

Engineering Vacation Research Internship Program



PROJECT MANAGEMENT RESEARCH PROJECTS FOR WINTER 2022

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FACULTY OF ENGINEERING

PROJECT MANAGEMENT RESEARCH PROJECTS

PROJ22/1 Role of leadership diversity on the ESG (environmental, social and governance) disclosure of project-based organisations

Supervisor: Dr Fatima Afzal

Eligibility: Awareness of research methodologies

Project Description:

ESG has become a key indicator of management competence, risk management, and non-financial performance (Galbreath, 2013). In particular, ESG covers a variety of issues related to the environment (e.g. climate change, and energy and water use), social responsibility (e.g. human rights, gender equality), and corporate governance (e.g. corruption and bribery, shareholder protection). Many studies claim that a more balanced presence of women on Board of Directors (BoD) could have a positive impact on firms' financial performance, but the effect of such diversity on ESG disclosure of project-based organisations is still underexplored.

This study aims to answer the following research question: What is the relationship between board diversity and ESG disclosure.

This research will use the survey result method in which data will be obtained via the publicly available annual/sustainability reports of top listed project organisations in ASX 200. Thereafter, content analysis will be done to examine the pattern and frequencies of the words and texts used in organisational documents for the year 2021.

Requirement to be on campus: No

PROJ22/2 Resilience of the infrastructure systems

Supervisor: Dr Nader Naderpajouh

Eligibility: Prior research experience will get high preference

Project Description:

Building resilience of critical infrastructure requires decisionmakers working in different industry sectors to understand 'what' can be done, 'why' it should be done, and 'how' to put it into practice. Our work to date has told us that key stakeholders are often either unaware of the value that resilience can bring or are constrained by a lack of resources or support in terms of how to embed and enhance resilience. In this research the student will provide a review of the grey literature to address these questions and informs a framework developed by Dr Naderpajouh with the synthesis developed through the analysis of the documents that are retrieved through the search of the grey literature.

Requirement to be on campus: No

PROJ22/3 Diversity in resilience building projects

Supervisor: Dr Nader Naderpajouh and Dr Marzena Baker

Eligibility: Prior research experience will get high preference

Project Description:

Resilience building projects are generally defined as temporary organising of resources to deal with unexpected disruptions (e.g., disasters and extreme events). Actions associated with resilience building are intended to build communities' and society's capabilities to prepare for, adapt to and recover rapidly from future disruptions. The increasing emphasis on resilience building, which is often a complex and multi-faceted project, has called for a capable and more diverse project teams. In this summer internship the student will develop a synthesis of literature in resilience building projects including the grey literature from practice. Given the increasing trend of disruptions, this research contributes to future academic and practical career of the potential intern.

Requirement to be on campus: No

PROJ22/4 Machine learning to explore project complexity

Supervisor: Dr Shahadat Uddin

Eligibility Criteria: Analytical background and Python programming language

Project Description:

By using different project attributes (e.g., duration, time, variability in stakeholder engagement etc.), this project will explore project complexity. The intended outcome of this project is to find attributes that significantly contribute to the perceived level of project complexity. It will use different supervised machine learning algorithms and data analytics methods to explore the research dataset.

Requirement to be on campus: On campus is preferable.

PROJ22/5 Ambidexterity as a dynamic capability: Drivers of value in an innovation project portfolio

Supervisor: Dr Karyne Ang

Eligibility Criteria:

- Distinction average
- Familiarity with qualitative data analysis using NVivo
- Interested in the advanced use of Nvivo for queries, modelling and data mapping (highly preferred)
- Mindset: Analytical, curious, organised and self-directed
- Good command of English Language – written and verbal
- Interest in stakeholder value, project portfolios and dynamic capabilities in organisations

Project Description:

From narratives of Tattoo parlour visits to intense portfolio strategy meetings, this project will explore multiple stakeholder perspectives of value in an innovation project portfolio. The study applies a single case study approach and involves one of Australia's leading construction manufacturing organisations (deidentified). The theoretical frameworks of organisational ambidexterity and dynamic capabilities will be used to interrogate the qualitative data.

These research questions will be explored:

1) How is stakeholder value is identified and delivered through organisational ambidexterity, defined as 'exploration and exploitation'?

2) What is the relationship between ambidexterity, dynamic capability and value?

Interns will benefit from working with the academic on a literature review in the subject area, developing a conceptual framework for innovation value from the lenses of ambidexterity and dynamic capabilities, developing propositions and analysing the qualitative data to address the research questions for a draft journal paper.

Requirement to be on campus: No (project work will be via Zoom/MS Teams)