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Research Report

Success in Academia? The experiences of early career academics in New Zealand universities

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AKO AOTEAROA
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EXECUTIVE SUMMARY

The academic workforce around the world is changing, becoming more diverse, less secure and, arguably, less happy. At the same time governments expect universities to provide educational experiences for more – and more diverse – students, and demand accountability for how each dollar of government funding is spent. New Zealand universities are not immune to these changes on the global scene. In particular, the Performance Based Research Fund (PBRF) has changed the focus of many New Zealand institutions, and individual academics, to a more intense concentration on research output and performance than ever before. New academic staff entering the academic workforce in 21st century New Zealand thus face a different environment from the one in which their academic leaders trained and served.

This report summarises the key findings from a project that investigated the work experiences of early career academics at all eight New Zealand universities in the year following the completion of the most recent PBRF round. We sought to find out which factors influence the productivity and satisfaction of early career academics in New Zealand universities. We also wanted to identify any variations in the expectations of the organisations in which the early career academics work and their own aspirations and needs, as well as what resources and support might be necessary to enhance the academic career experience of those just starting out.

The project included a questionnaire sent to all early career academics in all eight New Zealand universities that generated 538 responses (a 47% response rate), follow-up focus groups at four universities with 26 academics and managers, and a survey of academic leaders and managers that generated 104 responses (representing a good spread across all eight universities and all levels of senior leadership). Our key findings are outlined below.

CHANGING DEMOGRAPHICS

The academic workforce in New Zealand universities is noticeable for its diversity and for some gaps that need filling:

- More than half of the early career academic workforce in New Zealand universities are born overseas and of those not born in New Zealand, 71 per cent have been here for fewer than ten years.
- More women than men are early career academics, but men are over-represented in permanent, full-time roles and at the higher level of senior lecturer.
- There are too few Māori (6%) and Pacific Island (2%) academics starting academic careers in New Zealand universities.
- More than a third of our early career academics are 40 years of age or over, and so are obviously coming into academia from other careers, with plenty of life and work experience.
- More women than men shoulder the burden of primary childcare responsibility, alongside their academic duties, and this affects their research output and confidence.

FACTORS AFFECTING 'SUCCESS'

Acknowledging that 'success' in academia is a slippery concept, we summarised it as: research productivity (defined by number of outputs); overall satisfaction with the academic career; and high levels of confidence in teaching and research. The factors most affecting each of these success indicators are outlined below.

Research output

Academics were asked where their primary interests lay, and those who responded that they were most strongly interested in research (rather than teaching, or teaching and research equally) also produced more research outputs but were less satisfied. The following factors are also related to whether an early career academic is likely to have a high research output:

- being an active supervisor
- active involvement in one's disciplinary society
- attendance at international conferences
- having a doctoral degree
- publishing during the doctorate (either by oneself or with one's supervisor)
- gaining experience serving on university committees during the doctorate
- teaching (especially lecturing) during the doctorate, and
- having a teaching qualification.

Satisfaction

The most satisfied of our early career respondents were those who felt as though they had some control over their working conditions. The least satisfied were those with poor work-life balance and high workloads. Satisfaction is also positively affected by the following:

- gaining lecturing experience during the doctoral degree
- being employed on a full-time contract
- being provided with effective resources, services, professional development and training, and
- strong departmental support.

Teaching and research confidence

Teaching confidence is related to gaining some teaching experience during the doctoral degree, being involved in and loyal to one's academic discipline, a high teaching workload, and being employed full-time. Research confidence, on the other hand, is affected negatively by a high teaching workload, but positively by publishing a lot, and by gaining service and teaching experience during the doctorate.

Recommendations and Resources

All of these findings led us to make four key recommendations:

1) Academic leaders need to know who their early career academic staff are, where they have come from, what experiences they bring with them, what support they need and where they might find that support.
2) Early career academics themselves need to proactively identify and seek the support and training they need to do their jobs well.
3) New Zealand universities need to improve the doctoral experience so that more teaching, service and publishing opportunities are provided for aspiring academics, and they need to provide more targeted support for academic women.
4) Everyone involved in academia needs to tell their own stories of 'success' more widely.

To help each of these groups achieve these goals, we have produced a series of resources designed to guide academic leaders, early career academics and their colleagues through a reflective, questioning process that will identify their respective strengths, areas for improvement, and support and training needs. The resources can be downloaded from the following website: http://akoaotearoa.ac.nz/early-career-academics. We hope you will find both the report and the resources informative and useful.

1. INTRODUCTION

Academic staff in New Zealand universities are expected to adhere to several scholarly standards, including performing adequately in the PBRF, achieving respectable student evaluations of teaching, enhancing student learning, and functioning collegially within their schools, faculties, professional and/or scholarly communities. It has been well documented that the first few years in an academic job are crucial for developing the skills, attitudes and knowledge that will lead to success and productivity in research and teaching. However, academic success is about more than meeting externally imposed standards in research output, reputation and profile, or about generating satisfactory student ratings in teaching. It is also about self-fulfilment (Archer, 2008), enjoyment (Lucas & Murry, 2002), autonomy (Archer, 2008; Baruch & Hall, 2004; Laudel & Glaser, 2008; Warhurst, 2008) security (Bazeley, 2003) and balance. So, how can early career academics balance their own aspirations with the expectations of their institutions, communities and students? Drawing on earlier research projects with successful academics and extending the research to a nationwide sample of early career academics, this report makes recommendations for best supporting early career academics as they enter universities and for nurturing their aspirations and encouraging their own and their students' success as they progress through the system.

While the work of Robert Boice (1991, 1996, 2000) on successful early career faculty (those he calls "Quick Starters") has informed the research literature on academic success and the practice of faculty development in the United States, very little research of a comparable nature has been carried out in New Zealand. Earlier research conducted by the project leader (Sutherland, 2010a & 2010b) indicates that successful early career academics are conscious of, but not restricted by, conflicting personal and institutional expectations. They have developed a strong sense of "relational agency" (Edwards 2005) and are able to balance their own aspirations with those of their university, discipline and students. The lessons learned from these successful academics have been applied to this new project in an effort to investigate the experiences of all early career academics New Zealand universities, not just those identified as "successful".

The project posed the following questions:

1) What factors influence the success, productivity and satisfaction of early career academics in New Zealand universities?
2) How do organisational expectations and personal aspirations vary, if at all, for early career academics in New Zealand universities?
3) What impact does this variation in aspirations have on the experiences of early career academics in New Zealand universities?
4) What institutional and personal processes and support need to be in place to support early career academics to be satisfied and confident researchers and teachers in New Zealand universities?
5) What resources can we develop that will be of use at a national and local level to support early career academics?

We hope that in uncovering answers to these questions we can provide university and faculty leaders with insights into the kinds of support that early career academics need as they enter the academic profession and learn to be good teachers, researchers and academic citizens. Early career academics themselves are learners, in that they are learning about the academic profession, but the choices they make and the support they receive obviously have an immediate impact on students as well. Thus, this project resonates very strongly with Ako Aotearoa's goal to provide the best possible educational outcomes for all learners (both staff and students).

2. LITERATURE REVIEW

2.1 SUCCESS IN ACADEMIA

A growing body of international literature has looked at the identities, productivity and satisfaction of early career academics (see, for example, the 2011 special issue of the *International Journal for Academic Development,* Sutherland & Taylor 2011, as well as other work by Bazeley, 2003; Kahn, 2009; Rice, Sorcinelli & Austin, 2000; Smith, 2010; and Solem & Foote, 2004). There are also many handbooks on how to succeed in academia. However, few empirical studies directly consider just what constitutes success in academia. In a special issue of the journal *Gender, Work and Organization*, the editors note that despite ongoing investigations into gender issues in academia, most research "overlook[s] any critical reflection on the concept of success…" and they call for a "critical examination of hierarchical life and its associated criteria of success" (Knights and Kerfoot, 2008, p. 234).

An interrogation of the limited research literature on success in academia, and the wider body of literature on the experiences of early career academics navigating their way into successful careers, reveals that success in academia is primarily about productivity and output in research, and reputation amongst disciplinary peers. Teaching is noticeably absent from the narratives on success for early career academics. Indeed, as Gill Nicholls has shown:

> *[t]here is a high correlation for the new lecturer's role as being engaged in research, publishing and establishing credibility in their designated field of knowledge…Conversely, there is a low correlation for a new lecturer's role in developing teaching strategies and determining an emphasis on teaching"* (Nicholls, 2005, p. 619).

Enders & Kaulisch (2006, p. 87) state that the "prime criterion for success in academia was, and still is, performance in research", and the research literature on the academic career confirms this (Williamson & Cable, 2003). Hemmings and Kay (2010, p. 185) emphasise that "the publication of scholarly works, such as refereed journal articles and books, is the basic form of currency in academe", while, in an analysis of the promotion criteria of 89 UK universities, Parker (2008) found that teaching and research may be equally well rewarded for promotion to Senior Lecturer, but the higher up the ranks that academics move, the more they are required to demonstrate research excellence, with unequal regard for other aspects of the academic role.

Various handbooks on how to succeed in academia reinforce this message. In an analysis of five recent handbooks targetting new academics (Boden, Epstein & Kenway, 2005; Cantwell & Scevak, 2010; Crone, 2010; Gray & Drew, 2008; McCabe & McCabe, 2010), doing well at research is the key theme. The table below summarises the major themes from our analysis of the contents of each handbook.

Table 1: Content analysis of handbooks on succeeding in academia

Theme	Percentage of chapters/hints on this theme (%)
Research	42
Workplace	16
Personal	14
Networking/ relationships	13
Teaching	11
Service	4
Total	100%

The six themes are listed above from most to least mentioned overall. Research includes publication output, grant funding, building and managing research teams, and getting writing done. The workplace

environment (the second most commonly mentioned theme) includes the job search itself, finding the right fit of institution, understanding the promotion/tenure process, salaries, and preparing a CV/tenure portfolio. The third most popular theme was personal aspects of the academic career, including time management, work-life balance, gender and family issues, and staying healthy. Fourth was networking and relationships with colleagues, superiors and mentors. Fifth was advice about teaching, including supervision and postgraduate advising, and sixth was service and administration, including committee work, departmental service and leadership, and community service and/or consultancy.

The clear message is that early career academics should target their energies on the research aspects of their careers. In fact, in their list of six key concepts for succeeding in academic life, Gray and Drew (2008) focus exclusively on the research and networking aspects of the career. Even in their combined section on teaching and service, Gray and Drew's first hint – and the one repeated most often throughout the book – is not about teaching or service at all. Instead, they remind their readers that, "[p]ublication is the only portable wealth" (Gray & Drew, 2008, p. 33).

Success in academia is also about reputation amongst disciplinary peers. Academic identity is intricately entwined with disciplines and scientific communities, and research on academic careers from a variety of perspectives is unequivocal about the individual academic's commitment to the disciplinary community (Meyer & Evans, 2005). As Laudel and Gläser (2008) state, "the scientific community is the source of tasks and standards of conduct as well as the target of contributions, i.e., it fulfils all the main functions of the work organisation except for providing salaries and resources for the work" (p. 389). However, promotion and tenure decisions are often made by peers within the university, so academics must straddle both their disciplinary and university communities and build and maintain relationships within each. "In academia, the commitment of the individual to the organisation is low, while their commitment to the discipline and a sense for individual accomplishment is considered the key to their professional identity" (Enders & Kaulisch, 2006, p. 88).

Notions of success are inevitably tainted by the challenge of defining on whose terms we perceive success and what constitutes success in which contexts. Not every academic will have the same definition of success. The next section of the literature review looks at the ways in which the research literature has attempted to define and explain academic success.

2.2 Models for explaining success

Various models for explaining academic or faculty (as referred to in the United States) productivity have been developed over the last couple of decades. For example, Bland, Center, Finstead, Risbey and Staples (2006, p. 91) argue that three key factors contribute to faculty productivity: the "individual faculty member, the structure or environment in which he or she finds himself or herself, and the leadership of the organization". Blackburn and Lawrence (1995) similarly identify three variables affecting faculty productivity: self-knowledge, social knowledge, and environmental influences (cited in Fairweather, 2002, p. 28), and Azad and Seyyed (2007) add demographics as a fourth variable. Others emphasise various factors that may increase the likelihood of better success in research productivity, in particular. These include, for example, the impact of experiences and relationships during the doctoral experience, including the qualifications of their dissertation advisor, their own research productivity before appointment, and the reputation of the department in which they did their PhD (Williamson & Cable, 2003), or the 'Matthew effect' where "researchers who are more active in their younger years gain more scientific capital, thereby accessing more resources, which in turn, help them stay productive and so on" (Gingras, Laniviere, Macaluso & Robitaille 2008, p. 70). Other models consider such factors as life stages (early, mid- or late-career), life changes (such as transfer to another institution, family change, etc.), environmental conditions (such as collegial relationships, institutional climate etc.), and motivators such as achievement, recognition, advancement and salary (Hagedorn, 2000).

2.3 Structure and Agency

Common to many of these models (even if the researchers themselves may not have articulated it as such) is the underlying social theory of structure and agency (Archer, 2007; Kahn, 2009), and in particular the relational interdependence of structure and agency (Archer, 2007; Bandura, 2001; Billett 2006; Edwards 2005; Neumann, LaPointe Terosky, & Schell 2006). Agency refers to the capacity that individuals have for acting on and changing the world around them: "To be an agent is to intentionally make things happen by one's actions" (Bandura, 2001, p. 2). Central to this agentic action are intentionality (Bandura, 2001; Archer 2007; Neumann *et al*., 2006) and reflexivity (Archer 2007; Luckett & Luckett, 2009); that is, individual agency requires a person to act with intention and to develop the capability of reflecting on the success or otherwise of that action, particularly in relation to the structure in which the action occurred. Structure, then, is about "the properties which give coherence and relative permanence to social practices in different times and locales" (Trowler & Knight, 1999, p. 182). As Billett, Smith and Barker (2005, p. 220) argue, "Individuals' learning is neither a wholly solitary nor a wholly socialised process…more than learning through this process, individuals are actively remaking and potentially transforming their work practices and activities." Individuals exert their agency within the context of external institutions, structures, organisations and environments over which they may have limited or no control, and "which present various opportunities and constraints" (Neumann *et al*., 2006, p. 94). But, as Mathieson (2011, p. 243) has argued, while much research on academic identities has focused on "academics' loss of a sense of an idealised collegial past, highlighting the effect of work intensification, massification and the increasing role of state and market", for early career academics beginning their careers in the 21st century, theirs is not an environment experienced through the "lens of loss" but the "only reality they know". Mathieson calls for a "sociocultural approach to inducting new academics, which explicitly engages them in reflecting on the possibilities and limitations of their agency amid a range of structural opportunities and constraints" (Mathieson, 2011, p. 244). Thus, we need to consider both structure and agency when developing a model for investigating the factors that influence early career academic productivity, success and satisfaction. We must also consider what each individual brings from their prior experience:

> *Structures and environments have influence but people draw on the same repertoires of scripts and schemata yet experience the same environment in different ways thanks to their biographies, expectations, self-image and dispositions* (Knight, 2002, p. 13).

2.4 Prior Experiences

Many researchers argue for the need to take into consideration the prior experiences of early career academics when developing support and training programmes and/or for predicting or measuring their productivity. Fairweather (2002, p. 28) cites several studies that demonstrate that "experiences during graduate school help shape the future faculty member's attitudes and behaviour [and that]…experiences during the early part of the faculty member's career also affect psychological development and orientation and thereby influence behaviour". As Billett *et al*. (2005, p. 223) have argued, "it is these conceptions and subjectivities that shape individuals' intentionality and agency in the process of their learning". Besides the development of personal characteristics during the doctoral phase, also significant is the influence of the people with whom an early career academic has interacted prior to becoming an academic, in particular their supervisor/s. Williamson and Cable (2003), in a longitudinal study of 152 early career (six years) management professors, found that, among other things, early career research productivity is affected by the qualifications of the academic's dissertation advisor, the academic's own productivity before appointment, and the reputation of the department in which they did their doctorate: "The more skilled and productive a dissertation advisor is, the more likely he or she will imbue students with the research skills and values needed to be productive researchers during the early portions of their

careers" (Williamson & Cable, 2003, p. 28). They argue that a good doctoral experience can also provide early career academics with 'accumulated advantages' that indirectly enhance research productivity, including: advanced research training from productive scholars; greater opportunity to join fruitful research projects; and greater opportunity to meet and develop relationships with influential members of the professions via research presentations and conferences hosted by their school. Baruch and Hall (2004) support this contention with their claim that success is set early in an academic's career, primarily because of relationships they do and do not form. Also significant is whether an early career academic published any research in scholarly outlets during their doctorate and/or before their academic appointment. Several studies have shown that publishing during the doctorate improves the likelihood that early career academics will be more productive researchers during their academic career (Bazeley, 2003; Laudel & Gläser, 2008; Lucas & Murry, 2002).

2.5 OTHER PROJECTS ON THE ACADEMIC WORKFORCE

Internationally, we identified several projects on early career academic experiences that have been conducted on a national scale, including the Collaborative on Academic Careers in Higher Education (COACHE) survey on Tenure-Track Faculty Job Satisfaction in the United States, which has collected data on job satisfaction from nearly 10,000 academics at 149 universities and colleges in the US since 2005 (COACHE, 2010), and the National Science Foundation's 2001 Survey of Doctorate Recipients that Corley and Sabharwal (2007) used to compare productivity levels, work satisfaction levels and career trajectories of foreign-born scientists and US-born scientists. In the United Kingdom, Colin Bryson's Working in Higher Education Survey (Bryson, 2004) investigated the environmental, personal and biographical circumstances and opinions of academics at a stratified sample of UK higher education institutions, and elicited 1586 responses. And in Europe, Leeman (2010) conducted an analysis of data from a Swiss national project on PhD graduates, which included around 500 PhD graduates, as well as conducting 45 in-depth interviews with PhD graduates and relatively new researchers who had applied for funding from the Swiss National Science Foundation (SNSF). She was particularly interested in gender differences in academic mobility.

In Australia, the Department of Education, Employment and Workplace Relations (DEEWR) has commissioned a number of projects on the academic workforce in recent years. In particular, Edwards, Bexley and Richardson (2011), in *Regenerating the academic workforce*, report on the findings from the National Research Student Survey (NRSS) and identify the careers, intentions and motivations of higher-degree research students in Australia. Their report covers the views of more than 11,000 PhD and Masters students from 38 of the 39 Australia universities. Bexley, James and Arkoudis (2011), in another report for DEEWR, *The Australian academic profession in transition*, summarise the previous major projects on the academic workforce in Australia, and report the findings of their survey of more than 5,000 academics at 20 Australian universities on the immediate and longer-term career intentions for Australia's academics. Both of these reports show that academics and aspiring academics share a deep commitment to and love for their subject areas, but are dissatisfied with their job security and income, and that many younger academics intend to leave the Australian higher education system within the next five to ten years.

In terms of studies with an international scope, the most recent data is from a book by Bentley, Coates and Dobson (2013), called *Job satisfaction around the academic world.* They use findings from the Changing Academic Profession (CAP) Survey to investigate the academic profession, focussing on the organising concept of 'career satisfaction' in 11 countries: Argentina, Australia, Brazil, Canada, Finland, Germany, Japan, Malaysia, Portugal, South Africa and the United Kingdom. Academics from around the world, especially those early in their careers, are not, it would seem, very satisfied with their careers. In particular, "only 57% of academics in junior ranks reported satisfaction" (Bentley, Coates, Dobson,

Goedegebuure & Meek, 2013b, p. 251). New Zealand was not included in the 18 countries that took part in the CAP and is thus not represented in the book.

As far as we have been able to ascertain, there have been only two large-scale projects on the academic workforce in New Zealand in recent years that have included surveys of a significant sample of the New Zealand university academic staff population. The first is a longitudinal survey of New Zealand scientists, conducted through The New Zealand Association of Scientists that included scientists at universities. The NZAS conducted three surveys of New Zealand scientists (in 1996, 2000 and 2008) and the most recent and comparative results were published in the *New Zealand Science Review* (Sommer, 2010). The 2008 survey attracted a 38.6 per cent response rate (n=361) and comprised 74 questions, the majority using a five-point response scale ranging from emphatic agreement to emphatic disagreement. More than half of the respondents were scientists based in universities, and the survey sought their views on science policy and their working experiences.

The second project was initiated by the Universities New Zealand Human Resources Committee Steering Group, who commissioned a report from Business and Economic Research Limited (BERL) that "quantified the supply and demand for academic staff within New Zealand's universities between 2008 and 2020, and identified strategies to address the issues that may arise during this period" (Nana, Stokes & Lynn, 2010, p. 5). Nana *et al*. (2010, p. 9) found that the "New Zealand university sector is facing a future with caps to funded domestic student numbers, a significantly older than average academic workforce and increasingly intense global competition for academics. In this context, the sector must accept the challenge to make an academic career an attractive opportunity for those currently inside and outside the sector". They emphasise the need to retain our current academic staff as well as attract newcomers to the academic profession, and they also recommend that such retention and recruitment will best occur collaboratively and across the sector rather than at an individual institutional level. This justifies our data collection at national level and our overarching aim of trying to understand the experience of current early career academic staff.

Both the Sommer (2010) and Nana *et al*. (2010) reports include demographic data that make for interesting comparisons with the data collected through our ECA questionnaire, and where direct comparisons are possible and/or significant we provide them in our report. The overall population and the general focus of each of their reports are different from our project, however. The NZSA project (Sommer, 2010) looked at scientists across New Zealand, employed in universities, polytechnics, Crown Research Institutes, Research Associations, and museums. University staff made up just over two-thirds of the research population and just under half of the respondents, and the survey intended to provide the following four outcomes: a voice for the scientific community; a source of unbiased information for development of science policy; a source of performance measures of government science policy; and a source for enhanced public understanding of science and technology. These purposes differ from our somewhat narrower, but related, aim to document the experiences of early career academics in order to determine what kinds of institutional and personal processes and support need to be in place to support them to survive and ultimately to succeed in New Zealand universities.

By contrast, the New Zealand Universities Human Resources project (Nana, *et al*., 2010) was aimed at identifying strategies for dealing with the economic and workforce planning realities of New Zealand's changing academic workforce and included data collected from all eight New Zealand universities' HR departments. A snapshot was taken of the academic workforce at each New Zealand university in 2008 and included such information as position and employment category, discipline or business unit, age and sex, length of service, and turnover. The project compared some of this information with 2006 New Zealand Census data, particularly on ethnicity, nationality, age and sex. The views and opinions of the academic staff themselves were not sought in this project, in contrast with our survey which seeks to canvas the experiences and opinions of early career academics, as well as the demographics of that population in New Zealand universities.

Besides these two nationwide projects, a few smaller-scale New Zealand projects have looked at the experiences of academic staff, although the only one that we are aware of that focuses solely on early career academics is Sutherland and Petersen's (2010) Ako Aotearoa Central Hub-funded project that served as a pilot for this National Project Fund research. In a 2002 article, Gilbert and Cameron wrote about a small-scale study conducted at two New Zealand institutions that included 33 university academics and 17 College of Education teachers. They found differences in understanding of the nature of academic work, with a much stronger focus on research in the university environment. Maureen Baker undertook a study of gender differences in academia that included interviews with 30 male and female academics at two New Zealand universities in 2008 (Baker, 2010). Doyle, Wylie, Hodgen and Else (2004) conducted a survey for the Association of University Staff that was published by the New Zealand Council for Educational Research (NZCER) of 619 academics at Massey University, in which they found significant gender differences in the promotions process, outcomes, and satisfaction for male and female academics. And Kensington-Miller (2010) published a chapter on peer mentoring for early career academics in a 2010 book on academic practice.

3. STRUCTURE OF THIS REPORT

First, we outline our methodological approach and describe the various methods we used to collect and analyse data for this project. Then, we present the findings from the demographic section of the questionnaire and provide a profile of our respondents. With our research questions guiding us, we then move into a consideration of the factors that influence early career academic success and satisfaction – from individual characteristics, to prior experiences, to structural and organisational influences. We then consider what our research tells us about variations in organisational expectations and the perspectives and expectations of the early career academics themselves. We follow these findings with a discussion of the institutional and personal processes and support that need to be in place in order to enable early career academics to survive and ultimately succeed in New Zealand universities. The report concludes with a section on implications and recommendations for managers, universities and individual academics.

4. METHODOLOGY

4.1 RESEARCH APPROACH

We took a mixed-methods approach to this project, using a quantitative method to answer the first and second research questions, and qualitative methods to answer the remaining three. A mixed-method approach enabled a pragmatic response to the research questions that balanced the strengths and weaknesses of each statistical method.

4.2 DATA COLLECTION

4.2.1 EARLY CAREER ACADEMIC (ECA) QUESTIONNAIRE

The ECA questionnaire was based on our earlier research (Sutherland & Petersen, 2010) and aligned closely with other international surveys, for example the Collaborative on Academic Careers in Higher Education (COACHE, 2010) survey on Tenure-Track Faculty Job Satisfaction, and Colin Bryson's survey on the UK academic workforce (Bryson, 2004). The questionnaire included statements to which participants responded using four- and five-point Likert Scales, as well as demographic and open-ended questions, and included the following sections (the full questionnaire is available upon request):

a) Demographics, Qualifications, and Job Information – including nationality, age, job title, discipline, highest qualification, length of time in job, promotion success, home situation (*i.e.* raising children or not, spouse working or not, *etc*.) and so on

b) Research and Teaching Activity – including number of publications, awards, conferences attended, students supervised, teaching relief in first year, and so on

c) Institutional Policies, Support and Services for New Academics – this section asked them to rate 30 different policies, support mechanisms and services for new academics in terms of their importance to a new academic's success and the effectiveness of each at their own university

d) Work-Life Balance and Satisfaction – included questions on intent to stay in academia, satisfaction with time spent at work and with family, finding time for exercise, and recommending one's department and institutions as places to work.

We piloted the questionnaire with 47 early career academics, whom we also interviewed, at all eight New Zealand universities in 2011. As a result of this pilot, and issues that were raised during the interviews, we added more questions to the demographic section on early career academics' living situations, and to the institutional policies, support and services section, in particular.

The questionnaire was then sent to all early career academics (those within the first seven years of their first permanent academic appointment) at all eight New Zealand universities in early- to mid-2012. Our reference group, comprising one local contact at each university (usually working in the university's teaching and learning centre or equivalent), helped us to liaise with Human Resources (HR) staff at each university to identify the early career academic population at each university. As explained above, we defined 'early career' as academics within the first seven years of their first permanent academic appointment. This choice was made on the basis that the literature identifies early career academics as anywhere from five years in the role (Bazeley, 2003) to six years (Bland, Center, Finstead, Risbey & Staples, 2006) to eight years since receiving a PhD (Laudel & Gläser, 2008), and also because a new academic starting on the bottom rung of the Lecturer scale in New Zealand (at our university, at least) would take seven years to move to Senior Lecturer.

For ease of sampling, because we knew such a population had already been identified for Performance Based Research Fund (PBRF) reporting purposes, we asked each university's HR contact for the email addresses of PBRF-eligible academic staff in the first seven years of their academic career. In most cases, this meant they had been appointed at their current university since the beginning of 2005 (or just before the last PBRF round). Some of those appointees came from academic positions at other institutions and were quite senior and thus not considered "early career", so our HR and reference group contacts had to do some culling before sending through their list. The eventual list numbered 1216 potential participants. We then sent all early career academics at all eight universities a personalised email inviting them to answer the questionnaire online (using the Qualtrics survey software) and to let us know if they did not fit the criteria. Several replied, telling us they had been in academia for longer than seven years (but at their institution for fewer years, which is why they would have appeared on the original list). Once we removed those outside the criteria, our population was 1151. We received 538 responses, giving us a very respectable response rate of 46.7 per cent. The table below outlines the responses by university and overall.

Table 2: Responses to ECA questionnaire

University	Population (*N*)	Responses (*n*)	Response Rate (%)	Percentage of ECA population	Percentage of all responses
1	249	120	48.2	21.6	22.3
2	239	124	51.9	20.8	23.0
3	168	53	31.5	14.6	9.8
4	163	58	35.6	14.2	10.8
5	130	71	54.6	11.3	13.2
6	114	74	63.2	10.0	13.8
7	54	23	42.6	4.7	4.3
8	31	15	48.4	2.8	2.8
Total	1151	538	46.7%	100%	100%

4.2.2 MANAGERS' QUESTIONNAIRE

A much shorter survey, with several of the same questions from the Institutional Policies, Services and Resources section of the ECA questionnaire, was sent to a variety of academic managers and senior people who support early career academics at all eight New Zealand universities. This questionnaire (available upon request) included the following sections:

- Institutional policies, support and services for new academics
- Professional and career development
- Job Information
- Advice for new academics.

For the managers' survey, we sent an email to our reference group members (one person at each university) and asked them to forward an email request to Heads of Department, Deans, Associate Deans, Pro/Assistant/Deputy Vice-Chancellors, and anyone involved in managing or directly supporting early career academics. We did not identify the size of this entire population, as we did with the early career academic population, because our key concern was the perspective of the early career academics. This survey of managers was merely to provide a counter view from a different group within the university sector. We hoped to receive eight to ten responses from each of the larger universities, and perhaps five or six from smaller universities, as we thought this would give us a sense of the perspectives of some managers and enable us (or someone else) to identify issues to follow up on in later research. We were very pleased to receive 104 replies, with a good spread of responses from all eight universities. The table below shows the responses received from each university. As mentioned above, because invitations to complete the survey were not sent individually we do not know the population size for the managers' survey at each university, so no overall response rate is listed below. However, as Table 3 shows, a good

spread of responses was received from across all eight universities, corresponding well with the response rates for the ECA questionnaire from each university.

Table 3: Responses to Managers' questionnaire

University	Responses	% of all university responses
1	23	22
2	27	26
3	11	11
4	10	9
5	8	8
6	14	13
7	5	5
8	6	6
Total	104	100%

We were also pleased to receive replies from managers in a variety of different positions, from a Deputy Vice-Chancellor to several Deans or Associate Deans and Directors. The majority of responses to the managers' survey came from Heads of Department (HoDs) or equivalent (at our university, for example, this title is Head of School). HoDs are usually the people with direct line management responsibility for early career academics and the managers upon whom the early career academics rely most for support and information at the outset of their academic career or upon arrival at a new university.

Table 4: Positions of Managers

Role	Responses
Deputy Vice-Chancellor	1
Pro Vice-Chancellor	6
Dean	7
Associate Dean	8
Head of School or equivalent	39
Director of a Research Centre or Central Service Unit	7
Other	11
Total	79*

**Not all respondents identified their position, so this total is not the same as the overall number of responses*

4.2.3 FOCUS GROUPS

Following the collection of the questionnaire data, we conducted focus groups at four universities, with a sample of early career academics from different disciplines, and one focus group with managers at our own institution. Respondents were asked at the end of the survey if they were interested in receiving a copy of the findings, and we used this list to email people to ask if they would be interested in participating in a focus group at their university. The focus groups considered the results of the national questionnaire and probed further the experiences of early career academics, and the support and resources needed for survival and success in academia in New Zealand. Seventeen early career academics and nine managers were involved in the focus groups.

Table 5: Focus group participants

University	Male	Female	Disciplinary Area	Total
1	4	6	Health x2, Science x4, Social Sciences x3, Humanities x 1	10
2	1	3	Science x2, Humanities x1, Social Sciences x1	4
3	1	2	Science x1,Commerce x1, Humanities x 1	3
6	4	5	Central Service Unit x4, Science x1, Commerce x1, Social Science x2, Humanities x1	9
TOTAL	10	16		26

4.3 Data Analysis

4.3.1 Statistical analyses

Survey response comparisons were conducted using correlations, t-tests, Chi-Squares, ANOVAs and regression analyses. All statistical analyses excluded cases pairwise, which ensured each analysis only used the data that was available for that analysis. Preliminary analyses were conducted on all the variables to assess their relative distribution in order to inform the subsequent analyses. Subscale items were grouped together based on conducting Primary Component Analyses and then assessing the reliability of the scales (only alpha scores above 0.7 were accepted).

4.3.2 Survey comments

We allowed space after three sections in the survey (institutional policies and support, working relationships, and work-life balance) and at the end of the survey for respondents' to make open-ended comments. More than 160 respondents made comments. Our thematic analysis of these comments involved the principal investigator first reading through all the comments, identifying codes for analysis, then ordering those codes into a series of key themes and attributing each comment to a theme (some comments fit more than one theme). The research assistant and/or the other researcher then also went through the comments and assigned them to the key themes. More than 90 per cent of the time comments were coded into the same themes by both researchers, so we are confident of the accuracy of our analyses of the comments.

In places throughout the report we include comments from the questionnaire to support the statistical findings and the suggestions we make for supporting early career academics. These comments are not intended to be representative of all respondents; rather, they shed further light on the findings and go some way to explaining how some early career academics feel about their circumstances. Comments are indented, and respondents' academic level, discipline, sex and age group are provided. A significantly higher percentage of women than men provided comments in all four sections, with more than a third (35%) of women providing closing comments, compared with a fifth (21%) of men, and 27 per cent of women, but only 15 per cent of men, commenting on work-life balance. Consequently, many more of the comments that appear in the body of the report are from women than from men.

4.3.3 Focus group transcripts

As with the open-ended comments in the survey, we conducted a thematic analysis of the focus group transcripts, coding the transcripts by key themes as described above.

4.4 Respondent demographics

As we far as we can ascertain, no comprehensive investigation of the demographics of academics in New Zealand universities has been undertaken in New Zealand recently, with recent projects relying on census data – which includes academics outside the university sector, from polytechnics, wānanaga, research institutes and so on (Nana, *et al.*, 2010) – or on a specialised subset of academics, for example, scientists (Sommer, 2010). Thus, our project offers insights into who New Zealand university academics are (early career academics in particular), where they come from, what they do, their prior experiences and how they feel about their working situation. In this section, we present information on participants' academic discipline area, nationality, ethnicity, age, sex and academic level, and compare these findings, where appropriate, to data from the New Zealand Association of Scientists (Sommer, 2010) and Universities New Zealand Human Resources (Nana, *et al*., 2010) projects. We make some suggestions for supporting early career academics, in light of what we found in terms of their background and demographics.

4.4.1 Academic Discipline Area

The discipline areas in the table below have been taken from the 2012 Performance Based Research Fund Quality Evaluation Guidelines panels and subject areas. Responses to the category 'Other' included areas such as Emergency Management, Veterinary Science, and Animal Science. The biggest groups of respondents came from the Biological Sciences, Health and Medicine, and Social Sciences.

Table 6: Academic discipline area (percentage of respondents)

Discipline	%
Biological sciences	13
Business & Economics	6
Creative & Performing Arts	3
Education	7
Engineering, Technology & Architecture	8
Health & Medicine	23
Humanities & Law	8
Māori Knowledge & Development	3
Mathematical & Information Science & Technology	4
Physical Sciences	7
Social Sciences & Other Cultural/Social Studies	16
Multidisciplinary	1
Other (please specify)	1
TOTAL	100%

4.4.2 Nationality and Ethnicity

More than half of the respondents (56%) to our survey were not born in New Zealand, which indicates an acceleration of the trend identified in Nana *et al.*'s 2010 report of an increase in overseas-born academics from 32 per cent of the tertiary academic population in New Zealand in 1991 to 39 per cent in 2006. In the Nana *et al.* (2010) sample, 42 per cent of those overseas-born academics had been in New Zealand for nine years or less. By contrast, our responses indicate that the majority (71%) of overseas-born academics in early career positions in New Zealand universities in 2012 have been in New Zealand for fewer than 10 years.

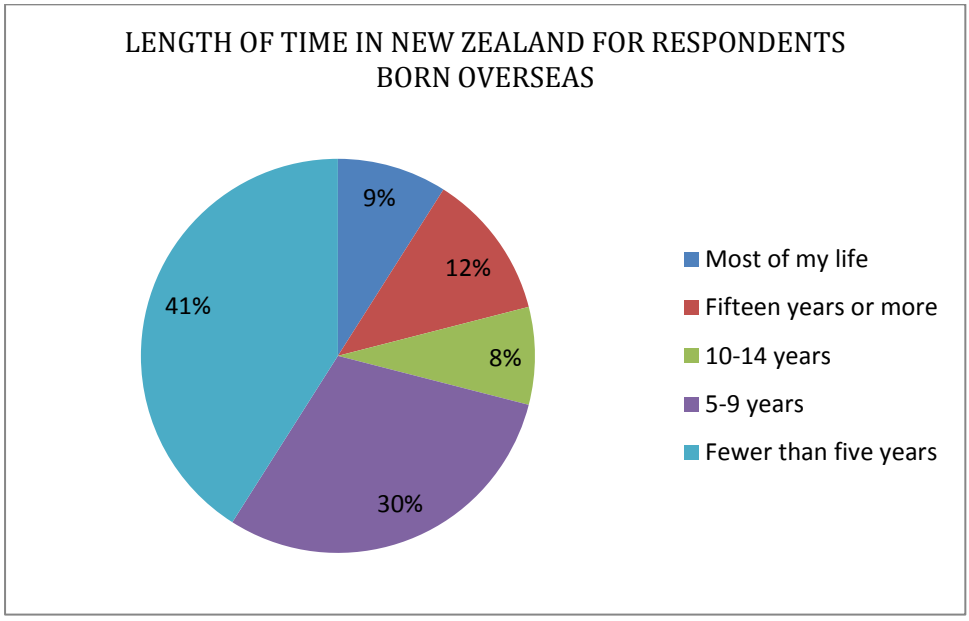


Figure 1: Length of time in New Zealand for respondents born overseas

These data remind us that as early career academics set out on their academic careers, those responsible for inducting, managing and supporting them in their first few years will need to be mindful of how much newcomers to the country might or might not know about New Zealand's cultures and education systems (both school and tertiary level). We did not ask in our survey about this, but suspect that with so many early career academics being relative newcomers to the country as well as the profession, some time to transition smoothly from one country to another (especially if moving with a family and needing to find a home, schools and/or daycare for the children, and so on) as well as some support for raising awareness and knowledge of Māori culture and language may be appropriate for new academics from overseas. Of course, such support may well be welcomed by many other early career academics as well, especially given that so few have Māori heritage themselves. The ethnicity of respondents is outlined below.

Table 7: Ethnicity (percentage of respondents)

Ethnicity	ECAs	Nana *et al*. (2010)
Caucasian	79	71
Māori	6	7
Pacific Islander	2	2
Asian	10	8
Other*	3	12
Total	100%	100%

*Other included Hispanic, Latin American and African.

Nana *et al.* (2010) found that "between 1991 and 2006, the proportions of the tertiary teaching workforce identifying themselves as Maori or Pasifika has [sic] remained unchanged, while the proportion reporting themselves as Asian has increased noticeably" (p. 80). By contrast, the New Zealand Association of Scientists Survey reported an increase for Māori scientists from 0.7 per cent in 1996 to 1.7 per cent in 2008 (Sommer, 2010). The percentage reported by Sommer is still considerably lower than the percentage of Māori in the overall New Zealand population, however, and while our findings in terms of ethnicity show a higher proportion of Māori (6%) and Pasifika academics (2%) than in the NZSA survey (Sommer, 2010), the percentages of early career academics of Māori and Pasifika descent are significantly lower than in the national population (with 14.6 per cent Māori and 6.9 per cent Pasifika reported in the 2006 New Zealand census). Our findings indicate that there may be a higher percentage of Māori and Pasifika academics starting to enter the academic workforce in recent years, which is encouraging, but more Māori and Pasifika academic staff will need to be recruited to come close to matching the numbers of students from these priority groups (TEC, 2012).

4.4.3 Sex and Age of Respondents

The majority (64%) of respondents are under 40, which is to be expected given that our criteria sought respondents within the first seven years of their academic career. Clearly, however, many early career academics in New Zealand have come into academia from another career, with more than a third (36%) of respondents 40 years of age or over.

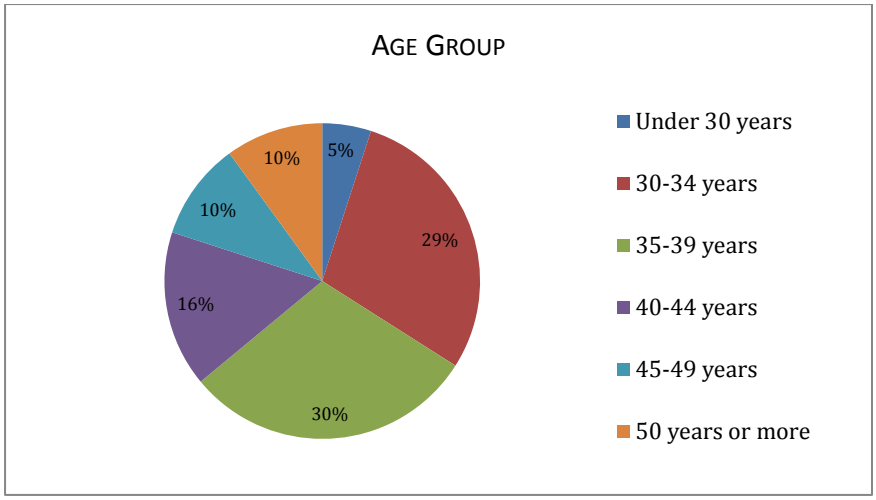


Figure 2: Age group of respondents

It is important to keep this in mind when designing support programmes and deciding how best to induct, orient and provide information for new academics: not all ECAs will need the same level of input in terms of career planning, for example, but may need more opportunity to refine their research or teaching skills, depending on prior experience, or to find networks of like-minded colleagues. One survey respondent commented that, "As an older early career academic there are a lot of extra barriers to overcome and it can be quite lonely at times" [Postdoc, Education, Female, 50+]. By contrast, other older early career academics may find the transition less daunting and take quite a different attitude towards the career change, as the next comment indicates:

> *My situation is quite different than many other early career academics because I was 55 when I was hired here (my first academic job), I am part-time (0.4 FTE), and I had an abundance of teaching experience in a variety of settings before I began academic teaching. I have been astonished at the amount of support available for staff…It appears to me that there is a large quantity of it, which I think is wonderful.*
>
> [Lecturer, Humanities and Law, Female, 50+]

Early career academics with experience in other industries or professions may also have a lot to offer in terms of mentoring other staff and providing insights from outside the university, as well as possessing leadership or management skills that younger early career academics may not have had the time to develop elsewhere.

More women (60%) than men (40%) responded to the survey. This contrasts with national data showing that 54 per cent of the total academic workforce is made up of men and 46 per cent women (Nana, Stokes & Lynn, 2010, p. 64). However, given that there are fewer women than men in senior academia positions in New Zealand universities (NZHRC, 2012, p. 138) and that our target population was *early career* academics, it is not surprising more women responded.

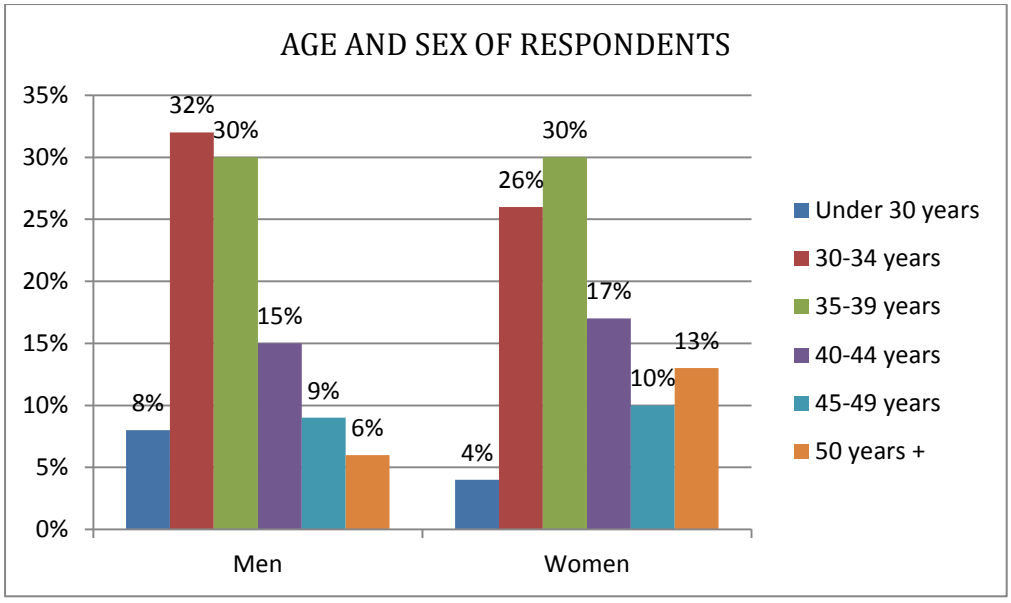


Figure 3: Age group of respondents (by sex)

Women are slightly over-represented among the older participants in the sample (especially over 50 years). This was a non-significant trend ($\chi^2(5)=9.59$, p=0.09), and contrasts with Nana *et al.*'s (2010) finding from the 2006 Census data that shows that the proportion of female academics in tertiary institutions nationwide declines markedly after the age of 55. It also contrasts with Sommer's (2010) finding that the majority of young scientists are women (women outnumbered men four to one in the under-35 age group in his survey). These differences could be attributed to the fact that our survey sought data from early career academics at universities only, whereas the Nana *et al.* (2010) finding from the Census data was from across the tertiary workforce (including institutions other than universities), and the New Zealand Association of Scientists survey (Sommer, 2010) incorporated all scientific research institutions in New Zealand, including universities, polytechnics, museums and Crown Research Institutes. Regardless of the difference, the data from all three projects emphasise the need to work on evening out the representation of women and men in academia.

4.4.4 Academic Level

The table below shows the spread of respondents across academic levels. Two respondents are already Associate Professors, but are still considered early career academics because they earned their doctorates in 2004 and 2005, and were appointed to their first academic jobs in 2009 and 2005, respectively. One started in 2009 as a Senior Lecturer and was promoted to Associate Professor in 2011; the other started in 2005 as a Post-Doc and was promoted to Associate Professor in 2009. We have included them in with Senior Lecturers for reporting purposes.

Table 8: Current academic level (percentage of respondents)

Current Academic Level	% All	% Men	% Women
Senior Lecturer*	21	29	17
Lecturer	52	50	53
Post Doc/ Research Fellow	23	18	25
Other**	4	3	5
Total	100%	100%	100%

*Includes two Associate Professors

**If respondents chose "Other", they were asked to name their role. Their responses included the following kinds of roles: tutor, field work coordinator, director, professional practice fellow, and programme leader.

The percentage of women in the higher ranks of academia continues to be disturbingly low. The New Zealand Human Rights Commission (2012) *Census of Women's Participation* reports that only 24.38 per cent of Associate Professors and Professors in New Zealand universities are women – a small 8.56 per cent increase since 2003. Our data show that despite a higher percentage of men than women under 30 years of age in academia, men and women are not equally represented in the lower levels of academia ($\chi^2(5)=13.87$, $p<0.05$). There is a significantly higher percentage of women than men at the lower ranks (Lecturer and below), and in jobs where contracts are often not permanent (such as Post-Doctoral positions and Tutoring roles). Because of these differences, we consider sex of respondents as a factor in our investigation of early career academics' experiences at several points during this report.

In this section, we sought to identify the demographics of our early career academic respondents. Not surprisingly, given what we know from earlier work (Nana *et al.*, 2010; Sommer, 2010) early career academics are predominantly female, Pakeha/New Zealand European, and under 40 (although a somewhat suprising 36 per cent of all respondents are over 40). More surprising, though, was the finding that more early career academics are born overseas than in New Zealand, and that the majority of these overseas-born academics (71%) have been in New Zealand for fewer than ten years. Our data also confirm earlier New Zealand findings (Doyle, *et al.,* 2004) that women are over-represented in the lower ranks of academia. In places the next section of the report uses sex of respondents, in particular, and some other demographic data to investigate the differences in experience for early career academics from around the country and to ask which factors have an impact on their success and/or satisfaction.

5. FACTORS INFLUENCING EARLY CAREER ACADEMIC SUCCESS

This section of the report attempts to answer the first of our research questions: what factors influence the success, productivity and satisfaction of early career academics in New Zealand universities? As discussed in the literature review, actually defining what constitutes success in academia is not easy, with variations depending on who is asked. What represents success for one person in a particular discipline at a particular university may not even register on another academic's radar in terms of work commitments let alone what they perceive of as success. However, from the literature and our earlier research, we determined that research productivity, satisfaction and confidence are all forms of success in academia that the majority of acdaemics, researchers, managers and employers agree upon. For this reason, we use research output, teaching and research confidence, and satisfaction as key outcome variables in this report.

We developed a model for investigating the experiences of early career academics and outline this below, drawing on the theory discussed earlier that structure and agency function interdependently, and that both strongly influence and shape early career academics' experience and perceptions of success. In the process of learning how to be academics, early career academics also act upon and change the university, disciplinary and departmental systems in which they work and learn. Thus, our consideration of how they learn to be academics (and ultimately how they learn to be successful, productive and happy academics) needs to bear in mind: 1) what early career academics bring to their roles from *prior experiences*; 2) the various *individual characteristics* that influence how they engage with each other and with the structure of the university, department and discipline; and 3) the *support, services and resources* that they receive from the structures within which they work (that is, the department, university and discipline).

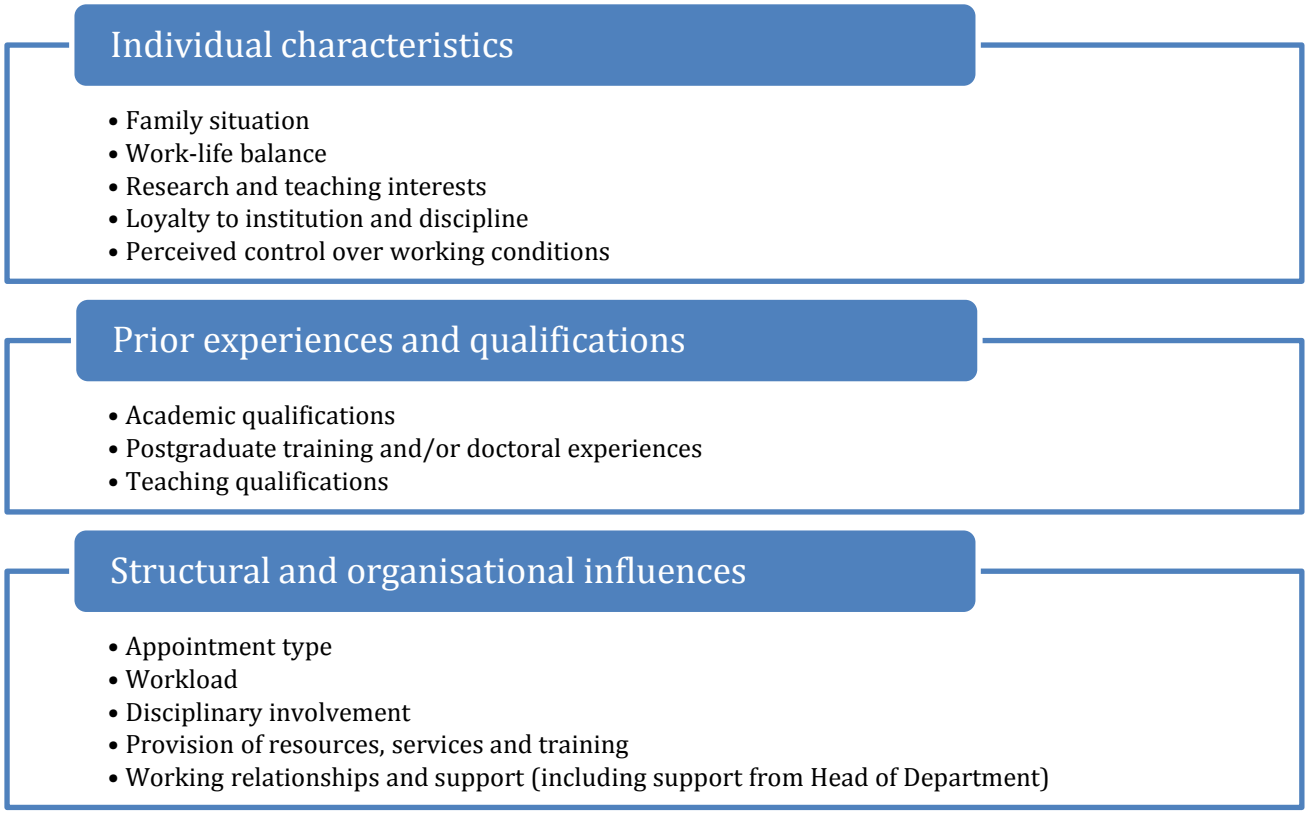


Figure 4: Factors influencing ECA success

The following sections investigate these factors in depth. In some places, we also compare early career academics' responses with responses to the managers' survey.

5.1 VARIABLES

We consider satisfaction, teaching and research confidence, and research outputs as indicators of varied forms of success in academia, and describe how we use these to interrogate our findings, below.

5.1.1 SATISFACTION

Satisfaction is one of the most commonly tested variables in studies of the academic workforce (Bentley, Coates, & Dobson, 2013). Because satisfaction is often strongly correlated with loyalty to the institution, intention to leave, and productivity, it is very important to consider. Throughout this report, for satisfaction we use the individual means provided in response to the question, "Overall, how satisfied are you as an academic?", in which the overall average was 2.15 on a 1–5 scale where 1 is *very satisfied* and 5 is *very dissatisfied*. The modal response was "satisfied" with 54 per cent reporting that they were *satisfied* and 21 per cent *very satisfied* as academics.

This compares with New Zealand scientists in the NZSA survey who indicated that their job satisfaction was moderate: 44 per cent agreed and 38 per cent disagreed that their job satisfaction had risen in the past five years (Sommer, 2010, p. 20). It contrasts with Australian data provided by Bentley, Coates, Dobson, Goedegebuure and Meek (2013a), whose study found that Australian academics are some of the least satisfied worldwide (only 55 per cent of Australian academics reported being satisfied or very satisfied with their current job) and with international data that found that 'only 57 per cent of academics in junior ranks [compared with 62 per cent over all ranks] reported satisfaction' (Bentley, *et al*., 2013b, p. 251). Despite the fact that the salary of a lecturer in a New Zealand university is at least 20 per cent lower than lecturers' salaries in Australia, Canada and the United States (Deloitte, 2012), early career academics in New Zealand appear to be more satisfied with their work than academics in comparable countries. The trend is similar to the overseas research, though, in that satisfaction is lower by rank, $F(3, 452)=6.79$, $p<0.001$, with Post Docs less satisfied than Lecturers and Lecturers less satisfied than Senior Lecturers.

Table 9: Overall satisfaction (by academic level)

Academic Level	Mean*	*n*	Std. Deviation
Senior Lecturer	1.97	100	0.797
Lecturer	2.08	239	0.866
Post Doc/Res Fellow	2.49	98	1.008
Other	2.16	19	0.834
Total	2.15	456	0.9

* 1 = very satisfied and 5 = very dissatisfied.

There is no statistical difference in satisfaction among male and female respondents, but satisfaction does vary across disciplinary areas, $F(12, 444)=2.25$, $p<0.01$. (Detailed data are available in Table 26 in Appendix 1.) Academics from the Biological Sciences and Education seem generally less satisfied than early career academics in other disciplines, and academics in Māori Knowledge and Development reported the highest levels of satisfaction (this was a small disciplinary grouping, however).

The following survey comments expand a bit on what generates such satisfaction:

> *I feel really well supported, I am well aware of the opportunities available to me, I know who to ask and I trust who I ask. I have a clear career plan and am well on track. Frankly I think I have the best job in the world.*
>
> [Lecturer, Social Sciences, Female, 40-44 years]

I am so grateful to have my job…talking with friends who have academic jobs in Australia and the US, I can clearly see the advantages I have here in NZ: much better job security, a much more reasonable teaching load, flexible working hours and a good work-life balance.

[Lecturer, Biological Sciences, Female, 35-39 years]

We pick up on many of the factors affecting satisfaction later in the report.

5.1.2 CONFIDENCE

Confidence is another important variable in our project for two main reasons: 1) it has been recognised as a characteristic of successful academics (Clegg & Rowland, 2010) and 2) it has been proven to have a significant effect on research output (Hemmings, & Kay, 2010). For confidence, we use responses to the questions, "How confident are you as a teacher?" and "How confident are you as a researcher?", in which overall means were 1.81 and 1.97 respectively, on a 1–4 scale where 1 is *very confident* and 4 is *not at all confident*. Most early career academics report a fairly high level of confidence in both their teaching and research work. (There was no relationship between teaching confidence and research confidence, $r(439)=0.04$, $p=0.30$).

Table 10: Confidence in teaching and research

	Research			Teaching		
	% All	% Men	% Women	% All	% Men	% Women
Very confident	29	41	20	35	40	32
Fairly confident	49	45	52	52	48	54
Not very confident	19	13	24	10	10	11
Not at all confident	3	1	4	3	2	3
Total	100%	100%	100%	100%	100%	100%
Mean*	1.97	1.76	2.11	1.81	1.74	1.86

* 1 = *very confident* and 4 = *not at all confident*

Both teaching and research confidence were weakly correlated with overall satisfaction with being an academic: $r(430)=0.18$, $p<0.001$; and $r(453)=0.14$, $p<0.001$ respectively. We looked more deeply into our demographic data to find out who were our most confident researchers and teachers, and found that men are more confident than women at research ($t(452)=-4.88$, $p< 0.001$) but there is no difference between the sexes when it comes to confidence in teaching. Other demographic data that appears to affect confidence includes where an academic was born and their age. A non-significant trend ($t(454)=1.79$, p=0.07) indicated that overseas-born early career academics are more confident researchers than New Zealand-born respondents. And, the younger early career academics are, the more confident they are as researchers, but the less confident they are as teachers.

While we might expect that younger academics might be less confident than their older counterparts, having had less life experience, we found that older early career academics reported less confidence in research ($r(455)=0.23$, $p<0.001$) and more confidence in teaching ($r(431)=-0.20$, $p<0.001$). Younger early career academics commonly enter academia from a PhD and have had several years focussed on research, but often little teaching experience or opportunity (especially during a New Zealand PhD – less than half of New Zealand early career academics gained teaching experience during their doctorate, whereas nearly three quarters of early career academics who did their doctorate overseas gained some form of teaching experience – see Section 5.3.2). Older early career academics, by contrast with the younger age group, enter academia from years of experience in another industry or profession, but often have little research experience; indeed, many begin their PhD (or even Masters) upon appointment. The following survey comment emphasises how difficult some of these older academics find the career transition:

I wish I had transferred from industry to academic life earlier, instead of starting at 40 years. Whilst I have considerable support from my HOD regarding a pathway to my PhD, I am still well behind my

colleagues in terms of research experience/output. Plus, with a high teaching load, it is hard to 'catch up' on the research side of things even with a strong goal to develop research capacity.

[Senior Lecturer, Business, Female, 45-49 years]

Research confidence, not surprisingly, is positively related with research output, and below we describe how we have defined and will use research output in the rest of the report.

5.1.3 RESEARCH OUTPUT

We use research output as a variable because, as Enders and Kaulisch (2006, p. 87) make clear, "The prime criterion for success in academia was, and still is, performance in research". This claim is reinforced by much of the literature on success in academia (Hemmings & Kay, 2010; Laudel & Gläser, 2008; Parker, 2008). We asked respondents to indicate how many peer-reviewed research outputs they had produced over the course of their academic career to date and then conducted a hierarchical cluster analysis of participants based on responses to the research outputs question, using Ward's method as the clustering algorithm (Hair, Tatham, Anderson & Black, 1996). This analysis suggested that there were four 'clusters' or groups of participants with more in common with each other (in terms of the amount and type of typical research outputs) than with members of other clusters.

The four clusters were:

1) *Low Overall Output* (characterised by a low number of outputs across all categories of output type) = 34% of respondents

2) *Med/High Journal and Low Conference Output* (characterised by medium to high journal article publications, but low number of published conference abstracts and proceedings) = 20% of respondents

3) *High Conference and Med/High Journal Output* (characterised by medium to high journal article publications, book chapters, and high published conference abstracts) = 31% of respondents

4) *High Overall Output* (characterised by a high number of journal articles, book chapters, published conference proceedings and abstracts, and keynote presentations) = 15% of respondents.

A table showing the breakdown for these clusters is in the appendices, and we use these clusters to analyse other data later in the report. The next section of the report looks at the individual characteristics of early career academics in New Zealand universities and considers the relationship of these characteristics with early career academics' satisfaction, confidence and, in some cases, research output.

5.2 INDIVIDUAL CHARACTERISTICS

As outlined in Section 4, the majority of our respondents are young, female and from overseas, but a variety of different living and employment situations were described, as well as varying opinions about what is important at work and home. In fact, early career academics' family circumstances are considerably varied, and it is important to bear this in mind when working out how best to support new academics setting out on their careers. The following section outlines first the family and living situations of respondents, including household employment and childcare arrangements, and notes vastly significant differences for men and women. As discussed earlier, sex of respondents is an important factor in research on academia because of the lack of women at higher levels of leadership in universities (Human Rights Commission, 2012). New Zealand research has shown that women are under-represented in academia in general, but over-represented in the lower ranks (Human Rights Commission, 2012) and that they lack role models at the higher levels of academia (Doyle, *et al*., 2004). International research, including in New Zealand, shows that women publish less than men (Doyle *et al*., 2004; Wilson, 2012), spend more time on service activities (Wilson, 2012) and pastoral care for students (Doyle, *et al*., 2004), are more likely to be on part-time contracts and less likely to be in permanent roles (Doyle, *et al*., 2004) and apply for promotion less often than men (Doyle, *et al*., 2004). For all these reasons, we felt it important to consider sex of respondents as a factor in our project, and for many of the questions we asked, we provide data on the differences in responses from men and women. After considering family and living situations in this section, we then look at early career academics' perceptions of their work-life balance, where their teaching and research interests and loyalties lie, and the issues of key concern they face. This section concludes with findings relating to early career academics' experiences of the Performance Based Research Fund.

5.2.1 FAMILY AND/OR LIVING SITUATIONS

In order to find out a bit more about the kinds of lives early career academics live beyond as well as within the university, we asked about their family and living situations. More early career academics (75%) have spouses or partners than do not (25%), and 21 per cent have partners who are also academics. Relationship status varied by sex of participant, with men more likely to be in a relationship than women ($\chi^2(4)=19.08$, $p<0.005$). Only a few early career academics (11%) live by themselves. The majority live with a partner and/or children or other family members. A few early career academics are in commuting relationships or have a partner living in a different country, and the majority of the partners in these circumstances are themselves also academics. For those with partners, a variety of employment situations were described, with the most common being that their spouse or partner was employed full-time somewhere other than at their university.

Table 11: Household employment situation (percentage of respondents, by gender)

Household employment situation	% All	% Men	% Women
My spouse/partner is not employed outside the home	17	28	9
My spouse/partner is employed full-time at this institution	15	16	15
My spouse/partner is employed part-time at this institution	2	2	1
My spouse/partner is employed full-time elsewhere	41	24	54
My spouse/partner is employed part-time elsewhere	14	20	9
My spouse/partner is self-employed	8	7	9
Other	3	3	3
Total	100%	100%	100%

Household employment situation varied considerably by sex of participant ($\chi^2(6)=46.24$, $p<0.001$). Men were more likely to report that their spouse or partner was not employed outside the home or was working only part-time, whereas women in relationships were more likely to have partners in full-time employment elsewhere.

Nearly half (49%) of all ECAs have children, with the vast majority (89%) of those children still dependent and/or living at home. Of those with children, more than half (54%) report that they do not put their children in paid childcare. Outside of the times that any children *are* in paid childcare, the responsibilities for looking after children are shared by ECAs as follows:

Table 12: Childcare responsibilities for respondents with children (percentage by gender)

Childcare responsibilities (other than paid childcare)	% All	% Men	% Women
I am the primary caregiver	28	5	46
My spouse/partner is the primary caregiver	23	45	6
My spouse/partner and I share the childcare between us	44	47	42
My ex-partner and I share the childcare between us	2	2	2
Another family member provides regular, ongoing childcare	<1	0	1
Other	2	1	3
Total	100%	100%	100%

While the most common situation was that childcare was shared with the academic's partner, there was a significant difference in childcare responsibility by sex of participant ($\chi^2(5)=69.63$, $p<0.001$). Women were less likely than men to have a partner at home looking after the children, and more likely to be taking the primary childcare responsibility themselves. This has potential consequences for early career academic women, who are trying to balance all the challenges of a new career with raising a family:

> *I have just had a new baby, and the pressure to return to work early has been high due to financial circumstances and very limited (9 weeks) parental leave on full pay. This has exacerbated pressures associated with trying to balance work and home life, and I am prioritising differently. Yet this is not easy because the normal expectation is to prioritise work. This adds unnecessary stress and pressure at a time when I want to be enjoying my expanding family.*
>
> [Lecturer, Social Sciences Female, 40-44 years]

By contrast, men with children appear to have more choice about how to balance their work and family lives. The following comment shows how differently a male academic reacts to the birth of a new baby and the opportunity for parental leave. Both respondents find their situations stressful, but the woman sees nine weeks' parental leave as not enough to care adequately for herself and her child, while the man returns to work earlier in order to protect his career prospects:

> *My wife and I recently had a baby so I was entitled to 9 weeks paternity leave. I have a 2 year contract (from an external funding source which I applied to and was successfully awarded a fellowship). I feel that if I had taken the full time-off which was offered to me, then I would sabotage my future funding opportunities and career.*
>
> [Post Doc, Biological Sciences, Male, 30-34 years]

Besides caring for children, 16 per cent of all respondents also had other caring responsibilities, including a partner or relative with an illness or disability, caring for aged parents or relatives, caring for grandchildren, looking after younger siblings or caring for the children of a deceased sibling. Of those with other caring responsibilities the majority (70%) also had dependent children. Keeping in mind the ageing of the New Zealand population, university employers may need to be more mindful of the additional care responsibilities many academics (not just early career academics) will face as their parents age. Because family and living situations often have a big impact on any attempt to achieve some sense of an ability to balance work, family and personal expectations, we asked a series of questions about perceptions of work-life balance and we outline these below.

5.2.2 WORK-LIFE BALANCE

Respondents indicated the extent to which they agreed or disagreed with 17 statements about work and life outside work. Responses were provided on a 1 (*strongly agree*) through 3 (*neutral*) to 5 (*strongly disagree*) scale. Example statements included "People comment on my high number of work hours", "I seldom find time to relax", "I regularly find time for myself, e.g. to read for pleasure, pursue a hobby, go to a play or movie, etc.", and "I am satisfied with my work-life balance". Principal Component Analysis indicated the work-life balance questions represented a single component that accounted for the majority of variation (α=0.91). That is to say, analysis showed that people responded to these statements as a single family of questions (or they did not respond in ways that suggested there are different sub-families of work-life balance questions). Therefore, respondents' scores on the scale were averaged.

The distribution of scale scores indicates that the average respondent felt neutral about the extent to which they were able to achieve a balance, with a mean score of 3.1 (see Table 30 in Appendix 1). Respondents' reported ability to balance their work with expectations outside the university and family life varies somewhat by position, with work-life balance reportedly more difficult to manage the more senior an early career academic is.

Comments on the questionnaire about work-life balance were overwhelmingly negative, with only 12 respondents making positive comments on work-life balance. The positive comments fell into five key themes, listed below, with a sample comment for each theme:

1) good self-management, which included an ability to manage their own time well, decisions not to take work home or to work fewer hours, and prioritising time for exercise and/or family:

   I have chosen to prioritise work-life balance and organise my work and work day to take advantage of when I am most productive. I feel I work hard at work, but relax after hours, although in reality I do spend quite a lot of time worrying and thinking about work when I am not there. It takes considerable discipline to leave work at work.

   (Lecturer, Biological Sciences, Female, 35-39 years).

2) being single or having no children:

   I am a young single person with no family in New Zealand. Given that that is the case and that I am ambitious I am likely far more content with my work life balance than I might be if I had a family.

   (Senior Lecturer, Social Sciences, Male, 30-34 years).

3) going part-time:

   I have come back to work part time after a year of maternity leave. My department has been very accommodating of my need to work less hours now, and allowed me to ease slowly back in to work while sorting out childcare for my daughter, and I now work 24 hours per week, which (although I am quite busy) is exactly how many hours I want to work.

   (Research Fellow, Physical Sciences, Female, 30-34 years)

4) having a supportive family:

   I hate actually taking annual leave – I get bored too quickly, so I take my family with me on work trips – they see me and I can work for a few hours a day – everyone is happy...although, I'm sure my family would prefer to see me more...but they realise a happy me for a few hours is better than a grumpy me for a whole day!

   (Senior Lecturer, Commerce, Male, 30-34 years)

5) working in New Zealand:

Compared to what I've seen in other universities overseas, the work-life balance here is fantastic! The very fact that you refer to the "end of the working week" and worry about people taking work home implies that people here expect to have a weekend and to have evenings free, whereas overseas (and, to be honest I think, among more driven academics here) working during these times is the norm.

(Lecturer, Physical Sciences, Female, Under 30 years)

By contrast with these positive comments, a high number (96) of respondents made negative comments about their work-life balance. These comments fell into seven key themes, which are outlined below. In Appendix 2, we provide a table with further examples of comments from each of these themes and indicate how common each was by showing the number of comments that were coded at each theme.

1) Workload: including, high number of work hours; too much teaching or administrative responsibilities; not enough time for research; having to do research outside of work hours because of teaching and/or service expectations; working more hours than other colleagues

   In academia it seems to be the norm that to succeed you need to work many more hours than you are being paid for. I get the impression that if you don't do this, people (e.g. future employers) will feel you are not committed. I find this an entirely undesirable situation that is kept up by fellow (early career) academics who, in my opinion, lead unbalanced lives, overachieve and make others who wish to have a better work-life balance look bad.

   (Post-doc, Physical Sciences, Female, 30-34 years)

2) Family: including, balancing family's expectations with work hours; fitting in time for children's activities and/or childcare during the week and at weekends; wanting to spend more time with family OR, in contrast, wanting to spend more time at work; family not understanding academic work expectations; single/older colleagues not understanding pressures of family life

   I have two children under five and work extremely hard. The combination of the two is what makes life exhausting. Thankfully I have an extremely supportive husband. I do take work home most nights and struggle to switch off. This frustrates me more than anyone else as I want to strike a better balance. When I am at home with my kids I prioritise time with them, but the moment they are in bed, I am at it again. I love my job though!!!!

   (Senior Lecturer, Health Sciences, Female, 35-39 years)

3) Contract-type*:* including, lack of job security and/or career progression opportunity because of type and length of fixed-term contract/s; part-time contract with full-time expectations; balancing more than one contract; having to constantly seek more funding and thus needing to spend time writing applications for funding that would otherwise be spent on research or teaching; needing to bolster CV with other activities that are not included in contract

   My work life balance is totally out of kilter, but then again I do field work which I enjoy. BUT I spend far far too much time applying for grants and attempting to stay afloat. I get no help or support in this and know full well despite my contributions (which are quite hefty) I will be gone when my research grant finishes. So does one just go now or actually stay working one's backside off in the hope of things changing?

   (Research Fellow, Biological Sciences, Female, 50+ years)

4) Stress: including, dealing with problematic colleagues/manager/students; worrying about workload; worrying about career progression; worrying about contract/job security; worrying about not spending enough time with family

   I need to take sleeping pills on Sunday nights due to thinking too much about work to get a good night's sleep.

   (Lecturer, Physical Sciences, Male, 35-39 years).

5) Expectations of others: including, promotion expectations; pressures of the PBRF; colleagues who work long hours and thus raise expectations for everyone else's working hours; work culture

within the department or university being excessive; challenge of balancing teaching, research, service, administration and management expectations early in career

> *The fact that senior members of my department attempt to monitor and police when I am in the office is offensive given that I often work much more than 40 hours a week. With a young family, flexibility with my work schedule is really important, but there is no tolerance for this in my department whatsoever.*
>
> (Lecturer, Social Sciences, Male, 35-39 years)

6) Doing a PhD

> *Over the last four years I have carried a full teaching load (with over 350 students), while doing my PhD on a full time basis. My husband has been in the same situation and we have two teenagers. What work-life balance? However, once the PhDs are completed, I intend to correct this.*
>
> (Lecturer, Commerce, Female, 45-49 years)

7) Perceived personal inability to manage time: including, not fitting in enough exercise; not knowing how to tune off from work; working longer hours than personally desired; not knowing how to say no.

> *I struggle to maintain a balance and often wonder if I am just badly organised or whether my commitments are too much. No-one ever admits to working less than they think they should.*
>
> (Senior Lecturer, Health, Female, 45-49 years)

In both the positive and negative comments about work-life balance, respondents recognise that there are individual and structural issues at play. Some imply that any perceived lack of balance is entirely their own fault because they have 'chosen' to do a PhD, or have children, or work at two universities or take on extra responsibilities. Others blame 'the system' that requires them to add extra roles or outputs to already stretched workloads. In the focus groups, similar themes arose and participants all commented, with varying degrees of frustration and despair, about the difficulties of managing academic careers and young families, or of seeking funding to continue in an academic role, or of battling hard to meet others' expectations (either the university's, the Head of School's, or the academic's own family's expectations). Focus group participants in all locations were vocal in their desire for more clarity from the institution about what is expected of early career academics in terms of output, time on campus, service commitments, and when and how to apply for various funding and promotion opportunities. We expand on these needs later in the report and identify what early career academics seek most in terms of support, information, resources and services. In the meantime, the next section of the report looks into the research and teaching interests, as well as loyalties, of the early career respondents.

5.2.3 Research and Teaching Interests

We asked respondents to indicate where their interests lay in terms of research and teaching, and more than two-thirds reported that they were primarily interested in or leaning towards research, rather than teaching.

Table 13: Research and teaching interests

Interests Lie	% All	% Men	% Women
Primarily in research	27	24	29
In both, leaning towards research	40	44	36
Equally in research and teaching	22	23	21
In both, leaning to teaching	8	5	11
Primarily in teaching	4	4	3
Total	100%	100%	100%
Mean	2.22	2.19	2.24

The mean overall was 2.22 (where 1='Primarily in research' and 5='Primarily in teaching'), which represents a strong leaning towards research. There was no statistical significance in this difference in means by sex of respondent, but on average men leaned slightly more toward research than did women. Across the eight New Zealand universities there was a significant difference *(F*(7,441)=5.14, *p*<0.001) in the way that respondents at each university responded to this question. At the four older universities, there was a clear leaning towards research, with respondents at the other universities being more inclined to be equally interested in both research and teaching. A much higher percentage of respondents at University 3 were interested primarily in teaching than at any other university (*p*<0.05) (see Table 31 in Appendix 1).

Respondents to the managers' survey also indicated in a final question in the survey that a strong interest in research is a desirable characteristic for early career academics. We asked the managers for one piece of advice that they would give to a new academic and 77 of the 104 manager respondents provided advice. There were two dominant themes: be resourceful, and be a productive researcher. Many of the managers simply wrote, "Publish". Others wrote the following kinds of comments:

- *Get started on publishing as soon as you can. It is the key determinant of progression.*
- *Focus on research and international publications; do as little teaching and service as is possible*.

The second comment above was countered by several others, who stressed that new academics should seek a balance between their focus on research and teaching; we pick up on this later in the report (a table of the key themes from the managers' advice is available in Table 32 in Appendix 1).

Given this strong leaning towards an interest in research, and the messages that early career academics are receiving from their managers about the importance of research, we sought to investigate what kind of impact an interest in research might have on satisfaction and were surprised to find that early career academics who are predominantly interested in research have lower satisfaction than those who are interested in both teaching and research, *F*(4,432)=3.84, *p*<0.05. There were no significant differences in satisfaction between any of the other interest categories. Where early career academics' interests lie will arguably affect how they approach their work. For example, if they feel that an excessive amount of teaching is expected of them when their interest is primarily in research, they will be less likely to express satisfaction with their working conditions as implied above. Any mixed messages they might receive will also affect their satisfaction. An apparently clear focus on research performance as 'the key determinant of progression' (see above) is often muddied by contradictory messages around teaching development, high teaching loads and/or unclear promotion information: "A recurring complaint of [early career academics] is that they find university expectations for their performance opaque and ambiguous" (Kligtye, 2011, p. 201). Fanghanel and Trowler (2008) found that working conditions for academics are generally unspoken, academic labour is often invisible, the various systems in place to account for academic labour are inadequate, and ultimately that "regulation of practice through audits, measurement of performance outputs, and rewards has had limited effect on enhancing practice for all" (p. 311). Lucas (2006) agrees that, in the absence of clear rules for the game, new academics orient their practice towards the performative expectations of whatever system is most conspicuous, for example, the Research Assessment Exercise (RAE) in the UK or the PBRF in New Zealand. This may go some way to explaining the sense of dissatisfaction some of the early career academics with a strong interest in research express, and may well indicate an intention to leave sooner than others whose interests and work commitments or expectations are more closely aligned. That so many early career academics express a stronger interest in research than in teaching indicates that universities will have to carefully manage academic workloads and expectations to ensure some level of loyalty to the institution. We investigate this in more depth, below.

5.2.4 Loyalty

Respondents completed 13 questions about loyalty to their institution, department and discipline, using a 1 (*strongly agree*) to 5 (*strongly disagree*) scale. Principle Components Analysis indicated that participants responded to these as if they belong to two sets of questions, the first assessing loyalty to one's institution (for example, "I would recommend my department/unit as a good place to work", "I feel strong loyalty to my department/unit colleagues", and "I would turn down a higher salary to stay at this university") and the second assessing loyalty to one's broader discipline or profession (for example, "I feel strong loyalty to my discipline", "I would turn down a higher salary to stay in this profession", and "I get intellectual pleasure from my job"). Reliability analyses produced alpha scores above 0.7, and there was no statistical difference by sex of respondent.

Table 14: Academic loyalty

	n	Mean*	Std. Deviation
Loyalty to institution	459	2.6	0.84
Loyalty to discipline/profession	457	1.9	0.66

* 1 = *Strongly agree* and 5 = *Strongly disagree*

Overall, participants indicated greater loyalty to their disciplines/professions than they did to their institutions. This plays out at all levels and across all disciplines and is most pronounced at Senior Lecturer level and in Mathematics and Information Sciences, Humanities and Law, and Education. Those respondents who were more satisfied with their roles also reported higher loyalty to their discipline $r(455)=0.52$, $p<0.001$, and institution $r(456)=0.61$ $p<0.001$. This combination of satisfaction and loyalty would suggest that these respondents may be more inclined to stay in their jobs longer, and such loyalty and commitment is thus an important objective to endorse.

Loyalty to the discipline is reinforced by the answers to another question in the survey, which asked respondents to identify their peer group. More respondents identified colleagues in the same discipline as their peer group than colleagues at the same academic rank, on the same type of contract or in the same department.

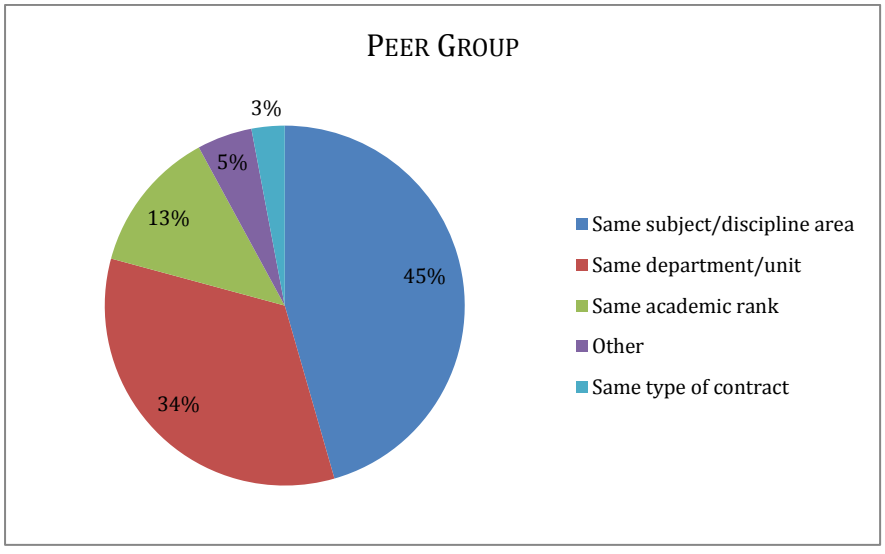


Figure 5: Peer group as identified by respondents
(Other included: 'professional group (i.e. social workers),' 'colleagues I respect,' 'other Māori academics,' and 'anyone who wants to talk to me.')

Early career academics in Humanities and Law, and the Creative and Performing Arts are the most likely to identify their peers as their disciplinary colleagues, while Social Science academics are least likely to, preferring instead to think of their departmental colleagues as their peer group. Universities need to be aware of where early career academics' loyalties and affiliations lie when designing support programmes and considering how best to help them transition into their institutional workplace. Bolden, Gosling and O'Brien (2013, p. 9) found in their research in the UK that 'many people expressed a sense of disengagement from their own institutions and a lack of clarity around organisational boundaries….A sense of citizenship was expressed more often in relation to one's academic discipline and/or professional group'. As Bolden *et al*. (2013) and other researchers (Laudel and Gläser, 2008; Meyer & Evans, 2005; Warhurst, 2008) have argued, many academics recognise themselves first by disciplinary affiliation – as historians, scientists, psychologists or geographers, for example – in which case their loyalties are with people outside the institution, and there will be considerable work to do to help these new academics to settle in to the university. This is confirmed by responses to two questions about settling in to the university. Participants were asked how easily and quickly they settled into their jobs, and their responses, on a scale where 1 is *strongly agree* and 5 is *strongly disagree,* were means of 2.41 for speed of settling in and 2.86 for ease of settling in – neither of which are convincingly positive. Part of what makes settling in to a new workplace easier is the provision of relevant information, resources and services at the appropriate times, and we look at this in depth in Section 5.4.7. Meanwhile, alongside considering where academics' loyalties lie, it is important to find out what matters to them in terms of issues of personal importance, and the next section considers such issues.

5.2.5 Perceived control over working conditions: Issues of key concern

Respondents indicated issues of personal importance to them, in terms of their academic careers, on a scale of 1 to 5, where 1 is *very important to me* and 5 is *not at all important to me*. These items were derived from the literature on academic careers and from various definitions for success that were provided by successful early career academics in an earlier pilot phase of the project (Sutherland & Petersen, 2010). Interviewees were asked what success meant to them personally, and their responses included many of the following items.

Of the 22 items on the list, the early career respondents considered all but five to be important to varying degrees. The five issues not considered important were all status- or income-related (earning a high salary, the status of having an academic job, achieving recognition by the public, having managerial responsibilities, and becoming professor quickly) and garnered neutral, rather than negative, responses.

Table 15: Issues of personal importance (from most to least important)

Very Important	*n*	Mean	Std. Dev	Men	Women
My family or relationships outside work	457	1.39	0.86	1.52	1.30
Autonomy in my job	457	1.50	0.83	1.59	1.42
A job which makes a positive contribution to society	458	1.50	0.85	1.68	1.37
Seeing students succeed	456	1.57	0.99	1.51	1.60
Job security	457	1.58	0.89	1.61	1.56
The chance to do innovative work	457	1.59	0.92	1.54	1.60
Having an income adequate to my needs	457	1.60	0.83	1.57	1.60
Other interests outside work	457	1.95	1.22	2.22	1.76

Fairly Important	*n*	Mean	Std. Dev	Men	Women
Achieving recognition by my peers	457	2.03	1.17	2.05	2.01
Helping others to better themselves	457	2.05	1.19	2.07	2.04
Working in a reputable university	455	2.10	1.26	2.07	2.13
Being recognised by my managers as doing a good job	458	2.10	1.23	2.38	1.94
Securing external grant funding	453	2.15	1.38	2.04	2.21
Influencing postgraduate students' opportunities	457	2.31	1.35	2.17	2.40
Continuing to work in the higher education sector	456	2.36	1.41	2.58	2.24
Social interactions with work colleagues	456	2.43	1.40	2.60	2.33
Being a leader	458	2.83	1.54	2.77	2.85

Neutral	*n*	Mean	Std. Dev	Men	Women
Earning a high salary	458	3.12	1.54	3.06	3.17
The status of having an academic job	457	3.27	1.39	3.25	3.28
Achieving recognition by the general public	458	3.30	1.45	3.18	3.39
Having managerial responsibilities	457	3.41	1.34	3.38	3.44
Becoming professor quickly	458	3.44	1.37	3.15	3.63

Most important was "family and relationships outside work", and women were statistically more likely to rate this as very important than men, $t(450)=3.38$, $p<0.001$. Family was followed closely by "autonomy in the job" and "a job that makes a positive contribution to society", both of which women were also more likely to rate as very important, $t(450)=2.24$, $p<0.05$, and $t(451)=4.08$, $p<0.001$. Having other interests outside of work, $t(450)=4.00$, $p<0.001$, and being recognised by their managers as doing a good job were more important to women, $t(451)=3.03$, $p<0.01$, and men valued influencing postgraduate student opportunities, $t(450)=-2.03$, $p<0.05$, and becoming a professor quickly, $t(451)=-6.15$, $p<0.001$, more than females did.

The following quote from a survey respondent sums up the kinds of priorities, and corresponding challenges, early career academics face as they try to balance personal and institutional aspirations and expectations:

> *I enjoy the intellectual challenges of my job, and my research and teaching offer much joy and inspiration. I work hard and have long hours and am okay with that, but administrative duties are excessive and interfere with my ability to do research. Management issues are an almost constant source of stress that very seriously interfere with my ability to enjoy my time off. Most non-work days are for recuperation and preparation for return to work.*
>
> [Senior Lecturer, Social Sciences, Female 35-39 years]

Least important to early career academics in this list of issues of personal importance were status and a high income. These findings compare with the opinions of the New Zealand scientists in the NZSA survey (Sommer, 2010) in which the top three reasons for becoming a scientist were: intrigue with the search for truth and knowledge; desire to contribute to the improvement of the material and intellectual conditions of humanity; and an expectation of a sense of accomplishment by becoming an expert in my field. The "least cited reasons included: 'the potential to become famous for my research' and 'the potential to

achieve greater wealth than possible through other careers'" (Sommer, 2010, p. 26). As the table above shows, New Zealand early career academics care more about what their peers think of them than their managers or the general public, but they do want to serve society, and often find it difficult to do this, keep students and their families happy, and get promoted, in an environment where they are worried about funding and managerialism, as evidenced by the following quote:

> *I think one of the major issues for NZ universities is lack of democratic governance (only 1 item addressed that issue in the questionnaire) and the transference of decision-making from faculty to business managers. I certainly believe that universities should be financially viable, but autocratic leadership coupled with an over emphasis on profit-making may eventually cripple the capability of universities to serve as society's leader, critic, innovator, and intellectual stimulator.*
>
> [Lecturer, Maori Knowledge & Development, Female, 45-49 years]

In particular, as already alluded to in the previous two comments and further supported by the comment below, early career academics are frustrated by a perceived lack of autonomy coupled with what many referred to in the survey comments and during focus groups as 'excessive bureaucratisation':

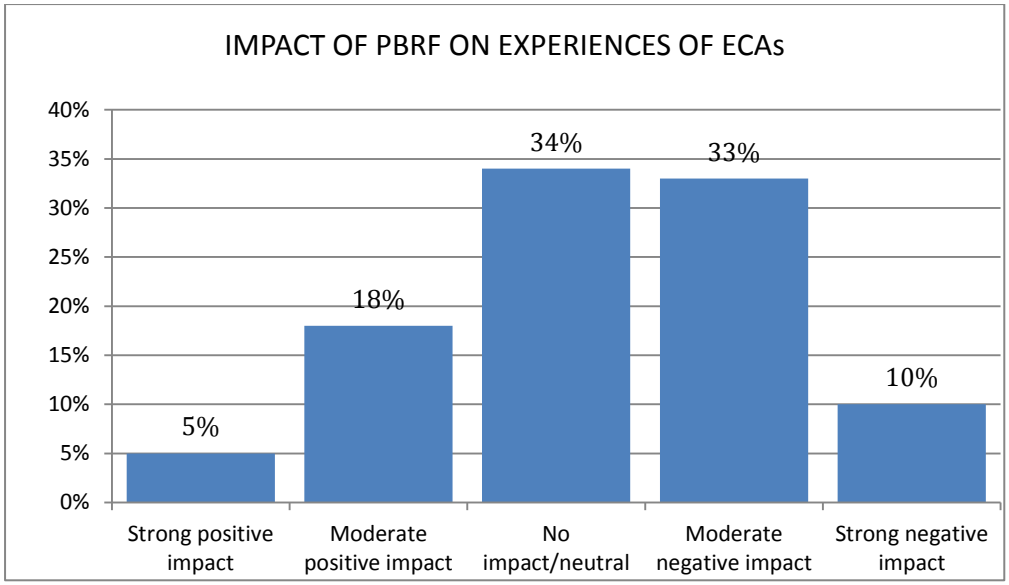
> *I returned to NZ after working in top research institutions in Europe and the US expecting that work in a NZ university would be less stressful and I would have more time to devote to family and other interests. However, I find that working in a NZ university is even more stressful due to the higher amount of "performance control", lower resources for research in terms of funding and time but still high expectations.*
>
> [Lecturer, Health & Medicine, Male, 35-39 years]

5.2.6 The impact of the PBRF

Perhaps the biggest bureaucratic imposition that early career academics complained about was the Performance Based Research Fund (PBRF). Because this survey was conducted at the end of the most recent PBRF round, we deemed it appropriate to ask early career academics how they thought the PBRF had affected them as academics, and few were positive. Respondents were asked, "How would you rate the impact that the PBRF has had on your academic experience?" Response options were:

1. Strong positive impact on my life as an academic
2. Moderate, positive impact on my life as an academic
3. No impact/neutral
4. Moderate, negative impact on my life as an academic
5. Strong, negative impact on my life as an academic

The modal response was neutral.



Mean=3.24
Std.Dev=1.04
n=458

Figure 6: Impact of PBRF from early career perspective

An ANOVA revealed significant differences between satisfaction and the impact of the PBRF on their experience, $F(4,449)=7.03$, $p<0.001$. Those who perceived the PBRF as having a strong negative impact were significantly less satisfied than those who rated it neutral and more positive.

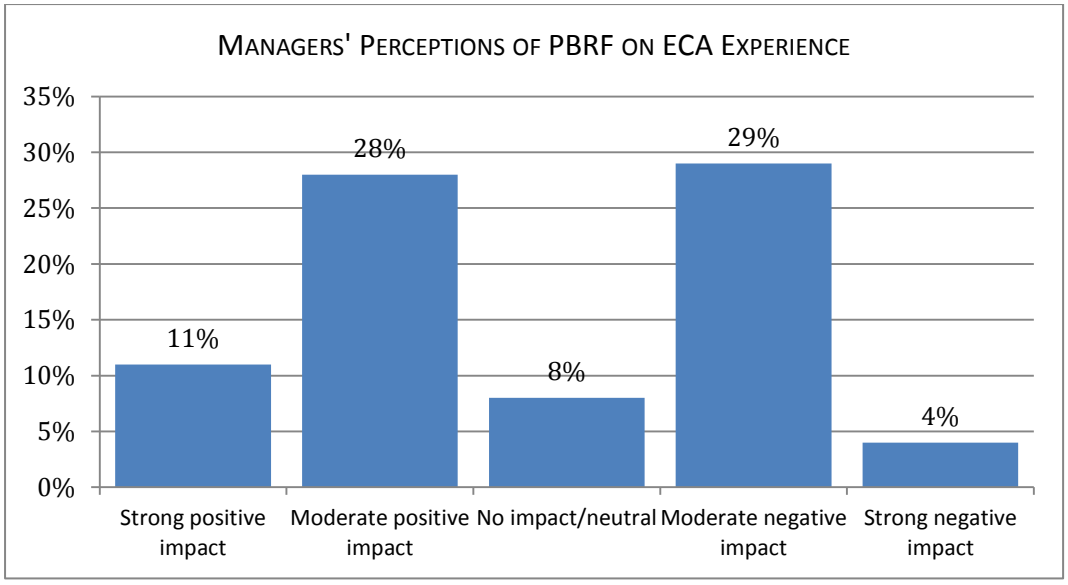
The three comments below provide some further insight into why so many early career academics expressed a negative attitude towards the impact of the PBRF, from impact on workload, to the lessening importance of teaching, to the pointlessness of having to fill in boxes to tell others what we already know:

> *I feel unfairly treated by the PBRF system. The timing of my employment and limited support due to continual fixed term contracts combined with very high teaching load mean the PBRF assessment does not reflect my true contribution or potential.*
>
> [Lecturer, Physical Sciences, Male, 35-39 years]

> *PBRF has diminished the importance of teaching and the primary role of a university. I am continually being told it is all about the outputs! Academia is losing its appeal.*
>
> [Senior Lecturer, Science, Female, 50+]

> *The PBRF was stressful as for months it has been a big deal at work; my direct boss is in charge of coordinating it so we have heard a lot about it. Frankly as an early career researcher I would have been a C grade, no matter what I did, but I was still expected to spend hours chasing after poster presentations at conferences, and making statements about how important they were to me, which is frankly rubbish.*
>
> [Post Doc, Engineering, Technology & Architecture, Female, 40-44 years]

The fairly negative response from early career academics, as represented by the statistical findings and the comments (some examples of which have been provided above), contrasted with a bi-modal response from managers. We asked managers the same question, phrased slightly differently to ensure that they were thinking about the answer in relation to the experiences of early career academics, rather than themselves or all academics. Thus, the question was, "From your experience working with early career academics, how would you rate the impact that the PBRF has had on their academic experience?" The managers' responses, laid out in the figure below, show that they perceived a moderate positive impact on the lives of early career academics (mean=2.84).



Mean=2.84
Std. Dev=1.21
n=80

Figure 7: Managers' perceptions of the impact of the PBRF on the experiences of early career academics

However, the bi-modal response implies that not all managers were positive about the PBRF, and the following survey comment reinforces this:

> *Most academics, especially with PBRF, seem to think that academia is a competitive rather than a cooperative enterprise, both within and between institutions.*
>
> [Manager from University 3]

Clearly, managers and early career academics have different perspectives on the impact of the PBRF. This may be because managers were exposed more to PBRF from a departmental and institutional perspective, not just an individual experience. Our data suggest, however, that despite the neutral response to the performance evaluation of research through the PBRF, early career academics have, in the main, a stronger interest in research than in teaching. There is the possibility that this finding has been somewhat skewed by the timing of the survey at a time when most respondents would likely have just come out of a period of intense research activity given that it was the end of the PBRF cycle. Our findings resonate, however, with the work of Jespen and colleagues (2012) in Australia, who found a shift in the last two decades towards a higher priority on research than teaching. Their two surveys (one nationally with research students (Edwards, *et al.,* 2011) and one at a single Australian university with academic staff (Jespen, *et al*., 2012)) showed that Australian PhD students and academics put more weight on research than on teaching activity.

Regardless of their stronger interest in research than teaching, early career academics report a deep concern for students and place student success very high in terms of importance to them personally ('seeing students succeed' was fifth of 22 items of importance). Early career academics in New Zealand universities report that they are driven by relationships with family, friends, students and colleagues, and by contributing to some sort of change in society. As we think about how best to support new academics, it will be important to remember this relational focus and allow plenty of opportunities for them to build, extend and nurture those relationships as they develop their academic careers. We need also to be aware of the loyalty that academics express towards their disciplines, and the frustration they feel at not having autonomy over their work choices, in both research and teaching. Giving voice to early career academics' concerns, as well as allowing – and explicitly encouraging – them to take part in decision-making processes within our institutions may work towards decreasing the perception of excessive bureaucratisation and may increase loyalty to the institution.

In order to give voice to early career academics and allow them to build the kinds of relationships with the institution and other academics that will lead to this desired loyalty and employment commitment, we need to understand the prior experiences that early career academics bring with them to their new roles. The following section explores various prior experiences that the research literature on academic careers has identified as being significant for academic success and satisfaction.

5.3 Prior Experiences and Qualifications

Because the experiences that academics have during their graduate training, and in other industries and professions before entering academia, have a significant bearing on how well they will do as academics (Bazeley, 2003; Billett, *et al.*, 2005; Fairweather, 2002; Laudel & Gläser, 2008; Williamson & Cable, 2003), we investigated various aspects of the prior experiences that New Zealand early career academics might have had before taking on their current academic roles. In particular, we looked at the following:

- their academic qualifications
- the postgraduate and/or doctoral training they received
- their teaching qualifications.

5.3.1 Academic Qualifications

Seventy-four per cent of respondents have a doctoral degree and 12 per cent are working towards a doctorate. Of those with doctoral degrees, 51 per cent earned them in New Zealand, and 49 per cent overseas. When we delve further into the data on nationality and doctoral degree qualifications, we discover that the majority of New Zealand-born or New Zealand-raised (those who indicated that they were born overseas but have spent most of their lives in New Zealand) early career academics have a New Zealand doctorate (65% versus 35% of New Zealanders with an overseas doctorate). Amongst those born overseas, just 18 per cent have a New Zealand doctorate. And of those working towards a doctorate, 11 per cent are working towards an overseas, not a New Zealand doctorate (the percentage is the same whether the doctoral candidate is New Zealand-born and/or raised, or grew up elsewhere). There was no significant difference in overall satisfaction with being an academic, p=0.31, based on where the doctorate was completed, nor were there significant differences in research confidence based on completing doctoral studies overseas or in New Zealand, p=0.32. However, early career academics who completed their doctoral degree overseas produced slightly more research outputs $t(335)$=-2.5, p=0.01 and teaching confidence was significantly higher for early career academics who completed their doctoral degrees overseas, $t(321)$=3.05, p=0.003. We speculate that this may be related to the emphasis on teaching experience built into North American doctoral programmes, and in the next section we report on the kinds of teaching and research experiences that respondents reported gaining during their doctoral degrees.

5.3.2 Training during doctoral degrees

The opportunities that academics receive during their doctoral experience have a significant impact on their research and teaching confidence. Nearly two-thirds published some of their research during their doctorate and gained some tutoring or TA experience, and nearly half gained lecturing and/or course coordination experience.

Those who answered that none of these statements described their experience during their doctorate, tended to fall into one of three camps: either they were working full-time as academics during their PhD and did not see the PhD as the training ground implied by these questions, or they were working off campus and/or taking care of children so only had time for their thesis, or they were distance students who were not necessarily able to take advantage of these opportunities even if they were offered. The majority, however, were offered both research and teaching experiences during their doctoral training, with fewer being given (or taking up) service opportunities.

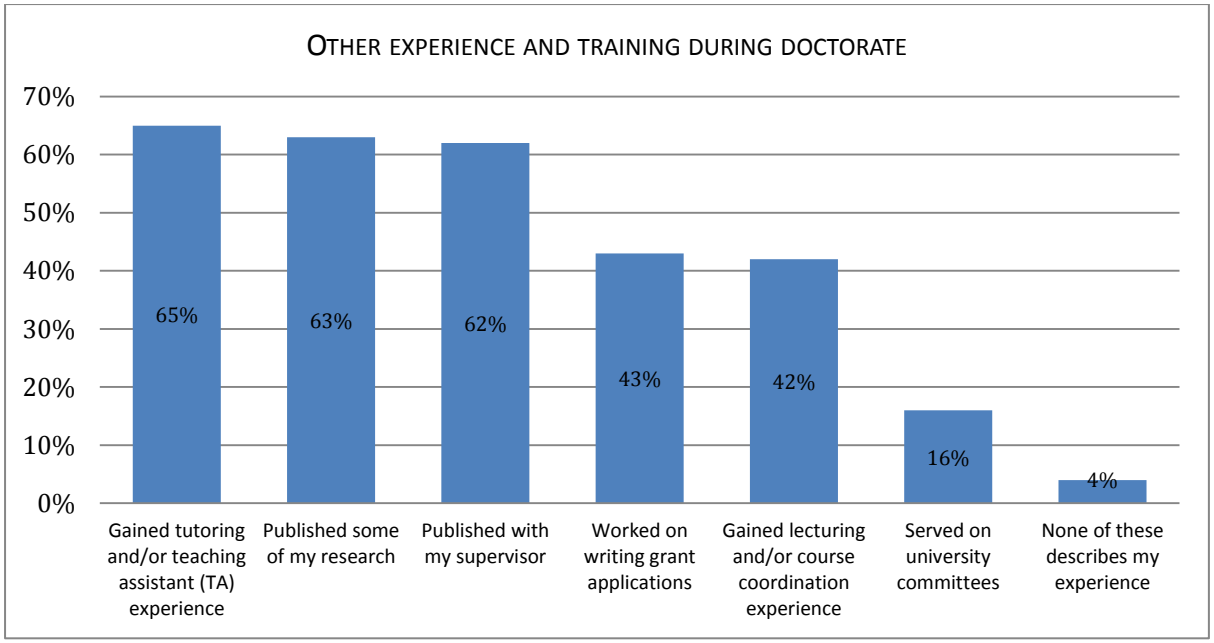


Figure 8: Other experience and training during doctorate

The strongest positive relationship between doctoral experience and research confidence is found in those who published some of their research, either independently or with their supervisor, during their doctorate. These groups differed significantly in terms of teaching and research confidence (multivariate $F_{\text{Research \& Teaching}}(6,460)=2.44$, $p<0.05$), but there was no significant univariate effect for research confidence ($F_{\text{Research}}(3,230)=0.75$, $p=0.52$). In terms of teaching confidence, the strongest positive relationship with experience during the doctorate is found among those who gained some form of lecturing or course coordination experience – this also had a positive impact on their research confidence. Serving on university committees during the doctorate also had a significant positive impact on research and teaching confidence.

As discussed earlier, we constructed research productivity 'profiles' of participants, using Ward's Method as the clustering algorithm, to aggregate people in groups of similar number and type of publications. This identified four profiles that represented low, low/medium, medium/high and high volumes of research output. We wanted to see if there was a correlation between publishing activity during doctoral study and career research output. Respondents who reported not having published some of their research or not having published with their supervisor during their doctorate were more likely to have low overall research output. The results (see appendices) indicate that publishing during a PhD may be indicative of greater than expected research output.

It is clear from these data on respondents' postgraduate experiences that early career academics in New Zealand universities have come into academia from a variety of backgrounds and with a diverse array of prior training and experience. Most (75%) have a doctoral degree and of those who do not, more than half are working towards attaining one. During their doctoral (or other higher degree) training, the majority gained both research and teaching experience, in terms of publishing and tutoring, although less than half gained lecturing and/or course coordination experience. Those who did not publish during their doctoral training, either independently or with their supervisor, recorded a lower overall research output across their career to date than those who published during their doctorate. Research in the US has shown that the status of the university from which one receives one's PhD has less relationship with later research productivity than the academic's current affiliation (*i.e.* if they are at a top-tier university now), but that academics with PhDs from higher status universities are more likely to be appointed at higher status universities for their career, creating a Matthew effect ('the rich get richer') (Valle & Schultz, 2010). We did not collect data on status of PhD-granting university, but do note higher research productivity from

the early career academics at the older New Zealand universities. Also at the older universities, fewer early career academics are likely to have teaching qualifications, as we outline in the next section.

5.3.3 Teaching Qualifications

The majority of early career academics do not have any form of teaching qualification. Fifteen per cent have a higher education teaching qualification and 13 per cent have another teaching qualification, while only two per cent report that they are studying towards a higher education teaching qualification at present.

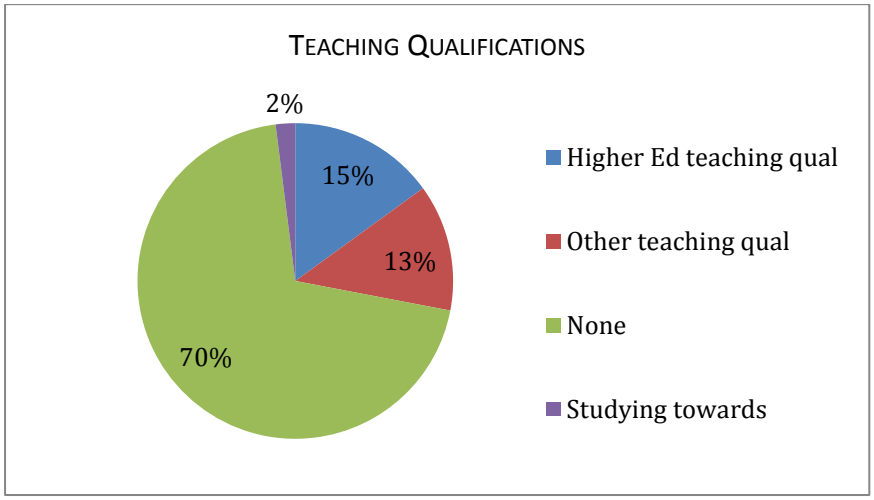


Figure 9: Teaching qualifications

Prior experiences, including the postgraduate experience, and whether people have had the opportunity to gain teaching qualifications prior to or during their first academic appointment, have a significant impact on confidence. Those early career academics who have a New Zealand teaching qualification are more confident teachers ($t(439)=2.29$, $p<0.01$) than early career academics with any other type of teaching qualification or no teaching qualification at all.

University 3 has a much higher percentage (60%) of early career academics with a teaching qualification, and with a higher education teaching qualification specifically (33%), than any other university. About one third of early career academics at Universities 4 and 7 have a teaching qualification of some description (with a significant percentage of these being overseas qualifications), while the other universities have less than a quarter either holding or studying towards a teaching qualification of any description (see more detail on this in the appendices).

Later in the survey, we asked participants to indicate how important they thought "the opportunity to gain a tertiary teaching qualification" was. This item was ranked lowest out of 36 resources, services and training items and was the only item not considered important by early career academics (mean=2.63 on a 1–4 scale). Early career academics in New Zealand universities appear not to consider gaining a teaching qualification as an important part of their professional development. In part this may be because they are simply not *aware* of the opportunity; nearly 40 per cent answered that they did not know whether their university provided the opportunity to gain a tertiary teaching qualification and two per cent said that such qualifications were not offered by their university. In fact, *all* eight New Zealand universities offer the *opportunity* to complete a tertiary teaching qualification, either through a programme at their own university or in conjunction with another New Zealand or overseas university by distance. Academic development units and faculties of education which offer these qualifications will need to keep both this ambivalence and lack of awareness in mind as they work out how and to whom to target these qualifications. Ako Aotearoa and the Higher Education Research and Development Society of

Australasia (HERDSA) will also need to be cognisant of this as they work towards any accreditation scheme for tertiary teachers. As our research shows, early career academics in New Zealand universities are predominantly discipline-focussed academics who spend more time on, and are more interested in, their research than their teaching and value their autonomy, so any moves to require them to 'professionalise' their teaching may well be met with some resistance.

Such resistance may also arise when early career academics are asked to engage in activities with which they do not agree, which they feel threaten their autonomy, or about which they have not had the opportunity to be involved in the decision making. As discussed earlier, autonomy is very important to early career academics (second only to family and relationships outside work), so the influence of the university's structures and expectations, and the provision, of resources and services (or perceived lack thereof) can be very significant for an early career academic's experience. We explore this further in the next section.

5.4 Structural and organisational influences

As discussed in the literature review, the university (the structure within which early career academics work) has a powerful influence on academics' experiences and their likelihood of success and satisfaction (Blackburn & Lawrence, 1995; Bland *et al.*, 2006; Azad & Seyyed, 2007). The decisions that university employers make about the contracts under which early career academics are employed, the workload and activities they expect academics to undertake, the funding they provide, and the resources, services and training early career academics might have the opportunity to undertake, all come to bear on academic satisfaction, confidence and productivity. We look into each of these issues in turn below.

5.4.1 Appointment Type

Sixty-three per cent of respondents were first appointed on contract, and into full-time roles (73%), but the vast majority are now both permanent (72%) and full-time (86%). In terms of confidence and satisfaction, those ECAs currently in full-time appointments are more confident researchers ($t(455)=-.77$, $p<0.01$) and more confident teachers ($t(431)=-2.36$, $p<0.05$) than those who are in part-time appointments. Satisfaction is also higher amongst those who are employed on a full-time contract, $t(454)=-2.93$, $p=0.004$, and with permanent status, $t(454)=-5.08$, $p<0.001$.

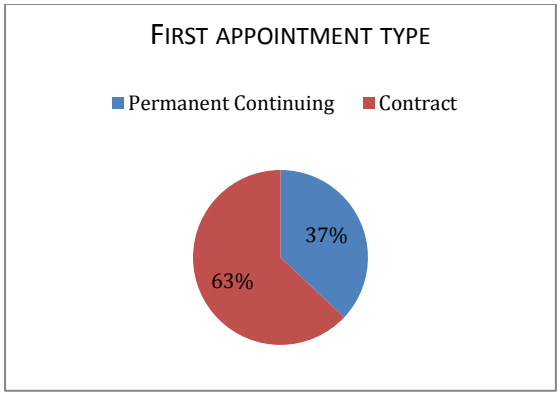


Figure 10: First appointment type

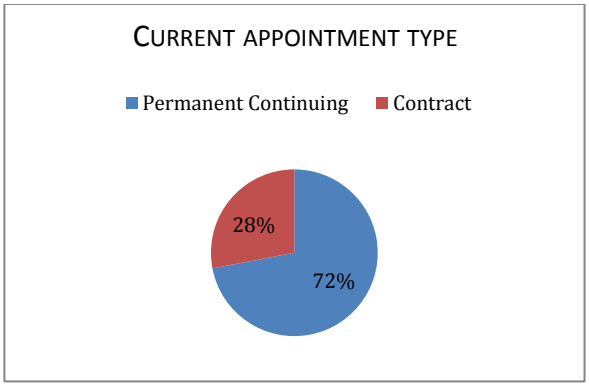


Figure 11: Current appointment type

Women are significantly more likely to be in part-time roles ($\chi^2(1)=21.62$, $p<0.001$), and more likely to have been originally appointed as part-time ($\chi^2(1)=18.84$, $p<0.001$). This corresponds with Doyle *et al.*'s (2004) findings in their study of academics at Massey University, and with other research in New Zealand. For example, in 2012 the New Zealand Human Rights Commission (NZHRC) reported on the status of women in New Zealand and noted that while New Zealand universities are continuing to make incremental progress for women academics, less than a quarter of senior academic staff are female. "Women's low representation at the top, despite increasing participation at entry level, remains systemic and frustrating" (NZHRC, 2012, p. 2).

According to the survey comments, and our focus group conversations, for some women working part-time or on contract is a choice:

> *I have negotiated to work very part-time to care for our children, but have been fully supported to stay on a confirmation path. There is little time for me but I love my job and my kids.*
> [Senior Lecturer , Health & Medicine, Female, 35-39 years]

> *My department has been very accommodating of my need to work less hours...and I now work 24 hours per week, which (although I am quite busy) is exactly how many hours I want to work.*
> [Research Fellow, Physical Sciences, Female, 30-34 years]

For the vast majority, however, they would rather have a full-time and/or permanent contract and the job security and benefits that such contracts entail. The following two comments sum up well several of the issues associated with part-time contracts, and the frustration felt by many women, and some men, in similar situations:

> *I took on the position as I had always wished to work at tertiary level and because my previous professional work experience had meant that I felt very optimistic about taking on the risk of 0.5 work, as I anticipated that this would increase once I was within the institution. At 0.5, I am ineligible to receive the fee waiver for PhD study within my university and am ineligible for other professional development (PD) opportunities. The particular contract that I am on 'trades' a yearly PD allowance for a six-month or full-year sabbatical (if you are full-time,) every six years, thus I have had no opportunity for PD over the time I have so far been employed at the university. I have considered self-financing my own attendance at conferences* etc.*, just so I can get ahead; however, my current salary precludes me from being able to do this. Therefore, without being able to attend conferences* etc.*, it is difficult to generate research and to find out what the trends* etc. *are within my discipline area. My experience has thus far been frustrating and for the first time in my professional career I feel that there are obstacles before me and that prejudice exists due to my gender. There is much more I could write on this topic.*
>
> (Lecturer, Education, Female, 35-39 years)

The young academic quoted above finds it difficult to climb the academic ladder because she does not have as much opportunity to engage in the kinds of professional development that would help her to get promoted or to secure a full-time academic role. Another finds it difficult to balance her employer's expectations with her family's, and struggles to fit everything in to her working week satisfactorily:

> *Contract work is not well understood by the people employing me,* i.e.*, the Principal Investigator(s) on my grant (I am 0.5FTE). Whatever I do is never enough, which I think rests on their own standards as permanently employed academics. In the past this was interpreted formally as my "having difficulties getting the work done". I therefore have absolutely no choice as to priorities and one of my 3 children deeply resents this, the other is very sad and the youngest just gives me long hugs and sleeps on a mattress on the floor of our room to get more time close to me. My husband and I pass like ships in the night and I still do all the laundry, dishwashing, childcare and homework organising and general cleaning (though not the lawn mowing).*
>
> [Research Fellow, Social Sciences, Female, 50+]

Supporting our ECAs involves recognising the choices that many make to work in different ways, as well as acknowledging (and doing what we can to help them overcome) the barriers that some face in attempting to pursue an academic career. Hearing the varied stories of ECAs will help us all to better understand the experiences that others are going through, and one of the aims of this project is to allow some of those voices to be heard.

Our data show, for example, that even in the early stages of an academic career, women and men have considerably different experiences of academia because of the other responsibilities or expectations they have placed on them. Women are less likely to be married, but more likely to have primary childcare responsibilities and less likely to have a partner at home looking after the children. As well as more childcare responsibility, women are on average more likely to have other caring responsibilities, particularly for aged parents or ill relatives. They are also more likely than men to be appointed into part-time roles and to continue in part-time positions. Whether or not women *choose* to work part-time in academia is not clear from our research, but their part-time status arguably makes it harder for them to progress through the academic ranks, in that they do not apply for promotion as often. There was a non-significant trend ($t(453)=-1.85$, $p<0.05$) in our data on promotion that shows fewer women than men actually apply for promotion, but are no less successful than men when they do apply. The way they spend their time also varies somewhat, as outlined in the next section.

5.4.2 TIME SPENT ON ACADEMIC ACTIVITIES

The expectation that academics will spend 40 per cent of their time on teaching, 40 per cent on research, and 20 per cent on service is well known. Some promotions handbooks and workload policies spell this out explicitly (for example, the University of Waikato's Academic Workloads Policy, available on the web at: http://www.waikato.ac.nz/official-info/index/docs/academic-workloads-policy states this very clearly), and academics are expected to account for their time thus. We tested this workload distribution and found that, across the country, the figures nearly fit the 40-40-20 model, although slightly more time is reportedly spent on research than on teaching. We asked respondents the following question: "Generally speaking, what percentage of the time you spend on academic work goes to each of the following activities? Please make sure that your three entries add up to 100% overall." (Not all participants followed these instructions, so the total did not add up to 100%.) Supervision was included under research, while service and administration were either to the institution or the community, but related to their role as academics.

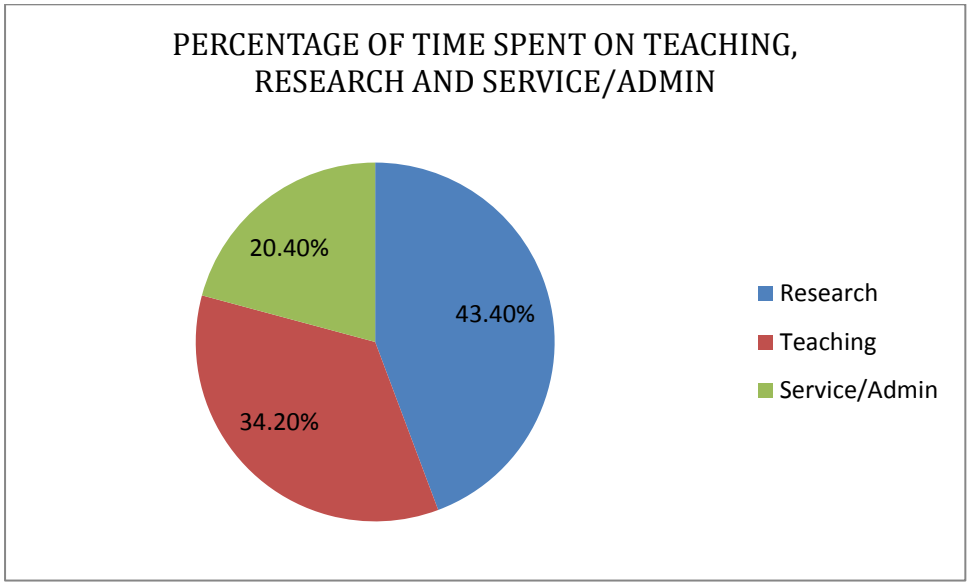


Figure 12: Percentage of time spent on teaching, research and service/admininstration

There was no difference in the percentage of time men and women reported spending on teaching, research and admin, $F(6,908)=0.57$, $p=0.76$, though the variance among men for proportion of time spent on research ($p<0.001$) and teaching ($p<0.005$) was less than that reported by women. That is, there is more diversity among women in the amount of time they say they spend on research and teaching. The four clusters for research output also differed by amount of time spent on research, $F(3,317)=5.91$, $p=0.001$, or teaching $F(3,317)=5.65$, $p=0.001$. Not surprisingly, spending less time on research results in a significantly lower research output, as does spending more time on teaching. Time spent on administration and service was not statistically associated with any variation in research outputs.

Early career academics in the Biological Sciences report spending the most time on research (57.3%), while early career academics in Creative and Performing Arts spend the least time on research (28.6%) and the most on service and administration (28.9%). Humanities, Law and Education early career academics spend the most time on teaching. (More detail in appendices.) There was a significant difference in proportion of time reportedly spent on research, $F(12,449)=5.73$, $p<0.001$), teaching ($F(12,449)=6.09$, $p<0.001$) and administration ($F(12,449)=1.84$, $p<0.05$).

Respondents in Māori Knowledge and Development and the Creative and Performing Arts report spending significantly more time in service-related activities than ECAs from other disciplines. The comment below, from a Māori academic explains some of this:

Some of this has to do with management not understanding how being Māori in an institution has an impact; working to support people to understand why we do things the way we do can be very wearying, and doubles our work-load…Last week, last minute, a group came to the marae. I was there from 4.45pm until 7.30pm, unplanned. I do not begrudge that, because it is about the mana of our marae, but it is not taken into account when we talk about workload.

[Lecturer, Education, Female, 45-49 years]

Perhaps not surprisingly, the amount of time spent on research increases the higher up the academic salary scale one moves, with Senior Lecturers spending more time on research than Lecturers. However, Post Docs and Research Fellows, given their roles, spend the most time on research, and Tutors (included in the Other category) spend the most time on teaching, with a significant proportion of their time taken up in service and administrative activities.

These data show that the 40-40-20 academic activities split is a close fit for early career academics in New Zealand, who report that they spend slightly more time on research than on teaching and service (43-34-20). This slight leaning towards research could be partly explained by the fact that we conducted this survey in the first half of 2012, when most of the participants would have been immersed in completing their evidence portfolios for the Performance Based Research Fund. It will be interesting to conduct this survey again during a different phase of the PBRF cycle to see if the results would be any different. Given the significant differences in how time was apportioned in different disciplines (academics in the science disciplines spend much more time on research than on teaching or service, and those in creative disciplines, humanities, law and business spend more time on teaching), the people supporting early career academics need to make sure that newcomers understand the expectations of their discipline in terms of how time tends to be spent. The next sections probe a bit more deeply into just what research, teaching and service activities entail.

5.4.3 Research Activities

In terms of research output, the most popular forms of publication were conference abstracts and journal articles, with only 9.0 per cent and 9.3 per cent of respondents not having published a conference abstract or journal article respectively. By contrast, and not surprising given the stage of their career, most had not yet published a book or given a keynote address.

Table 16: Research outputs by type

	Percentage reporting such publication (%)					
Output type	None	1-4	5-10	11-15	16+	N/A*
Journal article	9	33	31	13	14	<1
Authored book (other than PhD theses)	83	13	<1	0	0	3
Edited book	85	13	1	0	0	1
Chapter in book	40	53	6	<1	<1	<1
Full conference paper in published proceedings	32	41	14	3	7	4
Conference presentation/abstract published	9	33	30	9	18	1
Keynote address (published)	87	9	<1	0	0	3
Major creative work (Film, dance, play, exhibition, *etc*.)	67	5	1	1	<1	25

* We included the Not Applicable option, because some forms of publication output do not occur in some disciplines (major creative works, for example).

These data compare with the NZSA 2008 survey of New Zealand scientists (Sommer, 2010), which found that of the New Zealand scientists surveyed, 90 per cent had published a peer-reviewed journal article in the past five years, 64 per cent had published work in refereed conference proceedings, 44 per cent had written a chapter in book, 13 per cent had published an edited book and 11 per cent an authored book. We looked into whether men and women published more or less in particular modes and discovered that men are statistically more likely to have published more journal articles ($t(321)=4.34$, $p<0.001$), more edited books ($t(452)=2.47$, $p<0.05$), more chapters in books ($t(455)=3.60$, $p<0.001$), and more conference presentations/abstracts ($t(455)=4.47$, $p<0.001$) than women.

We also asked respondents to complete the following statement, "I publish more…" with one of six choices, listed in the table below. This revealed that six per cent had not yet had anything published, and that, overall, multiple authorship was more common than single authorship.

Table 17: Publication activity: Single or multiple authorship

"I publish more…"	% All
By myself	23
With one other author	13
With two or three other authors	26
With multiple authors	14
A combination of the above	18
I have not yet had anything published	6
TOTAL	100%

There is a significant difference between overall research output and typical publishing collaborations, $F(5,462)=19.91$, $p<0.001$, with more publications arising out of collaborative efforts. Those who combine collaborative and independent publications have a greater number of research outputs than those who only publish by themselves (Mean difference=3.54, SE=0.88, $p=0.001$), or with one other person (Mean difference=3.13, SE=1.33, $p=0.031$). There were no significant differences by discipline, most likely due to the range within each category ($p=0.13$).

Finally, for research activity, we also asked about the research funding that early career academics have received. The majority (79%) of respondents have not received *internal* research funding (that is, funding that is provided from within their university) of more than $50,000. However, significantly more have received *external* research funding, with 39 per cent of all respondents indicating that they have gained more than $50,000 in external funding (nine per cent report having managed to secure more than half a million dollars of external funding). On average, men have been more successful at securing funding (both internal and external) than women.

5.4.4 Teaching activities

As well as looking into the kinds of research output and funding that early career academics engage with, we also asked respondents to indicate across an average academic year how many courses (units/papers) they would usually teach. The most common course load was three to four courses per year, with only 18 per cent teaching more than that. Women reported teaching fewer courses in an average academic year ($t(450)=2.63$, $p<0.01$). Further analysis of number of courses taught by sex and part-time or full-time status showed that women reported teaching fewer courses regardless of part- or full-time status.

We also asked at which levels early career academics have taught in the past 12 months, and the most common levels were third year/300-level and Masters/Postgraduate level (61 per cent and 58 per cent had taught at these levels respectively, in the last 12 months). However, there was a good mix across all levels and only 18 per cent who had not done any teaching in the past 12 months. These were generally Research Fellows or Post Docs, but also included one Associate Professor and one Senior Lecturer, as well as five Lecturers. The only sex difference in teaching levels was for 300- and 400-level, where men were more likely to report teaching at these levels than women ($\chi^2(1)=16.03$ and 9.88, $p<0.005$).

5.4.5 Supervision activities

Less than half of New Zealand ECAs are currently involved in supervising postgraduate students, but for those who are, Masters level is the most common supervision responsibility (41 per cent have supervised one or more Masters students to completion). Only 22 per cent of ECAs have successfully supervised a doctoral student to completion (which is not surprising given that doctorates usually take three or more years to complete and many of our respondents have not yet served three years in their academic roles,

so could not be expected to have seen any of their doctoral students complete yet). Encouragingly, nearly half (47%) are currently supervising at least one doctoral student.

Women do less supervision than men, particularly at Honours and Masters level, and are less likely than men to have supervised Honours students to completion, but have supervised similar numbers of Masters and Doctoral students to completion. Part of this may be explained by the fact that more women are in part-time positions than men, so may have fewer opportunities to engage in supervision, but there could be other explanations that warrant investigation.

5.4.6 Disciplinary involvement

As well as engaging in the teaching, research and supervision activities that universities assign to and expect of them, early career academics are also expected to be active members of their disciplinary societies. Sommer (2010, p. 14) argues that "[s]cientists contribute to the vigour and stability of their professions by participating in affairs of scientific societies such as meetings of Member Bodies of the Royal Society of New Zealand, programmes sponsored by the New Zealand Association of Scientists, or in organisations specific to disciplines" and goes on to show that more than three quarters of his survey respondents (scientists across New Zealand, not just in universities) attended meetings of, or have otherwise been active in, such societies. By contrast, the early career respondents to our survey are less actively involved than Sommer's scientists in their disciplinary societies. Less than a third indicate active involvement (being an office bearer or committee member, organising a conference or event, or being involved with a journal's editorial board, for example) and only slightly over half (52%) are paid up members. However, the majority of respondents do report that they attend one national and one international conference per year (with men more likely to attend at least two international conferences yearly than women). Worryingly, though, if conferences are as significant a form of professional development and networking as the literature implies they are (Baruch & Hall, 2004; Hitchcock, *et al.*, 1995; Solem & Foote, 2004), it is of concern that one fifth of respondents do not attend any national conferences, and one quarter do not attend any international conferences at all.

In order to develop a disciplinary reputation, academics in the 21st century need to be mobile and free to build their academic networks. Leeman (2010), for example, discovered that the 'ideal type' of mobile academic is "an independent, socially privileged, academically supported, cosmopolitan academic individual…with an academic family background, without children and partner, who had career-oriented support during doctoral studies…and got an approved fellowship from…[a] research funding institution" (p. 619). Leeman claims that transnational academic mobility is now an expected aspect of a young academic's career and that academic success happens more quickly for those who have spent time abroad. It is, indeed, "a normative requirement of a successful academic career" (Leeman, 2010, p. 612). Being able to fufill this requirement of mobility depends, however, on the responsibilities one has domestically and within the institution. Lynch (2010) notes that "the idealized worker is one that is available 24/7 without ties or responsibilities that will hinder her or his productive capacities" (p. 57). She suggests that one needs to be able to renounce one's caring responsibilities (for students, families, children, and departmental/university service) in order to succeed in academia:

> *[Y]ou need freedom from necessity to be an academic….those who are in a position to globalise their point of view are generally people who have time to do the promotional work that international academic scholarship requires, not only writing and research time, but care-free travel time, networking time, conferencing time and general self-promotional time* (Lynch, *et al*., 2007, pp. 2-3).

People who do not attend any New Zealand conferences are less satisfied with their job than those who attend three or more New Zealand conferences a year, $F(5,427)=3.11$, $p<0.01$, or attend at least two overseas conferences, $F(5,425)=3.52$, $p<0.01$. Academics who attend one or two overseas conferences are more confident researchers than those who do not attend any overseas conferences, $F(5,432)=7.53$,

$p<0.001$. There was no significant relationship between New Zealand conference attendance and research outputs or confidence (teaching or research). Attending more than one overseas conference annually, however, was significantly related to producing a greater amount of research outputs, $F(5,437)=14.77$, $p<0.001$. Given these findings, we should perhaps be looking more closely at how to encourage (and fund) early career academics to get more involved with conference attendance and service work in their disciplines as early as possible in their careers.

Early career academics have several activities assigned to them (teaching and supervision, for example) or expected of them (research output and service to the university and discipline), and can reasonably expect that they will be provided with support, resources and services that will enable them to undertake these activities effectively and fulfil these expectations adequately. But, as we have already discussed, early career academics come from different disciplinary, national, educational and training backgrounds and what one early career academic might consider vitally important in terms of support another may have already received full training for or at least feel adequately equipped to undertake. The next section investigates the importance of various support, resources and services that universities provide for early career academics and draws distinctions between what academics indicated they most need and what managers think is most important.

5.4.7 Provision of resources, services and training

Our questionnaire began with two different sets of statements – one about institutional policies and services, and the other about working relationships and support. Respondents were thus asked to state how important they saw these various services, policies, relationships and forms of support as being to their own success as academics, and there were some clear preferences. Respondents indicated the extent of importance (for them) of 21 institutional policies and services on a 1 (*very important*) to 4 (*not at all important*) scale. These questions derived from the pilot phase of the project, where we interviewed successful early career academics at all eight New Zealand universities and asked, among other things, what they thought had contributed to their success in academia (see Sutherland & Petersen, 2010, for some of these early findings). Principle Components Analyses indicated that respondents tended to think of these 21 policies and services as belonging to three broad families of initiatives (with alpha scores all above 0.7) that we have labelled as follows:

Table 18: Clusters of resources and services

Teaching development and mentoring	Flexibility, rewards and benefits	Workload, research support and information
Professional assistance for developing/improving teaching	Recognition of each individual's contribution to the work of the university	Teaching relief in the early years of academic appointment
Peer observation of teaching	Rewards for good research	Paid or unpaid research leave
Formal mentoring programme for new academics	Rewards for good teaching	Workload policy within department/faculty
Availability of resources for teaching	Opportunity to work from home/out of the office	An upper limit on service obligations in the early years of academic appointment
Formal orientation programme for new academics	Availability of resources for conducting research	Travel funds to present papers or conduct research
Opportunity to gain a tertiary teaching qualification	Attractive/competitive salary and benefits	Information about criteria for promotion
	Availability and accessibility of child care	
	Flexible working hours	

Respondents considered all of these things (on average) to be at least "Fairly important" (the means for all individual items are available in a table in the appendices). The table above shows that Workload, Research Support, and Information were more important than Flexibility, Rewards and Benefits, which were, in turn, considered more important than Teaching Development and Mentoring. Even though Teaching Development and Mentoring ranked less highly, the differences were minimal, and the vast majority of respondents agreed that all these services and policies were important. The only individual item that they ranked as unimportant was "The opportunity to gain a tertiary teaching qualification".

This plays out, also, in the comments, where respondents prioritised the need for more support in the research, mentoring and resources aspects of their jobs than in teaching:

> *I would find formal support for how to write and access external grants immensely beneficial as this seems to be a skill and art in how to frame research and present it to a funding body.*
>
> [Lecturer, Health & Medicine, Female, 35-39 years]

> *I'm on a research fellowship that doesn't require teaching, hence my lukewarm responses about teaching.*
>
> [Research Fellow, Health & Medicine, Female, 40-44 years]

> *Need early guidance regarding publication and more marking assistance for language courses to create time for research.*
>
> [Lecturer, Humanities & Law, Female, 35-39 years]

Some respondents were clear that they could make their own way through, with little formal help or input, but required adequate funding foremost:

> *In general, the different types of organizational programs such as orientation and mentoring are extremely pointless. An academic knows her/himself the best way to organize time and carry out research and teaching effectively in the university. Sitting through a boring orientation for 2 days is just a complete waste of time. The institution should focus on the things that matters: travel funding, reducing teaching hours, funding for research collaboration (invited researchers,* etc.*), funding for research resources (books, software,* etc.*).*
>
> [Lecturer, Mathematics & Information Sciences, Male, Under 30 years]

This dismissive view was not widely held among respondents; in fact, most respondents rated formal orientation and mentoring as very important with means of 1.78 and 1.60 respectively, and more important than teaching relief. In fact, more comments focussed on the desire for and provision of *any* professional development and input that the university, faculty or department was willing to offer, in all aspects of the academic career:

> *The need for formal support is incredibly important – my department and university have not prioritised this at all.*
>
> [Lecturer, Biological Sciences, Female, 35-39 years]

> *I think that a lot of these things are available but not institutionalised, so it is really up to the individual how motivated they are to access them. For example, it would be great to get a tertiary teaching qualification, but it would be even better if this was supported with teaching relief in one's programme. The 'rewards' one gets for teaching/research are often implicit, and it would be good if managers were more proactive in expressing encouragement when one does well. But on the whole, I think that there is lots of good support out there if one is proactive about accessing it.*
>
> [Lecturer, Humanities & Law, Female, 30-34 years]

Managers also noted the importance of various forms of professional development in a section at the end of their survey, where we asked them to provide one piece of advice for new academics. Seventy-seven of the 104 respondents to the managers' survey provided advice and more than a third of those respondents centered their advice on new academics seeking professional development opportunities and mentoring:

- *Make use of all the opportunities to become acquainted with the university's policies and processes and use them*
- *Take advantage of what the university provides re: development*
- *Obtain a tertiary teaching qualification early in your career*
- *Locate mentors: within department; within higher management; external but within discipline; external and OUTSIDE your discipline; plus international mentor*.

We found a strong positive relationship between the provision of some particular professional development opportunities and provisions, and confidence in teaching and research. Teaching relief in the first year was not statistically related to teaching confidence but was related to research confidence ($t(430)=-2.24$, $p<0.05$). Formal mentoring also appears to be significant ($t(463)=2.21$, $p<0.05$) in terms of research confidence, but was not significantly related to teaching confidence. We speculate that this is because most mentoring relationships tend to focus on the research aspects of the academic role, rather than on teaching, but we have not explored this hypothesis. Thirty-five per cent of early career academics report not having had any form of mentoring over the course of their academic career, and only 26 per cent have engaged in a *formal* mentoring scheme as a mentee. A slightly higher percentage of women (71%) have received mentoring than men (63%), but there is no difference between men and women as to whether this mentoring is informal or not, though informal mentoring is more common (see appendices for more data on this).

Several higher education researchers have noted the importance of mentoring for academics, and the benefits are summed up well in this quote from Lucas and Murry (2002, p. 24):

> *[M]entored protégés compared with unmentored faculty newcomers, it is claimed by some researchers, do tend to feel more self-assured about professional risk-taking, exhibit greater political savvy, profess to feel more confident about their teaching, and, generally, in the long run tend to be more prolific researchers. Faculty with mentors have been found to be more productive, to receive more competitive grants, to publish more, and they indicate higher career and job satisfaction, while achieving greater long-term success than those not mentored*.

In our study, early career academics who have experienced six months or more of formal mentoring rate professional development as more effective than those who have not experienced mentoring, $t(106)=3.16$, $p=0.002$, which suggests that mentoring may play a role in exposing early career academics to other professional development opportunities and/or may help early career academics to be more proactive about having their professional development needs met.

About two thirds of early career academics have taken part in some form of professional development within the last 18 months, and the table below shows respondents' uptake of various professional development activities.

Table 19: Uptake of professional development activity in last 18 months

	% All	% Men	% Women
Teaching-related professional development workshop or seminar	64	70	60
Research-related professional development workshop or seminar	65	65	65
Personal development workshop or seminar	28	25	30
Overnight or residential prof. development event (*e.g.* writing retreat)	12	4	16
Other professional development event	7	3	10

NB: Other professional development included events such as wānanga, te reo training, Running Hot Conference, media training, and the Women in Leadership programme.

The kind of professional development that was most positively related with teaching confidence was attendance at teaching development workshops; those who attended a teaching development workshop were significantly more confident teachers than those who had not ($t(439)=2.96$, $p<0.001$). This is not to say that the workshops caused the confidence (they may well have been more confident teachers before attending the workshops, and their teaching confidence may even have made them more likely to seek out professional development opportunities in teaching). However, if we can identify some of the things that are related to teaching confidence, we can perhaps encourage more ECAs to engage with what is on offer. Research development workshops did not, however, have the same positive relationship with research confidence. Attendance at overnight or residential professional development events appears to have a significant relationship with both research and teaching confidence ($t(463)=-1.98$, $p<0.05$), but the numbers of people attending these workshops are small, so this is a tentative finding.

5.4.8 Working relationships and support

Overall, even more important than professional development, resources or funding is the support from the early career academic's Head of Department and from his or her departmental colleagues. For the second question in our survey, we asked respondents to indicate the extent of importance (for them) of 15 working relationships and types of support on a 1 (*very important*) to 4 (*not at all important*) scale. These items were, once again, identified from the literature and our pilot study as the kinds of relationships and support most likely to be considered important by early career academics. Examples include: "Good communication between university management and other academic staff"; "Opportunities to participate in decision-making processes"; and "Feedback from manager/s about my academic performance". Principle Components Analysis indicated that respondents tended to think of these as belonging to two broad families of support and relationships that we have labelled as follows:

Table 20: Clusters of support and relationships

Departmental support	Institutional engagement
Senior colleagues who are interested in my progress and well being	Opportunities to participate in decision-making processes
A Head of Dept/manager who is committed to my success	Opportunities to engage with student reps [outside formal classroom environments]
Regular contact with senior colleagues in my department	Good communication between university management and other academic staff
Support from Head of Dept/manager to apply for tenure or promotion	Opportunities to meet other new academics within the institution
Support from other departmental colleagues	Opportunities to meet with disciplinary colleagues beyond the institution
Informal mentoring relationships or opportunities	Regular contact with senior colleagues in other disciplines
Opportunities to make decisions about direction of my own research & teaching	Feedback from manager/s about my academic performance
	Support from administrative/general staff

These two clusters resonate with our earlier finding that early career academics tend to express stronger loyalty to their discipline than to their university. When we put the two lists of statements together – policies and services combined with relationships and support – the top three most important items were relational, not resource/service-oriented. Autonomy in decision making was most important, followed very closely by a Head of Department committed to the early career academic's success, and support from the Head of Department to apply for promotion.

Table 21: Most important services and relationships (from early career academics' perspective)

Rank	Item
1	Opportunities to make decisions about the direction of my own research and teaching
2	A Head of Dept/manager who is committed to my success
3	Support from HoD/manager to apply for tenure or promotion
4	Availability of resources for conducting research
5	Travel funds to present papers or conduct research
6	Senior colleagues interested in my progress and well being
7	Informal mentoring relationships or opportunities
8	Regular contact with senior colleagues in my department
9=	Support from administrative/general staff
9=	Good communication between university management and other academic staff
9=	Professional assistance in obtaining externally funded grants

Three of the most important items are related to research resources and funding, which reinforces the findings around interest in research being stronger than interest in teaching, but the others are all to do with either personal autonomy or relationships with colleagues. The significance of support from the Head of Department, in particular, and from other departmental colleagues comes out very strongly in respondents' comments:

> *My experience as an early career academic [here] has been awesome. I also was employed for 18 months at [an Australian university]. I felt overwhelmed and lost because the place was so big, and my workload was huge with little support or mentoring, although the people I worked with were great people. I believe my experience here has been so good because of my HOS and Head of Programme and the fact I work in a child-friendly dept.*
>
> [Lecturer, Social Sciences, Female, 40-44 years]

However, this support is variable and appears to depend on individual personalities as well as departmental cultures and structures:

> *I have never been offered orientation or support, but that may be a function of my department. I am aware that other departments work differently. I am very aware of a lack of transparency in who gets what and very aware that the 'club' get benefits not acruing to others.*
>
> [Research Fellow, Biological Sciences, Female, 50+]

The next section of the report looks more into this variability in support across departments and universities, and finds interesting correlations with how satisfied academics are, and the perceived effectiveness of the support and services available to them departmentally and university-wide. We found no correlation between how *important* these services and support were perceived to be and how satisfied early career academics are. What we did find was a vast and significant difference in how important early career academics rated these items and how important *managers* perceived them to be.

We asked a cross-section of managers of early career academics at all eight New Zealand universities the same questions about the importance of various institutional resources, services, support and relationships. Their responses were quite different from the early career academics' responses. Managers ranked the importance of teaching development and mentoring significantly higher than early career academics, $t(608)=2.13$, $p<0.05$, whereas there were no significant differences between the importance ratings of departmental support ($p=0.24$) and institutional engagement ($p=0.56$). Early career academics, compared with the managers, rated the importance of workload, research support and information, $t(608)=3.81$, $p<0.001$), as well as flexibility, rewards and benefits significantly higher, $t(608)=5.86$, $p<0.001$). For presentation purposes, the displayed charts show these ratings in reverse order, where a larger number indicates a higher level of effectiveness.

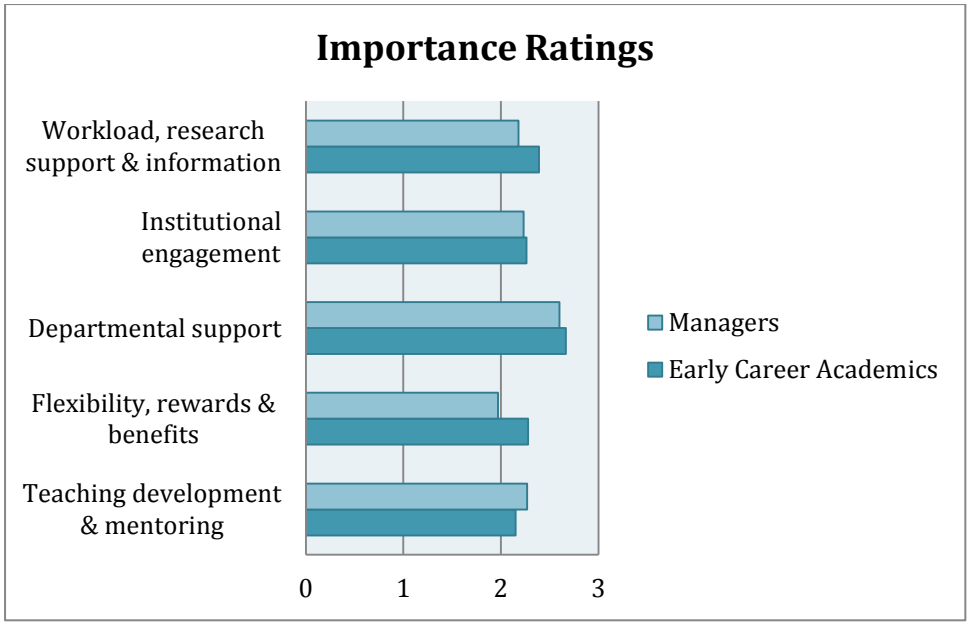


Figure 13: Importance ratings from managers' and early career academics' perspectives

The table below lists what *managers* perceived to be the top most important items from the questions about services, relationships and support (the rank was determined by highest mean score, from the scale, as described earlier, where 1 is *very important* and 4 is *not at all important*). The number in brackets is the rank given to the item by the early career academics.

Table 22: Most important services and relationships (from managers' perspective)

Rank	Item
1= (8)	Good communication between management and other academic staff
1= (12)	Feedback to early career academics from manager/s about their academic performance
3 (2)	A Head of Department who is committed to early career academics' success
4 (3)	Support from Head of Department to apply for promotion/tenure
5 (8)	Regular contact for early career academics with senior colleagues in the same department
6= (6)	Senior colleagues interested in my progress and well being
6= (27)	Formal orientation programme for new academics
8 (23)	Professional assistance for early career academics in developing/improving their teaching
9= (18)	Formal mentoring programme for new academics
9= (4)	Availability of resources for conducting research

Clearly, managers and early career academics have varying perceptions about what is important for academic survival and success. Managers see themselves as playing a more significant role than the early career academics perceive them to have, rating communication between them and academic staff as most important, whereas early career academics put their own autonomy at the top of their list. To be fair, many of the items that were ranked highly by the managers also ranked highly for the early career academics, such as support from the Head of Department, and availability of resources for conducting research. But there is more variation than agreement on what matters most. It seems that academics want to know that their Head of Department is in their corner, so to speak, but they want to be left to make their own decisions and choose their own supporters. For example, early career academics ranked *informal* mentoring opportunities much more highly than formal mentoring programmes. And while academics rank commitment and support from the Head of Department as important, feedback from their manager on their performance is considered less important.

Managers rated *formal* mentoring as much more important than early career academics did, along with a formal orientation programme and professional assistance in developing/improving teaching. Given our findings about greater confidence among early career academics who have had formal mentoring and/or attended teaching development workshops, perhaps the managers are on the right track in this regard, and may well know better than their new staff what might be most helpful for them. Perhaps, though, there is also a sense of mixed messages being received by early career academics. The existence of the PBRF has clearly increased pressure on academics to perform well in research, and early career academics appear to be directing their interests and activities more towards research than teaching. Furthermore, this list shows that early career academics consider the provision of resources and support around research more important than support for other aspects of their job (such as teaching or service), ranking availability of resources for research, travel funds to present papers or conduct research, and assistance in obtaining external grant funding as more important than teaching development or resources. By contrast, managers consider assistance for teaching development more important. New Zealand academics are required to be both researchers *and* teachers, and it would seem that managers may need to work more closely with early career academics on identifying their training and support needs in *all* areas of their academic work, as well as helping them to find the appropriate balance between the varied aspects and expectations of their roles.

Managers will also need to walk a fine line between telling early career academics what is best for them, and recognising their agency in deciding what is most important for their careers. As Fanghanel (2007, pp. 2-3) outlines in an article on lecturers' pedagogical constructs, agency is the "individual ability to position towards and respond to structures" as well as "room for response and manoeuvre" and if we want to help change practice, then we need to direct our development efforts at interventions or initiatives that provide scope for agency. Knight (2002) has argued similarly, citing research which found that "those new faculty who were most positive about their early careers had a high locus of internal control – that is to say, they believe themselves to have some control over the ways in which they responded to external demands and pressures" (Knight, 2002, p. 50). Knight argues that improving teaching in universities cannot be left to the individual academic alone, but requires a much more holistic, complex approach involving departmental change, strong leadership and collegiality. We should not be expecting new academics to support themselves, nor to be left entirely to their own devices in determining their professional development needs, nor should we expect that any professional development we make available for individual academics will miraculously turn each new academic into the consummate professional: "this steady normalization of the discourses of personal professional development is a ploy to make the victims responsible for their own rescue" (Knight, 2002, p. 15).

Certainly, one of the biggest concerns for early career academics is the disparity between departments and across the university (and in some cases, across various institutions, for those working in more than two places) of the provision of services, support and collegiality. Participants in the focus groups called for awareness-raising work for Heads of Department in what is available around the university for early career academics, not just what they are willing to provide from within the department. The following section outlines how effective the academics thought the provision of these various services and support was. We also identify some of the gaps in managers' and early career academics' knowledge about the availability of various services and professional development opportunities, and show how those gaps will need to be filled if we hope to better support and retain early career staff.

6. VARIATIONS IN EXPECTATIONS AND PERSPECTIVES

After asking how *important* the early career academics thought various services, policies, relationships and support were, we asked them to rate the *effectiveness* at their institutions of these offerings. Respondents could rate each item from 1 ("Very effective") to 4 ("Very ineffective") and could also indicate if the particular service was not offered at their institution or offer a simple "I don't know". For presentation purposes, the displayed charts show these ratings in reverse order, where a larger number indicates a higher level of effectiveness.

Managers rated the effectiveness of all practices significantly higher than early career academics did (using *t*-tests, $p<0.05$), which is demonstrated in the figure below. Consistent, though, was that departmental support was both more important and more effective than all other services/practices, from both the early career academics' and the managers' perspectives.

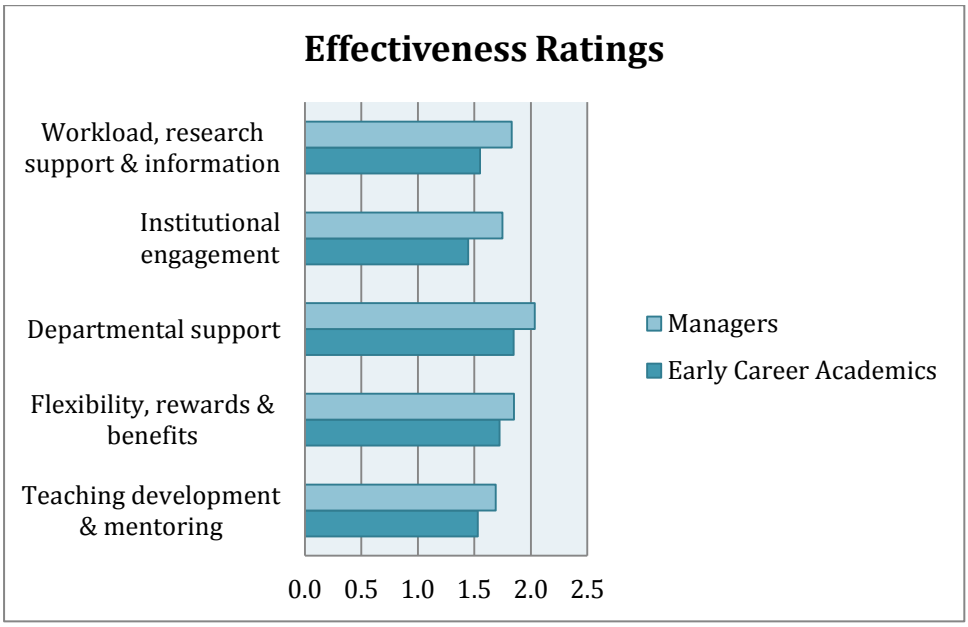


Figure 14: Effectiveness ratings of resources, services and support

When looking more closely at departmental support (from the Head of Department, senior colleagues and administrative staff, for example) and institutional engagement (opportunities to meet other colleagues, participate in decision-making processes, interact with student reps, and so on), it is clear that early career academics think that departmental support is both more important *and* more effectively provided, $t(478)=-24.14$, $p<0.001$, than the various services and support that we labelled as institutional engagement , $t(478)=-27.13$, $p<0.001$. There are big gaps, however, between how *important* early career academics perceive these relationships to be and how *effectively* they are implemented in their own institutions. Workload and research support also significantly differed between importance and effectiveness, $t(508)=-22.85$, $p<0.001$.

> *I would make a distinction between the University Policy and the practice at Faculty and Department Level. My university has good policies in place; however, the Faculty I am in does not follow them particularly closely. Talking with colleagues from other Faculties confirms that the one I work in does not conform to the University's policies.*
>
> [Lecturer, Health & Medicine, Female, 50+]

The University environment is very competitive and insular now, with the PBRF mentality, and few people go out of their way to say hello in the corridors let alone ask about my work or share relevant areas of theirs.

[Research Fellow, Social Sciences, Female, 50+]

We also asked both managers and early career academics to rate how effective they thought their institutions were at providing professional development and supporting early career academics' career development. As can be seen in the table below, early career academics do not agree that they have been provided with adequate professional development opportunities or staff review processes, nor do they see the student evaluation process at their universities as an effective aid for their career development. (The scale was 1=*strongly agree* to 5=*strongly disagree*).

One of the biggest challenges I have had is not having institutional knowledge and feeling that I am expected to simply 'know'. This is particularly the case with post-grad requirements. University website is not easy to navigate around and information is often hard to find.

[Senior Lecturer, Health & Medicine, Female, 45-49 years]

Table 23: Professional and career development support

	Managers			Early Career Academics		
	Mean	*n*	Std.Dev.	Mean	*n*	Std.Dev.
The right infrastructure exists in this university for ECAs to pursue a career here	2.20	84	0.88	3.12	460	1.36
Adequate professional development opportunities are offered for ECAs at this uni	2.37	83	0.93	3.12	461	1.44
The staff appraisal/review process at this uni is an effective aid for ECAs' career development	2.31	83	1.08	3.49	459	1.31
The student evaluation process at this uni is an effective aid for ECAs' career development	2.93	83	1.07	3.54	439	1.46

By contrast, managers are significantly more positive about the provision of professional development opportunities, the infrastructure that exists to support early career academics, and the staff review and student evaluation processes.

It is worrying that there is such a big gap between how each group perceives the situation: the people receiving (or not) the services and support are simply not as positive about what is on offer as those responsible for providing the services and support, or at least for directing the early career academics to what is on offer. We wondered if perhaps some managers simply did not know about the availability of some professional development opportunities for early career academics (perhaps because such opportunities were not available when they were younger academics) and this proved to be the case for a few managers in their answers to questions on resources and training opportunities. We outline below some of the services that some managers appeared to have little knowledge about. Not all items on the list are policies or services about which all managers could be expected to know; for example, if one is not a Head of Department, it would not be easy or necessary to know about teaching relief or service obligations in every department, especially as these are likely to vary across the university. However, there are some fairly basic offerings that we would hope any manager would know about and be able to tell a new colleague about, should the opportunity arise. These include mentoring opportunities, orientation programmes for new academics, assistance in developing teaching or applying for

external grants, and the opportunity to gain a tertiary teaching qualification. As far as we are aware, all these services are offered centrally (that is, they are not confined to one department or faculty) in some form or another, at all eight universities (if the university itself does not offer a particular service, relationships often exist with other universities to enable staff to take part in the programme elsewhere – for example, Lincoln staff can complete the Postgraduate Certificate in Higher Education at Canterbury or Otago University).

Table 24: Managers' knowledge of resources/opportunities available to early career academics

	Not offered at my institution (*n*)	I don't know (*n*)
Formal mentoring programme for new academics	16	10
Professional assistance for ecas in developing their teaching	4	2
Professional assistance for ecas in obtaining external grants	2	7
Paid or unpaid research leave for ecas	10	16
Teaching relief in the early years of academic appointment	9	18
Flexible working hours for ecas	8	8
Opportunity for ecas to work from home/out of the office	5	8
Opportunity for ecas to gain a tertiary teaching qualification	0	9

We recommend that managers who have responsibility for supporting early career academics make themselves familiar with the wide range of services, support, professional development and training opportunities available for early career academics (in fact, for all academics) within their own institutions and beyond. To this end, we have developed some resources that ask questions we hope will prompt both managers and early career academics to proactively seek the information and support that they need. More information on these resources is available in Section Eight of this report.

Also key to improving the provision of support for early career academics, according to the focus group participants and the comments provided in the survey, is to align departmental and institutional practice so that early career academics do not receive conflicting messages, or in some cases, no message at all:

> *Although many useful support and training opportunities may exist, it is very hard to find out about anything unless you are already familiar with the procedures and who to contact. Most of this information trickles through eventually, but sometimes this is too late. For example, I have just discovered that I should have applied for sabbatical more than a year ago, so now my sabbatical is only possible more than a year later than it should have been.*
>
> [Lecturer, Biological Sciences, Female, 35-39 years]

Early career academics on contracts and in post-doctoral and research fellow roles would also like to feel more integrated into the university community and their departments:

> *I am a research-only contract employee and therefore never had an orientation to the University in this role as nobody considers someone in my position an employee let alone anyone with a contribution to make over time. I have been in my academic department on short-term contracts for 8 years and yet am not included in any staff meetings or email mailouts and most would not know what I do. I receive no research leave. I was told to take my paid holiday leave between certain dates this year, and had to work through the paid leave period in order to make the PBRF deadline.*
>
> [Research Fellow, Social Sciences, Female, 50+]

Research Fellows and other part- (and full-) time contract staff expressed deep-seated consternation about a variety of issues that permanent staff seem less affected by, for example,

access to support and training and information. Not only do they report not hearing about or getting invited to various formal university events (such as Orientation or programmes for early career researchers, or mentoring schemes), even when they might find out about such opportunities they are often told they are not eligible. Something as simple as including contract staff in all-department or all-faculty emails may make a big difference to their sense of being part of the university community, and would seem to be a minimum standard. The following section summarises our key findings in terms of the factors that affect early career academic success, and we follow this with some more recommendations for early career academics, managers and universities for making the start of the academic career as productive *and* enjoyable as possible.

7. WHAT PREDICTS SUCCESS FOR EARLY CAREER ACADEMICS?

For this final section of the report, we pull together the key findings and lay them out in table form to demonstrate the key factors that influence "success" for academics, where success is defined as the research output of early career academics, their overall levels of satisfaction, and their confidence in teaching and research.

7.1 RESEARCH OUTPUT

As Table 25 shows, several key factors are related to whether early career academics have a high research output or not, including, not surprisingly, having a strong interest in research and already having a doctoral degree. The other key factors related to research output are whether an early career academic published, and gained teaching and service experience, during their doctorate and, surprisingly, whether they have a teaching qualification. Our research indicates that those early career academics who already have a teaching qualification also have higher research output than those without a teaching qualification or still working towards one. The other strong indicator of higher research output among early career academics is active engagement in supervision *and* active involvement in their disciplinary society/ies (including conference attendance). These findings suggest that academics who approach their academic roles holistically – understanding themselves to be researchers, teachers *and* academic citizens – are more likely to thrive in the research area of their work than those who focus on developing just one aspect of their career (whether that is teaching, research or service).

Negative predictors with high research output include the finding that women are less likely than men to have high research output, and that academics with primary care responsibility for their children have lower research output than academics who share the care with their partner or have someone else taking primary care responsibility. Incidentally, a much higher percentage of women respondents than men declared that they had primary care responsibility for their children. There was also an indication that those academics who experienced workload pressures, and those who felt they did not have autonomy over their teaching and research decisions, were also less likely to have high research output.

7.2 SATISFACTION

Autonomy and workload also affected satisfaction significantly, with people under workload pressure feeling less satisfied, and people with the sense that they controlled their decision making feeling more satisfied. Satisfaction was also associated with work-life balance: the more balanced an early career academic perceives their work and life to be, the more likely they are to express satisfaction with their work as well. Having gained some lecturing or course coordination experience during the doctoral process is also significantly associated with workplace satisfaction, although no other doctoral experiences seem to be related with satisfaction. Being employed full-time and in a permanent role leads to a greater sense of satisfaction than being part-time and/or on contract. Finally, those early career academics who perceived the provision of resources, services, support and training to be effective were also more satisfied overall.

7.3 TEACHING CONFIDENCE

As with research output, those early career academics whose doctoral experiences (especially overseas doctorates) included some lecturing and service are also more likely to be confident teachers. Teaching confidence also seems to be related to disciplinary involvement and loyalty, teaching a lot, and being on a full-time, permanent contract.

7.4 RESEARCH CONFIDENCE

Research confidence on the other hand is negatively affected by a high teaching load, but was positively related to publishing, tutoring, writing grants, and serving on committees during the doctorate. While teaching confidence was higher among those obtaining their doctorate overseas, research confidence is not affected by the place of origin of the doctorate, just by having a doctorate itself. Finally, academic women are less confident researchers than academic men and, as with research output, those with primary caregiving responsibilities are also less confident researchers.

Table 25: Key factors that influence satisfaction, output & confidence of early career academics

			Research Output	Satisfaction	Teaching Confidence	Research Confidence
Individual Characteristics	*Sex of respondents*	Women	lower	same	same	lower
	Family situation	Primary caregiver	lower	none	none	lower
		Living alone	none	none	none	none
	Work-life balance	Good work-life balance	none	higher	none	none
	Loyalty	Strong loyalty to institution	none	higher	slightly higher*	slightly higher
		Strong loyalty to discipline	none	none	higher	slightly higher
		Strong loyalty to department	none	higher	slightly higher	none
	Interests	Stronger interest in research	higher	lower	lower	higher
	Perceived control over working conditions	Opportunities to make decisions about own research & teaching	slightly lower	higher	slightly higher	none
		Effective opportunities to participate in decision-making processes	none	higher	slightly higher	none
Prior experiences & qualifications	*Academic qualifications*	Has a doctoral degree	higher	none	lower	higher
		Has an overseas doctoral degree	same	none	higher	same
	Doctoral training/experience	Published during doctorate	higher	none	none	higher
		Published with supervisor during doctorate	higher	none	lower	higher
		Tutoring experience during doctorate	higher	none	none	higher
		Lecturing/course coordination during doctorate	higher	higher	higher	none
		Grant writing experience during doctorate	higher	none	none	higher
		Served on committees during the doctorate	higher	none	higher	higher
	Teaching qualifications	Has a teaching qualification	higher	none	none	none
Structural & organisational influences	*Appointment type*	Full-time	higher	higher	higher	higher
		Permanent	none	higher	higher	lower
	Workload	Workload is perceived as an issue	slightly lower	lower	none	none
		High teaching load	none	higher	higher	lower
	Discipline involvement	Is an active supervisor	higher	slightly higher	slightly higher	slightly higher
		Actively involved in disciplinary society	higher	none	higher	slightly higher
	Provision of resources, services, training & support	Effective departmental support	none	higher	slightly higher	slightly higher
		Effective institutional engagement	none	higher	slightly higher	slightly higher
		Effective workload, research support & info	none	higher	slightly higher	none
		Effective flexibility, rewards, & benefits	none	higher	none	slightly higher
		Effective teaching development and mentoring	none	higher	slightly higher	slightly higher

*Slightly higher (or lower) = higher (or lower) on average, but not statistically significant

8. IMPLICATIONS AND RECOMMENDATIONS

Early career academics in New Zealand universities are, overall, a fairly satisfied bunch, but they struggle to find a sense of balance between their work and home lives. Many are frustrated by long hours, unrealistic expectations, the challenge of balancing the various academic roles, and the disparity between and among departments, faculties and institutions in terms of provision of services and support. These frustrations, however, do not have a significant bearing on their perceived ability to do their jobs confidently, with the majority reporting confidence in both their research and teaching abilities. There are significant differences among age groups in terms of prior experience and confidence, though. We discovered that a comprehensive doctoral experience that includes teaching, research *and* service opportunities results in more confident early career academics – in both teaching and research – than no doctoral experience and/or limited opportunities to do anything other than write the thesis. Furthermore, once an early career academic begins working at a university, the provision of some form of teaching development may affect their confidence positively, as will a formal mentoring relationship. The more confident teachers are those who have recently attended a teaching development workshop, and overnight or residential professional development opportunities (such as writing retreats) have a positive relationship with both teaching and research confidence.

Given these findings, it is important for us to find out what experiences our early career academics have had before they reach us, and to tailor the professional development support we provide according to their individual needs. In particular, it is important for those supporting early career academics to recognise the different pathways into academia, and that a younger early career academic coming in from a PhD may have very different needs from an older early career academic with years of professional experience.

Support at departmental level is also vital for early career academic success, from the HoD to senior colleagues to the administrative staff. But this support needs to be tempered by departmental awareness of what is going on elsewhere in the university: provision of services and support should be consistent with what others receive elsewhere within the faculty and within the wider university. Mathieson (2011, p. 244) calls for those responsible for inducting new academics to "take seriously the role of academics in constructing their understanding of themselves in their new environments" and "the need for further research at the interface between centralised induction programmes and situated departmental cultures of teaching and learning" (p. 254). The role of the HoD comes across as one of the most influential relationships in an academic's early career experience, and HoDs need to make themselves aware of all the various institutional services and support that are available for early career academics and not attempt to provide all of that support on their own.

HoDs, and other senior colleagues, can also play a role in helping academics to recognise their individual agency, to be proactive and resourceful, and to develop their relational agency. Relational agency is described as a capacity to offer support and ask for support from others; to both seek and give help when engaging with the world; and to align one's thoughts and actions with those of others in order to interpret problems of practice and to respond to those interpretations (Edwards, 2005). In short, it is about knowing how to know whom, as well as knowing what, how and why.

Bruce Macfarlane's work on academic citizenship highlights some of these relational aspects of the academic role:

> *[C]ommitment to service is about being an 'academic citizen.' This is someone prepared to contribute positively as a member of a series of overlapping communities both within and outside the university, to take responsibility for the welfare and development of students,*

colleagues and fellow professionals and to contribute to the life of the institution through decision-making processes (Macfarlane, 2007, p. 3).

Other researchers variously refer to this academic citizenship work as "collegiality" (Ambrose, *et al*., 2005; Solem & Foote 2004) or "administrative attentiveness" (Jones, 2007) and have shown that a lack of people demonstrating these behaviours within a department may lead to early career academics choosing to leave academia, while a new academic's inability to develop such collegial qualities may threaten his or her promotion prospects. As Sutherland and Petersen (2010) have noted, "new academics will not stay, and go on to be successful, without the support of their departmental colleagues, or without an operational, social and political understanding of their working environment…Indeed, the research suggests that such collegiality and understanding are actually marks of success" (p. 7). Yet, early career academics commonly express disappointment at the lack of collegiality in academia and several research studies have declared this lack to be one of the most surprising aspects of the first few years for early career academics (Boice, 1996; Sorcinelli, 1988; Ambrose *et al.*, 2005). Because of this, researchers such as Bolden *et al*. (2013), Macfarlane (2007) and Nixon (2004) call for resistance to the neo-liberal discourse dominating much higher education leadership, decision making and the overall academic experience, especially in the UK where these researchers are. They ask us to replace neo-liberal approaches with the discourse and practice of "academic citizenship" (Bolden, *et al.*, 2013; Macfarlane 2007) and "the reaffirmation of moral values in academia such as 'honesty', 'truthfulness', 'openness to difference' and 'authenticity'" (Nixon, 2004). Bolden *et al.* (2013, p. 14) suggest that in terms of the perceived tensions associated with a managerial approach to academic leadership, engaging from "a position as 'citizens', rather than as 'leaders', 'managers' or 'employees' may foster a greater appreciation of the commonalities of academic experiences and give rise to a more collective and community-based response".

The following sections make some recommendations for managers, for early career academics and for universities, which we hope will make the start of the academic career a positive one for any new academics who happen upon this report and its accompanying resources.

8.1 For managers and departments: Know your new staff

We have developed a resource for Heads of Department (and other senior leaders with responsibility for inducting and supporting early career academics) that lays out a series of questions to ask new academic staff members in order to find out:

- what experience they already have
- their most pressing professional development and support needs
- the policies and procedures they most urgently need to familiarise themselves with, and
- their aims and professional development plans and needs for the upcoming year.

One particular role that an HoD can and should play is to find out exactly what prior experiences an early career academic has had before arriving at their university and help to devise an induction and professional development strategy that will suit that individual early career academic's needs at the appropriate times. Early career academics complained that orientations and inductions, while valuable, were often an experience of 'information-overload' – there is too much to take in all at once, and someone needs to help filter what is and is not important as they start their academic journey. The HoD plays an important role here, but should also assign a departmental mentor or buddy whose role is to help the early career academic navigate the ins and outs of the new environment. Mentoring should not, however, be limited to a senior departmental colleague. Early career academics should seek mentors beyond their departments

and for varying purposes, and not all mentoring relationships need to be formalised (although, our research shows that a formal mentoring relationship does have a positive effect on research confidence).

The guide we have designed, "Supporting Early Career Academics: Conversational Guidelines for Senior Staff", is intended to serve as a useful accompaniment rather than a replacement for existing career development and planning or regular progress report processes that universities may already have in place. Those processes often ask early career academics to identify their career goals and areas they will work on in the first few years in the job, whereas our guide probes a bit more deeply to work out exactly what training, support and contacts will be most helpful for new academics as they settle in to working in the university.

Most universities will also have an induction process and checklist/procedure that covers off issues such as email, online services and phone access; parking services; equipment and resource availability; office hours; kitchen and toilet locations; after hours and emergency procedures; safety and security, *etc*. However, there is a vast array of other academic policies and procedures that new academics need to know about in their first few months, and it is not always easy to filter which are most important, and at which times. The "Supporting Early Career Academics" booklet provides some examples of policies and procedures that may not be included in a regular induction process. They are by no means exhaustive lists and will vary by university, but they are starting points for conversation with new academics. The resource is designed for managers/staff to add their own questions as well – the important point is to help new colleagues to filter what they need to know and do, and when, as well as from whom they can seek support.

Furthermore, Heads of Departments, along with senior colleagues and the various providers of professional development services and support within the rest of the university, should avoid a deficit model of professional development (trying to fix what is wrong with early career academics) and instead celebrate early career academic strengths, contributions and successes. Early career academics in our project called for a university culture where the hard work of academics is affirmed, their contribution valued, and their lives beyond work recognised as important. To this end, we have also produced a one-page accompaniment to the guide for HoDs, called "Supporting New Academic Staff". This brief resource is designed to prompt a department-wide conversation (perhaps at a staff meeting, retreat or away-day) about how the department celebrates successes and achievements, supports new academics and each other, and works together to create a supportive, respectful and generous departmental and institutional culture.

Trowler and Knight (1999), writing at the end of the 1990s, called for an end to the "structural functionalism" approach to the induction of new academic appointees. They were uneasy with the focus on the collective and formal approaches and the sequential timetabled events and serial socialisation that dominated induction practice in the '90s and called for more individualistic, informal, random, disjunctive approaches and events: "They [previous studies] prioritise the overt over the tacit, the corporate over the local, the formal over the naturally occurring, structure over action" (Trowler & Knight, 1999, p. 191). They argued that universities need to recognise the role of agency in individual learning about becoming an academic, and that individuals have the capacity to consciously or unconsciously change the social practices into which they are being inducted, which leads us on to our next recommendation: that individual academics need to work out what they need and have to offer.

8.2 For early career academics: Know your own strengths and needs

The whole process of support from within the department, particularly in terms of identifying training and professional development needs, should sit alongside a personal process in which early career academics ponder their own goals, values, strengths and aspirations in academia. To this end, we have also designed a resource for early career academics – "Surviving and Succeeding as an Early Career Academic" – that focuses on the personal characteristics that help early career academics to succeed in and enjoy their work. The resource identifies five key personal characteristics that are likely to improve early career academics' chances of success. The resource asks questions that encourage early career academics to:

- be *resourceful* in the ways that they seek support, help, advice and guidance
- have a strong sense of *relational agency* and have developed broad networks of support
- demonstrate *resilience* in the face of setbacks and obstacles, rather than being defensive or risk-averse
- be *respectful*, organisationally aware, astute and committed, and
- be conscious of balancing work and home life and getting enough *rest and recreation*.

We encourage early career academics to download and use this resource in their own time and/or in conversation with their peers, departmental colleagues and managers. It is the kind of resource that can be returned to once or twice a year, and is certainly not only useful for *early career* academics but may well hold questions that prompt reflective action on the part of more experienced academics, too.

8.3 For universities: Improve the New Zealand doctoral experience **and** provide targeted support for women

Our findings showed that publication and teaching experience during the doctoral years are important for research and teaching confidence, and that the opportunity to serve on university committees also has an effect on confidence. Those early career academics who published, either independently or with their supervisor, during their doctorate are more confident researchers *and* have a higher research output than those who did not publish during their PhD. Likewise, those early career academics who gained teaching experience, particularly lecturing or course coordination experience, begin their academic careers as more confident teachers than those who get no teaching experience. Our data show that it is more common for early career academics who did their doctorates overseas to have gained teaching experience (nearly three quarters did so) than for early career academics who completed their doctorates in New Zealand (only half of New Zealand PhDs gained teaching experience). We suggest that it would be timely to consider what kind of preparation New Zealand doctoral degrees provide for aspiring academics (even if not all enter academia) and look into providing more teaching opportunities, particularly with some responsibility (*i.e.* lecturing or course coordination, not just tutoring). At the least, those of us who are supervising New Zealand doctoral students with academic career aspirations should be encouraging them to publish during, not just after, their PhDs, and could be helping them into the world of publication by publishing with them, where appropriate.

As well as universities thinking through the purpose and focus of their doctoral programmes, we also encourage New Zealand universities to look into the support available for academic women who aspire to climb the academic ladder. Women with childcare responsibilities may need different support from single men with no children, for example. Fewer women than men attend international conferences, so what other opportunities are there for them to engage with their

disciplinary colleagues internationally? Men are also more likely to be more actively engaged with their disciplinary society, taking more responsibility (journal editor or conference organiser, for example, rather than just being a paid-up member) than women. What targeted opportunities does your university provide for women to improve their research output, confidence and overall satisfaction in academia? And what opportunities do women *and* men have to participate in decision-making processes at your university? The early career academics in our research called for more such opportunities to be heard, to have their agency acknowledged, to have the importance of their families and lives beyond the institution recognised, and to have their contributions celebrated. It is important, also, that we unveil "the underlying processes of institutional reproduction that structure our academic world" (Bauder, 2006, p. 672) so that early career academics can navigate their way through the system with more transparency and less opaqueness.

8.4 For everyone: Tell your own stories of "success"

Early career academics in our project were concerned at what they perceived as a push, exacerbated by the accountability-driven nature of the PBRF, to turn everyone into prolific researchers at the expense of the development of and care for teaching and learning. Further, they resisted being held accountable for their performance at every turn and called for more autonomy over the decisions regarding their teaching and research activities. In the focus groups, several participants talked about wanting to see and hear different versions of success in academia – they wanted to hear more stories and see more deliberate modelling of varied academic career paths and possibilities. Quite simply, they wanted to hear senior academics talking more about their own experiences in academia – the challenges, the successes, the pitfalls and the opportunities. Brook and Michell (2012) lament the lack of autobiographical reflections on academic experiences from working-class academics in the higher education literature and argue that providing more space for and incorporation of such stories would enable low-socioeconomic status students to see possibilities for themselves in academia. Similarly, more women sharing their stories of survival and success in academia may encourage more young women into academic careers and may entice them to stay longer and pursue higher status roles that begin to correct the imbalance between men and women at higher levels in academia. Following Jespen, Varhegyi and Edwards (2012, p. 630) we urge supervisors, for example, to talk to PhD students about career opportunities and to share their own experiences. Students need to ask more than just their supervisors about their stories and pathways as well.

At the start of this report, we declared that defining "success" in academia is not easy to do because everyone has a different conception of what success means to them. There is a clear message that performing well in research is a key marker of success in academia, but this project has shown that research performance does not necessarily coincide with happiness. For this reason, we encourage all readers of this report to share their own definitions, stories, warnings about and versions of success with as many aspiring and current academics as are willing to listen. If we can work towards being productive *and* happy, perhaps then we can pin down success.

APPENDIX 1: TABLES OF FINDINGS

Table 26: Overall satisfaction (by discipline area)

Overall, how satisfied are you as an academic? (From most to least satisfied)			
Discipline Area	Mean	*n*	Std. Deviation
Māori Knowledge & Development	1.64	11	0.674
Humanities & Law	1.79	39	0.695
Mathematics & Information Sciences	1.89	19	0.875
Social Sciences & Other Cultural/Social Studies	2.04	74	0.943
Engineering, Technology & Architecture	2.05	39	0.759
Business & Economics	2.07	28	0.979
Physical Sciences	2.13	30	0.819
Other	2.20	5	0.447
Health & Medicine	2.22	103	0.928
Creative & Performing Arts	2.29	14	0.726
Education	2.38	32	1.008
Biological Sciences	2.43	58	0.901
Multidisciplinary	3.00	5	1.225
Total	2.15	457	0.900

Table 27: Confidence by age group

	Research confidence		Teaching confidence	
	Mean	Std. Dev	Mean	Std.Dev
Under 30 years (*n*=25)	1.76	0.13	2.29	0.17
30-34 years (*n*=131)	1.81	0.61	1.86	0.61
35-39 years (*n*=136)	1.88	0.61	1.82	0.07
40-44 years (*n*=74)	2.14	0.87	1.90	0.09
45-49 years (*n*=46)	2.22	0.13	1.61	0.11
50 years+ (*n*=46)	2.29	0.14	1.48	0.10

Table 28: Cluster analysis of research output by type

	Cluster	Journal article	Authored book	Edited Book	Creative work	Book Chapter	Paper in conference proceedings	Conference abstract	Published keynote
1	Mean	0.1288	0.0152	0.0076	0.1439	1.1061	1.1061	1.5227	1.0076
	N	132	132	132	132	132	132	132	132
2	Mean	3.8052	0.1558	0.0519	0.0130	1.6753	2.6753	1.9740	1.0649
	N	77	77	77	77	77	77	77	77
3	Mean	3.8347	0.1901	0.2562	0.1074	2.3471	1.7355	6.4711	1.1818
	N	121	121	121	121	121	121	121	121
4	Mean	4.4821	0.1429	0.1429	0.1071	2.4643	6.7143	7.3750	1.2143
	N	56	56	56	56	56	56	56	56
Total	Mean	2.6554	0.1166	0.1140	0.1010	1.8057	2.4301	4.0130	1.1036
	N*	386	386	386	386	386	386	386	386

** N is lower than overall response rate because not all respondents provided information on publication activity.*

Table 29: Living Situation (percentage of respondents)

Living situation	% All
I live alone	11
I live with my spouse/partner only	38
I live with my spouse/partner and other family members	37
I live with my spouse/partner & others who are not family (*i.e*. flatmates/boarders)	2
I live with other people with whom I am not in a romantic relationship (*i.e*. children, flatmates, siblings, boarders or other family members)	11
None of these (*i.e.* commuting between two places, or partner living in another place)	1
Total	100%

Table 30: Work-life balance (by academic position)

Position	Mean	*n*	Std. Deviation
Senior Lecturer	3.2	101	0.7
Lecturer	3.1	239	0.7
Post Doc	3.0	101	0.7
Other	3.0	19	0.9
Total	3.1	460	0.7

Table 31: Research and teaching interests (by university)

University	Primarily in research	In both, leaning towards research	Equally in research and teaching	In both, leaning towards teaching	Primarily in teaching	Mean
1	44	32	14	7	3	1.95
2	38	39	14	9	0	1.93
3	10	30	26	19	15	2.98
4	16	53	22	9	0	2.24
5	18	47	24	5	6	2.33
6	18	57	23	2	0	2.09
7	24	33	33	5	5	2.33
8	25	17	42	8	8	2.58

Table 32: Advice from managers

We also asked managers of early career academics for one piece of advice that they would give to an early career academic starting out at their university. Seventy-seven of the 104 managers who responded to the survey provided advice, and analysis of the text fell into the following themes:

Theme	Frequency	Sample Comments
Resourcefulness and planning	29	- Focus on confirmation objectives - Find out the rules and play by them - Ask questions of senior colleagues. The best mentoring system can't anticipate all your individual questions - Develop a game plan for the long run
Research and publication	26	- Develop a research track - Focus on establishing your research programme - Publish - Get started on publishing as soon as you can. It is the key determinant of progression - Focus on research and international publications; do as little teaching and service as is possible
Mentoring	17	- Find a strong mentor who wants to be your mentor - Establish both peer and mentoring relationships, and try to keep things in perspective - Locate mentors: within department; within higher management; external but within discipline; external and OUTSIDE your discipline; plus international mentor
Professional development	7	- Obtain a tertiary teaching qualification early in your career - Make use of all the opportunities to become acquainted with the university's policies and processes and use them - Take advantage of what the university provides re: development
Balance between teaching and research	7	- Maintain a balance between teaching and research - Collaborate in your research and don't neglect your teaching
Networking and relationships	6	- Go to Faculty meetings; get to know the movers and shakers in the Faculty - Cultivate a few strong collegial/friendship relationships: 1) within your discipline or faculty, and 2) at other institutions internationally for on-going support and development

Table 33: Academic activities by discipline area

Discipline	Research	Teaching	Service & Admin	Total
Biological Sciences	57.3	20.2	19.1	96.6%
Health & Medicine	53.4	27.7	18.0	99.1%
Physical Sciences	45.6	34.5	16.5	96.6%
Engineering, Tech & Arch	44.0	34.8	19.3	98.1%
Maths & Info Sciences	41.6	39.0	19.4	100%
Soc Scie & Other Cultural/Social Studies	38.0	39.5	22.7	100.2%
Business & Economics	34.3	45.0	17.2	96.5%
Humanities & Law	34.0	45.0	21.0	100%
Education	31.8	44.9	23.3	100%
Māori Knowledge & Dev	31.4	40.0	28.6	100%
Creative & Performing Arts	28.6	42.5	28.9	100%
Other	26.0	45.0	29.0	100%

Table 34: Early Career Academics' Loyalty

Discipline	*n*	Mean	Std. Deviation
I would recommend my DEPARTMENT as a good place to work	457	2.30	1.248
I would recommend my UNIVERSITY as a good place to work	459	2.37	1.107
I feel strong loyalty to my department/unit colleagues	454	2.17	1.182
I feel strong loyalty to my head of department/unit	457	2.46	1.260
I feel strong loyalty to this university	457	2.60	1.175
I feel strong loyalty to my discipline	457	1.70	0.853
I am proud to be a member of this profession	457	1.66	0.792
I would turn down a higher salary to stay in this profession	455	2.52	1.309
I would turn down a higher salary to stay at this university	453	3.36	1.263
I am treated fairly by my employer	455	2.51	1.144
My contribution is recognised by the university	454	3.14	1.248
I get intellectual pleasure from my job	455	1.61	0.703
If I could do it all over again, I would still embark on an academic career	454	2.07	1.153

Table 35: Academic loyalty (by discipline)

	Mean	
Discipline	Loyalty to discipline/profession	Loyalty to institution
Maths & Info Sciences	1.6	2.4
Humanities & Law	1.7	2.5
Soc Scie & Other Cultural/Social Studies	1.8	2.7
Education	1.9	2.9
Māori Knowledge & Dev	1.9	2.5
Physical Sciences	1.9	2.5
Engineering, Tech & Arch	1.9	2.4
Health & Medicine	1.9	2.5
Creative & Performing Arts	2.0	2.8
Business & Economics	2.1	2.5
Biological Sciences	2.1	2.8
Other	2.4	2.6
All	1.9	2.6

Table 36: Peer Group Identification (percentage by discipline)

Discipline	Same discipline	Same department	Same rank	Other	Same contract	Total
Humanities & Law	59	28	10	3	0	100%
Creative & Performing Arts	57	14	7	22	0	100%
Maths & Info Sciences	53	26	16	5	0	100%
Business & Economics	52	22	22	0	4	100%
Other	50	50	0	0	0	100%
Education	49	45	3	3	0	100%
Physical Sciences	46	27	17	7	3	100%
Māori Knowledge & Dev	46	18	0	36	0	100%
Health & Medicine	44	36	11	4	5	100%
Biological sciences	43	32	13	2	10	100%
Engineering, Tech & Arch	42	39	16	3	0	100%
Soc Scie & Other Cultural/Social Studies	36	42	14	5	3	100%

Table 37: Academic qualifications (percentage of respondents)

Academic qualifications	*n*	% All
New Zealand doctorate	175	38.2
Overseas doctorate	170	37.1
Currently working towards New Zealand doctorate	47	10.3
Currently working towards overseas doctorate	8	1.7
I do not have a doctoral degree	58	12.7
Total	458	100%

Table 38: Confidence by doctoral experience

	Mean	
	Research confidence	Teaching confidence
Published some of my research during my doctorate	1.77	1.82
Published with my supervisor during my doctorate	1.78	1.97
Gained tutoring/TA experience	1.85	1.84
Gained lecturing/course coordination experience	1.89	1.70
Worked on writing grant applications	1.79	1.91
Served on university committees	1.78	1.63
None of these	2.07	1.93

Table 39: Research output by publication during doctorate

			1 Low	2 Low/Med	3 Med/High	4 High
Published some of my research during my doctorate	No	Count	124	39	46	20
		Expected Count	78.3	45.7	71.8	33.2
		% within Ward Method	93.9%	50.6%	38.0%	35.7%
	Yes	Count	8	38	75	36
		Expected Count	53.7	31.3	49.2	22.8
		% within Ward Method	6.1%	49.4%	62.0%	64.3%

Table 40: Research output by publication with supervisor during doctorate

			1 Low	2 Low/Med	3 Med/High	4 High
Published with my supervisor during my doctorate	No	Count	126	46	56	15
		Expected Count	83.1	48.5	76.2	35.3
		% within Ward Method	95.5%	59.7%	46.3%	26.8%
	Yes	Count	6	31	65	41
		Expected Count	48.9	28.5	44.8	20.7
		% within Ward Method	4.5%	40.3%	53.7%	73.2%

Table 41: Percentage of respondents with teaching qualifications

University	NZ cert/dip in Higher Education Teaching & Learning (or equivalent)	Overseas cert/dip in Higher Education Teaching & Learning (or equivalent)	Other NZ teaching diploma or degree	Other overseas teaching diploma or degree	Currently studying towards a Higher Ed T&L cert/dip	None of these describes my teaching qualifications	Total %
1	5	9	4	6	1	75	101
2	3	6	4	4	1	82	102
3	33	0	18	9	11	36	110
4	7	11	13	7	0	69	111
5	9	7	4	2	2	77	106
6	2	4	5	11	0	81	109
7	10	10	15	0	5	65	112
8	8	0	0	0	0	92	108
Men	7	8	3	4	3	75	100
Women	9	6	10	7	1	67	100
ALL	8%	7%	7%	6%	2%	72%	102

NB: Some respondents have more than one qualification, which is why the totals do not add up to 100%.

Table 42: Appointment status (First and current)

Full-time/Part-time status	First appointment			Current appointment		
	% All	% Men	%Women	% All	% Men	% Women
Full-time	73	84	66	86	95	80
Part-time	27	16	34	14	5	20
Total	100%	100%	100%	100%	100%	100%

Table 43: Promotion applications

	Number of times applied			Successful applications		
	% All	% Men	% Women	% All	% Men	% Women
Never	69	63	73	19	19	18
Once	22	25	21	67	63	70
Twice	7	8	5	11	12	10
Three times	1	1	1	3	6	2
Four or more times	1	3	0	0	0	0
Total	100%	100%	100%	100%	100%	100%

Table 44: Academic activities by academic level

Academic Level	% Research	% Teaching	% Service & Admin	Total
Senior Lecturer	35.5	40.8	22.0	98.4%
Lecturer	34.4	43.9	21.1	99.4%
Post Doc	75.4	7.7	14.1	97.1%
Other	35.8	29.2	35.0	100%

Table 45: Publication outputs

Type of publication	Percentage reporting such publication (%)	
	Scientists (Sommer, 2010)	Early Career Academics, this project
Journal article	90	91
Paper in refereed conference proceedings	64	68
Chapter in book	44	60
Edited book	13	15
Authored book	11	17

Table 46: Correlation between research output and teaching and research confidence

Ward Method	Research Confidence	Teaching Confidence
1) Low Overall Output	2.52	1.54
2) Low/Med	2.08	1.79
3) Med/High	1.90	1.84
4) High Overall Output	1.65	1.87
Total	2.02	1.77

Table 47: Number of courses taught per year

Number of courses taught per year	% All	% Men	% Women
I don't do any teaching	18	14	21
I usually teach 1-2 courses per year	21	17	22
I usually teach 3-4 courses per year	43	47	41
I usually teach 5-6 courses per year	13	16	11
I usually teach 7 or more courses per year	5	6	5
Total	100%	100%	100%

Table 48: Current supervision responsibilities

	Honours			Masters			Doctorate		
	% All	% Men	% Women	% All	% Men	% Women	% All	% Men	% Women
None	66	58	71	49	44	51	53	43	60
One	17	19	16	25	26	25	19	25	15
Two	10	13	7	14	17	13	13	15	11
Three	2	3	2	6	6	6	7	8	6
Four	1	2	1	3	4	2	3	3	3
Five+	4	5	3	3	3	3	5	6	5
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 49: Students supervised to completion

	Honours			Masters			Doctorate		
	% All	% Men	% Women	% All	% Men	% Women	% All	% Men	% Women
None	60	52	65	59	53	64	88	87	89
One	11	13	9	18	20	17	7	5	7
Two	8	10	6	9	9	8	3	4	2
Three	6	6	6	6	9	4	1	1	1
Four	4	4	4	3	4	2	<1	<1	<1
Five+	11	15	10	5	5	5	<1	2	0
Total	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 50: Involvement in disciplinary society

Involvement in disciplinary society	% All	% Men	% Women
Office bearer or committee member (national)	20	21	19
Office bearer or committee member (international)	10	12	8
Paid-up member	52	48	55
Disciplinary conference or event organiser	22	27	18
Journal editor or advisory board member	19	25	14
None of the above	26	25	26
Other (please specify)*	2	3	1

*Other includes reviewer and life member.

Table 51: Average conference attendance per year

	National conferences per year			International conferences per year		
	% All	% Men	% Women	% All	% Men	% Women
None	21	20	21	25	19	30
One	61	62	60	57	53	59
Two	14	12	16	15	22	10
Three	3	4	3	2	3	1
Four	<1	<1	<1	1	2	0
Five or more	1	2	0	<1	1	0
Total	100%	100%	100%	100%	100%	100%

Table 52: Mentoring experiences

Type of mentoring relationship (over whole career)	% All	% Men	% Women
Formal mentoring relationship of six months or more as a MENTOR	9	10	9
Informal mentoring relationship of six months or more as a MENTOR	16	16	17
Formal mentoring relationship of six months or more as a MENTEE	26	24	28
Informal mentoring relationship of six months or more as a MENTEE	41	39	43
I have not had a mentoring relationship that lasted six months or more	34	36	33

APPENDIX 2: SURVEY COMMENTS ON WORK-LIFE BALANCE

Below we list the seven negative themes about work-life balance in rank order and provide examples of each kind of statement. The second column shows how many comments fell into each theme and the third column provides an example of the kind of comment that was coded at each theme.

Theme	#	Example
Workload	31	Part of this is my own fault re: time management, but there is also a very unreasonable expectation of what is achievable. Theoretically, I am contracted for 37.5 hours a week, in which my research, teaching and administrative work should be completed. In reality, I would normally work from around 9-8 during term time, as well as regular extra work on weekends. My course has increased from 50 to 170 in four years and I have received no additional resource or support to offset the increased workload. During the first semester I have to work seven days a week if I want to maintain a research programme. I feel exhausted at the start of most working weeks, as I end up working most weekends. Because of less administrative crap, this is when I can actually get more work done.
Family	19	*More family time desired* I have two children under five and work extremely hard. The combination of the two is what makes life exhausting. Thankfully I have an extremely supportive husband. I do take work home most nights and struggle to switch off. This frustrates me more than anyone else as I want to strike a better balance. When I am at home with my kids I prioritise time with them, but the moment they are in bed, I am at it again. I love my job though!!!! I have just had a new baby, and the pressure to return to work early has been high due to financial circumstances and very limited (9 weeks) parental leave on full pay. This has exacerbated pressures associated with trying to balance work and home life, and I am prioritising differently. Yet this is not easy because the normal expectation is to prioritise work. This adds unnecessary stress and pressure at a time when I want to be enjoying my expanding family. *More work time desired* I kinda found this difficult to answer well. My issue is not so much work-life balance, rather it is life-work balance. I have too many kids doing too many activities with too many friends. So I struggle with balance for sure but I actually wish I had more time to work, research, write. Sometimes I think I need to do *more* work than I currently do. I have a good balance in terms of hours spent at home/work, but my focus is not on work as much as I'd like it to be – I feel too easily distracted by things going on in my non-work life!
Contract type	18	Contract work is not well understood by the people employing me, *i.e.* the Principal Investigator(s) on my grant (I am 0.5FTE). Whatever I do is never enough, which I think rests on their own standards as permanently employed academics.

		My work life balance is totally out of kilter, but then again I do field work which I enjoy. BUT I spend far far too much time applying for grants and attempting to stay afloat. I get no help or support in this and know full well despite my contributions (which are quite hefty) I will be gone when my research grant finishes. So does one just go now or actually stay working one's backside off in the hope of things changing? My wife and I recently had a baby so I was entitled to 9 weeks' paternity leave, in addition to the 5 weeks' annual leave. I have a 2-year contract (from an external funding source which I applied to and was successfully awarded a fellowship). I feel that if I had taken the full time off which was offered to me, then I think I would sabotage my future funding opportunities and career.
Stress	17	I need to take sleeping pills on Sunday nights due to thinking too much about work to get a good night's sleep. Developing a new line of research on my own has left me with little time to spend on anything other than worrying about where the next pot of money is going to come from to continue research. I am currently having counselling to deal with anxiety and stress.
Expectations of others	16	The University will do what it can to increase the teaching load – as much as you can possibly take – but then it still expects the same amount of research and service, so it goes from being a 40-40-20 position, to a 70-40-20 position. In academia it seems to be the norm that to succeed you need to work many more hours than you are being paid for. I get the impression that if you don't do this, people (*e.g.* future employers) will feel you are not committed. I find this an entirely undesirable situation that is kept up by fellow (early career) academics who, in my opinion, lead unbalanced lives, overachieve and make others who wish to have a better work-life balance look bad. The fact that senior members of my department attempt to monitor and police when I am in the office is offensive given that I often work much more than 40 hours a week. With a young family, flexibility with my work schedule is really important, but there is no tolerance for this in my department whatsoever.
Doing a PhD	10	Over the last four years I have carried a full teaching load (with over 350 students), while doing my PhD on a full-time basis. My husband has been in the same situation and we have two teenagers. What work-life balance? However, once the PhDs are completed, I intend to correct this misbalance. My work-life balance is currently being affected by being close to PhD submission (a unique time in anyone's life). However, I anticipate the ongoing pressure for publication in peer-reviewed journals. They are introducing "performance management" in this respect at my institution.
Perceived personal inability to manage time	9	I struggle to maintain a balance and often wonder if I am just badly organised or whether my commitments are too much. No-one ever admits to working less than they think they should.

APPENDIX 3: IMPORTANCE OF POLICIES, SERVICES, RELATIONSHIPS

#	Question	*n*	Mean	Std. Dev.
1	Opportunities to make decisions about direction of my own research & teaching	484	1.16	0.37
2	A Head of Dept/manager who is committed to my success	484	1.22	0.45
3	Support from HoD/manager to apply for tenure or promotion	482	1.25	0.48
4	Availability of resources for conducting research	527	1.27	0.49
5	Travel funds to present papers or conduct research	526	1.29	0.51
6	Senior colleagues interested in my progress and well being	484	1.30	0.50
7	Informal mentoring relationships or opportunities	483	1.41	0.60
8	Regular contact with senior colleagues in my department	483	1.42	0.58
9=	Support from administrative/general staff	483	1.43	0.56
9=	Good communication between university management & other academic staff	483	1.43	0.59
9=	Professional assistance in obtaining externally funded grants	524	1.43	0.61
12	Feedback from manager/s about my academic performance	484	1.48	0.64
13	Paid or unpaid research leave	524	1.55	0.72
14=	Flexible working hours	527	1.57	0.71
14=	Workload policy within department/faculty	524	1.57	0.69
16	Attractive/competitive salary and benefits	527	1.58	0.66
17	Support from other departmental colleagues	484	1.59	0.64
18=	Formal mentoring programme for new academics	525	1.60	0.72
18=	Information about criteria for promotion	526	1.60	0.68
20=	Opportunities to participate in decision-making processes	483	1.62	0.63
20=	Opportunities to meet with disciplinary colleagues beyond the institution	482	1.62	0.68
22	Opportunity to work from home/out of the office	527	1.63	0.73
23	Professional assistance for developing/improving teaching	523	1.65	0.72
24	Availability of resources for teaching	525	1.66	0.75
25	Recognition of each individual's contribution to the work of the university	527	1.68	0.70
26	Rewards for good research	526	1.73	0.76
27	Formal orientation programme for new academics	526	1.78	0.78
28	An upper limit on service obligations in early years of appointment	521	1.79	0.79
29	Teaching relief in the early years of appointment	524	1.84	0.87
30	Opportunities to meet other new academics within the institution	484	1.97	0.72
31	Rewards for good teaching	526	2.02	0.84
32	Regular contact with senior colleagues in other disciplines	483	2.07	0.74
33	Peer observation of teaching	525	2.26	0.78
34	Availability and accessibility of child care	522	2.27	1.09
35	Opportunities to engage with student representatives [outside formal classroom environments]	481	2.30	0.82
36	Opportunity to gain a tertiary teaching qualification	523	2.63	0.91

APPENDIX 4: EFFECTIVENESS OF POLICIES, SERVICES, RELATIONSHIPS

#	Question	*n*	Mean	Std. Dev.
1	Flexible working hours	489	1.72	0.68
2	Opportunity to work from home/out of the office	496	1.77	0.66
3	Opportunities to make decisions about direction of my own research & teaching	476	1.90	0.88
4	Support from administrative/general staff	481	1.93	0.90
5	Opportunity to gain a tertiary teaching qualification	241	2.03	0.75
6	An HOD/manager who is committed to my success	461	2.13	1.01
7=	Regular contact with senior colleagues in my department	479	2.14	0.96
7=	Senior colleagues interested in my progress and well being	474	2.14	0.97
9=	Support from HOD/manager to apply for tenure or promotion	412	2.19	1.00
9=	Paid or unpaid research leave	388	2.19	0.81
11	Availability of resources for teaching	421	2.20	0.84
12=	Travel funds to present papers or conduct research	479	2.26	0.90
12=	Information about criteria for promotion	478	2.26	0.84
14	Informal mentoring relationships or opportunities	461	2.27	0.90
15	Availability and accessibility of child care	214	2.28	0.85
16	Support from other departmental colleagues	472	2.29	0.93
17	Availability of resources for conducting research	488	2.36	0.79
18	Attractive/competitive salary and benefits	488	2.38	0.78
19	Feedback from manager/s about my academic performance	464	2.39	0.89
20	Professional assistance for developing/improving teaching	397	2.43	0.85
21	Formal orientation programme for new academics	412	2.47	0.87
22	Rewards for good research	395	2.50	0.84
23	Good communication between university management & other academic staff	461	2.53	0.84
24	Peer observation of teaching	298	2.55	0.88
25	Upper limit on service obligations in early years of appointment	274	2.60	0.88
26	Opportunities to engage with student representatives [outside formal classroom environments]	353	2.61	0.86
27	Professional assistance in obtaining externally funded grants	426	2.62	0.85
28	Rewards for good teaching	352	2.65	0.83
29	Formal mentoring programme for new academics	347	2.68	0.92
30	Opportunities to participate in decision-making processes	453	2.70	0.88
31	Workload policy within department/faculty	393	2.73	0.97
32=	Opportunities to meet with disciplinary colleagues beyond the institution	454	2.74	0.87
32=	Teaching relief in the early years of academic appointment	277	2.74	0.95
34	Regular contact with senior colleagues in other disciplines	455	2.79	0.92
35	Opportunities to meet other new academics within institution	458	2.80	0.88
36	Recognition of each individual's contribution to the work of the university	401	2.86	0.88

APPENDIX 5: INTER-CORRELATIONS BETWEEN SATISFACTION, EFFECTIVENESS & LOYALTY SUBSCALES

Subscales		2	3	4	5	6	7	8	9
1. Overall Satisfaction	***r***	0.42*	0.30*	0.33*	0.50*	0.46*	0.37*	0.61*	0.52*
	n	436	441	450	450	450	456	456	455
2. Effectiveness of Professional Development and Teaching	***r***	-	0.51*	0.52*	0.50*	0.54*	0.25*	0.41*	0.35*
	n		497	502	464	464	461	438	436
3. Effectiveness of Workload, Research Support and Information	***r***		-	0.56*	0.43*	0.52*	0.30*	0.36*	0.16*
	n			507	470	470	466	443	441
4. Effectiveness of Flexibility, Rewards, and Acknowledgement	***r***			-	0.50*	0.57*	0.33*	0.45*	0.26*
	n				479	479	476	452	450
5. Effectiveness of Departmental Support	***r***				-	0.69*	0.28*	0.60*	0.30*
	n					482	477	452	450
6. Effectiveness of Institutional Engagement	***r***					-	0.26*	0.58*	0.31*
	n						477	452	450
7. Work-Life Balance	***r***						-	0.34*	0.15*
	n							458	456
8. Institutional Loyalty	***r***							-	0.48*
	n								457
9. Loyalty to Discipline and Profession	***r***								-
	n								

* $p<0.001$

Information on which factors were related to satisfaction as an early career academic was sought by calculating correlations between a series of variables and respondents' reported satisfaction.

We discovered that dissatisfaction was greater, not surprisingly, when respondents' perception of the impact of PBRF was more negative ($r=0.24$, $p<0.001$), and when they reported more difficulty achieving a work/life balance ($r(456)=0.37$, $p<0.001$). In terms of how they spend their time, dissatisfaction is greater when they report spending less time on research ($r=0.11$, $p<0.05$) and more time on teaching ($r=-0.18$, $p<0.001$).

As far as what the institution does (or does not do) that might affect ECAs' levels of satisfaction, our calculations showed that dissatisfaction was greater when respondents perceived that their university was ineffective at managing Teaching Development and Mentoring ($r(436)=0.42$, $p<0.001$), Workload, Research Support and Information ($r(441)=0.30$, $p<0.001$), and Flexibility, Rewards and Benefits ($r(450)=0.33$, $p<0.001$), as well as when they perceived the university as providing ineffective Departmental Support ($r(450)=0.50$, $p<0.001$) and Institutional Engagement ($r(450)=0.46$, $p<0.001$).

As some of these 'variables' are themselves correlated with each other, they might 'overlap' in explaining satisfaction. Therefore, we entered them as predictors of satisfaction in a hierachial multiple regression analysis. The subsequent regression explained 49 per cent of the variation in respondents' satisfaction responses, $R^2=0.49$, $F(8,427)=53.36$, $p<0.001$. Satisfaction predictors included loyalty to the instution (10%) and loyalty to the discipline (6%). The effectiveness of

prodessional development and teaching, departmental support and support expectations were each associated with predicting nine per cent of the variance in satisfaction. Work-life balance also individually contributed to five per cent of the satisfaction prediction.

The most important predictors of dissatisfaction were (from most to least important):

- Subjectively poor work-life balance (β=0.27, p<0.001)
- Perceived institutional inefficacy around Departmental Support (β=0.21, p<0.001)
- Perceived institutional inefficacy around Teaching Development and Mentoring (β=0.16, p<0.001), and
- Perceived institutional inefficacy around Institutional Engagement (β=0.16, p<0.001).

These findings correspond with what we discovered about the services and support that have an impact on research and teaching confidence (mentoring and teaching development are important, for example).

People who were more satisfied with their roles also reported higher loyalty to their discipline, $r($455)=0.52, p<0.001, and institution, r(456)=0.61, p<0.001.

Early career academics who are predominantly interested in research have lower satisfaction than the ones who are interested in both teaching and research, F(4,432)=3.84, p<0.05, Mean Difference=0.38, SE=0.11, p=0.003. There were no significant differences in satisfaction between any of the other interest categories.

Both teaching and research confidence were weakly correlated with overall satisfaction with being an academic, τ(430)=0.18, p<0.001; and τ(453)=0.14, p<0.001 respectively.

Opportunities for professional development corresponded with satisfaction, ρ(455)=0.42, p<0.001, including formal mentoring, ρ(298)=0.29, p<0.001, and a formal orientation programme, ρ(356)=0.25, p<0.001, as well as an opportunity to gain a tertiary teaching qualification, ρ (205)=0.17, p<0.001. The effectiveness of both teaching, ρ(305)=0.21, p<0.001, and research rewards, ρ(342)=0.23, p<0.001, were also related to satisfaction, as were availability of resources for research, ρ(426)=0.27, p<0.001, and teaching, ρ(368)=0.25, p<0.001.

An effective student evaluation process is related to general satisfaction, ρ(433)=0.28, p<0.001, as was effective peer observation of teaching, ρ(258)=0.23, p<0.001.

Satisfaction is also related to working conditions. Early career academics who feel that each individual's contribution to the university is recognised are also more satisfied, ρ(344)=0.34, p<0.001. Satisfaction was also related to an effective workload policy, ρ(342)=0.27, p<0.001, and childcare availability, ρ(186)=0.19, p<.001. Other working conditions had significant, albeit slightly weaker realtionships to satisfaction: flexible working hours, ρ(421)=0.15, p<0.001; opportunities to work from home, ρ(429)=0.15, p<0.001; and attractive salary and benefits, ρ(422)=0.16, p<0.001.

These results suggest that interpersonal support and relational agency correspond with general satisfaction, and while departmental connections seemed slightly more related to satisfaction, early career academics also seemed to appreciate opportunities for external, cross-disciplinary connections as well. Also, when provided with opportunities to participate in decision making, early career academics were also more satisfied. General satisfaction is significantly associated with departmental loyalty, F(4,446)=21.59, p<0.001, rather than disciplinary loyalty, p=0.47.

Those who view continuing to work in higher education as important are more satisfied, ρ(452)=0.32, p<0.001. Satisfaction was also related to the importance of influencing

postgraduate students opportunities, ρ(453)=0.22, p<0.001. The importance of seeing students succeed was also weakly asociated with satisfaction levels, ρ(452)=0.11, p=0.02.

Satisfaction did not statistically vary by age (p=0.93), ethnicity (p=0.28), or university (p=0.26). PhD status (p=0.49), publishing independently (p=0.09), research output (p=0.54), or teaching relief (p=0.16) also were not significantly related to satisfaction.

Early career academics are generally less satisfied when casualisation and use of fixed-term contracts are viewed as a concern, ρ(449)=0.24, p<0.001. Accordingly, satisfaction is higher amongst those who are employed on a full-time contract, t(454)=-2.93, p=0.004.and with permanent status, t(454)=-5.08, p<0.001.

Also, those who are concerned with employment rights have lower general satisfaction with being an academic, ρ(450)=-0.25, p<0.001. Not suprisingly, those who do not plan to do the same work in five years' time are also less satisfied with their jobs, F(3,448)=12.17, p<0.001.

Those who perceive their academic workload to be an issue also are less satisfied with their career, ρ(449)=-0.26, p<0.001, and this dissatisfaction is also associated with lack of research funding, ρ(451)=-0.21, p<0.001.

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