

# JCU Postgraduate Research Experience Questionnaire (PREQ) Summary Report – 2021

Prepared June 2021

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## 1.0 Introduction

Every year recently completed Higher Degree by Research candidates are invited to take the Postgraduate Research Experience Questionnaire (PREQ), which is part of the nation-wide Graduate Outcomes Survey and is published within the Quality Indicators for Learning and Teaching (QILT). These surveys are administered by the Social Research Centre on behalf of Universities Australia.

This report summarises the results of the JCU PREQ as part of the 2019 and 2020 Graduate Outcomes Surveys (GOS).

These surveys reflect the experience of graduates who completed the requirements for a Higher Degree by Research between March 2018-February 2019 (2019 GOS) and March 2019-February 2020 (2020 GOS) across the Research Education sector in Australia. Results are therefore reflective of those enrolled in Doctoral candidature in the preceding 4-8 years (approx. 2012 – 2019). The lag time in results typically means that the survey is most useful for identifying trends over time and sectoral patterns. The analysed data are provided by QILT to JCU via the Reporting & Analytics Office who collaborated with the Graduate Research School on preparation of this report.

Analyses revealed no statistically significant difference in level of satisfaction between JCU and the Sector at a scale level, although there were some statistically significant differences at an item level. There were also some statistically significant differences in satisfaction between demographic groups both at JCU and across the Sector.

## 2.0 Results

### **2.1 The Survey**

For the purposes of this report, the data for the years of 2019 and 2020 were combined due to the relatively small number of responses for JCU (see Table 1). The data were filtered to reflect the Tableau workbook version of the data that is reported on the QILT website<sup>1</sup> in which 154 of JCU's responses were included in the analysis. As a percentage of the total number of completions in 2019 and 2020, JCU's valid response rate was 63%.

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<sup>1</sup> Filters included the following: Online completions of the survey only, study level = 'Postgraduate research' and 'Flags records used in the analysis of QILT data' = 'Graduate' and 'Second course in double degree' only.

**Table 1: Number of respondents and response rates.**

	2019		2020		Total	
	Respondents	Sample	Respondents	Sample	Total respondents	Response rate
<b>JCU Valid Responses</b>	65	130	89	113	154	63%
<b>Sector Valid Responses (not JCU)</b>	5642	9593	5651	9595	11293	59%

The PREQ itself consists of 1 item relating to “Overall Satisfaction” and a further 33 items which roll up into 7 scales as defined below:

**Overall Satisfaction Item**

Asks the graduate to indicate their level of overall satisfaction with their completed research. (1 item)

**Supervision Scale**

Evaluates the accessibility and quality of research degree supervision. (6 items)

**Intellectual Climate Scale**

Measures the learning community and conditions provided by the institution, and whether the graduate felt that their department had made efforts to integrate them into the academic community. (5 items)

**Skill Development Scale**

Assesses the extent of generic analytical and communication skill development. Such skills include the ability to transfer knowledge, apply analytical techniques to new situations, solve problems, plan work, and communicate effectively in writing. (8 items)

**Infrastructure Scale**

Asks the student about the quality of learning infrastructures such as space, and equipment and finance and whether resource requirements were met during their period of research. (5 items)

**Thesis Examination Process Scale**

Evaluates whether the examination process was timely, fair and satisfactory, and how satisfied the student was with thesis examination. (3 items)

**Goals and Expectations Scale**

Measures the clarity of learning structure, requirements and standards, and whether supervisors and others frame learning with appropriate pedagogical structures and expectations. (3 items)

**Industry Engagement Scale**

Asks the student about the applicability of their skills, professional connections, and opportunities to work on “real-world” problems all outside the university sector. (3 items)

**2.2 Analysis**

The PREQ asks graduates to indicate their agreement to statements on a five-point Likert scale. Each statement is a positive statement about the HDR experience e.g., “I had good access to the technical support I needed”. For the item-level analyses in this report, the following numbers were assigned to the Likert scale points: 1 = strongly disagree, 2 = disagree, 3 = neither agree nor disagree, 4 = agree, 5 =

strongly agree. A higher score indicates a more positive experience. Scale-level data is provided in a simplified form: “in agreement” and “not in agreement”. “In agreement” includes “agree” and “strongly agree” responses.

### 2.2.1 Scale Level Comparison of JCU vs Sector

A series of one-way ANOVA tests were used to examine if there were differences between JCU and the rest of the sector. The first analyses examined whether there were statistically significant ( $p < 0.05$ ) differences between JCU and the sector on the PREQ scales and Overall Satisfaction item.

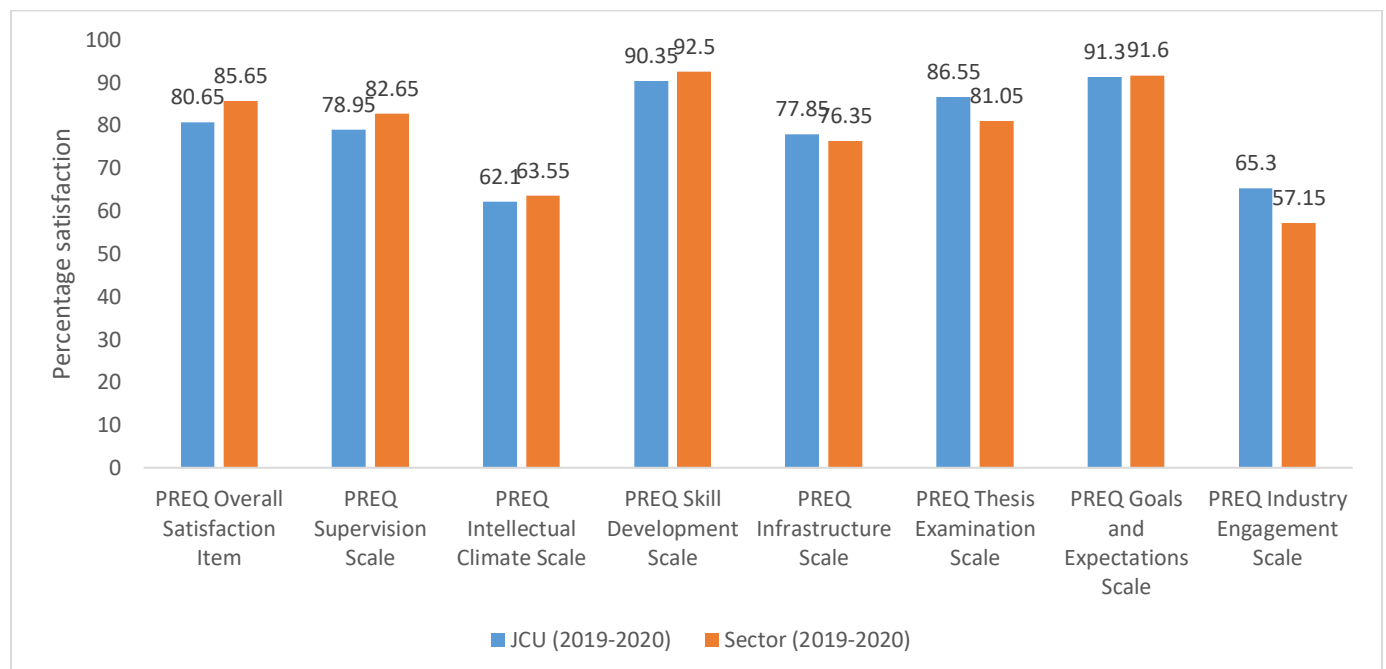
No statistically significant differences were found at the PREQ scale level. However, JCU HDR graduates had a significantly lower score for the Overall Satisfaction item. Tests for differences in all items (individual questions) revealed only two additional significant differences between JCU and the sector, with JCU graduates less satisfied with guidance in topic selection and refinement and availability of supervision when they needed it.

Figure 1 illustrates the average satisfaction (i.e., the percentage of respondents “in agreement”) on each scale for JCU and the Sector. In addition to the statistically significant differences between JCU and the Sector, JCU HDR graduates have

- slightly lower levels of satisfaction for the Supervision, Intellectual Climate and Skill Development scales, and
- slightly higher levels of satisfaction for the Infrastructure, Thesis Examination, and Industry Engagement scales.

Intellectual Climate has had the lowest satisfaction rating of all scales traditionally in the PREQ (see [PREQ 2015, Figure 1](#)) and the Industry Engagement scale was a new addition to the PREQ from 2019.

**Figure 1: Average satisfaction levels for each PREQ Scale for JCU and the Sector.**



### **2.2.2 Comparison of Demographic Groups within JCU and the Sector at Scale Level**

The dataset contained the following demographic and academic context variables which were used to test whether there were statistically significant differences in responses within JCU and across the entire Australian sector:

- Study mode (internal/external)
- Attendance mode (full time/part time)
- Survey completion year
- If from non-English speaking background
- Citizenship (Overseas/domestic)
- Broad field of education of study
- Gender

Statistically significant differences in satisfaction were found for the above groups in the following PREQ scales at both JCU and across the sector:

- Domestic students and part-time students had lower scores on the Intellectual Climate and Infrastructure scales than international and full-time students;
- Domestic students had lower Overall Satisfaction scores than international students; and
- Female students had lower Overall Satisfaction, as well as lower scores on the Skill Development, Infrastructure, and Industry Engagement scales.

Table 2 below shows the proportions of respondents in different demographic groups within JCU and across the sector. JCU had a slightly higher proportion of international and full-time respondents than the sector.

**Table 2: Proportions of HDR respondents within JCU and across the sector, based on international status, study load and gender.**

	<i>Domestic</i>	<i>Overseas</i>	<i>Full-time</i>	<i>Part-time</i>	<i>Female</i>	<i>Male</i>
<i>JCU</i>	0.56	0.44	0.72	0.28	0.53	0.47
<i>Sector</i>	0.66	0.34	0.67	0.33	0.52	0.48

### **2.2.3 Item-level comparison of demographic groups within JCU**

The JCU data were then interrogated at the level of each individual item making up each scale, for each of the demographic groups above showing satisfaction differences at the scale level (see Table 3.)

These findings provide an excellent opportunity to unpack their origins through targeted focus groups.

Across the individual items the greatest differences in satisfaction were between domestic and international students, and between full-time and part-time students. International and full-time students were significantly more satisfied than domestic and part-time students respectively in the following items (including four of the five Intellectual Climate scale (ICS) items):

- The thesis examination process was fair (TES)
- I was satisfied with the thesis examination process (TES)

- I had access to a suitable working space (IS)
- I was able to organise good access to necessary equipment (IS)
- I had good access to computing facilities and services (IS)
- I was integrated into the department's community (ICS)
- The department provided opportunities for me to become involved in the broader research culture (ICS)
- A good seminar program for postgraduate students was provided (ICS)
- The research environment in the department or faculty stimulated my work (ICS)
- I improved my ability to communicate information effectively to diverse audiences (SDS)
- I understood the required standard for the thesis (GES)

Several of the above items are more relevant to the full-time student experience than for part-time students, particularly Infrastructure scale items. On these items, lower satisfaction of part-time students is due to a large proportion of students selecting “Neither agree nor disagree”, rather than “disagree” or “strongly disagree”.

Female students were often less satisfied than male students, particularly on the Intellectual Climate scale. Almost all statistically significant differences between students with an English-speaking background versus a non-English speaking background were Intellectual Climate items, with students with a non-English speaking background consistently more satisfied.

There were few statistically significant differences in scores between internal and external students. This stands in contrast with the 2017-2018 PREQ results in which internal and external students scored differently on the Intellectual Climate scale, with internal students significantly more satisfied. This may be due to very few external JCU students completing the survey across all four years. However, internal students in both the 2019 and 2020 surveys were more satisfied on all but one Intellectual Climate item on the 2019 survey (The department provided opportunities for me to become involved in the broader research culture). This indicates that intellectual climate may still be an area of need within the experience of external students and is worth investigating further.

Similarly, it is difficult to draw conclusions around the satisfaction of indigenous students compared to non-indigenous students and students with disabilities compared to students without disabilities due to low survey completion numbers for indigenous students and students with disabilities. For this reason, these demographic groups are not included in Table 3.

#### ***2.2.4 Comparison between discipline groups within JCU***

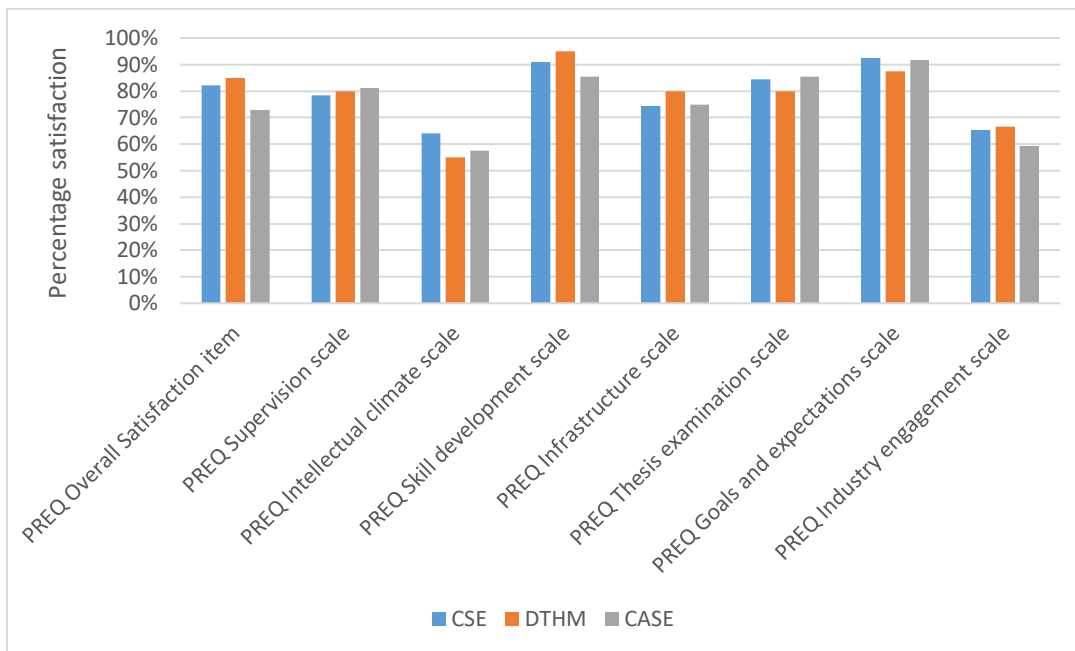
To better understand student satisfaction in different parts of the university the data was analysed according to three broad groups, where there were sufficient student numbers to make the analysis meaningful.

All responses from 2017-2020 were included in this analysis to increase sample size, as some subject areas had very few students completing the survey. The three sub groups for this part of the analysis were:

- Division of Tropical Health and Medicine (DTHM) n=43
- College of Science and Engineering (CSE) n=170
- College of Arts, Society and Education (CASE) n=65

The data also allowed an initial picture of differences in satisfaction. A series of chi-squared tests were run to determine whether there was a significant difference in satisfaction between students within the three discipline groups. No significant differences were found at the scale level or for the Overall Satisfaction item (see Figure 2). Some significant differences were found on individual items (see Table 3). Note that full time and international students typically respond with a higher level of satisfaction than domestic, part time or female candidates.

**Figure 2: Percentage satisfaction of DTHM, CSE and CASE graduates at the scale level.**



**Table 3: Items on which JCU discipline groups differed in satisfaction.**

Item	Result
The thesis examination process was fair (TES)	DTHM students were less satisfied than CSE and CASE students
I improved my ability to communicate information effectively to diverse audiences (SDS)	CASE students were less satisfied than DTHM and CSE students
I understood the required standard for the thesis (GES)	DTHM students were the least satisfied. Zero CASE students responded negatively.
The department provided opportunities for me to become involved in the broader research culture (ICS)	CSE students were more satisfied than DTHM and CASE students.
A good seminar program for postgraduate students was provided (ICS)	CSE students were the most satisfied. CASE students were the least satisfied.
I had opportunity to work on research problems with businesses, governments, communities or organisations outside the university sector (IES)	DTHM students were the most satisfied. CASE students were the least satisfied.

## 3.0 Recommendations

The PREQ data presented in this report provide a picture of the HDR experience in the 4-8 years prior to data collection. This data may not reflect current experience.

Collecting survey data from current JCU HDR students based on the PREQ instrument and findings reported here, would provide insight into the contemporary experience of the HDR program.

Interview data would provide a more nuanced picture of current needs and expectations of the student experience.

Further understanding the needs of students in less satisfied demographic groups (according to the PREQ data) would be helpful in designing interventions to support these groups.

The discipline group analysis of the JCU PREQ data provides a useful starting point for considering contextual and demographic differences within these study areas that may be influencing student satisfaction, as well as differences that should be noted when considering interventions to improve the student experience.

## 3.0 Conclusions

This report compares the satisfaction of HDR graduates from JCU in 2019 and 2020 with those of the entire sector. There were no statistically significant differences in the levels of satisfaction of JCU HDR Graduates and Sector HDR Graduates at the scale level of the survey. However, JCU graduates had significantly lower scores for the Overall Satisfaction, topic selection and supervision availability items.

The survey data also highlighted differences in levels of satisfaction for demographic groups within JCU for select items in the survey. These variations for certain demographic groups provide a useful baseline for focus groups within JCU with the aim of improving the HDR experience.

Within JCU, some differences in satisfaction were identified between broad discipline groups (DTHM, CSE and CASE) on individual items. These results provide a broad picture of which aspects of the student experience would benefit from undertaking further research in these discipline groups, and are a starting point for working to understand why these differences may be present.





