

JCU Postgraduate Research Experience Questionnaire (PREQ) Summary Report – 2022

Prepared September 2022

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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 2020 and 2021 Graduate Outcomes Surveys (GOS).

These surveys reflect the experience of graduates who completed the requirements for a Higher Degree by Research between March 2019-February 2020 (2020 GOS) and March 2020-February 2021 (2021 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. 2013 – 2020). 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 2020 and 2021 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 website¹ in which 162 of JCU's responses were included in the analysis. As a percentage of the total number of completions in 2020 and 2021, JCU's valid response rate was 73%.

¹ 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.

| | 2020 | | 2021 | | Total | |
|---|-------------|--------|--------------------|--------|-------------------|---------------|
| | Respondents | Sample | Respondents | Sample | Total respondents | Response rate |
| JCU Valid Responses | 89 | 113 | 73 | 108 | 162 | 73% |
| Sector Valid Responses (not JCU) | 5651 | 9595 | Not yet available. | | | |

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.

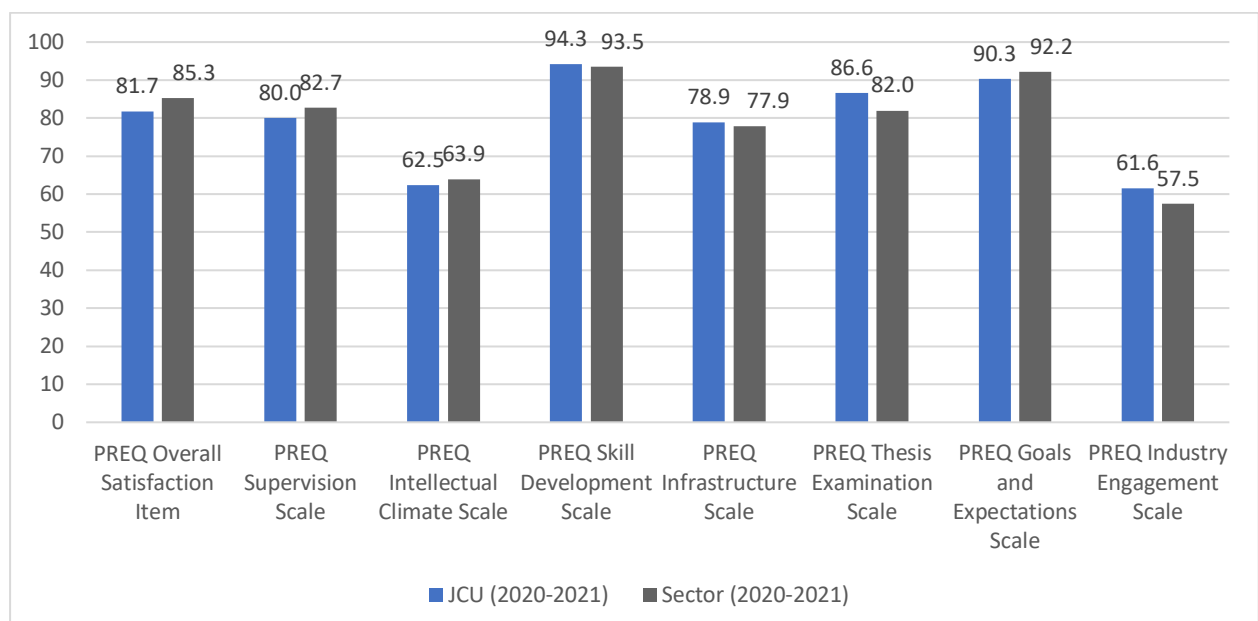
No statistically significant differences were found at the PREQ scale level, however JCU graduates scored significantly lower on the Overall Satisfaction item. Tests for differences in all items (individual questions) revealed only one additional statistically significant difference between JCU and the sector: JCU graduates were more satisfied that they improved their ability to communicate information effectively to diverse audiences, compared to graduates across the sector.

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 Goals and Expectations scales, and
- slightly higher levels of satisfaction for the Infrastructure, Skill Development, 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.



While Figure 1 shows average satisfaction for 2020-2021, it is encouraging to see that JCU graduates scored 98.6% satisfaction on the Skill Development scale in the 2021 PREQ.

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:

- Part-time graduates had lower scores on the Overall Satisfaction Item, and the Supervision, Intellectual Climate, Infrastructure and Goals and Expectations scales than full-time graduates;
- Domestic graduates had lower Overall Satisfaction and Intellectual Climate scale scores than international graduates; and
- Female graduates had lower Overall Satisfaction, as well as lower scores on the Intellectual Climate, Skill Development and Infrastructure scales than male graduates.

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 (2020-2021).

| | <i>Domestic</i> | <i>Overseas</i> | <i>Full-time</i> | <i>Part-time</i> | <i>Female</i> | <i>Male</i> |
|---------------|-----------------|-----------------|------------------|------------------|---------------|-------------|
| <i>JCU</i> | 0.52 | 0.48 | 0.72 | 0.28 | 0.54 | 0.45 |
| <i>Sector</i> | 0.65 | 0.35 | 0.66 | 0.33 | 0.52 | 0.47 |

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 the scales, for each of the demographic groups above showing statistically significant differences in satisfaction at the item level (see Table 3.)

Across the individual items, the greatest differences in satisfaction were between domestic and international graduates, and between full-time and part-time graduates. International and full-time graduates were significantly more satisfied than domestic and part-time graduates respectively, most notably on Intellectual Climate and Infrastructure scale items.

Female graduates were often less satisfied than male graduates, particularly on the Intellectual Climate scale. Almost all statistically significant differences between graduates with an English-

speaking background versus a non-English speaking background were Intellectual Climate items, with graduates with a non-English speaking background consistently more satisfied.

There were no statistically significant differences in scores between internal and external graduates. This may be due to very few external JCU graduates completing the survey (14 external graduates for 2020 and 2021 combined). The categories 'internal' and 'external' also may not be suitable descriptors of the candidates' study mode, with many working both on- and off-campus, particularly over the last two years.

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

2.2.4 Comparison between discipline groups within JCU

To better understand graduate satisfaction in different parts of the university the data was analysed according to three broad groups, where there were sufficient respondent numbers to make the analysis meaningful for the 2020-2021 data.

The three subgroups for this analysis were:

- Colleges of Medicine and Dentistry, Healthcare Sciences, and Public Health Vet and Molecular sciences (CMD/CHS/CPHMVS, formerly DTHM) n=29
- College of Science and Engineering (CSE) n=97
- College of Arts, Society and Education and College of Business, Law and Governance (CASE/CBLG) n=36

The data also allowed an initial picture of differences in satisfaction. A series one-way ANOVA tests were run to determine whether there was a statistically significant difference in satisfaction between graduates within the three discipline groups. No significant differences were found at the scale level or for the Overall Satisfaction item (see Figure 2). Some statistically significant differences were found on individual items (see Table 4). It is interesting to note that all differences between discipline groups were on Supervision Scale items.

Figure 2: Percentage satisfaction of CMD/CHS/CPHMVS, CSE and CASE/CBLG JCU graduates at the scale level (2020-2021).

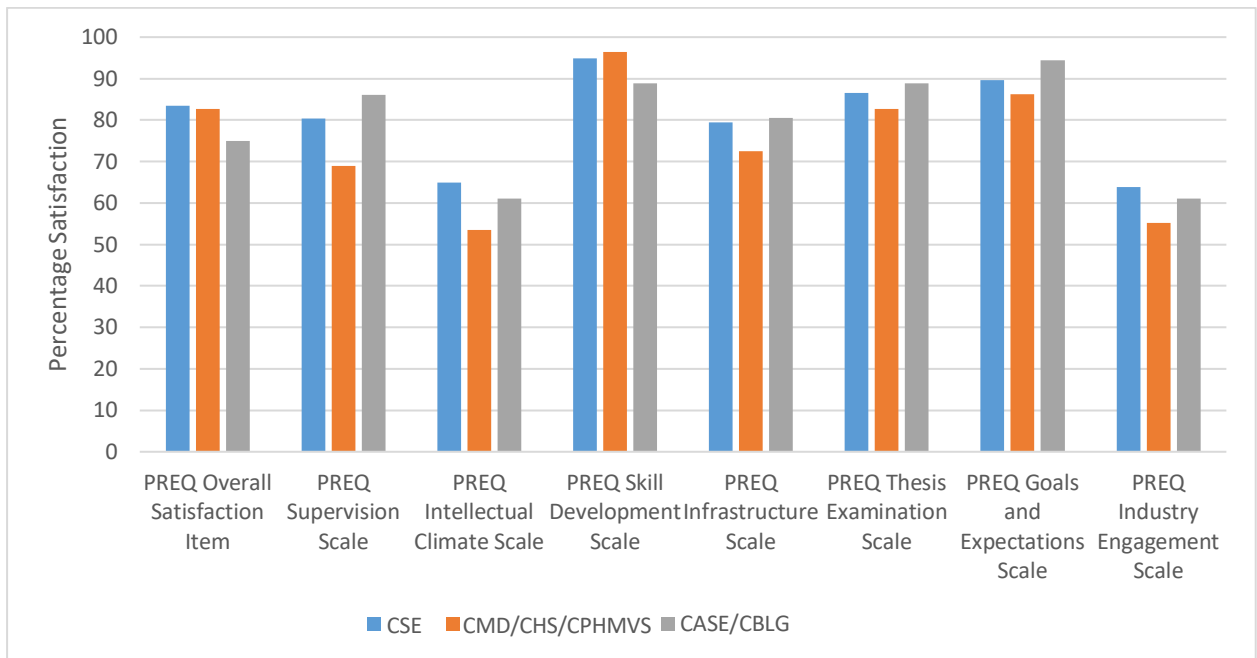


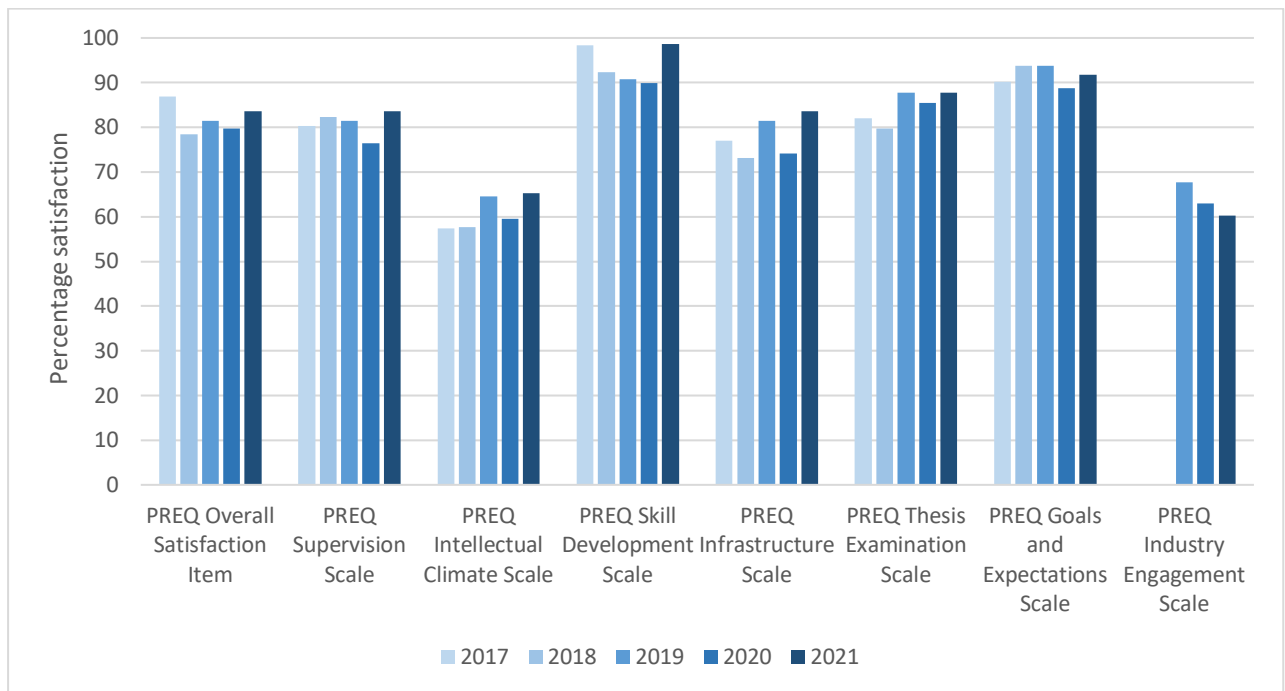
Table 4: Items on which JCU discipline groups differed in satisfaction.

| Item | Result |
|--|---|
| My supervisor(s) provided additional information relevant to my topic (SC) | CMD/CHS/CPHMVS graduates were less satisfied than CSE and CASE/CBLG graduates |
| I was given good guidance in topic selection and refinement (SC) | CASE/CBLG graduates were more satisfied than CMD/CHS/CPHMVS and CSE graduates |
| My supervisor(s) provided helpful feedback on my progress (SC) | CASE/CBLG graduates were more satisfied than CMD/CHS/CPHMVS and CSE graduates |
| I received good guidance in my literature search (SC) | CASE/CBLG graduates were more satisfied than CMD/CHS/CPHMVS and CSE graduates |

2.2.5 Scale-level satisfaction within JCU 2017-2021

Figure 3 below provides a picture of how graduate experience at JCU has changed since 2017. It shows the percentage satisfaction for each PREQ scale and the Overall Satisfaction item for the years 2017-2021 (the Industry Engagement scale was introduced to the PREQ in 2019). Viewing the data in this way is informative in that large-scale changes in satisfaction over a long period of time are easily able to be analysed.

Figure 3: Time series showing scale-level satisfaction for JCU graduates 2017-2021.



3.0 Recommendations and Conclusions

This report compares the satisfaction of HDR graduates from JCU in 2020 and 2021 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, compared to the sector, JCU graduates had significantly lower scores for the Overall Satisfaction item, but were more satisfied that they improved their ability to communicate information effectively to diverse audience.

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.

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 investigating ways to improve the HDR experience at JCU. Indeed the initial stages of this work was completed in 2021 with the HDR Candidature Experience Report, which presents survey and interview data from current JCU HDRs and explores in depth the issues highlighted in the PREQ. The report also outlines specific recommendations for improving the HDR experience. The report can be found at: https://www.jcu.edu.au/__data/assets/pdf_file/0010/1959049/HDRCandidatureExperienceReport_Appendices_2022.pdf

Table 3: Item level comparison of demographic groups within JCU (2020-2021). Demographics highlighted red/green are those where a significant difference in satisfaction was found, with red being less satisfied and green being more satisfied.

| | Item | Female | Male | English speaking background | Non-English speaking background | Domestic | Overseas | Full-time | Part-time |
|-----|---|--------|------|-----------------------------|---------------------------------|----------|----------|-----------|-----------|
| | Overall, I was satisfied with the quality of my higher degree research experience | 3.74 | 4.32 | | | 3.79 | 4.22 | 4.10 | 3.71 |
| SC | Supervision was available when I needed it | | | | | | | 4.19 | 3.73 |
| | My supervisor(s) made a real effort to understand difficulties I faced | | | | | | | | |
| | I was given good guidance in topic selection and refinement | | | | | | | | |
| | My supervisor(s) provided additional information relevant to my topic | | | | | 3.91 | 4.26 | | |
| | My supervisor(s) provided helpful feedback on my progress | | | | | | | | |
| | I received good guidance in my literature search | | | | | | | | |
| ICS | The department provided opportunities for social contact with other postgraduate graduates | | | 3.83 | 4.19 | 3.72 | 4.19 | 4.08 | 3.60 |
| | I was integrated into the department's community | 3.39 | 3.81 | 3.37 | 3.98 | 3.15 | 4.03 | 3.80 | 2.96 |
| | A good seminar program for postgraduate graduates was provided | 3.75 | 3.95 | 3.69 | 4.08 | 3.58 | 4.08 | | |
| | The research environment in the department or faculty stimulated my work | 3.34 | 3.74 | 3.32 | 3.88 | 3.26 | 3.78 | 3.65 | 3.13 |
| | The department provided opportunities for me to become involved in the broader research culture | 3.26 | 3.86 | | | 3.24 | 3.84 | 3.72 | 3.02 |
| SDS | My research further developed my problem solving skills | | | | | | | | |
| | I improved my ability to communicate information effectively to diverse audiences | | | | | 4.15 | 4.45 | 4.37 | 4.11 |
| | I developed my skills in critical analysis and evaluation | 4.45 | 4.52 | | | | | | |
| | I improved my ability to plan and manage my time effectively | | | | | | | | |
| | As a result of my research, I feel confident about tackling unfamiliar problems | 4.18 | 4.37 | | | | | | |
| | I improved my ability to design and implement projects effectively | | | | | | | | |
| | I developed my understanding of research integrity | | | | | | | | |
| | I gained confidence in leading and influencing others | 3.74 | 4.10 | | | 3.68 | 4.12 | | |
| IS | I had access to a suitable working space | | | | | | | | |
| | I had good access to computing facilities and services | 3.86 | 4.27 | | | 3.87 | 4.25 | 4.24 | 3.56 |
| | I was able to organise good access to necessary equipment | 3.76 | 4.12 | | | 3.73 | 4.12 | 4.05 | 3.56 |
| | I had good access to the technical support I needed | | | 3.81 | 4.19 | | | 4.04 | 3.64 |
| | There was appropriate financial support for research activities | | | | | 3.49 | 3.96 | 3.91 | 3.22 |
| TES | The thesis examination process was fair | | | | | 4.16 | 4.44 | | |
| | I was satisfied with the thesis examination process | | | | | 4.08 | 4.40 | | |
| | The examination of my thesis was completed in a reasonable time | | | | | | | | |
| GES | I understood the required standard for the thesis | | | | | 4.12 | 4.52 | 4.42 | 4.02 |
| | I developed an understanding of the standard of work expected | | | | | | | | |
| | I understood the requirements of thesis examination | | | | | 4.20 | 4.46 | | |

| | | | | | | | | | |
|-----|---|--|--|--|--|--|--|--|--|
| IES | I am confident that I can apply my skills outside the university sector | | | | | | | | |
| | I had opportunities to develop professional connections outside the university sector | | | | | | | | |
| | I had opportunity to work on research problems with businesses, governments, communities or organisations outside the university sector | | | | | | | | |