CAREER CONSTRUCTION, FUTURE WORK AND THE PERCEIVED RISKS OF GOING TO UNIVERSITY FOR YOUNG PEOPLE FROM LOW SES BACKGROUNDS

FINAL REPORT

RESEARCH FELLOWSHIP REPORT

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Oh, the places you'll go!

You will come to a place where the streets are not marked.
Some windows are lighted. But mostly they're darked.
A place you could sprain both your elbow and chin!
Do you dare stay out? Do you dare to go in?
How much can you lose? How much can you win?
And *IF* you go in, should you turn left or right….
Or right-and-three-quarters? Or, maybe, not quite?
Or go around back and sneak in from behind?
Simple it's not, I'm afraid you will find,
For the mind-maker-upper to make up their mind.

—Dr Seuss—

Career construction, future work and the perceived risks of going to university for young people from low SES backgrounds

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It has been my enduring and wholehearted belief that higher education has the power to transform peoples' lives — it is a chance to author a different future to the one ascribed. As a personal disruptor, higher education illuminates the paths and possibilities that can bring about intergenerational change and an (e)quality-of-life that previously could only be imagined. Higher education is hope.

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"Give like the sun and the whole world grows tall."

—Atticus—

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Executive Summary

The aim of this Fellowship project was to understand the interplay between career construction in the 21st century, future work, and the perceived risks of going to university for young people from low socioeconomic status (SES) backgrounds. Making career decisions is becoming increasingly complex and fraught with risk. Perceived risks are endemic in the decision to go to university and this Fellowship project drilled down into the role of perceived risks in light of the contemporary career context where traditional ways of planning careers no longer work.

We live in uncertain times with the rise of the gig economy, job automation, career mini-cycles and an erosion of the sense of security that going to university will "guarantee" access to a defined, stable occupation. With more occupations to choose from than ever before, young people experience confusion or even decision paralysis. With predictions that jobs in the future are more likely to need a university education, there is a need to accelerate efforts to increase participation of people from low SES backgrounds to prevent the further deepening of social inequalities. Indeed, stemming the deepening of social inequalities was the impetus for this Fellowship project.

- focused on the role of perceived risks in the decision to go (or not to go) to university for secondary school students from low SES backgrounds
- outlined the decision-making processes of low SES secondary school students
- introduced risk tolerance as a characteristic that can explain differences in how low SES secondary school students respond to the decision dilemma of whether to go (or not to go) to university.

The underpinning research question and objectives were:

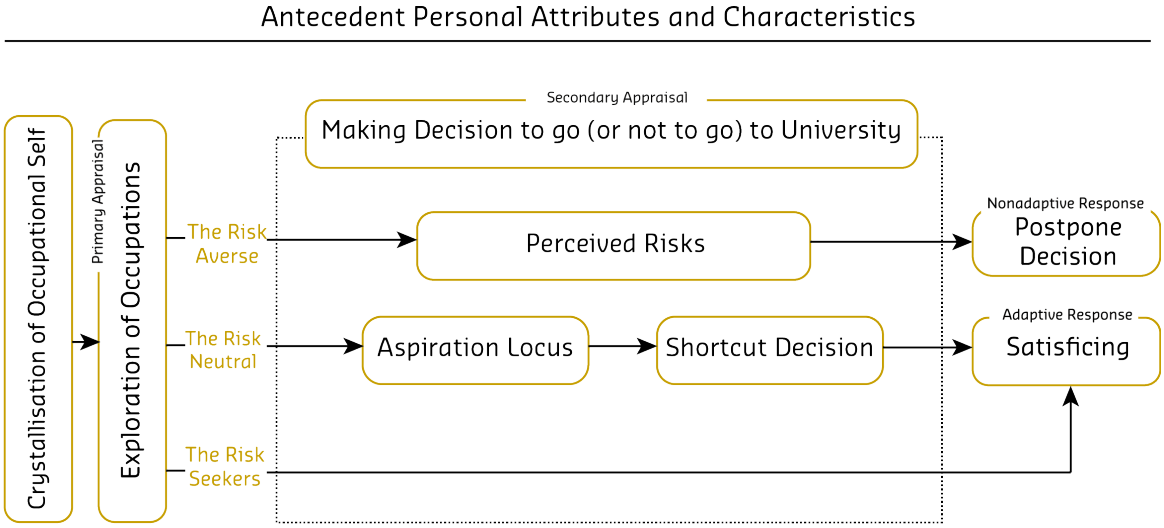
RQ:	How do the perceived risks of going to university influence the decision to participate in Australian higher education by young people from low SES backgrounds?
RO1:	To identify the types of perceived risks that young people from low SES backgrounds associate with going to university.
RO2:	To develop and test a model of the influence of perceived risks on the decision to go to university by young people from low SES backgrounds.

To address the research question and objectives, data were gathered via three studies, being:

Study 1:	Systematic content analysis of grey literature (n=396)
Study 2:	Manual thematic analysis of secondary, qualitative data collected in a National Priorities Pool (NPP) Widening Participation (WP) project (n=177).
Study 3:	A quantitative national survey (n=1177) that compared the perceptions of people from low SES backgrounds to those from other SES (OSES) backgrounds to identify statistically significant differences in the project model. Data were collected from secondary school students (n=561, low SES=275, 49 per cent; OSES=286, 51 per cent) and parents of secondary school students (n=616, low SES=303, 49.2 per cent; OSES=313, 50.8 per cent).

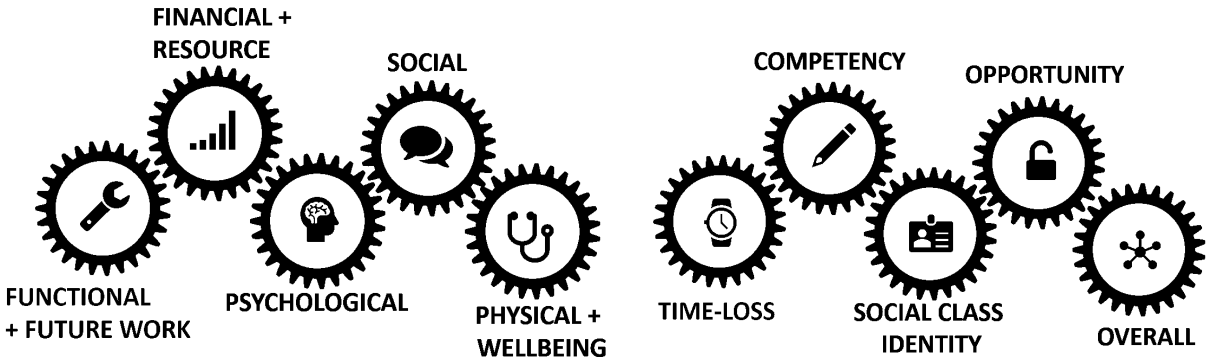
Key Output: The University Participation Decision Making Model

The preeminent contribution of this project is the University Participation Decision Making Model (simplified version below) which overviews how people make the decision to go (or not to go) to university.



Key Findings

1 There are 10 types of risk that secondary school students from low SES backgrounds perceive as being associated with the decision to go (or not to go) to university.



Functional and future work risk, social risk and overall risk can predict if a low SES secondary student chooses to go to university directly after school or at some time in the future (e.g. after a gap year).

2 Low SES secondary school students respond in different ways to the dilemma of deciding whether to go to university.

The Risk Averse	University perceived as threatening "May do more harm than good"
The Risk Neutral	University perceived as challenging "It won't be easy, but it will be worth it"
The Risk Seeker	University perceived as benign-positive "Only good can come out of this"

Low SES secondary school students:

- are more likely to be risk averse than their OSES peers.
- who are risk seekers leapfrog steps faster than their OSES peers.
- who are risk neutral are more careful in their decision process than their OSES peers.
- are slower to progress to the exploration of occupations than their OSES peers.
- who perceive going to university as risky are less likely than their OSES peers to postpone making a decision about whether to go (or not to go) to university.
- are slower to progress to decision shortcutting than their OSES peers.

3 The perspectives of low SES secondary school students and the parents of low SES secondary school students are very different.

- The parents of risk averse low SES secondary school students underestimate how much their child is concerned about going to university.

Conclusions and Recommendations

Mapped against the research objectives, conclusions and recommendations for upstream stakeholders (for example, government) and downstream stakeholder (for example, universities, schools) include:

RO1 There are 10 types of risk that secondary school students from low SES backgrounds perceive as being associated with the decision to go (or not to go) to university.

Upstream stakeholders can embed resources that address the 10 types of perceived risk into existing websites to help low SES secondary students make an informed decision.	**Midstream stakeholders can** empower low SES secondary school students through co-design solutions centred on the 10 types of perceived risk that "myth-bust" and help them to make an informed decision.

RO2 Low SES secondary school students respond in different ways to the dilemma of deciding whether to go to university.

Upstream stakeholders can embed risk profile decision making quizzes into existing websites to help students recognise their proclivity and then suggest ways that will help them make an informed decision.	**Midstream stakeholders can** use the project's insights to design WP initiatives for risk averse, risk neutral and risk seeking secondary students from low SES backgrounds.

RO2 The perspectives of low SES secondary school students and the parents of low SES secondary school students are very different.

Upstream stakeholders can embed parent-dedicated resources that address perceived risks into existing websites.	**Midstream stakeholders can** use the project's insights to design low SES parent-focused WP initiatives that are substantively different to that delivered to low SES secondary school students.

Definitions and Acronyms

Employment:	The state of having paid work
Job:	A paid position of employment
Occupation:	The type of work a person does
Work:	A means of earning income

Low Socioeconomic Status:	Low SES
Other Socioeconomic Status:	OSES
Structural Equation Modelling:	SEM
Widening Participation:	WP

Chapter 1: Project Overview

Background

This project highlights the need not only to continue, but to accelerate efforts to widen participation (WP) in Australian higher education. It has been long-established that the benefits of a university qualification extend beyond the individual to their family, communities and society for the common good. Indeed, the high-level reason why people from low SES backgrounds participate in higher education is to author "a better life" for themselves, significant others in their lives and potentially future generations. In simple terms, a university qualification enables social mobility for people from low SES backgrounds, allowing them to improve their socioeconomic status and quality of life. WP seeks to uphold The United Nations (Dugarova & Lavers, 2015) vision of "a society for all" so that no one is left behind. WP safeguards the principles of *A Fair Chance for All* (Department of Employment, Education & Training, 1990), keeping the doors of opportunity open, uplifting aspirations and the hopes for a brighter future.

The variety and success of WP initiatives since the Bradly Review (2008) have been remarkable. There is no doubt that great strides have been made with increasing the proportional representation of students from the core equity groups in Australian universities (ACIL Allen Consulting, 2017). The target of achieving parity is within sight and within reach—but we still have a little way to go (see NCSEHE, 2017). By leveraging the existing WP momentum and evolving from WP practice-led research to research-led WP practice, we can close in on the parity target.

This project adds to the growing stock of research-led WP practice and centres on widening the participation of secondary school students from low SES backgrounds. Students from low SES backgrounds, being Statistical Area 1, comprise 16.8 per cent of all domestic university students; yet, 25 per cent of Australians are classified as low SES (Department of Education and Training, 2017). In usual circumstances, there is a clear case for the continued pursuit of parity for low SES participation in higher education. However, in the light of future work, the need for continued pursuit of parity for people from low SES backgrounds takes on a higher level of urgency. It is predicted that jobs in the future may be more likely to need a university education (e.g. Universities Australia, 2018a) and given low SES participation in higher education is not yet at parity, there is a need to significantly accelerate WP efforts to prevent the deepening of social inequalities.

Future work (also known as the Fourth Industrial Revolution or Industry 4.0) in essence refers to technology changing work in the future. Importantly, these future work changes are forecast for the next 10–15 years hence are pertinent to the current generation of school-aged children (Business Council of Australia, 2017). At present, technology is creating uncertainty about work in the future, with occupations disappearing due to automation and artificial intelligence and, at the same time, it is anticipated that unspecified new occupations will emerge (Kessler, 2018; Schwab, 2017). Relatedly, future work has also disrupted traditional ways of constructing careers; occupations are becoming unstable and less well-defined, with formerly predictable pathways to those occupations (such as completing a specific university degree) no longer a guarantee of employment (Productivity Commission, 2017). Consequently, enrolling in a bachelor degree at university is increasingly a risky proposition as lifelong careers have now given way to career portfolios comprised of occupational mini-cycles facilitated by platform-based freelancing in the growing gig economy (Kuhn, 2016). In sum, making occupational decisions is increasingly complex and fraught with risk as present-day secondary school students wrestle with uncertain, speculative work futures. For those from low SES backgrounds, the risk is amplified.

First, this Fellowship project was situated at the intersection of three seminal frameworks. The three frameworks were drawn from higher education, vocational psychology and marketing literature and converged and overlapped in unanticipated ways. There were parallels between Bennett, Naylor, Mellor, Brett, Gore, Harvey and Witty's (2015) Equity Initiatives Framework student lifecycle, Savickas, Porfeli, Hilton and Savickas' (2018) Student Career Construction Inventory and Engel, Kollat and Blackwell's (1978) Consumer Decision Making Process.

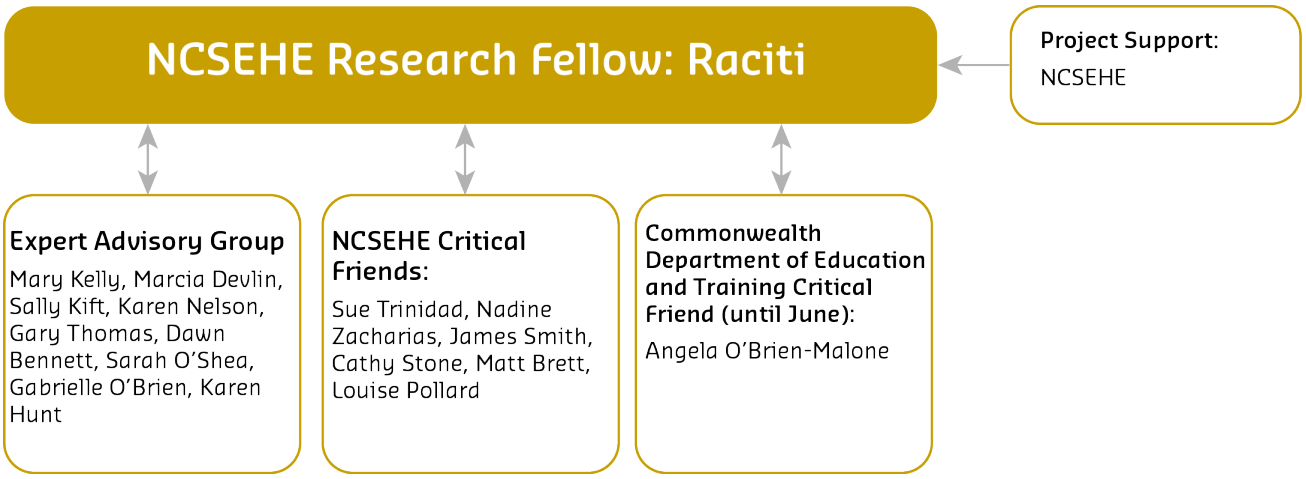
After situating the project in the three seminal frameworks, an untested preliminary University Participation Decision Making model was developed. Three themes shaped the model being a) the interrelated global phenomena creating occupational risk; b) the ecology of perceived risks in the decision to go to university; and c) the role of level of occupational aspiration. Specifically:

Theme 1: Interrelated global phenomena creating occupational risk	• Future Work: technology will make some jobs redundant, create new jobs and change the nature and way tasks are performed in jobs. • The Gig Economy: platformed-based work such as Air Tasker. • Occupational Hyperchoice: Over 1,000 occupations exist in Australia, and too many choices convolute decision making.	*See*: Autor, 2015; Foundation for Young Australians, 2017a, 2017b; Kuhn, 2016
Theme 2: An ecology of perceived risks of going to university	• Perceived risks are largely overlooked in the WP literature yet are endemic in the decision to go to university. • All human endeavours carry some level of risk. Risk taking is the intentional interaction with uncertainty where the potential for gains is assessed against the potential for losses. • Individuals vary in their risk tolerance being risk averse, risk neutral or risk seekers. • Most risk is assessed in the pre-access stage. • Perceived risks from the marketing literature are a financial risk, functional risk, time-loss risk, physical risk, psychological risk, social risk and sensory risk. Opportunity costs are also a type of perceived risk. • A university education is a high credence, almost pure service making it the riskiest of all service types.	*See*: Cline, 2015; Cunningham, 1967; Lamb & Huo, 2017; Raydugin, 2016; Shostack, 1977
Theme 3: Role of level of occupational aspiration	• Aspiration is a high-order, transdisciplinary concept with occupational aspiration one manifestation which refers to the development and pursuit of an occupational goal. • This project proposes that the level of occupational aspiration operates as a moderator in assessing the risk of going to university.	*See:* Gore et al., 2017; Haller & Miller, 1967; Sellar, 2013

Governance

This Fellowship project included regular engagement with a range of experts and critical friends who provided formative feedback that was systematically enfolded into the project design, outputs and outcomes (Figure 1).

FIGURE 1: Project Governance Structure



Research Question and Objectives

The three studies which comprised the project approach—a systematic content analysis (Study 1); a manual thematic analysis (Study 2); and a national quantitative survey (Study 3)—aligned with the research objectives as presented in Table 1.

TABLE 1: Research Question, Objectives and Alignment with the Three Studies

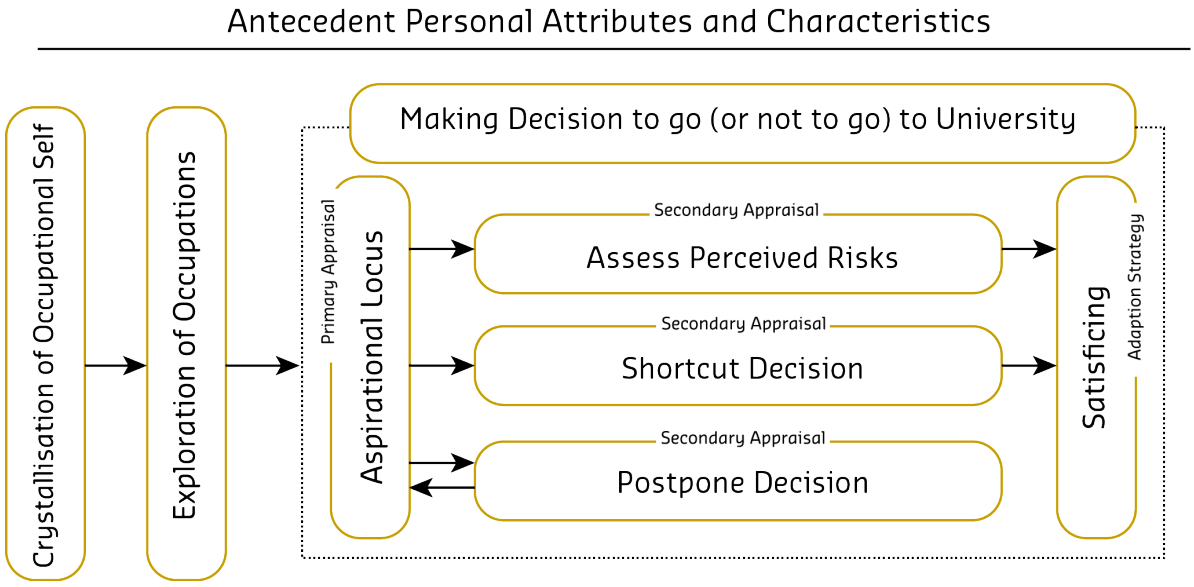
RQ	How do the perceived risks of going to university influence the decision to participate in Australian higher education by young people from low SES backgrounds?	
RO1	To identify the types of perceived risks that young people from low SES backgrounds associate with going to university.	Study 1: Systematic content analysis Study 2: Manual thematic analysis
RO2	To develop and test a model of the influence of perceived risks on the decision to go to university by young people from low SES backgrounds.	Study 3: National quantitative survey

In sum, today, the sense of security that going to university "guarantees" access to a defined and stable occupation is not as reliable a heuristic as it once was. There is much risk in going to university. The shifting occupational landscape means the modern-day career lexicon no longer talks of employment but of "employability" based on acquiring transferable skills that serve as a buttress to increasingly fluid portfolio careers (Business Council of Australia, 2017; Savickas, 2012; Universities Australia, 2018a, 2018b) that is open to freelancing in the emerging gig economy (Kuhn, 2016). Consequently, the already difficult decision for low SES secondary school students of what to do after school is further exacerbated. Making occupational decisions is fraught with risk and present-day secondary school students attempt to wrestle with occupational hyperchoice and uncertain, speculative futures. A counter view by Archer, Leathwood and Hutchings (2002, p. 106) is that the decision to not go to university is for people from low SES backgrounds may reflect "a rational, pragmatic strategy of risk avoidance, rather than a lack of aspiration or talent" suggesting that in the ecology of perceived risks associated with going to university, risk tolerance may be an overlooked yet important factor.

Chapter 2: Literature Review Précis

A comprehensive literature review was undertaken early in the project. A truncated version of this literature review is provided next. The purpose of the literature review was to flesh out each major construct in the project's untested preliminary model that was developed in the initial stages of the Fellowship. As the Fellowship progressed, additional constructs were identified, and these have been integrated into the literature review. A simplified version of the untested preliminary University Decision Making Model (Figure 2) aids in following the flow of this Chapter.

FIGURE 2: Untested Preliminary University Decision Making Model (Simplified Version)



Personal Attributes and Characteristics

Prior WP research has established a range of personal attributes and characteristics that influence the decision to go to university by people from low SES backgrounds. In addition, literature from occupational psychology and marketing revealed other influential student characteristics. A summary follows (Table 2).

TABLE 2: Summary of Personal Attributes and Characteristics that Influence University Participation

Personal attribute or characteristic	Summary	Examples of literature
Demographics	Demographic characteristics known to influence the decision to go to university include: gender; age; older siblings who are no longer at school; socioeconomic status; location (urban, regional or remote); Indigenous Australian heritage; Pasifika heritage; language/s spoken at home; refugee status; people with disability and those who are the first in their family to go to university.	Cardak et al., 2017 Dockery et al., 2017 Gore et al., 2017a Li & Carrol, 2017 O'Shea et al., 2017

Personal attribute or characteristic	Summary	Examples of literature
Risk tolerance	People approach and resolve uncertainty in different ways. Risk tolerance is a continuum from risk aversion to risk seeking and is context-dependent.	Bandera et al., 2018 Borghans et al., 2008 Dohmen et al., 2012
Academic attainment	Academic attainment at school is a predictor of the likelihood to go to university, but it is influenced by socioeconomic status which is entrenched by senior secondary school.	Gore et al., 2017b Kenway, 2013 Li & Dockery, 2014
Occupational volition	Work volition is the power to choose or determine one's occupation with people from marginalised groups restricted in their ability to make career decisions freely.	Autin et al., 2017 Duffy et al., 2012 Duffy et al., 2016
Adaptability	Adaptability is a meta-capability that future-proofs people by minimising the effects of occupational events and is vital for career construction in the 21st century.	Savickas, 1997 Savickas, 2002 Savickas et al., 2018
Student persona	Low SES secondary school students can be classified into four psychological personas that reflect their approach to university decision-making.	Russell-Bennett et al., 2016
Parent persona	The parents of low SES secondary school student can be classified into four psychological personas that reflect their approach to supporting their child to make university decisions.	Russell-Bennett et al., 2016
Intention to go to university	The intention to go to university directly after school (proximal) or at some time in the future (distal) is likely to influence university decision-making.	Kahu, 2013 Savickas, 2002 Savickas et al., 2018

A range of personal attributes and characteristics are known to influence university participation.

Crystallisation of Occupational Self

Savickas' Life Design (2009) perspective of career guidance and Career Construction Theory (2002) frame this project. According to Savikas (2002), there are four career tasks, with the first being the crystallisation of occupation self-concepts, which is loosely defined as the degree of clarity and congruence between a person's self-perception and their occupationally relevant abilities and interests (Tokar et al., 2003). As part of the crystallisation process, preferred occupations are identified. As outlined by Gottfredson (2002), once a suite of preferred occupations is identified, they are grouped into those that are either idealistic or realistic based on an appraisal of each occupation's accessibility and compatibility. Occupational preferencing occurs leading to the formation of the zone of acceptable occupational alternatives which reflect people's identity and where they feel they fit best in society (Gottfredson, 2002). The crystallisation can be triggered by both intrinsic factors (for example, self-perception, likes and interests) and extrinsic factors (for example, parental prompting and career advice). Once occupational self-concepts crystallise, people then explore occupations.

Crystallisation triggers can be intrinsic or extrinsic.

Exploration of Occupations

The second task in Savickas (2002) Theory of Career Construction is the exploration of occupations. In this phase occupational self-concepts are translated into an occupational identity, prompting the pursuit of information about occupations in search of a match (Savickas, 2002). While occupation information can take different forms and be acquired from diverse sources (Career Industry Council of Australia, 2017), people from low SES backgrounds have fewer non-school sources of information, such as family social networks, from which to draw information about education and careers. As such, people from low SES backgrounds tend to rely on schools—namely, teachers' advice and encouragement and school career staff guidance (Tomaszewski et al., 2017)—and university-led WP outreach (Bennett et al., 2015).

There are parallels between occupational psychology (e.g. Gottfredson, 2002) and marketing literature (which also draws from psychology) that when people are searching for information, they use passive and active search strategies (e.g. Fodness & Murray, 1997). When applied to an occupation context, passive strategies are where a person has heightened awareness of information about a particular occupation (for example, noticing local employers, discussions or news stories about the occupation grabbing their attention). Active strategies are intentional information seeking strategies. Active strategies may include drawing information from a range of sources including internal (for example, memory, past experience), external (for example, websites, brochures), personal (for example, talking to family, teachers, guidance officers) and experiential (for example, WP outreach activity targeted to their preferred occupation).

The riskier the decision, the more effort and cost (e.g. money, time, effort and emotional energy) is required to access information. The money, time, effort and energy costs of an active search can become burdensome, which may lead to less information being acquired (Jacoby et al., 1974) and a preferencing of internal sources of information (Murray, 1991). In brief, the decision to go (or not to go) to university is a complex, high-involvement and protracted process. Active searching strategies mean working through voluminous information that takes money, time, effort and energy. Where such money, time, effort and energy costs become onerous, people tend revert to subjective information from sources considered to be more credible and accessible that are internal (for example, own observations, secondary school work experience), personal (for example, advice of parents, word-of-mouth from a family friend who works in that field) and/or experiential (for example, WP student ambassador) as a way to help simplify and expedite the decision process (Lutz & Reilly, 1973; Murray, 1991). The reason for this is information source credibility whereby the information generated from university websites or government pamphlets are perceived as less credible than direct personal experience and word-of-mouth from a trusted person.

Exploration of occupations involves various active information search strategies.

Making the Decision to go (or not to go) to University

Not all decisions are equal. Decisions, for example, may be simple or complex, quick or protracted, with insignificant or significant implications for people's lives. People progress through stages when making challenging, complex decisions. That is, complex decisions are typically broken down into smaller decisions (or appraisals) which occur in a sequence and/or simultaneously (Lazarus, 1991). Furthermore, some decisions can be described as dilemmas (or double propositions) as they place a person in a difficult situation where they need to make a choice between two different, unrelated possibilities (alternatives). The decision to go (or not to go) to university is a complex, dilemma decision situation.

Making the decision to go (or not to go) to university can be described in psychological terms as a stressor, being a challenging event (stimuli) that triggers primary and secondary cognitive appraisals which lead to a coping response, such as making concessions or adjustments, to overcome the stressor (Lazarus, 1991). Appraisal theory describes how people make complex decisions,

particularly when faced with uncertainty and where they need to estimate the likely implications of choices (see Nesse & Ellsworth, 2009). The decision to go (or not to go) to university arises from a series of appraisals commencing with a primary appraisal (the first critical decision) the outcome of which will lead to secondary appraisals. A primary appraisal is typically goal-related (for example, "Do I need to go to university to get a job in my preferred occupation?") and, once made, this primary appraisal triggers a suite of secondary appraisals (for example, "Will I fit in at university?", "Can I afford to go to university?") that require more involved and intricate reasoning. Following secondary appraisals, people engage a coping (or adaption) strategy, whereby trade-offs are made (for example, choice of degree or campus) to arrive at a solution that is "good enough". This is known as satisficing—an amalgam of satisfying and sufficing—where a satisfactory result is sought to cope with, and bring to an end, complex decision making (Simon, 1956). Other decision-making characteristics were identified in the literature and are summarised in Table 3.

TABLE 3: Summary of Relevant Decision-making Dimensions

Decision-making dimensions	Summary	Examples of literature
Commitment	The extent to which a person identifies with occupation, and their degree of commitment to that occupation are critical pre-cursors to their university decision making.	Savickas et al., 2018 Stumpf et al., 1983
Value for money	The perceived overall value for money of a university qualification is an economics-based (utility) judgement. It is a person's estimate of their graduate premium, being the difference between what they would have earned if they did not go to university and what they estimate they will earn if they graduate with a university qualification.	Norton & Cherastidtham, 2018
Vigilance	Coping responses to difficult situations can be broadly classified as monitoring (attending to) or blunting (avoiding). Vigilance engages monitoring and is regarded as a coping pattern that results in sound decision making.	Janis & Mann, 1976 Mann et al., 1997 Miller, 1987
Intuitive	When making decisions, people engage in rapid autonomy processing ("thinking fast": intuitive, emotions-based judgements) and higher order reasoning processing ("thinking slow": analytical, rational-based judgements). When faced with the complex dilemma to go (or not to go) to university, some people will use an intuitive decision-making style to expedite the process when given little time to decide or to make the process less burdensome. This is akin to a blunting (avoiding) coping response.	Evans & Stanovich, 2013 Hamilton et al., 2016 Kahneman, 2011

The complex dilemma of deciding to go (or not to go) to university involves a two-step appraisal process followed by a coping, adaption strategy.

It was initially proposed that four constructs comprised the two-step appraisal process. Aspiration locus was proposed as the primary appraisal after which three secondary appraisals occur, being: a) assessment of perceived risks; b) shortcutting the decision-making process; and c) postponing the decision-making process. The two-step appraisal process is a combination of sequential appraisal (i.e. aspiration locus appraisal in the first instance leading to all secondary appraisals), as well as simultaneous appraisals (i.e. all secondary appraisals co-occurring). Satisficing is the relevant coping, adaption strategy that follows the two-step appraisal process. A discussion of each follows.

Aspiration Locus

Aspiration is a transdisciplinary concept that is relevant to many disciplines or contexts, including WP. Since the Bradley Review (2008) the notion of aspiration has become central to WP with the recurrent narrative that people from low SES backgrounds have lower levels of aspiration (Sellar &

Gale, 2016). Aspiration has been firmly cast as the "motivational force that can increase participation" in higher education among people from disadvantaged backgrounds (Sellar, 2013, p. 2). For clarity, the aspiration for a preferred occupation was the proposed primary appraisal in this project and refers to the pursuit of an identified occupational goal (Haller & Miller, 1967; Grubb & Lazerson, 2005). A university qualification may be either a required credential necessary for entry to a preferred occupation (means-to-an-end aspiration locus) or a desirable credential that improves job prospects in a preferred occupation (occupation locus).

Occupational goals are formed throughout compulsory schooling by people from low SES backgrounds (Gore et al., 2017a). People from low SES backgrounds tend to be pragmatic in their approach to the decision to go (or not to go) to university (e.g. Wilks & Wilson, 2012). Extending beyond the presence or absence or magnitude of occupational aspiration, this project focuses on the *locus* of occupational-driven aspiration among people from low SES backgrounds which may be either a:

- means-to-an-end locus, in that going to university serves an instrumental purpose namely to secure a qualification that is a necessary prerequisite to becoming a professional in their preferred occupation; or
- occupational locus in that they have a clear occupation end-goal but are not constrained to one pathway (for example, via university) to achieve it because for their preferred occupation a university qualification is desirable but not essential.

Aspirations appear to operate as the primary appraisal and can be classified as having either a means-to-an-end locus or an occupational locus.

Assess Perceived Risks

According to Slovic (2016), the leading researcher of perceived risk, the more complex society becomes, the more risk people perceive as there are more hazard domains that they must navigate. The perceived risk is related to worries, concerns and fears that a person may have, including fear of success (Horner, 1968).

After determining their aspirational locus (primary appraisal), the untested preliminary model proposes that people then move to the secondary appraisal where a range of different types of risk are comprehended and considered. People process risk both fast (via rapid autonomous processing, system 1, risk as feelings, intuitive-based processes) and slow (via higher order reasoning processes, system 2, analytically-based processes) (Evans & Stanovich, 2013; Kahneman, 2011; Slovic et al., 2005).

As a starting point, 10 types of risk common in many contexts were identified in the literature (e.g. Archer et al., 2002; Cunningham, 1967; Featherman & Pavlou, 2003; Hostkins et al., 2018; Kurzban et al., 2013; Zhang et al., 2017). Modifications to these 10 types of risk as well as additional risks that emerged as the project progressed and all are described in Table 4.

TABLE 4: Summary and Contextualisation of Types of Perceived Risk.

Perceived Risk	Description	Examples of Likely Sentiments in WP Context
Functional and future work risk*	The likelihood that a service will not do what it says it will. That is, a concern that the degree may not grant access to a profession or provide relevant knowledge or skills needed for success in a preferred occupation. Functional and future work risk can be organised into four key sub-types being preferred occupation job availability; automation risk; gig economy risk; and skill portability risk.	"What if I do this degree and there are no jobs in my preferred occupation at the end?"
		"Automation might reduce future work opportunities in my preferred occupation."
		"Even with a degree, I may still end up working in the gig economy rather than getting a full-time job with one organisation."

Perceived Risk	Description	Examples of Likely Sentiments in WP Context
		"Will the university degree give me transferable skills that can be used in multiple occupations?"
Financial and resource risk*	The monetary costs associated with using a service. That is, worries about the affordability of going to university.	"I don't want to get into debt with university expenses before I even get a job."
		"Going to university is very expensive."
Psychological risk	Personal fears or other negative emotions associated with using a service. That is, concerns about the ability to successfully enter and undertake university study.	"I don't think I'm smart enough to get into university ."
		"I'm worried that I might not be able to understand the class material."
Social risk	Concern about how others think and may react. That is, fears about not fitting in, not being able to make friends and what family and friends may think of the decision to go to university (for example, unsupportive, discouraging).	"People like me do not go to university."
		"None of my friends are going to university."
Time-loss risk	That the activity is not the best use of their time compared with other alternatives. That is, worries about the length of a university degree compared to other pathways to a preferred occupation or the concern that going to university may be a "waste of time" if there is no guarantee of a job at the end.	"If I don't get a job in my preferred occupation at the end, is this going to be a waste of time?"
		"I don't want to wait another three years to get a full-time job in my preferred occupation."
Physical and wellbeing risk*	The likelihood of personal injury. That is, feeling safe on campus and when travelling to and from campus, and negative impacts of study stress on personal wellbeing.	"I'm concerned about my physical safety at university given all the news about sexual assault and harassment that takes place there."
		"I don't feel safe using public transport especially when classes are scheduled for late in the evening."
Social class identity risk*	Concerns about changing social class identity because the degree may uplift socioeconomic status. That is, students from low SES backgrounds may perceive that going to university is for "snobby" people and there is a tension between "leaving" and "holding on to" their low SES identities and "not changing" social class because they perceive that uplifting their socioeconomic status would be a "betrayal" to those close to them.	"If I go to university, people will think I've got tickets on myself and that I'm trying to show them up."
		"People who go to university are snobby."
		"I'm afraid if I go to university that I won't fit in with my friends and family anymore."
Opportunity cost*	The cost of forgoing the next best opportunity. As the decision to go to university is a dilemma, and a choice is made between two alternative paths, by choosing one path a person forgoes the other path (opportunity). Key opportunity costs include paid junior employment; alternative study paths; and lifestyle costs.	"If I go to university directly after school, by the time I graduate, I will be 21 years old, and an employer will have to pay me at adult rates for an entry-level job. If I get an entry-level job in my preferred occupation while I am a teen, I am more attractive to an employer as they will only have to pay me junior rates."
		"Rather than go to university I can do a traineeship where I will be paid and am more likely to get a job at the end."
		"I just want to travel, have fun and live life for a while and if I go to university I won't be able to do that."

Perceived Risk	Description	Examples of Likely Sentiments in WP Context
Competency risk*	A concern with losing momentum in terms of study motivation and skills if taking a gap year or longer between finishing school and going to university.	"I am worried that if I take a gap year, it might be too hard to come back to study."
		"University will require a lot of commitment and study skills that I might lose over time."
Overall risk*	An overall assessment of how risky going to university is perceived by the individual.	"I have a lot of concerns about going to university."
		"To me, going to university is very risky."

*Emerged or were refined in Study 1 and Study 2

Assessing perceived risks appear to be a secondary appraisal of 10 types of perceived risks.

Shortcutting the Making of an Occupational Decision

When faced with uncertainty, people use shortcuts as a coping mechanism to fast-track the decision process (Tversky & Kahneman, 1974). Shortcutting is a secondary appraisal, prompted by the person's aspiration locus. Heuristics, unconflicted change and hypervigilance are simplifying strategies used to shortcut the decision process (Janis & Mann, 1976; Mann et al., 1997). In brief,

- heuristics (or rules of thumb) are approximations of probable outcomes (Baron, 2008) that are used to reduce effort and expedite a decision (Gigerenzer, 2015a; 2015b). For example, going to university might be viewed by an individual as a natural, next step in life and as such non-university options are not explored. For others, they may have been inspired by role models in their community and have chosen to follow in their footsteps by going to university, estimating that by doing so they too will achieve success.
- unconflicted change is where a person uncritically adopts a course of action that is most strongly recommended to them or most conspicuous to them (Janis & Mann, 1976). In WP, unconflicted change may explain the decision to go to university to appease parents (see Cupitt et al., 2016; OECD, 2017).
- hypervigilance is the frantic search for a solution with time pressures leading to overlooking of information and making hasty solutions so as to bring about relief to the psychological stress of making a complex decision (Janis & Mann, 1976).

Shortcutting decision making appears to be a secondary appraisal where people attempt fast-track making a decision by using heuristics, submitting to unconflicted change or engaging in hypervigilance.

Postponing the Making of an Occupational Decision

Following the primary appraisal of aspiration locus, a number of secondary appraisals manifest, one of which is postponing or avoiding the decision to go (or not to go) to university. When faced with a difficult decision, people experience psychological stress which triggers helpful and unhelpful coping responses (Janis & Mann, 1976). Unhelpful coping responses include attempts to avoid decision making which result in incomplete searches, appraisals and contingency planning (Jannis & Mann, 1976). Attempts to avoid making a decision, also known as blunting (Miller, 1987), include the three main decision-coping behaviours being procrastination, buck-passing and rationalisation (Jannis & Mann, 1976; Mann et al., 1997). In brief, all three behaviours draw from the seminal work of Janis and Mann (1976) and Mann et al. (1997) who define each as different type of "wishful beliefs", namely:

- Procrastination refers to efforts to put off decision making based on the wishful belief that nothing will be lost by delaying a decision.

- Buck-passing refers to shifting responsibility for the decision and letting others make the decision for them based on the wishful belief that nothing will be lost by outsourcing the decision.
- Rationalisation refers to engaging in wishful thinking by being selectively inattentive to information and spending time after a decision convincing themselves that it was correct.

Postponing decision making appears to be a secondary appraisal where people attempt to evade making a decision by procrastinating, buck-passing or rationalising.

Satisficing

For this project, Simon's (1956) concept of bounded rationality—rather than the alternatives of perfect rationality or irrationality—is apt. Bounded rationality is the view there are three unavoidable constraints that influence how people make decisions, being: a) limited and sometimes unreliable information regarding the options available and the consequences of choosing particular alternatives; b) people, irrespective of intelligence, have a limited capacity to process and evaluate the quantum of information that is available; and c) people only have a limited window of time in which to make a decision (Radner, 1975; Simon, 1972, 1982).

The consequence of bounded rationality is that, rather than seeking to optimise choice as classic economic theory suggests, in complex decision making such as deciding whether or not to go to university, people instead engage in satisficing (Simon, 1956, 1959; Manktelow, 2000). People, in general, do not optimise their choices but rather follow a satisficing path where they pursue satisfaction at some threshold level with some of their needs (Simon, 1956). That is, satisficing is a coping strategy for complex decision making where people seek results that are satisfactory or "good enough" because seeking the optimal, maximised or best achievable result would require additional costs, effort and a higher level of risk (Simon, 1956, 1959; Tversky & Kahneman, 1974).

When satisficing, the choice made is deemed "good enough" with trade-offs made among various selection criteria that the individual may have (Bazerman & Moore, 2009), with this trading off process essentially a coping-based, adaption strategy. In the context of this project, satisficing may occur along the lines of:

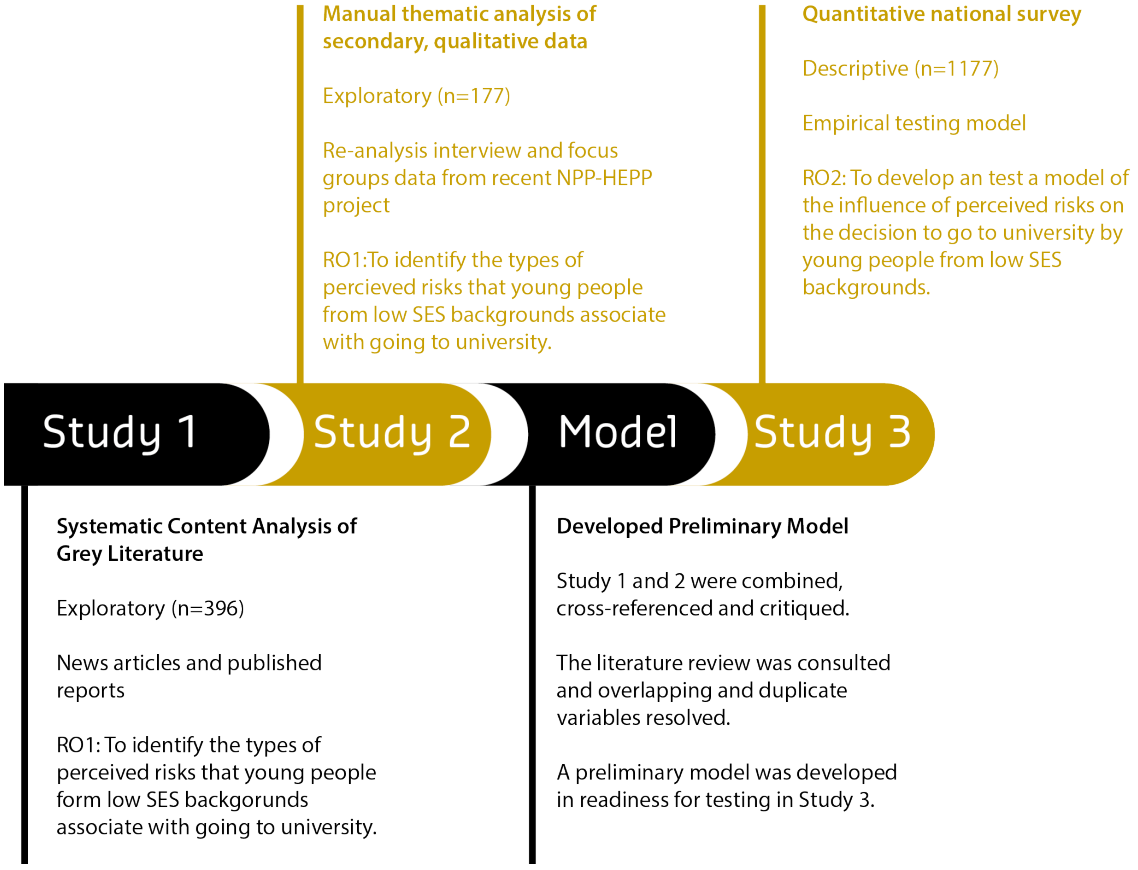
- employment likelihood such as choosing a degree in a related but not preferred area because it has higher employment outcomes
- degree options such as choosing from the suite of degrees offered at a nearby campus so that the person may live at home and still go to university
- delivery concessions such as getting into a preferred university and preferred degree but choosing to study part-time or online in order to make the arrangement affordable or to balance other commitments.

When deciding to go (or not to go) to university, people engage in satisficing, which appears to be an adaption strategy, choosing the "good enough" option by trading off employment likelihood, degree options and/or making delivery concessions.

Chapter 3: Approach

The project approach comprised three studies. Study 1 and Study 2 were exploratory in nature, using secondary data. A preliminary University Participation Decision Making model was developed from the two exploratory studies in readiness for testing in Study 3. A national quantitative survey collected primary data and empirically tested the model using structural equation modelling as the primary data analytic technique. Figure 3 depicts the project approach.

FIGURE 3: Project Approach



Exploratory Studies (Study 1 and 2) Data Analysis Approach

As presented in Figure 3, Studies 1 and 2 addressed Research Objective 1 of the project. Both exploratory studies analysed secondary data—being existing data such as reports and news articles that are in the public domain (Study 1 Grey Literature)—and existing data collected in relevant and related research (Study 2 Manual Thematic Analysis of Data from a recently completed, national WP project). Both Study 1 and 2 comprised qualitative data and involved two coders using deductive (set criteria) as well as inductive (emergent) approaches to identify the frequency, prominence and sentiment patterns of all variables in the preliminary model. This approach also sought to identify new variables relevant to the project.

A single coder first engaged in manual, thematic analysis commencing with an inductive approach to identify and classify variables, code new variables emerging from the data as well as code the interplay between all variables and the presence of related, mitigating factors such as the influence of gender. Also, frequency, prominence and sentiment patterns were determined, with each defined as follows:

Frequency: The number and percentage of times a variable is mentioned.

Prominence: The depth of discussion about the variable including its links with other variables in the model. High prominence variables were discussed in detail with links articulated to multiple other model variables. Medium prominence variables were discussed to a lesser degree with some links with other model variables articulated. Low prominence variables were discussed at a superficial level with few links to other model variables.

Sentiment: The positive, neutral or negative pitch of the words and emphasis placed on a model variable. Also reported is the most observed sentiment being the average of the total number of positive, neutral and negative sentiment ratings for each variable.

A second coder then undertook a similar practice. Both coders engaged in a series of meetings, coming to a consensus about the variables (i.e. their meaning, frequency, prominence, sentiment and interplay).

The Preliminary Model Development Approach

After Study 1 and Study 2 were completed, a further consolidation, ratification and consensus-building process were undertaken. Both coders engaged in a series of meetings to ensure the fidelity of the new variables, the accuracy of their labels and to consider what higher level dynamics may be at play that could explain observed patterns. For example, it was through this process that appraisal theory was identified.

As part of this ratification process, the literature and the data were consulted in an integrative manner to help tease out overlapping variables and aid in the interpretation of phenomena. A critical, fault-finding lens was adopted to ensure the fidelity of the variables and that differences between variables were substantial. Furthermore, there was close scrutiny of the relationships between the variables to ensure that the untested preliminary model was comprehensive but not convoluted and made intuitive sense so that it could be easily translated into useful, sector-wide WP practice.

Descriptive Study (Study 3) Data Analysis Approach

Study 3 addressed Research Objective 2. Unlike the first two studies, Study 3 was descriptive in nature and collected primary data to test the preliminary model empirically. Ethics clearance was approved by the University of the Sunshine Coast prior to data collection. The chief data analytic technique was structural equation modelling (SEM) which is a well-known, advanced, multivariate data analytic technique that enables both systematic and holistic assessment of models (Hair et al., 2010). SEM is an extension of several multivariate techniques combining multiple regression and factor analysis as well as having the ability to represent unobserved variables. SEM expands a researcher's explanatory ability and statistical efficiency by allowing the researcher to simultaneous estimate a series of interrelated dependent relationships. As is standard with SEM, quantitative data were first prepared and cleaned, and descriptive statistics were assessed. Next, an exploratory factor analysis (EFA) and subsequent confirmatory factor analysis (CFA) were undertaken to determine the measurement model. Finally, the data were subject to SEM. IBM SPSS (v.24) and IBM AMOS (v.24) software packages were used.

Chapter 4: Study 1

Study 1 was a systematic content analysis of Australian news articles (print and online) and published reports relevant to the project. A grand total of 429 unique, eligible news articles (n=393) and reports (n=36) comprised Study 1, the purposes of which were to: a) ascertain the prominence and most observed sentiment of the eight types of perceived risks; and b) identify other perceived risks relevant to the project context. In brief:

- Study 1 was delimited to items published between 1 January 2016 and 1 May 2018.
- Predefined keywords for searching were drawn from the literature review.
- News articles were retrieved from the Factiva database and the ANZ Newsstand (Australia & New Zealand Newstream) database. Reports and additional news articles identified during project development were also included.
- Once database searches were complete, duplicates were removed, and six eligibility criteria were applied excluding items if they were about (E1) international students, (E2) postgraduate study, (E3) topics not related to Australian, domestic university students (for example, superannuation), (E4) not in English and (E5) published outside of search cut-off dates. For news articles, there was an additional eligibility criterion, with (E6) news articles not published by Australian news sources excluded from analysis.
- The final unique, eligible news articles and reports were systematically reviewed by two coders using deductive and inductive approaches that ensured the purposes of Study 1 were achieved.

The systematic content review process and results occurred in four steps summarised in Table 5.

TABLE 5: Summary of Study 1 Steps

Step		Number identified	Duplicates removed	Ineligible excluded	Eligible included
1	Factiva database: Search #1	373	46	268	59
2	ANZ Newstream: Search #1	324	9	172	143
	ANZ Newstream: Search #2	41	5	14	22
	ANZ Newstream: Search #3	135	5	58	72
3	Additional news articles	67	3	0	64
NEWS ARTICLE TOTAL		940	68	512	360
4	Reports	50	0	14	36
GRAND TOTAL		990	68	526	396

Study 1 findings are presented in Appendix 1. The two key findings of Study 1 were:

- Evidence of all eight types of perceived risk with functional and future work risk, (30.8 per cent), financial and resource risk (27.3 per cent) and social risk (13.1 per cent) the most frequently mentioned types.
- Competency risk emerged as a new type of perceived risk, while three types of opportunity cost risk were found.

Chapter 5: Study 2

Secondary, qualitative data collected from 177 participants in the 2018 *Widening Regional and Remote Participation: Interrogating the Impact of Outreach Programs Across Queensland* NPP-funded project were analysed for Study 2. The qualitative data was drawn from nine case studies—14 university-based outreach project managers, 69 secondary school students, 33 parents/community members and 15 school staff (for example, principals, deputy principals, guidance officers)—and 46 university students from six universities who previously attended the schools involved in WP endeavours of the Queensland Widening Participation Consortium.

The purposes of Study 2 were to: a) ascertain the frequency, prominence and most observed sentiment of the variables in the preliminary model; and b) identify other variables relevant to the project. The findings of Study 2 are presented in Appendix 2.

The two key findings of Study 2 were:

- Sources of Information: External (58.8 per cent), means-to-an-end aspiration (53.1 per cent) and personal (46.9 per cent) were the most frequently mentioned variables. The construct exploration of occupations was the most frequently mentioned, of the highest prominence and for which there was a consistent positive sentiment.
- Evidence of all types of perceived risks that were generally couched in negative sentiments, apart from social class identity risk for which neutral sentiments arose.
- Several new variables were identified in Study 2 including:
    - different types of aspiration, opportunity cost and heuristics
    - the presence of satisficing and different types of satisficing in the university decision process
- Emerging insights about perceived risks:
    - Perceived risks and risk tolerance not only influenced the decision to go to university but were also attrition markers that could be used to trigger pre-dropout university interventions or to shape post-dropout re-entry strategies.
    - There was an interplay between the types of perceived risk (halo effects).
    - Different types of perceived risk, while considered pre-access, appeared to be active at different points in the student lifecycle. For example, functional and future work risk may be most prominent when deciding to go to university, social risk may be most prominent during the first year and possibly linked to early attrition, and social class identity risk may be most prominent in the latter years of a degree and possibly linked to advanced level attrition.
    - Some types of perceived risks were discussed more than others, reflecting both prominence and social sensitivity. For example, functional and future work risk was of high prominence, and low sensitivity thus is more freely discussed. Conversely, social class identity risk was widely experienced yet deeply personal thus not always openly shared without prompting because it was psychosocially painful.

Chapter 6: Study 3

Research Design

Study 3 was quantitative, national surveys aligned with Research Objective 2: To develop and test a model of the influence of perceived risks on the decision to go to university by young people from low SES backgrounds. Ethics approval was granted by the University of the Sunshine Coast with the final survey administered online via a privacy-compliant, opt-in commercial research firm. The commercial research firm used is a well-known, international research firm that is the preferred online research platform and participant panel provider for several major universities in Australia. They have ISC 27001 certification for information security management and provide quality assured national panels of participants who have voluntarily registered (opted-in) to undertake online surveys.

The research design included several pre-tests to refine the survey for the two samples of interest, being a) secondary school students and b) the parents of secondary school students. In the first instance, NCSEHE survey design experts (n=2) and the Expert Advisory Panel (n=10) pretested and provided feedback on the survey for secondary school students. The phrasing of the secondary school students survey was then adapted for the second sample, the parents of secondary school students. For example, question stems for the secondary school student survey such as, "How concerned are you about ...?" were replaced with, "How concerned is your child about …?", noting that parents were asked to complete the survey with their eldest, secondary school child in mind. The next round of pretesting then occurred with the secondary school student survey was pretested by five (5) PhD qualified, quantitative researchers with survey design expertise while the survey of parents of secondary school students was pretested on a convenience sample of eight (8) parents. Lastly, the privacy-compliant commercial research firm conducted a soft launch of the survey, collecting data from 50 secondary school students and 50 parents of secondary school students. This soft launch data were analysed to determine survey completion time and identify and rectify any issues with such as the effectiveness of screening questions, survey flow and the quality of responses to the open-ended questions. Also, descriptive statistics such as frequencies, means and standard deviations of all survey items were assessed to give early insights as patterns in the data and how well the constructs appeared to hold together. Subsequently, both surveys were launched with data collected over a two-week period.

Participation in the online survey was voluntary. Participants could withdraw at any time with no reason for withdrawal required, and their responses are nonidentifiable. For the sample of secondary school students, the privacy-compliant commercial research firm had a minimum age of 15 years (equivalent to Year 10[1]) for research participants and secured parental consent for the young person to participate in online survey research. The commercial research firm pre-screened participants to ensure they were Australian residents with survey screening questions ensuring that the secondary school student participants were enrolled in an Australian secondary school and in Year 10, 11 or 12. The final screening question determined socioeconomic status, with participants asked to identify if their parents had a university degree selecting either "no" (indicating low SES) or "yes" (indicating Other SES being either medium or high). To ensure equal representation of low SES and OSES, a nested quota was required in that the commercial research firm was asked to provide approximately 50 per cent low SES and 50 per cent OSES so that statistical comparisons could be made. Additionally, nested quotas were applied to the sample to ensure good representation including 70 per cent of the sample to be from public schools; equal representation of males and females; and that all Australian states and territories were represented.

[1] In Australia, children undergo thirteen years of formal education (plus non-compulsory preschool or kindergarten), usually starting at age 4, 5 or 6, and finishing at age 16, 17 or 18. Year 10 is the tenth full year of compulsory education and usually the fourth year of secondary school.

For some time there have been widespread concerns about the effectiveness of the postcode-based, Socio-Economic Indexes for Areas (SEIFA) metric used by the Australian Bureau of Statistics to determine socioeconomic status (see Devlin & O'Shea, 2011; Zacharias, 2017). A more effective alternative metric that is based on individual factors is asking respondents to indicate the educational attainment of their parents (see Devlin & McKay, 2017). In the case of this project with the sample of secondary school students, there were concerns that the young respondents may not know their annual household income or their postcode, being two criteria to determine socioeconomic status. This latter concern was borne out in the final sample where 19.1 per cent (n=107) of the sample indicated that they did not know their postcode. Furthermore, in the absence of any facility to assign postcodes to low SES or OSES areas in real time, which was necessary for survey flow and to ensure nested quotas were met, the alternative parental education level was deemed both effective and efficient as the criteria for determining socioeconomic status for the sample of secondary school students.

The second sample, parents of Australian secondary school students, were adults over 18 years of age who could provide informed consent to participate in the online survey. Pre-screening by the commercial research firm ensured that all parent participants were Australian residents. Survey screening questions ensured that parent participants children were a minimum of 15 years of age, enrolled in an Australian secondary school and in Year 10, 11 or 12. Socioeconomic status was determined with the final screening question, where parent participants were asked to indicate their annual household income. The Australian Taxation Office defines the low-income threshold for a household as under $67,000 (see https://www.ato.gov.au/Individuals/Income-and-deductions/Offsets-and-rebates/Low-income-earners/). Hence, those parents who indicated their annual household income was $67,000 or less were designated as low SES and those who indicated their annual household income was greater than $67,000 were designated as OSES. Similar to the secondary school student sample, equal representation of low SES and OSES was sought, and a nested quota was applied. It was requested that the commercial research firm provide a sample comprised of responses from approximately 50 per cent low SES and 50 per cent OSES so that statistical comparisons could be made to determine points of parity and points of difference. Additionally, nested quotas mirrored that of the secondary school student sample with the request that 70 per cent of the sample have children in public schools; equal representation of males and females; and that all Australian states and territories were represented.

Returned data were assessed for quality. The online survey required participants to answer all questions, hence, there was no missing data. Parameters on the online survey in terms of minimum completion time, the maximum number of straight-line responses (i.e. ticking the same number for answers in a row) and automatic cross-checking of manual entry of postcodes to actual postcodes in Australia also ensured quality. Responses to the open-ended questions were checked manually and in instances where the responses were gibberish (for example, random strings of characters) or could not be interpreted the participant case was deleted and the market research firm provided a replacement participant case.

Final Sample

The final data set for secondary school students comprised 561 useable responses (low SES=275; OSES=286). In brief, gender representation in the secondary school student sample was relatively equally split with 47.2 per cent being male and 51.2 per cent female with 1.6 per cent of the sample reporting unspecified gender or preferring not to say (chi-square goodness of fit testing confirmed the gender quota of 50:50 was met; p=0.35). In relation to age, the reported age range of respondents was 15 to 20 years; the average age was 16.89 years; and the majority of the sample was aged between 16 and 18 years (89.4 per cent). Similarly, approximately half of the sample (50.6 per cent) reported that they were a member of an equity group. The average grade in their last report card was reported by respondents as B or better for 79.9 per cent of the sample, with B being the most commonly reported grade (47.6 per cent). While all Australian states and territories were represented, the majority of the sample were from the eastern seaboard states of New South

Wales, Victoria and Queensland (75.2 per cent). Additional demographics included the secondary school year level of respondents and socioeconomic status. Specific secondary school year levels were targeted by the survey. These included Years 10, 11 and 12 which were represented at 27.3 per cent; 30.6 per cent; and 42.1 per cent of the sample respectively. SES was gauged using the question, “Do either of your parents have a university degree?”, and a quota was set to ensure that low SES respondents represented 50 per cent of the sample. Accordingly, 49.0 per cent of the sample reported that neither of their parents had a university degree indicating low SES (chi-square goodness of fit testing confirmed the SES quota was met; p=0.64).

The final data set for the parents of secondary school students comprised 616 useable responses (low SES=303; OSES=313). The reported age range of respondents’ children was 14 to 19 years, the average age was 16.58 years, and the majority of the sample was aged between 16 and 18 years (85.5 per cent). In relation to gender representation of respondents’ children, the sample was approximately split with 50.2 per cent being male and 49.3 per cent female with 0.5 per cent of the sample reporting unspecified gender or preferring not to say (chi-square goodness of fit testing confirmed the gender quota of 50:50 was met; p=0.84). Similarly, approximately half of the sample (47.7 per cent) reported their children were members of an equity group. While all Australian states and territories were represented, the majority of the sample were from the eastern seaboard states of New South Wales, Victoria and Queensland (77.3 per cent). Respondents also reported that their child’s average grade in their last report card was C or better for 97.1 per cent of the sample, with B being the most commonly reported grade (47.9 per cent). Additional demographics included the secondary school year level of respondents’ children and household income. Specific secondary school year levels were targeted by the survey. These included Years 10, 11 and 12 which were evenly represented at 32.8 per cent, 35.2 per cent and 32.0 per cent of the sample respectively. In relation to household income, a quota was set to ensure that low SES respondents represented 50 per cent of the sample. Accordingly, 49.2 per cent of the sample reported a household income of $0 to $67,000 (low SES) with medium- and high-income households (OSES) together representing 50.8 per cent of the sample (chi-square goodness of fit testing confirmed the SES quota of 50:50 was met, p=0.69).

Measures

Where possible, valid and reliable measurement scales from existing research were used. Measures were also developed from Study 1 and Study 2. The same measurement scales were used for both the secondary school student survey and the parents of secondary school students survey. Appendix 3 details all of the survey questions used in the multivariate analysis. Likert-type response formats are necessary for variables in structural equation models, with a five-point format where 1=strongly disagree and 5=strongly agree, or similar (for example, 1=not at all and 5=a lot) were used. The exception was the use of a six-point response format for the perceived risk items which as drawn from the Savickas et al. (2018) Student Career Construction Inventory where 0=have not thought about it, 1=not concerned at all and 5=very concerned.

Reliability and Validity of Measures

All Likert-type scales were subject to exploratory factor analysis in the first instance to confirm the factor structure for all constructs in the project model. All constructs were uni-dimensional. Next confirmatory factor analysis served to ratify the fit of the measurement model with all items found to be strong measures of their respective constructs for the secondary school student sample ($\chi^2_{(df)}=451.7_{(155)}$, p=0.000, CFI=0.93, IFI=0.93, RMSEA=0.06) and the parents of secondary school students sample ($\chi^2_{(df)}=670.3_{(155)}$, p=0.000, CFI=0.93, IFI=0.93, RMSEA=0.07). Construct reliability and discriminant validity were established with additional analysis. Furthermore, there was no evidence of common method bias or multicollinearity. Hence, the measures were proven valid and reliable.

Sample Size

As the usable sample size for the secondary school student sample in total (n=561) and the SES sub-samples (low SES=275; OSES=286) exceeded the minimum sample size of 150 which was recommended by Hair et al. (2010). Likewise, the size of the usable sample of parents of secondary school students in total (n=616) and the SES sub-samples (low SES=303; OSES=313) also exceeded minimum sample size requirements as outlined by Hair et al. (2010). Overall, the larger samples in this project meant that the model produced is more stable more likely to be replicable (Hair et al., 2010).

Multivariate Analysis of Data

Study 3 data were analysed using two multivariate techniques. First, logistic regression was used to ascertain if the different types of risk could predict when low SES students intended to go to university (i.e. their proximal or distal intentions). Second, structural equation modelling was used to empirically refine and test the project model based on the data. For both techniques, key insights are teased out, and suggestions as to how these insights could be translated into WP practice are provided.

Logistic Regression Analysis

Logistic regression is a choice modelling technique that can be used to predict a discrete choice made by a group of people (Tabachnick & Fidell, 2014; Field, 2017). Logistic regression was used to determine which perceived risks predict when low SES students intended to go to university; that is, the choice made between going to university directly after leaving school versus going to university at some time in the future. The results of logistic regression varied between the secondary school student sample and parents of secondary school students' sample. It was decided to report the logistic regression analysis of the secondary school student sample results only. The low SES secondary school student data (n=275, model significant χ^2=30.78, p=0.001) revealed that perceived functional and future work risk (z=2.56, p<0.05, Exp(B)=0.66), perceived social risk (z=4.14, p<0.05, Exp(B)=0.73) and overall perceived risk (z=9.68, p<0.01, Exp(B)=1.65) were significant predictors in differentiating between low SES students who intended to go to university in the year directly after leaving school and low SES students who planned to go to university at some time in the future.

These results establish that perceived functional and future work risk, perceived social risk and overall perceived risk are significant predictors of *when* low SES students intend to go to university. Hence, the greater low SES secondary school students concerns about a) the university qualification not leading directly to a job in their preferred occupation or not beginning work in their preferred occupation immediately after graduating from university (functional and future work risk); b) concerns about not fitting in at university or making new friends at university (social risk); and c) a perception that is going to university is, on the whole, a risky prospect (overall risk). Notably, the Exp(B) statistic was highest for "overall risk", being 1.65. This Exp(B) of 1.65 means that a person from a low SES background who perceived going to university as risky was 1.65 times more likely to delay going to university.

Insight #1

Perceptions of **functional and future work risk** can predict if a low SES secondary student intends to go to university directly after school or at some time in the future (for example, after a gap year).

Translating insights into impact

WP practitioners and schools may help low SES secondary school students to objectively assess functional and future work risk such as in-class tasks exploring jobsoutlook.com projected employment rates or

helping students to use critical thinking skills to identify credible sources of information about future work.

Insight #2

Perceptions of **social risk** can predict if a low SES secondary student intends to go to university directly after school or at some time in the future (for example, after a gap year).

Translating insights into impact

WP practitioners and schools may help low SES secondary school students to find ways to solve social risk such as student ambassadors discussing their concerns about not fitting in, and how clubs or Indigenous centres helped; or schools collating alumni profiles of past students who have gone to various universities and potentially finding ways for them to be an initial contact point for others from their school (for example, a "You're not alone" school alumni program).

Insights #3

Perceptions of **overall risk** can predict *when* they intend to go to university. if a low SES secondary student intends to go to university directly after school or at some time in the future (for example, after a gap year).

Translating insights into impact

WP practitioners and schools may help low SES secondary school students by acknowledging that going to university can be scary and encouraging an open dialogue about concerns to give voice to their fears in the first instance. This may lead to a subsequent activity whereby students to come up with an action plan to address their fears (for example, engaging with the mycourses.com.au site, the QTAC My Path planning site, university websites or YouTube channels; visiting a campus or going to an open day; and/or talking with their parents, school teachers or careers advisors).

Furthermore, explaining that all human endeavours have some level of risk, and that people handle risk differently (for example, risk averse, risk neutral, risk seekers) may help students understand themselves and help them develop a personal action plan to address their concerns.

The intention is to empower and not insinuate that going to university directly after secondary school is the right path for all people. Giving young people tools and resources so that if and when they decide to go to university, they know there are key touchpoints to help guide them. For example, the school may have a designated contact teacher whom they can approach up to five years after graduation to help them navigate and connect them to others who can illuminate that pathway into university.

Structural Equation Modelling

As outlined in Chapter 3, SEM is a well-known, advanced, multivariate data analytic technique that enables both systematic and holistic assessment of models and comparisons of models to determine statistically significant points of difference (Hair et al., 2010). The data met all the requirements for SEM. Commencing with the project's untested preliminary model and using all data from both samples (n=1177) a baseline model was established (Figure 4). To aid in the interpretation of this baseline model, a narrative was overlayed (Figure 5).

The samples were split and the baseline model was then tested with the secondary school student data (low SES and OSES; $\chi^2_{(df)}=508.9_{(168)}$, p=0.000, CFI=0.92, IFI=0.92, RMSEA=0.06) and the parents of secondary school student data (low SES and OSES, $\chi^2_{(df)}=753.7_{(168)}$, p=0.000, CFI=0.92, IFI=0.92, RMSEA=0.07) with both demonstrating good fit (see Hair et al., 2010). Next, for each sample, the model was tested to determine the statistically significant differences when comparing low SES to OSES respondents (Figures 6, 7 and 8). Note that the significant paths in the secondary school students model differed from the parents of secondary school students' model, reflecting different perspectives.

FIGURE 4: University Participation Decision Making Model (Tested Baseline Model)

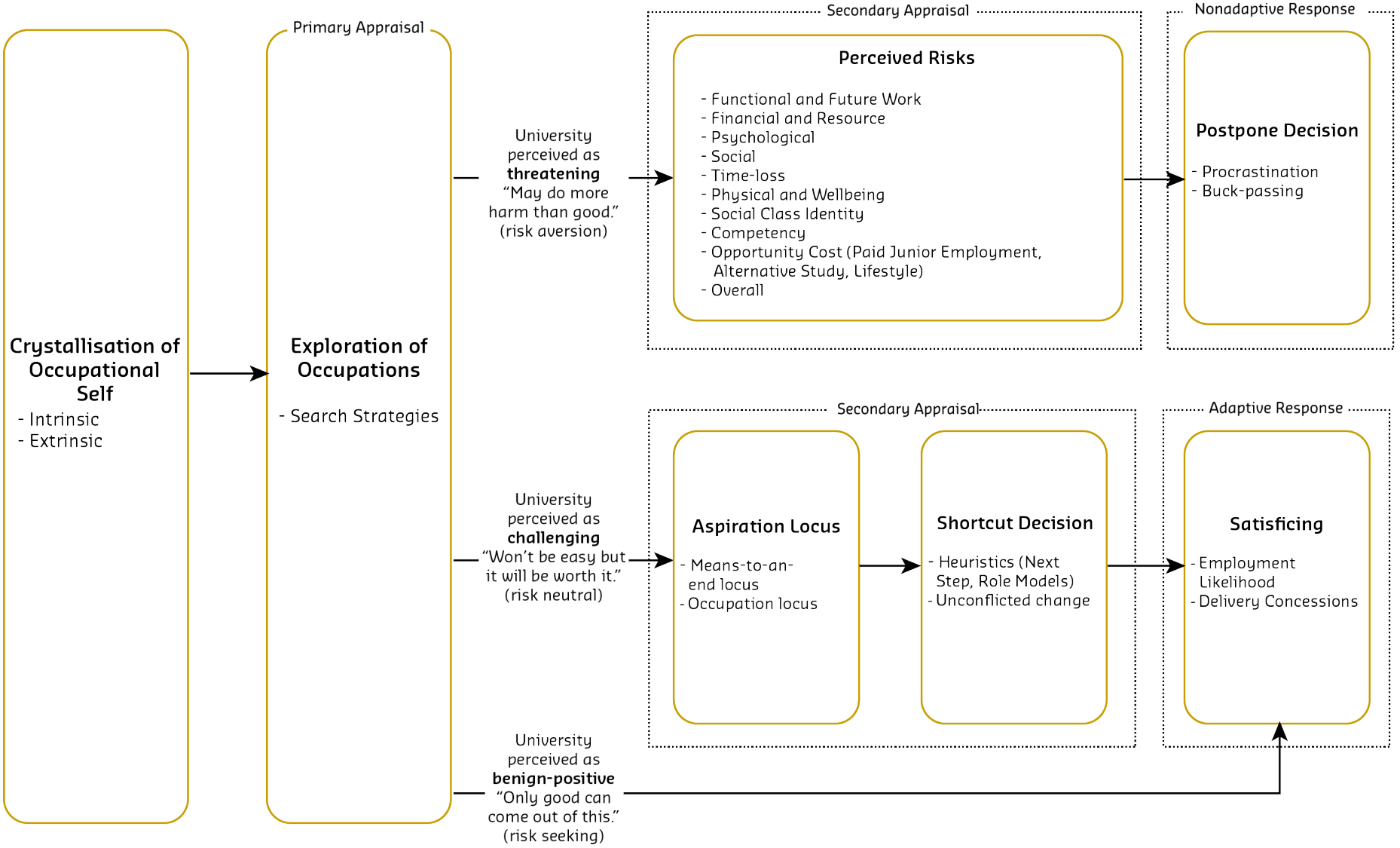


FIGURE 5: University Participation Decision Making Model with Narrative

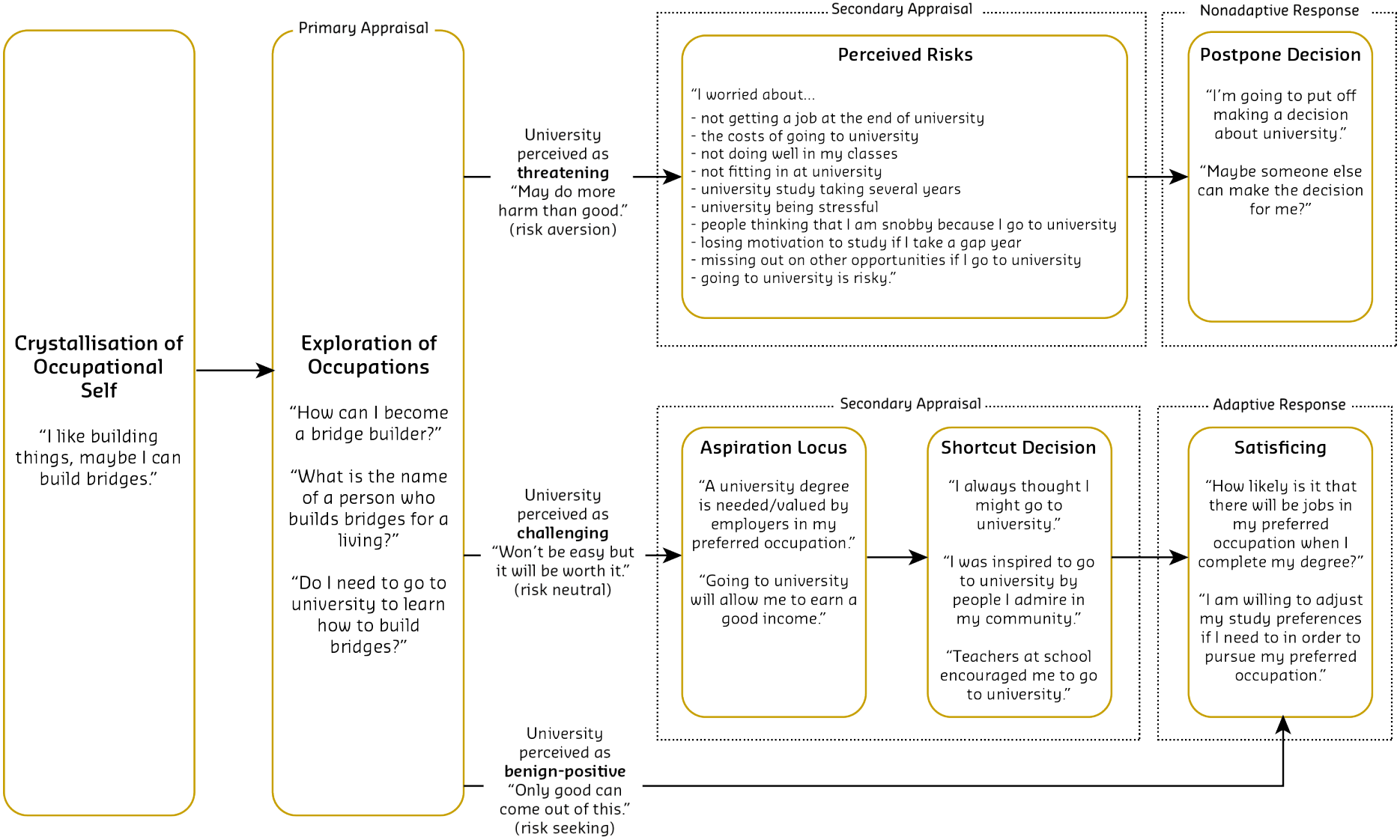
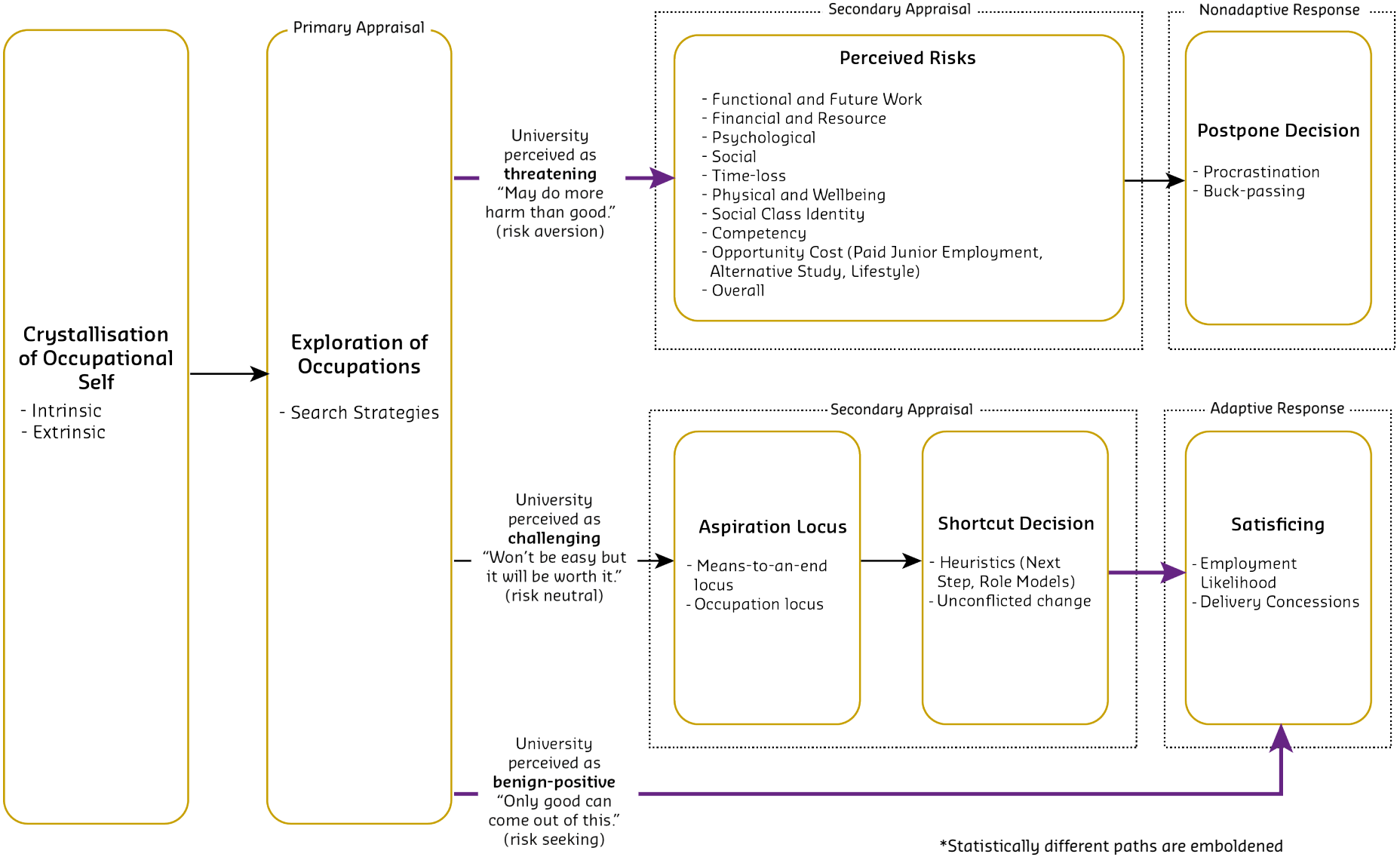
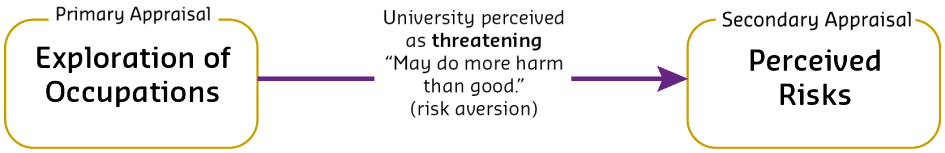


FIGURE 6: Secondary School Student Sample Comparing Low SES to OSES*



Insight #4



The path from Exploration of Occupations to Perceived Risks is significant for low SES secondary school students (0.31^{***}) but not significant for OSES secondary school students (0.02^{ns}). Thus, low SES secondary school students are more likely to be **risk averse** than their OSES counterparts.

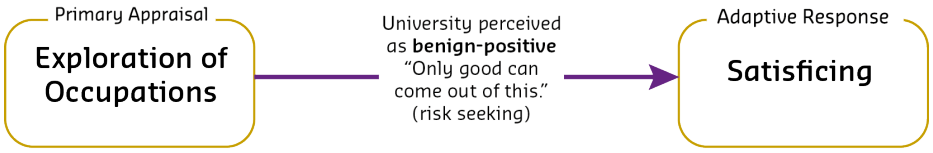
Translating insights into impact

People interpret risk in different ways. For risk averse low SES secondary school students, going to university is perceived as a threat. In such cases, the Protection Motivation Theory suggests that the reason for this threat perception is based on the person's perceived vulnerability and the perceived severity of negative outcomes on their life. Protection Motivation Theory notes that such perceived vulnerability and severity are considered in relation to the persons perceived self-efficacy (i.e. belief that they can succeed at university) and response efficacy (i.e. where a suggested action will solve their concerns such as a scholarship will solve their concerns about financial and resource risk). One way that WP could address Insight #4 may be to provide a risk-remedy resource. For example, a table that lists the 10 types of risk in one column and in a corresponding column list the possible remedies (perhaps with evidence to demonstrate response efficacy) could be developed for students.

To illustrate,

Common concerns low SES students have.	Solutions that have worked for others.
"I can't afford to go to university." (financial and resource risk)	Messaging: "Scholarships and bursaries provide you with money so that you can study. You can apply for these online. Let's look some up."
"What if I can't get a job at the end of university?" (functional and future work risk)	Messaging: "Joboutlook.gov.au is a great site that can tell you the projected number of jobs there will be in specific occupations in the future and what the average pay will be. Take a look for yourself."

Insight #5



This path from exploration of occupations to satisficing is significant of low SES secondary school students (0.71^{***}) but not for OSES secondary school students (0.17^{ns}). Thus, low SES secondary school students who are **risk seekers** perceive that only good can come from going to university (benign-positive). They have identified a preferred occupation, and whether a university qualification is essential or desirable to secure work in their preferred occupation, then they leapfrog to considering their employment prospects (likelihood) and degree delivery concessions (for example, studying at a nearby campus for the first year).

Translating insights into impact

For risk seeking low SES students, some types of WP may not seem relevant. These low SES risk seekers may need tools to help them with the satisficing stage of decision making. WP might focus on activities like:

- employment trends in their preferred occupation
- employers in their local area
- average income for graduates in their preferred occupation
- information about universities, their campuses and the degrees that they could enrol in that will help them gain entry to their preferred occupation
- accommodation options and transport options (for example, Will they need to catch public transport?; Do they know how?)
- degree delivery options such as part-time study, online study or studying at a nearby campus in their first year before relocating.

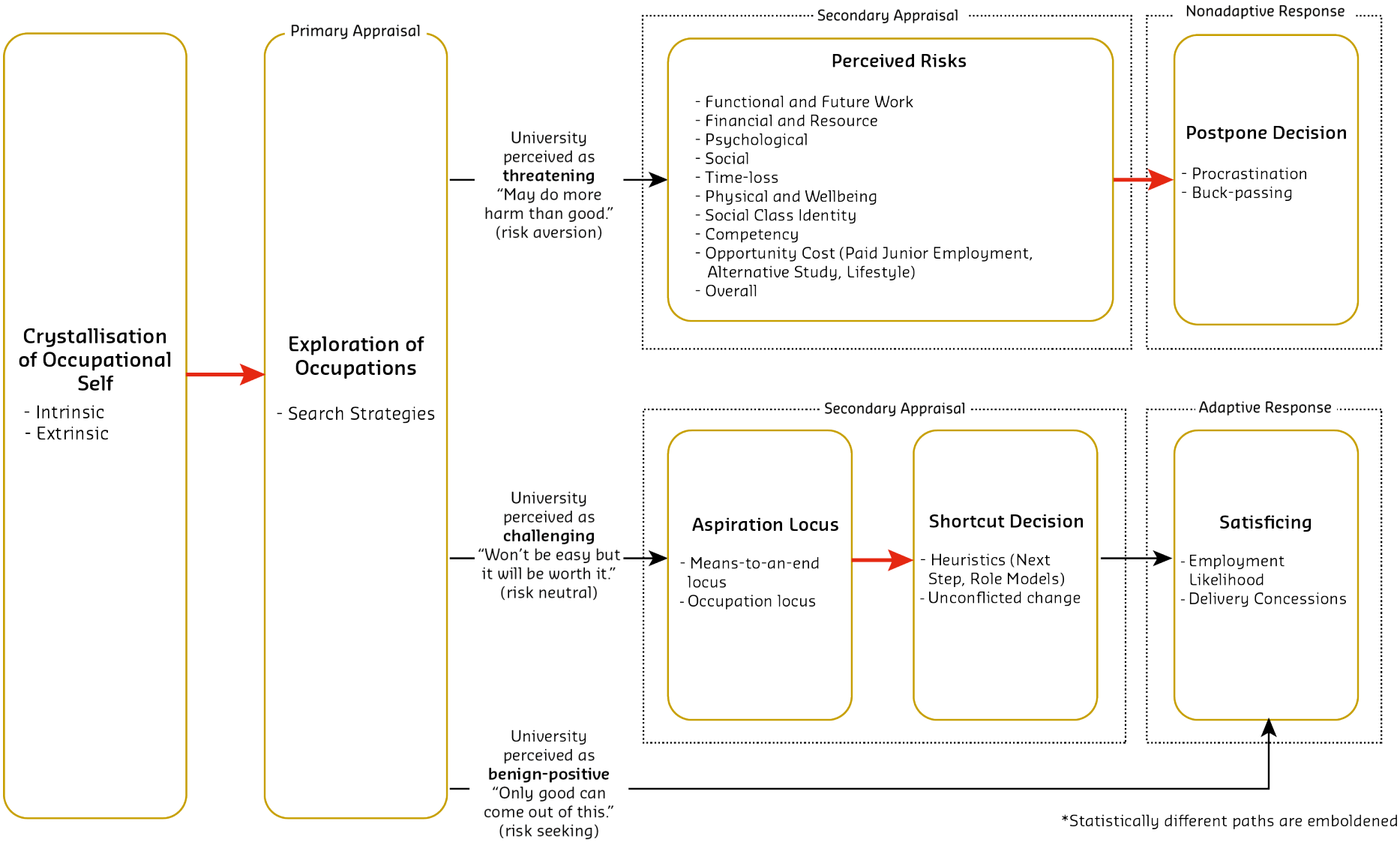
Insight #6

This path is much stronger for OSES (0.73^{***}), thus OSES secondary school students progress faster from shortcutting (for example, career officer advised they could become a nurse) to weighing up their options (satisficing: "Nurses are in high demand, and I can study it nearby") than low SES secondary school students (0.37^{***}). Thus, **risk neutral** low SES secondary school students are more careful and considered than their OSES counterparts in their decision process as they are more likely to be the first in their family to go to university and take more time to unpack options.

Translating insights into impact

Checklists, workbooks or self-evaluation questions that can guide low SES students with satisficing decisions would be advantageous. The suggestions for Insight #5 would work equally well for Insight #6. Also, WP messages that normalise a more careful process would be beneficial. For example, statements such as "people who are the first in their family to go to university often take a little longer to consider their options—don't feel you need to rush".

FIGURE 7: Parents of Secondary School Students Sample Comparing Low SES to OSES*



Insight #7

This path from crystallisation of occupational self is stronger for OSES (0.92***), suggesting, from a parent's perspective, once an OSES child crystallises what type of occupation they might want to pursue, they progress faster to exploring occupations than low SES children (0.88***). Thus, compared to their OSES counterparts, low SES secondary school students are **slower to progress to the exploration of occupations.**

Translating insights into impact

WP practitioners and schools could design a range of scaffolded activities that focus on this step. These could include in-class, personalised activities where, in the first instance, low SES students talk about what they are good at and what they like, using the seven job clusters developed by the Foundation for Young Australians (2017) as the central framework. The seven job clusters framework is a simple stepping stone that can help secondary school students conceptualise their occupational options. From this point, more activities could be narrowed to occupations falling within each cluster, with secondary school students selecting their "top 3" possibilities and embarking on a deeper exploration of each. A scaffolded approach prevents information overload or hyperchoice responses which typically overwhelm, stifling or paralysing progress to the exploration of occupations. Potentially, low SES secondary school students could be streamed according to interest in job cluster, and targeted WP could ensue to deliver cluster-relevant messages. Similar programs could be developed for parents or parent-and-child programs.

Insight #8

This path from Perceived Risks to Postpone Decision is stronger for OSES (0.50***) suggesting that from a parent's perspective, an OSES child who sees going to university as risky is more likely to postpone deciding on whether to go to university than a low SES child (0.35***). Thus, compared to their OSES counterparts, low SES secondary school students who perceive going to university as risky are **less likely to postpone making a decision** about whether to go (or not to go) to university.

Translating insights into impact

Insight #8 suggests that there is still an opportunity for WP practitioners to intervene and address low SES secondary school student's concerns (risks). An option here might be to return them to the "exploration of occupations" phase to consider the job cluster and explore other types of occupations that fit within that job cluster. Other resources such as QTAC My Path may be helpful to consider longer journeys to their occupational destination via non-university tertiary qualifications.

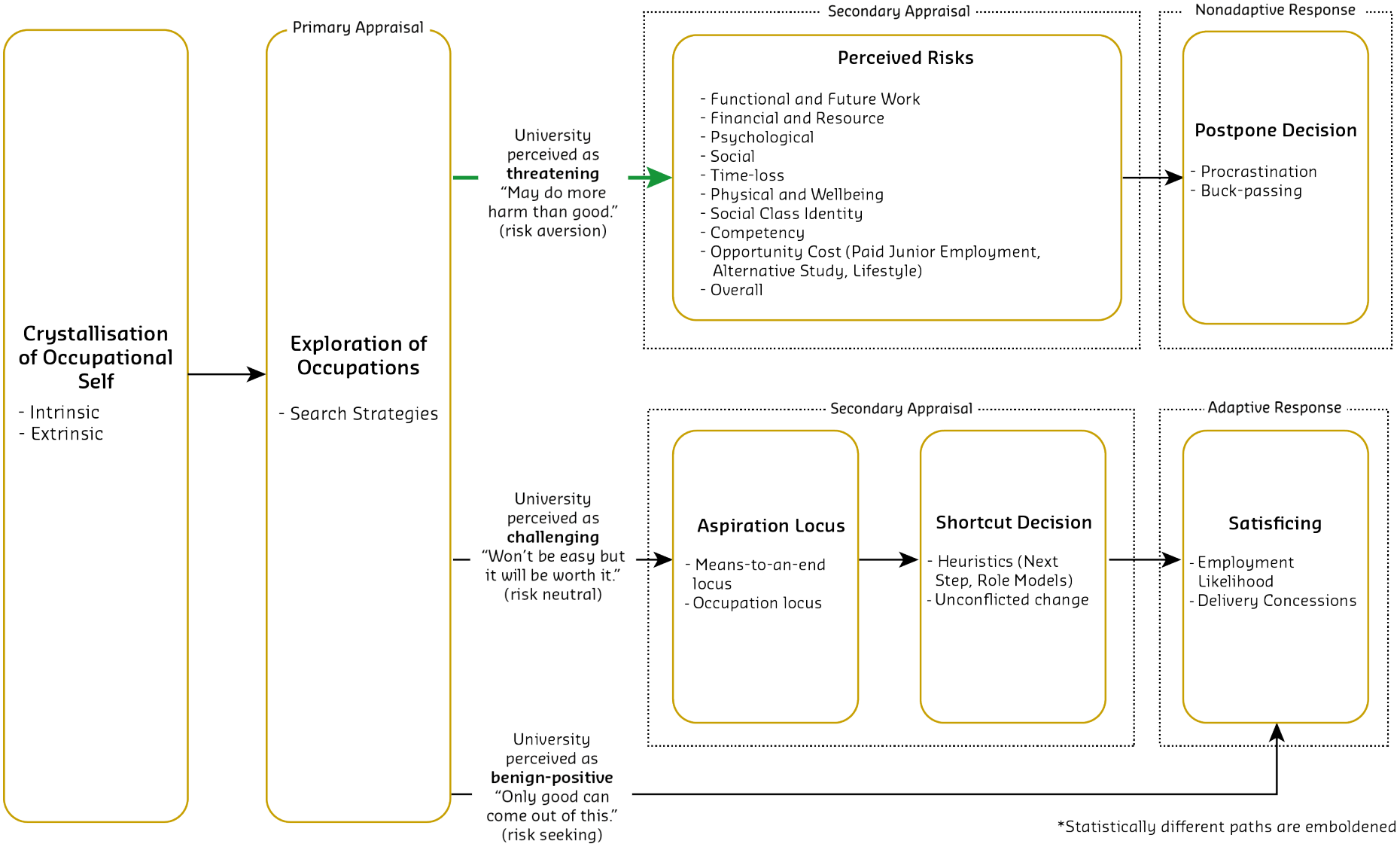
Insight #9

This path from aspiration locus to shortcut decision was stronger for OSES (0.88***) suggesting that from the parent's perspective, once their secondary school child has decided on a preferred occupation and wants/needs to go to university, an OSES secondary school student will progress faster to shortcut the decision such as taking career officer advice or mimicking the choices of role models than low SES (0.75***) secondary school students. Thus, compared to their OSES counterparts, low SES secondary school students are **slower to progress to decision shortcutting**.

Translating insights into impact

There may be many good reasons as to why low SES secondary school students do not progress as fast from aspiration locus to shortcut decision. Low SES secondary school students are typically the first in their families to have the opportunity to go to university, and they do not have the social capital (including role models) to draw from. Hence, they are more measured and careful in progressing to the next step. WP online video resources along the lines of "I came from a background like you and look at me now," would be advantageous as a type of simulated role model experience.

FIGURE 8: Comparison of Low SES Secondary School Students and Parents of Low SES Secondary School Students Samples*



Insight #10

This path between exploration of occupations and perceived risks is much stronger for low SES secondary school students (0.31***) than it is for the parents of low SES secondary school students (0.13**). Thus, the parents of risk averse low SES secondary school students **underestimate how much their child is concerned about going to university**.

Translating insights into impact

WP practitioners and schools may encourage or facilitate parent-child discussions about a range of concerns (for example, functional and future work, financial and resource) that secondary school children have. Parent events, for example, could help parents understand the degree and spectrum of concerns their risk averse children have. Similar to Insight #4, explaining to secondary school students and their parents that all human endeavours have some level of risk and how people handle risk differently (for example, risk averse, risk neutral, risk seekers) may help them to understand themselves, which will help them to develop a personal action plan to address their concerns.

Chapter 7: Conclusions and Recommendations

The intention of WP is to increase participation in higher education of people who do not traditionally go to university. This Fellowship focused on young people from low SES backgrounds and set out to garner a deeper understanding of the multitude of perceived risks that influence their decision to go (or not to go) to university. The research question of the Fellowship was: *How do the perceived risks of going to university influence the decision to participate in Australian higher education by young people from low SES backgrounds*? In answering this research question, this Fellowship has advanced the now mature "enabler and barrier" approach used in WP research, providing research-informed insights and solutions for how these may be translated into WP practice. Furthermore, the Fellowship has drawn attention to the interplay between career construction in the 21st century, future work, and the perceived risks of going to university for young people from low SES backgrounds.

Risks perceived by young people when faced with the dilemma of choosing to go (or not to go) to university cannot be viewed in isolation. Key factors in the external macroeconomic environment—being the contemporary career construction process or the nature of future work—influence a young low SES person's decision to go (or not to go) to university. Furthermore, key psychological factors intrinsic to individuals such as how they make decisions and their risk tolerance could also not be divorced from understanding perceived risks. Accordingly, the Fellowship delved into decision making (for example, bounded rationality, satisficing) and how people perceive and respond to risk— be it risk aversion, risk neutrality or risk seeking. While people from low SES backgrounds share a socioeconomic background, they differ in terms of their risk tolerance. Indeed, their risk tolerance influences how they navigate the dilemma of choosing to go (or not to go) to university. Teasing out these differences is advantageous to WP by providing an evidence base for nuanced WP programs that can be tailored for the diverse low SES secondary school student cohort.

This Fellowship also drew on appraisal theory. Appraisal theory helped to frame the decision to go (or not to go) to university as a decision dilemma. Streaming into two pathways in the lead up to senior secondary school presents young people with two options—OP/ATAR pathway or the non-OP/ATAR pathway—that are mutually exclusive. As choosing one option (for example, OP/ATAR pathway) in senior secondary school precludes participation in the other option, the streaming choices made in Year 10 present a psychological stressor for young people. Indeed, it is possible that for many young people with under-developed decision-making ability or experience this will be the first major dilemma they face, and one for which there are lifetime consequences. Although there are options to switch between the two pathways (OP/ATAR versus non-OP/ATAR) during senior secondary school, they are underused, perhaps even unknown. Similarly, those on the non-OP/ATAR pathway do have options to apply for an OP/ATAR equivalence, but again this appears to be uncommon. The lack of awareness or understanding of options available during, or at the end of, Year 12 compound the Year 10 streaming decision. Appraisal theory also contributed to this Fellowship in that when people are faced with a stressor, they engage in primary appraisal (i.e. interpretation of the stressor as threating, challenging or benign positive) before progressing to a secondary appraisal where they consider their resources to deal with the stressor which triggers either adaptive (i.e. satisficing) or nonadaptive (i.e. postponing decision) coping responses.

The Fellowship comprised three studies. Study 1 and Study 2 used secondary data and identified the types of perceived risks that young people from low SES backgrounds associate with going to university (Research Objective 1). Ten types of perceived risks were identified and contextualised as to how they relate to low SES secondary school students. Study 3 collected primary data from a national survey of Australian secondary school students (Years 10, 11 and 12) and the parents of Australian secondary school students in Year 10, 11 or 12. Study 3 data was used to develop and test a model of the influence of perceived risks on the decision to go to university by young people from low SES backgrounds (Research Objective 2). The University Participation Decision Making Model developed from Study 3 data was used to compare respondents from low SES backgrounds

with those from other SES backgrounds (OSES) to ascertain statistically significant differences for which specific WP interventions could be targeted.

Several conclusions can be drawn from the Fellowship project. These conclusions are presented in Table 6 and are organised by research objective. Associated recommendations are also provided in Table 6, and these are organised for stakeholders who are upstream (for example, local, State and Commonwealth governments) and midstream (for example, universities, WP practitioners, schools, teachers, careers advisors).

TABLE 6: Conclusions and Practical Recommendations for Upstream and Midstream Stakeholders

Conclusions	Practical Recommendations for Upstream and Midstream Stakeholders
RO1: To identify the types of perceived risks that young people from low SES backgrounds associate with going to university.	
There are 10 types of risk that young people from low SES backgrounds perceive as being associated with the decision to go (or not to go) to university.	**Upstream stakeholders can** assist middle and senior low SES secondary school students in making the decision to go (or not to go) to university by addressing their perceived risks through online resources (including short videos) that are embedded into existing national and state/territory resources such as QILT, CourseSeeker and QTAC My Path. For example, the CourseSeeker site could detect when a person has spent some time on the homepage without entering information. Similar to many commercial sites, a chatbot could ask if they need assistance and questions such as, “Are you still a little unsure about going to university?”. Following which it could be ascertained if the person was a secondary school student and progress to a dialogue about common concerns (for example, “A lot of other secondary school students are concerned about going to university,” to acknowledge and empathise, then, “Here are some of their concerns and some sites they looked at to help them make an informed decision”). **Midstream stakeholders can** recognise the different ways that young people from low SES backgrounds may express their perceived risks and empower them to co-design solutions that help them to make an informed decision. Not all young people from low SES backgrounds may be concerned by all 10 types of perceived risk, may not know how to express their concern, or may not be aware of some types of risk. Careful WP and school practices that provide a safe outlet for low SES secondary school students in middle and senior secondary school is best to first acknowledge the concerns of students and then through co-design activities that empower and encourage positive action to “myth-bust” concerns and provide objective, credible information so they can make an informed decision.
RO2: To develop and test a model of the influence of perceived risks on the decision to go to university by young people from low SES backgrounds.	
Low SES secondary school students respond in three different ways to the dilemma of deciding whether or not to go to university.	**Upstream stakeholders can** recognise that while low SES secondary school students have much in common in terms of shared experiences on the journey to higher education (i.e. points of parity like being the first in their family to go to university), they also have points of difference such as their risk tolerance. The aforementioned upstream practical recommendation for Research Objective 1 would be equally effective for Research Objective 2, bringing self-awareness of their risk tolerance and how this may be influencing their decision making. One suggestion is that existing government sites could include a career quiz to assist students in identifying compatible occupations. A similar risk tolerance profile or decision-making quiz (for example, “What’s your career decision style?”) could help students recognise how they make decisions, their proclivity towards risk, and then ways they can progress to make an informed decision (for example, “You’re a risk seeker. Sometimes you can rush decisions like deciding on which university you want to go to. Take a little time now and identify your top three universities and look them up on the QILT site to find out a little more before settling on one institution.”).

Conclusions	Practical Recommendations for Upstream and Midstream Stakeholders
	Midstream stakeholders can find low-cost ways to profile low SES secondary school students in terms of their risk tolerance (for example, a simple paper-based quiz) and then deliver targeted, relevant messages. It would also be helpful to share with the larger low SES secondary school student cohort information on how we experience risk in everyday experiences, but we respond to them differently (and all responses are okay). Furthermore, talks about decision making and how, for example, risk seekers may rush a decision, while others who are risk averse may postpone a decision. Such information may help in other parts of life beyond the decision to go (or not to go) to university.
The perspectives of low SES secondary school students and the parents of low SES secondary school students are very different.	**Upstream stakeholders can** embed parent-friendly resources into existing national and state/territory online resources. For example, a "For Parents" tab at the top of the QILT website next to the "For Students" tab would be a simple, low-cost yet effective way to engage low SES parents who are trying to assist their secondary school children. A "For Parents" webpage might include content related to findings from the Fellowship such as Insight #10, where students' concerns about going to university were significantly greater than that of their secondary school child. The "For parents" webpage may include "Common concerns that parents have," (for example, "How much does going to university cost?"; "How can I find out about job prospects in my child's preferred occupation?"; "How will technology influence my child's preferred occupation in the future?").
	Midstream stakeholders can engage more parents of low SES secondary school students and to adapt resources accordingly. The models demonstrated that the paths that parents of low SES secondary school students were concerned with were not the same as the paths that secondary school students were concerned with. Indeed, there were no overlapping paths that both groups had in common (see Figure 6 and Figure 7). Informed by this Fellowship, WP and school engagement with low SES parents is best to focus on Insights #7, #8 and #9, while the concerns of low SES secondary school students that are centred on Insights #1 to #6 would be beneficial. Furthermore, helping parents to determine if their child is risk averse, risk neutral or risk seeking, and ways they can support their low SES secondary school child, would also be advantageous.

Future Research Directions

Future research-led WP opportunities that leverage the outputs of this Fellowship may include:

- mapping pre-access perceived risks to first-year attrition frameworks such as Professor Sally Kift's Transition Pedagogy and Professor Keithia Wilson's First Year Experience.
- exploring how different types of perceived risk may be more pronounced at different stages of the student lifecycle.
- exploring the influence of perceived risks on the decision to go (or not to go) to the university by non-school leavers.

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Appendix 1: Study 1 Findings Summary

Perceived Risk	Frequency[#]	Prominence	Sentiment	Notes
Functional *and Future Work**	122 (30.8%)	Medium	☹	Retain all as evidence supports inclusion.
Financial *and Resource**	108 (27.3%)	Medium	☹	
Psychological	34 (8.6%)	Medium	☹	
Social	52 (13.1%)	Medium	☹	
Time-loss	13 (3.3%)	Medium	☹	
Physical *and Wellbeing**	15 (3.8%)	Medium	☹	
Sensory	6 (1.5%)	Medium	☹	
Social Class Identity*	8 (2.0%)	Medium	☹	
*Competency**	82 (20.7%)	Medium	☹	
Opportunity Cost	**Frequency**	**Prominence**	**Sentiment**	**Notes**
*Paid Employment**	39 (9.9%)	Medium	☹	Retain all as evidence supports inclusion.
Alternative Study*	65 (16.4%)	Medium	☺	
Lifestyle*	24 (6.1%)	Medium	☹	

* emerging from Study 1 data; [#]percentage based on a sample of 396

The amended and new types of perceived risks were:

- Financial *and Resource* Risk: expanded to reflect that access to laptops and other resources are needed to perform well in the degree.
- Physical *and Wellbeing* Risk: a wellbeing aspect was added to reflect the stresses caused by study.
- *Social Class* Identity Risk: clarified that the social class identity is the focus.
- *Competency risk:* a concern with losing momentum in terms of study motivation and skills if taking a gap year or longer between finishing school and going to university.
- *Opportunity Cost: Paid Employment*: going to university means forgoing full-time paid employment in entry-level positions at junior rates (lower rates more appealing to employers).
- *Opportunity Cost: Alternative Study*: going to university means forgoing VET/TAFE or apprenticeship options which have higher employment outcomes.
- *Opportunity Cost: Lifestyle:* going to university means forgoing the opportunity to develop or maintain relationships, start a family, travel and live life.

Appendix 2: Study 2 Findings Summary

Personal Attributes + Characteristics	Frequency[#]	Prominence	Sentiment	Note
Demographic: Age	38 (31.5%)	Medium		Retain all as evidence supports inclusion. Gender, CALD and risk seeking retained as have theoretical support.
Demographic: Gender	7 (4.0%)	Medium		
Demographic: Indigenous	18 (10.2%)	Medium		
Demographic: CALD	17 (9.6%)	Low		
Demographic: Regionality	57 (32.2%)	Medium		
Demographic: SES	38 (21.5%)	Medium		
*Demographic: Family Responsibility***	14 (7.9%)	Medium		
*Demographic: Health and Wellbeing***	10 (5.6%)	Medium		
*Demographic: Living Situation***	34 (19.2%)	Medium		
First-in-family	42 (23.7%)	Medium		
Risk tolerance: Risk Averse	12 (6.8%)	Medium		
Risk tolerance: Risk Seeking	7 (4.0%)	Medium		
Expectations: Implicit	28 (15.8%)	Medium		
Expectations: Explicit	20 (11.3%)	Medium		
Academic Attainment	53 (29.9%)	Medium		
Decision Making Ability	62 (35.0%)	Medium		
Work Volition	11 (6.2%)	Medium		
Career Adaptability	23 (13.0%)	Medium		
Crystallization of Self Concepts	**Frequency**	**Prominence**	**Sentiment**	
Intrinsic Trigger: Unconscious Mind	46 (26.0%)	Medium		Retain all as evidence supports inclusion.
Intrinsic Trigger: Physical Conditions	13 (7.3%)	Medium		
Extrinsic Trigger: External Sources	27 (15.3%)	Medium		
Exploration of Occupations	**Frequency**	**Prominence**	**Sentiment**	
Sources of information: Internal	63 (35.6%)	High		Retain all as evidence supports inclusion.
Sources of information: External	104 (58.8%)	High		
Sources of information: Personal	83 (46.9%)	Medium		
Sources of information: Experiential	71 (40.1%)	Medium		
Info search: Heightened Awareness	10 (5.6%)	High		
Info search: Active Search	50 (28.3%)	Medium		
Making Decision: Consideration Set	**Frequency**	**Prominence**	**Sentiment**	
Opportunity Cost: Paid Employment*	53 (29.9%)	Medium		Remove convenience and Information Availability as not supported. Retain others - junior jobs and employment likelihood as are novel.
Opportunity Cost: Alternative Study*	29 (16.4%)	Medium		
*Opportunity Cost: Junior Jobs***	6 (3.4%)	Medium		
*Opportunity Cost: Degree Preference***	5 (2.8%)	Medium		
Opportunity Cost: Lifestyle*	13 (7.4%)	Medium		
*Opportunity Cost: Convenience***	1 (0.6%)	Medium		
*Satisficing: Employment Likelihood***	4 (2.3%)	Medium		
*Satisficing: Information Availability***	2 (1.1%)	Low		
*Satisficing: Degree Options***	10 (5.6%)	Medium		
*Satisficing: Delivery Concessions***	14 (7.9%)	Medium		

Making Decision: Perceived Risks	Frequency	Prominence	Sentiment	
Functional and Future Work	29 (16.4%)	Medium		Merge physical and wellbeing with wensory as indistinguishable. Retain all others as evidence supports inclusion.
Financial and Resource*	59 (33.3%)	Medium		
Psychological	39 (22.0%)	Medium		
Social	30 (17.0%)	Medium		
Time-loss	25 (14.1%)	Medium		
Physical and Wellbeing*	3 (1.7%)	Medium		
Sensory	5 (2.8%)	Medium		
Social Class Identity*	18 (10.2%)	Medium		
Competency*	42 (23.7%)	Medium		
Making Decision: Aspiration	**Frequency**	**Prominence**	**Sentiment**	
*Means-to-an-end Aspiration***	94 (53.1%)	Medium		Retain all as evidence supports inclusion.
*Occupation Aspiration***	34 (19.2%)	Medium		
*Employment Prospects Aspiration***	30 (17.0%)	Medium		
*Uncrystallised Aspiration***	52 (29.4%)	Medium		
Making Decision: Confidence**	**Frequency**	**Prominence**	**Sentiment**	
*Confident***	44 (24.9%)	Medium		Retain all as evidence supports.
*Not Confident***	10 (5.7%)	Medium		
Shortcutting Decision Making	**Frequency**	**Prominence**	**Sentiment**	
Unconflicted Change	40 (22.6%)	Medium		Retain all as evidence supports inclusion. Hypervigilance has theoretical support.
Hypervigilance	5 (2.8%)	Low		
*Heuristics: Next Step***	24 (13.6%)	Medium		
*Heuristic: Expectations***	31 (17.5%)	Medium		
*Heuristic: Role Models***	34 (19.2%)	Medium		
Postponing Decision Making	**Frequency**	**Prominence**	**Sentiment**	
Procrastination	3 (1.7%)	Medium		Retain all as evidence supports inclusion.
Buck-passing	4 (2.3%)	Medium		
Rationalisation	4 (2.3%)	Medium		
Intention to go to University	**Frequency**	**Prominence**	**Sentiment**	
Proximal goal	26 (16.7%)	Medium		Retain all as evidence supports.
Distal goal	41 (23.2%)	Medium		

* emerging from Study 1 data; ** emerging from Study 2 data; #percentage based on a sample of 177

New variables identified in Study 2 were:

- *Demographic: Family Responsibility*: dependent children or significant others influences decision making and perceived risks.
- *Demographic: Health and Wellbeing*: health problems or substance addiction may deter aspiration.
- *Demographic: Living situation*: living at home or independently influences financial and social risks.
- *Opportunity Cost: Junior Jobs*: forgoing the entry-level employment advantage gained in working immediately after school. It was perceived that employers are inclined to hire junior staff rather than graduates as upon turning 21 years, higher senior pay rates apply.
- *Opportunity Cost: Degree Preference*: choosing a degree of a lesser preference (realistic option) means forgoing the degree of greater preference (idealistic option).
- *Satisficing: Employment Likelihood:* a specialised degree with an industry placement increases graduate employment likelihood.
- *Satisficing: Information Availability:* had limited information and unaware of all options.
- *Satisficing: Degree Options:* OP/ATAR will determine degree options.
- *Satisficing: Delivery Concessions:* adjusting delivery choices to improve cost/benefit ratio, e.g. enrol in preferred university/degree, but compromise on location and study mode.
- *Aspiration: Means-to-an-end Locus:* want to go to university in order to be a professional in a chosen field (e.g. “I want to go to university, so I can become a nurse”).

- *Aspiration: Occupation Locus:* had a clear occupation end goal and were not constrained to one pathway (via university) to achieve it (e.g. “I want to be a graphic designer”).
- *Aspiration: Employment Prospects:* want a high paying job and have good employment prospects but have not identified a specific profession.
- *Uncrystallised Aspiration:* want to “get a job” but have not yet undertaken or fully crystallised self-concepts or explored occupational alternatives.
- *Making Decision: Confidence:* Confident decision makers saw going to university as the logical next step in their education rather than a leap of faith. First-in-family participants typically lacked confidence.
- *Heuristics: Next Step:* university was the natural, next step that had always been planned for.
- *Heuristic: Expectations:* there was an unspoken expectation that they would go to university. Hence, they did not consider other options.
- *Heuristic: Role Models:* role models went to university, so they would too.

Appendix 3: Study 3 Survey Questions

Survey questions used in the multivariate analysis

Construct (Source)	Survey questions phrased as per student survey (adapted for parent survey)
Crystallisation of Occupational Self (Savickas et al., 2018, Stumpf et al., 1983)	**Intrinsic** Since the beginning of the year, to what extent have you spent time… Forming a clear picture of your personality Becoming aware of your interests and abilities Determining what is important to you
	Extrinsic Since the beginning of the year, to what extent have you spent time… Knowing how other people view you Identifying people that you want to be like
Exploration of Occupations (Savickas et al., 2018)	**Search Strategies** Since the beginning of the year, to what extent have you spent time… Learning about different types of occupations Finding out more about specific occupations that might suit you Learning as much as you can about the particular educational requirements of the occupation that interests you the most Learning what you can do to improve your chances of getting into your preferred occupation
Aspiration Locus (Lages & Fernandes, 2015; developed from Study 1 and 2)	**Means-to-an-end locus** For me, going to university will allow me to achieve… More financial wealth More stability in life More freedom More personal and professional fulfilment More ways I can help others More status
	Occupation locus For me, a university qualification… Is valued by employers in my preferred occupation Will help me get a job in my preferred occupation Will improve my employment chances in general
Shortcut Decision (Mann et al., 1997; developed from Study 1 and 2	**Heuristics - Next Step** I'm thinking about going to university because… It is something I have always planned to do
	Heuristics - Role Models I'm thinking about going to university because… I was inspired by people in my community who have gone to university
	Unconflicted change I'm thinking about going to university because… My teachers at school suggested that I should go My parents want me to go People I know at school are going to university, so I am too It is not really a choice for me—my family expects me to go
Postpone Decision (Mann et al., 1997; Hamilton et al., 2016)	**Procrastination** In making decisions about university, I… Put off making decisions Waste time on unrelated things which distract me from making decisions Often change my mind several times
	Buck-passing In making decisions about university, I… Prefer that people who are better informed decide for me Try to get other people to help me to make decisions

Construct (Source)	Survey questions phrased as per student survey (adapted for parent survey)
	Rationalisation In making decisions about university, I… Realise I can't possibly know everything before deciding Do not think it is a big decision in life Do not think decisions about university require a lot of careful thought
Assess Perceived Risks (Stumpf et al., 1983; Archer et al., 2002; Jacoby & Kaplan, 1972; developed from Study 1 and 2)	**Functional and Future Work Risk** How concerned are you about the possibility that… The university experience may not be what you expect A university qualification may not lead directly to a job in your preferred occupation You may not begin work in your preferred occupation immediately after graduating from university There may be fewer jobs in your preferred occupation by the time you graduate from university Technology, like artificial intelligence, robots or automation, may reduce future work opportunities in your preferred occupation It may be hard to secure a full-time job in the future You may work in the "gig economy", being casual, contract work offered by online platforms (e.g. Air Tasker, Uber) rather than having a full-time job with one organisation Gaining skills that can be used in multiple occupations (i.e. transferrable skills like written communication or working in a team)
	Financial and Resource Risk How concerned are you about… The cost associated with going to university (e.g. textbooks, accommodation, travel to and from campus) Having a HECS-HELP debt/loan to pay for part of your university degree Unexpected expenses associated with going to university that may arise (e.g. excursions, work experience placements)
	Psychological Risk How concerned are you about… Not doing as well in your classes at university as you hope to Not being able to keep up with the pace of your university classes Finding help with your study when you need it Being an independent learner and managing your own study
	Social Risk How concerned are you about… Not fitting in Making new university friends that you can hang out with on campus Whether your background will make you different to the people who typically go to university Missing the company of others who have been in your life (e.g. school friends, feeling homesick if you have to move to go to university)
	Time-loss Risk How concerned are you about… University degrees taking several years to complete compared to other alternatives (e.g. some TAFE/VET qualifications are shorter) University study taking up a lot of your time for several years Sticking with university study all the way to the end of the degree
	Physical and Wellbeing Risk How concerned are you about… The stress of university study potentially impacting your wellbeing Using public transport, especially for classes scheduled at night Your physical safety at university in general

Construct (Source)	Survey questions phrased as per student survey (adapted for parent survey)
	Social Class Identity Risk How concerned are you about… Others in your life who may think that you are snobby because you go to university People thinking that you are trying to be better than them and show them up because you go to university Not fitting in with your current friends and family anymore because going to university may change how you see the world Your identity changing because going to university may mean you become part of a higher social class Others in your life having higher expectations of you because you go to university Others in your life being mean to you because you go to university University turning you into somebody that you do not want to be
	Competency Risk How concerned are you about… Losing momentum (e.g. motivation and skills) if you take a gap year or longer between finishing school and going to university
	Opportunity Cost Risk How concerned are you about… Missing out on entry-level jobs where a junior pay rate would make you more appealing to an employer Missing out on other career opportunities (e.g. traineeships or apprenticeships in high-income jobs) Having to compromise on lifestyle while you are studying (e.g. giving up some leisure time, social activities, sports participation)
	Overall university risk Overall, I perceive that going to university is… Not at all risky — Extremely risky
Satisficing (Turner et al., 2012; developed from Study 1 and 2)	**Employment Likelihood** Please rate how strongly you agree or disagree with the following statements. It is highly likely I will get a job in my preferred occupation It is highly likely there will be lots of job opportunities in my preferred occupation when I complete their university degree
	Delivery Concessions Please rate how strongly you agree or disagree with the following statement. I am willing to adjust my study delivery preferences (e.g. go to a university/campus closer to home, study online, study part-time) on my way to my preferred occupation

Appendix 4: Engagement Activities

Activity	Place (Host)	Month
2018 Universities Australia Conference	Canberra (UA)	February
National Forum - Improving the Transition and Retention of Regional Students from Low-socioeconomic Backgrounds: A 5Ps Approach	Brisbane (CQU)	February
NCSEHE Legacy and Capacity Workshop 3: Strengthening Evaluation in Indigenous Higher Education Contexts in Australia	Sydney (NCSEHE)	April
Professor Dawn Bennett Developing EmployABILITY Thinking HERDSA Workshop	Sunshine Coast (HERDSA/USC)	April
Placement with the Commonwealth Department of Education and Training (included Fellowship project presentation). Dom English (Group Manager, Higher Education) Robert Latta (Branch Manager, Governance, Quality and Access) Jo Chivers (Director, Higher Education Program Management) Amanda Franzi (Director, Equity Policy) Lyndal Groom (Branch Manager, Student Participation Branch) Mike Jackson (Assistant Manager, Vocational Pathways) Vicki Ratliff (Director, AQF Review) Angela O'Brien-Malone (Assistant Director, Equity Policy)	Canberra (DET)	May
National Forum – Addressing the Gap Between Policy and Implementation: Strategies for Improving Education Outcomes of Indigenous Students	Brisbane (CQU)	May
NCSEHE Legacy and Capacity Workshop 4: Towards 2030 – A Long-term Strategic vision for Student Equity	Melbourne (NCSEHE)	June
Higher Education Academy (UK) Invitation-Only Fellowship Forum: Leading the Way in Teaching and Learning	Brisbane (UQ)	June
CQU Research Training Conference	Rockhampton (CQU)	July
4th Queensland Widening Participation Practitioner Seminar	Brisbane (Qld DET)	August
The Financial Review Higher Education Summit 2018	Melbourne (FR)	August
First Year Experience Symposium	Sunshine Coast (USC)	August
Queensland University Educators Showcase 2018	Sunshine Coast (QUES)	September
Regional Universities Conference 2018	Gold Coast (SCU)	October
2018 Australasian Evaluation Society and Australian Market and Social Research Society Symposium	Brisbane (AES + AMSRS)	November
USC Research Seminar	Sunshine Coast	November
World Access to Higher Education Day	Perth	November
Society for the Provision of Education in Rural Australia	Perth	November
Australian and New Zealand Marketing Association Conference	Adelaide	December

Fellowship Project Conference Papers (1)

Raciti M 2018, The Risk Ecology of Widening University Participation, Australian and New Zealand Marketing Academy Conference, The University of Adelaide, Adelaide, 3-5 December.

Fellowship Project Presentations (7)

Raciti M 2018 How the perceived risks of going to university influences the decision to participate in Australian higher education by people from Low SES backgrounds, Australian Government Department of Education and Training, Canberra, 21 May.

Raciti M 2018 Should I stay, or should I go? Indecision about going to university among people from low SES backgrounds, Widening Tertiary Participation Practitioner Seminar, Queensland University of Technology, Brisbane 17th August.

Raciti M 2018 The journey: In, out and beyond the Research Higher Degree, Invited Guest Speaker, CQUniversity RHD Training Intensive II – Indigenous Research Session, Rockhampton, 23 July.

Raciti M 2018 Career speculation and the risky business of going to university for people from low SES backgrounds, Keynote presentation, 2018 Australasian Evaluation Society and Australian Market and Social Research Society Joint Symposium, Griffith University, 8th November.

Raciti M 2018 University teacherhood: A journey back to the beginning. Guest presenter at HEA@USC launch, University of the Sunshine Coast, Sippy Downs, 31 October

Raciti M 2018 Career construction in the 21st century: The interplay between future work and the perceived risks of going to university for young people from low socioeconomic backgrounds, USC Research Seminar, University of the Sunshine Coast, Sippy Downs, 26 November

Raciti M 2018 The perceived risks of going to university by people from low socioeconomic backgrounds, World Access to Higher Education Day, Curtin University, Perth, 27 November

Other HEPPP Project Conference Papers (3)

Russell-Bennett R and Raciti M 2018, Magpies, Possums, Emu and Penguins: When Vulnerable Consumers Co-create a Digital Service, Frontiers in Service Conference, Texas State University, Austin, USA, 6-9 September (HEPPP project: Social Marketing Strategy for Widening Tertiary Participation in Low SES Communities)

Raciti M and Dale J 2018 Geographic proximity and disadvantaged students' university participation, Australian and New Zealand Marketing Academy Conference, The University of Adelaide, Adelaide, 3-5 December (HEPPP project: Widening Regional and Remote Participation: Interrogating the Impact of Outreach Programs Across Queensland)

Raciti M 2018 Swimming upstream: The dilemmas faced by regional, rural and remote students who decide to go to university, 34th National Society for the Provision of Education in Rural Australia conference, Curtin University, Perth, 28-29 November (HEPPP project: Widening Regional and Remote Participation: Interrogating the Impact of Outreach Programs Across Queensland)