

ECR Identity, Well-Being, and Engagement

Analysis and Project Plan



April 2022

EXECUTIVE SUMMARY

Early career researchers (ECRs) are *emerging researchers within their first eight years of academic or other research-related employment following completion of postgraduate training* (The University of Queensland, 2022). ECRs in academia play an important role in the production of high-quality research yet often face significant structural barriers. However, important questions remain about how group-based social connections and research culture experiences impact on ECR well-being and development. Our capacity to help ECRs harness the potential resources that their different group memberships and identities (e.g., as UQ academics, ECRs, economists, lab group members) to better support their development and retention is under-utilised. This program of research addresses these gaps by drawing on the social identity approach and its methodologies to determine the key identities that shape ECR experiences and their well-being.

This report has three parts. Part 1 provides a brief introduction to the social identity approach and the ways in which identity can protect, but also potentially undermine, health and well-being. In this section, we also provide a brief background to summarise the ECR literature and systemic challenges identified to date to provide broader context for the project. Part 2 reports on analysis of existing ECR data from two recent UQ workplace surveys to identify consistent themes and gaps in knowledge. Taken together, findings from both surveys highlight the importance of social support from direct supervisors and the broader research environment. However, findings also speak to some of the challenges that ECRs at UQ identified including lacking voice and struggling to maintain work-life balance.

Drawing on limitations and gaps identified in previous workplace surveys, Part 3 of this report summarises the proposed research plan that aims to interrogate the identity processes that underlie ECR well-being and engagement at UQ. We propose an initial qualitative phase of investigation to better understand the identities that are important to ECRs and the supports these enable. A second aim of this phase is to understand the challenges identified for ECRs. Findings in this phase will inform a subsequent quantitative study that aims to clarify how identity processes influence ECR well-being and engagement. Together, this program of research serves to improve our understanding of the ECR experience and to inform the development of interventions and strategies to best support ECRs.

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Part 1:

Background



BACKGROUND

General Introduction

The importance of social connectedness for better health and well-being cannot be underestimated, yet we have very little understanding of how work-based social connections influence the development and well-being of early career researchers (ECRs) in academia. ECRs are in a transitional stage between postgraduate study and the attainment of a senior academic position (Christian et al., 2021) and commonly experience numerous challenges gaining entry into, and sustaining, an academic career (Holley et al., 2018). For example, data from a large survey of 7,670 postdoctoral researchers spanning 93 nations found that 1 out of 4 ECRs were dissatisfied with their position, and more than half had a negative view of their career prospects (Woolston, 2020). Over the past decade, research has sought to better understand the unique challenges ECRs experience and in this, three key systemic barriers have emerged — limited access to support, lack of work-life balance and precarious employment. Only recently has the focus in research shifted to understanding how ECRs develop their sense of personal identity and role as an academic (e.g., Mcalpine, 2021; Monereo & Liesa, 2020; Mula et al., 2021). Unfortunately though, current research largely ignores the influence of group-based *social identities* (e.g., which are derived from belonging to lab and research groups, departments or schools, faculties, and institutions) despite a significant body of evidence suggesting that group memberships and the social identities that underpin these are central to health and well-being (Haslam et al., 2018). In this project, we draw on the social identity approach to better understand the ways in which social identity contributes to the ECR experience, and how it can be harnessed to inform interventions, services, and systemic changes to improve ECR well-being and engagement.

The Double-Edge Sword of Group Identification

The social identity approach to health argues that when (and to the extent) that groups form part of a person's sense of self, they also become central to their health and well-being (Jetten et al., 2017; Haslam et al., 2018). Supporting this is a substantial body of evidence showing that group memberships and identities can have a profound impact on health and well-being across a variety of contexts (see Haslam et al., 2018 for a review) — though this impact is not always positive. Group memberships can protect health and well-being when they are a positive source of influence in people's lives, becoming a source of social cure. However, research also shows the various ways in which groups can undermine health and well-being (e.g., through increasing stress and burden, the need to work longer hours, promoting unhealthy behaviour; Kellezi & Reicher, 2012; Jetten et al., 2017; Haslam et al., 2018; Postmes et al., 2019).

To date, only one paper has examined the influence of social identity on the ECR experience. Ysseldyk and colleagues (2019) found in a sample of postdoctoral women that strong social identification with one's academic discipline was a consistent protective factor for well-being and mental health. This protective effect of group membership is thought to be due to the psychological resources that groups provide such as an increased sense of meaning and connection (Cruwys et al., 2014; Wegge et al., 2006), enhanced personal control (e.g., Gleibs et al., 2014; Greenaway et al., 2015), and self-esteem (e.g., Jetten et al., 2015). All these resources are known predictors of better health and well-being (Jetten et al., 2014). Additionally, numerous studies show that group memberships enable various

supports. In particular, they can shape how support is received — favourably when it comes from a trusted source that one identifies with or viewed with suspicion when it comes from a source one does not identify with (e.g., Haslam et al., 2012; Ellemers et al., 1998).

While it is important to understand and harness the positive resources from group-based connections, it is equally critical to understand the influences of harmful group networks to mitigate their effects. Group memberships have been shown to have negative consequences when they are a source of burden or stress, or when they are perceived to be unsupportive (e.g., Haslam et al., 2012; Haslam & Reicher, 2006; Kellezi & Reicher, 2012; Oyserman et al., 2007). Moreover, similar findings are emerging from studies that have evaluated negative experiences with group membership (i.e., from groups providing low support) in healthy samples in everyday contexts (e.g., in early retirement; La Rue et al., Under Review). Clearly too, however, it is not only the positive and negative experiences of groups that matters but also how identity shapes perceptions of *what it means to be a member of a particular group*. Research that speaks to this shows that group identification can be problematic when groups promote unhealthy norms (e.g., Dingle et al., 2015; Kellezi & Reicher, 2012). This is because people who identify strongly with a group will seek to enact the norms and values associated with that group identity (Haslam et al., 2018). While the influence of group identification on norms and group climate is yet to be investigated in less vulnerable samples (and is something we address in the current project), it raises questions about the influence of identity in the ECR experience. For example, how are ECRs, and the research culture in which they are embedded, influenced by social identity? What is the influence of identities that are experienced to be positive and supportive? And what is the influence of identities which promote unhealthy workplace norms (e.g., working long hours)? Clearly, there are important gaps in understanding the role that social identities play in the ECR experience, and this is what the current project seeks to address. The primary aim of this project is to understand the identity processes that underlie ECR well-being and engagement; it will also consider how these interact with the structural challenges that ECR's experience in the workplace. Thus, in the paragraphs that follow, we summarise the literature on three major systemic barriers identified to date — precarious employment, lack of work-life balance and limited access to support — and how these impact on ECR well-being and career development.

Systemic Challenges ECRs Experience

Precarious Employment. Cannizzo's (2017) research suggests that Australian ECRs forge their careers based on passion and authenticity but are far more likely to describe their career progression in terms of survival. This may be in part due to the growing sense of competition that stems from the high number of successful PhD completions relative to the limited number of academic positions available (Holley et al., 2018; Locke et al., 2018). Indeed, lack of job security has been cited as one of the most common reasons ECRs choose to leave academia (Aarnikoivu et al., 2019). Adding to this, the academic positions that are available are not all permanent and many ECRs manage what Locke and colleagues term a “patchwork” career, consisting of multiple short-term contracts (Locke et al., 2018). Clearly too, the prevalence of insecure academic employment is on the rise across many universities around the world (e.g., Stringer et al., 2018; University and College Union, 2016; Vitae, 2019). Being employed in these positions can contribute to major delays in ECR specific forms of career development and progression. For example, ECRs on research-only contracts have little time to gain teaching and supervision experience, while

those in teaching-only roles have limited time to progress their research (Locke et al., 2018; Stringer et al., 2018). Moreover, regardless of whether their position is research or teaching-focused, ECRs rarely have the capacity to pursue and develop their own research agenda due to the demands of their specific contracted project (Capewell et al., 2017). Clearly, the type of contract on which an ECR is employed can have significant consequences for their career development and progression. Though, questions remain about the influence of the nature of contractual working arrangements, and in particular, the impact of permanent, fixed-term, and casual employment contracts. Is job security the critical factor in ECR well-being and engagement, and if so, how do those on fixed term and casual contracts fare?

Maintaining Work-Life Balance. In the face of a precarious and competitive academic job market, many ECRs are encouraged to establish themselves as researchers through quantifiable metrics (e.g., number of publications, grants; Cannizzo & Osbaldiston, 2016). Given this, it is perhaps unsurprising that many ECRs believe they do not work hard enough compared to their peers and report experiencing anxiety over their rate of progress (Arslan & Barlett, 2020). This is despite research showing that as many as 61% of ECRs work more than their contracted hours (Capewell et al., 2017). As with job insecurity, difficulty maintaining work-life balance is cited as one of the leading causes of ECR attrition (Bozzon et al., 2017). Additionally, US data suggest that work-life imbalance decreases ECR well-being and contributes to high burnout (Pitt et al., 2021). Here, it is worth noting that the onus of maintaining work-life balance is often placed on the individual. However, as past research notes, there are important gaps in understanding how work-life balance is supported (or not) by sector and institutional policies (Cannizzo & Osbaldiston, 2016; Pitt et al., 2021). According to Woolston's (2020) findings, 36% of ECRs report lacking institutional support to manage work-life balance, and almost half the sample interviewed reported working on weekends or on days off. To achieve greater balance between work and personal life spheres, they need support from their institutions and line supervisors who can put steps in place to encourage and support ECRs to achieve a good work-life balance (Pitt et al., 2021). In this context too, modelling may be part of the problem as line supervisors themselves are likely to struggle to manage work-life balance given work and institutional demands.

Limited Support. Previous research has identified important gaps in ECR support. In particular, over 60% of ECRs report lacking career development support (Christian et al., 2021; Shaw et al., 2015). Others report lacking counselling support specifically tailored to ECR experiences (O'Neill & Schroijen, 2018). Together, these findings are concerning in light of research showing that perceived institutional support is an important predictor of ECR engagement (Crome et al., 2019) and well-being (Pyhältö et al., 2017). Strikingly too, in a study led by Bentley and colleagues, satisfaction with institutional support was the only factor significantly positively associated with job satisfaction across the 12 countries from which they recruited academics (Bentley et al., 2009). More recent research has examined how support is received from different sources within the institution. Line supervisors in particular have been identified as one of the most important sources of support for ECRs (Locke et al., 2018). Moreover, ECR peers provide informational and emotional support which facilitates progress and alleviate feelings of isolation (Fork et al., 2020; Merga & Mason, 2021; Shaw et al., 2015). Previous research also shows that support from the wider research community has a role to play in fostering ECR engagement and mental health. ECRs who work as part of a group tend to feel more supported than those working on their

own (Pyhältö et al., 2017). What we know from the above research is that support across various levels of an academic institution has an important role to play in ECR well-being.


Clearly support is a critical factor in employee well-being. Though, while institutions must be open to giving such support, ECRs must also be open to receiving it. Research in the social identity tradition has consistently shown that identification is a key mechanism through which such support is enabled (e.g., Levine et al., 2005; Sani et al., 2012; Wakefield et al., 2011). Openness to support from peers, for example, is enabled through sharing a common sense of connection and identification with those peers, as *us* ECRs (Ysseldyk et al., 2019). Yet, we have a limited understanding of these identity processes within academia. Additionally, much of our understanding of ECR support in academia comes from research applying a top-down approach, where ECRs are asked about predetermined supports — most commonly, support from their direct supervisor and wider institution. What is needed to better understand ECR support is a bottom-up approach that identifies how support is perceived by ECRs to provide a more nuanced understanding of where it is effective and where it might be lacking. It is imperative to gain a better understanding of identity and support processes if we are to optimise the ECR experience, career progression and general well-being.


Conclusion and Research Questions


ECRs are vital in providing a strong bedrock of learning and knowledge progression within academic institutions. However, they also experience major barriers to career development and progression. The current project seeks to interrogate the identity processes that underlie the ECR experience to increase our understanding of how workforce and research culture influences ECR development and well-being. In this, several research questions will be addressed. **What are the key social identities for ECRs? What is the nature of these identities and their influence on workplace culture? What influence do these identities have on ECR well-being and career development? And how can we help ECRs to more effectively harness their workplace groups and identities in ways that support their career development and well-being?** In addressing these questions, we hope to open new avenues for investigation and intervention to better support ECRs in academia both nationally and internationally.

What are the key social identities for ECRs?

 What is the **nature** of these identities?

 How do they influence **workplace culture** and **norms**?

 How do these identities **influence** ECR well-being and career development?

 How can identities be effectively **harnessed** to support ECRs?

Part 2:

Analysis



What we already know based on existing UQ data

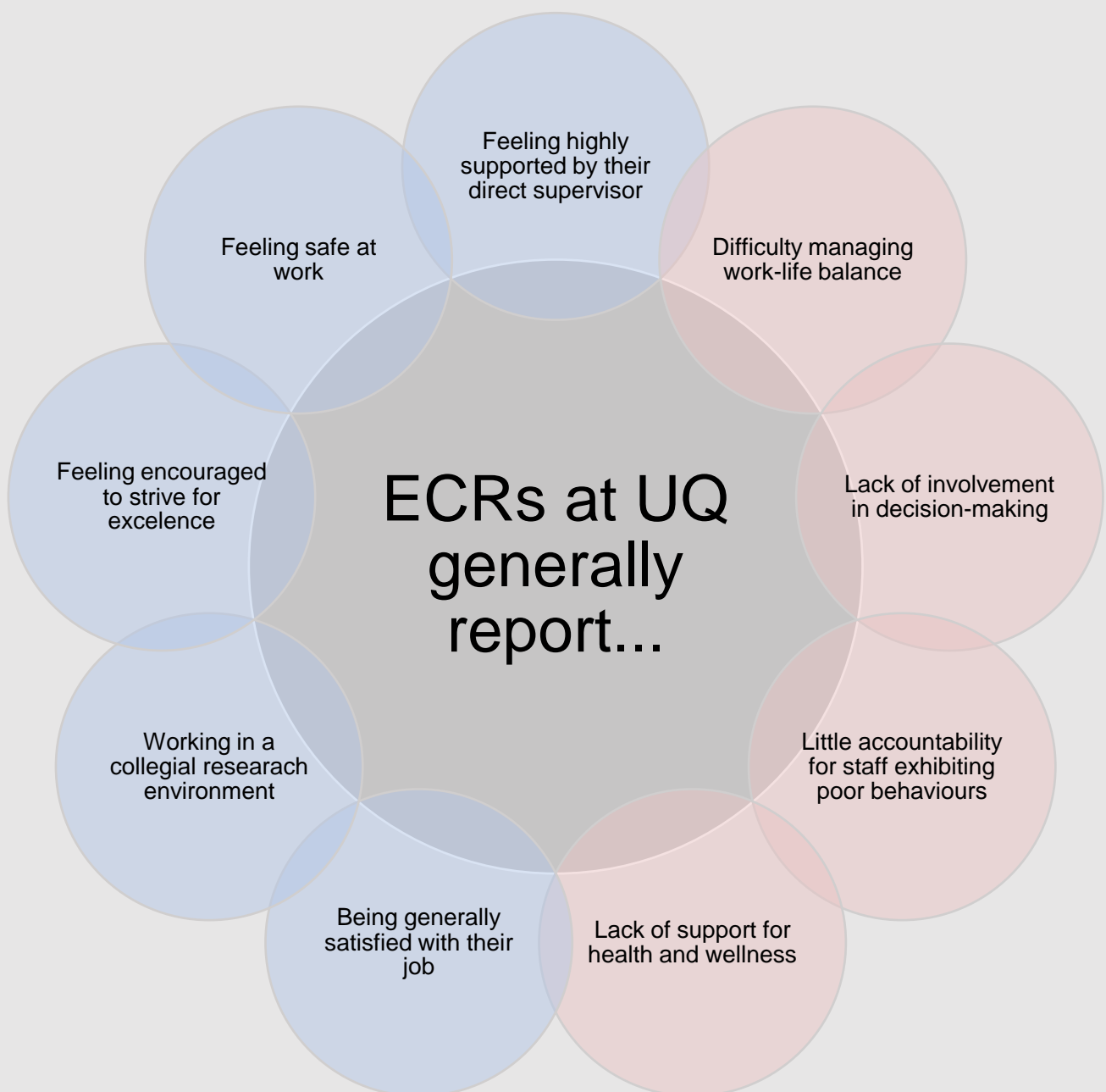
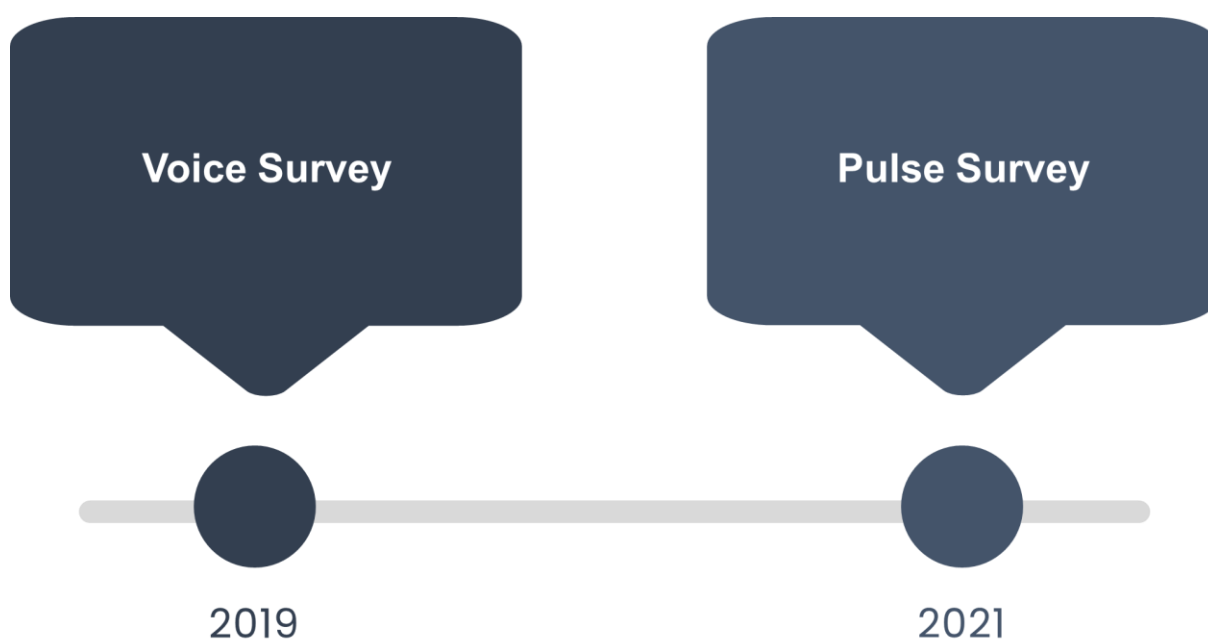


Figure 1. Key findings from the Voice and Pulse Surveys

ANALYSIS

This section of the report summarises findings from two UQ staff engagement surveys — the Voice Survey and, most recently, the Pulse Survey. These surveys sought feedback from UQ staff about their current work practices. The focus in this report is on the experience of ECRs at UQ.

The purpose of this analysis was to review existing university data relevant to ECR experiences to identify consistent themes and gaps in knowledge. Survey details and key findings are reported below for the Voice and Pulse surveys, respectively. Following this, we outline limitations of these surveys to inform current project objectives. Additional information and analyses are included as supplemental material in the appendix.



Voice Survey Details

The focus of the Voice survey was on understanding UQ staff engagement, the quality of current work practices, and organisation progress. Data were collected in 2019 with $N = 6,161$ responses across different employment types within the university.

ECRs consisted of those in Academic Level A/B positions ($N = 865$) who were appointed in Associate Lecturer or Lecturer positions. It is not clear from the data whether ECRs on research contracts (e.g., postdoctoral researchers) were included in this sample.

Responses were made using a 5-point Likert scale ranging from strongly disagree to strongly agree. The only data made available for the purposes of this report were percentages of favourable responses for each item assessed. Favourable responses were indicated as “tend to agree” or “strongly agree”.

The below summary of UQ strengths and shortcomings (reported in Figure 2) is based on the proportion of favourable responses for ECRs.

Key Findings From the Voice Survey

UQ Strengths

- Employees have clarity around their roles
- Safety on campus
- Supervision from immediate supervisor
- Collegial work environment
- Value high quality research
- Organisational unit pursues excellence
- No-tolerance of gender-based/sexual harassment
- Organisational commitment
- Job satisfaction

UQ Limitations

- Cross-unit collaboration
- Career opportunities
- Employees involved in decisions that affect them
- Opportunities for entrepreneurship
- Wellness (i.e., burnout)
- Work-life balance
- Accountability for poor behaviour
- Efficient processes
- Performance appraisal
- Change and innovation

Figure 2. Key strengths and limitations of UQ as rated by ECRs*

**Strengths are based on items with more than 80% favourable responses (defined as those comprising "tend to agree" or "strongly agree") and limitations are based on items with less than 50% favourable responses.*

Voice Survey Highlights

- This survey found that **ECRs in teaching and research roles** (Associate Lecturer or Lecturer) were generally **satisfied with the mentorship they received from their immediate supervisor**.
- UQ was identified as a workplace that **values safety** (including zero tolerance of gender-based or sexual harassment), **high quality research, excellence**, and a **collegial work culture**.
- ECRs reported **high levels of engagement**, indexed via high job satisfaction and organisational commitment. They also reported being clear about the nature of their work roles.
- **ECRs struggled with wellness** (in particular, burnout) and **work-life balance**.
- ECRs felt **excluded from decision-making** discussions and felt that people in their organisational unit were **not held accountable** for poor behaviour
- **ECRs were not favourable about UQ processes**, particularly the distribution of responsibility and efficiency of policies and procedures. They also reported lacking easy access to data which provides them with information about their work performance.

Pulse Survey Details

The Pulse Survey sought responses from UQ staff in seven key areas:

- (1) Communication,
- (2) Support and Leadership,
- (3) Social Responsibility,
- (4) My Work and My Job,
- (5) Diversity, Inclusion, and Culture,
- (6) Well-Being and Workload, and
- (7) You and UQ.

Data were collected in 2021 with $N = 6,375$ responses from staff across the university. Items were scored on a 5-point Likert scale ranging from strongly disagree to strongly agree.

ECRs consisted of those in Academic Level A/B positions ($N = 965$). The data were initially filtered by staff level (i.e., Academic Level A/B, Level C/D, and Level E) to compare the responses of early career researchers to more senior staff. A figure illustrating descriptive differences in the mean scores for each survey item as a function of academic level is reported in the appendix (see Figure A1). Findings show that compared to more senior staff, Level A/B employees report feeling more supported by their supervisor but lack insight about how their work contributes to UQ's strategies and goals.

Next, to explore whether ECR responses varied as a function of the precariousness of their position, the data were filtered to only include Level A/B employees on fixed-term ($N = 744$) or continuing contracts ($N = 187$). The findings are illustrated below. Table 1 shows the areas of difference and similarity in ECR experience as a function of employment level. A table reporting t -test statistics for these comparisons is included in the appendix as supplemental material (see Table A1). In summary, Level A/B staff on continuing contracts report significantly lower scores than those on fixed contracts on almost all variables assessed. Notable here are worse experiences in areas of work demands, work-life balance, and institutional response to change.

The ECR (i.e., Level A/B staff) data were broken down further to examine responses for those in each employment type separately. Responses from those on fixed-term contract are shown in Figure 3 and continuing contract shown in Figure 4. Each figure shows the proportion of ECRs who responded favourably to each item (i.e., with "agree" or "strongly agree"). Highlighted here too are items where the proportion was less than 50%. Findings revealed that continuing ECRs respond less favourably to survey items than those on fixed contracts. More than 50% of fixed contract ECRs responded less favourably to a smaller number of survey items ($n = 3$) tapping into work-life balance, involvement in decision making, and accountability for poor behaviour. In contrast, more than 50% of continuing ECRs responded less favourably to 11 survey items tapping the above issues in addition to workload, confidence in leadership, stress, management of organisational change, and voice.

Areas of difference and similarity in ECR experience as a function of employment type

Continuing ECRs had significantly lower scores than fixed-term ECRs on the following items:

My workload is manageable
UQ managed COVID-19 changes well
I maintain good work-life balance
Work-related stress is manageable
Change is handled well in my organisation
I recommend UQ as a great place to work
I receive appropriate recognition for my work
I am consulted before decisions that affect me are made
Health and safety are priorities in my organisational unit
My org unit has good processes for internal communication
I feel listened to when discussing issues that are important to me
I feel supported by my direct supervisor
I have confidence in UQ's senior leadership team
I have confidence in the leader of my organisational unit
I have flexibility to manage work/non-work related commitments
Overall, I am satisfied with my job
My org unit is committed to social responsibility
In my experience, UQ has an inclusive culture
UQ is genuinely committed to diversity and inclusion
My direct supervisor provides helpful feedback
UQ is committed to building a sustainable future
Staff in my organisational unit enact UQ values
I feel informed about what is happening at UQ
Staff are held accountable for poor behaviours
My organisational unit supports UQ's Reconciliation Action Plan

Continuing and fixed-term ECRs had similar scores on the following items:

I understand how my work contributes to UQ's strategic goals
I intend to be working at UQ in two years' time
My career development is supported at UQ
I have access to the learning and development activities I need to progress my career
I feel encouraged to strive for excellence
The staff in my organisational unit work collegially

Table 1. Continuing ECRs reported significantly lower scores than fixed-term ECRs on 25 items assessed (top)*. The remaining 6 items (bottom) were similar for both employment types.

*Responses are ordered from greatest to smallest degree of difference

Fixed-Term ECRs

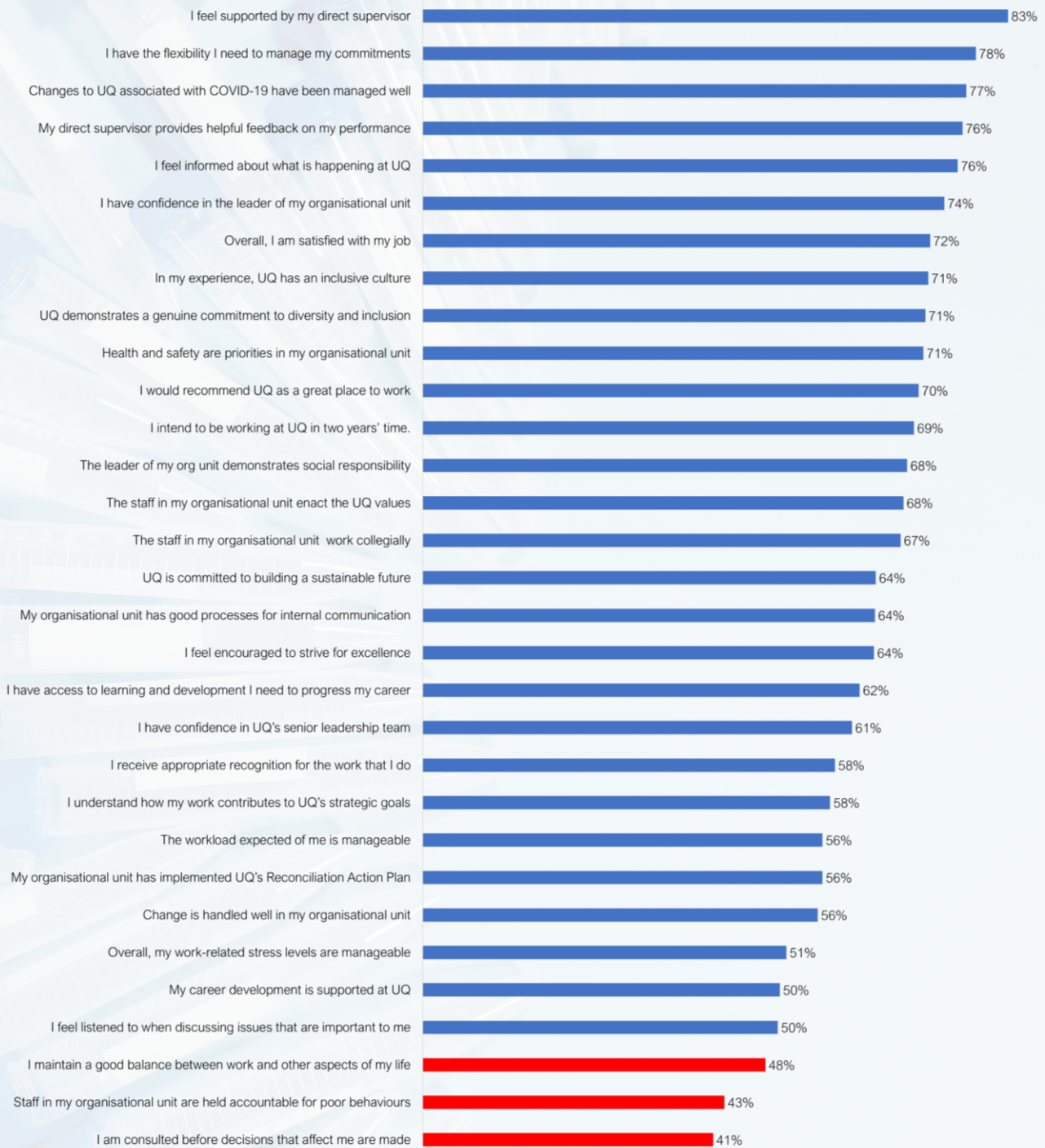


Figure 3. Percent favourable responses (i.e., “agree” or “strongly agree”) for Level A/B fixed-term staff**

***Bars in red represent items with less than 50% favourable responses.*

Continuing ECRs



Figure 4. Percent favourable responses (i.e., “agree” or “strongly agree”) for Level A/B continuing staff*

*Bars in red represent items with less than 50% favourable responses.

Pulse Survey Highlights

- Overall, **most ECRs felt supported by their direct supervisor**, and this was the case for both fixed (83%) and continuing staff (72%). Supervisor support had the highest number of favourable responses across both employment types.
- ECRs on **fixed term contracts fared better than continuing/permanent ECRs**. There are insufficient data to determine the reason for this.
- Three key areas that represent a challenge for continuing ECRs are **workload**, **work-life balance**, and **being involved in decisions**. Only 27% of permanent ECRs (a) feel their expected workload is manageable; (b) feel adequately involved in decisions that affect them, and (c) maintain a good work-life balance.
- **Less than 50% of continuing ECRs would recommend UQ** as a great place to work and even fewer express confidence in UQ's senior leadership team. In line with Voice data, many feel they do not receive the appropriate recognition for the work they do. Most continuing ECRs surveyed do not feel listened to when discussing important issues. Other areas for improvement include **better handling of change** across organisational units, **accountability for poor behaviours**, and **supporting ECRs to manage work-related stress**.

Limitations of Voice and Pulse Surveys

- ❓ Lack of ECR-specific measures to capture the unique challenges ECRs experience
- ❓ Lack of data on group identity processes and how these contribute to ECR engagement, performance, job satisfaction, and well-being
- ❓ Limited data on (a) different sources of social support for ECRs, (b) support needs and gaps, and, (c) perceived quality of support received
- ❓ Limited insight about why ECR experiences differ as a function of their employment type (i.e., fixed versus continuing)

Part 3:

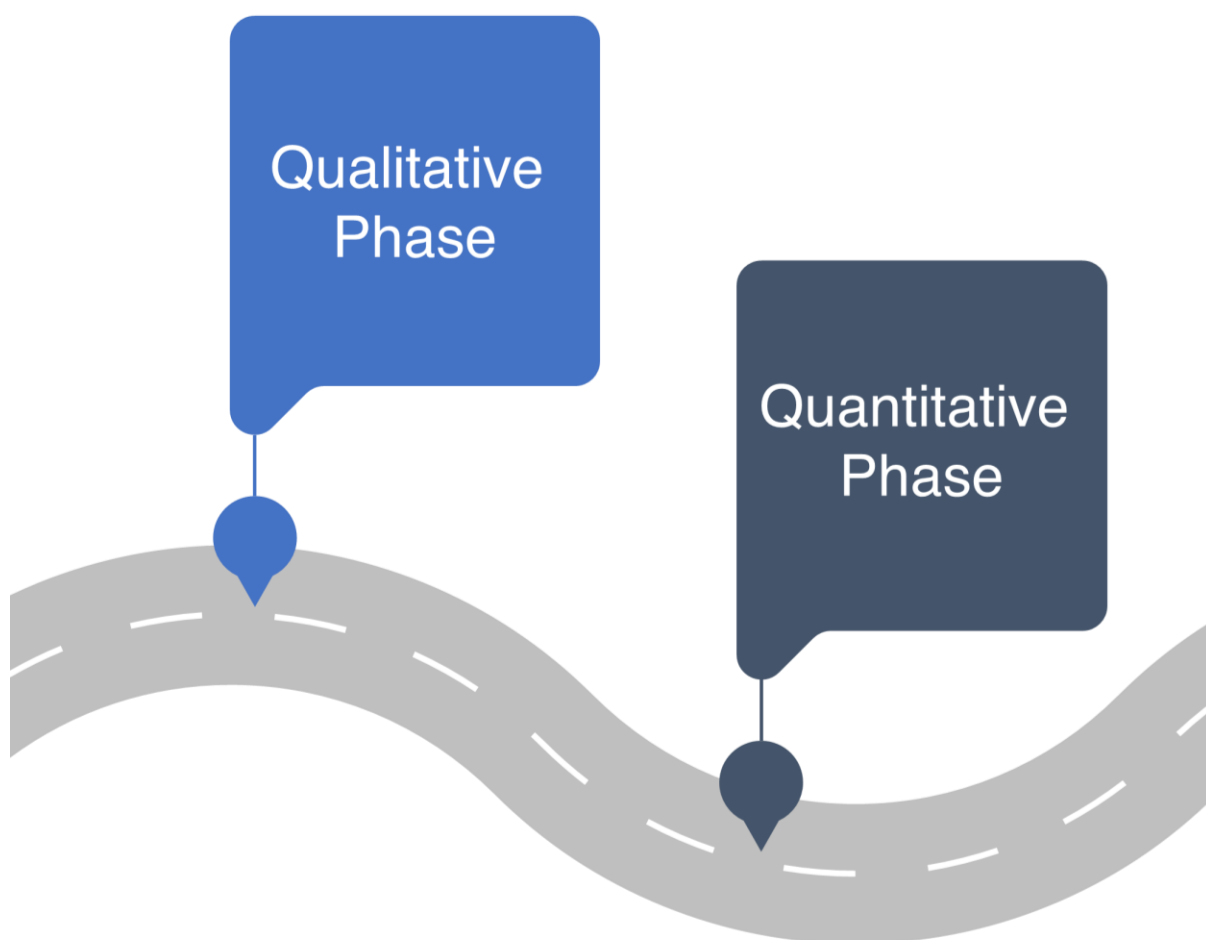
Project Plan



PROJECT PLAN

The *ECR Identity, Well-being, and Research Engagement* project team have developed the following project plan informed by both the social identity approach and the highlighted gaps in previous UQ staff surveys.

The primary aim of the project is to better understand the identities relevant to ECRs, how these influence workplace culture, how these influence support, and how these identity processes, in turn, influence the ECR experience. Two phases of investigation are proposed involving qualitative interviews and a quantitative survey.



Research Questions

1. What are the key social identities for ECRs?
 - What is the nature of these identities?
 - How are they experienced and how do they influence workplace culture?
 - How do these identities influence ECR well-being and engagement?
 - How can identities be effectively harnessed to support ECRs?
2. What are the enablers and barriers in ECR researcher engagement and well-being?
 - The aim is to be inclusive of known issues relevant to job security, sense of voice, work-life balance, and supports to consider inter-relationships with workplace groups and identities.

Qualitative Investigation

Method

Semi-structured focus group interviews conducted via zoom to facilitate recording and transcription.

Participants and Recruitment

The project will aim to run three focus groups, comprising between 6-8 participants from different ECR employment types — notably, teaching and research, research primarily, and teaching primarily. These participants will be recruited via the Steering group or via the EMCR@UQ committee, with a balance of demographics and employment.

Analysis

Reflexive thematic analysis is proposed (Braun et al., 2013) to generate patterns and themes in the data. These will be used to further refine the quantitative investigation as needed.

Descriptive statistics will be used to quantify social identity mapping data.

Proposed Interview Structure and Questions:

Short demographic/screening survey in advance of focus group interview

- Name
- Age
- Gender
- Position at UQ
- Appointment type (fixed, continuing, casual)
- Length of time in position
- Length of time since PhD completion
- Open text: How do you define ECRs?
- Social Identity map: specifically ask to map all groups, inclusive of work and non-work groups

Short demographic/screening survey in advance of focus group interview

Welcome and introductions

General experience and challenges

- Can you tell me a little bit about what it has been like working in the university?
- What is your experience as a teaching and research/research-focused/teaching-focused (*choose as appropriate for focus group*) academic like?
- What factors have enabled or supported you to do that work?
- What challenges (if any) have you experienced being ECR? Are there particular barriers that make it difficult to progress with your work?

Social identity

- What are the groups that are part of your life at work?
 - *If explanation needed: They might be ones based locally in your school (like a research or lab group), at the faculty level (like across-school), or even an interest-based group (like a music or sporting group) associated with work.*
- How have these workplace groups impacted on your experience working in the university?
 - Which groups are more influential? Why?
 - Which groups would you like more from? In what ways?
- Think about a group that has the most influence on your day-to-day work.
 - What is your experience being a member of this group?
 - *If mostly positive/negative answers given: Is this experience always positive/negative? [mostly positive] In what ways does this group promote norms that are not ideal for your well-being or career development? [mostly negative] Are there occasions or ways that this group might have supported your well-being and career development?*
 - What 3 words would you use to describe the work culture this group promotes?

Support

- What kinds of supports do you find most helpful in your working life? Where does support come from?
- Can you tell me where you feel most supported in your work? How is that enabled?
- What about where you feel the least supported? What are the barriers? Where and in which contexts is this felt?
- How might the university improve your experience as an early career researcher?
- What supports do you have outside the university and your work?

Closing

- There are many work surveys that people are invited to take part in.
 - What is it about those surveys that you think is positively captured?
 - What do you think is missing in those surveys? What don't they capture?
- Would you like to share any other experiences or thoughts about being an ECR at UQ or more generally?
- Closing remark: If anyone has anything to add that they would prefer not to share with the group, you are welcome to contact me privately.

Quantitative Investigation

Method, Participants and Recruitment

This study will involve a quantitative survey that includes mapping of people's group-based networks using a new tool developed at UQ called online Social Identity Mapping. There will be an open invitation for all UQ ECRs to participate, with the assistance of the Steering group or via EMCR@UQ committee.

Findings from the focus group interviews will be used to inform the measures included in the quantitative survey. The following overview provides suggested items based on existing research and available data from previous UQ surveys.

Quantitative Survey Content

Screening items

- Consent (Agree/Do not agree)
- Self-identified as an ECR (Yes/No)

Outcomes

- Well-being (e.g., burnout, psychological distress, psychological well-being, life satisfaction)
- Engagement (e.g., intention to stay in academia)
- Motivation (e.g., job satisfaction)
- Career development

Social identity

- Work group inclusion (Chung et al., 2020)
 - Sense of belongingness at UQ (e.g., "I am treated as a valued member of my research team")
 - Sense of uniqueness (e.g., "I can share a perspective on research issues that is different from my research team members")
- Social group capital
 - Strength of identification as ECR/UQ employee/local unit (school, centre)/ research group
 - Prototypicality as ECR/UQ employee/local unit (school, centre)/ research group
 - Number of groups (captured through online social identity mapping)
 - Quality of groups (captured through online social identity mapping)
- Group experiences
 - The nature of group memberships (e.g., experienced as positive, empowering, exploitative, high-pressure, etc)
- Supports
 - Availability/quality of support (using online Social Identity Mapping, Bentley et al., 2020)
 - Support from my direct supervisor
 - From other members of my research team
 - From my organisational unit
 - From UQ central advisory groups and committees
 - From UQ senior leadership
 - From my ECR peers
 - From external professional networks (e.g., professional societies, organisations,
 - From my personal network outside UQ (e.g., partner, family, friends, and/or community)

- Extent to which additional supports and resources are needed and tailored to...
 - o ... ECRs wanting to change careers
 - o ... ECRs balancing dual careers
 - o ... ECRs who have moved or want to move for work
 - o ... ECRs who are parents or are thinking of having children
 - o ... ECRs who are caring for other family members
 - o ... Other [please describe]

Work-life balance (alignment with workplace norms, support and management)

- Organisational segmentation norm and support (Kreiner, 2006)
 - Example item: "Where I work, people can keep work matters during work hours"
- Work-life boundary management (Wepfer et al., 2018)
 - Example item: "I often think about work matters during my time off"

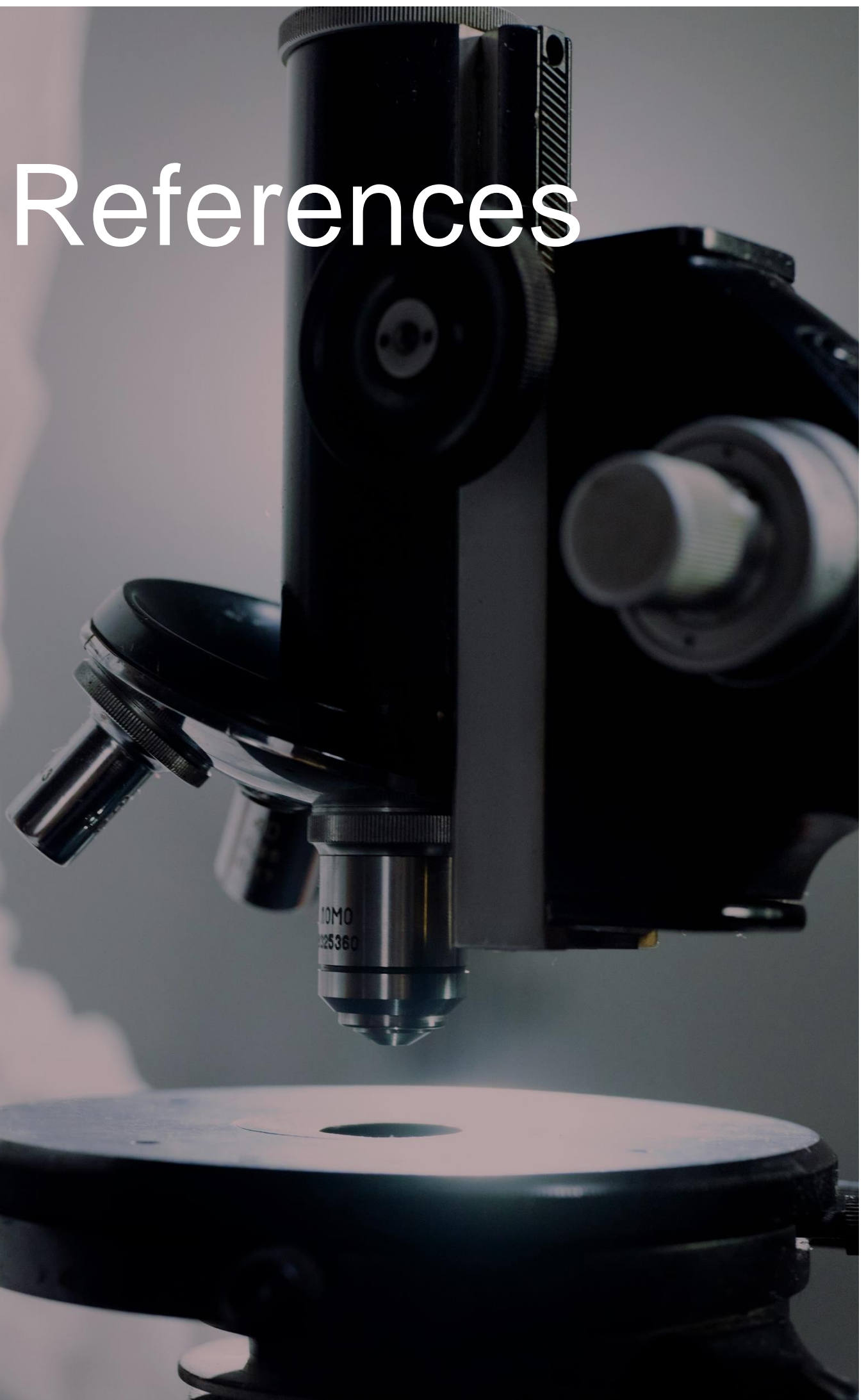
Job insecurity and demands (to identify nuance in these challenges)

- Job insecurity (De Witte, 2000; Fischmann et al., 2021)
 - Example item: "I feel insecure about the future of my job"
- Job demands (Adapted from Morgeson et al., 2006)
 - Example item: "My job requires me to work very hard"

Demographics

- Age
- Gender
- Parent with child/ren at home
- Aboriginal/Torres Strait Islander
- Years since PhD award
- Organisational unit [dropdown menu]
- Position at UQ
- Working from campus/from home/remotely/other
- Employed on a full-time/part-time/casual basis
 - If part-time: How many hours per week are you contracted to work?
- Fixed term or continuing employment
 - If fixed term: What is the length of your term?
- Length of time in current position
- Average number of hours worked each week
- Distribution of hours spent on research/teaching/admin/service/other

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Appendices



APPENDIX A

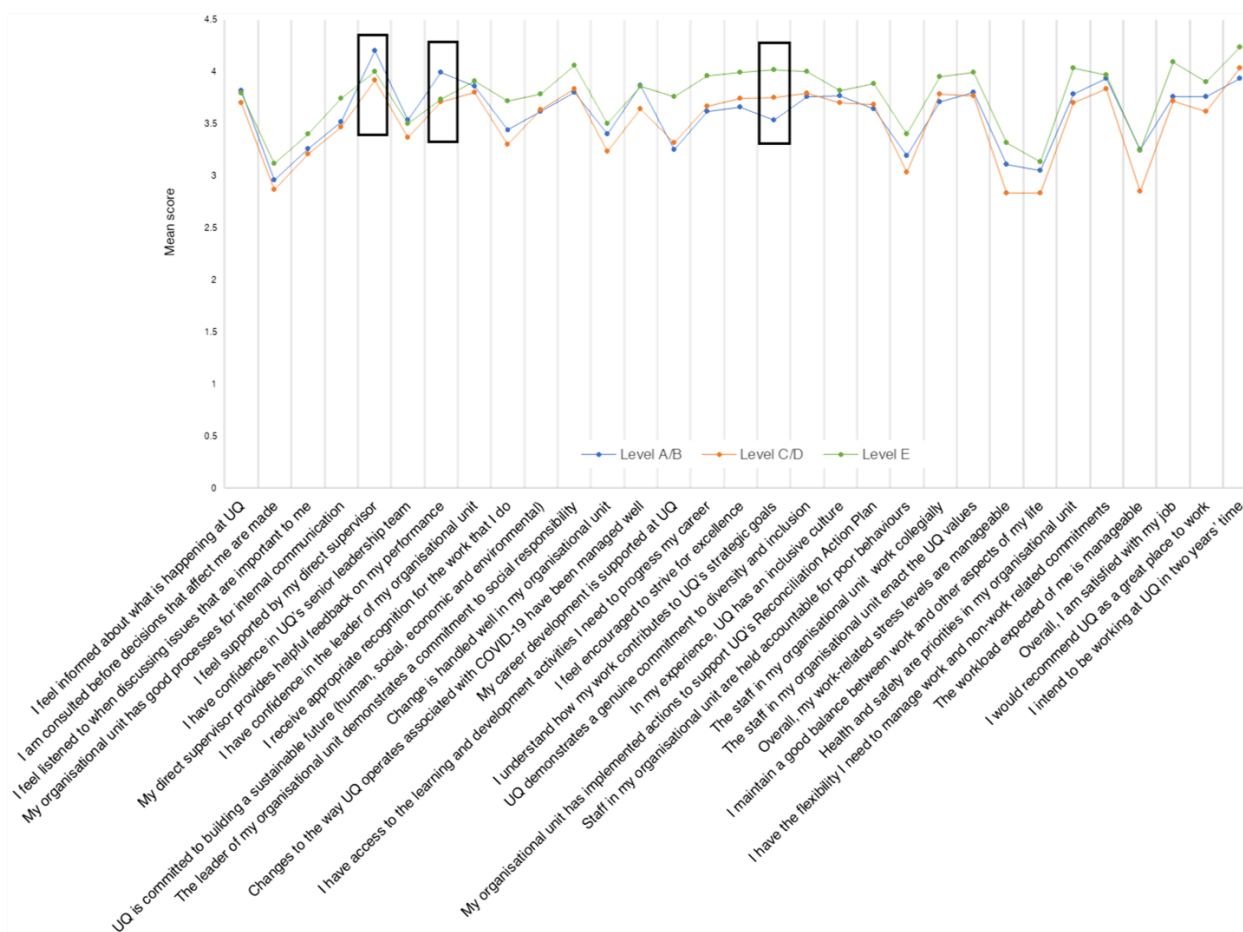
Supplemental Material for the Pulse Survey Analysis

Descriptive differences in survey responses as a function of staff level (Figure A1)

Key Finding

→ Compared to more senior staff, Level A/B staff report feeling more supported by their supervisor but lack insight how their work contributes to UQ's strategies and goals.

Figure A1. Mean response scores by academic level: Level A/B (N = 965), Level C/D (N = 707), Level E (N = 439).

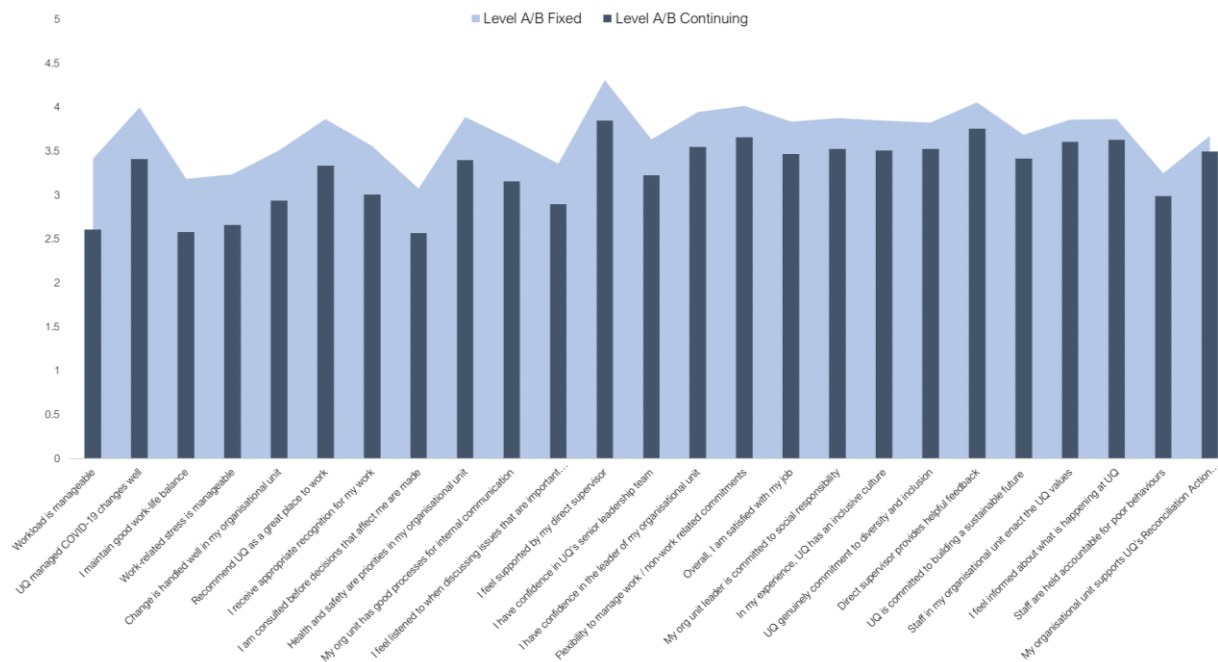


Areas of difference in academic staff experience, with ECR data as a function of employment level (Figure A2)

Key finding

→ Level A/B staff on continuing contracts report significantly lower scores than those on fixed contracts on almost all variables assessed. Notable here are worse experiences in areas of work demands, work-life balance, and institutional response to change.

Figure A2. Comparing responses from Level A/B employees as a function of their employment type: fixed term ($N = 744$; shaded area) compared to continuing employees ($N = 187$; bars). The response means below differ significantly between employment types and are ordered from greatest to smallest degree of difference.

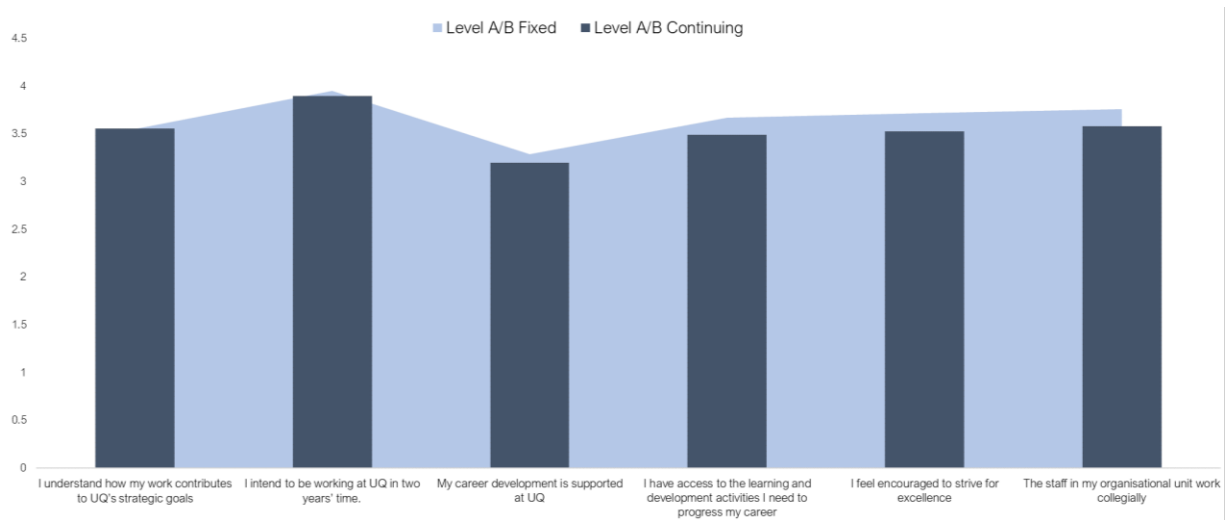


Areas of similarity in academic staff experience, with ECR data as a function of employment level (Figure A3)

Key finding

→ Level A/B staff on continuing contracts report similar scores to those on fixed contracts on experiences of career development, positive research culture, and intentions to stay at UQ.

Figure A3. Level A/B responses which were similar for fixed and continuing employment types



Statistical (t-test) analyses of areas of similarity and differences between ECR employment types (Table A1)

Table A1. Paired-samples *t*-tests comparing Pulse item responses for Level A/B fixed-term staff compared to Level A/B continuing staff.

	Fixed		Continuing		<i>t</i>	<i>df</i>	<i>p</i>	<i>d</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
I feel informed about what is happening at UQ	3.87	0.90	3.63	1.04	2.82	258.42	.005	.24
I am consulted before decisions that affect me are made	3.08	1.19	2.57	1.26	4.97	276.10	< .001	.46
I feel listened to when discussing issues that are important to me	3.36	1.14	2.90	1.28	4.54	265.67	< .001	.42
My organisational unit has good processes for internal communication	3.64	1.20	3.16	1.30	4.52	271.59	< .001	.43
I feel supported by my direct supervisor	4.31	1.05	3.85	1.35	4.28	244.56	< .001	.42
I have confidence in UQ's senior leadership team	3.64	1.12	3.23	1.19	4.25	273.19	< .001	.38
My direct supervisor provides helpful feedback on my performance	4.06	1.16	3.76	1.32	2.85	260.16	.005	.27
I have confidence in the leader of my organisational unit	3.95	1.19	3.55	1.48	3.39	247.81	< .001	.35
I receive appropriate recognition for the work that I do	3.56	1.29	3.01	1.35	5.03	276.47	< .001	.48
UQ is committed to building a sustainable future (human, social, economic and environmental)	3.69	1.05	3.42	1.12	2.95	275.52	.003	.26
The leader of my organisational unit demonstrates a commitment to social responsibility	3.88	1.08	3.53	1.18	3.64	269.41	< .001	.33
Change is handled well in my organisational unit	3.51	1.14	2.94	1.28	5.65	263.12	< .001	.52
Changes to the way UQ operates associated with COVID-19 have been managed well	4.00	1.03	3.41	1.22	6.09	255.84	< .001	.56
My career development is supported at UQ	3.29	1.27	3.20	1.27	0.80	286.68	.423	.08
I have access to the learning and development activities I need to progress my career	3.67	1.06	3.49	1.19	1.86	264.3	.064	.17
I feel encouraged to strive for excellence	3.72	1.18	3.53	1.28	1.81	270.62	.071	.17
I understand how my work contributes to UQ's strategic goals	3.55	1.14	3.56	1.13	-0.10	288.73	.917	-.01
UQ demonstrates a genuine commitment to diversity and inclusion	3.83	1.09	3.53	1.18	3.15	270.14	.002	.28
In my experience, UQ has an inclusive culture	3.85	1.07	3.51	1.18	3.67	266.1	< .001	.32
My organisational unit has implemented actions to support UQ's Reconciliation Action Plan	3.68	1.01	3.50	1.04	2.12	271.65	.035	.18
Staff in my organisational unit are held accountable for poor behaviours	3.25	1.17	2.99	1.22	2.65	276.78	.009	.24
The staff in my organisational unit work collegially	3.76	1.10	3.58	1.22	1.85	265.12	.066	.17
The staff in my organisational unit enact the UQ values	3.86	0.98	3.61	1.06	2.84	270.91	.005	.25
Overall, my work-related stress levels are manageable	3.24	1.22	2.66	1.22	5.89	284.25	< .001	.53
I maintain a good balance between work and other aspects of my life	3.19	1.24	2.58	1.22	6.04	291.32	< .001	.55
Health and safety are priorities in my organisational unit	3.89	1.11	3.40	1.21	4.98	270.85	< .001	.45
I have the flexibility I need to manage work and non-work-related commitments	4.02	1.00	3.66	1.14	3.98	261.36	< .001	.35
The workload expected of me is manageable	3.42	1.23	2.61	1.24	8.01	285.74	< .001	.73
Overall, I am satisfied with my job	3.84	1.09	3.47	1.25	3.78	262.23	< .001	.34
I would recommend UQ as a great place to work	3.87	1.09	3.34	1.23	5.39	264.21	< .001	.49
I intend to be working at UQ in two years' time.	3.95	1.14	3.90	1.16	0.49	284.09	.622	.05

APPENDIX B

UQ HDR WERC Survey (November – December 2021)

The HDR Well-Being, Engagement, and Research Culture (WERC) Survey collected data in 2021 on the well-being and engagement of Higher Degree by Research (HDR) students at UQ. Higher Degree Researchers (HDRs) — especially those in the later stages of their candidature — represent the early stage of ECR career transition. Thus, data from this cohort can shed light on the wider context from which to understand the early stages of the ECR experience. The below table reports associations between well-being, engagement, and research culture for HDRs in the final stage of their HDR candidature.

Key findings

→ *Pressure to publish was most strongly associated with lower optimism about their future career in late-stage HDR candidates.*

→ *Incompatibility between late-stage HDRs’ social identities was most strongly associated with experiencing distress about their future career.*

Table B1. Correlations between research culture and engagement variables for those in the post-submission stage of their HDR candidature at UQ ($N = 128$).

	Future Career Optimism	Future Career Distress [^]	Meaningful Life	Life Satisfaction	HDR Satisfaction	Research Competence	Psychological Distress [^]	Burnout [^]	Loneliness [^]	Imposter Syndrome [^]
Supervisor support	.16	-.01	.17	.32**	.54**	.18*	-.18*	-.35**	-.05	-.06
Advisor support	.17	-.21*	.01	.17	.30**	.03	-.26**	-.29**	-.17	-.05
HDR peer support	.13	-.21*	.37**	.46**	.24**	.34**	-.39**	-.17	-.26**	-.10
External social support	.02	.05	.05	.04	.32**	.06	-.04	-.17	-.05	.12
UQ support	.15	-.05	.09	.08	.21*	.09	-.02	.01	-.04	-.00
UQ policies support research	.33**	.13	.19*	.13	.26**	.20*	-.06	-.19*	-.15	-.04
UQ policies support well-being	.36**	-.19*	.20*	.20*	.37**	.23**	-.16	-.28**	-.23**	-.09
Social identity	.13	-.05	.15	.28**	.44**	.16	-.28**	-.34**	-.17	.04
Identity compatibility	.26**	-.36**	.42**	.42**	.42**	.27**	-.39**	-.44**	-.36**	-.25**
Belongingness	.22*	-.06	.20*	.32**	.50**	.15	-.24**	-.25**	-.15	-.05
Personal value recognised	.30**	-.11	.19*	.29**	.44**	.16	-.29**	-.29**	-.21*	-.03
HDR-life balance	.30**	-.28**	.39**	.36**	.47**	.16	-.54**	-.63**	-.28**	-.16
HDR-life boundary management	.12	-.16	.15	.21*	.24**	.05	-.13	-.21*	-.12	-.15
Balance reflects values	.26**	-.27**	.37**	.34**	.53**	.19*	-.33**	-.53**	-.21*	-.16
Support for HDR-life balance	.25**	-.16	.21*	.29**	.41**	.16	-.23**	-.29**	-.10	-.06
Detach from work	.20*	-.17	.33**	.31**	.31**	.07	-.32**	-.24**	-.16	-.14
Spend time relaxing	.13	-.11	.27**	.21*	.28**	.06	-.37**	-.32**	-.13	-.04
Seek new activities	.24**	-.18*	.37**	.27**	.38**	.20*	-.33**	-.33**	-.16	-.30**
HDR autonomy	.23*	-.15	.34**	.35**	.48**	.39**	-.26**	-.40**	-.05	-.23**
Collaborative	.21*	-.11	.16	.27**	.49**	.12	-.12	-.20*	-.17	.08
Innovative	.26**	-.16	.14	.33**	.44**	.05	-.13	-.17*	-.17	.09
Strives for excellence	.19*	-.16	.16	.20*	.30**	-.03	-.15	-.12	-.13	.06
Values research integrity	.30**	-.18*	.23**	.34**	.51**	.10	-.18*	-.24**	-.20*	.05
Pressure to publish [^]	-.38**	.35**	-.41**	-.42**	-.31**	-.34**	.29**	.34**	.12	.32**

[^] represents negatively valanced measures

* indicates $p < .05$. ** indicates $p < .01$.