Postgraduate Research Experience (PREQ) Background Report

2012

James Cook University

Office of
Corporate
Planning &
Performance
In collaboration with the
Graduate
Research
School

#### Introduction

#### **The Survey Instrument**

The Postgraduate Research Experience Questionnaire (PREQ) is part of the nation-wide Australian Graduate Survey (AGS) owned by Graduate Careers Australia (GCA), and administered annually by JCU's Careers Advisory Centre and the Teaching and Learning Directorate (TLD). The data are stored and managed by Information, Technology and Resources (IT&R).

The PREQ component of the survey instrument measures the student satisfaction with their research experience, taken after students have completed their postgraduate research degrees.

The 2012 PREQ survey evaluates students' learning experiences on seven different scales, they are:

- Supervision;
- Intellectual Climate:
- Examination;
- Infrastructure:
- Skills
- Goals and Expectations; and
- Overall Satisfaction

The PREQ survey includes 28 five-point Likert scale questions, and two open ended questions. The open ended questions request responses on 'Best Aspects' and 'Needs Improvement'.

In 2012, the Graduate Research School (GRS) administered an internal postgraduate satisfaction survey. This survey collects the same satisfaction data as the PREQ and will be used to gauge any shifts in student satisfaction within the current cohort. The internal survey also incorporates questions relating to access to library resources, timely feedback on work, fortnightly meetings with principal supervisor and if the research takes advantage of JCU's tropical location.

Caution is advised in interpreting the PREQ results as many factors can contribute to the results, including response rate, method of data collection, and other broader University factors. However, all attempts have been made to ensure data integrity and statistical rigour. Corporate Planning and Performance would also value feedback about the content of this report and any suggestions should be forwarded to <a href="mailto:daniel.zamykal@jcu.edu.au">daniel.zamykal@jcu.edu.au</a>

#### **Overview of the Report Data**

This report includes analyses of the responses of JCU graduands to the national PREQ survey for the years 2007 to 2012, and includes sector benchmark analysis for 2012. A further comparison of current student satisfaction with the PREQ survey (2010 and 2012) and the sector result for 2012 is also presented within the report.

The year represents the year the survey was conducted, not the graduating year. For example, 2012 data was collected in early 2012 for students completing their awards in 2011.

# **Background**

#### **Data Sources**

The data set is the survey results from the 2010-2012 PREQ, internal survey results from the current HDR candidate cohort of 2012 and sector results published in the Postgraduate Research Experience Report 2012 (Graduate Careers Australia).

#### Methodology

The twenty eight PREQ survey questions are designed to measure a student's perception of the learning community and conditions provided by the institution (Intellectual Climate Scale), the accessibility and quality of the supervision (Supervision Scale), the extent of generic analytical and communication skill development (Skill Development Scale), the quality of the learning infrastructure (Infrastructure Scale), whether the examination process was timely, fair and satisfactory (Thesis Examination Scale), the clarity of learning structures, requirements and standards (Goals and Expectations) and the overall satisfaction level of the degree (Overall Satisfaction) (Table 1). Each respondent is asked to express their degree of acceptance on a five-point Likert scale ranging from 'strongly disagree' to 'strongly agree'. While the data are captured at the degree level, this report combines the JCU data at the Faculty and Campus level from the student system with historical records being attributed to the current Faculty. The discipline groups are further classified based on the Field of Education (FoE) categories.

The PREQ results are reported in Mean Precent Agreement (MAP) and calculated in the following manner:

- 1. The 'percentage agreement' is calculated by recoding the responses 1, 2, and 3 as 0, while the responses of 4 and 5 on the reporting scale are recoded as 1 for each question within the scale. Each respondent obtains a 'percentage agreement' score for each scale depending on the proportion of 1's within the scale.
- 2. The Mean Agreement Percent (MAP) is the average 'percentage agreement' score from all respondents within the scale of interest.

Because the JCU sample sizes for each survey year are small (typically < 50) a decision was made in consultation with the Graduate Research School (GRS) to pool the results of all survey years (2010-2012) and compare them to the sector results from 2012. This decision

was statistically validated as the year to year variation within the scales at JCU was found to be statistically non significant.

The qualitative responses to the PREQ survey have been analysed using word clouds. A word cloud is a list of commonly used words where the size of the word is correlated with the word frequency in the respondents answer. The use of this technique nicely summarises the type of descriptions used when answering the 'Best Aspects' and 'Needs Improvement' questions.

Table 1: PREQ scales and survey questions

Scale	Questions	
Supervision Scale Questions		
Accessible	PREQ01 Supervision was available when I needed it.	
Understand difficulties	PREQ07 My supervisor(s) made a real effort to understand the	
Additional information	difficulties I faced. PREQ13 My supervisor(s) provided additional information relevant to	
Additional information	my topic.	
Topic guidance	PREQ17 I was given good guidance in topic selection and refinement.	
Helpful feedback	PREQ21 My supervisor(s) provided helpful feedback on my progress.	
Literature guidance	PREQ24 I received good guidance in my literature search.	
Intellectual Climate Sca		
Postgrad contact	PREQ05 The department provided opportunities for social contact with	
Part of community	PREQ09 I was integrated into the department's community.	
Involved in research	PREQ16 The department provided opportunities for me to become	
	involved in the broader research culture.	
Seminar program	PREQ22 A good seminar program for postgraduate students was	
Stimulating	PREQ23 The research ambience in the department or faculty stimulated	
	my work.	
Thesis Examination Sca	le Questions	
Fair process	PREQ02 The thesis examination process was fair.	
Satisfied process	PREQ15 I was satisfied with the thesis examination process.	
Reasonable timeframe	PREQ25 The examination of my thesis was completed in a reasonable	
Skill Development Scale	e Questions	
Problem solving	PREQ06 My research further developed my problem-solving skills.	
Develop ideas	PREQ10 I learned to develop my ideas and present them in my written	
	work.	
Analytical skills	PREQ14 My research sharpened my analytical skills.	
Planning skill	PREQ20 Doing my research helped me to develop my ability to plan my	
Taglingunfamilian	own work. PREQ26 As a result of my research, I feel confident about tackling	
Tackling unfamiliar		
problems Infrastructure Scale Qu	unfamiliar problems.	
Access space	PREQ03 I had access to a suitable working space.	
Technical support	PREQ08 I had good access to the technical support I needed.	
Equipment	PREQ12 I was able to organise good access to necessary equipment.	
Computing	PREQ18 I had good access to computing facilities and services.	
Financial support	PREQ27 There was appropriate financial support for research activities.	
Goals and Expectation S		
Know standards	PREQ04 I developed an understanding of the standard of work expected.	
Understand standards	PREQ11 I understood the required standard for the thesis.	
Understand Requirement		
Overall Satisfaction Indicator		

Scale	Questions
Overall satisfaction	PREQ28 Overall, I was satisfied with the quality of my higher degree
	research experience.
Further Questions Relating to Internal PREQ	
Tropical Location	NoPREQ01 My research takes advantage of the universities tropical
Library Resources	NoPREQ02 I have access to all library resources I need.
Supervision meetings	NoPREQ03 I generally meet with my principal supervisor at least once
Timely feedback	NoPREQ04 My supervisors provide timely feedback on my written work.

#### Report Structure

This report is hierarchical in nature taking a top down approach from the University to the Faculty, Discipline and Demographic levels. The sections are outlined below:

**Section A** describes the trends at the University level from 2006 to 2012 and compares JCU to the sector result for 2012.

**Section B** explores the difference in respondents' attitudes within the Faculties and Fields of Education and compares them to JCU, the broad sector and the sector Fields of Education.

**Section C** focuses on the results for each demographic group. In this case the survey population is analysed by the qualification, attendance, gender, age group and mode of study. These groups are then compared to their sector counterparts. This section also analyses the open ended qualitative responses.

**Section D** compares the results of the current student satisfaction 2012 with the PREQ (2010-2012) and sector results for 2012.

# Section A - University Overview

#### University

Analysis of each scale compared to the sector across time reveals that JCU does not differ from the sector. Further analysis reveals that the variation from year to year within the scales at JCU does not vary significantly<sup>1</sup> (Figure 1). Therefore, we are able to treat the data from 2010-2012 as one sample thereby increasing samples sizes at the Faculty, Discipline and Demographic level.

Because the sector remains fairly constant across time and JCU's responses vary insignificantly, it is possible to take long term averages of JCU's responses and compare them to the sector at the different levels of interest. This approach has the effect of removing insignificant year to year variation in order to uncover new information. Therefore, this report combines the historical PREQ data and compares them to the latest published sector results (2012) as a proxy of long term satisfaction within the sector.

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<sup>&</sup>lt;sup>1</sup> Each survey year represents an independent sample, one from each population. We assume the ith population has a normal distribution and the populations have the same standard deviation. In the event that one or all of these assumptions are violated, non-parametric tests were used to draw conclusions.

Figure 1: Time series of JCU satisfaction levels (% satisfied y axis) for each of the PREQ scales by year for recent graduands compared to the sector averages. The JCU results are presented as means <u>+</u> standard errors. The Y axis on each graph is % satisfied.

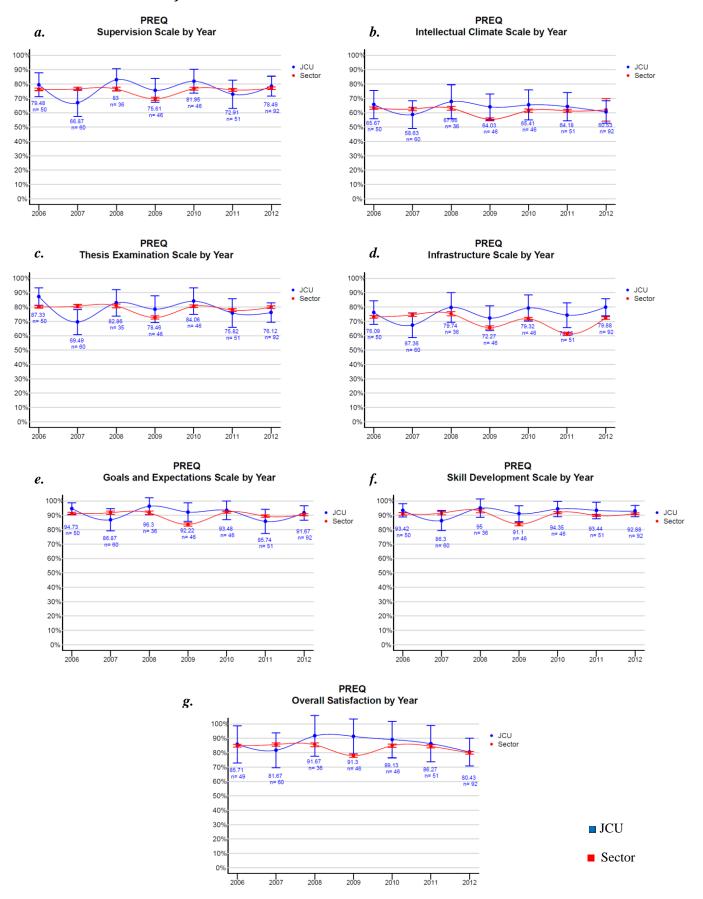
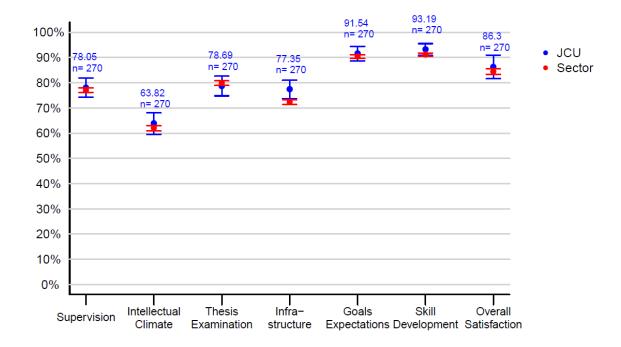


Figure 2: Levels of satisfaction for HDR candidates (% satisfied y axis) from JCU (2010-2012) compared with the National PREQ results (2012) for recent graduands. The JCU results are presented as means  $\pm$  standard errors. The national mean is presented as the standard.



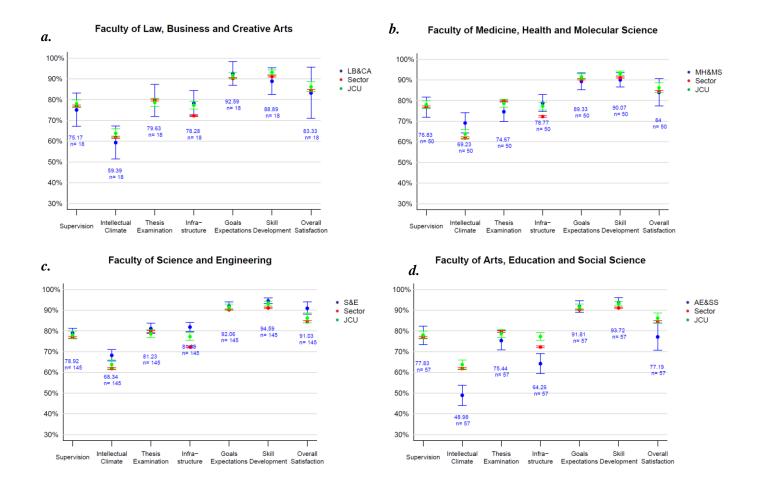
# **Section B - Faculty Overview**

#### **Faculty**

In this section, each of the Faculties within JCU is compared to the overall University average and the overall sector average for each scale.

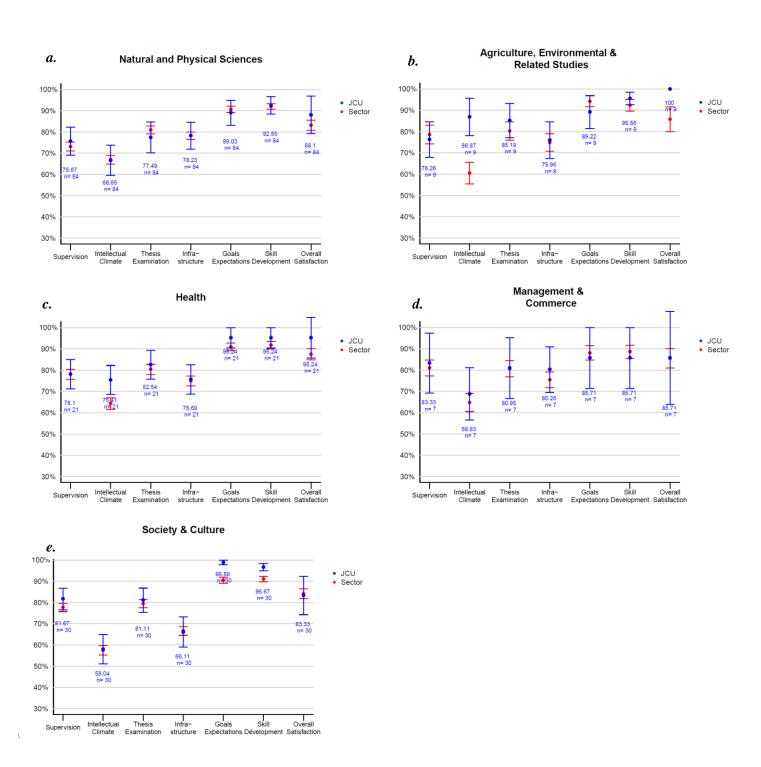
The Faculty of Law, Business and Creative Arts has the fewest respondents with eighteen students answering the survey since 2008, whereas the Faculty of Science and Engineering had the most respondents with 145.

Figure 3: Levels of satisfaction of recent graduands (% satisfied y axis) from each of the JCU Faculties (2010-2012) compared to the corresponding JCU and National PREQ results (2012) for recent graduands. The JCU results for each faculty are presented as means ± standard errors. Significantly different results occur when the national and overall JCU means are outside the error bars.



#### **Broad Field of Research**

Figure 4: Levels of satisfaction for JCU recent graduands (2010-12) (% satisfied y axis) compared to the corresponding National PREQ results (2012) by Aggregated Broad Field of Research Categories. The JCU results for each Field of Education are presented as means ± standard errors. Significantly different results occur when the national mean is outside the error bars.



### **Section C - Demographic Overview**

This section compares the following groups within JCU to their sector counterparts.

Figure 5: Levels of satisfaction (% satisfied y axis) for recent graduands from JCU (2010-2012) compared with the corresponding national PREQ results (2012) by level of qualification. Significantly different results occur when the national mean is outside the error bars.

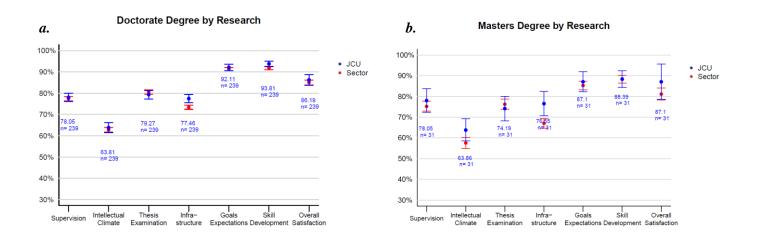


Figure 6: Levels of satisfaction (% satisfied y axis) for recent graduands from JCU (2010-2012) compared with the corresponding national PREQ results (2012) by Attendance Type. Significantly different results occur when the national mean is outside the error bars.

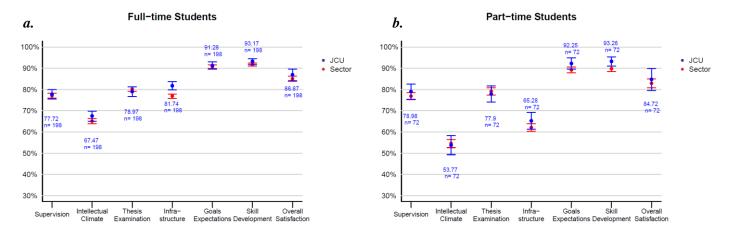


Figure 7: Levels of satisfaction (% satisfied y axis) for recent graduands from JCU (2010-2012) compared with the corresponding national PREQ results (2012) by Mode of Study. Significantly different results occur when the national mean is outside the error bars.

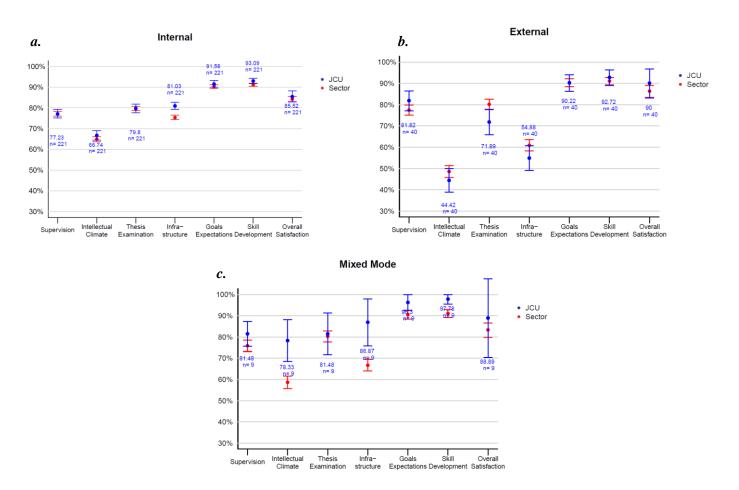


Figure 8: Levels of satisfaction (% satisfied y axis) for recent graduands from JCU (2010-2012) compared with the corresponding national PREQ results (2012) by of each gender. Significantly different results occur when the national mean is outside the error bars.

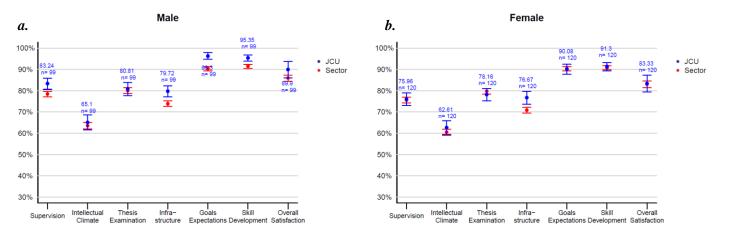


Figure 9: Levels of satisfaction (% satisfied y axis) for recent graduands from JCU (2010-2012) compared with the corresponding national PREQ results (2012) by Age Group. Significantly different results occur when the national mean is outside the error bars.

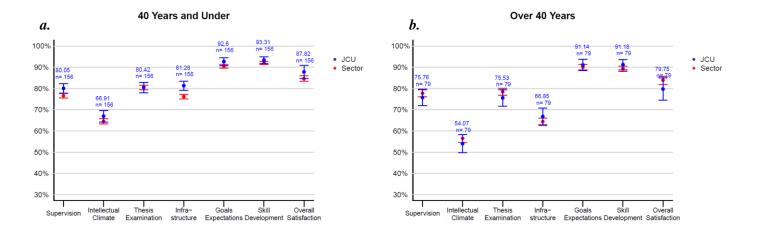


Figure 10: Levels of satisfaction (% satisfied y axis) for recent graduands from JCU (2010-2012) compared with the corresponding national PREQ results (2012) by Resident Status. Significantly different results occur when the national mean is outside the error bars.

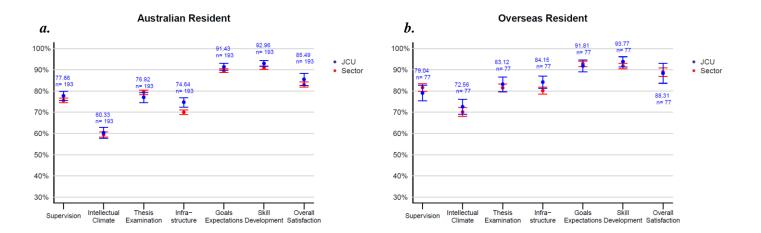
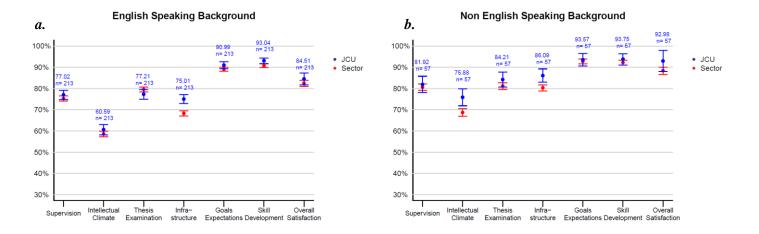


Figure 11: Levels of satisfaction (% satisfied y axis) for recent graduands from JCU (2010-2012) compared with the corresponding national PREQ results (2012) by Language Background. Significantly different results occur when the national mean is outside the error bars.



### **Qualitative Analysis**

The qualitative analysis is undertaken using the word cloud technology in conjunction with reading through the responses to the qualitative questions.

Figure 12: Word Cloud depicting the best aspects of the course of study for JCU graduands (2010-2012) . The size of the word is correlated with the word frequency in the respondent's answer.



Figure 13: Word Cloud depicting the worst aspects of the course of study for JCU graduands (2010-12). The size of the word is correlated with the word frequency in the respondent's answer.

access examination experience faculty funding internal jcu needed phd process research school students supervision Supervision supervision support thesis university Work

### Section D - Internal Survey 2012

#### Comparison with internal surveys of current students

In addition to the PREQ, JCU has two internal methods of getting feedback from *current* research students. See <a href="https://www.jcu.edu.au/graduate-research-school">https://www.jcu.edu.au/graduate-research-school</a> for the results of recent surveys. It is important to note that the survey population is different from that targeted by the PREQ.

The internal PREQ was conducted for the second time in 2012. This survey allows the JCU internal results for current students to be benchmarked against the national results for graduating students. The internal surveys are administered in even-numbered years, with qualitative focus groups to be repeated in odd-numbered years.

Figure 14: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with the JCU and national PREQ results (2010-2012) for recent graduands. The JCU results are presented as means + standard errors.

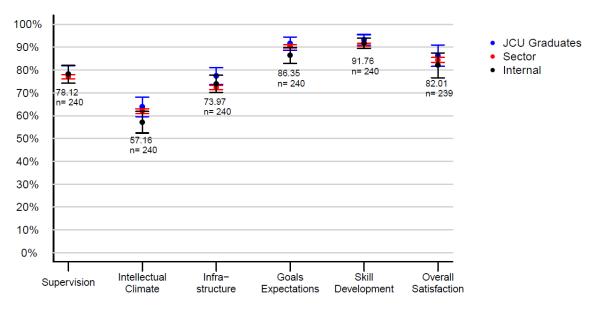


Figure 15: Levels of satisfaction (% satisfied y axis) for JCU HDR candidates in 2012 and 2010 for each of the PREQ satisfaction scales. The JCU results are presented as means ± standard errors.

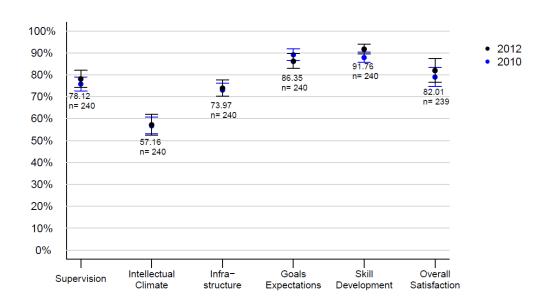
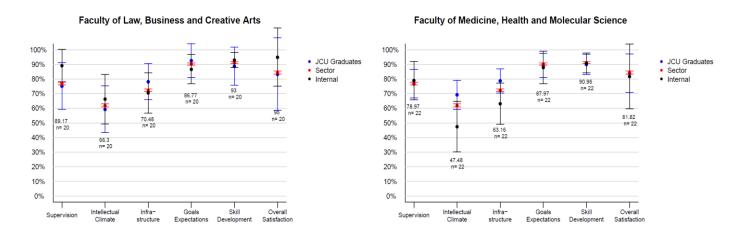
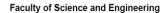


Figure 16: Levels of satisfaction (% satisfied y axis) for HDR candidates for each faculty of JCU (2012) compared with: (1) JCU graduands (2010-2012) for each faculty, and (2) the overall sector results for graduands (2010-12). The JCU results are presented as means <u>+</u> standard errors. Significantly different results occur when the national mean is outside the error bars.





#### Faculty of Arts, Education and Social Science

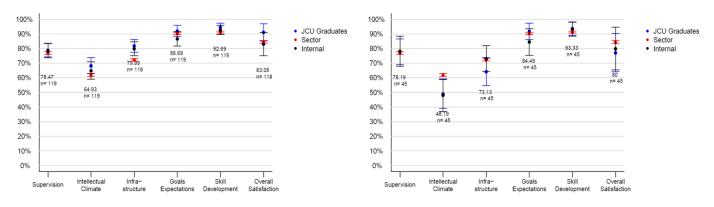


Figure 17: Levels of satisfaction (% satisfied y axis) for JCU candidates compared for 2012 and 2010 by Faculty. The JCU results are presented as means ± standard errors. Significantly different results occur when the national mean is outside the error bars.

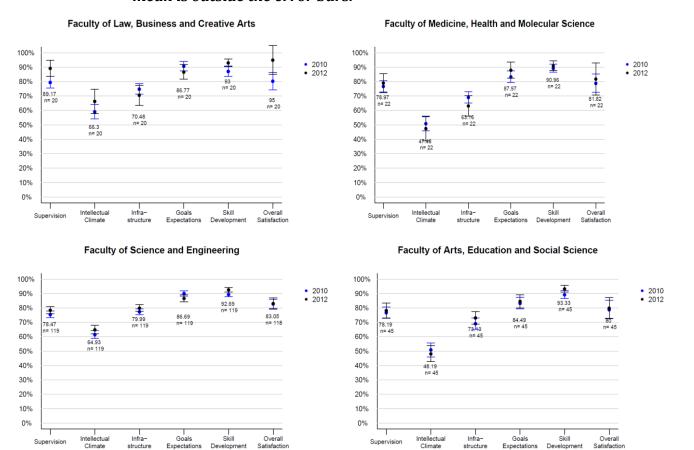


Figure 18: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with JCU and sector results (2010-12) for graduands for field of research. The JCU results are presented as means ± standard errors. Significantly different results occur when the national mean is outside the error bars.

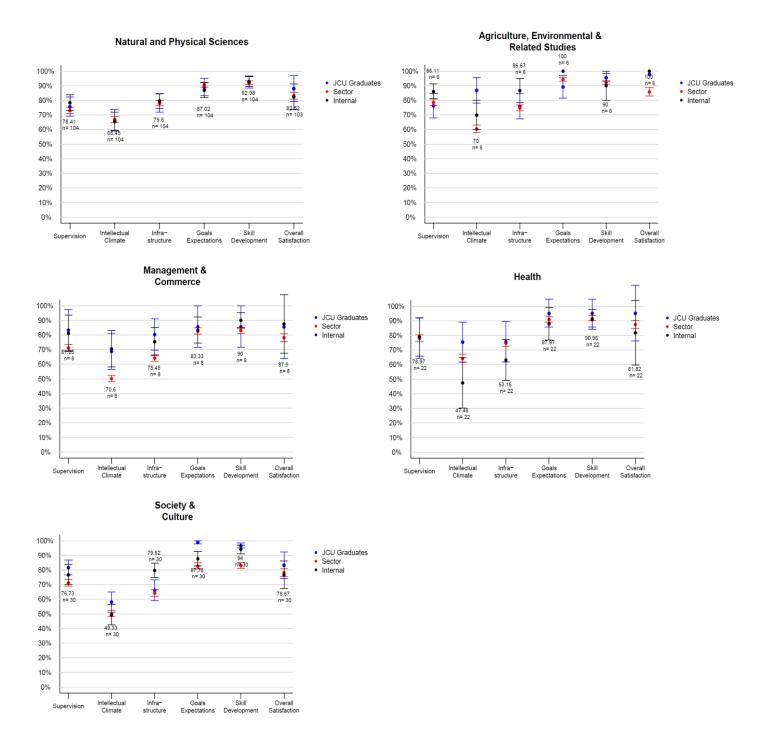


Figure 19: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with the corresponding results for 2010 by Field of Research. The JCU results are presented as means ± standard errors. Significantly different results occur when the national mean is outside the error bars.

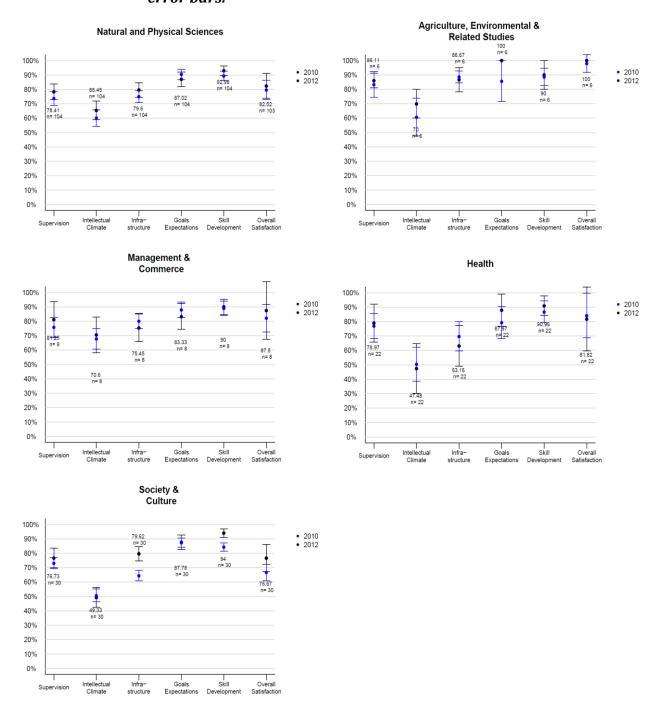


Figure 20: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with, JCU and sector results (2010-12) for graduands by attendance type. The JCU results are presented as means <u>+</u> standard errors.

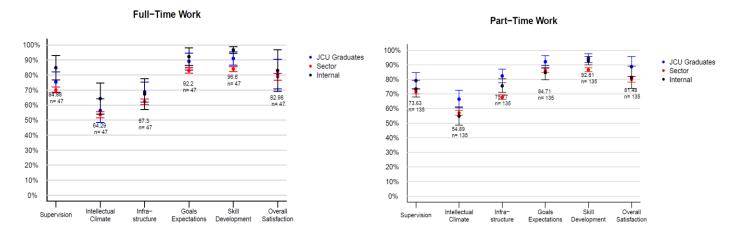


Figure 21: Levels of satisfaction for HDR candidates from JCU (2012) compared with the corresponding results for 2010 by attendance type. The JCU results are presented as means  $\pm$  standard errors.

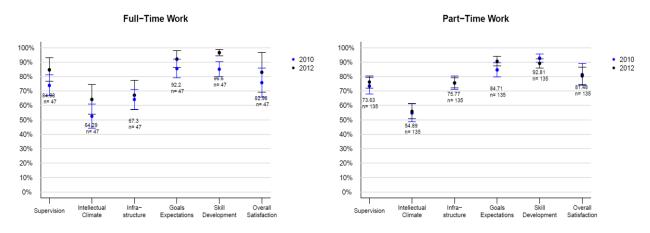
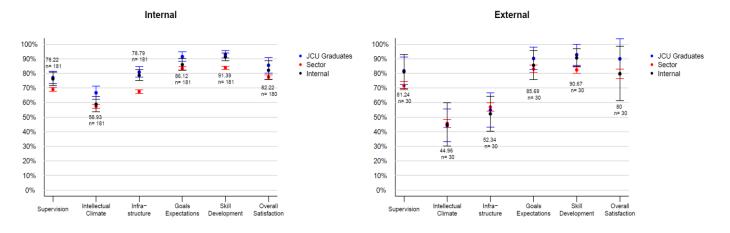


Figure 22: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with JCU and sector results (2010-12) for graduands by mode of study. The JCU results are presented as means  $\pm$  standard errors.



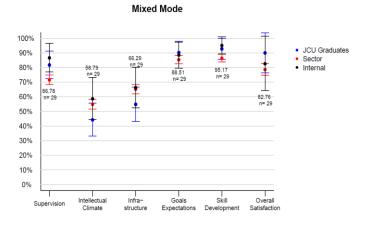


Figure 23: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with the corresponding results for 2010 by mode of study. The JCU results are presented as means  $\pm$  standard errors.

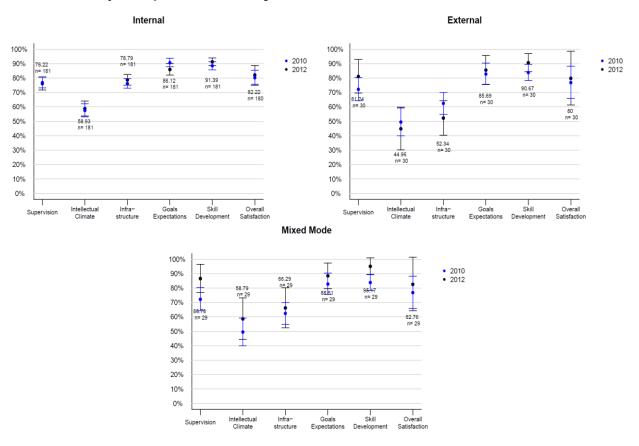


Figure 24: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with JCU and sector results (2010-12) for graduands by resident status. The JCU results are presented as means <u>+</u> standard errors.

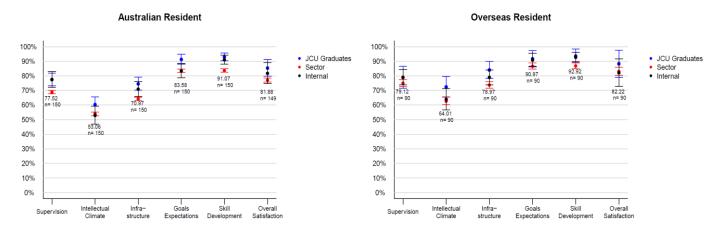


Figure 25: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with the corresponding results for 2010) by resident status. The JCU results are presented as means  $\pm$  standard errors.

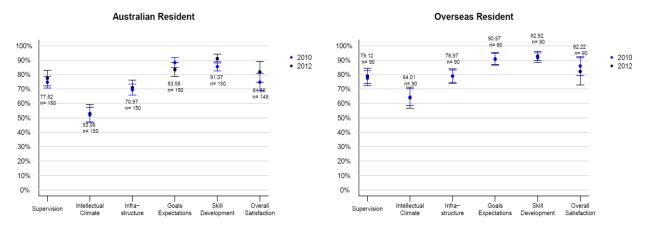


Figure 26: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with, JCU and sector results (2010-12) for graduands by age group. The JCU results are presented as means  $\pm$  standard errors.

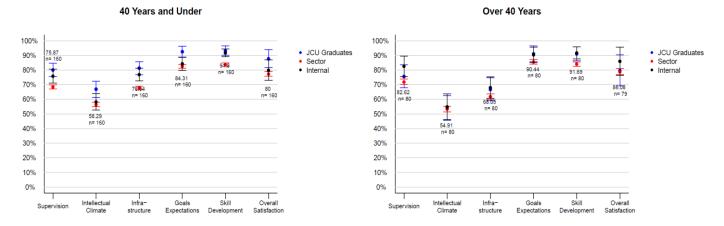


Figure 27: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with the corresponding results for 2010 by age group. The JCU results are presented as means  $\pm$  standard errors.

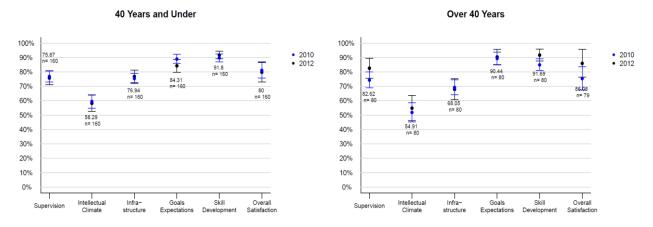


Figure 28: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with JCU and sector results (2010-12) for graduands by gender. The JCU results are presented as means  $\pm$  standard errors.

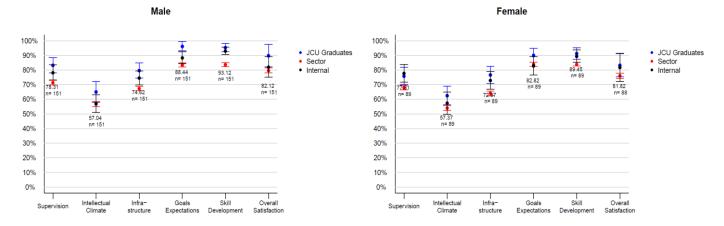


Figure 29: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with the corresponding results for 2010 for each gender. The JCU results are presented as means  $\pm$  standard errors.

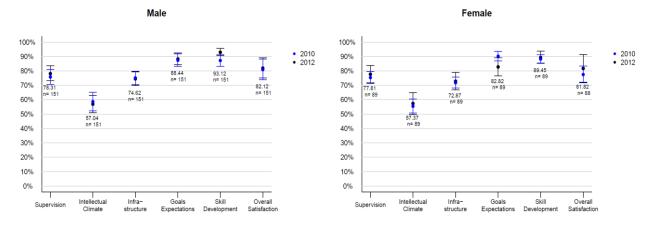
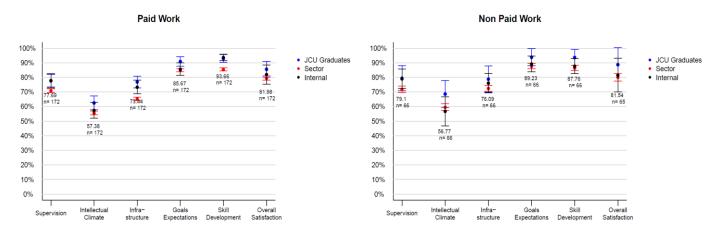


Figure 30: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with JCU and sector results (2010-12) for graduands by working status. The JCU results are presented as means <u>+</u> standard errors.



## Figure 31:

Comparison of the satisfaction levels (% satisfied y axis) of JCU current HDR candidates in 2012 and 2010 by work status for each of the PREQ satisfaction scales. The JCU results are presented as means  $\pm$  standard errors.

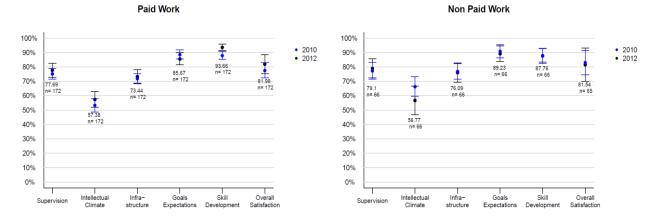


Figure 32: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with JCU and sector results (2010-12) for graduands by qualification level. The JCU results are presented as means <u>+</u> standard errors.

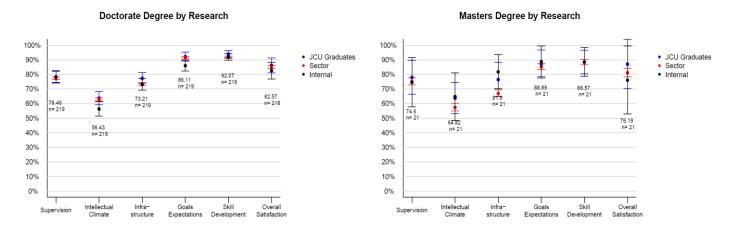


Figure 33: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with the corresponding results for 2010 by qualification level. The JCU results are presented as means  $\pm$  standard errors.

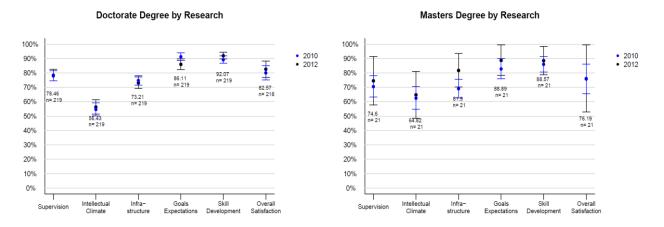


Figure 34: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with JCU and sector results (2010-12) for graduands by employment type. The JCU results are presented as means  $\pm$  standard errors.

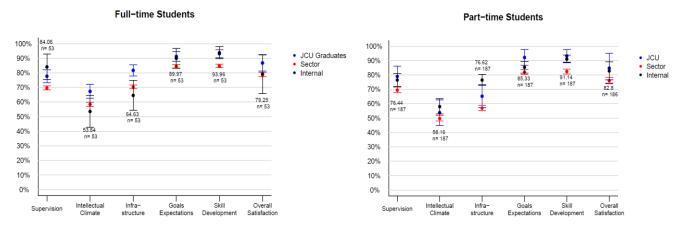


Figure 35: Levels of satisfaction (% satisfied y axis) for HDR candidates from JCU (2012) compared with the corresponding results for 2010 by employment type. The JCU results are presented as means  $\pm$  standard errors.

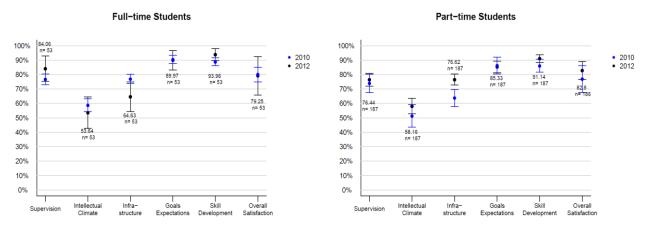


Figure 36: The proportions of HDR candidates in agreement with the additional statements in the internal PREQ surveys in 2012 and 2010. The JCU results are presented as means  $\pm$  standard errors.

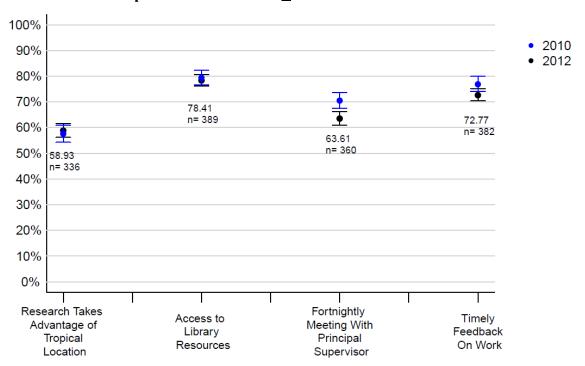
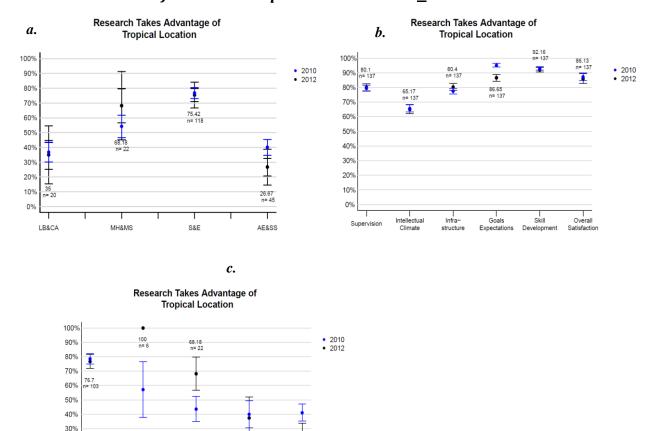


Figure 37: The proportion of HDR candidates (% y axis) who agreed that their research takes advantage of the University's tropical location by Faculty and aggregated field of research and the satisfaction levels (% satisfied y axis) on the PREQ satisfaction scales (2012 and 2010) of such candidates. The JCU results are presented as means ± standard errors.



37.5 n= 8

Management & Commerce

Healh

26.67 n= 30

Society & Culture

20%

10%

Natural &

Physical Sciences

Agriculture, Environmental & Related Studies

Figure 38: Comparison of the satisfaction levels (% satisfied y axis) of HDR candidates whose research does not take advantage of the University's tropical location by PREQ satisfaction scale for 2012 and 2010. The JCU results are presented as means  $\pm$  standard errors.

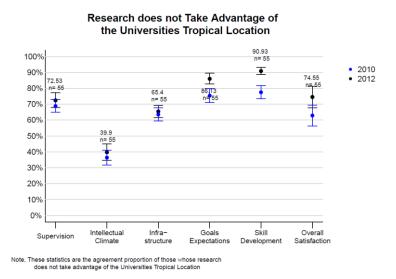


Figure 39: Comparison of the satisfaction levels (% satisfied y axis) of HDR candidates whose research <u>does</u> and <u>does not</u> take advantage of the University's tropical location by PREQ satisfaction scale for 2012. The JCU results are presented as means <u>+</u> standard errors.

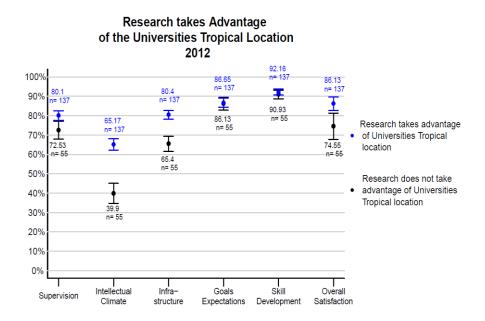


Figure 40: The proportion of HDR candidates who agreed that their Access to Library Resources met their needs by Faculty and aggregated field of research and the satisfaction levels (% satisfied y axis) on the PREQ satisfaction scales (2012 and 2010) of such candidates. The JCU results are presented as means ± standard errors.

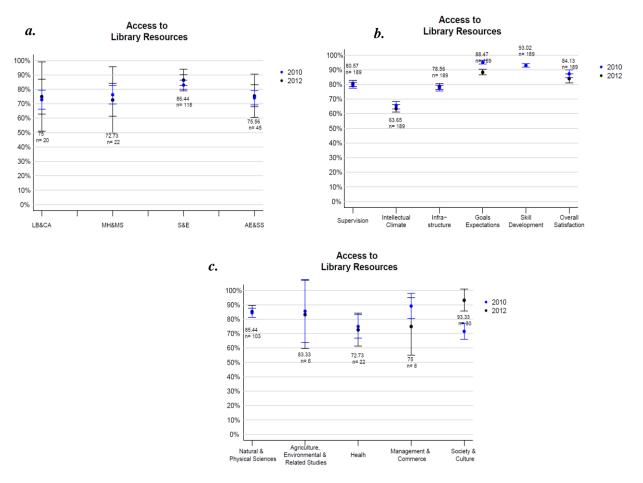


Figure 41: The satisfaction levels of HDR candidates who considered that their access to Library Resources was <u>not satisfactory</u> for each PREQ satisfaction scale (2012 and 2010). The JCU results are presented as means ± standard errors.

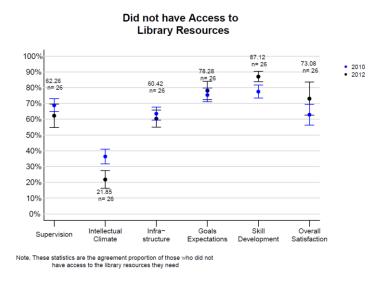


Figure 42: Comparison of the satisfaction levels (% satisfied y axis) of HDR candidates whose were and were not satisfied by their access to library resources by PREQ satisfaction scale for 2012. The JCU results are presented as means ± standard errors.

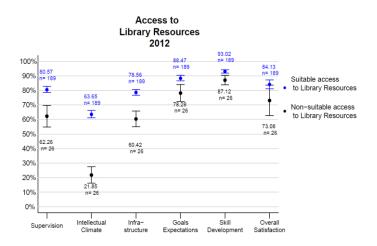


Figure 43: The proportion of HDR candidates (% y axis) who had a least Fortnightly Meetings with Principal Supervisor by Faculty and aggregated field of research and the satisfaction levels (% satisfied y axis) on the PREQ satisfaction scales (2012 and 2010) of such candidates. The JCU results are presented as means ± standard errors.

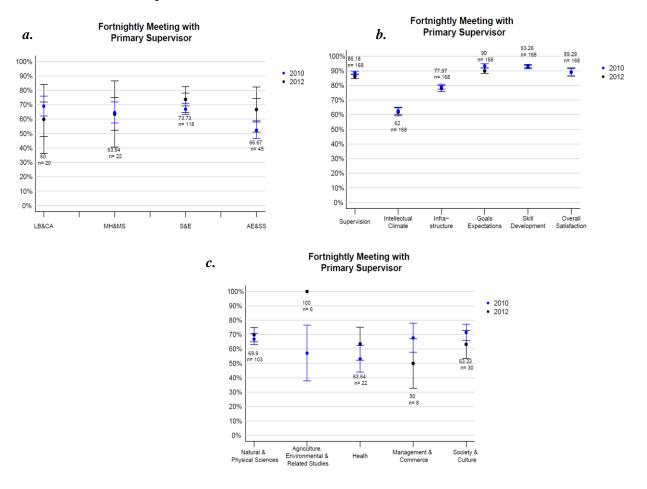


Figure 44: The satisfaction levels for the PREQ satisfaction scales (2012 and 2010) for the HDR candidates who <u>did not</u> meet wither their primary supervisor on at least a fortnightly basis. The JCU results are presented as means <u>+</u> standard errors.

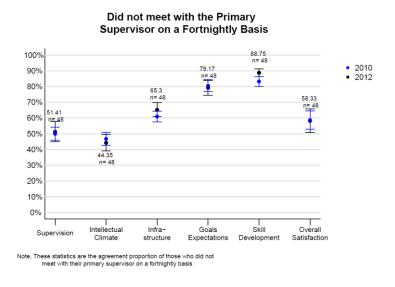


Figure 45: Comparison of the satisfaction levels (% satisfied y axis) of HDR candidates who did and did not have at least fortnightly meetings with their principal supervisor by PREQ satisfaction scale for 2012. The JCU results are presented as means  $\pm$  standard errors.

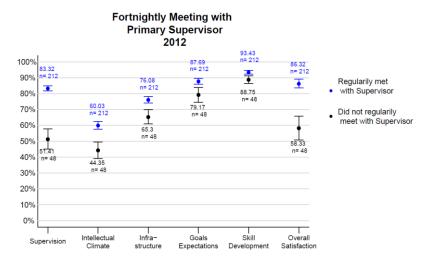


Figure 46: The proportion of HDR candidates (% y axis) whose supervisor provides timely feedback to written work by Faculty and aggregated field of research and the satisfaction levels (% satisfied y axis) on the PREQ satisfaction scales (2012 and 2010) of such candidates. The JCU results are presented as means ± standard errors.

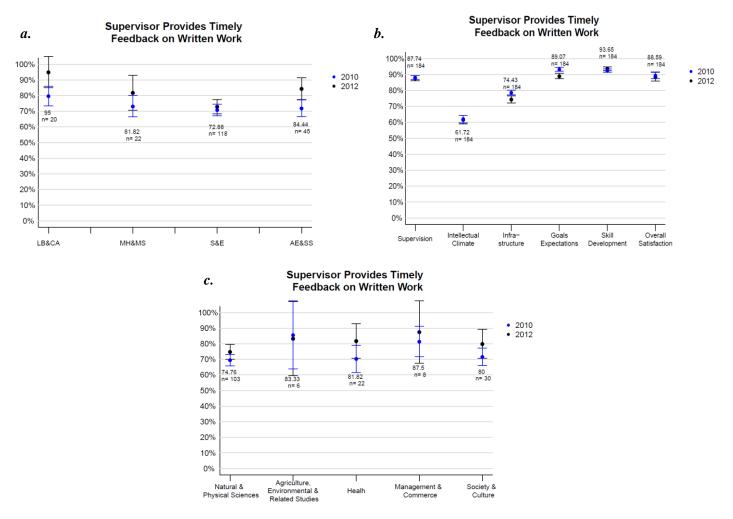
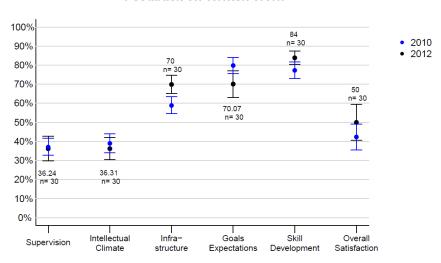


Figure 47: The satisfaction levels for the PREQ satisfaction scales (2012 and 2010) for the HDR candidates who <u>did not</u> receive timely feedback from their supervisor. The JCU results are presented as means <u>+</u> standard errors.

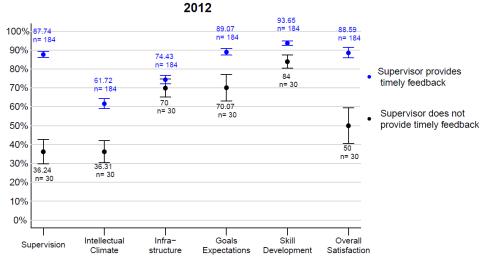




Note, These statistics are the agreement proportion of those whose research does not take advantage of the Universities Tropical Location

Figure 48: Comparison of the satisfaction levels (% satisfied y axis) of HDR candidates who did and <u>did not</u> receive timely feedback from their supervisor by PREQ satisfaction scale for 2012. The JCU results are presented as means <u>+</u> standard errors.

# Supervisor Provides Timely Feedback on Written Work



### **Qualitative Analysis**

The qualitative analysis is undertaken using the word cloud technology in conjunction with reading through the responses to the qualitative questions.

Figure 46: Word Cloud depicting the best aspects of the course of study as identified by JCU HDR candidates in 2012. The size of the word is correlated with the word frequency in the respondent's answer.



Figure 41: Word Cloud depicting the worst aspects of the course of study as identified by JCU HDR candidates in 2012. The size of the word is correlated with the word frequency in the respondent's answer.

access campus community enough feel field isolation jour lack paperwork phd school sometimes students students study supervision supervisors supportuniversity work