

Researching the Research

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Aims and Objectives

Aim: to undertake a methodological scan of research

The scan investigated

- the use of multidisciplinary teams
- the level of methodological diversity and innovation
- the level of cross institutional and industry collaboration
- the experiences and career trajectories of CRC scholarship students
- aspects of the research culture that has been developed within the CRC for Rail Innovation Research Programs.



CRC for Rail Innovation

- Established 2007
- Close doors 30 June 2014
- Predecessor RailCRC
 - predominantly engineering
- Current CRC has broader scope and wider industry collaboration



Partner Organisations

- Seven Australian Universities
- Rail Organisations
- Passenger operators
- Heavy Haul
- Government departments
- Statutory authorities



Research Themes

- Safety and Security
- Urban Rail Access
- Performance
- Smart Technologies
- Climate Change and the Environment
- Workforce Development



Discipline mixes

Human factors/Engineering/Ethnographers/Mathematicians

Mechanical/Civil/Electrical engineering

Engineering/Psychology/Social Psychology/Computer Science/Economics

HRM/Education/Vocational Education & Training/Historians

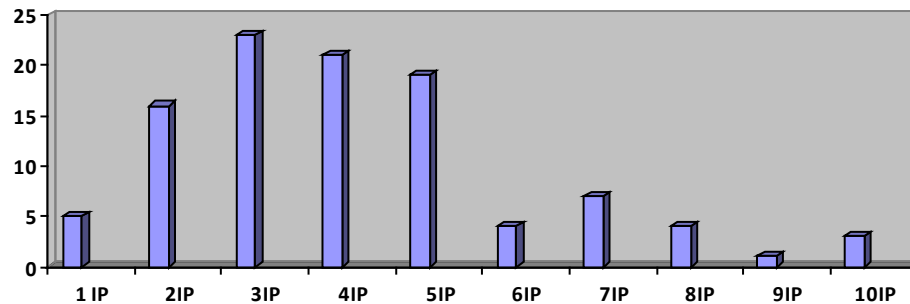
Ethnography/Anthropologists/Change Management/Safety

Economists/Engineers/Architecture/Design



Industry Involvement

Industry Participants	1	2	3	4	5	6	7	8	9	10	
Projects	5	16	23	21	19	4	7	4	1	3	103



Methodological Methods

Multi QUAL	Mono QUAL	Mixed Methods	Mono QUAN	Multi QUAN	TOTAL
43 (42%)	29 (28.5%)	29 (28.5%)	1 (1%)	0	102 (28.5%)



Literature review	83 (36.6%)	Observation	6 (2.6%)
Interviews	37 (16.3%)	Modelling	5 (2.2%)
Focus groups	19 (8.4%)	Lab test	4 (1.8%)
Survey	16 (7.1%)	Human Factor analysis	2 (0.9%)
Workshop	14 (6.2%)	Other 6 (2.6%) Pilot Study (1) Pref. Choice Experiment (1) Indy Forum (1) Trials (1) Desk Audit (1) Delphi Technique (1)	
Case studies	11 (4.8%)		
Simulations	11 (4.8%)		
Field test	7 (3.1%)		
Questionnaire	6 (2.6%)		



Industry Engagement

Key learnings for industry:

- New perspectives on issues
- Need for engagement to get the most from the research
- Greater awareness and appreciation about research and how it is conducted
- Benefits of working collaboratively on common issues

Value to industry:

- Benefits of collaboration in generating ideas
- Value of research
- Innovative responses to problems and issues
- Cost effectiveness of collaborative research
- Leveraging off international research



Value of Multidisciplinary mixed methods research

- New insights
- Assisting in introducing innovation in a relatively conservative environment



University Engagement

Barriers to institutional collaboration:

- Communication, motivation and personalities
- Willingness of academics to work with industry
- Budget split and delegation of research across researchers and institutions
- Research culture clashes
- Academic rivalry and self interested behaviours

Key learnings for universities:

- Importance of meeting project milestones and delivering practical outcomes
- Opportunities to work with industry



... and finally

I think that the CRC in general, I think they're well over 100 projects, so it's been a very productive exercise over the five years so far, 75 HDRs as I said, and goodness knows how many academic outputs have come out and are still coming out, and will continue to come out, so I think it's been a tremendously productive CRC, and I think in terms of the CRC Research Program, I think it's been managed centrally pretty well [INT05].

