respondents with over 20 years' experience in research administration as compared to the other regions. The reasons for joining and staying in the profession are also explored, with positives including working with faculty, the challenging work, and the fun. The extensive datasets are not fully explored in this paper and others are invited to use them for their own research and analyses.

Overall, we conclude that research administration is becoming a global profession and argue that in some regions it is more advanced than in others, as reflected in the composition of the workforce and the availability and uptake of certification.

INTRODUCTION

Research Administration (Kaplan, 1959) is becoming recognized (Campbell, 2010) as a profession in various parts of the world (see also Atkinson et al., 2007; Kirkland, 2009; Langley & Ofosu, 2007; Szekeres, 2011). However, far from being widely acknowledged, not only are there different expectations of and boundaries to what a research administrator does (Shelley, 2010), there are different monikers for them. In North America, *research administrator* is the most common term, but in other parts of the world the equivalent roles are occupied by *research managers* and by *research manager and administrators*, often referred to as RMAs. The rationales for these geographic differences are discussed in Kerridge (2012) and the definition of "the leadership, management or support of research activities" is derived from Beasley (2006), Chronister & Killoren (2006), and Stackhouse (2008), and was used as the basis for this project. We utilized the acronym RMA to encompass all of this nomenclature.

The Research Administration as a Profession (RAAAP) project (Kerridge & Scott, 2016a) set out to survey Research Managers and Administrators (RMAs) from around the world with the aim of eliciting a snapshot of the profession and the skills valued by RMA leaders. This paper focuses on the former; we aimed to explain the various findings by considering historical and cultural differences in the various regions, as well as previous work in the area, such as Roberts & House (2005), Shambrook & Roberts (2011), and Shambrook et al (2015).

METHODS

The authors developed a questionnaire to survey RMAs around the world on their perceptions of the relative importance of technical ("hard") skills and more generic ("soft") skills. Another component of the questionnaire was designed to collect demographic information. This paper focuses on the results of the demographic data collected.

The questionnaire was initially created and developed in collaboration with the RAAAP Advisory Group (see below) during the early part of 2016. The questionnaire (Kerridge & Scott, 2016b) was then constructed using the Qualtrics (2017) online survey platform and tested by the advisory group to identify and correct any technical issues, and to enhance ease of use. The advisory group assisted in the wording of questions to account for RMA terminology differences in different regions of the world.

Before and during the development of the questionnaire, a number of RMA societies were approached to solicit their support for the survey. Some of these core associations also were asked if they would like to have a representative on the project advisory group (see below). The associations approached were members of the International Network of Research Management Societies (INORMS, 2018) umbrella association, a collection of 18

research management and administration societies from across the globe. Their participation maximized geographic coverage and the respective number of questionnaire participants.

Advisory Group

The initial project proposal had envisioned an advisory group, partially to guide the questionnaire development, but also to stimulate interest within the respective associations. The principal and co-investigators represented the United Kingdom (UK) through the Association of Research Managers and Administrators (ARMA, 2017) and the U.S. through the National Council of University Research Administrators (NCURA, 2017), respectively. The Association of Commonwealth Universities (ACU, 2018) has a much wider remit than just RMA, so their members were not surveyed through that avenue, although many were covered by other geographic associations such as the Australasian Research Management Society (ARMS, 2017), Canadian Association of Research Administrators (CARA, 2017), Southern African Research and Innovation Managers Association (SARIMA, 2017), and West African Research and Innovation Management Association (WARIMA, 2018). However, they were included on the advisory group to ensure as broad a perspective as possible. The European Association of Research Managers and Administrators (EARMA, 2017) was given two places to better represent the numerous European national associations such as the Danish Association of Research Managers and Administrators (DARMA, 2017), Finnish Association of Research Managers and Administrators (Finn-ARMA, 2018), German Association of Research Managers and Administrators (GARMA, 2018), Icelandic Association of Research Managers and Administrators (Icearma, 2018), and Norwegian Association of Research Managers and Administrators (NARMA, 2018). Similarly, the Society of Research Administrators International (SRAI, 2017), the second largest association after NCURA, was offered an advisory group position, meaning two associations headquartered in the U.S., in recognition of the fact that over 50% of the research administrators being surveyed work in that country. The remaining places were taken up by ARMS and CARA, the Australasian and Canadian associations, respectively. The final advisory group make-up (including the PI and Co-I) was perhaps rather Anglophone- and Western-biased—this is something to be considered for any future iterations of the questionnaire. However, it is not seen as a structural weakness of the survey development, as a large proportion of the target audience for the survey was from those regions. See Table 1 for the membership sizes of the various associations in the survey.

Participating Organizations

In the early part of 2016, when the questionnaire was being developed and the advisory group was formed, a number of research management and

administration associations were contacted to solicit their assistance in asking their members to complete the questionnaire. In addition to the associations directly represented on the advisory group (ARMA, ARMS, CARA, EARMA, NCURA, and SRAI) a further five - the Brazilian Research Administration and Management Association (BRAMA, 2018), U.S. National Organization of Research Development Professionals (NORDP, 2017), Research Manager and Administrator Network Japan (RMAN-J, 2018), SARIMA, and WARIMA - also agreed to support the work and requested that their members participate in the survey. In addition, EARMA requested that the other (non-UK) national associations in Europe that are members of the "Leiden Group" - including the Austrian Universities' Research Administrators and Managers association (AURAM, 2018), DARMA, Finn-ARMA, GARMA, Icearma, and NARMA) also ask their members to take part in the survey.

Questionnaire

A questionnaire was developed to elicit the information required for the dual purposes of creating a snapshot of the profession and determining the skills most prized by RMA leaders. Informed by best practice from Fink (2016), it was constructed in three parts with the initial (part A, 12 questions) requesting information on current role and entry into the profession; part B included 32 questions about the skills necessary to be an RMA; and part (C) was comprised of 10 questions to collect demographic information. The final questionnaire (Kerridge & Scott, 2016b) contained 54 questions, many of which were multi-part, providing up to 222 data points per respondent. When referring to questions from the RAAAP questionnaire in this paper the actual question text is quoted.

Survey

After the advisory group tested the questionnaire, it was finalized and made available for distribution on May 20, 2016, and advertised by the participating associations to their members. For each association, a membership size was elicited and used as the basis to calculate (CRS, 2017) a target number of responses in order to be able to undertake statistically significant analysis with a 95% confidence level and a 5% confidence interval. Number of responses by association was compared with membership level provided by the association. Email reminders were sent to members of each association at least once, but more often as necessary to attempt to reach the target number of responses needed for statistical significance.

Table 1. Confidence Levels for Each RMA Association with Desired and Actual Response Rates

Association	Num Members	Target for 95%+/5%	Target for 95%+/1%	Num Responses	Confidence Interval
ARMA – UK Association of Research Managers and Administrators	3153	343	548	495	5%
ARMS – Australasian Research Management Society	2300	329	515	313	no
BRAMA – Brazilian Research Administration and Management Association	60	52	55	11	no
CARA/ACAAR – Canadian Association of Research Managers and Administrators	914	271	385	241	no
EARMA – European Association of Research Managers and Administrators	958	274	392	268	no
NCURA – National Council of University Research Administrators	7312	365	608	741	1%
NORDP – National Organization of Research Development Professionals	640	240	326	138	no
RMAN-J – Japanese Research Management Association	309	172	211	49	no
SARIMA – Southern African Research & Innovation Management Association	415	200	256	38	no
SRAi – Society of Research Administrators International	5300	358	590	636	1%
WARIMA – West African Research and Innovation Management Association	34	31	32	23	no
NARMA - Norwegian Association of Research Managers and Administrators	700	248	341	110	no

As shown in Table 1, while the ARMS, CARA, and EARMA response levels were nearly high enough, only ARMA, NCURA, and SRAI membership analysis could provide statistically significant analyses at the 95%, or better confidence level. However, since the aim was to look at the demographics of the profession worldwide, larger regional groupings were created to demonstrate differences, in addition to the groupings of professional organization memberships.

Response Rates

Overall 2,691 responses were collected from 64 countries. The threshold for a general population (with 95% confidence level and 5% confidence interval) is 384, and while the UK and U.S. provided sufficient numbers, all other countries did not. Therefore, for comparative analysis, responses are grouped into geographic regions such that most fall above this level. This new *AnalysisRegionOfEmployment* [note that throughout the paper, field names from the data sets are shown in *italics*] data

point was created and computed from the *CountryOfEmployment*. *Canada*, *UK*, and *USA* map directly [also note that ordinal values from the data sets are shown in *italics*]. *Europe (excl UK)* includes all countries in the geographic region of Europe excluding the UK (25 countries with responses). *Oceania* comprises Australia and New Zealand. The *Rest of World* includes responses from 24 other countries with responses. Overall, there were responses from 64 different countries (see Table 2), but only 19 countries had more than 10 responses, and 5 (*Australia, Canada, Norway, UK,* and the *USA*) had over 100 responses. During the survey window, associations invited participation at different times and used a different number of reminders, so the response rate from the various associations should not be seen as indicative of membership size. Any future survey of this type should be sent directly to all associations rather than relying on one member of a regional grouping to share it with their sister associations.

Table 2. Response Rates by Participating Country, Mapped to
AnalysisRegionOfEmployment

|	What Country do you work in	Frequency	Percent	Valid Percent	Cumulative Percent	AnalysisRegionOfEmployment
Valid	Albania	1	0.0	0.0	0.0	Europe (excl UK)
	Australia	306	11.4	12.0	12.0	Oceania
	Austria	29	1.1	1.1	13.2	Europe (excl UK)
	Belgium	5	0.2	0.2	13.4	Europe (excl UK)
	Botswana	2	0.1	0.1	13.4	Rest of World
	Brazil	19	0.7	0.7	14.2	Rest of World
	Cameroon	2	0.1	0.1	14.3	Rest of World
	Canada	243	9.0	9.5	23.8	Canada
	Chile	1	0.0	0.0	23.8	Rest of World
	Croatia	1	0.0	0.0	23.9	Europe (excl UK)
	Cyprus	2	0.1	0.1	23.9	Europe (excl UK)
	Denmark	42	1.6	1.6	25.6	Europe (excl UK)
	Estonia	1	0.0	0.0	25.6	Europe (excl UK)
	Finland	27	1.0	1.1	26.7	Europe (excl UK)
	France	4	0.1	0.2	26.8	Europe (excl UK)
	Gambia	3	0.1	0.1	27.0	Rest of World
	Germany	10	0.4	0.4	27.4	Europe (excl UK)
	Ghana	2	0.1	0.1	27.4	Rest of World
	Greece	2	0.1	0.1	27.5	Europe (excl UK)
	Hong Kong	2	0.1	0.1	27.6	Rest of World
	Hungary	3	0.1	0.1	27.7	Europe (excl UK)
	Iceland	3	0.1	0.1	27.8	Europe (excl UK)
	Indonesia	1	0.0	0.0	27.9	Rest of World
	Iraq	1	0.0	0.0	27.9	Rest of World
	Ireland	37	1.4	1.4	29.3	Europe (excl UK)
	Israel	3	0.1	0.1	29.5	Rest of World
	Italy	19	0.7	0.7	30.2	Europe (excl UK)
	Jamaica	3	0.1	0.1	30.3	Rest of World
	Japan	59	2.2	2.3	32.6	Rest of World
	Kazakhstan	1	0.0	0.0	32.7	Rest of World
	Kenya	2	0.1	0.1	32.8	Rest of World
	Luxembourg	3	0.1	0.1	32.9	Europe (excl UK)
	Malawi	2	0.1	0.1	33.0	Rest of World
	Malaysia	2	0.1	0.1	33.0	Rest of World
	Malta	2	0.1	0.1	33.1	Europe (excl UK)
	Mexico	1	0.0	0.0	33.2	Rest of World
	Mozambique	1	0.0	0.0	33.2	Rest of World
	Namibia	2	0.1	0.1	33.3	Rest of World
	Netherlands	28	1.0	1.1	34.4	Europe (excl UK)
	New Zealand	33	1.2	1.3	35.7	Oceania
	Nigeria	17	0.6	0.7	36.3	Rest of World
	Norway	111	4.1	4.3	40.7	Europe (excl UK)
	Poland	1	0.0	0.0	40.7	Europe (excl UK)
	Portugal	16	0.6	0.6	41.3	Europe (excl UK)
	Puerto Rico	2	0.1	0.1	41.4	Rest of World
	Qatar	4	0.1	0.2	41.6	Rest of World
	Rwanda	1	0.0	0.0	41.6	Rest of World
	Saudi Arabia	2	0.1	0.1	41.7	Rest of World
	Sierra Leone	1	0.0	0.0	41.7	Rest of World
	Singapore	4	0.1	0.2	41.9	Rest of World
	Slovenia	3	0.1	0.1	42.0	Europe (excl UK)
	South Africa	28	1.0	1.1	43.1	Rest of World
	Spain	14	0.5	0.5	43.7	Europe (excl UK)
	Sweden	18	0.7	0.7	44.4	Europe (excl UK)
	Switzerland	9	0.3	0.4	44.7	Europe (excl UK)
	Tajikistan	2	0.1	0.1	44.8	Rest of World
	Tanzania	2	0.1	0.1	44.9	Rest of World
	Thailand	1	0.0	0.0	44.9	Rest of World
	Turkey	1	0.0	0.0	44.9	Rest of World
	Uganda	5	0.2	0.2	45.1	Rest of World
	United Arab Emirates	3	0.1	0.1	45.3	Rest of World
	United Kingdom	453	16.8	17.8	63.0	UK
	United States	941	35.0	36.9	99.9	USA
	Zimbabwe	3	0.1	0.1	100.0	Rest of World
	Total	2552	94.8	100.0		
Missing	No Response	139	5.2			
Total		2691	100.0			
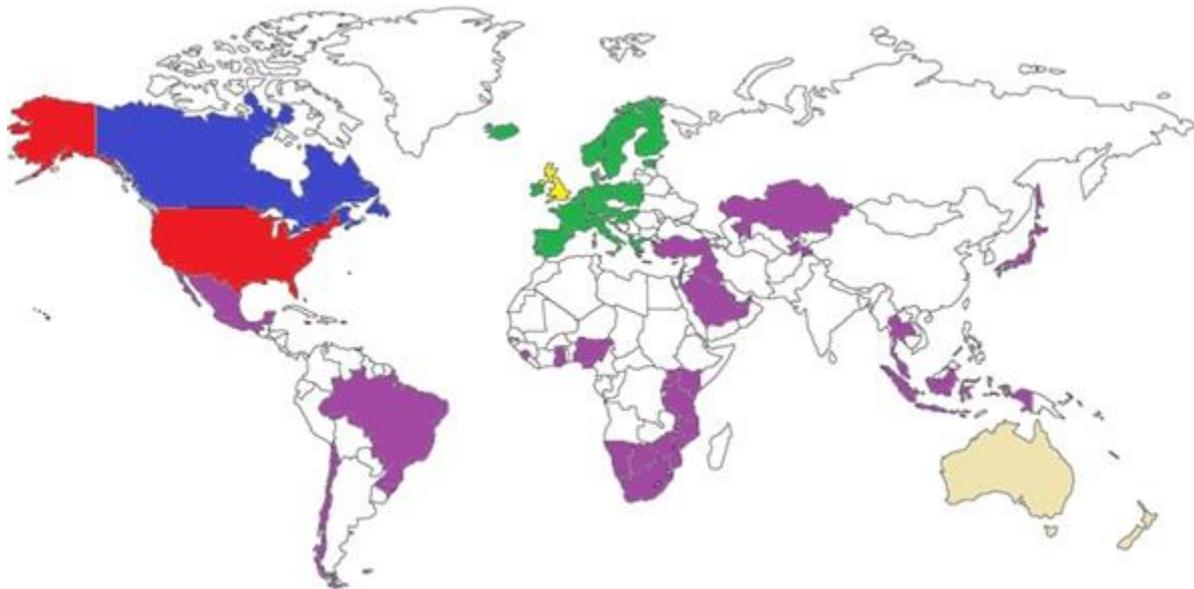
Figure 1. Geographic Coverage of Responses

The map in Figure 1 shows the geographic distribution of responses color-coded to *AnalysisRegionOfEmployment*, as shown in Figure 2.
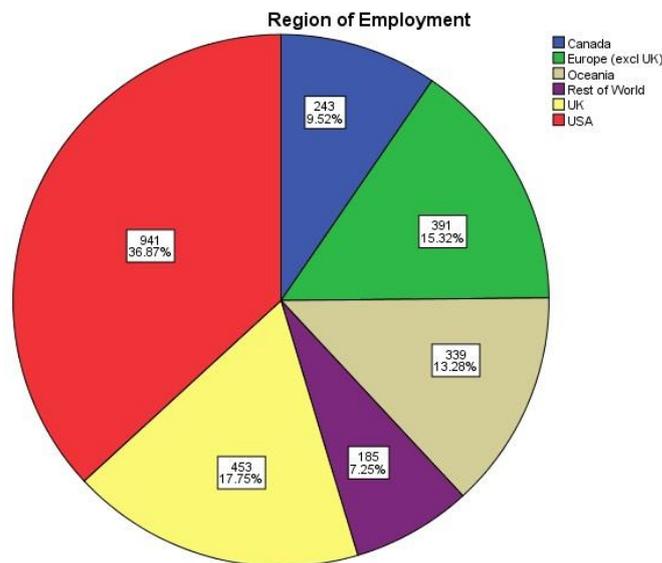

Figure 2. Response Rates by Region of Employment (*AnalysisRegionOfEmployment*)

Limitations

It should be noted that while we aimed for representative survey responses, there are a number of potential limitations. First, the geographic coverage of responses should not be seen as

representative of the distribution of RMAs. Other national and larger geographic regions did not participate, such as the Association of Research Administrators in Africa (ARAA, 2017), Central African Research and Innovation Management Association (CARIMA) (CAAST-net-plus, 2017), EARIMA (2017), and Caribbean Research & Innovation Management Association (CabRIMA). Anyone continuing the work of RAAAP may wish to increase international representation, while noting that some of these new associations are still early in nature, making participation problematic. In addition, the response rate from the Leiden Group members was generally low, perhaps because of how the survey solicitation was conducted, which was through EARMA rather than directly from associations that are part of the Leiden Group. A direct approach to all associations might have proven to be more fruitful.

Second, since only association members were targeted [it should be noted that some associations allow for group/organizational membership], it should be assumed that, generally, those who responded are members of (at least one) association, and perhaps more likely to be advanced in their professional careers. This was revealed by the large percentages of managers (41.0%, 1,102) and leaders (20.8%, 559) who responded to the survey. In terms of a representative picture of the profession, these are potential weaknesses. However, it also is a

strength when analyzing the skills most valued by leaders in the profession—the other main purpose of the survey. Pragmatically, this approach was taken as there is no mandatory registration for RMA professionals, leaving no easy way to identify and contact those outside the professional associations. One approach could have been to utilize open mailing lists such as the U.S.-based RESADM-L [–resadm-l@lists.healthresearch.org - Research Administration Discussion List] but at just over 5,000 subscribers this has fewer members than each of the two major U.S.-based associations.

Third, since the questionnaire preamble, informed consent, and soliciting emails focused on the views of RMA leaders, it seems likely that a higher proportion of leaders as compared to operational staff would have participated in the survey. Therefore, the proportion of leaders in the response population is almost certain to be higher than the overall proportion of RMA leaders in the RMA population. This likelihood is exacerbated by the second issue noted earlier.

Fourth, the soliciting emails and informed consent concentrated on the benefits of completing the survey for individuals looking to contribute information to the professional community to help those seeking to further their careers, those mentoring others to do so, and to the profession as a whole. It is possible that the responses were not representative in terms of

satisfaction, with perhaps a higher proportion of responses from those content with their profession and wishing to learn how to advance in it, rather than those who feel disenfranchised and are looking to leave.

Fifth, while each association was asked to provide the number of members on their mailing lists, the actual number of emails sent to valid addresses was not checked—it is possible that between providing the membership numbers and sending out the solicitations, the membership sizes may have changed. Therefore, there is a degree of uncertainty over the exact number of responses needed for statistically significant analyses. However, due to the large number of responses, this is not an issue for the main analyses, but care should be taken when looking at subsets of the data.

Finally, as with all questionnaires, the responses may not be 100% accurate. For example, one respondent indicated that they were a member of all 21 associations on the list—this seems highly unlikely. Conversely, notwithstanding that the questionnaire was only sent to members of the participating associations, 9.8% (264) of respondents did not report being members of any of the listed associations; this could be due in part to some respondents not completing the questionnaire, but not all, as only 14 respondents did not answer the gender question which came afterwards. It also is likely that some respondents who were not members of professional associations

received the questionnaire from individuals who forwarded it to them.

As indicated above, these and the other probable biases should be considered when reviewing the results. However, notwithstanding the imperfect nature inherent in research of this type, the extremely high response level overall provides confidence in the overarching findings.

DATA CLEANSING AND ANALYSIS

The data cleansing process (see Kerridge & Scott, 2017a) included a 20-point data analysis plan (see Kerridge & Scott, 2017b), starting with SPSS Statistics (IBM Corp., 2016) orientation. An SPSS data file was exported from the Qualtrics survey tool used for the questionnaire with the 2,691 responses and 282 data fields. A number of data fields in the SPSS data file were the actual question text rather than responses from the survey; therefore, the data fields were pruned to 222 data points. Each variable was then renamed from their original SPSS system-generated variable names to more meaningful names for ease of conducting analyses. Variable values were also renamed. For example, for *CurrentRoleLevel*, a value coded as 1 was then labelled as "Leader", and -99s mapped in SPSS as "Missing Value" and so was labelled as "No response", in order to aid analysis. Conversely, some default codings were reordered so the numerical values reflected the ordinality of the values. Measurement levels also were corrected where necessary. For example,

some were changed from Ordinal to Nominal.

A number of fields were back-coded from other data. For example, if a respondent left the *CountryOfEmployment* blank, but other data collected (e.g., if the respondent indicated the name of their employing institution) would unambiguously allow identification of the country, then a back-coding was performed to include a response. This resulted in the addition of 112 country entries. The *CountryOfEmployment* variable is important in this paper as it determines the often used *AnalysisRegionOfEmployment* variable.

Some data points were grouped. For example, on the questionnaire we asked for number of years employed as an RMA. Inspecting the data showed a spike at "round numbers", with a higher proportion selecting 10 rather than 9 or 11. To allow for more robust analysis, this "spurious accuracy" issue was addressed by grouping the responses into 5-year bands, creating a new variable, *YearsEmployedGrouped*.

Another area of back-coding and data cleansing was open-ended responses to free-text questions, including those questions with an option to select "other" from the list of possible answers. For example, looking at the membership of associations, one selectable option was "CARA", the Canadian association. Forty-two people selected "other" and typed in "CAURA"—a previous acronym for the same association; these responses were back-coded to reflect that they were CARA members.

The survey was developed with anonymity in mind. The collection of IP addresses and geo-locations was turned off in Qualtrics to ensure that these data were not automatically collected by default. Names and email addresses were not requested, and all questions were voluntary. However, some respondents provided information that could potentially be used to identify them. For example, several individuals provided an exact job title with the name of the institutions that employed them.

Therefore, to preserve anonymity in the publicly released datasets, some responses were redacted. Open-ended responses were released as separate files in the publicly released datasets to ensure that potentially sensitive data could not somehow be re-identified with individuals by connecting open-ended responses with other data points in the main dataset.

The analyses for this study are based on Pearson chi-square to (a=0.005) level of significance.

RESULTS

Presented below are the results on survey responses. As noted earlier, this sample was not fully representative of RMAs around the world, but skewed towards those who were members of the professional associations approached and, further, towards leaders within those groups. However, due to the high volume of responses, a number of results still can

be seen as being broadly representative of the profession. As discussed previously, the results are presented as comparative

between regions (using the *AnalysisRegionOfEmployment* variable that is common to all of the datasets).

*Current Role*
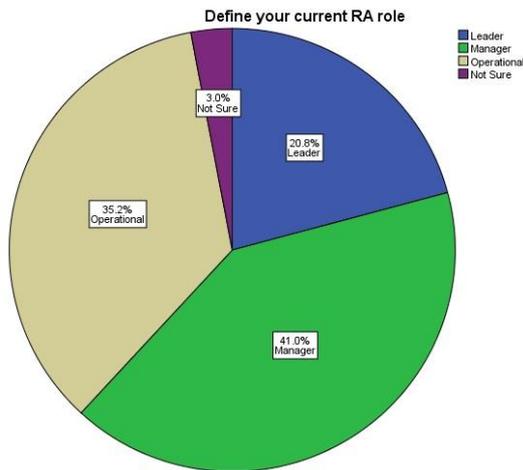
Figure 3. Respondents by Current Role
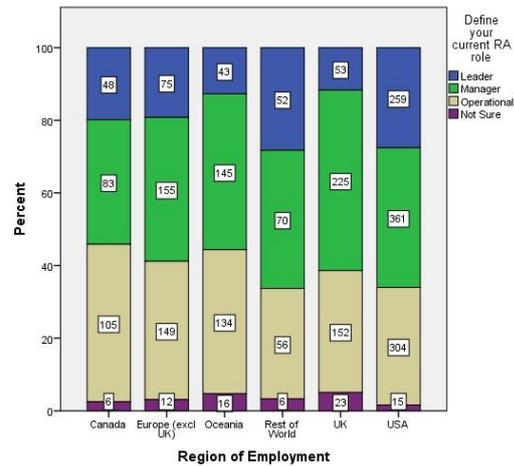
Figure 4. Current Role by Region of Employment

In the questionnaire, respondents were asked to self-identify as: Leader ("head of office, or responsible for leading strategic function(s)"); Manager ("subordinate to a leader but responsible for a team or functional area"); Operational ("responsible for undertaking specific duties, with no line management"); or Not sure ("none of these options seem to fit my role"). This was coded into the *CurrentRoleLevel* variable.

Overall, as shown in Figure 3, 20.8% (559) of respondents self-identified as

being RMA leaders, with 41.0% (1,102) in managerial roles and 35.1% (944) in operational roles. When comparing results between the regions (see Figure 4), the overall pattern is broadly similar, with perhaps a higher proportion of leaders responding from the *USA* and the *Rest of World*. As indicated, this is not necessarily seen as being representative of the population as a whole and therefore does not imply that there is a higher proportion of RMA leaders in the U.S. as compared to the UK.

Number of Years
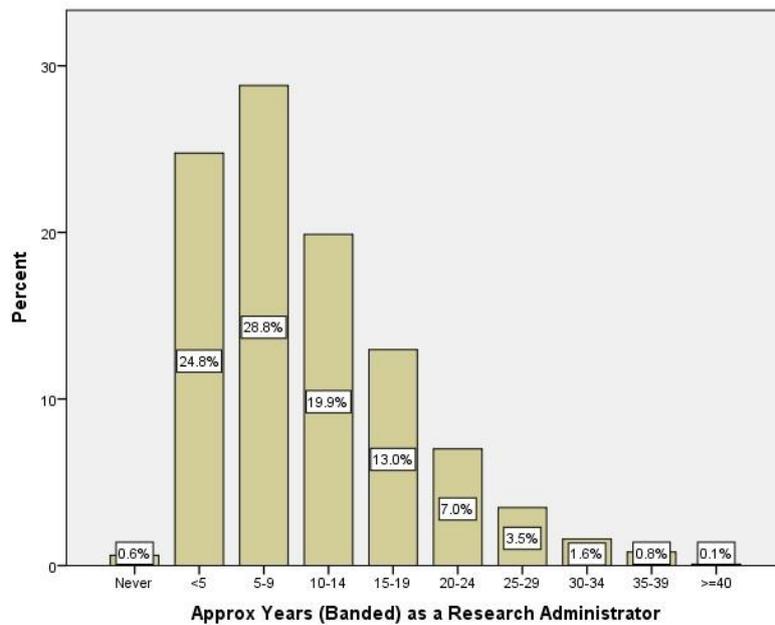
Figure 5. Approximate Years (Banded) as a Research Administrator (RMA)

Survey participants were asked, "*Approximately how many years in total have you been employed in the field of Research Administration? [Does not have to be consecutive years and can be full or part time].*" The data presented here (see Figure 5) are grouped in ranges (*YearsEmployedGrouped*), rather than as individual years of experience. For example, a response of "11" would be reported as part of the 19.9% in the "10-14" column of the 'Approx Years (Banded) as a Research Administrator' bar.

The mode was 5-9 years (27.7%, 745 respondents), with a reasonable number having been in the profession for 20 years or more, and 0.1% (2 respondents) reporting over 40 years' experience.

Again, there appear to be differences by region.
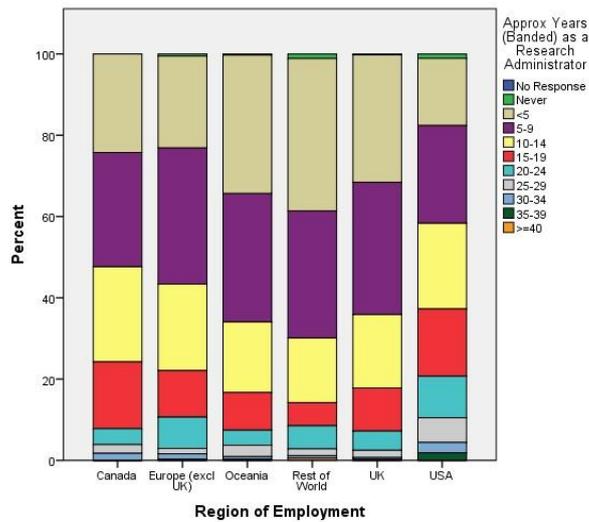
Figure 6. Approximate Years (Banded) as an RMA, by Region

As shown in Figure 6, the *USA* had the highest proportion of respondents with over 20 years' experience in RMA (20.7%, 188 respondents), as compared to 6.8% (32), 7.8% (18) and 10.6% (40) from the *UK*, *Canada*, and *Europe (excl UK)*, respectively. This seems likely to be due to RMA as a profession having existed longer in the U.S. (Beasley, 2006) than other parts of the world, such as the UK (Taylor, 2001). This is perhaps supported by comparison to the Roberts (2005) data for the U.S., from about ten years prior, showing 15% with over 20 years' experience; the proportion of long-serving RMAs has increased over time. Using the null hypothesis (see Boone & Boone, 2012; Fink, 2016) that approximate years employed in the profession (*YearsEmployedGrouped*) and geographic region (*AnalysisRegionOfEmployment*) are not related, a chi-square test of independence was performed. The relationship between these variables was significant, χ^2(45, N=2,456) = 206.812, p<0.001. There is strong evidence of differences in length of time in the profession for individuals between regions.

Number of Roles

How many different RA job/roles have you had
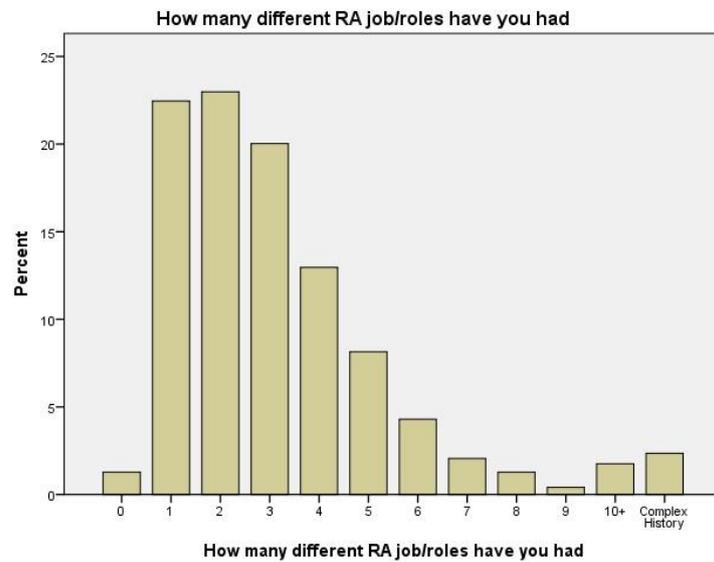
Figure 7. Number of Jobs/Roles as an RMA

When asked, "*Approximately how many research administration job roles in total have you had during the years you were/are employed …*", a small number (1.3%, 34) of respondents did not consider themselves to be or to have ever been research administrators (RMAs), but a large proportion had been employed in between one to three RMA jobs, with a mode of 2 (see Figure 7). However, many respondents reported four or more jobs, with 1.7% (47) reporting ten or more RMA positions. A further 2.3% (63) noted that they had a "complex history," which sometimes included a transition from another role type (e.g., researcher) and not knowing which their first RMA role was. This blurring of roles appeared to be quite common and has been reported elsewhere; see, for example, Whitchurch (2009).
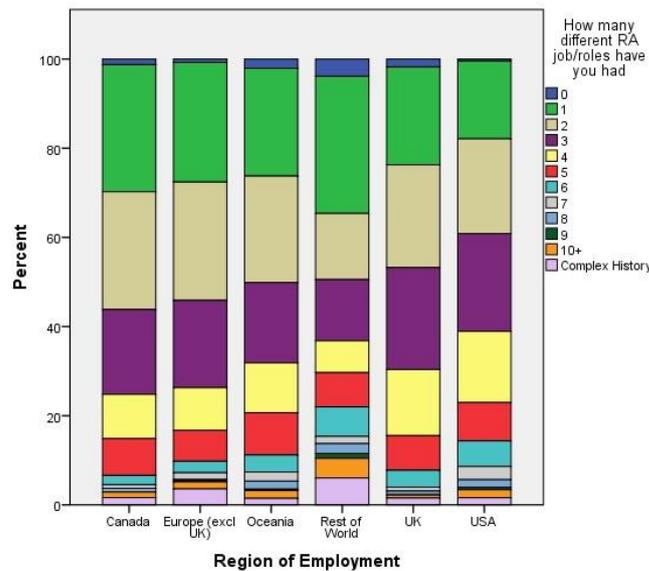
Figure 8. Number of Jobs/Roles as an RMA, by Region

Figure 8 shows the variation in the number of roles that RMAs have held depending on their region of employment. For example, 59.3% (557) of *USA* respondents reported three or more RMA roles, whereas in *Canada* and *Europe (excl UK)*, this dropped to 42.1% (102) and 42.3% (164), respectively. A chi-square test of independence was performed to examine the relationship between number of roles that RMAs have had (*NumRARoles*) and region (*AnalysisRegionOfEmployment*). The relationship between these variables was significant, χ^2(55, N=2,542) = 145.888, p<0.001. There is strong evidence that there are differences between regions in the number of roles held by individuals in the profession.

This may reflect the relative longevity of the profession in the U.S.; see, for example, Beasely (2006) as compared to Taylor (2001) for the UK.

Why people become research administrators (RMAs)

Respondents were asked, *"How important were the following factors in your choice to become a research administrator?"*, and were provided seven factors to which they responded using a Likert-type scale with 1 being Not Important/Relevant and 5 being Really Important/Relevant. Looking at why people become research administrators, there appears to be a low understanding of what the profession is to those outside it. Only around 20% of responses indicated, *"It was a profession I was interested in while studying"*, with a Likert-type scale response of 3 or higher. In examining this factor by region (see Figure 9), responses from the rest of the world assigned it the highest importance, with 15.0% (25 respondents), as compared to 1.3% (3) to 5.2% (19) in the other regions. A chi-square test of independence was performed to examine the relationship between the extent of one's

interest in the profession was a reason for becoming an RMA (*JoinRAInterested*) and region (*AnalysisRegionOfEmployment*). The relationship between these variables was significant, χ^2(20, N=2,431) = 151.238, p<0.001. There is strong evidence of differences between the extent to which

individuals joined the profession due to their interest in it while studying, between regions. While RMA is generally newer in the *Rest of World* region, it seems possible that the professional brand is growing—this could be an interesting area for further research.
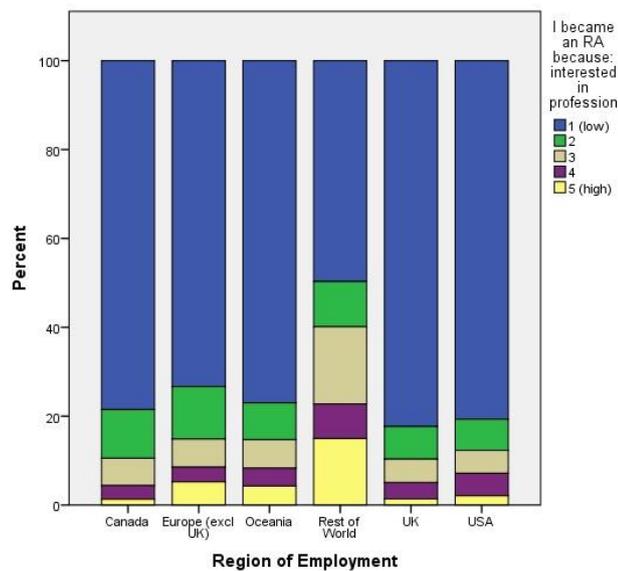
Figure 9. How Many Individuals across Regions Became RMAs Due to Interest in the Profession Gained during Their Studies?

Another option provided as a reason for joining the profession was, "*It was a profession I felt my skills would be a good match for*". Perhaps unsurprisingly, respondents reported this as being of much higher importance than being interested in the profession during their studies. This was consistent across the regions (see Figure 10). A chi-square test of independence was performed to examine the relationship between how much having the skills for the job was a

reason for becoming an RMA (*JoinRASkillsMatch*) and region (*AnalysisRegionOfEmployment*). The relationship between these variables was not significant (a=0.005), χ^2(20, N=2,464) = 19.045, p=0.519. There was no evidence of differences between the regions in the extent to which individuals joined the profession because it matched their skills.

Similarly, there appeared to be a fair amount of serendipity in why people became research administrators, with "*A*

position was available, so I applied and got the job, even though I did not have any experience" scoring relatively high on the 5-point Likert-type scale (see Figure 11). A chi-square test of independence was performed to examine the relationship between how much the availability of a job was a reason for becoming an RMA (*JoinRAJustApplied*) and region

(*AnalysisRegionOfEmployment*). The relationship between these variables was not significant (a=0.005), χ^2(20, N=2,458) = 32.387, p=0.039. There was little evidence of differences between the regions in the extent to which the reason that individuals joined the profession was serendipity.
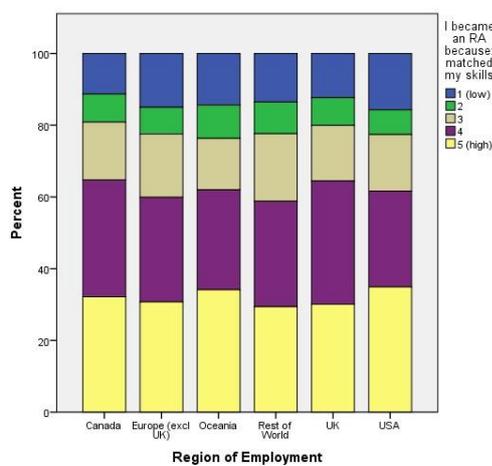
Figure 10. How Many Individuals across Regions Became RMAs Because It Matched Their Skills?

Figure 11. How Many Individuals across Regions Became RMAs Because a Position was Available?

There did seem to be a regional difference when examining the importance reported for "*I was previously a researcher and moved into research administration*" (see Figure 12). A chi-square test of independence was performed to examine the relationship between the extent to which having previously been a researcher was a reason for becoming an RMA (*JoinRAResearcher*) and region (*AnalysisRegionOfEmployment*). The relationship between these variables was significant, χ^2(20, N=2,422) = 199.689,

p<0.001. There was strong evidence of differences between the regions in the proportion of respondents who joined the profession after having been researchers. *USA* respondents assigned lower importance to taking this route compared to other parts of the world such as *Europe (excl UK)*, *Oceania*, and the *Rest of World*. This higher importance in some regions could be attributed to RMA being a developing profession and the possibility that researchers often find themselves becoming RMAs because they are

required to undertake RMA duties because there is no one else to do this for them. This is supported by the higher proportion of joint RMA-Researcher roles in these regions (see Figure 13). For example, in the *Rest of World* region, 16.9% (31 respondents) were currently in (full- or part-time) roles that combined research and RMA; the next highest proportion was in *Europe (excl UK)* with 5.1% (20 respondents), compared to the *USA* with 3.1% (29 respondents). A chi-square test of independence was performed to examine the relationship between the current employment status (*CurrentEmploymentStatus*) and region (*AnalysisRegionOfEmployment*). The relationship between these variables was significant, $\chi^2(40, N=2,549) = 286.496$, p<0.001. There was strong evidence of differences between the regions in the working roles / employment status of RMAs.
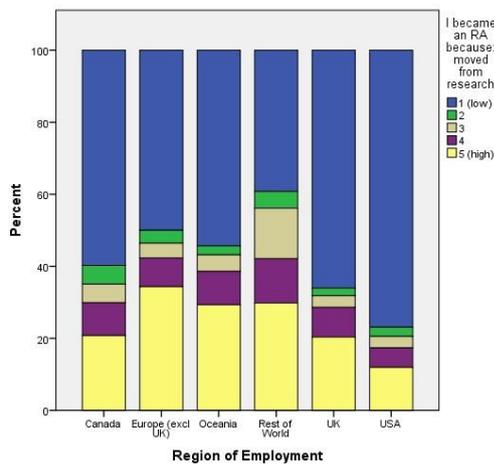
Figure 12. How Many Individuals across Regions Became RMAs by Moving from Research Positions?

Figure 13. Current Employment Type, by Region

The survey also provided respondents with the opportunity to provide open-ended responses. When asked about other factors that led respondents to join the profession, 346 provided additional textual reasons that were highly important to them. These analyses are not provided here due to space considerations but could prove to be an interesting avenue for future research.

Why Have RMAs Continued in the Profession?
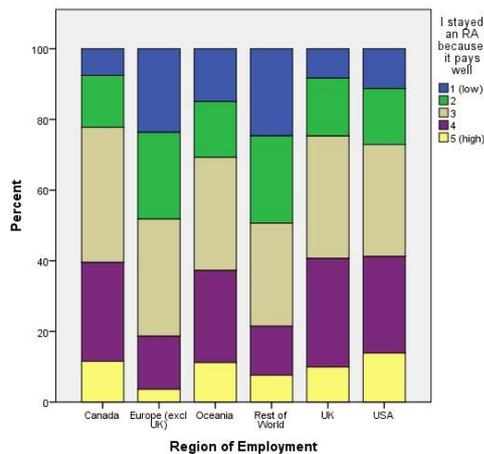
Figure 14. How Many Individuals across Regions Continue as RMAs Due to Pay?
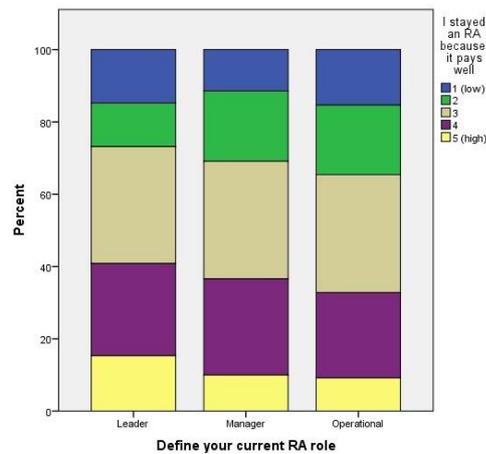
Figure 15. How Many Individuals at Different Levels Continue as RMAs Due to Pay?

Respondents were asked, *"Why have you stayed in research administration?"* They were then provided with nine statements; answers were reported according to a Likert-type scale with 1 being Not Important/Relevant and 5 being Really Important/Relevant. When it came to why people had stayed in RMA, there were mixed views. This included "It pays well" (see Figure 14), but a lower proportion of those in *Europe (excl UK)* (18.6%, 67 respondents) and the *Rest of World* (21.5%, 34 respondents) regions were satisfied (4 and 5 on the Likert-type scale) with their compensation for their work than those in other regions, such as the *UK* (40.6%, 176 respondents) or the *USA* (41.2%, 377 respondents). A chi-square test of independence was performed to examine the relationship between how important good pay was in RMAs' decision to stay in the profession (*StayRAGoodPay*) and region (*AnalysisRegionOfEmployment*). The relationship between these variables was significant, $\chi^2(20, N=2,412) = 139.268$, p<0.001. There was strong evidence of differences between the regions in satisfaction with pay levels.

Overall, it appeared that those higher up in the profession are generally more satisfied (4 and 5 on the Likert-type scale) with their pay (see Figure 15): Leaders, 40.8% (213 respondents); Managers, 36.7% (382 respondents); and Operational-level RMAs, 32.8% (293 respondents). A chi-square test of independence was performed to examine the relationship between *StayRAGoodPay* and *CurrentRoleLevel*. The relationship between these variables was significant $\chi^2(12, N=2,533) = 41.830$, p<0.001. There was strong evidence of differences in the

seniority of RMAs in terms of satisfaction
with pay levels.
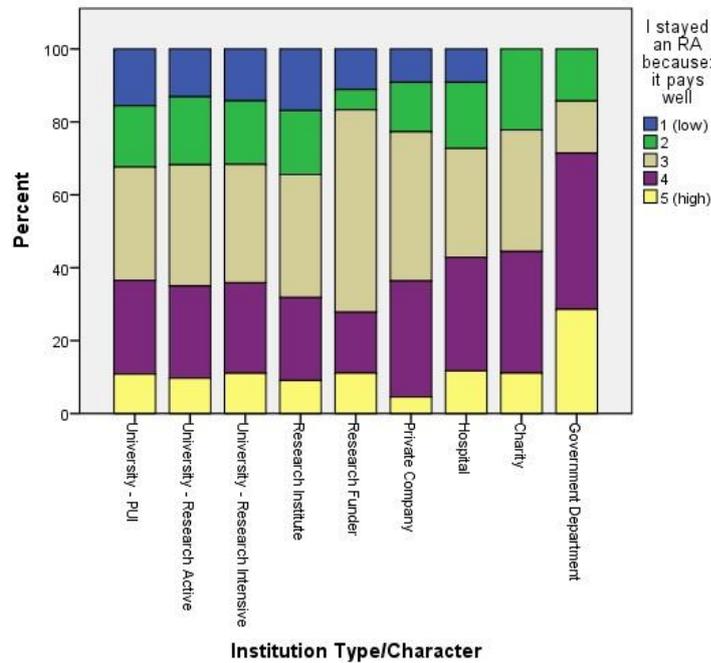
**Figure 16. How Many Individuals across Types of Employers
Continue as RMAs due to Pay?**

Overall, the type and size of the institution did not appear to have much bearing on pay satisfaction (4 and 5 on the Likert-type scale)—see Figure 16: Predominantly Undergraduate Institutions (PUIs), 36.5% (115 respondents); Research Active (middle tier) Universities, 35.0% (270 respondents); and Research-Intensive Universities, 35.8% (409 respondents). Much higher satisfaction scores were reported by those working in government departments (that are not research funders/sponsors)—71.5% (10 respondents)—but the number

of responses was low, and this was not statistically significant. A chi-square test of independence was performed to examine the relationship between *StayRAGoodPay* and the type of institution in which RMAs work (*InstitutionCharacter*). The relationship between these variables was not significant, (a=.005), $\chi^2(36, N=2,523) = 31.765$, p=0.670. There was no evidence of differences between types of institutions in terms of satisfaction with RMA pay levels.
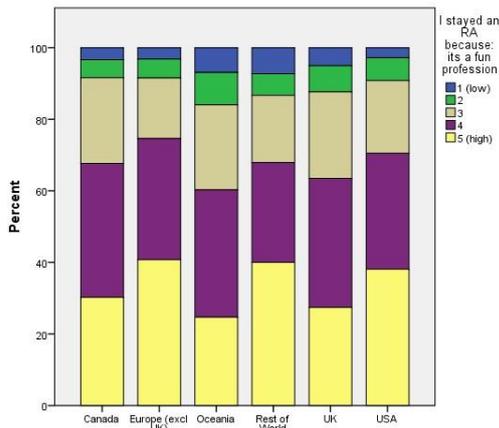
Figure 17. How Many Individuals across Regions Continue as RMAs because It's Fun?
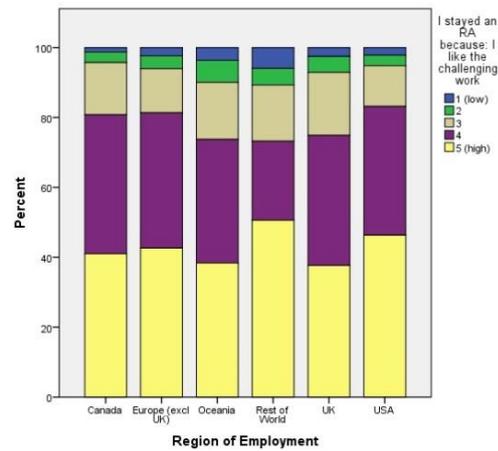
Figure 18. How Many Individuals across Regions Continue as RMAs because the Work is Challenging?

In continuing to examine why RMAs stay in the profession, the majority of respondents reported enjoying their work ("I enjoy the profession, it's fun") (see Figure 17), with some regional variations, and enjoy the challenge ("I like the challenging work") (see Figure 18), and working with academic colleagues ("I like working with faculty / academics") (see Figure 19). A chi-square test of independence was performed to examine the relationship between those staying in the profession because they enjoy it (*StayRAFun*) and region (*AnalysisRegionOfEmployment*). The relationship between these variables was significant, $\chi^2(20, N=2,477) = 59.626$, p<0.001. There was strong evidence of differences between regions in terms of how fun the profession is perceived to be. A chi-square test of independence was

performed to examine the relationship between those staying in the profession because they enjoy the challenge (*StayRAChallenging*) and region (*AnalysisRegionOfEmployment*). The relationship between these variables also was significant, $\chi^2(20, N=2,477) = 49.616$, p<0.001. There was strong evidence of differences between regions in terms of enjoying the challenging work. A chi-square test of independence was performed to examine the relationship between those staying in the profession because they enjoy working with faculty/academic staff (*StayRAFaculty*) and *AnalysisRegionOfEmployment*. Again, the relationship between these variables was significant, $\chi^2(20, N=2,462) = 48.145$, p<0.001. There was strong evidence of differences between regions in terms of enjoying working with faculty.
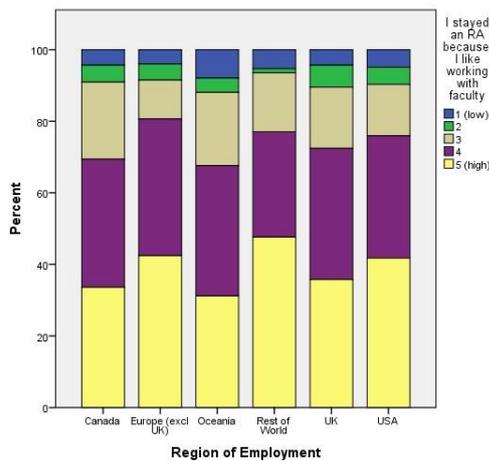
**Figure 19. How Many Individuals across Regions Continue as RMAs because They Like Working with Faculty?**
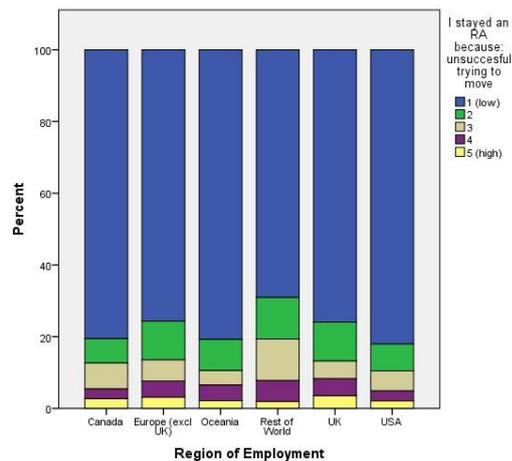

Figure 20. How Many Individuals across Regions Continue as RMAs Because They Have Been Unsuccessful in Trying to Leave?

Conversely, few RMAs were stuck and unable (if they wanted) to move into another profession ("Unsuccessful in trying to move into another field") (see Figure 20). Although the proportions of those giving high (4 and 5 on the Likert-type scale) scores to this question were low, these were still noteworthy numbers. For example, in the *Rest of World* region, 7.7% (12), and in the *UK*, 8.2% (35), of respondents found themselves in this position. A chi-square test of independence was performed to examine the relationship between those unable to leave their current job (*StayRACouldntMove*) and *AnalysisRegionOfEmployment*. The relationship between these variables was not significant (a=0.005), $\chi^2(20, N=2,383) = 33.504$, p=0.030. There was little evidence of differences between regions in terms of being stuck in the position.

However, it was visually clear that in all regions RMAs were more likely to enjoy their work than to feel stuck in the job.

Highest Degree

With regard to formal training and highest degree earned (Figure 21), we can see that those in the profession were highly qualified, with 26.4% (709) holding doctorates, 66.9% (1,795) with at least a master's degree, and all but 6.6% (178) holding at least a bachelor's degree. A smaller survey (*n*=221) conducted in 1968 (D'Agostino et al., 1991) reported a similar proportion—26.7% (59), with doctorates—but a lower proportion—46.6% (103)—with master's degrees, and a similar proportion—7.2% (16)—without an undergraduate degree. The current 93.4% (2,504) proportion of RMAs who responded in the RAAAP survey held a degree (or better), comparing favorably with the Organisation for Economic Co-

operation and Development reported (OECD, 2017) average of 35.7%. There were regional variations with 56.3% of Canadians holding a degree (OECD, 2017), as compared to 95.0% (229) of RMAs working in Canada (see Figure 22). A chi-square test of independence was performed to examine the relationship between RMAs' highest academic attainment level (*HighestQualification*) and *AnalysisRegionOfEmployment*. The relationship between these variables was significant, χ^2(20, N=2,547) = 305.661, p<0.001. There was strong evidence of differences between regions in the academic qualifications of RMAs. Other regional differences included the proportions with doctorates—53.8% (99 respondents) in the *Rest of World*, perhaps reflecting the large proportion of researchers who became RMAs. The high proportion of those holding masters and doctorates (91.1%, 255 respondents) in

Europe (excl UK) perhaps reflected the propensity for European students to study to the master's level before seeking jobs. In an early study of one U.S. region, Roberts (2005) reported that 12% of RMAs had doctorates, and 44% a master's or above; the data presented here (16.9% and 63.5%, respectively) for the *USA* suggest that RMAs have become more academically qualified over the elapsed eleven plus years. It also can be seen that those in Leadership roles are more likely (36.5%) to hold a doctorate than those in Managerial (24.2%) and Operational (23.3%) roles (see Figure 23). A chi-square test of independence was performed to examine the relationship between *HighestQualification* and *CurrentRoleLevel*. The relationship between these variables was significant, χ^2(12, N=2,677) = 100.221, p<0.001. There was strong evidence of differences in the academic qualifications of RMAs at differing levels of seniority.
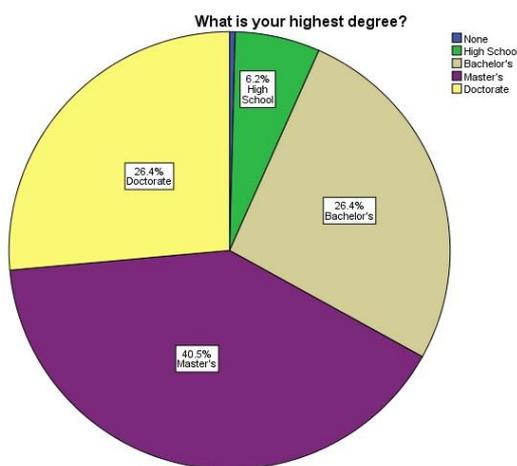
**Figure 21. Highest Academic Qualification**
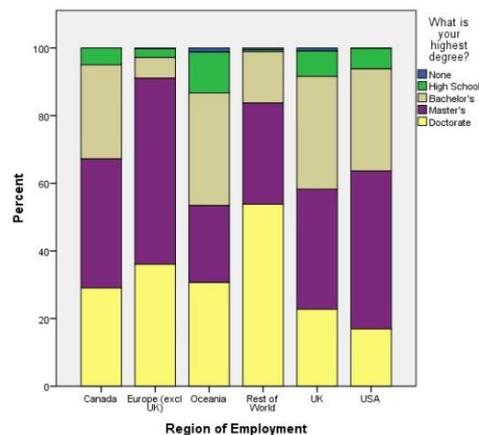
**Figure 22. Highest Academic Qualification by Region**
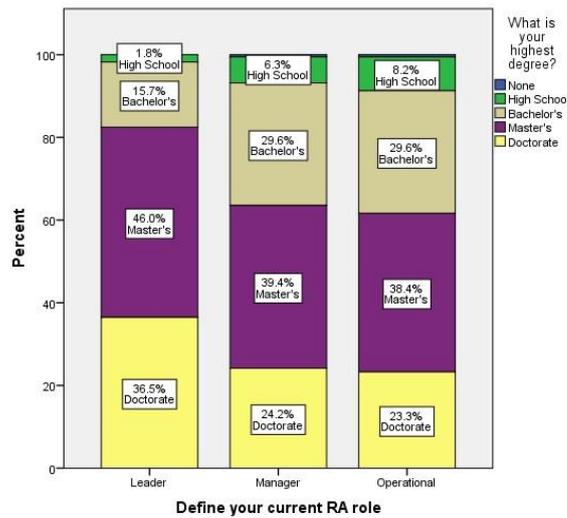
Figure 23. Highest Academic Qualification by Current Role Level

Certification
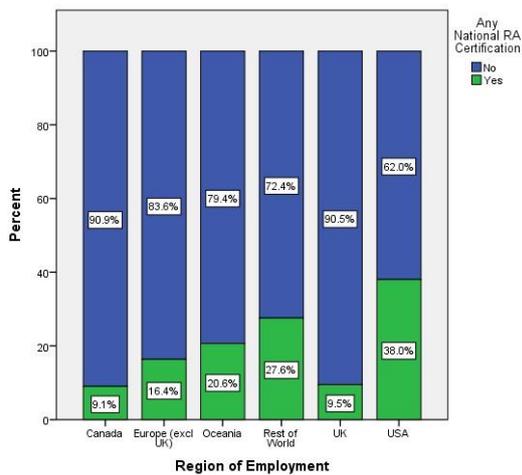
**Figure 24. Proportion of RMAs with RMA Certification, by Region**
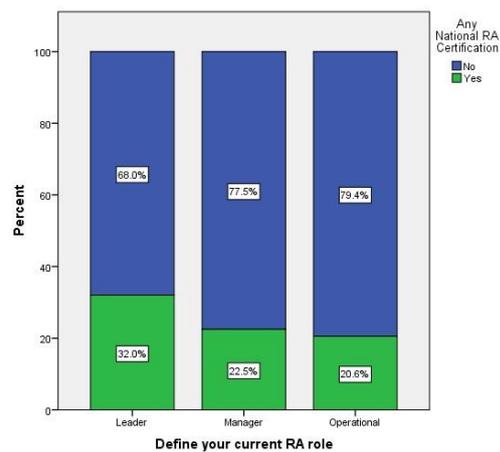
Figure 25. Proportion of RMAs with RMA Certification, by Current Role Level

The proportion of respondents with professional certification (i.e., who selected at least one option under the heading, "*Please select all professional accreditations that you have related to research administration.*") in RMA varied between regions (see Figure 24). A chi-square test of independence was performed to examine the relationship between those with any professional accreditation (see the list in the questionnaire - "*AnyCRA*") and *AnalysisRegionOfEmployment*. The relationship between these variables was significant, $\chi^2(5, N=2,552) = 200.624$, p<0.001. There is strong evidence of differences between the professional

accreditation of RMAs between regions. The main reason is likely to be the availability of these certifications. For example, in the *USA*, the Research Administrators Certification Council (RACC, 2017) Certified Research Administrator (CRA) has been available since 1993 and the benefits seem clear (Ritchie, 2017). Shambrook & Roberts (2011) reported a 14.1% (*n*= 161) certification (CRA) level in the U.S. in 2010, the 2016 data collected here showed an increase to 31.6% (*n* = 297), suggesting that certification is increasing in importance. In the *UK*, the ARMA-certified CRA has only been available since 2014. Similarly, while Canadian RMAs have been able to study for the U.S.-based RACC CRA, there appears to be little demand for it. It seems that the national context is important. A localized version of the ARMA-certified CRA is now available in Canada and Europe. It would be interesting to see if the

proportions of RMAs in the regions increases over time. Looking at the proportions of respondents with a professional certification when comparing staff at differing levels, more Leaders (32.0%, 179 respondents) than Managers (22.5%, 248) and Operational staff (20.6%, 194) were certified (see Figure 25). A chi-square test of independence was performed to examine the relationship between "*AnyCRA*" and *CurrentRoleLevel*. The relationship between these variables was significant, χ^2(3, N=2,685) = 27.425, p<0.001. There was strong evidence of differences between the professional accreditation of RMAs at different levels of seniority. While no causality is implied here, there does appear to be a link between professional certification and advancement within the RMA profession, as alluded to by Smith & Shambrook (2015).

Age
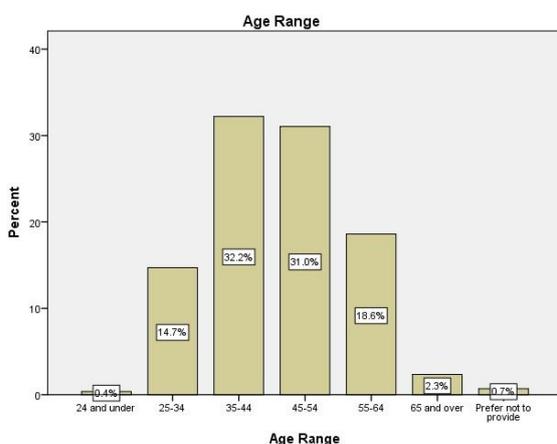

Figure 26. Age Range of RMAs
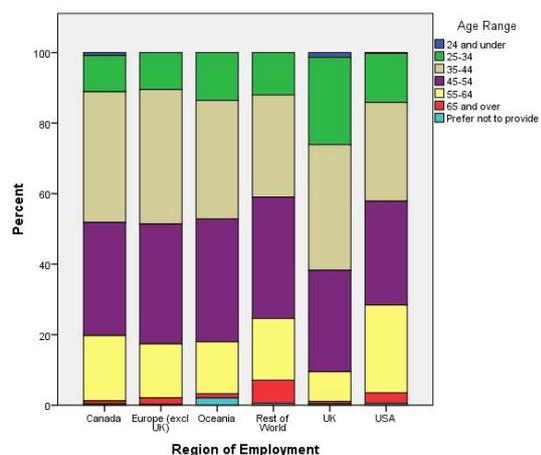
Figure 27. Age Range of RMAs, by Region

The overall age profile of the respondents is shown in Figure 26. There were very few (0.4%, 10 respondents) below 25 years of age, but a reasonable number (2.2%, 56 respondents) over 65; the mode was the 35–44 age bracket. This is broadly reflected across the regions (see Figure 27); however, the *UK* appeared to have a younger age profile than the other regions. A chi-square test of independence was performed to examine the relationship between age range of RMAs (*AgeRange*) and *AnalysisRegionOfEmployment*. The relationship between these variables was significant, $\chi^2(30, N=2,548) = 164.743$, $p<0.001$. There was strong evidence of differences between the age profiles of RMAs in different regions.

Gender Profile of RMAs
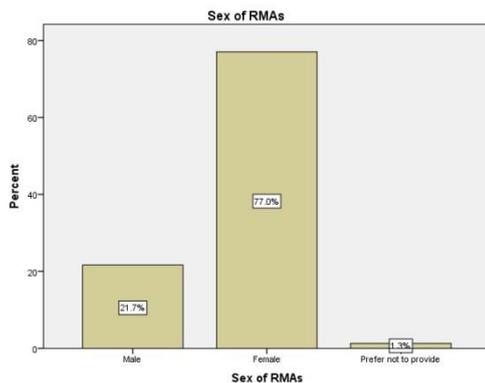
Figure 28. Gender of RMAs

Figure 29. Gender of RMAs, by Region

Data showed that the profession is unbalanced gender-wise, with 76.6% (2,062 respondents) identifying as being female (see Figure 28). While this female prevalence was reflected across the regions, the degree of imbalance was quite varied (see Figure 29), with only 54.1% (99) in the *Rest of World* reporting being female compared with around 80% in all other regions apart from *Europe (excl UK)* at 66.2% (258 respondents). A chi-square test of independence was performed to examine the relationship between the self-identified sex of RMAs (*Gender*) and *AnalysisRegionOfEmployment*. The relationship between these variables was significant, $\chi^2(10, N=2,545) = 146.640$, $p<0.001$. There was strong evidence of differences between the gender profiles for RMAs in different regions. There may not be a simple explanation for these variations—possibly the higher

proportion of researchers (where in most areas there is a male bias) becoming RMAs is one contributing factor. The overarching culture may be another factor. An additional possible explanation is the maturity of the profession. In the

U.S., the field moved from a male-dominated (see D'Agostino et al, 1991), to a female-dominated profession over time (see Shambrook et al., 2015). There are undoubtedly other cultural issues at play.
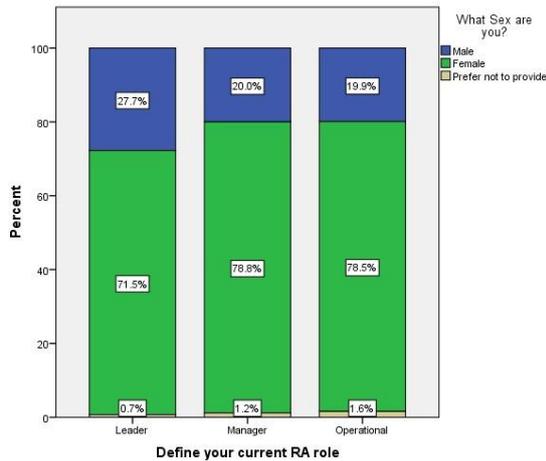

Figure 30. Gender of RMAs, by Current Role Level
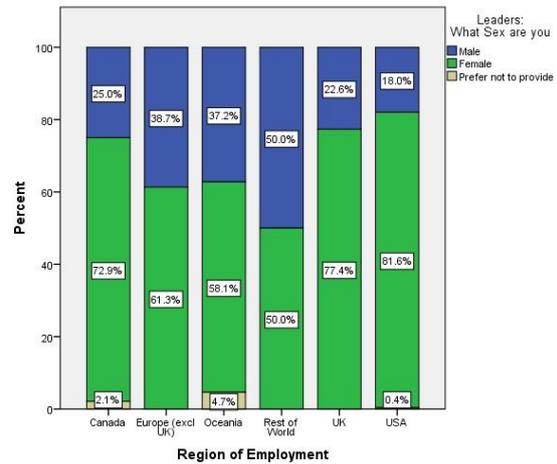
Figure 31. Gender of RMAs, by Region

Overall, 19.9% (187 respondents) of Operational-level staff were male—this was very similar to the 20.0% (219 respondents) of Managerial staff, but lower than the 27.7% (154 respondents) of Leaders (see Figure 30). A chi-square test of independence was performed to examine the relationship between *Gender* and *CurrentRoleLevel*. The relationship between these variables was significant (a=0.005), $\chi^2(6, N=2,672) = 21.411$, p=0.002. There was strong evidence of differences in the gender balance of RMAs at different levels of seniority. One possible interpretation of these data is that more males self-identify as leaders than do females. If this were the case, then one could expect a similar view about the

difference between operational and managerial roles, but this was not seen. Therefore, a more likely reason is that there was a greater proportion of males in leadership roles. These findings appear consistent with the widely reported 'glass ceiling' seen in other professions—see, for example, Jackson & O'Callaghan (2009). Again, there appeared to be regional variations in terms of the likelihood of having female leaders (see Figure 31). A chi-square test of independence was performed to examine the relationship between *Gender* and *AnalysisRegionOfEmployment* for the subset of respondents who self-identified as being RMA leaders (*CurrentRoleLevel=1*). The relationship between these variables

was significant, χ^2(10, N=527) = 44.797, p<0.001. There was strong evidence of differences in the proportions of female leader RMAs across regions.

CONCLUSIONS / DISCUSSION

Notwithstanding the limitations identified above, the results presented here are, due to the large number of responses, broadly representative of research managers and administrators around the world. The profession is predominantly female, as reported elsewhere (Roberts & House, 2005; Shambrook et al., 2015); however, there were differences between regions, with a much higher proportion of males in the *Rest of World* region than elsewhere. As reported by Shambrook et al. (2015), early in its history in the U.S., RMAs were predominantly male—perhaps this was an early regional characteristic of the RMA profession. It has been argued that before the profession was recognized as such, the role of RMAs was often undertaken as part of another role (an added duty); the *Rest of World* region had the greatest proportion of such roles. Similarly, there was a lower proportion of full-time RMAs in the *Rest of World* region, supporting this hypothesis.

In terms of overall gender balance, notwithstanding that the majority of RMAs were female, consistent with other glass ceiling findings, there were fewer female RMAs in leadership roles than in the general RMA population.

Overall, the profession was highly academically qualified, with two-thirds of respondents having a master's degree or higher, and with RMA leaders more likely to have a doctorate than other RMAs. However, even at the operational level, more than a quarter of RMAs held doctorates, suggesting a close tie with the researcher profession. Indeed, 21.2% indicated that they had moved from research into becoming an RMA. Interestingly in the *USA*, this was only 11.9%, further supporting the idea that as the profession developed it attracted professional staff, rather than just being something that researchers "fall into". However, only 3.5% indicated that a top reason for becoming an RMA was that they were interested in the profession—perhaps because of the lack of visibility of what an RMA does. Counterintuitively, the *Rest of World* region had the highest proportion (15.0%) reporting interest in the profession as a top reason for becoming an RMA. This perhaps warrants further investigation.

Another indicator of the maturity of a profession or semi-profession is, according to Etzioni (1969), the requirement or availability of certification in order to practice. Morris et al. (2006) argued for the importance of a body of knowledge, such as that tested in the RACC CRA. The *USA* had the highest proportion (over a third certified), supporting the supposition that it is the most mature region. However, the next highest proportion was *Rest of World*; further work is needed to explain this. The importance of certification to RMAs was

discussed by Roberts (2005), and more generally by others such as Phillips (2004) and Adams et al. (2004). The data presented in this paper show that a higher proportion of RMA leaders have a professional certification than managers and operational staff. This is at odds with the data reported by Roberts (2005), where certification was rarer at more senior levels. Perhaps certification has helped individuals progress into more senior RMA positions—this also could be an interesting area for future research.

In summary, it is argued that the RMA is indeed a profession, at least in the *USA*. Some other parts of the world can perhaps also make a claim for this status, or semi-profession at the least, but other areas such as *Rest of World* still have some way to go. It is hoped that these newer regions can learn from the more established ones, to accelerate their development of the profession.

FUTURE WORK

The data from the questionnaire are a rich source for future analyses. Overall, 2,691 respondents each supplied up to 222 data points. In this paper we only used a few of those; clearly, more work is required to analyze and report on other findings. These data (Kerridge & Scott, 2018) are freely available for others to use. It should be noted, however, that to preserve anonymity, the textual responses have been partially redacted and a number of the variables have been disaggregated into unlinked datasets (with *AnalysisRegionOfEmployment* being the only variable common between the datasets).

With regard to specific findings presented here, there is clearly an opportunity to create a longitudinal dataset to help map the development of the RMA profession over time. The authors have proposed biennial surveys.

ACKNOWLEDGMENTS

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AUTHOR CONTRIBUTIONS

SK and SFS made equal contributions to the paper. Specifically, according to the CRediT descriptors: SK and SFS together conceived the study, developed the methodology and the funding bid, administered the project, liaised with and led the advisory group, developed the questionnaire, coordinated the data collection, undertook the data cleansing, curated the datasets, undertook the data analyses, prepared the visualisation for and text of the manuscript, and critically reviewed the manuscript. SK led on the conceptualization, funding bid, and literature review.

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