Regional and remote school students' perceptions and assessments about university and associated obstacles in their progression to university

Abstract

This article explores remote and regional school students' attitudes, their significant others' opinions (social capital) and their perceptions of control about progressing to university as likely drivers of these students' intentions to progress to university. The role of school students' knowledge about university in shaping their attitudes and perceptions of control about progressing to university is also examined. For these purposes, a model based on the theory of planned behaviour was tested using the responses of a survey based on a sample of 620 school students, from remote and regional areas in New South Wales, Australia. Results show that students' attitudes towards university and perceptions about social capital are the most important predictors of their intentions to progress to university. Practical implications for widening participation practitioners are proposed and discussed.

Introduction

The Bradley report (Bradley et al., 2008) was a review requested by the Australian Government to understand directions and challenges in the future of higher education. This report identified students who belong to low socio-economic backgrounds, those coming from regional and remote contexts, and those with indigenous heritage as groups requiring particular attention particularly in improving university access rates, given their low representation in the Australian higher education system. Studies have shown that regional and remote students are more likely to perceive difficulties in their access to university and feel less encouraged about this decision when compared with their metro counterparts (Martin et al., 2013; James et al., 1999). In this context, exploring the obstacles perceived by regional and remote students by the time they assess their options of studying at university becomes critical (Walton and Carrillo, 2017).

Multiple obstacles faced by regional and remote students have been recognised in the education literature, and many of these have been reported as being directly related to distance and geographic isolation. Examples of obstacles include a lack of awareness and difficulties in understanding the advantages attributed to a university degree (Shaw and Larson, 2003; Griffin et al., 2011; Young et al., 1997), university fees, including costs of relocating far from hometown, and fear of missing out things at home (Alloway and Dalley-Trim, 2009; Robinson, 2012). Other examples include perceptions of university as an unrealistic choice, lack of support from significant others (Gale et al., 2013; Israel et al., 2001; Byun et al., 2012) or preference for other more immediate alternatives (such as acquiring jobs after school or undertaking shorter vocational studies) (Hossain et al., 2008). The improvement of regional and remote students' access to universities and the negation of obstacles might be related to several factors, such as intervention in schools by university outreach programs, providing opportunities to study for capable students, financial support, and a gratifying university experience. (Bradley et al., 2008; Gale et al., 2010; James et al., 2010). However, to properly define and propose solutions for, regional and remote students, it is important to assess the way perceive both university and obstacles.

Individual-level factors such as perceptions, feelings and values have been identified as capable of affecting behaviours (Fishbein and Ajzen, 2010), such as intentions to progress to university. This article presents a theory-driven model that groups and simultaneously tests regional and remote students' perceptions about university and obstacles associated with university progression. Based on the theory of planned behaviour (TPB) (Ajzen, 1991), we investigate three elements as predictors of remote and regional students' intentions to progress to university: students' attitudes towards progressing to university; students' perceptions of control over the decision of progressing to university; and the way students perceive the influence and opinions of the community around them, in regards to progressing to university. In addition, information and knowledge have been described as part of a set of background factors that can affect the predictors of intentions of performing behaviours in individuals (Fishbein and Ajzen, 2010). Therefore, the TPB was extended to include students' levels of knowledge about university and study programs as a variable capable of affecting their attitudes and perceptions of control about university progression. To test this model, a quantitative approach was used, employing a sample of 620 students attending their last year of school in 33 schools located in regional and remote areas of New South Wales, Australia.

Students' perceptions about university, and its associated obstacles, have been described in literature mostly independent of each other. There is a lack of studies addressing and testing these elements simultaneously in a single model, assessing and comparing their relative importance for students as proposed in this research. It is essential to have a holistic and complete understanding of the factors that shape regional and remote students' aspirations for university, in order to focus efforts in those areas more likely to have positive consequences for students., (Robinson, 2012; Bradley et al., 2008).

Theoretical framework and hypotheses

Theory of Planned Behaviour (TPB)

The framework used for this research is based on the TPB (Ajzen, 1991; Fishbein and Ajzen, 2010). The TPB has been successfully used in several disciplines that involve understanding human behaviours, including education, where it has been employed to describe the way students' perceptions affect their career choice (e.g. Fong, 2012; Giles and Rea, 1999), The TPB proposes that behaviours flow from intentions, which are the extent of readiness of individuals to engage in a behaviour, or their perceived probability to do so (Fishbein and Ajzen, 2010). Intentions are predicted by three variables: attitudes - defined as the way individuals perceive the outcomes and consequences of performing the behaviour (Ajzen, 1991; Fishbein and Ajzen, 2010); subjective norms - ways in which individuals perceive their significant other's opinions about engaging in the behaviour (Eagly and Chaiken, 1993); and perceptions of control - understood as the individuals' assessments of their own capabilities and resources related to the performance of the behaviour (Ajzen, 1991). In the context of this research, the object of study is the intended progression to university of regional and remote students in their last year of school. Attitudes represent these students' perceptions and feelings about university and their undertaking of a university degree. Subjective norms are represented by students' perceptions about the opinions and extent of support received from those who are important to them, such as family, friends, peers and teachers. Finally, perceptions of control encompass students' perceptions about their own academic skills and external factors such as financial considerations that would affect their decision to go to university.

Relationship between regional and remote high school students' attitudes towards progressing to university and their intentions to progress to university

According to Fishbein and Ajzen (2010, p. 76), attitudes are defined as the 'tendency to respond with some degree of favourableness or unfavourableness to a psychological object', and are the result of an individual's assessment of a set of beliefs about certain behaviour (Ajzen, 1991). Students' attitudes and beliefs towards university have been found to be essential to understand students' educational attainment, given their power to influence key choices, such as intentions to progress to post school education (Gregg and Goodman, 2010; Gorard et al., 2012).

Positive attitudes towards university are connected to students' enthusiasm, motivation for learning and the idea of obtaining prospective earnings, opportunities and benefits from a university degree (Gorard et al., 2012). Students who have greater motivations and consider university as a relevant, useful, life-changing option for the future and necessary to access higher level job opportunities, have been found to be more likely to intend undertaking university studies after finishing high school (Flouri, 2006; Jacob and Wilder, 2010; Gorard et al., 2012). On the other hand, university can be less attractive for some students who do not believe that a university degree can have an important and positive impact on their future life (Naylor et al., 2013). Also, those with more immediate goals and needs such as applying for a job right after finishing high school, those unwilling to commit more time to education, or those who might find it difficult to relocate far from families can struggle perceiving university as a valid choice (Naylor et al., 2013; Stone, 2017).

Regional and remote high school students tend to experience particular challenges that can discourage career exploration and aspirations. These include limited career advice, lack of awareness and knowledge about the benefits of a university degree and other disadvantages associated with distances and isolation. All t may increase perceived obstacles and prevent intentions of undertaking further education (Griffin et al., 2011; Provasnik et al., 2007). These factors lead regional and remote students to assess the value of university education differently from their counterparts in metropolitan areas, contributing to a narrowing of life and work perspectives, and increasing pessimistic and negative feelings towards university education (Atkins, 2003; Morris, 2012). Moreover, regional and remote students tend to appreciate education in the extent that it contributes to facilitating their access to the local workforce (Morris, 2012; Stone, 2017). These students are likely to look for educational options that are considered more achievable, such as apprenticeships, technical and vocational education (Roberts, 2015). However,, some studies have shown that initiatives based on promoting university among students, such as outreach programs or mentoring schemes, tend to have positive impacts on these students' attitudes and, consequently, in their transition rates to university (Bradley et al., 2008; Curtis et al., 2012).

This study proposes that attitudes will be an important predictor of the intention to progress to university, which leads to the following hypothesis:

H1: There is a positive relationship between regional and remote high school students' attitudes towards university and their intentions to progress to university.

Relationship between regional and remote high school students' significant others' opinions about university (social capital) and their intentions to progress to university

The theory of planned behaviour proposes subjective norms as another variable capable of affecting individuals' intentions to perform a behaviour (Fishbein and Ajzen, 2010). The education literature often refers to this same concept as "social capital", defined as 'the capital inherent in the relations among persons' (Coleman, 1988). In the context of this study, regional and remote students' social capital is composed of the interactions they have with their family (particularly parents and carers), teachers, peers and friends, these being the significant influencers of their academic aspirations (Israel et al., 2001; Byun et al., 2012). Social capital has been said to be an important element able to shape students' aspirations and intentions of progressing to university (Alloway and Dalley-Trim, 2009; Fabiansson, 2006; Young et al., 1997), and powerful enough to make a student decide between dissimilar options, such as choosing the university path or finding a local job (Alloway and Dalley-Trim, 2009).

Parents and carers are one of the most important sources of encouragement, inspiration and influence on students when they shape their goals in life (Garg et al., 2002; Hutchinson et al., 2009; Archer et al., 2014). Different parenting styles can affect children's aspirations in dissimilar ways (Wentzel, 1998). Parents and carers twho are present, supportive, communicative and concerned about their children can provide better attention and guidance, particularly on issues related to future options and educational aspirations (Leidy et al., 2011; Shumow et al., 1998; Grolnick and Slowiaczek, 1994). Israel et al. (2001, p.45) stress parents' importance, arguing that *'parents' nurturing activities, such as helping children with their homework, discussing important school activities with them, and holding*

high educational aspirations for them', along with restricting some behaviours, such as limiting television and monitoring homework, are likely to improve children's academic aspirations. It has been argued that parents' educational expectations about their children are positively correlated to their children's educational aspirations (Kirk et al., 2011; Benner and Mistry, 2007). In the case of regional and remote school students, it has been stated that parents tend to expect less from their children in terms of educational attainment, since university degrees are usually not perceived as a very relevant requirement for the local lifestyle or joining the local workforce (Byun et al., 2012; Kirk et al., 2011). This may impact negatively in the development of attitudes towards university in children. In addition, families in regional and remote areas are over-represented among those with low socio-economic backgrounds (DEEWR, 2010; Naylor et al., 2013). Consequently, parents may not possess much knowledge, awareness and experience about university, making it difficult for them to provide the right guidance to children in this regard (Naylor et al., 2013).

In the case of teachers, there is consensus that students will increase their academic aspirations when they feel their teachers provide advice, help and emotional support, manifest interest in their academic performance and have positive expectations about their students (Wentzel et al., 2010). Supportive and caring teachers have been positively related to students who are more engaged in their academic activities and have higher aspirations and intentions to undertake further studies (Watson et al., 2016; Wentzel and Asher, 1995; Roeser et al., 1996). School students' educational aspirations are positively influenced by teachers who have high expectations about their students, which consequently impacts positively on students' attitudes towards university (Byun et al., 2012).

Peer groups, such as friends and classmates, have similarly been cited as an important source of influence for students. Peers exhibit characteristics such as trust, loyalty, emotional support and closeness, along with reciprocity and social exchange (Laursen and Hartup, 2002), which are exalted during adolescence. These elements encourage students to rely on and influence each other, which is reinforced by identity search and sense of belonging that make school students look for peer approval and advice (Bukowski, 2000; Molloy et al., 2011). In this sense, peers' opinions about progressing to university can potentially impact very deeply on students' academic aspirations.

Community networks can negatively influence students' academic attainment. Many jobs are never advertised in regional and remote settings, but rather allocated by personal recommendations from family and friends (Smith and Brennan, 2001). Community and local networks are then highly valued by students, since they provide access to the local labour market in these geographical areas, offering a sense of security to high school students as future job applicants. Students might feel reluctant to leave their localities to progress to further studies This may be seen as riskyand would force them to build other networks and relationships in more complex urban contexts (Kilpatrick and Abbott-Chapman, 2002), thus becoming an obstacle for students potentially interested in university.

Based on the early discussion on the significance of community influence in regional and remote students' lives, it is proposed that:

H2: There is a positive relationship between regional and remote high school students' significant others' opinions about university (social capital) and their intentions to progress to university.

Relationship between regional and remote high school students' perceptions of control and their intentions to progress to university

Fishbein and Ajzen (2010) define perceptions of control as 'the extent to which people believe that they are capable of performing a given behaviour, that they have control over its performance'. The more control the individual perceives they have over a behaviour, the more likely the individual will be of performing that behaviour. It has been argued that there is a duality in perceptions of control, with two elements as part of the same concept: perceived self-efficacy and controllability (Ajzen, 2002). Perceived self-efficacy relates to individuals' beliefs about their own skills and capabilities and the extent to which they rely on them to fulfil a particular behaviour (Bandura, 1991). In the case of this study, self-efficacy refers to students' assessment about their own academic capabilities and preparation (e.g. perceptions of being 'smart enough' for succeeding in higher education), which will affect their intentions of progressing to university. On the other hand, controllability refers to the extent to which an individual believes the execution of certain behaviour is under volitional control (Ajzen, 2002). In other words, the engagement of the individual in the behaviour depends on the willingness of the same individual. In the context of this study, controllability considers students' issues such as the right financial support needed to attend university, the extent of confidence of the student in the the decision to go to university, and if a student's school academic performance meets university requirements.

Self-efficacy and controllability are relevant when predicting students' progression to university. Perceived self-efficacy has proved to be an important factor capable of positively affecting academic attainment among students. It has been argued that school students with high perceptions of academic self-efficacy will put more effort into their academic duties, persevere when facing adverse settings, tolerate higher levels of anxiety and stress, and overall, will see their academic aspirations increased (Carroll et al., 2009; Bandura et al., 2001). Self-efficacy involves skills such as acquisition of study habits, problem solving and being able to effectively communicate (Pajares, 1996), which are of value once the student reaches university. Perceptions of controllability have been related to financial issues and perceived costs. These are often mentioned in literature as the most important barriers faced by students when assessing their university options (Munro, 2011; Tang et al., 2008). Relocation and its associated costs can mean relying on financial support from parentsor having the permanent pressure of finding and retaining a job (Young et al., 1997; Alloway and Dalley-Trim, 2009). Financial-related issues are particularly relevant for students economically disadvantaged and from regional and remote contexts. In the Australian context, belonging to rural backgrounds and being economically disadvantaged are factors that reinforce each other (Naylor et al., 2013), emphasising pessimism among students from those backgrounds (Fleming and Grace, 2014) and undermining their perceptions of controllability. These perceptions have been found to decrease students' aspirations, since their fulfillment is bound to economic considerations (Hossain et al., 2008).

Given these arguments, and also considering that students with high perceived self-efficacy and controllability might be 'more likely to persevere when facing problems' (Gorard et al.,

2012, p. 60), as they will perceive themselves as capable to succeed once at university, it is proposed that regional and remote high school students with greater perceptions of control will be more likely to intend to progress to university. The following is the third hypothesis of this study:

H3: There is a positive relationship between regional and remote high school students' perceptions of control about progressing to university and their intentions to progress to university.

Relationship between regional and remote high school students' level of knowledge about university and their attitudes and perceptions of control towards progressing to university

The benefits of a university education have been widely described in literature. For instance, it has been stated that individuals with a degree are more likely to enjoy better employment conditions, higher salaries, moving up in the 'socio-economic ladder', along with leading healthier lifestyles (Baum et al., 2013)., Studies have concluded that groups under-represented in university, such as lows SES regional and remote students, remain mostly unaware of the benefits of higher education and therefore, reluctant to participate (Robinson, 2012; Bradley et al., 2008; Atkin, 2003). The value of university is not obvious for many such students (Atkin, 2003), and can be perceived as out of their area of interest and unconnected with their lives (Walton et al., 2018; Parker et al., 2016; Naylor et al., 2013). Although there are regional and remote students who appreciate that education can improve existing skills and support the acquisition of new ones, along with being a 'ticket out of rural areas' (Blackwell and Pinder, 2014; Atkin, 2002), lack of knowledge about university can become a major obstacle to some of these students, leading them to dismiss the value of education (Atkin, 2003).

Knowledge and information by school students about university programs, pathways, scholarships and related future occupations can contribute to shaping their aspirations (Shaw and Larson, 2003; Griffin et al., 2011). Students with an accurate understanding of university are likely to recognise the benefits that a university degree can provide, along with developing more accurate expectations about university life, careers, programs, required skills and related prospective future occupations (Brown and Lent, 2004; Griffin et al., 2011). Therefore, knowledge about university can boost students' attitudes and perceptions of control towards progressing with further studies (Young et al., 1997). Nonetheless, regional and remote students can be prevented from experiencing and interacting with university life, university students, academic staff and visiting campuses, because of isolation and distances. Chances of obtaining first-hand knowledge are therefore reduced, increasing feelings of pessimism that can result in picturing university as a distant and unachievable option (Griffin et al., 2011).

Students with a clear knowledge about university will see the process of transition from school to university with less stress. Knowledge can contribute to reducing ambiguity, uncertainty and stress in individuals when facing important decisions (Bawden and Robinson, 2009; Wurman, 2001). Thomas et al. (1993, p.243) claims that knowledge supports individuals' decision-making process, so a 'sense of mastery and a feeling that no stone has been left unturned emerges'. For students, knowledge about university would allow them to be more certain and optimistic about progression to university, interpreting this option in terms of opportunities and benefits instead of barriers and obstacles (Jackson

and Dutton, 1988; O'Shea et al., 2016) and consequently improving their attitudes towards university. University is not an option for everybody, but students should be able to freely decide for a realistic post-school option based on proper knowledge and understanding (Robinson, 2012), which will increase their perceptions of control over this decision.

Based on these arguments, we state that knowledge built from accessible information will lead to feelings of self-confidence, positive attitudes and more controllability in regards to an eventual progression to university. In this sense, it is proposed that:

H4: There is a positive relationship between regional and remote high school students' level of knowledge about university (study programs, pathways, scholarships and related future occupations) and their attitudes towards progressing to university.

H5: There is a positive relationship between regional and remote high school students' level of knowledge about university (study programs, pathways, scholarships and related future occupations) and their perceptions of control towards progressing to university.

Methodology

Sample

To put Australia into context, the size of the country is 24 times that of the UK. The population is highly concentrated on the coast (Green and Raid, 2004; Robinson, 2012), with four out of five people living within 50 km from the coast (ABS, 2017). Data collection for this research was undertaken during 2017, visiting 33 schools located in geographic areas away from the coast in the state of New South Wales (NSW), Australia, and classified as regional and remote by the Australian Bureau of Statistics (ABS, 2017). Schools were scattered across the state, with distances ranging between 200 - 800 km from the state capital, Sydney. A paper-based survey was conducted in these schools among students attending Year 12, the last year of schooling in Australia. The number of surveyed students was 695, from which 75 returned incomplete surveys, reducing the usable sample size to 620. The final sample's demographic characteristics are provided in Table 1.

Table 1: Sample's demographic information (Incomplete responses are not considered)

	Number	Percentage from total
Sex of respondent		
Male	239	38.5%
Female	373	60.2%
Other	8	1.3%
Identifies as an Aborigine or Torres Strait Islander		
Yes	115	18.5%
No	502	81.0%
Parents' highest educational level		
Primary education or lower	21	3.4%
High School	253	40.8%
Vocational qualifications/TAFE	160	25.8%
Bachelor degree	111	17.9%
Postgraduate degree	61	9.8%
Highest educational goal		
High school certificate	144	23.2%
Vocational (VET)/TAFE	124	20.0%
Bachelor degree	188	30.3%
Postgraduate degree	142	22.9%

Measurements

All measurement scales were based on previous literature. These scales and its items are depicted in Table 2. The first scale, intentions to progress to university, was measured by four items adapted from the work of Fishbein and Ajzen (2010), and used to capture the extent of a student's determination to join university after finishing school. Students' level of knowledge about university was measured through five items adapted from the work of

Shaw and Larson (2003) and Griffin et al. (2011) They assess the extent of student understanding in terms of programs of study, university life, careers opportunities accessible with a university degree, pathways to study programs, entry requirements, and roles and skills that can be taken back to the community once finishing university. Students' attitudes towards university were measured using six items based on the work of Shaw and Larson (2003). These items include the extent to which students would like to progress to university, to achieve their goals in life through university study, how useful students see university in terms of allowing access to better jobs, the extent of value assigned to a university degree that would justify relocation away from family, the degree to which university is seeing in positive or negative terms, and also the extent to which they see themselves as a suitable candidate for university. Perceptions of control were measured with six items adapted from the elements proposed by Ajzen (2002), composed of items assessing self-efficacy (skills, perceptions of intelligence, and perceptions of being capable of leading a university life) and controllability (volitional control about the decision, financial support, academic performance at school). Social capital was assessed using five items adapted from Fishbein and Ajzen (2010), Gale et al. (2013) and Israel et al., (2001), in terms of the extent of perceived importance of some of the students' significant others' opinions regarding progression to university, along with the frequency of interactions with university topics held between students and their parents and carers.

All these items were measured with a 5-Likert scale, with options from 'strongly disagree' to 'strongly agree'. The survey also measured background information, such as gender and indigeneity, which was assessed via multiple choices. An initial version of the survey was distributed among staff of UNSW-AimHigh[1], who include academic researchers and experienced practitioners. Their feedback and comments mainly consisted in rewording along with adapting the language used to fit the last year of school students, enriching the final version of the survey.

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[1] The AimHigh unit is a portfolio of pre-entry programs and initiatives supporting social equity at the University of New South Wales (UNSW)

Data analysis and results

Normality requirements were all confirmed for each item in all the collected responses after establishing skewness and kurtosis were within acceptable ranges (±2) (Hair et al., 2009; Gravetter and Wallnau, 2014). In addition, histograms were used to check distributions for each item, visually confirming normality as the distributions were bell-shaped.

As part of the two-stages Structural Equation Modeling (SEM), Confirmatory Factor Analysis (CFA) was used to evaluate the measurement model. CFA is indicated for testing the fit of the theoretical model to the data (Tharenou et al., 2012), assessing each of the item loadings in each construct and therefore making sure that items are measuring the same underlying theoretical concept. CFA was tested with five latent constructs and 25 observed variables using AMOS v24.0. The goodness of fit of the overall model was found to be satisfactory, as values for χ2/df = 3.08, CFI=0.95, IFI=0.95, GFI=0.90, NFI=0.93, Standardised RMR=0.0391 and RMSEA=0.057 are all acceptable (Hair et al., 2009; Green, 2016). Convergent validity for the model was achieved, since factor loadings for each item were over 0.5 (Hair et al., 2009; Tharenou et al., 2012). Reliability for each scale was tested through Cronbach's alphas, and resulting values were well above the threshold of 0.7 stated by Hair et al. (2009), which shows a high consistency among items within constructs (Hair et al., 2009). The composition of each latent construct, its Cronbach's alpha and factor loadings for each item are depicted in Table 2.

Table 2: CFA factor loadings and Cronbach's alphas for each construct

Scales	Factor Loading
Intentions (α=0.96)	
I'm willing to take the challenge of going to university once I finish school	0.90
I'm going to work as hard as I can to go to university once I finish school	0.92
My plan for once I finish school is to go to university	0.96
I am determined to go to university once I finish school	0.97
Knowledge (α=0.87)	
I have a clear idea of what I would like to study	0.73
I have a clear idea of what university would be like	0.71
I have a clear idea of the career opportunities I would have with a university degree	0.85
I have a clear idea about pathways to study programs and entry requirements	0.68
I have a clear idea of the jobs and roles that I could take back to my community if I get a university degree	0.80
Attitudes (α=0.91)	
I would like to go to university	0.93
I'm not bothered about university, since I could get a good job without going to university	0.68
I think university would help me to achieve my goals in life	0.88
I think it is worth sacrificing some things, such as being far from the family, in order to get a university degree	0.65
I think going to university would make a positive difference in my life	0.86
University is not for people like me	0.79
Perceptions of Control (α=0.82)	

Scales	Factor Loading
I think I don't have the right skills to succeed at university	0.61
I think I am smart enough to go university	0.74
I think I would fit in at university	0.70
I am confident that I can go to university if I want to	0.62
I think my school grades are good enough to allow me to go to university	0.72
I am confident that I could find financial support to go to university (regardless of the source: family, government, universities, etc.)	0.53
Social Capital (α=0.87)	
Most people who are important to me think that I should go to university	0.80
My parents/caregivers support and encourage the idea of me going to university	0.83
My teachers support and encourage the idea of me going to university	0.76
My friends think it is a good idea if I go to university	0.77
Frequency in the interaction with parents about topics related to school and university	0.58

Discriminant validity was tested using the average variance extracted (AVE). The results obtained for the square root of the AVE (Table 3) were over 0.5 (values in the diagonal) and were higher than the correlation estimates for every couple of latent variables (Hair et al., 2009; Tabachnick and Fidell, 2012), meaning that discriminant validity was achieved for this study. Composite reliability (CR) is also depicted, with values over the 0.7 threshold suggested by Hair et al. (2009).

Table 3: Discriminant Validity assessment

	CR	AVE	Intentions	Attitudes	Social capital	Knowledge	Perceptions of control
Intentions	0.966	0.878	**0.937**				
Attitudes	0.902	0.653	0.780	**0.808**			
Social Capital	0.863	0.561	0.710	0.722	**0.749**		
Knowledge	0.869	0.572	0.492	0.499	0.523	**0.756**	
Perception of control	0.820	0.520	0.582	0.636	0.610	0.558	**0.721**

AVE: Average Variance Extracted and Correlation Estimates. The non-diagonal elements are the latent correlations while the diagonal elements show the square root of Average Variance Extracted.

CR: Composite reliability

Structural model

A structural model was subsequently built to test the hypothesis after CFA was satisfactorily completed. Consistent with other education studies (eg. Cooper et al., 2017; Gore et al., 2015; Lent et al., 2000), the model was controlled by students' gender, parents' highest level of education (used as proxy of students' socio-economic status – SES), class' size (number of students in Year 12 for each school) and distances from each school to the

nearest university campus - all highly relevant in regional and remote contexts. The goodness of fit of the structural model was satisfactory, with values for χ2/df = 3.80, CFI=0.92, IFI=0.92, GFI=0.90, NFI=0.90, Standardised RMR=0.088 and RMSEA=0.067, all of them within acceptable thresholds (Hair et al., 2009; Green, 2016). Figure 1 shows the model and the results obtained.
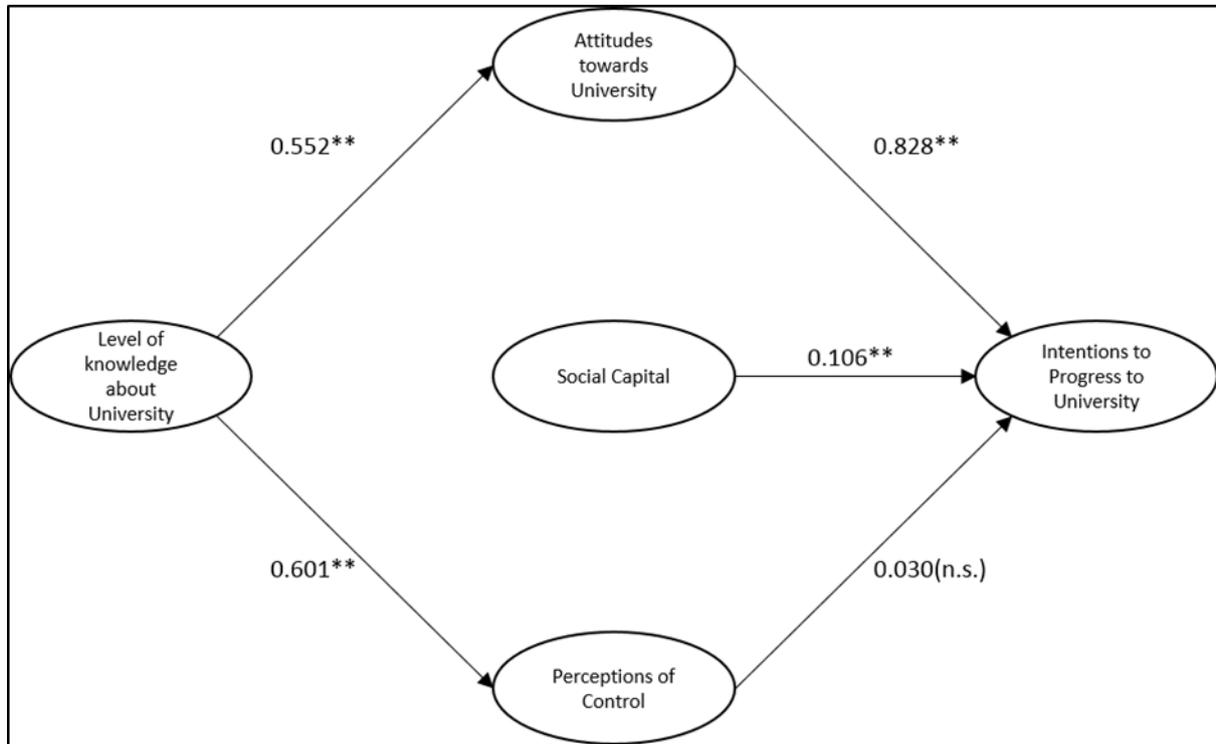

Figure 1: Results for the model

The results found for H1 are significant (0.828, p<0.01): there is a strong association between students' attitudes towards university and their intentions to progress to university. Results for H2, also show a significant relationship (0.106, p<0.01) between social capital and students' intentions to progress to university. H3 is not supported, since the effect of perceptions of control are not significant (0.030, p>0.05) on the students' intentions to progress to university. Finally, findings for H4 and H5 suggest that that the level of knowledge about university possessed by students, improves both students' attitudes towards university (0.552, p<0.01) and their perceptions of control about university issues (0.601, p<0.01).

Discussion

The main purpose of this study was to explore the predictive power of students' attitudes, social capital and perceptions of control about progressing to university as capable of affecting regional and remote high school students' intentions to progress to university. The impact of the level of knowledge about university held by regional and remote school students on their attitudes and perceptions of control towards progressing to university was also examined. The findings show that remote and regional school students' attitudes and their perceptions about social capital are better predictors of their intention to progress to university than their perceptions of control. The relevance of attitudes and the influence of social capital perceived by students found by this research provides empirical support to studies such as Marks et al. (2000) and particularly Cooper et al. (2017), where these elements were found to be very relevant in predicting progression to university for a sample of students in Victoria, Australia.

Students' attitudes towards progressing to university was the strongest predictor of intention to progress to university (0.828, p>0.05). The strength of this relationship shows that students in the sample are more likely to express intentions about progressing to university if they perceive university in positive terms, as a life-changing option, relevant for the achievement of their life goals, and as a required step for accessing better job opportunities. Regional and remote students, who perceive university in these terms, will do so despite the presence of obstacles such as geographic isolation and risks associated with being away from home, understanding university as an accessible choice that can be aspired to.

Social capital was found to be a relevant predictor of intentions to progress to university (0.106, p>0.05), although relatively less influential for students than their own attitudes. Students in the sample confirm that parents, carers, teachers and friends influence their intentions to progress to university, supporting results obtained in education-social capital studies, such as Kilpatrick and Abbott-Chapman (2002), Byun et al. (2012) and Alloway and Dalley-Trim (2009), where significant others' support and high academic expectations have been described as essential for raising educational aspirations among students.

The relationship between perceptions of control and intentions to progress to university was not statistically significant (0.03, n.s.). Itappears that perceptions of control become less relevant when simultaneously tested along with attitudes and social capital as predictors of intentions to progress to university This reaffirms the results of studies such as Cooper et al. (2017). This finding is particularly interesting, since perceptions of self-efficacy and controllability (components of perceptions of control) have been found to be relevant when studying the barriers and obstacles in university progression perceived by school students (eg. Alloway and Dalley-Trim, 2009; Tang et al., 2008).

An explanation for this could be that perceptions of control might have contributed to shape these final year students' attitudes earlier in their lives. There is evidence suggesting that knowledge and interest about different occupations, and therefore the decision of progressing to university, could be shaped and developed by students before their last year of school (Auger et al., 2005; Watson and McMahon, 2005). Shaw and Larson (2003) and Powlette and Young (1996), for example, state that many students have already made a decision in terms of academic aspirations by the age of 14 or 15, with Young et al. (1997)

arguing that regional and remote students make career decisions earlier than metropolitan students. Moreover, the Australian educational system requires school students to choose specific subjects that satisfy universities admission's selection criteria, as early as Year 10, when they are around 16 years old.

There is also evidence that perceptions of control, and particularly self-efficacy, can affect subjects' attitudes towards behaviours. For instance, Luzzo (1993) argues that perceptions of control have an important effect on attitudes held by students towards career decision-making. From this point of view, and according to the results in this study, attitudes and social capital are the main driving forces that shape students' intentions based on their goals and preferences in life, whereas perceptions of control act as a facilitator, reinforcing and facilitating this decision rather than playing a determinant role.

In terms of students' knowledge about university, it is revealed as a key element capable of influencing and predicting students' attitudes (0.552, $p>0.05$) and perceptions of control (0.601, $p>0.05$) towards progressing to university. These findings confirm the importance for students having access to the right knowledge about university, study paths and scholarships outlined in the Bradley report (Bradley et al., 2008)., The results suggest that providing information to remote and regional students in regards to career opportunities, university programs, university life, future jobs and roles that university degrees facilitate is likely to increase these students' attitudes and perceptions of control towards university, and consequently, their intentions to continue university.

Implications for practitioners

There are some interesting implications of the findings of this study for the work of widening participation practitioners. Since regional and remote students' attitudes was found to be the most important predictor of their intentions to progress to university, the results suggest that efforts should be made to orient and encourage these students towards continuing their education in university. These efforts should be focused on helping students to understand university as a feasible and valuable choice, capable of providing access to better work alternatives and consequent improved life-quality conditions.

The study suggests the importance of widening participation practitioners' early initiatives to promoting students' work towards goals in life. Since school students tend to make career decisions several years before their last year of school, practitioners should aim to promote positive attitudes towards university from the early years, keeping students interested in the university choice until the end of their school education. Students should be invited to be ambitious, 'thinking bigger' at the time of planning their life goals and objectives. Further work could then focus on helping students understand university as a path to achieve these goals, making their attitudes positive about this option, as something possible to achieve. Goals may change with time, but students will be able to associate the role, place and value of university in regards to their new goals. As mentioned, widening participation programs should build regular assessment of students' goals and attitudes towards to university from early age, monitoring the way they evolve throughout school years. In addition, regional and remote school students should be particularly aware that students with socio-economic disadvantages can be as successful in obtaining their degrees as people from other backgrounds (Naylor et al., 2013), and that universities are making

efforts to include people from different social and geographical settings, meaning that they will not be alone and are likely to meet people from similar backgrounds.

As previously mentioned, university is not for everyone, and students may be interested in other post-school options. Although being described as 'soft' and 'low-status options' by many regional and remote students (Fleming and Grace, 2014), the prospect of working right after school or studying short technical degrees can be quite attractive among school students, since these are seen as capable of providing rewards in the short term (Woodroffe et al., 2017). On the contrary, university is perceived by many regional and remote students as 'hard, stressful and boring' (Gore et al., 2015), as a far more difficult choice to achieve and where it is necessary to invest long periods of time before being able to receive a salary. It is practitioners' challenge to explain advantages and disadvantages of choices such as progressing to university, to vocational studies or getting a job after finishing school, and how these options align with the objectives and life goals of students previously defined.

A further implication of the results of this study is that students' positive attitudes towards university must also be supported by a positive influence of the social capital around them. Teachers, parents and carers and other agents should be aligned towards extending and reinforcing students' positivity towards university. Another important aspect is the, introduction of role models for students, such as professionals in the areas they show interest. Finally, knowledge about university, study programs and entry paths will lead students to be more optimistic about their opportunitiesIt indicates that students with university goals can be properly guided and informed, so levels of ambiguity, anxiety and stress during the school-university transition stage are reduced.

Limitations

The results of this study consider the opinions of students attending Year 12 in regional and remote schools in NSW, Australia. Findings are particularly true for students within the sample context, but they might vary when other geographical contexts are considered, or younger students are included in the sample.

Future work should consider that decisions about academic attainment are made by regional and remote students earlier than their metropolitan counterparts, so students in early school years should also be considered into the study sample. Younger students' opinions may vary the results of this study, especially in terms of perceptions of control, which might be found to have a more relevant role.

Conclusion

This study examines some of the variables able to influence regional and remote students' intention to progress to university, based on the TPB. Results based on the opinions of students attending Year 12 in regional and remote schools in NSW, Australia, show that the variables related to their attitudes towards university, along with the perceived influence of their social capital, are more relevant predictors of their intention to progress to university than the perceived control towards this decision. These results suggest that factors connected to students' attitudes, such as linking their long term personal goals and objectives to a university degree, along with holding beliefs that university can make positive changes in the students' life, can be considered critical when encouraging regional and remote students to pursue university.

References

ABS (2017). Remoteness Structure. [online] Available at: http://www.abs.gov.au/websitedbs/D3310114.nsf/home/remoteness+structure [Accessed 14 Dec. 2017]. *Australian Bureau of Statistics.*

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes, 50*(2), 179-211.

Ajzen, I. (2002). Perceived behavioral control, self-efficacy, locus of control, and the theory of planned behavior. *Journal of applied social psychology, 32*(4), 665-683.

Alloway, N. and Dalley-Trim, L. (2009). 'High and Dry' in rural Australia: Obstacles to student aspirations and expectations. Rural Society 19(1): 49-59.

Archer, L., DeWitt, J., & Wong, B. (2014). Spheres of influence: What shapes young people's aspirations at age 12/13 and what are the implications for education policy?. *Journal of Education Policy, 29*(1), 58-85.

Atkin, C. (2003). Rural Communities: human and symbolic capital development, fields apart. *Compare: A Journal of Comparative and International Education, 33*(4), 507-518.

Atkins, C. (2003). The influence of rural culture on post-sixteen pathways from school. *Journal for Continuing Liberal Adult Education (Ad-Lib), 24.*

Auger, R., Blackhurst, A. and Wahl, K. (2005). The development of elementary-aged children's career aspirations and expectations. *Professional School Counseling,* 322-329.

Bandura, A. (1988). Self-efficacy conception of anxiety. *Anxiety research, 1*(2), 77-98.

Bandura, A. (1991). Social cognitive theory of self-regulation. *Organizational behavior and human decision processes, 50*(2), 248-287.

Bandura, A., Caprara, G., Barbaranelli, C., Pastorelli, C. and Regali, C. (2001). Socio-cognitive self-regulatory mechanisms governing transgressive behavior. Journal of Personality and Social Psychology, 80(1), 125-135.

Baum, S., Ma, J. and Payea, K. (2013). Education pays 2013: the benefits of higher education for individuals and society. *Trends in Higher Education*. College Board.

Bawden, D. and Robinson, L. (2009). The dark side of information: overload, anxiety and other paradoxes and pathologies. *Journal of information science, 35*(2), 180-191.

Benner, A., and Mistry, R. (2007). Congruence of mother and teacher educational expectations and low-income youth's academic competence. Journal of Educational Psychology, 99, no. 1: 140–53.

Blackwell, E. and Pinder, P. (2014). What are the motivational factors of first-generation minority college students who overcome their family histories to pursue higher education?. *College Student Journal, 48*(1), 45-56.

Bradley, D., Noonan, P., Nugent, H. and Scales, B. (2008). Review of Australian higher education. Final report. Canberra, Australia: Commonwealth of Australia.

Brown, S. and Lent, R. (2004). *Career development and counseling: Putting theory and research to work*. John Wiley & Sons.

Bukowski, W., Sippola, L., and Newcomb, A. (2000). Variations in patterns of attraction of same- and other-sex peers during early adolescence. Developmental Psychology, 36, 147-154.

Byun, S., Meece, J., Irvin, M. J. and Hutchins, B. (2012). The role of social capital in educational aspirations of rural youth. *Rural sociology, 77*(3), 355-379.

Carroll, A., Houghton, S., Wood, R., Unsworth, K., Hattie, J., Gordon, L. and Bower, J. (2009). Self-efficacy and academic achievement in Australian high school students: The mediating effects of academic aspirations and delinquency. *Journal of Adolescence, 32*(4), 797-817.

Coleman, J. (1988). Social capital in the creation of human capital. *American journal of sociology, 94*, S95-S120.

Cooper, G., Baglin, J. and Strathdee, R. (2017). Access to higher education: Does distance impact students' intentions to attend university? National Centre for Student Equity in Higher Education (NCSEHE), Perth: Curtin University.

Curtis, D., Drummond, A., Halsey, J., and Lawson, M. (2012). *Peer-Mentoring of Students in Rural and Low-Socioeconomic Status Schools: Increasing Aspirations for Higher Education.* National Centre for Vocational Education Research, School of Education, Flinders University, Australia.

Department of Education, Employment and Workplace Relations (DEEWR) (2010). Annual Report, 2010-11. Canberra.

Eagly, A. and Chaiken, S. (1993). The Psychology of Attitudes. Harcourt Brace Jovanovich College Publishers.

Fabiansson, C. (2006). Being young in rural settings: Young people's everyday community affiliations and trepidations. *Rural Society, 16*(1), 47-61.

Fishbein, M. and Ajzen, I. (2010). *Predicting and changing behavior: The reasoned action approach*. Taylor & Francis.

Fleming, M. and Grace, D. (2014). Increasing participation of rural and regional students in higher education. *Journal of higher education policy and management, 36*(5), 483-495.

Flouri, E. (2006) 'Parental interest in children's education, children's self-esteem and locus of control, and later educational attainment: Twenty-Six Year Follow-Up of the 1970 British Birth Cohort', British Journal of Educational Psychology, Vol. 76, No. 1, pp. 41–55.

Fong, W. (2012). The role of Personality in the Career Choice Commitment of university students in Hong Kong. Faculty of Business and Law The University of Newcastle, Australia.

Gale, T., Hattam, R., Comber, B., Tranter, D., Bills, D., Sellar, S., & Parker, S. (2010). Interventions early in school as a means to improve higher education outcomes for disadvantaged students. National Centre for Student Equity in Higher Education.

Gale, T., Parker, S., Rodd, P., Stratton, G. and Sealey, T. (2013). Student aspirations for higher education in Central Queensland: a survey of school students' navigational capacities. *Centre for Research in Educational Futures and Innovation (CREFI)*, Deakin University, Melbourne, Vic.

Garg, R., Kauppi, C., Lewko, J., & Urajnik, D. (2002). A structural model of educational aspirations. *Journal of Career Development, 29*(2), 87-108.

Giles, M. and Rea, A. (1999). Career self-efficacy: An application of the theory of planned behaviour. *Journal of Occupational and Organizational Psychology, 72*(3), 393-398.

Gorard, S., See, B. and Davies, P. (2012). The impact of attitudes and aspirations on educational attainment and participation. *York: Joseph Rowntree Foundation. University of Birmingham*.

Gore, J., Holmes, K., Smith, M., Southgate, E. and Albright, J. (2015). Socioeconomic status and the career aspirations of Australian school students: Testing enduring assumptions. *The Australian educational researcher, 42*(2), 155-177.

Gravetter, F. and Wallnau, L. B. (2014). Introduction to the t statistic. *Essentials of Statistics for the Behavioral Sciences, 8*, 252.

Green, B. and Reid, J. (2004). Challenging futures, changing agendas? Sustaining and renewing teacher education in Australia. *Asia-Pacific Journal of Teacher Education, 32*(3), 255-274.

Green, T. (2016). A methodological review of structural equation modelling in higher education research. *Studies in Higher Education, 41*(12), 2125-2155.

Gregg, P., and A. Goodman (2010). Children's Educational Outcomes: The Role of Attitudes and Behaviours, from Early Childhood to Late Adolescence. *CMPO, University of Bristol and Institute for Fiscal Studies.*

Griffin, D., Hutchins, B. C., & Meece, J. L. (2011). Where do rural high school students go to find information about their futures?. *Journal of Counseling & Development, 89*(2), 172-181.

Grolnick, W. and Slowiaczek, M. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child development, 65*(1), 237-252.

Hair, J., Black, W., Babin, B. and Anderson, R. (2009). Multivariate Data Analysis. 7th edition, Prentice Hall.

Hossain, D., Gorman, D., Williams-Mozely, J. and Garvey, D. (2008). Bridging the gap: Identifying needs and aspirations of Indigenous students to facilitate their entry into university. *The Australian Journal of Indigenous Education, 37*(1), 9-17.

Hutchinson, J., Stagg, P. and Bentley, K. (2009). STEM Careers Awareness Timelines. Attitudes and Ambitions Towards Science, Technology, Engineering and Maths (STEM at Key Stage 3). Derby: International Centre for Guidance Studies, University of Derby.

Israel, G., Beaulieu, L., Hartless, G. (2001). The influence of family and community social capital on educational achievement. Rural sociology 66(1): 43-68.

Jackson, S. and Dutton, J. (1988). Discerning threats and opportunities. *Administrative Science Quarterly*, 370-387.

Jacob, B. and Wilder, T. (2010) Wilder educational expectations and attainment, NBER Working Paper No. 15683: National Bureau of Economic Research.

James, R., Bexley, E., Anderson, A., Devlin, M., Garnett, R., Marginson, S. and Maxwell, L. (2008), Participation and equity: a review of the participation in higher education of people from low socioeconomic backgrounds and Indigenous people, *Centre for the Study of Higher Education*, Melbourne, Vic.

James, R., Krause, K., & Jennings, C. (2010). The first year experience in Australian universities. *Canberra: Department of Education, Employment and Workplace Relations [DEEWR]*.

James, R., Wyn, J., Baldwin, G., Hepworth, G., McInnis, C., and Stephanou. A. (1999). Rural and isolated school students and their higher education choices: A re-examination of student location, socio-economic background, and educational advantage and disadvantage. Canberra: National Board of Employment, Education and Training, Higher Education Council.

Kilpatrick, S. and Abbott-Chapman, J. (2002). Rural young people's work/study priorities and aspirations: The influence of family social capital. *The Australian Educational Researcher, 29*(1), 43-67.

Kirk, C., Lewis-Moss, R., Nilsen, C., and Colvin, D. (2011). The role of parent expectations on adolescent educational aspirations. *Educational Studies, 37*(1), 89-99.

Laursen, B. and Hartup, W. (2002). The origins of reciprocity and social exchange in friendships. *New directions for child and adolescent development, 2002*(95), 27-40.

Leidy, M., Schofield, T., Miller, M., Parke, R., Coltrane, S., Braver, S., Cookston, J., Fabricius, W., Saenz, D. and Adams, M. (2011). Fathering and adolescent adjustment: Variations by family structure and ethnic background. *Fathering, 9*(1).

Lent, R., Brown, S. and Hackett, G. (2000). Contextual supports and barriers to career choice: A social cognitive analysis. Journal of counseling psychology 47(1): 36.

Luzzo, D. (1993). Value of career-decision-making self-efficacy in predicting career-decision-making attitudes and skills. *Journal of Counseling Psychology, 40*(2), 194.

Marks, G., Fleming, N., Long, M. and McMillan, J. (2000). Patterns of Participation in Year 12 and Higher Education in Australia: Trends and Issues. Research Report. Longitudinal Surveys of Australian Youth. *Australian Council for Educational research, Victoria.*

Martin, A., Ginns, P., Papworth, B. and Nejad, H. (2013). The role of academic buoyancy in Aboriginal/Indigenous students' educational intentions: Sowing the early seeds of success for post-school education and training. In *Seeding Success in Indigenous Australian Higher Education* (pp. 57-79). Emerald Group Publishing Limited.

Molloy, L., Gest, S. and Rulison, K. (2011). Peer influences on academic motivation: Exploring multiple methods of assessing youths' most "influential" peer relationships. *The Journal of Early Adolescence, 31*(1), 13-40.

Morris, E. (2012). Learning the Hard Way: Masculinity, Place, and the Gender Gap in Education. New Brunswick, NJ: Rutgers University Press.

Munro, L. (2011). 'Go boldly, dream large!': The challenges confronting non-traditional students at university. *Australian Journal of Education, 55*(2), 115-131.

Naylor, R., Baik, C. and James, R. (2013). A critical interventions framework for advancing equity in Australian higher education. *Canberra: Department of Industry, Innovation, Climate Change, Science, Research and Tertiary Education*.

O'Shea, S., Stone, C., Delahunty, J. and May, J. (2016). Discourses of betterment and opportunity: Exploring the privileging of university attendance for first-in-family learners. *Studies in Higher Education,* 1-14.

Pajares, F. (1996). Self-efficacy beliefs in academic settings. *Review of educational research, 66*(4), 543-578.

Parker, P., Jerrim, J., Anders, J. and Astell-Burt, T. (2016). Does living closer to a university increase educational attainment? A longitudinal study of aspirations, university entry, and elite university enrolment of Australian youth. *Journal of youth and adolescence, 45*(6), 1156-1175.

Powlette, N. and Young, D. R. (1996). Career and other factors influencing postsecondary decisions: Survey of high school students in Alberta, Canada. *The Journal of technology studies, 22*(2), 30-37.

Provasnik, S., KewalRamani, A., Coleman, M., Gilbertson, L., Herring, W. and Xie, Q. (2007). Status of Education in Rural America. NCES 2007-040. *National Center for Education Statistics*.

Roberts, P. (2015). Education for rural Australia. *Rural and regional futures*, 117-134.

Robinson, S. (2012). Freedom, aspiration and informed choice in rural higher education: Why they are saying 'no'. Australian and International Journal of Rural Education 22(2): 79.

Roeser, R., Midgley, C. and Urdan, T. (1996). Perceptions of the school psychological environment and early adolescents' psychological and behavioral functioning in school: The mediating role of goals and belonging. *Journal of educational psychology, 88*(3), 408.

Shaw, P. and A. Larson (2003). Influences on aspirations for university study among regional and outer-metropolitan year II students. Australian Journal of Career Development 12(3): 42-54.

Shumow, L., Vandell, D. and Posner, J. K. (1998). Harsh, firm, and permissive parenting in low-income families: Relations to children's academic achievement and behavioral adjustment. *Journal of Family Issues, 19*(5), 483-507.

Stone, A. (2017). Rural students and higher education: an overview of challenges and opportunities. *Texas Education Review, 5*(1), pp. 1-9.

Tabachnick, B. and Fidell, L. (2012). Using multivariate statistics. Pearson.

Tang, M., Pan, W., & Newmeyer, M. (2008). Factors influencing high school students' career aspirations. *Professional School Counseling, 11*(5), 285-295.

Tharenou, P, Donohue, R. and Cooper, B. (2012). Management Research Methods. Cambridge University Press.

Thomas, J., Clark, S. and Goia, D. (1993). Strategic sensemaking and organizational performance: Linkages among scanning, interpretation, action and outcomes. Academy of Management Journal, vol. 36, no. 2, pp. 239-270.

Walton, T, Carrillo, F. and Jardine, A. (2018). Calculating the effectiveness of university widening participation activities on the academic attainment of rural Australian students. Manuscript submitted for publication.

Walton, T. and Carrillo, F. (2017). Mechanisms for fulfilling equity targets at the elite Australian university: a review of scholarship and practice. *Widening Participation and Lifelong Learning, 19*(2), 156-162.

Watson, J., Wright, S., Hay, I., Beswick, K., Allen, J., and Cranston, N. (2016). Rural and regional students' perceptions of schooling and factors that influence their aspirations. *Australian and International Journal of Rural Education, 26*(2), 4-18.

Watson, M. and McMahon, M. (2005). Children's career development: A research review from a learning perspective. *Journal of Vocational Behavior, 67*(2), 119-132.

Wentzel, K. (1998). Social relationships and motivation in middle school: The role of parents, teachers, and peers. *Journal of educational psychology, 90*(2), 202.

Wentzel, K. and Asher, S. (1995). The academic lives of neglected, rejected, popular, and controversial children. *Child development, 66*(3), 754-763.

Wentzel, K., Battle, A., Russell, S. L. and Looney, L. (2010). Social supports from teachers and peers as predictors of academic and social motivation. *Contemporary Educational Psychology, 35*(3), 193-202.

Woodroffe, J., Kilpatrick, S., Williams, B. and Jago, M. (2017). Preparing rural and regional students for the future world of work: Developing authentic career focussed curriculum through a collaborative partnership model. *Australian and International Journal of Rural Education, 27*(3), 158-173.

Wurman, R. (2001). Information Anxiety 2, *New Riders Publishers,* New York.

Young, D., Fraser, B. and Woolnough, B. (1997). "Factors affecting student career choice in science: An Australian study of rural and urban schools." Research in Science Education 27(2): 195-214.