

**RELOCATED UNDERGRADUATES' ACADEMIC SUCCESS
AND WELL-BEING:
FACTORS ASSOCIATED WITH TYPE OF RESIDENCE, SOCIAL SUPPORT,
MEANING-IN-LIFE, BELONGING, AND SENSE OF COMMUNITY**

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Table of Contents

Declaration	x
Outline of Candidature	xi
Acknowledgements	xii
Dedication	xiii
Thesis Abstract	xiv
List of Intended Publications	xvii
Presentation	xvii
List of Tables	xviii
List of Figures	xxi
Thesis Overview / Exegesis	xxii
Chapter 1. Introduction and Literature Review	1
1.1 Major Life Events and Mental Health	1
1.2 Complementary Paradigms: Mental Health and Psychological Well-Being	2
1.3 Major Life Event: Relocation and First-year University Students	2
1.4 International Students in Australian Higher Education	3
1.5 Australian Students from Regional, Rural, and Remote Areas (RRR)	3
1.6 Relocated Undergraduates: Departure and Arrival Challenges	4
1.7 Relocated Undergraduates: Emerging Adults	6
1.8 Undergraduates' Developmental Tasks	6
1.8.1 Work domain: Academic success	6
1.8.2 Relationships domain: Social support network	7
1.8.3 Self-domain: Meaningful life	8
1.8.3.1 Presence and search for meaning-in-life	8
1.9 Academic Success and Risks	9
1.9.1 Risks to pass rate	10

1.9.1.1 Loss of existing proximal social support and community	10
1.9.1.2 Loss of domestic support	11
1.9.1.3 International students and oral English use	11
1.9.2 Risks to persistence	12
1.10 Psychological Health and Risks	13
1.10.1 Risks to mental health	13
1.10.2 Risks to psychological well-being	15
1.11 Types of Residences for Relocated University Students	15
1.12 Summary and the Current Research	16
1.12.1 Social effects of architectural design of residences	17
1.13 Research Aim and Questions	18
Chapter 2. Research Methodology	20
2.1 Preamble	20
2.2 Research Design of the Thesis	20
2.3 Research Design of the Studies	20
2.3.1 Systematic review: Study One	21
2.3.2 Quantitative research: Studies Two and Three	22
2.4 Outline of the Research	22
2.5 Study One: Systematic Review	23
2.5.1 Registration	23
2.5.2 Selection	24
2.5.2.1 Inclusion criteria	24
2.5.2.2 Exclusion criteria	25
2.5.3 Method	25
2.5.3.1 Systematic search	25
2.5.4 Results	26

2.5.5 Critical appraisal	26
2.5.6 Conclusion	27
2.6 Studies Two and Three: Quantitative, Cross-Sectional Research	27
2.6.1 Ethics	28
2.6.2 Recruitment	28
2.6.2.1 Inclusion and exclusion criteria	29
2.6.3 Materials	30
2.6.3.1 Study Two survey	30
2.6.3.1.1 Demographic characteristics and type of term-time residence	31
2.6.3.1.2 Domestic support	31
2.6.3.1.3 Greeting network	32
2.6.3.1.4 Academic mix of co-residents	32
2.6.3.1.5 Oral English use	33
2.6.3.1.6 Interpersonal Support Evaluation List (ISEL)	33
2.6.3.1.7 Internal vs. External Locus of Control Scale	34
2.6.3.1.8 Meaning-in-Life Questionnaire (MLQ)	35
2.6.3.1.9 General Health Questionnaire - 12-item (GHQ - 12)	36
2.6.3.2 Study Three survey	36
2.6.3.2.1 Demographic characteristics and type of term-time residence	37
2.6.3.2.2 Integrated Support Scale (ISS)	38
2.6.3.2.3 Belonging (ISEL sub-scale)	39
2.6.3.2.4 Psychological Sense of Community Scale (PSCS)	40
- PSCS Residences	40
- PSCS Universities	41
2.6.3.2.5 Warwick-Edinburgh Mental Well-Being Scale (WEMWBS)	41
2.6.4 Procedure	42
2.6.5 Data analyses	44

2.6.5.1 Systematic review	44
2.6.5.2 Study Two	45
2.6.5.3 Transition	45
2.6.5.4 Study Three	46
2.7 Summary	47
Chapter 3. Systematic Review: Social support predicts relocated university students' academic success and mental health	48
3.1 Preamble	48
3.2 Statement of Authorship	49
3.3 Manuscript of Paper for Publication	50
3.3.1 Abstract	50
3.3.2 Key points	51
3.3.3 Introduction	51
3.3.4 Method	54
3.3.4.1 Definitions of factors and outcomes	54
3.3.4.2 Search strategy	56
3.3.4.3 Selection of studies	60
3.3.4.4 Collection of key data	63
3.3.5 Results	63
3.3.5.1 Characteristics of selected studies	63
3.3.5.2 Critical appraisal	64
3.3.5.2.1 Risk of bias	64
3.3.5.2.2 Reliability: Homogeneity and heterogeneity	64
3.3.6 Summary	73
3.3.7 Discussion	73
3.3.8 Strengths and limitations	76

3.3.9 Conclusion	76
3.3.10 List of studies included in the systematic review	77
3.4 Transition from Study One to Study Two	77
3.4.1 Introduction	79
3.4.2 Comparison of definitions of social support	79
3.4.3 Conclusion	80
Chapter 4. Relocated First-Year University Students: Type of residence, social support, greeting network, meaning-in-life, academic success, and mental health	81
4.1 Prologue	81
4.2 Statement of Authorship	83
4.3 Manuscript of Paper for Publication	84
4.3.1 Abstract	84
4.3.2 Key points	85
4.3.3 Introduction	86
4.3.4 Method	92
4.3.4.1 Participants	92
4.3.4.2 Measures	93
4.3.4.3 Procedure	95
4.3.4.4 Statistical analysis	98
4.3.5 Results	99
4.3.6 Summary	109
4.3.7 Discussion	110
4.3.7.1 Implications of factors associated with type of residence, and outcomes .	110
4.3.7.2 Implications of meaning-in-life associated with outcomes	113
4.3.7.3 Strengths and limitations	114

4.3.7.4 Conclusion	115
4.4 Transition from Study Two to Study Three	115
4.4.1 Introduction	115
4.4.2 Method	116
4.4.3 Results	116
4.4.4 Discussion	118
4.4.5 Impact of COVID-19 pandemic on the tertiary sector	120
Chapter 5. Relocated University Undergraduates: Type of residence, integrated support, belonging, sense of community, academic success, well-being, and distal peer contact	122
5.1 Prologue: International and National Context of Study Three	122
5.2 Statement of Authorship	124
5.3 Manuscript of Paper for Publication	125
5.3.1 Abstract	125
5.3.2 Key points	126
5.3.3 Introduction	127
5.3.3.1 Population	128
5.3.3.2 Types of residences and independent-living skills	129
5.3.3.3 Integrated support	129
5.3.3.4 Belonging	130
5.3.3.5 Sense of community	131
5.3.3.6 Academic success	132
5.3.3.7 Psychological well-being	133
5.3.3.8 Contact with dispersed, distal peers	135
5.3.3.9 Aim	135
5.3.4 Method	136

5.3.4.1	Participants	137
5.3.4.2	Measures	137
5.3.4.3	Procedure	140
5.3.4.4	Statistical analysis	142
5.3.5	Results	143
5.3.6	Summary	154
5.3.7	Discussion	157
5.3.7.1	Implications for the tertiary sector	158
5.3.7.2	Strengths and limitations	161
5.3.7.3	Conclusion	162
Chapter 6.	Discussion	163
6.1	Preamble	163
6.2	Summary of Findings	163
6.2.1	Relationship of perceived available social support with academic success and mental health	164
6.2.2	Relocated first-year university students, residences, factors, and outcomes	164
6.2.3	Transition from Study Two (chapter 4) to Study Three (chapter 5)	166
6.2.4	Relocated undergraduates, integrated support in residence environment, associated factors, and outcomes	168
6.3	Contributions to Psychological Knowledge	170
6.3.1	Contribution to the developmental and educational literature	170
6.3.2	Contribution to the social support literature	172
6.3.3	Contribution to the belonging and sense of community literature	173
6.4	Implications of the Findings	174
6.4.1	Implications for educational counselling	174
6.4.2	Implications for student residences	175
6.4.3	Policy	176

6.5 Methodological Strengths, Limitations, and Prospective Future Research	177
6.5.1 Strengths	177
6.5.2 Limitations	178
6.5.3 Prospective future research	178
6.6 Conclusion	180
References	181
APPENDIX A. Study Two Recruitment Posters and Flyers 2017 & 2018	210
APPENDIX B. Study Three Recruitment Posters and Flyers 2020	211
APPENDIX C. Study Two Correspondence to Residence Principals and Managers 2017	212
APPENDIX D. Study Two Summary of Results to Residence Principals and Managers 2018	214
APPENDIX E. Study Two Correspondence to Residence Principals and Managers 2018	216
APPENDIX F. Study Three Correspondence to Residence Principals and Managers 2020	217
APPENDIX G. Study Two Online Questionnaire Survey (Survey Monkey) 2017	218
APPENDIX H. Study Two Online Questionnaire Survey (Survey Monkey) 2018	271
APPENDIX I. Study Three Online Questionnaire Survey (Qualtrics) 2020	297
APPENDIX J. Factor Analysis of Integrated Support Scale (ISS)	321

Declaration

I, Susan Frances Straub, certify that this work contains no material which has been accepted for the award of any other degree or diploma in my name in any university or other tertiary institution and, to the best of my knowledge and belief, contains no material previously published or written by another person, except where due reference has been made in the text. In addition, I certify that no part of this work will, in the future, be used in a submission in my name for any other degree or diploma in any university or other tertiary institution without the prior approval of The University of Adelaide and where applicable, any partner institution responsible for the joint award of this degree.

I give permission for the digital version of my thesis to be made available on the web, via the digital research repository and the Library Search of The University and also through web search engines, unless permission has been granted by The University to restrict access for a period of time.

I acknowledge the support I have received for my research through the provision of an Australian Government Research Training Program Scholarship.

S. F. Straub

Susan Frances Straub

April 2023

Outline of Candidature

This thesis is the culmination of work undertaken for the requirement of a Doctor of Philosophy degree, at The University of Adelaide, South Australia. The four-year equivalent fulltime load was extended to a five-year candidature, allowing part-time work as a solo psychologist in the generalist division. The University of Adelaide and the School of Psychology provided the standard level of funding allotted to support PhD research including the purchase of a year-long Survey Monkey licence and registration at an industry conference held in Adelaide. Professor Emeritus Helen Winefield provided funds for the purchase of cinema vouchers as prizes awarded by lottery to participants in the survey of Study Two. An ORCID prize, awarded to me by the Graduate Centre of The University, provided funds for the purchase of cinema vouchers as prizes, also awarded by lottery, to participants in the survey of Study Three.

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Dedication

This thesis is dedicated to those students who relocate from abroad, from regional rural or remote areas of Australia both intra-state and inter-state, to undertake their tertiary education in Adelaide, South Australia.

Thesis Abstract

Relocation is a stressful life event. Addressing gaps in the literature through the prism of emerging-adult theory (Arnett, 2004), this thesis investigates the contribution of perceived available social support to the academic success and psychological well-being of typical (aged 18 - 20 years) undergraduate university students relocated for tertiary education in Australia. This thesis adds to the literature the associations of differing types of residence with perceived available social support; the concept and construct of integrated support; and the relationships between types of residence, integrated support, belonging, sense of community, Grade Point Average (GPA), psychological well-being, and contact with distal (geographically dispersed) peers.

The thesis consists of three studies in publication format, a systematic review and two quantitative studies. Study One, the systematic review, sought to ascertain the reliability of evidence for an association of perceived available social support with relocated, first-year undergraduates' type of residence, academic success, and mental health.

Study Two examined a sample ($N = 121$) of first-year undergraduates ($M = 18.89$ years) from abroad (international students) and rural, regional, and remote (RRR students) areas of Australia. Participants represented the three South Australian public universities. Study Two aimed, first, to determine any associations between type of residence (flat, share house, college, "village"), perceived available social support, domestic support, greeting network, and oral English use. The second aim was to determine relationships of such factors with meaning-in-life presence (PML) and search (SML), academic success (pass rate and intention to persist) and psychological distress.

A separate correlational analysis of perceived available social support sub-scales (tangible, belonging, appraisal), domestic support, greeting network, meaning-in-life sub-scales (PML and SML), and psychological distress, indicated Study Three.

Study Three, conducted in Semester 2 of 2020, examined another sample ($N = 122$) of relocated undergraduates ($M = 19.46$ years). Study Three aimed, first, to determine the strength of associations between the factors (integrated support [residence], perceived available belonging support, sense of community [residence], and sense of community [university]). The Study aimed, second, to determine the strength of associations between the factors and participants' outcomes (GPA, intention to persist, psychological well-being, and regular contact with distal co-residents, and university peers).

Study One used a rigorous, comprehensive electronic search spanning 27 years. Nine databases yielded seven eligible studies, each conducted independently at universities in the United States of America (USA). The review found consistent evidence that social support was associated with first-year undergraduates' academic success and psychological health but a paucity of such research, and no Australian content.

Study Two was a quantitative, cross-sectional, online survey. Statistical analysis showed that levels of perceived available social support, domestic support, greeting network, and oral English use were highest in colleges. Perceived available social support had a small, positive relationship with pass rate and a medium-sized, inverse relationship with psychological distress. Furthermore, the study found medium sizes of effect on relationships between greeting network and pass rate (inverse); meaning-in-life presence (PML) (positive) and intention to persist (positive) and psychological distress (inverse); and search for meaning-in-life (SML) and psychological distress (positive).

Study Three had the same design as Study Two. Statistical analysis showed levels of integrated support, perceived available belonging support, and sense of community (residence) were highest in colleges. Integrated support contributed a large proportion of the variance in both perceived available belonging support and sense of community (residence). Integrated support also largely predicted regular contact with dispersed, distal co-residents. Perceived available belonging support had a large, positive association with sense of community (residence) and a relatively small one with sense of community (university).

Perceived available belonging support showed a small, positive relationship with estimated GPA; a medium-sized, positive relationship with psychological well-being; was a significant, unique contributor to contact with dispersed, distal co-residents; and influenced contact with dispersed, distal university peers. University sense of community showed a medium-sized relationship with psychological well-being.

While this thesis has methodological limitations, it provides reliable evidence for the association of types of residence with differing levels of integrated support, perceived available social support, particularly perceived available belonging support, sense of community, and undergraduates' outcomes. This thesis confirms associations of PML and SML with academic success and psychological distress. In addition, the thesis shows reliable evidence of a positive relationship between sense of community at university and undergraduates' psychological well-being. Implications of this thesis for students, parents, counsellors, student accommodation providers, and universities are significant.

List of Intended Publications

This thesis contains intended publications which are listed in order of insertion. The format of the intended publications is consistent with the main body of the thesis.

Straub, S., Winefield, H., & Strelan, P. (n.d.). Systematic Review: Social support predicts relocated university students' academic success and mental health.

Straub, S., Winefield, H., & Strelan, P. (n.d.). Relocated First-Year University Students: Type of residence, social support, greeting network, meaning-in-life, academic success, and psychological distress.

Straub, S., Winefield, H., & Strelan, P. (n.d.). Relocated University Undergraduates: Type of residence, integrated support, belonging, sense of community, academic success, well-being, and distal peer contact.

Presentation

Straub, S. (2021, September [online]). International and relocated Australian university students: Type of residence, belonging, and well-being. *Asia-Pacific Student Accommodation Association Conference*.

List of Tables

Chapter Three

Table 1. *Definitions, Representative Measures, and Items of Social Support, and Residence*

Table 2. *Definitions of Outcomes Grouped into Distinct Research Domains: Academic Success and Mental Health*

Table 3. *Search Terms, Boolean Operators, and Asterisk Wildcards*

Table 4. *Inclusion and Exclusion Criteria for Studies of University Students*

Table 5. *Comparison of Social Support Sources Pertinent to the Systematic Review with Those Measured in the Four Questionnaires: The Multidimensional Scale of Perceived Social Support (MSPSS); Perceived Social Support (PSSI); Inventory of Parent and Peer Attachment (IPPA); and Strom & Savage (S&S)*

Table 6. *Primary Results of Included Studies: Social Support (SS), and Academic Success*

Table 7. *Primary Results of Included Studies: Social Support (SS), and Mental Health*

Table 8. *Primary Results of Included Studies: Social Support (SS), and Residence*

Table 9. *Reported Results of Regression Analyses Effect Size (r^2_{change}) of Social Support (SS) on Academic Success, Mental Health, and Association with Residence*

Chapter Four

Table 10. *Obtained Reliability Coefficients for Scales and Sub-scales.*

Table 11. *Descriptive Statistics of Social Support, Domestic Support, Pass Rate, Intention to Persist, and Psychological Distress for Identified International and RRR Participants*

Table 12. *Frequencies of All, International, RRR, and Unidentified Participants by Residence*

Table 13. *Descriptive Statistics for All Participants of Continuous Variables by Residence*

Table 14. *Descriptive Statistics for All Participants of Binary Variables by Residence*

Table 15. *Descriptive Statistics for All Participants of Domestic Support Items by Residence*

Table 16. *Spearman's Rho Correlational Coefficients (2-tailed) for all Participants of Factors, and Outcomes*

Table 17. *Standard Multiple Regressions of Model 1 (Social Support, Domestic Support, and Greeting Network) on Pass Rate, and Psychological Distress*

Table 18. *Hierarchical Regressions of Model 2 (Meaning Presence, and Meaning Search) on Pass Rate, Psychological Distress, and Logistic Regression on Intention to Persist*

Transition from Study Two to Study Three

Table 19. *Spearman's Rho Correlational Coefficients (2-tailed) for All Participants of Tangible, Belonging, and Appraisal Support (ISEL Sub-scales), Greeting Network, Meals, Total Domestic Support, Meaning Presence, Meaning Search, and Psychological Distress*

Chapter Five

Table 20. *Obtained Reliability Coefficients for Scales and Belonging Support Sub-scale*

Table 21. *Frequencies of All, International, and RRR Participants by Residence*

Table 22. *Descriptive Statistics for All Participants of Factors and Outcomes by Residence*

Table 23. *Spearman's Rho Correlational Coefficients (2-tailed) for All Participants of Factors, and Outcomes*

Table 24. *Standard Multiple Regressions of Residence Comfort, Communication, Commonality, and Care (Model 1) on Belonging, and Residence Community*

Table 25. *Standard Multiple Regression of Belonging, Residence Community, and University Community on Well-being*

Table 26. *Logistic Regressions of Model 1 and Model 2 on Contact with Co-residents and Contact with University Peers respectively*

List of Figures

Chapter 3

Figure 1. Diagram following the PRISMA 2009 flow-chart

Chapter 5

Figure 2. Positive associations between residence integrated support, belonging, residence sense of community, university sense of community, and outcomes

Thesis Overview and Exegesis

This thesis aims to increase knowledge of optimal support in residences to ensure the psychosocial development of relocated university undergraduates, aged 18 - 20 years.

Relocated undergraduates are defined as coming from abroad (international students) and regional, rural, or remote areas inter-state and intra-state (RRR students).

The thesis explores relationships between the following factors: perceived available social support, meaning-in-life, integrated support associated with residences, perceived available belonging support, sense of community (residence), sense of community (university); and the following outcomes: pass rate, two measures of academic success, psychological distress, psychological well-being, and contact with geographically dispersed (“distal”) co-residents, and university peers.

Chapter One presents relocation as a stressor demanding coping mechanisms to decrease, or buffer against, strain. The Chapter postulates two such mechanisms, social support and meaning-in-life, both scaffolded by Arnett’s (2004) theory of emerging adulthood as a stage (aged 18 – 25 years) in life span development. The Chapter proceeds with a critical review of the literature which provides the context of the constructs used in this thesis and describes the types of residence available to undergraduates in Adelaide, South Australia. The Chapter closes with the aims and research questions engendered by the review.

Chapter Two provides a detailed overview of the methodologies used for the thesis as a whole and each of the three studies conducted.

Chapter Three presents Study One, a systematic review of the relevant literature. Study One sought the strength of evidence for the effects of social support, associated with type of residence, on the academic success and mental health of first-year relocated students. Following the rigorous, comprehensive, electronic search, seven eligible studies were critically compared and evaluated. The studies were conducted independently at US universities. The review found consistent evidence of small direct and indirect positive effects

of social support on short- and medium-term measures of academic success, and on several indicators of mental health. The review also found a paucity of research, with none Australian, examining the relationship between social support and relocated undergraduates' residential options.

Studies Two and Three which are presented in Chapters Four and Five, respectively, followed a logical progression from outcomes of the systematic review. Both studies were quantitative, cross-sectional, and conducted online by survey. Participants self-reported as aged 18 – 20 years and either male or female, although two in Study Three declined to disclose. Most international participants in Study Two were from mainland China, East Asia, while most in Study Three were from South-East Asia. In Studies Two and Three, most Australian participants were from regional, rural, or remote (RRR) South Australia.

Study Two investigated relationships between types of residence, perceived available social support, domestic support, oral English use, greeting network, participants' meaning-in-life, and outcomes. Study Three hypothesised that perceived available social support was engendered by the integrated support available within the internal environments of residences. The Study examined relationships between integrated support associated with different types of residence, perceived available belonging support (sub-scale of social support), sense of community (residence and university), and outcomes. In response to government-imposed restrictions during the COVID-19 (Coronavirus Disease of 2019) global pandemic of 2020, regular contact between dispersed, distal co-residents and dispersed, distal university peers were each added to academic success and psychological well-being as outcomes.

The principal findings of the thesis and their contribution to psychological knowledge are summarised and discussed in Chapter Six together with an exploration of implications for first-year students, parents or guardians, tertiary student counsellors, psychologists, universities, and relevant institutions associated with tertiary education. A discussion of the methodological strengths and weaknesses of the thesis, with suggestions for future research, follows. The thesis presents references and appendices at the end.

Chapter 1. Introduction and Literature Review

1.1 Major Life Events and Mental Health

Major life events may be construed as positive (for example, birth, marriage) or negative (for example, divorce, death of parents), but they can delineate the end of one stage in life span development and the beginning of another (Luhmann et al., 2012). Relocation is life changing for students, typically aged 17 - 20 years, who migrate for tertiary education from abroad to Australia or from regional, rural, or remote (RRR) areas of Australia to a major city inter- or intra-state (Wilson et al., 2016).

It is normative for Australian metropolitan, first-year undergraduates to reside at home and commute to university. Metropolitan undergraduates constitute a bare majority of Australia's university students, while 48.5% (27% international, 21.5% RRR) relocate (Department of Education & Training [DET], 2017, 2018).

Following Study One, a systematic review of the literature, Studies Two and Three of this thesis were conducted with relocated participants residing in Adelaide, capital of the State of South Australia. The State is 983,482 square Kilometres (379,725 square miles), the combined areas of France and Germany or the area of the Canadian Province of Ontario, and has a population of 1.8 million of which 80% reside in Adelaide (Government of South Australia [SAGov], 2023). South Australia has three major universities, namely, Flinders University, The University of Adelaide, and the University of South Australia. The universities are public and principally located in the capital. The University of Adelaide is ranked 88th globally for teaching and research, while Flinders University and the University of South Australia are each ranked between 301 – 350 (Times Higher Education [THE], 2023).

Relocation disrupts daily routines and requires significant adaptation or adjustment. Holmes and Rahe (1967) constructed The Social Readjustment Rating Scale (SRRS) to

measure the impact of common, major life events. The Scale lists events with corresponding units of required adjustment in descending order of magnitude. Readjustment following a major life event is stressful and evokes complex interactions between behavioural and emotional responses (Park, 2010; Segerstrom & Miller, 2004). The strain associated with relocation may impact mental health (Monroe et al., 2007) and psychological well-being (Luhmann et al., 2012). This thesis employs two paradigms to investigate the effects of factors associated with type of residence on relocated undergraduates' outcomes.

1.2 Complementary Paradigms: Mental Health and Psychological Well-Being

Most research using the mental health paradigm is problem centred, focusses on measuring pathologies such as anxiety and depression, and investigates associated risk factors. This thesis uses, first, the mental health paradigm to measure the strength of associations between protective factors and the alleviation of psychological distress in relocated university undergraduates.

In a balanced approach, the thesis then shifts focus to that of positive psychology. Research using the positive psychology paradigm is predominantly strength centred, focusses on measuring characteristics of psychological health such as well-being, and investigates associated enabling factors. This thesis uses the positive psychology paradigm to measure the strength of associations with psychosocial well-being of known enabling factors and previously untested factors.

1.3 Major Life Event: Relocation and First-Year University Students

Relocating from a familiar place to one unfamiliar and geographically distant is a particularly stressful life event (Sokratous et al., 2013). Furthermore, individuals relocating at aged 17- 21 years, experience greater psychological strain than do those aged 22 - 65 years (Rothberg, 1991).

First-year university undergraduates are typically aged 20 years and younger (Universities Australia, 2020). Arnett (2004) designated the age range 18 - 25 years as a distinct stage of life span development, which he termed “emerging adulthood”. In this thesis, 17 years of age is included in the term. As noted above (1.1), nearly half of all students in Australia relocates.

1.4 International Students in Australian Higher Education

Universities, particularly in the Anglosphere, embraced the globalisation of western tertiary education and implemented policies under the term “internationalisation”. There was optimism about world-wide collaborative research. Such collaborations would be assisted by institutional academic credentials, interpersonal relationships students developed during their years at university, and loyalty to the alma mater.

The population of international students at Australian universities steadily increased from 2015 to 2019 (Department of Education [DE], n.d.). Most international students pay full fees. In 2019-20, international students accounted for A\$25.4 billion of Australia’s third major export, international education, worth A\$37.4 in total (Ferguson & Spinks, 2021).

Universities in Adelaide, like others, projected the increasing population of international students, particularly Chinese, and invested substantially in projects to attract and accommodate them. Universities established specialised academic and welfare services, and constructed new technologically advanced buildings, including multi-storeyed student residences (“villages”). Commercial entities also built large student residences.

1.5 Australian Students from Regional, Rural, and Remote Areas

Australian RRR students continued to relocate for tertiary education in major cities. Most students participated in the Higher Education Contribution Scheme (HECS) of the Australian Government. Between 2007 and 2016 the population of undergraduates from

regional areas increased by 62.4% and that of students from remote areas by 11.5% (Holden & Zhang, 2018). Such students, too, required accommodation.

From 2016, then Department of Education, Skills, and Employment (DESE) offered Rural and Regional Enterprise Scholarships (RRES) of \$18,000 to eligible students. Eligibility criteria included a permanent home address located within the Remoteness Area (RA) 2 - 5 range, so defined by the Australian Statistical Geography Standard (ASGS). Websites of universities in Adelaide listed internal and external competitive scholarships for RRR students.

Some students are of Aboriginal or Torres Strait Islander descent and have access to specialised support services (The Adelaide University, 28 October 2022, “Wirltu Yarlur Aboriginal Education”; Flinders University of South Australia, n.d. “Yunggorendi Student Engagement”; University of South Australia, n.d. “Wirringka Student Services”). Otherwise, RRR students share academic and welfare services with the broader student body. RRR individuals are between forty and fifty per-cent less likely than metropolitan dwellers to attain a bachelor’s degree by age thirty-five years and the Australian government aims to increase RRR students’ participation in higher education (Naphine et al., 2019).

1.6 Relocated Undergraduates: Departure and Arrival Challenges

Pre-departure, international and RRR students cope with more psychosocial stressors than their typical, native, metropolitan peers. For example, international students are likely to have experienced high academic and career expectations of family and social networks (Mazzarol & Soutar, 2002). Academically able RRR students might come from low socio-economic (SES) families and communities, which do not aspire to tertiary education, appreciate its value, or both (Gibson, et al., 2022). Research shows a positive correlation between Australian social and educational disadvantage, and geographic distance from major cities (Lamb et al., 2015).

International and RRR students overcome legal and/or institutional obstacles to

higher education in Australia. For example, to obtain a requisite student visa, international students must not only have university entrance qualifications, but also demonstrate in academic English, and sufficient financial resources to meet full university fees, health insurance, and general living expenses. RRR students may have overcome limits on the range of subjects and/or resources at regional high or rural area schools. Many such students defer university commencement for a year while they work to fund or help fund their education and living arrangements. Some may continue working and relinquish academic aspirations as too hard to achieve. Persistent international and RRR students meet the significant initial and ongoing financial and emotional costs of relocation for tertiary education.

Within both groups of relocated students, a few may have completed their secondary education in the university city, for example, at a boarding school or by residing with adults in “home-stay”.

Prior to relocation, optimism, excitement, and anxiety comprise first-year students’ anticipation of departure (Karp et al., 1998). Optimism and excitement are associated with beginning a new stage in life, while anxieties include the availability of suitable housing, opportunities for establishing friendships, cultural differences, and, when relocating to another country, competency in a foreign language (Brown & Aktas, 2011).

On arrival, the new stage in life begins. Relocation precipitates an abrupt loss of familiar places and proximity to existing social networks and communities (Hechanova-Alampay et al., 2002; Seah, 2008). Initial priorities are moving into a residence, exploring and adapting to the environs, and building a social network (Owens & Loomes, 2010). Concurrently, relocated first-year students face the academic demands of university. In sum, changes associated with relocation require international and RRR first-year undergraduates to cope with major cultural, social, academic, and psychological adjustments.

1.7 Relocated Undergraduates: Emerging Adults

As noted above (1.1), nearly half of all undergraduates in Australia relocate. The metropolitan remainder typically commute to university and delay the developmental task of leaving home (Seiffge-Krenke, 2016). Leaving home denotes adulthood, that is, the financial and emotional capacity for independence from parents (Seiffge-Krenke, 2016).

According to Arnett's theory of emerging adulthood (2004), financial capacity is achieved in the work domain, emotional capacity in the relationships domain, and actualisation in the self-domain. Thus, the three or four years of an apprenticeship, or university degree, are seen as preparation for a satisfying and financially rewarding job or career. Peer relationships, including romantic, are given increasing attention and value (Seiffge-Krenke, 2016). Individuation of identity and meaning-in-life apart from parents become apparent. International and RRR students, progress their psychological development through relocation (Seiffge-Krenke, 2016), but need financial and other support to do so.

1.8 Undergraduates' Developmental Tasks

The overall aim of this research is to increase knowledge of optimal support in residences to ensure the psychosocial development of relocated university undergraduates, aged 18 - 20 years. Such development in the emerging-adult stage of the life span (18 - 25 years [Arnett, 2004]) requires the achievement of tasks in three key domains.

1.8.1 Work domain: Academic success.

In the work domain, the task of undergraduates is to achieve academic success. Academic success at university is measured by attainment of a degree. Psychological research of undergraduates' progress towards graduation with a bachelors' degree, uses various short- and medium-term measures.

Short-term measures of progress are pass rate (Li & Carroll, 2017) and Grade Point Average (GPA) (Richardson et al., 2012). Study Two of this thesis uses pass rate and Study

Three uses GPA. A medium-term measure is re-enrolment which relates to characteristics of personality such as persistence. Studies Two and Three use intention to persist, a reliable indicator of persistence to graduation (Strom & Savage, 2014).

1.8.2 Relationships domain: Social support network.

To establish a network of trusted and supportive peers is the emerging adult's task in the domain of relationships (Seiffge-Krenke, 2016). Such a network provides social support in the present and potentially, the future. Social support is defined as consisting of material or instrumental aid (tangible), sharing activities with one or more individuals (belonging), helpful interactions with others (appraisal), and positive, personal feedback from others (self-esteem) (Cohen & Hoberman, 1983).

Actual social support may be given and received whether or not requested, or needed (Melrose et al., 2015). In contrast, the perception that social support is available if, and when, needed is a future-oriented construct affecting an individual in the present. Thus, social support received, and perceived available social support differ and may be weakly related (Melrose et al., 2015).

Sources of perceived available social support for typical undergraduates include parents, families, and peers. However, as emerging adults become less dependent emotionally on parents and families, they orient increasingly towards peers for support (Seiffge-Krenke, 2016). Need for specific social support is determined by the stressful event (Cohen & Wills, 1985). With relocation, first-year students lose physical proximity to pre-existing groups and network of peers, such that establishing trusted relationships is a priority (Wilson et al., 2016). Indeed, the need for belonging and companionship following geographical relocation might be greater than that for tangible or appraised support. Nevertheless, in a crisis, such as the COVID-19 pandemic, the vulnerability of relocated students and their need for tangible, appraised, and belonging support becomes clear (Cook, et al., 2022).

Tangible support may be still available to some extent from parents and/or family, for

example, financial assistance, while appraised and belonging support may be found formally and informally at the university. However, the developmental tasks of emerging adults in the work and relationship domains could increase the need for belonging. The type of residence to which undergraduates return daily from university may contribute to meeting the need for belonging. However, the ease of building a network of trusted relationships for belonging and companionship may differ between types of residence. Nevertheless, residences affect the nature of undergraduates' interpersonal network, the quality of their security (Paltridge et al., 2010), and satisfaction with their university education (Foubert et al., 1998).

Like other groups, residences occupied by students may be construed as entities characterised by commonality. However, residences differ in capacity and design, and both may affect the size of interpersonal networks of co-residents who greet each other when out. Socially-oriented first-year students with large greeting networks might have somewhat lower GPAs than those with smaller greeting networks. The effects on outcomes for relocated students of greeting-network size is currently unknown and are examined in Studies Two and Three.

1.8.3 Self-domain: Meaningful life.

While caring support from others assists relocated students with coping and adjustment (Lee & Dik, 2017), so too does personal meaning-in-life (Trevisan et al., 2017). Proponents of various definitions of meaning-in-life agree that it is an individually constructed self-perception that is crucial for authentic living (Kenyon, 2000) and eudaemonic well-being (Ryan & Deci, 2001; Ryff & Singer, 1998).

1.8.3.1 *Presence of meaning-in-life and search for meaning-in-life.*

Meaning-in-life as a psychological construct is conceptualised as having two dimensions, that is, as presence and as search (Steger et al., 2006). Presence of meaning, for example, sensing a clear purpose (Steger et al., 2006) is a psychologically satisfying

dimension of meaning-in-life. Search for meaning, for example, seeking something which makes one's life feel meaningful (Steger et al., 2006), is the second dimension and refers to the process of establishing, increasing, or developing perceived meaning and purpose.

Meaning-in-life, both presence and search, has been conceived as comprising three components for self-evaluation: identity (understanding who one is in relation to the world), purpose (how one fits in the world or how one contributes), and holding distinct, future-oriented desires and goals (King et al., 2006). The last is seen as motivation related to identity and purpose. More recent research has focussed on evaluation of one's life for its significance, value, or worthiness as the third component extending into the future (Martela & Steger, 2016).

In response to a proposal of a fourth component, belonging defined as the self as part of something greater (Schnell, 2014, p. 178), Martela and Steger (2016) argued compellingly for belonging and relatedness as a *source* of meaning rather than a component thereof (la Cour & Schnell, 2020).

Search for meaning-in-life precedes its presence. Once established, however, the presence of meaning-in-life fulfils a task of emerging adulthood (Maysless & Keren, 2014) giving direction and purpose to the inter-related domains of work, relationships, and self. Presence of meaning-in-life is associated with higher levels of psychological well-being across the life span, including during emerging adulthood (Steger et al., 2008), and lower levels of anxiety and depression (Steger et al., 2006). A lack of interest in meaning-in-life among emerging adults is associated with compromised well-being (Dezutter et al., 2014). Further, mediated by academic engagement, meaning-in-life as presence of purpose is related to academic success (Greenway, 2006).

1.9 Academic Success and Risks

Academic success for undergraduates is attainment of a bachelor's degree. Students' progress can be assessed in the short-term by performance, that is, the number of required

units or subjects passed satisfactorily at least, such that a pass rate and/or GPA may be calculated.

The financial difficulties of many relocated students and their reliance on gainful employment are risks to academic success, pass rate and persistence (Naphine et al., 2019). Living costs are \$25,000 - \$30,000 per annum (Naphine et al., 2019). Financial and employment stressors, including exploitation by employers, may cause high levels of strain (DET, 2018).

However, there are other risks, such as difficulties with living arrangements and language which, like financial risks, add stress by consuming internal resources and time. In addition, relocated students' experience mild to severe depression, anxiety, and longing ("homesickness") during the process of adjustment (Sun et al., 2016). Distress from severe "homesickness" is associated with lower academic performance and persistence (Sun et al., 2016).

1.9.1 Risks to pass rate.

1.9.1.1 Loss of existing proximal social support and community.

On relocation, international and RRR students lose proximal social support from previous peers, groups, and communities (Hechanova-Alampay et al., 2002; Wilson, 2016). For other stressful events, accessing social support assists coping by alleviating the associated strain (Cohen & Wills, 1985). Further, for university students, the perception that social support is available mitigates the deleterious effects of stressors on GPA (Richardson et al., 2012). Perceived available social support also moderates the effects of stressors on mental health (Cohen & Wills, 1985; Paykel, 1994), specifically for university students (Richardson et al., 2012), and is positively associated with psychological well-being (Chu et al., 2010; Thoits, 2011).

1.9.1.2 *Loss of domestic support.*

Many first-year students leave home for the first time. The effect of the loss or maintenance of domestic support on first-year relocated students' academic success has not been investigated. First-year students may need preparation in independent living skills, such as cooking (Martinez et al., 2019).

Most students living at home are accustomed to the provision of food. Relocated students are in one or more groups of individuals most at risk of food insecurity, for example, those on low incomes and/or renting. Students on low incomes and renting a sole or shared residence have difficulty accessing sufficient, nutritious food (Hughes et al., 2011). Food insecurity adversely modifies the effects on GPA of students' characteristics (Camelo & Elliott, 2019).

1.9.1.3 *International students and oral English use.*

English language proficiency is a key determinant of academic achievement for international students (Andrade, 2006). International students from non-English speaking backgrounds undertake tests for written and oral language skills. Students must produce a recognised certificate of academic English proficiency to apply for enrolment at Australian universities. Receipt of a Confirmation of Enrolment (CoE) enables students to apply for a student-visa to enter and study in Australia.

Both written and oral use of English are practised at university. However, first-year international students may have difficulty understanding lectures because of some unknown vocabulary and fast delivery speed (Ramsay et al., 1999). Students may also find the diversity of lecturers' accents problematic, as well as Australian-English idioms and cultural references. International students who lack confidence in speaking English, may withhold questions to lecturers, and not participate in class discussions with peers whether face-to-face, or in break-away "rooms", while meeting on-line. Although meeting online allows students to post written comments and questions, some may be deterred by a lack of anonymity. In

addition, difficulty using oral English inhibits not only the foregoing academic interactions but also, social, and healthcare interactions, with deleterious effects (Forbes-Mewett & Sawyer, 2016).

Practising informal conversation in English increases comprehension and confidence in academic settings and the ability to make friends (Schutz & Richards, 2003). However, the type of residence to which international students return daily may affect opportunities for informal interpersonal interactions using English.

1.9.2 Risks to persistence

Commencing students most likely to withdraw from university are from regional, rural, or remote areas (DET, 2018). Although most RRR students will eventually resume tertiary education, sometimes several years later (Harvey & Szalkowicz, 2017), withdrawal represents a loss to universities, communities, and themselves in the meantime. The aim of extensive previous research, beginning with Tinto (1975), has been to prevent attrition of first-year students through withdrawal. That many RRR students return to university when older notwithstanding, how they cope with their first year is critical to longer-term academic success (Bean, 1983).

The first year for international students is similarly, yet significantly more, critical since neither withdrawal from university nor failure may be perceived as options. The Coroners Court of Victoria ordered an investigation into 27 deaths by suicide of international students in the state between 2009 and 2015. The Coroners Preventive Unit (CPU) issued a report with acknowledgement that the number of suicides was likely to have been greater than 27 (“Coroner warns”, 2019).

International and RRR students face greater demands on their time than do their typical metropolitan peers living at home. Most international and RRR students work in low-paid jobs to meet, or contribute to, the costs of living away from home, for example, rent, food, travel, and incidentals. Working up to 10 - 15 hours weekly can have future career as

well as financial benefits for students. However, working more than twenty hours in addition to the expected forty hours of academic study, is a risk to persistence and completion of a full-time bachelors' degree (University of the Sunshine Coast, 2017).

Visa conditions for international students stipulate a maximum forty hours per fortnight of gainful and/or voluntary employment, but there was a temporary relaxation of the rule for 2022 (Department of Home Affairs, Immigration & Citizenship [DHAIC], 2022). International students, paying full university fees, may experience high expectations not only from parents, but also from a community which is providing financial support (Forbes-Mewett & Sawyer, 2016).

The most common personal reasons first-year students give for withdrawal are stress (Challice et al., 2019; Challice et al., 2021; Harvey & Szalkowicz, 2017) and mental health (Harvey & Szalkowicz, 2017). For students aged 12 - 25 years, serious mental illnesses may develop from milder forms (Kessler et al., 2007), such as anxiety disorders associated with stress. Thus, stress is a potential risk to relocated students' persistence with tertiary education.

1.10 Psychological Health and Risks

1.10.1 Risks to mental health.

Incremental increases in risk factors can have a deleterious effect on a university student's mental health. First, as emerging adults, typical undergraduates are within the age-range (12 - 25 years) when the onset of serious psychopathologies occurs (McGorry, 2011) and are at greater risk of anxiety and depression than at other life stages (Kessler et al., 2007). Further, research has shown consistently that undergraduates experience greater strain, anxiety, and depression than their peers not at university (Stallman, 2010). A screening survey of first-year students across eight developed countries showed an approximately 30% prevalence of at least one common DSM-IV anxiety, mood, or substance disorder in the previous 12 months (Auerbach et al., 2018).

Second, relocation increases the risk to first-year undergraduates' mental health (Adlaf et al., 2001). Third, such risk is compounded by geographical distance from home (Sokratous et al., 2013). Furthermore, international students cope with lifestyle changes associated with the socio-cultural context of an Australian city, while for Australian students, lifestyle changes are inherent in moving from a regional, rural, or remote location to an urban one (Renn & Arnold, 2003). Nevertheless, international students experience the greatest strain and anxiety of all first-year students and work harder to overcome difficulties (Andrade, 2006).

The abrupt loss of proximity to existing friends, groups, communities, and their social support (Hechanova-Alampay et al., 2002) precipitates a period of grieving (Seah, 2008), feeling isolated (Brown & Aktas, 2011), lonely (Sawir et al., 2008), and "homesick" (Sun et al., 2016). Such feelings are normal and typically transient. The innate human need to belong and feel accepted predicts the anxiety and depression of "homesickness" (Thurber, 2012) but inadequate social support in the new environment to meet the need is also a predictor (Adlaf et al., 2001; Sun et al., 2016). Students' mental health increases with perceived available social support (Lau et al., 2018; Li et al., 2018). Indeed, a key determinant of persistence under stress, while maintaining mental health, is social support (Manning, 1994). Nevertheless, relocated students gain greater independence, including the freedom and consequences of making decisions away from parental oversight and protection (Seiffge-Krenke, 2016).

While some factors elicit anxiety and depression, and others excitement, optimism, and confidence, losses and gains affect relocated first-years' mental health. Moreover, mental health and academic success are related (Lipson & Eisenberg, 2018; Orygen, The National Centre of Excellence in Youth Mental Health [TNCEYMH], 2017).

Necessity of gainful employment may cause a high level of strain (DET, 2018) exacerbating that associated with relocation. Academic and work demands can dominate relocated undergraduates' time, decreasing that for health maintenance. Incidental

consultations with health professionals are necessary but not sufficient to maintain health and well-being. Maintaining physical and psychological health requires routine exercise and consistent performance of domestic tasks, for example, shopping, meal-preparation, cleaning, laundering, and paying for use of utilities (Forbes-Mewett & Sawyer, 2016) amongst others. First-year students may have assisted with such tasks at home, but are unlikely to have had sole responsibility for maintaining a domestic routine. Furthermore, students may become food insecure (Bruening et al., 2016). Such additional stressors increase the risk to first-year relocated students' mental health compared with metropolitan peers (Bouteyre et al., 2007).

1.10.2 Risks to psychological well-being.

Poor physical and mental health are related. Health concerns related to poor nutrition and food insecurity are prevalent among university students (Bruening et al., 2016; Cady, 2014; Gallegos et al., 2014; Hughes et al., 2011; Martinez et al., 2019). Further, eating food with family or friends is associated with a sense of belonging (Dunbar, 2017). Belonging is a basic human motivation (Baumeister & Leary, 1995) which predicts well-being (Suhlmann et al., 2018) and is a component of perceived available social support (Cohen & Hoberman, 1983; Cohen & Wills, 1985).

Mutual recognition with eye-contact conveys a sense of belonging and worth (Wesselmann et al., 2012). Recognising and acknowledging others with whom there is a connection, occur during social eating (Dunbar, 2017) and when greeting friends and acquaintances when out (Wesselmann et al., 2012). Even eye-contact and a closed smile between individuals with a very weak connection elicit a sense of belonging and enhanced well-being (Sandstrom & Dunn, 2014).

1.11 Types of Residences for Relocated University Students

Relocated students must secure accommodation in the host city either before or on arrival. Prior to arrival, universities' websites inform students of residential options from

small-occupancy private rentals, through to purpose-built residences accommodating 400 or more students. Flats/units and houses in suburban areas comprise the typical private rental market. Small residences require independent living skills. Most universities in major cities globally have halls of residence and/or hostels, sometimes called “dorms”, for students. Such large residences might have shared rooms, typically have shared bathrooms, kitchens and some, a canteen. Universities in the Anglosphere also have colleges, which are home to organised communities of students at various academic levels. Students share facilities, including large spaces for interaction and communal activities. In Australia, colleges typically provide single rooms in dormitories and flats, meals, cleaning, and a laundry room. Dormitories consist of a corridor with adjoining single rooms, while flats typically have single rooms clustered around a central common area.

1.12 Summary and the Current Research

Typical international and Australian university undergraduates from intra- or inter-state RRR areas, are in the emerging adult stage of life span development. Undergraduates work at developmental tasks while completing a bachelors’ degree. Three developmental, key tasks are preparing for a career (academic success), establishing a network of supportive peer relationships, including romantic (perceived available social support), and creating a meaningful life (locus of control, meaning-in-life, and well-being) independent of parents.

Undergraduates who relocate for tertiary education in Australia have successfully overcome significant challenges. Overcoming challenges is stressful. On arrival, relocated undergraduates face more challenges. At the same time, such students are at greater risk of psychopathology than either their peers commuting to university from home or the general population (Morrow & Ackermann, 2012). Universities provide specialised support services for international undergraduates, while services for RRR undergraduates are receiving attention.

However, students return daily to one type of residence or another. The related social characteristics of different types of residence could affect their outcomes. For example, some characteristics will facilitate the development of social support which positively affects academic achievement and mental health (Richardson et al., 2012).

1.12.1 Social effects of architectural design of residences.

Various architectural exterior and interior designs of residences for students have been examined for social effects. For example, the room-capacity of a flat/unit or building will determine how many potentially supportive peers are resident. Further, the interior design of a building affects the socialisation of commencing students (Devlin et al., 2008).

Universities and commercial entities responded to the growth in the international student population by building blocks of student-apartments. While commencing students and their parents prioritise the privacy, technology, and amenities of apartment designs (Chambliss & Takacs, 2014), the cost is relative social isolation. Students reside behind a series of locked doors and have limited communal space (Devlin et al., 2008).

Pre-existing halls and colleges may have apartments or houses for post-graduates and senior undergraduates, and dormitories (floors of rooms opening onto central corridors) for first-year students. Dormitories enable more frequent interactions between more students than do apartments (Bronkema & Bowman, 2017). Furthermore, first-year students can interact with each other and more senior students in large spaces designed for study, leisure, and social activities, including mealtimes. Frequent interactions between students facilitate relationships and potential social support (Stallman, 2010).

Some evidence suggests that undergraduates perceive a high level of available social support in university residential colleges, principally from peers (Broderick & Co. [report], 2017). However, perceived available social support has not been measured with a standardised instrument, compared with amounts in other types of residence, or investigated. Similarly, other potentially beneficial social characteristics and associations with different

types of residence remain largely unexplored.

1.13 Research Aim and Questions

This thesis aims broadly to contribute to psychological knowledge by showing factors facilitating attainment of the developmental tasks of emerging adulthood following relocation for tertiary education. The literature review found a gap in understanding how residences contribute to relocated university undergraduates' outcomes. Evidence from the systematic review suggested a need for additional exploration of social support to determine a pathway from residence to academic success, mental health, and well-being. The main aim of this thesis is to locate and explore a pathway from types of residence to emerging-adult students' outcomes. Three studies were designed to answer the following research questions.

Study One (systematic review)

1. What is the strength of evidence supporting findings that the social support of relocated, first-year university students, aged 17 - 20 years old, affects (a) academic success and (b) mental health?
2. Is there evidence that such students' perception of available social support is associated with type of term-time residence?

Study Two (quantitative research study)

3. Are there differences between first-year international and RRR students?
4. Do levels of perceived available social support, domestic support, greeting network, and oral English use differ between all relocated first-year students occupying different types of residence?
5. Is oral English use associated with international students' outcomes?
6. Are perceived available social support, domestic support, and greeting network associated with all relocated first-year students' academic success and

psychological distress?

7. Is meaning-in-life associated with all relocated first-year students' academic success and psychological distress?

Study Three (quantitative research study)

8. Do levels of integrated support, perceived available belonging support and/or sense of residence community differ between relocated undergraduates occupying different types of residence?
9. Is integrated support associated with perceived available belonging support and sense of community in relocated students' residences?
10. Are perceived available belonging support, and sense of community in residences, and at university, associated with relocated students' GPA?
11. Are perceived available belonging support, and sense of community in residences, and at university, associated with relocated students' intention to persist?
12. Are perceived available belonging support, and sense of community in residences, and at university, associated with relocated students' psychological well-being?
13. Are perceived available belonging support, and sense of community in residences, and at university, associated with relocated students' regular contact with distal co-residents?
14. Are perceived available belonging support, and sense of community at university, associated with relocated students' regular contact with distal university peers?
15. Is relocated students' sense of community in their residence associated with that at university?

Chapter 2. Research Methodology

2.1 Preamble

This chapter outlines the design of the research for the thesis, and the methodology used to collect data for each of the three studies. There follows an overview of the paradigms selected to answer the research questions. The methodologies outlined here supplement and clarify those complying with the word limitations of a journal article. Similarly, details are added for the measures used, demographic characteristics, and reasons for including and excluding data.

2.2 Research Design of the Thesis

The format of this thesis is that of “Thesis by Publication”. In compliance with the requirements of The University of Adelaide Graduate Centre (August, 2022), this thesis consists of three research papers intended for publication. The body of work formed by the papers explores relationships between relocated undergraduates’ (a) type of residence, integrated support (based on determinants of “cohesion” [Manning, 1994]), perceived available social support, sense of community, academic success, psychological distress, psychological well-being, and maintenance of contact with geographically dispersed and distant peers (hereinafter termed “distal peers” for brevity and in distinction from “proximal peers”); (b) meaning-in-life, academic success, and psychological distress; and (c) sense of community at university and psychological well-being.

2.3 Research Design of the Studies

This thesis aims to provide valid and credible evidence for predicting undergraduates’ academic and psychological outcomes using their perceived available belonging and other social support associated with types of residence, meaning-in-life, and sense of community at university.

The thesis presents a systematic review for Study One, and two cross-sectional investigations for Studies Two and Three. The studies explore three perspectives. Study One examines social support as a predictor of first-year university students' academic success and mental health, Study Two investigates the association of perceived available social support with type of residence occupied by first-year undergraduates, and Study Three investigates the association of characteristics of the type of residence with greatest perceived belonging social support and sense of community. Thus, the studies progress in a logical sequence, increasing understanding of the impact of type of residence on relocated undergraduates' well-being. Outcomes are salient to emerging adults' developmental tasks, that is, pass rate/GPA and intention to persist (work domain), social network contact (relationships domain), psychological distress and psychological well-being (self-domain).

2.3.1 Systematic review: Study One.

Literature reviews assist researchers to balance the weight of evidence for conclusions in relation to a particular topic, sometimes amidst conflicting conclusions. Thus, a balance of little or inconclusive evidence can indicate and suggest necessary further research within a particular field of interest. Systematic reviews approach the literature of a topic scientifically and apply methodological rigour to produce a credible and valid balance of evidence. The first of two phases of research for this thesis, Study One is a systematic review of social support literature related to typical (aged 17 - 20 years) first-year relocated university students' academic success and mental health.

2.3.2 Quantitative research: Studies Two and Three.

Scientific quantitative research begins with hypotheses and/or questions about relationships between variables of interest within a defined field or population. Information collected in numbers comprise the raw data. Data are subjected to statistical techniques which investigate the variables and inter-variable relationships of interest. Results of such statistical

analysis either support or reject the hypotheses, answer the questions, and thus yield evidence to contribute to a body of theoretical or applied knowledge. Studies Two and Three employed a cross-sectional, descriptive, survey design to investigate relationships between variables pertinent and applicable to the developmental tasks of emerging adults within a population of international and Australian RRR university students. For example, Study Two asked, first, whether type of residence explains levels of students' perceived available social support, domestic support, greeting network, and use of oral English. Second, the Study asked what relationships exist between these four variables, together with students' meaning-in-life, and the outcomes of academic success and psychological distress. Further statistical analysis of data from Study Two informed a logical progression during the transitional phase to the third study. Study Three asked, first, whether integrated support in residences explains levels of perceived available belonging support and sense of community among undergraduates. Second, the Study asked what relationships exist between each of the foregoing three variables and sense of community at university. Third, the Study sought the magnitude and paths of relationships from integrated support through to GPA, intention to persist, psychological well-being, and maintenance of regular contact with distal peers.

2.4 Outline of the Research

Study One systematically reviewed the literature for results and conclusions, that is, without conducting a statistical meta-analysis. The Study aimed to find the strength of evidence for social support as a predictor of relocated, first-year university students' academic success and mental health, and whether it is associated with type of residence. Using the evidence obtained from Study One, Study Two aimed to investigate associations of students' perceived available social support, first, with types of residence and second, with academic success (pass rate and intention to persist) and psychological distress. Study Two also aimed to expand the investigation of associations with types of residence and outcomes by including domestic support, greeting network, and oral English use. The Study aimed, furthermore, to

investigate relationships between students' meaning-in-life development (presence and search) and outcomes. The transition from Study Two to Study Three aimed to investigate data from Study Two to inform Study Three and demonstrate a logical progression. Study Three presents *integrated support* as a construct of the characteristics found to engender cohesion/psychological unity and which Manning (1994) likened to social support. Study Three aimed to explore pathways and magnitude of relationships between types of residence, integrated support, perceived available belonging support, sense of community (residence), sense of community (university), academic success (GPA and intention to persist), and psychological well-being. The regime of COVID restrictions in South Australia allowed regular contact with distal co-residents and university peers during Semester 1, 2020 to be added as outcomes to the planned study.

2.5 Study One: Systematic Review

Systematic reviews have a variety of purposes and can have significant health, social, and financial implications (Petticrew & Roberts, 2012). From often voluminous bodies of research, systematic reviews aim to produce valid and reliable evidence of the effectiveness of interventions, exposures, or predictors. In psychological research, the effectiveness of such is in terms of the magnitude of associations with outcomes. At each stage of the systematic process, reviewers seek to reduce the risk of bias. Beginning with a specific question, relevant studies are identified, critically appraised, and synthesised (Petticrew & Roberts, 2012). Reviewers design and plan systematic reviews, as for other research studies, write a detailed procedure, and typically register the review with an independent body.

2.5.1 Registration.

The systematic review was registered in 2018 with PROSPERO International Prospective Register of Systematic Reviews, University of York Centre for Reviews and

Dissemination. The registered working title complied with the Participants, Intervention (or Exposure) and Comparison groups, Outcomes, Study designs (PI[E]COS) guidelines, and was as follows:

“A systematic review of the effect of social support, associated with accommodation, on the academic success and mental health of first-year international and regional/remote area university students aged 17 - 20 years.”

The registered review questions were the following:

“Does perceived available social support affect the academic success and mental health of first-year international and regional/remote area university students aged 17 - 20 years?”

Is there a difference between the level of perceived available social support in communal compared with small residences?”

Registration included contact details and affiliation of this author as sole reviewer, acknowledgement of the Australian Government, Research Training Program (AGRTP), and listed no actual or perceived undue influence on judgements concerning the main topic investigated.

2.5.2 Selection.

The aim of the systematic selection process is to identify studies which can be used to weigh or balance evidence in the review. Eligibility for critical appraisal is the final stage of the process. Selection begins with a search and collection of potential participating studies using pre-determined inclusion and exclusion criteria.

2.5.2.1 Inclusion criteria.

1. Studies in the English language.
2. Participants meeting specified demographic characteristics for home location, year of tertiary study, and age.

3. Outcomes meeting, or related to, concepts of academic success and mental health.
4. Predictors meeting definitions used in research literature for social support and type of residence.

2.5.2.2 Exclusion criteria.

1. Non-English language studies.
2. Participants not meeting specified demographic characteristics.
3. All outcomes unrelated to concepts of academic success and/or mental health.
4. All predictors unrelated to social support and/or types of residence.

Separate tables were compiled of acceptable definitions for outcomes and predictors.

The table of predictors also gave representative measures and items.

2.5.3 Method.

2.5.3.1 Systematic search.

Based on inclusion and exclusion criteria, logic grids of search terms with Boolean operators and wildcard asterisks were compiled. Different combinations and spellings of terms searched the period 1993 - 2018 in electronic bibliographic databases comprised of relevant literature in English. The search was exhaustive and comprehensive. Sources for peer-reviewed journal articles included the Cochrane Library (Cochrane Database of Systematic Reviews), Education Research Complete, EMBASE, ERIC, Psychology and Behavioral Sciences, PsycINFO/PsycLIT, SCOPUS, and Web of Science. The database, Web of Science, was requested to send notification of any relevant studies published up to 2020. ProQuest Dissertations and Theses Global was the source searched for “grey” literature (unpublished doctoral theses and dissertations). Search engines “Google” and “Google Scholar” were also used.

2.5.4 Results.

All studies which included one or more of the search terms in the title were exported to the reference manager “Endnote”. Studies eligible for critical appraisal were selected using the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) statement (Moher et al., 2009). The PRISMA checklist and flowchart guided the reduction of a total of 613 studies, produced by the search, to seven. “Endnote” identified 143 duplicated studies. From the remaining 470 studies, 48 were randomly selected for an inter-screener reliability test with the aim of reducing selection bias. The author and a peer (PhD candidate) concurred on a satisfactory 83.33 % of studies selected using the same inclusion and exclusion criteria. Titles, key words, and abstracts of the 470 studies were screened and 425 discarded as irrelevant (for example, “Well begun is half done: The importance of small group teaching for interaction, self-efficacy, and study success in the first semester”, Brouwer et al., 2016). Texts of the remaining 45 studies were examined in full and scored on the number of inclusion criteria using an Excel spreadsheet. The cut-off for potential eligibility for critical appraisal was 70% of the possible total score. Sixteen studies were obtained, however, nine of these failed to meet one or more essential inclusion criteria, for example, social support. The result was seven studies eligible for quality assessment using critical appraisal techniques.

2.5.5 Critical appraisal.

The seven studies were structured on five different theories and each study related in part to the research questions. The studies were appraised for risk of bias from various sources, including methodology, and for homogeneity and heterogeneity. Authors of each study addressed potential risks of bias except geographic bias. Each study was conducted in the United States of America (USA) but in different states. No Australian studies met the inclusion criteria. Thus, only intra-US geographical risk was reduced, highlighting the lack of

such research in other countries. There was homogeneity between the studies of population demographics, residence options, study design, and measures of social support.

2.5.6 Conclusion.

The systematic review found evidence for small, positive direct and indirect effects of social support on indicators of relocated, first-year students' short- and medium-term academic success and mental health. The evidence is consistent with the strong evidence of the meta-analysis conducted by Richardson et al. (2012) among others. The review also found a lack of research investigating the social support relocated students perceived was available to them in the types of residence which they typically occupied.

2.6 Studies Two and Three: Quantitative, Cross-Sectional Research

Studies Two and Three of this thesis employ the same methodology. Statistical analyses were conducted on two datasets using IBM SPSS, versions 26 and 27 respectively.

Desired alpha level, power level, and size of effect for correlations and regressions were entered into the G*Power 3 analysis program (Faul et al., 2009). Output showed a required sample of 111 participants.

Data for Studies Two and Three were collected following release of Semester 1 examination results in July. Study Two data were collected in two consecutive rounds as follows. Collection 1 (September – November 2017) yielded an insufficient sample size ($n = 67$). Collection 2 (July 2018 – March 2019) ($n = 54$) increased the total sample to above sufficient ($N = 121$). The same survey questionnaire was used with two exceptions. The exceptions are explicated in 2.6.4.1.1 under “Demographic Characteristics”, below, and 2.6.5 under “Procedure”, below. Sufficient data for Study Three were collected (July – November 2020) ($N = 122$). Participants had either remained in, or returned to, term-time residences. Australian international and South Australian state borders were closed. The University of

Adelaide changed the platform used for collecting data by survey between Studies Two and Three (see 2.6.5. under “Procedure”, below).

2.6.1 Ethics.

The School of Psychology Human Research Ethics Sub-Committee of The University of Adelaide approved Study Two (H–2017 17/78) and Study Three (H–2020 20/61).

2.6.2 Recruitment.

Notices, flyers, and the Research Participation Scheme (RPS) of The University of Adelaide, advertised Studies Two and Three (see Appendices A and B) and invited participation from university students meeting the inclusion and exclusion criteria. Notices were posted and flyers distributed at all campuses for undergraduates of The Flinders University of South Australia (FUSA), The University of Adelaide (UofA), and The University of South Australia (UniSA), except the regional Whyalla campus. Following receipt of a personal letter of request from the author (see Appendix C), principals of colleges for undergraduates in North Adelaide permitted notices to be posted on noticeboards and distribution of flyers by college administrators using internal email systems. Flinders Hall principal, and managers of UofA and commercial student villages also received a personal letter of request and permitted distribution of flyers by administrators using internal email systems. The foregoing was also the promotional method used for Study Three at Roseworthy College. Further, a notice was posted on the “Facebook” page of UofA. Ethics codes and internet links were provided in all materials. No paper surveys were used. Studies Two and Three were promoted as investigations into “what helps students, who have moved away from home, do well at university and feel good about life as a student”. However, “especially in this year of the COVID-19 pandemic” was added for Study Three.

All participants could choose to have a summary of the research results sent to them. Respondents to notices and flyers could also choose to enter a draw for double cinema tickets.

Participants in the Research Participation System (RPS) at UofA were granted 0.5-hour credit towards first-year psychology. The author's principal supervisor drew winners of cinema tickets blindly from a mix of paper slips inscribed with email addresses, and handed the slips directly to the author. The author alone saw email addresses and used only those required for sending the summary of results and/or informing winners of the draw.

2.6.2.1 Inclusion and exclusion criteria.

Respondents to promotional materials opened the surveys (Appendix D; Appendix E; Appendix F) at the introductory information letter. The letter stated eligibility and ineligibility criteria for participation; estimated 20 minutes to complete the questionnaire for Study Two, 12 minutes for Study Three; a list of counselling support services; benefits of the research; voluntary participation in all or part; assurance of anonymity in results, confidentiality of records and data; title of the study; code of clearance for human research ethics with contact details for the committee; telephone numbers and/or email addresses of the principal supervisor, co-supervisor, and researcher; and options to enter the draw for cinema tickets and/or receive a summary of results. Thus informed, respondents could withdraw or indicate consent to proceed with the survey. Consent was a required field.

Participants meeting the following criteria were included.

1. Students, relocated to Adelaide or environs, with international, inter-state, or South Australian regional, rural, or remote home locations.
2. Aged 18 - 20 years (if 17 years, then 18 that year).
3. First-year students for Study Two, undergraduates for Study Three.
4. Full-time.
5. Studying at one of three public universities in South Australia (FUSA, UofA, UniSA).
6. Resident in flat, share house, rooming house, college, hall, or "village".

Participants residing in flats or houses with family, relatives, or older adults responsible for running the household were excluded.

The surveys were in English only and designed to be accessed online by respondents with a computer or mobile smartphone available. “Survey Monkey” was the online survey platform (n.d.) for Study Two and “Qualtrics” (n.d.) for Study Three. First-year psychology students at the UofA accessed the surveys online via the Research Participation System.

2.6.3 Materials.

2.6.3.1 *Study Two survey.*

The structure of the survey consisted of the introductory information letter, items related to consent to participate, demographic characteristics, an untested scale, four valid and reliable standardised scales, and measures of a predictor and two outcomes. Domestic support was the untested scale. The four standardised scales measured perceived available social support, locus of control, meaning-in-life (“Presence” and “Search”), and psychological distress. One question requested the approximate size of the predictor, greeting network of co-residents. The outcome, pass rate, was calculated from participants’ answers to questions asking how many subjects taken and passed at the end of the previous semester. The outcome, intention to persist, was assessed by participants’ answers to items concerning intention to re-enrol, or not, at university the following year. Finally, by writing an email address in the textbox provided, participants could choose to receive a summary of the results of the survey and/or enter a draw for double cinema tickets, if they were not receiving course credit through the Research Participation System. Outlines of the measures are described below.

All items and scales were unchanged for the 2018 - 19 survey, except for Rotter’s (1966) Internal vs. External Locus of Control Scale. See details of such changes, below, at 1.6.4.1.3. or Appendix F.

For ease of statistical analysis, all variables, including residence, were re-coded as

required such that direction was consistently low to high, including psychological distress. Obtained Cronbach alphas for scales were rated as follows: .60 - .69 acceptable; .70 - .79 very acceptable; .80 - .89 good; .90 - .95 very good; .96 - .99 acceptable with consideration of some redundancy (Hulin, 2001; Pallant, 2013, p. 104).

2.6.3.1.1 Demographic characteristics and type of term-time residence.

Demographic data collected were name of home country, Australian participants' home postcode, term-time residence postcode, type of term-time residence, co-residents as university students or not, name of university/ies where enrolled, name of bachelor's degree, gender/sex, and age. The 2017 collection had some missing home country data. To prevent such a reoccurrence, home country was a required field in the 2018 - 2019 collection.

Term-time residences were originally ranked in descending order by level of independent living skills required, based on advertisements, into seven types (1 = *Student College or Hall*; 2 = *Student "Village" [university managed]*; 3 = *Student "Village" [commercially managed]*; 4 = *Rooming house [private]*; 5 = *Share house [private]*; 6 = *Unit or flat/apartment [private]*; 7 = *Other*). For purposes of statistical analysis, reporting, and interpretation, residences were collapsed into three types, ranked by level of in-house support, the corollary of independent living skills required, and reverse coded (0 = *Other*; 1 = *Flat/House*; 2 = *"Village"*; 3 = *College*).

2.6.3.1.2 Domestic support.

In-house support was termed "Domestic support". A scale for domestic support was constructed consisting of four questions asking if the following provisions were made in the participant's residence: meals, cleaning of common areas, cleaning of room, and laundering of bed linen. Answers were "Yes" or "No" and reverse coded (1 = *No*; 2 = *Yes*) for ease of statistical analysis. Possible scores ranged from 4 to 8. Responses were summed and obtained scores ranged from 4 to 8. Higher scores indicated higher levels of domestic support.

Obtained Cronbach's alpha for the total scale was .83 demonstrating good internal consistency.

A related but separate question asked participants whether they bought most meals already made, for example, take-away, fast food, or eat out. Data from this question were not used for the Study Two paper.

2.6.3.1.3 Greeting network.

Greeting network was defined as the number of co-residents recognised and acknowledged in greeting when outside the residence. Size of greeting network was measured on an ordinal scale, first, by individual numbers then by ranges (1 = *N/A – I live alone*; 2 = 1; 3 = 2; 4 = 3; 5 = 4; 6 = 5; 7 = 6 - 10; 8 = 11 - 20; 9 = 21 - 50; 10 = 51 - 100; 11 = 101 -150; 12 = 151+).

2.6.3.1.4 Academic mix of co-residents.

Academic levels of co-residents were recorded and recoded under the term “Academic Mix” (1 = *N/A – I live alone*; 2 = *Others with NO understanding of the demands of Uni study*; 3 = *Other(s) who understand the demands of Uni study*; 4 = *Bachelor degree student(s)*; 5 = *Mostly bachelor degree students and one or more higher degree/diploma student(s)*; 6 = *Mostly higher degree/diploma students and one or more bachelor degree students*). Word count limitations for submitting to journals precluded use of data from this question for the Study Two paper. However, although weak, the correlations of this variable with type of residence (.166, $p = .036$), oral English use (.145, $p = .036$), meaning-presence (.174, $p = .028$), pass rate (.172, $p = .033$), and psychological distress (.156, $p = .047$) confirmed the inclusion of commonality (university students) in the construction of “Integrated support” for Study Three.

2.6.3.1.5 Oral English use

Two questions, pertinent to international students, concerned probable use of oral English in residences (self and co-residents from non-English speaking homes, 1 = 100%; 2 = 75%; 3 = 50%; 4 = 25%; 5 = 0%) and actual use (1 = *Always*; 2 = *Most often*; 3 = *Sometimes*; 4 = *Not often*; 5 = *Never*; 6 = *I live alone*). English use was reverse coded. Following are outlines of the standardised instruments used in the survey.

2.6.3.1.6 Interpersonal Support Evaluation List (ISEL; Cohen & Hoberman, 1983).

The self-report ISEL measures respondents' perception of available social support, tapping "... the domain of socially supportive elements of relationships which college students might be expected to experience." (Cohen & Hoberman, 1983, p. 103). The scale comprises 48 items divided into four sub-scales of 12 items each. Respondents indicate that items are "*Probably true*" or "*Probably false*" for them. The scale was modified in three ways such that, first, the sub-scale "Self-esteem" was excluded since the internal psychological resource of interest was meaning-in-life. Second, the language of the sub-scales used, "Tangible", "Belonging", and "Appraisal", was modified for the South Australian context, for example, "If I were sick, I don't know anyone at Uni or in Adelaide who would get assignments for me from my lecturers" ("Tangible"), "I belong to a group that meets, or does things together, regularly" ("Belonging"), and "There isn't anyone at Uni or in Adelaide with whom I would feel perfectly comfortable talking about any problems I might have making friends" ("Appraisal"). Third, the following six-point Likert scale (1 = *Disagree strongly*; 2 = *Disagree*; 3 = *Disagree somewhat*; 4 = *Agree somewhat*; 5 = *Agree*; 6 = *Agree strongly*) allowed participants greater nuance in responding than did the dichotomous original. Eighteen negatively worded statements were reverse coded for scoring: Nos. 4, 9, 10, 13, 15, 16, 18, 19, 20, 23, 25, 26, 28, 29, 30, 31, 34, and 36. Possible scores ranged from 36 to 216. All responses were summed and obtained scores ranged from 56 to 214. Higher scores indicated higher levels of perceived available social support. Cohen & Hoberman (1983)

reported a Cronbach's alpha of .77 for the whole scale of four sub-scales and .71 ("Tangible"), .75 ("Belonging"), .60 ("Self-esteem"), and .77 ("Appraisal") for each. In Study Two, obtained Cronbach's alpha for the whole scale of three sub-scales was acceptable at .96 with consideration of redundancy (Hulin, 2001). The high internal consistency suggested some redundancies between rather than within sub-scales, since individual alphas were .85 ("Tangible"), .90 ("Belonging"), and .92 ("Appraisal"), that is, each below the .95 at which to suspect redundancies (Pallant, 2013, p. 104). The three sub-scales were not used individually and did not have means calculated. All statistical analysis for Study Two used the summed sub-totals of the individual scales to produce a total score of all items endorsed as perceived available social support.

Cohen and Hoberman (1983) presented the ISEL in the article "Positive events and social supports as buffers of life change stress". The ISEL, thus presented, was chosen as a valid and reliable instrument for demonstrating the buffering effects of perceived available social support on psychological distress following stressful life events and, as such, a measure of functions. The ISEL fits within the mental health paradigm used in Study Two.

2.6.3.1.7 *Internal vs. External Locus of Control Scale* (Locus of Control; Rotter, 1966).

Rotter's (1966) construct of locus of control is based on generalized expectancies for internal versus external control of reinforcement from social learning theory (Kormanik & Rocco, 2009). The 29-item and 13-item locus of control scales (Rotter, 1966) are valid, reliable in test-retest, widely used, translated, and freely available. The scale was chosen as a measure of individual agency in the emerging adult international and RRR participants in the Study. Agency is directly related to identity coherence (Schwartz et al., 2005).

The initial design of Study Two included Rotter's (1966) construct of locus of control. The 2017 survey attempted to collect participants' locus of control data using the 29-item scale (Rotter, 1966) which requested agreement with either item-statement "A" or "B". Instructions emphasised that indicating "Agree" to one was understood as greater agreement

with it than with the other and not necessarily total agreement. Despite such emphasis, some participants responded to both “A” and “B” statements of an item and many failed to respond altogether. It was hypothesised that participants had difficulty choosing but also the survey software did not allow a forced choice for one of paired statements.

The 2018 - 19 survey used Rotter’s (1966) 13-item scale, which consists of items from the 29-item scale. Responses, however, were recorded on a four-point Likert scale (1 = *Disagree*; 2 = *Somewhat disagree*; 3 = *Somewhat agree*; 4 = *Agree*). Instructions requested indications to statement “B”, after reading “A”, according to the response which was closest to participants’ current way of thinking. The four categories of response were collapsed into two for statistical analysis. Despite added nuance and a simplified format, 2018 responses were like those of 2017. Neither “Survey Monkey” nor “Qualtrics” software enabled forced-choice responses. Again, there were insufficient valid data to proceed. All data for locus of control were excluded from further analysis.

2.6.3.1.8 *Meaning-in-Life Questionnaire* (MLQ; Steger et al., 2006)

The MLQ consists of two sub-scales to measure the presence of, and search for meaning-in-life. Each sub-scale (“Presence” and “Search”) consists of five statements. Respondents indicate on a seven-point Likert scale how true each statement is for them (1 = *Absolutely untrue*; 2 = *Mostly untrue*; 3 = *Somewhat untrue*; 4 = *Can’t say true or false*; 5 = *Somewhat true*; 6 = *Mostly true*; 7 = *Absolutely true*). Statement nine is negatively worded and was reverse coded for statistical analysis. Possible scores ranged from 7 to 35 for each sub-scale. All responses were summed. Obtained scores ranged from 7 - 35 for presence of meaning-in-life and 11 - 35 for search. Higher scores indicated both greater meaning-in-life presence and search. Means were calculated and the sub-scales used individually in the statistical analyses. For a sample of undergraduates, Steger et al. (2006) reported Cronbach’s alphas of .86 and .87 for “Presence” and “Search” respectively. For Study Two, Cronbach’s alpha for each sub-scale was a very good .90 and good .86

respectively, showing the measures' internal consistency.

The MLQ was chosen as a valid and reliable measure of two dimensions of meaning-in-life integral to the emerging adult stage of the life span. The goal of achieving the developmental task of personal sense of meaning-in-life proceeds from a search (Mayseless & Keren, 2014). Like agency, the presence of meaning-in-life is measured by locus of control and is strongly associated with identity formation (Negru-Subtirica et al., 2016). The MLQ was published in the article "The meaning in life questionnaire: Assessing the presence of and search for meaning in life" (Steger et al., 2006). On request, the lead author gave emailed permission for use of the scale.

2.6.3.1.9 General Health Questionnaire 12-item (GHQ-12; Goldberg, 1992).

The GHQ-12 consists of 12 questions and screens individuals for anxiety and depression. Respondents indicate on a four-point Likert scale how well they have been feeling in the past few weeks (0 = *More than usual*; 1 = *Same as usual*; 2 = *Less than usual*; 3 = *Much less than usual*). Questions 2, 5, 6, 9, 10, and 11, are negatively worded and were recoded for statistical analysis. Possible scores range from 0 - 36. Obtained scores ranged from 7 - 24. Higher scores indicate greater anxiety and depression. Scores of 12 and above measure severity of psychological distress. Responses were summed and means calculated. Cronbach's alpha for the scale was a good .85, confirming previous extensive research with the scale as a valid and reliable instrument. The GHQ-12 was chosen for its validity and reliability in screening for psychological distress (anxiety and depression) within the mental health paradigm and for its brevity. The GHQ-12 is freely available.

2.6.3.2 Study Three survey.

As for Study Two, the structure of the Study Three survey consisted of the introductory information letter, items related to consent to participate, demographic

characteristics (home-country a required field), type of term-time residence, an untested scale and four valid and reliable standardised scales. Five outcomes were measured. The untested scale measured the predictor integrated support in residences. The three standardised scales measured the predictors perceived available belonging support (ISEL sub-scale), sense of community in residence and sense of community at university, and the outcome psychological well-being. Two outcomes were measures of academic success. First, estimated GPA was calculated from participants' data and the formula taken from each university's website. Few participants disclosed email addresses for possible confirmation of GPA and assurance of anonymity precluded using university student records. Second, intention to persist was assessed, as for Study Two, by participants' answers to items concerning intention to re-enrol, or not, at university the following year. Responses to questions regarding maintenance of regular contact with distal co-residents and university peers provided data for the fourth and fifth outcomes. Finally, as for Study Two, by writing an email address in the textbox provided, participants could choose to receive a summary of the results of the survey and/or enter a draw for double cinema tickets, if they were not receiving course credit through the Research Participation System. Outlines of the measures are described below.

2.6.3.2.1 *Demographic characteristics and type of term-time residence.*

Demographic characteristics requested were the same as for Study Two. Term-time residences and original rankings were also as for Study Two (1 = *Student College or Hall*; 2 = *Student "Village" [university managed]*; 3 = *Student "Village" [commercially managed]*; 4 = *Rooming house [private]*; 5 = *Share house [private]*; 6 = *Unit or flat/apartment [private]*; 7 = *Other*). For purposes of statistical analysis, reporting, and interpretation, residences were collapsed into four types, ranked by the levels of domestic support found in Study Two, as the corollary of independent living skills required, and reverse coded (0 = *Other*; 1 = *Flat*; 2 = *House*; 3 = *"Village"*; 4 = *College*). Numbers in each type of

residence were more evenly distributed than in Study Two in which Flat and House were combined. In-house support was termed “Integrated support”.

2.6.3.2.2 *Integrated Support Scale* (ISS; Straub, 2020).

The self-report, integrated support scale consists of 14 items tapping four constructs, “comfort”, “communication”, “commonality”, and “care”. Manning (1994) used the foregoing constructs in research of “cohesion” in military units, drawing parallels with social support. The items used to operationalise the four constructs in Study Three, however, differ in type from those used to measure social support in the psychological literature.

“Comfort” consists of six questions, four used in Study Two to measure domestic support, and a further two (“Is it quite easy to get things fixed when not working properly or broken [e.g., plumbing, windows, appliances]?” and “Are there spaces where you can meet with others or relax?”). “Communication” consists of two questions relating to ease of hierarchical (for example, landlords, agents, managers) and lateral communication (“Do the people responsible for various things, even ultimately in charge, help you feel at ease when you communicate/talk with them?” and “Is it generally easy to communicate/talk with other residents?”). Four questions tap “Commonality” (“Do you have enough space and quiet to study?”, “Is all the technology you need for your studies available?”, “Is personal academic support readily available when you need it: someone you can ask for help?” and “Like you, are other residents mostly students?”). Two questions measured “Care” (“Do the more senior check on how younger residents are doing or feeling?” and “How many people from your accommodation would you greet or say “Hello”, when you are out somewhere?”).

Respondents indicate “No” or “Yes” (1 = *No*; 2 = *Yes*) to questions 1 - 13. Response to question 14, size of greeting network of co-residents, is measured by indication of range (1 = “None”; 2 = 1 - 5; 3 = 6 - 10; 4 = 11 - 20; 5 = 21 - 50; 6 = 51 - 100; 7 = 101- 150+).

Thus, all questions are in the positive. Possible range of scores is from 14 to 34. All responses were summed and means calculated. Obtained scores ranged from 14 to 32. Higher

scores indicate higher levels of integrated support in residences. Standardised Cronbach's alpha was a very acceptable .74, indicating the Scale's internal consistency. Individual sub-scales were not used, and respective means not calculated. All statistical analysis in Study Three used scores summed into a total "Integrated Support" score. The Scale is novel, constructed for Study Three, and not yet standardised or re-tested.

2.6.3.2.3 *Belonging sub-scale of the Interpersonal Support Evaluation List (ISEL; Cohen & Hoberman, 1983).*

The ISEL belonging sub-scale, hereinafter termed "belonging scale", measures the extent to which an individual interacts with others. The scale comprises 12 items. Respondents indicate that items are "Probably true" or "Probably false" for them. As for Study Two, the sub-scale was modified. First, using a five-point Likert scale (1 = *Disagree strongly*; 2 = *Disagree*; 3 = *Neither agree nor disagree*; 4 = *Agree*; 5 = *Agree strongly*) unlike the six points of Study Two, but consistent with the five-points of the Psychological Sense of Community Scale (PSSC; Jason, et al., 2015) and The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS); Tennant et al., 2007). Second, five negatively worded statements were reverse coded for scoring: Item nos. 3, 4, 5, 9. Third, the item "I talk to or message a member of my family at least once a week" was deleted as irrelevant to a measure of peer support. The item was replaced with another item of belonging, "Most days, I have regular meal-times with others". Possible scores ranged from 12 to 60. Summed responses yielded obtained scores from 14 to 60. Higher scores indicated higher levels of belonging. For Cohen and Hoberman's (1983) sample of undergraduates, Cronbach's alpha for the belonging scale was .75. For participants in Study Three, obtained Cronbach's alpha was a very good .91. Responses were summed and means calculated for the whole scale. The ISEL belonging sub-scale was chosen following a correlational investigation of Study Two variables. The investigation was conducted in the transitional phase of the research and sought a suggestion of what might be engendering higher perceived available social support in colleges. Means of

the ISEL sub-scales were calculated and the sub-scales entered individually into a correlational matrix. Belonging, Domestic support, English use, Greeting network, and Psychological distress formed an inter-correlated cluster.

2.6.3.2.4 Psychological Sense of Community Scale (PSCS; Jason et al., 2015).

The PSCS measures the construct across three discrete ecological domains, namely, the individual, microsystem, and macro-system. The individual domain involves the Self (identity and importance to self); the microsystem domain, Membership (social relationships); and the macro-system domain, Entity (a group's organisation and purpose). The Scale consists of nine items. Three items relate to Membership, five to Entity, and one to both Membership and Entity. Responses are measured on a six-point Likert scale (1 = *Strongly disagree*; 2 = *Disagree*; 3 = *Slightly disagree*; 4 = *Slightly agree*; 5 = *Agree*; 6 = *Strongly agree*). Study Three used the PSCS for sense of community in residences and in universities. PSCS was chosen as a valid and reliable instrument with the flexibility to measure the construct among different, named entities, and memberships. The Scale is freely available.

PSCS Residences. To measure sense of community in residences, the scale was modified in two ways. First, Likert scale responses were modified (1 = *Strongly disagree*; 2 = *Disagree*; 3 = *Neither agree nor disagree*; 4 = *Agree*; 5 = *Strongly agree*; 6 = *N/A – I live alone or with one other person*). Second, text was modified such that item statements could apply to both small and large numbers of co-residents, for example, “The people with whom I live can depend on each other” (Membership); “I think that those with whom I live make a good community” (Entity); and “I feel good being involved in this community, and in helping the others” (Entity/Membership). For statistical analysis, response 6 (*N/A – I live alone or with one other person*) was coded 0. Possible scores ranged from 0 - 45. Responses were summed and obtained scores ranged from 0 - 45. Higher scores indicate higher sense of

community. Using a university student sample, Jason et al. (2015) reported a Cronbach's alpha of .92 for the whole Scale. In Study Three with co-residents as the sample, obtained Cronbach's alpha for the Scale was an acceptable .96 with consideration of some redundancy (Hulin, 2001). Obtained alpha with the co-resident sample was considered acceptable as representing the highest level of internal consistency in the range .87 - .96. Responses were summed and means calculated for the whole scale. Sub-scales were not used individually. All statistical analysis used sub-scale scores summed into a total score.

PSCS Universities. Modifications to the scale for universities were similar to those for residences. First, responses on the Likert scale were modified from six to five points (1 = *Strongly disagree*; 2 = *Disagree*; 3 = *Neither agree nor disagree*; 4 = *Agree*; 5 = *Strongly agree*). Second, text of statements was modified, for example, "For me, this university is a good fit" (Entity) and "Students can depend on other members of this university" (Membership). Possible scores ranged from 9 - 45. Responses were summed and obtained scores ranged from 24 - 45. As noted above under "PSCS Residences", higher scores indicate higher sense of community and Jason et al. (2015), reported a Cronbach's alpha for the whole scale of .92. In Study Three with university peers as the sample, alpha was .87. Obtained alpha was within the range .87 - .96 and considered good. Responses were summed and means calculated for the whole scale. Sub-scales were not used individually. All statistical analysis used sub-scale scores summed into a total score.

2.6.3.2.5 *The Warwick-Edinburgh Mental Well-Being Scale (WEMWBS; Tennant et al., 2007).*

The WEMWBS measures well-being conceptualised as a combination of the affective-emotional, cognitive-evaluative, and psychological functioning of an individual (Tennant et al., 2007). The Scale consists of 14 items. Positive affect (for example, "I've been feeling cheerful" [hedonic], "I've been feeling useful" [eudaemonic]), and satisfying interpersonal

relationships (for example “I’ve been feeling loved [cared for, that I matter]”) are measured by three items each. Eight items measure aspects of positive psychological functioning (for example, “I’ve been dealing with problems well”, “I’ve been interested in new things”). Responses are indicated on a five-point Likert scale (1 = *Much less than usual*; 2 = *Less than usual*; 3 = *Same as usual*; 4 = *More than usual*; 5 = *Much more than usual*). Possible scores range from 14 - 70, with higher scores indicating higher well-being. Obtained scores ranged from 14 - 70. Tennant et al. (2007) found a standardised Cronbach’s alpha of .89 using a student sample. Obtained alpha with Study Three participants was very good at .94. Responses were summed and means calculated for the whole scale. Sub-scales were not used individually. All statistical analysis for Study Three used sub-scale scores summed into a total score. The WEMWBS was chosen as a measure of psychological health within the positive psychology paradigm. Nevertheless, the Scale showed significant correlations with instruments within the mental health paradigm (Tennant et al., 2007). Jonckheere’s tests for ordered alternatives found moderate correlations between the WEMWBS and the GHQ-12 (Tennant et al., 2007), which was used in Study Two. The WEMWBS is freely available.

2.6.4 Procedure.

Participants in Study Two had the information letter, with survey following, made available to them online by URL (see Appendix A). The “Survey Monkey” (n.d.) website hosted the survey. The survey had six parts. In 2017, the survey consisted of 102 items (see Appendix G). The 2018 survey used the 13-item form of the locus of control measure (omitting 16 items of the 39-item measure used in the 2017 survey) and consisted of 86 items (see Appendix H).

As for Study Two, the information letter and survey of Study Three were available to

participants online. Access was by URL or QR code (see Appendix B). The “Qualtrics” website (n.d.) hosted the survey. The survey had three parts and consisted of 78 items (see Appendix I).

Participants could access the surveys following release of most Semester One examination results for the year. A few outstanding results were obtained by emailing a friendly reminder using addresses provided by those participants who had requested a summary of results and/or chosen to enter the draw for cinema tickets.

The letters preceding the surveys for both Studies Two and Three gave the same information. The information letter to participants included the relevance of the research to relocated university students, names of supervisors and researcher, participation inclusion and exclusion criteria, approximate time to complete the survey (20 minutes for Study Two and 12 minutes for Study Three), benefits of participation with brief instruction for entering Research Participation System (RPS) ID code if applicable, statement of low-risk with contacts listed for counselling assistance should the unforeseeable occur, wider benefits of the study, assurances of voluntary participation, ability to withdraw from the survey at any time and/or leave a question unanswered, anonymity in published results, and confidentiality maintenance. Principal supervisor, co-supervisor, and author were listed with contact details for any questions about the research, followed by the title of the study, and a statement, including the code, that it had approval from the Human Research Ethics Committee (HRECS) at the UofA. The principal supervisor was named as the contact for any questions or practical problems with participation, and for concerns or complaints. Contact details of the HRECS, UofA, were given for raising a concern or complaint with an independent person and for information regarding UofA policy on research involving human participants or rights as a participant. Assurance was stated that concerns or complaints would be confidential, fully investigated, and the complainant informed of the outcome. Finally, brief instructions were given for choosing to receive a summary of the results of the study, and/or enter the draw for

cinema tickets unless receiving course credit through the Research Participation System (RPS).

Respondents acknowledged satisfaction with the introduction and information, gave consent to participate and proceeded to the survey. Participation was voluntary and withdrawal enabled by closing the webpage. The survey could be completed on one or more occasions, at time(s) convenient for participants. No interaction between researcher and participants occurred during survey completion. For confidentiality, the principal supervisor was given as a contact for any queries, for example, language or other difficulties. A UofA password-protected, desk-top computer stores all data collected for the studies. Data will be retained until 2026, seven years from 2019.

2.6.5 Data Analyses.

2.6.5.1 Systematic Review.

Data for Study One were studies collected following a comprehensive and rigorous search of data bases. The quality of studies, which met the eligibility criteria for inclusion, was critically appraised. Appraisal consisted of an examination of each study for risks of bias (ethics approval, funding, publication, and geographical location), and for methodology (study design, demographics, types of student residence, and measures of social support). A further appraisal was conducted of homogeneity and heterogeneity across the studies for validity of results.

Research Questions One and Two were investigated using findings and conclusions of the selected studies.

2.6.5.2 Study Two.

Data collected for Study Two were compiled and analysed using IBM SPSS Statistics (Version 26) predictive analytics software. The alpha level to determine significance was .05 for all statistical tests.

Descriptive statistics were found, namely, means, medians, and standard deviations for continuous variables, and frequencies and percentages for categorical variables. Cronbach's alpha measured the internal consistency of scales and sub-scales to assess reliability. Research Question Three was investigated in two ways, first, using one-way analyses of variance (ANOVAs) to find any differences between types of residence in levels of the continuous predictors, perceived available social support and domestic support. Second, cell sizes were obtained for the categorical variables, English use and Greeting network. Cell sizes did not meet the assumption ($n \geq 5$) for Chi-square tests of difference. Analyses proceeded to non-parametric Spearman's rank correlation coefficients to determine the strength and direction of the linear relationships between all continuous and categorical predictors and outcomes. Research Questions Four to Seven employed linear multiple regression analysis to find effects of the continuous factors (perceived available social support, domestic support, meaning-in-life presence, and meaning-in-life search) on the variance in pass rate, intention to persist and psychological distress. Logistic regression analysis examined effects of the categorical predictors (greeting network and English use) on the variances of outcomes.

2.6.5.3 Transition from Study Two to Study Three.

To determine the direction of Study Three in 2020, Study Two data were further analysed. The analysis sought indicators which could explain higher perceived available social support in colleges than in flats/houses or "villages". Means of the ISEL sub-scales were calculated. Individual sub-scales were entered into a correlational matrix (tangible, appraisal, belonging, greeting network, meals provided, total domestic support, meaning presence, meaning search, and mental health). Cohen's (1988, pp. 79 - 81) guidelines

(small $r_s = .10 - .29$, medium $r_s = .30 - .49$, large $r_s = .50 - 1.0$) determined the strength of correlations. Belonging had a stronger correlation with mental health than did either perceived available tangible or appraised social support. Moreover, belonging was moderately correlated with greeting network, meals provided, domestic support, and meaning presence, as well as psychological distress, forming a cluster.

Literature related to belonging encompasses research on sense of community and the work of Manning (1994) in the field of military psychiatry. Relocated first-year undergraduates were compared with typical military recruits and their shared characteristics identified. Both groups are within the emerging adult stage of lifespan development (aged 18 - 25 years) (Arnett, 2004); leave family homes, familiar communities, and relocate; adapt to a different lifestyle from that of home; become members of a small entity (student residence/military unit) and large entity (university/defence force), face greater psychological challenges than their peers (urban/civilian); and rely on developing bonds of belonging and sense of community with peers to sustain them psychologically.

Manning (1994) found four key characteristics which engender and maintain socially supportive bonds (“cohesion”) between members of small entities and the increasingly larger entities in which they inhere. Such characteristics are material comfort (especially shared meals), ease of communication with those in authority (vertical) and peers (lateral), commonality of purpose, and interpersonal care. In short, the construct consists of comfort, communication, commonality, and care. The author uses the term “integrated support” for the construct and the novel Integrated Support Scale (ISS) for the measure.

2.6.5.4 Study Three.

Data collected for Study Three were compiled and analysed using IBM SPSS Statistics (Version 27) predictive analytics software. The alpha level to determine significance was .05 for all statistical tests.

Descriptive statistics were found for all variables, means and standard deviations

for continuous variables, frequencies and percentages for categorical variables. Cronbach's alpha measured the internal consistency of whole scales and sub-scales to assess reliability.

Research Question Eight was investigated in two ways, first, using one-way analyses of variance (ANOVAs) to find any differences between types of residence in levels of the continuous predictors, integrated support, belonging, and sense of community. Differences prompted further investigation.

A matrix of Spearman's *rho* correlations was compiled to determine the strength and direction of linear relationships between all continuous and dichotomised categorical variables. Linear regressions of integrated support on belonging and residence-sense of community followed.

Research Questions Nine to Fifteen included continuous variables (belonging, sense of community, estimated GPA, and well-being) and categorical (intention to persist, regular contact with dispersed, distal co-residents and university peers). Significant differences were sought between types of residence using ANOVAs for continuous variables and Chi-square tests for categorical variables. Cell sizes did not meet the assumption of ($n \geq 5$) for Chi-square tests of difference. Regression analysis followed. Multiple linear regressions sought effects on variances of continuous outcomes, and logistic regressions for effects on variances of categorical outcomes.

Research Question Ten was investigated using an ANOVA of university sense of community for differences between types of residence, followed by linear regression analysis.

2.7 Summary

This chapter is a comprehensive overview outlining in detail the methodology of the research project. The project consisted of three studies and a transitional, statistical analysis between Studies Two and Three. Rationales are given for beginning the project with the systematic review and for the progression from Study Two to Study Three.

Chapter 3. Systematic Review: Social Support Predicts Relocated University Students'

Academic Success and Mental Health

3.1 Preamble

Chapter 3 consists of Study One. Study One is the systematic review of the literature to determine (a) the strength of evidence that social support predicts the academic success and mental health of relocated first-year university students, aged 17 - 20 years, and (b) evidence that such students' social support is associated with type of residence. The method of the review is rigorous and includes a protocol developed *á priori* and lodged on a register for systematic reviews. Study One is written as a paper intended for publication in a peer-reviewed journal.

3.2 Statement of Authorship

Statement of Authorship

Title of Paper	Systematic Review: Social support predicts relocated University students' academic success and mental health	
Publication Status	<input type="checkbox"/> Published <input type="checkbox"/> Accepted for Publication <input type="checkbox"/> Submitted for Publication <input checked="" type="checkbox"/> Unpublished and Unsubmitted work written in manuscript style	
Publication Details	N/A	

Principal Author

Name of Principal Author (Candidate)	Susan F. Straub	
Contribution to the Paper	Conception, aim, design, acquisition, appraisal, interpretation, preparation of manuscript, and revision following first submission to a peer-reviewed journal.	
Overall percentage (%)	90%	
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that could constrain its inclusion in this thesis. I am the primary author of this paper.	
Signature		Date 08/11/22

Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

- the candidate's stated contribution to the publication is accurate (as detailed above);
- permission is granted for the candidate to include the publication in the thesis; and
- the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Helen Winefield	
Contribution to the Paper	Supervised and reviewed manuscript. (5% contribution)	
Signature		Date 8/11/22

Name of Co-Author	Peter Strelan	
Contribution to the Paper	Co-supervised and reviewed manuscript. (5% contribution)	
Signature		Date 8/11/22

Please cut and paste additional co-authors

3.3 Manuscript of Paper for Publication

3.3.1 Abstract.

Aim. This systematic review sought the strength of evidence that relocated, first-year university students' (17 - 20 years) perception of available social support (a) predicted academic success and mental health; and (b) was associated with type of residence.

Method. The review covered 27 years of research (1993 - 2020). Searches of databases yielded 613 references to studies published in English. After discarding 143 duplicates, 470 references remained. The researcher screened titles and abstracts of the 470 studies for relevance, and randomly selected 48, which a peer screened to test researcher's assessment of relevance. Inter-screener reliability was 83%. Screeners discussed differences and agreed on including or excluding each study. Forty-five of the 470 studies were retained (29 journal articles, 16 theses). The researcher examined the full texts. Sixteen met some or most criteria to answer the research questions. Data were extracted and each study rated for compliance with criteria. Nine of the 16 studies lacked an essential population criterion, predictor, or outcome, resulting in 7 eligible studies.

Results. "The Joanna Briggs Critical Appraisal Check List" applied to the 7 studies found all valid and reliable: these are presented. All studies were conducted in the USA. Final search in February 2020 yielded no further studies.

Conclusion. Seven studies showed (a) statistical evidence that perceived available social support predicts the academic success (GPA and intention to persist) and mental health of relocated, first-year university students; and (b) no evidence that it is associated with type of residence. Implications for future Australian research are discussed.

Keywords. social support academic success mental health relocated students residence

3.3.2 Key points.

What is known

1. Social support has a small positive effect on university students' academic success (GPA and persistence).
2. Social support has a small positive effect on university students' mental health.
3. Some evidence that social support is unrelated to the capacity (small, medium or large) of US university halls of residence.

What this paper adds

1. Four different measures of first-year university students' perceived available social support showed a consistent positive association with academic success (GPA and persistence).
2. The four measures also showed consistency of the association with first-year students' mental health on six different measures.
3. There is no recent evidence clarifying relationships between relocated first-year students' type of residence, perceived available social support, academic success, and mental health.

3.3.3 Introduction.

A tertiary education not only increases opportunities for a satisfying career and social mobility, but also has a positive effect on lifestyle and health. Most first-year university students in Australia commute from a metropolitan home. However, approximately 48.5% of first-year university students leave home and relocate to pursue higher education: 27% are international students (Australian Government Department of Education and Training [DET], 2018) and 21.5% are from regional, rural, or remote areas (RRR) of Australia (DET, 2017).

This systematic review aimed to find the strength of evidence, first, that perceived available social support is associated with the academic success and mental health of

relocated, first-year university students, and second, that it is also associated with term-time residence.

Social support has been defined as

“...those social interactions or relationships that provide individuals with actual assistance or with a feeling of attachment to a person or group that is perceived as caring or loving” (Hobfoll & Stokes, 1988, p. 499).

Typical (17 – 20 years), relocated, first-year students face the same academic demands as do students commuting to university from home. However, relocation is a major life-event (Holmes & Rahe, 1967). Relocation increases students’ psycho-social and other challenges (Akanwa, 2015; Fleming & Grace, 2017; Lupi et al., 2015; Vasilopoulos, 2016), including coping with an abrupt loss of proximal social support (Hechanova-Alampay et al., 2002).

The first year at university is critical for longer-term academic success (Bean, 1980; Li & Carroll, 2017; Tinto, 1993). How students cope academically and succeed in achieving the longer-term goal of graduation may be measured in the shorter term by the number of units taken and passed (Li & Carroll, 2017) or by Grade Point Average (GPA). Completing a degree requires persistence.

Stress and mental health are the likeliest among the personal reasons given by first-year students for discontinuing tertiary education (Harvey et al., 2017). First-year students report greater stress than do more senior students. A screening survey of first-year students across eight developed countries showed an approximately 30% prevalence of at least one common DSM-IV anxiety, mood, or substance disorder in the previous 12 months (Auerbach et al., 2018). Furthermore, first-year students are within the age range (mid-teens to mid-twenties) when serious mental illnesses may develop from milder forms (Kessler et al., 2007).

Extensive research in military psychology has examined determinants of persistence in

individuals under stress. The research shows that belonging to a cohesive, that is, a psychologically united, supportive group or entity, is a key determinant of persistence in achieving goals when under stress, and of maintaining mental health (Manning, 1994).

Research with university students has found relatively small, direct, positive effects of social support on short-term (Richardson et al., 2012) and long-term academic success (Tinto, 1993, p.122). The perception that social support is readily available has a positive effect on students' mental health (Lau et al., 2018; Li et al., 2018).

Following the abrupt physical separation from family and home location, relocated first-year students are likely to experience psychological symptoms such as nostalgia ("homesickness") (Sun et al., 2016) and loneliness (Sawir et al., 2008). Families, especially parents, may use various methods and technologies to provide emotional and practical support from a distance. Most universities offer institutional support, including counselling services, scholarships, groups, and organised activities. However, students aged 17 - 20 years need and seek (Seiffge-Krenke, 2016) interactions with peers to develop ongoing positive relationships, including romantic. Such interactions may occur at university. However, students may spend as much, or more, time in their term-time residence as at university.

Some first-year students residing in different locations within a city may be in want of the physical proximity of peers and others who care about them, value them, and with whom they share a sense of belonging. Students may reside in different types of residence, for example, flats/apartments, share houses, student hostels, colleges, or halls. Type of residence determines not only the number of occupants, ranging from one to hundreds, but also how physical interactions between co-residents occur (Bronkema & Bowman, 2017; Devlin et al., 2008). For example, small-occupancy flats or share houses may be associated with more, or less, social support than large occupancy residences.

Friendships and other trusted relationships develop over time to become sources of social support (Feeney & Collins, 2015). However, the author could find no literature investigating whether social support is associated with the type of residence typical relocated

first-year university students occupy. Therefore, this study will aim to ascertain the strength of evidence for the effect of social support on first-year students' academic success and mental health, and whether social support is associated with type of residence.

The current study tested the following two hypotheses. 1) There will be strong evidence that social support is associated with the academic success and mental health of typical relocated first-year university students; and 2) there will be no evidence that types of term-time residence are associated with varying amounts of readily available social support.

3.3.4 Method.

The protocol followed in this systematic review was registered á priori in 2018 with PROSPERO International Prospective Register of Systematic Reviews, University of York Centre for Reviews and Dissemination.

3.3.4.1 *Definitions of factors and outcomes.*

Tables 1 and 2 show the definitions, representative measures, and representative items accepted for the factors and outcomes.

Table 1*Definitions, Representative Measures, and Items of Social Support, and Residence*

Construct	<i>Definition, representative measures and items</i>
Social support	<p><i>Definition.</i> Perceived social support from interpersonal ties e.g. family, friends, significant others (Cohen & Wills, 1985; Zimet et al., 1988).</p> <p><i>Representative measure(s).</i> Perception that a strongly supportive person is available (Cohen & Hoberman, 1983).</p> <p><i>Representative item(s).</i> “I know someone who I see or talk to often with whom I would feel perfectly comfortable talking about any problems I might have ...” (Cohen & Hoberman, 1983).</p>
Residence	<p><i>Definition.</i> Accommodation, housing, living arrangement, on- or off-campus.</p> <p><i>Representative measure(s).</i> Type of residence.</p> <p><i>Representative item(s).</i> Rented flat/apartment, residential college.</p>

Table 2*Definitions of Outcomes Grouped into Distinct Research Domains: Academic Success and Mental Health*

First-year students' academic success	First-year students' mental health
Grade-point average [GPA]	Adaptation
Subject pass rate [SPR]	Adjustment
Intention to persist	Anxiety
Goal commitment (to finish a bachelor's degree)	Coping
	Depression
	Loneliness
	Psychological distress

3.3.4.2 Search strategy.

The search for eligible studies was conducted in four stages, as follows:

Stage 1. Search of databases for primary articles, theses, or dissertations.

Stage 2. Screening titles and abstracts for relevance and an inter-screener reliability test.

Stage 3. Examination of full texts against criteria.

Stage 4. Web of Science notification and subsequent (2020) full search of databases.

Stage 1. The first author developed and implemented the search strategy with assistance from a senior research librarian, and with reference to Petticrew & Roberts (2006). The range of dates for the search was fixed from 1993 with a final search in February 2020. The author sought published peer-reviewed studies and unpublished theses or dissertations in English. Including unpublished, “grey”, literature in systematic reviews reduces the risk of publication bias. Studies with statistically non-significant findings may not be accepted by editors of peer-reviewed journals, or even submitted (Petticrew & Roberts, 2006, pp. 231 - 232).

Quantitative studies only were considered eligible, since the purpose of the review was to ascertain the strength of empirical evidence. However, the author read qualitative studies and literature reviews to assist in deciding search terms and informing final criteria for inclusion.

Search terms were developed from the specific demographics of the university student population of interest, social support, residence, academic success, and mental health. No theory guided or influenced the search, indeed, five different theories were later identified as underlying the final eligible studies. Terms were formed by adjectives or derivatives of the inclusion criteria and accepted definitions, and combined with Boolean operators and asterisk wildcards. Table 3 presents the search terms. Brackets enclosing terms indicate separate columns in the logic grids used.

Table 3

Search Terms, Boolean Operators, and Asterisk Wildcards

“university student”

(“tertiary student*” OR “university student*” OR “college student”)

(“first year” OR commencing OR new OR fresh*)

(international OR foreign) OR (rural or regional)

“social support”

(“social support” OR “tangible support” OR “practical support” OR “material support”

OR “apprais* support” OR “emotional support” OR “perceived support”)

“residence”

(residence OR accommodation OR housing OR dwelling OR lodging OR “student

village” OR “communal residence” OR “communal dwelling” OR “residential college”

OR “residential hall” OR “share-house*” OR flat* OR unit* OR apartment)

“academic success”

(“academic success” OR “academic performance” OR “academic achievement”)

“mental health”

(“mental health” OR “well-being” OR anxiety OR depression OR “psychological

resilience” OR adjustment)

The academic search engines and bibliographic databases (ASEBDs) explored were: Cochrane Library of Systematic Reviews, Education Research Complete, EMBASE, ERIC Educational, Google Scholar, ProQuest Dissertations and Theses Global, Psychology and

Behavioral Sciences, PsycINFO/PsycLIT, SCOPUS, and Web of Science. EBSCO provided ongoing alert notifications of any new articles in Education Research Complete until October 2018, and Web of Science until February 2020.

All references were exported online to a reference citation-manager (“Endnote”) for categorisation. Categorised references were counted in preparation for completing the “Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2009 Flow-Chart” (Moher et al., 2009). The search yielded 613 references. The reference citation-manager identified 143 duplicates, which were discarded.

Stage 2. The author screened the remaining 470 titles and abstracts for some relevance and compiled two lists of studies. List 1 comprised a sample of 48 studies randomly selected (Belur et al., 2018) from the 470 for a test of the author’s screening reliability. List 2 comprised 40 studies selected from the remaining 422 (470 less 48).

The researcher gave a peer List 1 and the inclusion and exclusion criteria for relevant studies (see Table 4).

Table 4*Inclusion and Exclusion Criteria for Studies of University Students*

Included	English language publication	Dated: 1993-2020
Domains	Academic success and/or mental health, and social support	
Population demographics	First-year international or relocated national university students, aged 17 - 20 years, living in apartments, houses, halls, or colleges	
Excluded	Non-English language publication	Dated: prior to 1993
Domains	Social support unrelated to academic success and/or mental health	
Population demographics	Second or subsequent year university students, aged under 17 years or over 20 years, living at home or in a private residence with older adult(s), e.g. "home-stay"	

Peer and author independently screened titles and abstracts of the 48 sampled studies in List 1, using the same inclusion and exclusion criteria. Inter-screener reliability, in selecting studies, was 83.33%. Screeners discussed differences and agreed on the inclusion and exclusion of each study. Screeners agreed that five of the 48 studies on List 1 were sufficiently relevant to the research questions to be examined further.

The five studies, resulting from the inter-screener reliability test, were added to the 40 in List 2, selected by the author. The author read the full texts of 45 studies to investigate eligibility for inclusion in the current review.

The 45 studies comprised 29 articles published in peer-reviewed journals and 16 doctoral theses published on-line. The researcher created two separate "libraries" in the reference-citation manager. One "library" contained the 29 journal articles and the other, the 16 theses.

Stage 3. The author examined the reference lists of the articles and theses for any potentially eligible studies not found by the searches. The main texts were read and relevant data extracted. Data were quantified for each study and entered in an Excel spreadsheet. The author scored the number of criteria each study met in relation to the two outcomes together, and to academic success and mental health separately. Scores were converted to percentages of the desired total. The cut-off for potential eligibility was set at 70%. Sixteen studies scored 71 - 83% and were further examined.

The 16 studies were rated on spreadsheets according to the number of criteria each met to reject or retain Hypothesis One (excluding residence) and/or Hypothesis Two (including residence). Nine studies, including two which sampled international students, did not include one of the following essential criteria for answering one or both research questions:

1. population age-range (17 - 20 years),
2. social support as a predictor, and
3. indicator(s) of academic success, and/or mental health as outcome(s)

The researcher excluded the nine studies, retaining seven.

Stage 4. There was no positive result from an alert notification requested of the Web of Science Core Collection for studies with rural, first-year university students. A final search, conducted on 18th February 2020, of the databases listed (see Stage 1 above) also yielded no additional relevant studies.

3.3.4.3 Selection of studies.

Selection of studies used the following required criteria: (a) original quantitative research; (b) reported in English-language articles published between 1993 and 2020; (c) published in peer-reviewed journals or doctoral theses identified in the “grey” literature; (d) sample first-year university or college students, aged 17 - 20 years, relocated from abroad or within a country; (e) include statistically standardised or unstandardised measures of the

predictor social support and the outcomes academic success and/or mental health;

(f) investigate any association of social support with residences for relocated students.

The following modifications were made to the original criteria for eligibility in this review. First, the original criteria included international, regional, or rural for the population of students; and type of residence or living arrangement. However, the search yielded no studies of international students specifically, and only one study, a thesis (Bitz, 2013), sampled rural students. Bitz (2013) met the criteria used in the critical appraisal, including those of the JBI Checklist, 2017. The thesis was listed in the database ProQuest Dissertations and Theses. The study was published subsequently as a book chapter (Bitz, 2014).

Second, first-year students who had left home and relocated for their tertiary education were the primary interest of this systematic review. Therefore, international, regional, and rural were modified conceptually and operationally to relocated. In addition, the author interpreted residing in college, or on-campus, as indicators of relocation when not explicit.

Third, some of the included studies referred to students residing on-campus or off-campus rather than to specific types of residence. Type of residence was modified such that on-campus was interpreted as a communal residence and off-campus as a private, small-occupancy residence.

Studies eligible for inclusion in the critical appraisal stage of this review sampled US national students with differing ancestral ethnicities residing in colleges or on-campus.

Figure 1 presents the completed PRISMA flow chart (Moher et al., 2009) showing the method and result of the systematic search for the seven studies found eligible for inclusion in this review.

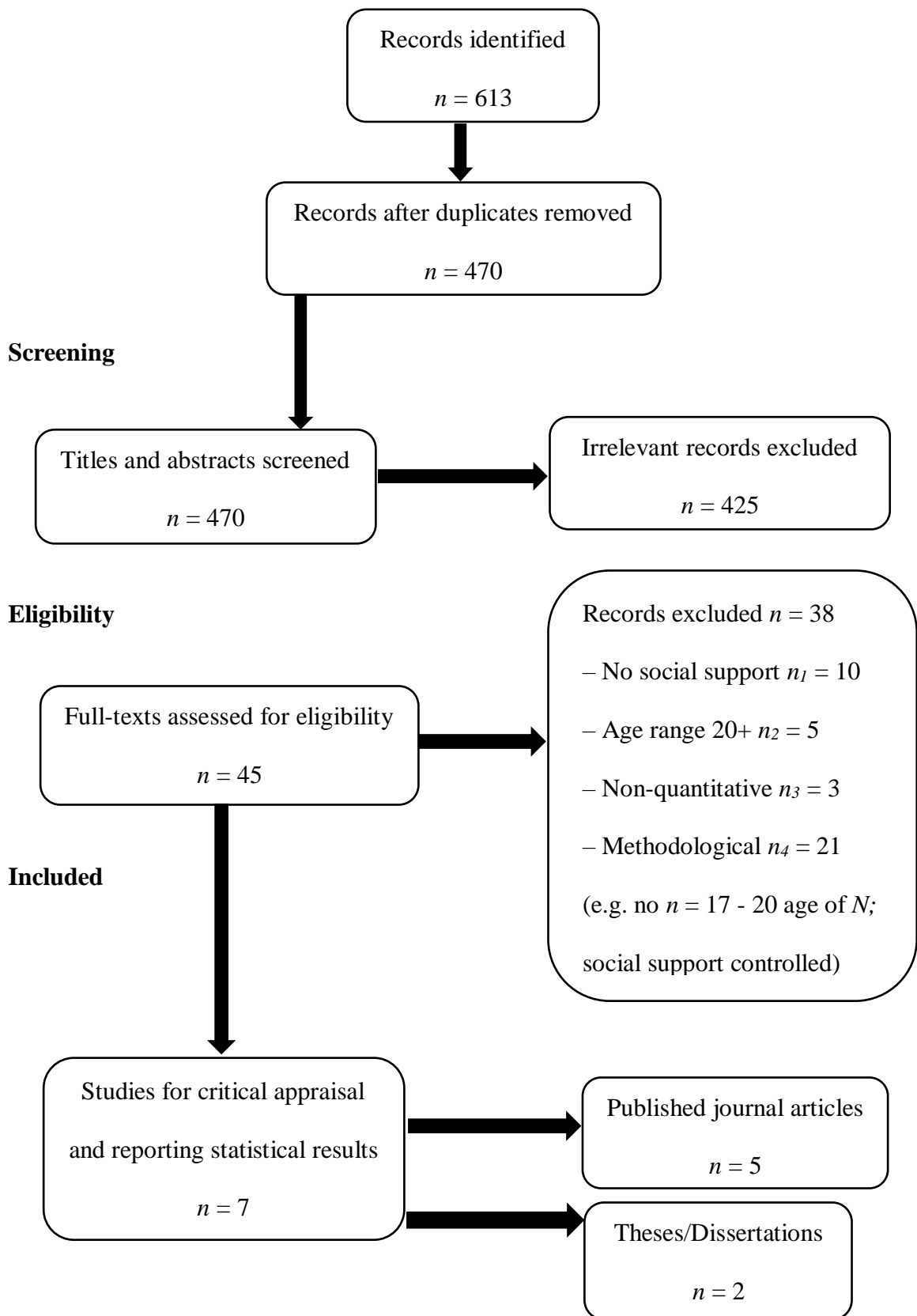
Identification

Figure 1. PRISMA (Moher et al., 2009) flow chart of study selection

In sum, titles and abstracts of 470 papers were screened, the full texts of 45 read, 16 assessed, and seven (five articles and two theses/dissertations) finally selected for inclusion in this review. Frequencies of studies related to the hypotheses were as follows.

Hypothesis 1. Studies investigating association of social support with (a) academic success ($n = 3$) and (b) mental health ($n = 6$).

Hypothesis 2. Studies investigating associations of social support with residence ($n = 3$).

3.3.4.4 Collection of key data.

The search yielded no studies of international students specifically, and only one study of rural students (Bitz, 2013). Key data from each study were extracted, summarised, and entered in an Excel spreadsheet. Extracted data were recorded according to Population Intervention Context Outcomes (PICO) (Petticrew & Roberts, 2006): geographic location, population characteristics, sampled groups, use of control group(s), measured predictor (social support) and outcomes (academic success and mental health). In addition, study design/method, the objective(s) as stated by authors, ethics approval, and funding sources were also recorded. Further information was added iteratively during the synthesis of findings.

3.3.5 Results.

3.3.5.1 Characteristics of selected studies.

The total of seven selected studies consisted of five articles published in peer-reviewed journals, and two doctoral dissertations, one of which was later published in a book chapter (Bitz, 2014). All studies used a cross-sectional design and were conducted in the United States of America (USA). No Australian studies met the selection criteria.

3.3.5.2 Critical appraisal.

To achieve the greatest possible reliability in the results, the quality of each study was assessed with an appraisal of risk of bias (Petticrew & Roberts, 2006, p. 126). Second, potential sources of homogeneity and heterogeneity between the seven studies were examined (Petticrew & Roberts, 2006, p. 215).

3.3.5.2.1 Risk of bias.

Risk of bias may arise from unstated non-approval of an institutional ethics committee, source of funding, selection for publication, geographical location, or methodology. The relevant data were extracted from the studies and recorded. The results are given below.

Ethics approval. The seven studies had the necessary ethical approvals.

Funding. Researchers' universities funded six studies. Strom and Savage (2014) disclosed a committee of the University of Hawai'i as an external source.

Publication. Peer-reviewed journals published five studies. A dissertation and theses database published two theses online (Bitz, 2013; Sutor, 2014).

Location. All studies were conducted in the USA. Location presented a potential geographical bias and limitation based on USA population characteristics and typical residences for university students. These are discussed.

Methodology. All studies met the appraisal criteria for methodological risk of bias of the Joanna Briggs Institute (JBI) Critical Appraisal Checklist for Analytical Cross-Sectional Studies 2017 (Moola et al., 2017).

3.3.5.2.2 Reliability: Homogeneity and heterogeneity.

All studies were sufficiently homogenous to yield reliable results. Potential sources of homogeneity or heterogeneity were demographics of the population samples; design;

measures of social support; and analysis of results. Each potential source was examined.

Population demographics. USA national male and female university students of differing ancestral ethnicities comprised the population samples of each study, except one, which included an insignificant six ($N = 401$) international students. The given ancestral ethnicities were the same across all studies. Population samples were within the age-range 17 - 20 years, except for two studies. One study had a range of 17 - 21 years ($M = 18.38$) and the other of 18 - 24 years ($M = 18.86$) (see Table 7b, below). Based on the means, the author had decided to retain the studies.

Most large, research universities in the USA require, expect, or recommend that first-year students reside in some type of communal residence, for example, an on-campus hall (University of Nebraska-Lincoln, 2019). However, exemptions may be given to, for example, students living at home with parents. The students in five of the seven studies were either all, or most, residing on-campus. The students in two studies also resided on-campus but were compared with a group residing at home or with others. None of the studies gave data for students residing alone.

Design. All studies were of quantitative, cross-sectional design using either paper or online questionnaire surveys.

Measures of social support. The studies used three different valid and reliable questionnaires to measure perceived available social support from various sources. The three questionnaires were The Multidimensional Scale of Perceived Social Support (MSPSS) (Zimet et al. (1988), Perceived Social Support Scale (PSSS) (Procidano & Heller, 1983), and Inventory of Parent and Peer Attachment (IPPA) (Armsden & Greenberg, 1987).

A fourth measure was constructed by the researchers (S&S) (Strom & Savage, 2014). The measure consisted of two subscales, namely, support from family and support from friends. Cronbach's alphas for the two subscales were .68 and .74 respectively at administration prior to students' entry to university, and .81 and .75 respectively at the end of

the academic year. The author appraised the alphas as showing an acceptable reliability of the measure.

The first column of Table 5 shows the sources of perceived available social support pertinent to the systematic review, and is cross referenced with the same sources found in each of the four measures.

Table 5

Comparison of Social Support Sources Pertinent to the Systematic Review with Those Measured in the Four Questionnaires:

The Multidimensional Scale of Perceived Social Support (MSPSS); Perceived Social Support Scale (PSSS); Inventory of Parent and Peer Attachment (IPPA); and Strom & Savage (S&S)

<i>Social Support Sources</i>	<i>MSPSS</i>	<i>PSSS</i>	<i>IPPA</i>	<i>S&S</i>
	3 sub-scales, 12 items	2 sub-scales, 20 items	2 parts, 48 items	2 sub-scales, 5 items
Family/Significant Others	*	*	*	*
Friends	*	*	*	*

Note: * = Included

Each questionnaire included support from Family/Significant Others and Friends (see Table 5), as required for homogeneity.

Frequencies of studies related to the research questions are as follows. Studies were found investigating the association of relocated first-year university students' perceived available social support with (a) academic success ($n = 3$), (b) mental health ($n = 6$), and residence ($n = 2$).

The three investigations of the association of perceived available social support with academic success used measures of academic adjustment, intention to persist, or commitment to the goal of graduation. All three found a positive effect. Shorter term measures, such as pass-rate or GPA, were not

used. Six of the seven studies examined the relationship of perceived available social support with mental health. The studies' authors used measures of one of the following constructs, namely, psychological, or social adjustment, depression, loneliness, and psychological distress. All six studies found perceived available social support increased as mental health increased. The two studies examining perceived available social support associated with residence found a tendency for greater social support in on-campus compared with off-campus residences and no differences in amount between halls of small, medium, and large capacity.

Tables 6, 7, and 8 present the primary author(s), geographic location, year, population age-range and descriptors, and the results obtained. Table 9 follows, showing the statistical tests used to obtain the results of each study. A detailed examination of the studies, the results, and implications, is presented in the discussion

Table 6*Primary Results of Included Studies: Social Support (SS) and Academic Success*

Primary author	Geographical location	Year	Students' years of age	Students' descriptor	Primary results
Katz, S.	USA mid-west (public, large, urban)	2017	17 – 20	National	SS (family) positive effect on Academic adjustment SS (friends & significant others) no effects on Academic (or Social) adjustment
Nicpon, M. F.	USA south-west (large, urban)	2006	17 - 20 (<i>M</i> = 18.30)	National	SS positive effect on Persistence decisions Women perceived greater SS than did men
Strom, R. E.	USA western	2014	17 - 19 (<i>M</i> = 17.74)	National	SS (family & friends) initial & subsequent positive effects on Commitment to graduate Commitment to graduate positive effect on Intent to persist

Table 7*Primary Results of Included Studies: Social Support (SS) and Mental Health*

Primary author	Geographical location	Year	Students' years of age	Students' Descriptor	Primary results
Bitz, A. L.	USA mid-west Lincoln, Nebraska	2013	18 - 19 (<i>M</i> = 18.42)	National Rural cf. urban	Rural students: SS positive direct & indirect effects on Adjustment Urban students: SS positive indirect effect on Adjustment
Brandy, J. M.	USA mid-west (private, religious affiliated)	2015	18 - 20	National	SS inversely related to Stress SS inversely related to Depression
Katz, S.	USA mid-west (public, large, urban)	2017	17 – 20	National	SS (all) positive effect on Social adjustment SS (friends & significant others) no effects on Social (or Academic adjustment)
Li, S. T.	USA mid-west (private, large, urban)	2014	17 - 21 (<i>M</i> = 18.38)	National	SS (parental) positive direct & indirect effects on Psychological adjustment SS (peer) positive effect on Psychological adjustment
Nicpon, M. F.	USA south-west (large, urban)	2006	17 - 20 (<i>M</i> = 18.30)	National	SS inversely related to Loneliness Women perceived greater SS than Men
Suitor, D .T.	USA mid-west west & south-east lower Michigan & east central Kansas	2014	18 - 24 (<i>M</i> = 18.86)	National	SS inversely related to Psychological distress

Table 8

Primary Results of Included Studies: Social Support (SS) and Residence

Primary author	Geographical location	Year	Students' years of age	Students' descriptor	Primary results
Nicpon, M. F.	USA south-west (large, urban)	2006	17 - 20 (<i>M</i> = 18.30)	National	Tendency for greater SS on- than off-campus
Suitor, D. T.	USA mid-west west & south-east lower Michigan & east central Kansas	2014	18 - 24 (<i>M</i> = 18.86)	National	SS unrelated to hall capacity (small, medium, large)

Tables 9 presents the statistical analyses and results.

Table 9

Reported Results of Regression Analyses Effect Size (r^2_{change}) of Social Support (SS) on Academic Success, Mental Health, and Association with Residence

Academic success											
Primary author	Year	<i>N</i>	Variable entry	r^2_{change}	B	SE B	β	<i>t</i>	<i>p</i>	95% CI	<i>F</i>
Nicpon, M. F.	2006	304	Hierarchical								<i>F</i> (3,328)
			SS inc. Loneliness	.282*							= 42.93
Strom, R. E.	2014	101	Hierarchical								
			SS friends		.162	.097	.177	.767			
			SS family		.227	.130	.198	.660			
			On Commitment to graduate		.608	.070	.719***	.660	.001		
Mental health											
Bitz, A. L.	2013	188	Structural equation model	.38**			.12*		.05		
Brandy, J. M.	2015	235	Stepwise				.14				
Katz, S.	2017	241	Stepwise				.23**		.01		
Li, S. T.	2014	197	SS parents				.32**		.01		
			SS friends				.28**		.01		
Suitor, D. T.	2014	690	Hierarchical		2.71	.28	.36***	9.76	.00	[-3.26, -2.17]	
Residence											
Primary author	Year	<i>N</i>	Test				Result				
Nicpon, M. F.	2006	304	MANOVA and Wilks' Lamda				No significant effect/association				
Suitor, D. T.	2014	690	Hierarchical multiple regression				No significant effect/association				

* $p = .05$ ** $p = .01$

3.3.6 Summary.

This systematic review attempted to synthesise 27 years of research with first-year international and RRR university students aged 17 - 20 years, investigating (a) associations of social support with academic success and mental health; and (b) the association of social support with type of term-time residence.

The search yielded no Australian studies. The researcher read the full texts of 45 articles and theses. The original criteria for eligibility were modified but the aim and focus of this systematic review were maintained. Seven studies conducted in the USA met most (for example, six of seven) of the criteria for inclusion in the review. The seven studies used measures of perceived available social support.

3.3.7 Discussion.

The statistical results of the studies were applied to the first hypothesis that there will be strong evidence for an association of social support with the academic success and mental health of relocated first-year students, aged 17 - 20 years. The hypothesis was accepted.

The seven studies of relocated, first-year, USA students in this review used measures of perceived available social support constructed on relationships as sources, which seems to represent a trend of the past twenty years or so. Such studies would be helpful to university counsellors. Investigations which could add to the literature would be those constructed on whether the support was material or tangible, involved the appraisal of persons whose help and advice could be trusted, and included persons with whom to join for extra-curricular and social activities (belonging). Concomitantly, an understanding of the kinds of social support first-year students need could have practical application in the student housing market as well as assisting students, parents, guardians, counsellors, and others. For example, architectural features and designs of housing encourage or limit interactions between students (Bronkema & Bowman, 2017).

Of the outcomes measuring academic success, namely, GPA, psychological

persistence, and academic adjustment, only one study used GPA while three used intention to persist, or academic adjustment.

The study which used GPA (Nicpon et al., 2006) did not find an association with perceived available social support. However, the meta-analysis of 241 datasets across thirteen years (1997 - 2010) of research with university students by Richardson et al. (2012) did so. Thus, the conclusion could not be drawn from this systematic review that there is no association between perceived available social support and relocated first-year students' GPA.

The study by Nicpon et al. (2006) was also one of two finding small positive associations of social support with the medium-term indicator of academic success, namely, intention to persist. A third study (Katz, 2017) investigating perceived available social support and academic success also found a small positive association ($\beta .23, p < .01$) using academic adjustment as the outcome. Each study used scales with good reliability measured with Cronbach's Alpha. Thus, the review found some evidence that perceived available social support has small direct and indirect positive associations with indicators of medium-term first-year students' academic success.

This review found the strongest weight of evidence with the small, positive association of perceived available social support on several indicators of students' mental or psychosocial health (see Table 8, above). With evidence of the associations of perceived available social support on measures of academic success and mental health, it is noteworthy that the first-year students facing the greatest academic and psychosocial challenges at university are those from abroad. Nevertheless, all students leaving home and relocating for higher education experience an abrupt depletion in their perceived available social support (Hechanova-Alampay et al., 2002). Finding studies investigating for any association between social support and relocated students' type of residence was the second aim of this review.

The second hypothesis that there is no evidence of an association of relocated, first-year students' perception of available social support and type of term-time residence could be neither accepted nor rejected unequivocally.

Universities may require on-campus residence for at least the first year of tertiary education. The websites of three universities included in this review stated such a requirement. Bitz (2013), for example, conducted the study at the University of Nebraska-Lincoln, Nebraska, where first-year students reside on-campus regardless of geographical distance from home. Any associations of perceived available social support and various types of residence could not be conducted with first-year students at universities with such a policy.

Noteworthy, however, was that Bitz (2013) found different effects of social support on measures associated with mental health (adjustment) for rural compared with urban students residing on-campus. Bitz (2013) concluded that for rural students, there was a direct effect of social support on adjustment in addition to an effect mediated by well-being. For urban students, however, only the effect mediated by well-being was found. The finding was interpreted as an indication of intrinsic differences between rural and urban populations of first-year students (Bitz, 2013).

Two of the seven studies did indeed seek an association of social support with type of residence. One study found no association between residential hall capacity (small, medium and large) and social support. Social support did not differ according to the number of students in a hall (Suitor, 2014). Nicpon et al. (2006) compared students residing in a hall on-campus with those living with family, or friends off-campus. The differences between the two groups in levels of social support, loneliness, GPA, and academic persistence were significant. However, since they accounted for only a very small amount of variance, the authors concluded that, for their sample, GPA was the greatest discriminator, that is, students residing in a hall on-campus had considerably higher GPAs than students residing off-campus. Future research could usefully investigate further the differences in outcomes associated with perceived available social support between first-year students residing on-campus or in large university-affiliated residences and those residing with peers in small occupancy residences off-campus.

3.3.8 Strengths and limitations.

A strength of the review was the inclusion of two studies written as unpublished doctoral dissertations/theses extracted from the “grey” literature. The studies provided more detailed information than that available in word-limited journal articles. The review was also strong in rigour and focus. In finding such a limited number of investigations related to the research questions, the implication that more research is needed becomes clear.

A major limitation of this systematic review was the scope. Seven English-language studies were found eligible for inclusion. All were quantitative, cross-sectional, survey studies. The search identified no longitudinal studies. Qualitative and mixed-method studies were excluded for the practical reasons of consistency, simplicity, and a manageable number of studies. However, the review lacks the perspectives and findings of researchers using other designs.

While all studies measured perceived available social support as a predictor, not all studies included short- and medium-term measures of academic success, and a mental/psychological health measure. As a result, only one study used GPA (short-term) as an outcome and, unlike the meta-analysis of Richardson et al. (2012), found no association with perceived available social support. A further limitation was geographic region since the eligible studies were conducted in the USA, although in different states. Australia endeavours to increase the populations of both international and RRR students studying at its universities. The needs of such relocated students and the factors associated with their academic success, mental health, and well-being is a field open for Australian research.

3.3.9 Conclusion.

In conclusion, for relocated first-year university students, this review found evidence of an association of perceived available social support with (a) academic success measured by intention to persist with tertiary education but not measured by GPA; and (b) a stronger weight of evidence that it was associated with various measures of mental and

psychosocial health.

This review found no evidence of an association of social support with relocated first-year students' specific types of residence. The finding appears to counter the claims of universities advertising the social benefits of large residences for students, such as halls. Such claims might be based on many years of experience rather than supposition, however, further investigation appears warranted to provide valid and reliable evidence. Australian research to investigate levels and determinants of social support within various types of in-term residence would be useful for students, parents, universities, accommodation providers, and counsellors.

3.3.10 List of studies included in the systematic review.

Bitz, A. L. (2013). *Does being rural matter? The roles of rurality, social support, and social self-efficacy in first-year college student adjustment*. (Doctoral dissertation).

University of Nebraska-Lincoln, USA.

<http://gateway.proquest.com/open> (Accession number: 2013-99020-097).

Brandy, J. M., Penckofer, S., Solari-Twadell, P. A., & Velsor-Friedrich, B. (2015). Factors predictive of depression in first-year college students. *Journal of Psychosocial Nursing and Mental Health Services*, 53(2), 38-44.

<https://doi.org/10.3928/02793695-20150126-03>

Katz, S., & Somers, C. L. (2017). Individual and environmental predictors of college adjustment: Prevention and intervention. *Current Psychology: A Journal for Diverse Perspectives on Diverse Psychological Issues*, 36(1), 56-65.

<http://dx.doi.org/10.1007/s12144-015-9384-0>

Li, S. T., Albert, A. B., & Dwelle, D. G. (2014). Parental and peer support as predictors of depression and self-esteem among college students. *Journal of College Student Development*, 55(2), 120-138.

<http://dx.doi.org/10.1353/csd.2014.0015>

- Nicpon, M. F., Huser, L., Blanks, E. H., Sollenberger, S., Befort, C., & Kurpius, S. E. R. (2006). *Journal of College Student Retention: Research, Theory and Practice*, 8(3), 345-358. <https://doi.org/10.2190/A465-356M-7652-783R>
- Strom, R. E., & Savage, M. W. (2014). Assessing the relationships between perceived support from close others, goal commitment, and persistence decisions at the college level. *Journal of College Student Development* 55(6), 531-547. <http://dx.doi.org/10.1353/csd.2014.0064>
- Suitor, D. J. (2014). *Social support, sense of community, and psychological distress among college students: Examining the impact of university housing units*. (Doctoral dissertation). University of Kansas, USA. <http://gateway.proquest.com/open> (Accession number: 2014-99020-259).

3.4 Transition from Study One to Study Two

3.4.1 Introduction.

The systematic review found some evidence of small but positive associations of social support with first-year undergraduates' medium-term academic success, and mental health. The large-scale systematic review and meta-analysis of Richardson et al. (2012) found consistent, small, positive associations of social support with short-term academic success and mental health. The paucity of studies eligible to include in the systematic review identified a current lack of research comparing different types of residence for the level of social support relocated undergraduates perceive as available. In addition, the review found a methodological difficulty. Standardised questionnaires, used by most researchers since 1993, measured perceived available social support from family and peers, that is, levels from these sources rather than levels in kind. Thus, the results of Study One provided evidence for a necessary, operational concept of social support with a corresponding construct to measure undergraduates' perception of the kinds of social support available when far from home. A description of the process is given in this section beginning with a comparison of operational definitions of social support.

3.4.2 Comparison of definitions of social support.

Actual social support as social support received, differs from perceived social support and may be weakly related (Melrose, 2015). Actual social support may be observed objectively, while perceived social support is psychological since it pertains to the individual and is subjective. Perception that social support is available if, and when, needed is a future oriented concept affecting behaviour in the present (Melrose, 2015). Sources of perceived available social support may be parents, families, and peers. Kinds of perceived available social support may be tangible aid (for example, a meal when ill, transport, a loan), appraised

(for example, helpful personal interactions, such as advice and informal counselling), belonging (for example, sharing activities with one or more individuals, or groups).

The results of Study One identified a lack of research measuring the perception of physically available tangible, appraised, and belonging support among undergraduate students. Following this chapter are the results of the cross-sectional studies using two independent, undergraduate cohorts.

3.4.3 Conclusion.

Recent and current research seeks the effects on first-year university students of perceived available social support from various sources, for example, support from family, peer support and/or support from previous and current friends. The review identified a gap in the literature of kinds of perceived, available social support.

The prologue to Study Two in Chapter 4 which follows, outlines the residential context for relocated university students in South Australia and other Australian states and territories.

Chapter 4. Relocated First-Year University Students: Type of Residence, Social Support, Greeting Network, Meaning-in-Life, Academic Success, and Mental Health

4.1 Prologue

Universities in Adelaide each have an accommodation service to assist relocating students in securing a term-time residence. However, some students prefer to make their own arrangements.

Typically, the types of residence available for students are a single or small occupancy flat/unit; a room in a share house or rooming house with a small number of other students; a single or double room in a dormitory or apartment in a student village; and college. However, "home-stay" accommodation, where students live with a couple or family, is also available.

Students lease rental flats/units and houses privately. Rentals require all independent living skills including paying for utilities, and commuting to university. Students may be exploited and most complaints from students come from those renting (Obeng-Odoom, 2012).

Universities own and manage share houses and "villages". Such residences require fewer independent living skills than private rentals and are either on-campus or within walking/short cycling distance of university with its facilities. Commercially owned and managed "villages" are similar to those managed by universities and are also within walking/short cycling distance of university. Leasing agreements for university and commercial "villages" include cost of utilities and WiFi.

Residential colleges affiliated with The University of Adelaide (UofA), and the collegiate Hall of The Flinders University of South Australia (FUSA), were established in the early to mid-twentieth century. The historically faith-based, independent colleges are an approximate 15-minute walk through parklands from campuses of UofA and The University of South Australia (UniSA) in the Central Business District (CBD). Roseworthy College of UofA and Flinders Hall are on-campus.

The colleges and Hall are residences for continuing, distinctive communities with

sophisticated social/organisational structures on the Oxbridge model. A live-in Principal oversees daily affairs and is supported by a governing body and pastoral, academic, administrative, cleaning, dining hall, and grounds staff. Students contribute to the community from the lowest level of, for example, eating with others at mealtimes and voting for a student committee and president, through to playing in sporting teams and/or undertaking responsibilities on the committee. Senior undergraduates may contribute as a Resident Assistant (RA), tutor, or as Student President. Residential agreements include all costs, and students may apply for scholarships. College residents typically return home during breaks in the academic year but some remain at a reduced cost.

This chapter reports findings from a study of relocated first-year students, aged 17 - 20 years, at three public universities in Adelaide, South Australia. The cross-sectional study investigated effects on students' academic success and mental health of social variables associated with type of residence, and meaning-in-life.

4.2 Statement of Authorship

Statement of Authorship

Title of Paper	Relocated First-Year University Students: Type of residence, social support, grieving network, meaning-in-life, academic success, and mental health.	
Publication Status	<input type="checkbox"/> Published <input type="checkbox"/> Submitted for Publication	<input type="checkbox"/> Accepted for Publication <input checked="" type="checkbox"/> Unpublished and Unsubmitted work written in manuscript style
Publication Details	N/A	

Principal Author

Name of Principal Author (Candidate)		
Contribution to the Paper	Conception, design, aim, data acquisition, analysis, interpretation, preparation of manuscript, and revision following submission in a peer-review journal.	
Overall percentage (%)	100%	
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in this thesis. I am the primary author of this paper.	
Signature		Date: 08/11/22

Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

- i. the candidate's stated contribution to the publication is accurate (as detailed above);
- ii. permission is granted for the candidate to include the publication in the thesis; and
- iii. the sum of all co-author contributions is equal to 100%. Use the candidate's stated contribution.

Name of Co-Author	Helen Winefield	
Contribution to the Paper	Supervised, advised on the preparation for publication in a peer-reviewed journal, and reviewed drafts. (10% contribution)	
Signature		Date: 8/11/22

Name of Co-Author	Peter Strelan	
Contribution to the Paper	Co-supervised, reviewed statistical analysis and format of results. (10% contribution)	
Signature		Date: 8/11/22

Please cut and paste additional co-authors:

4.3 Manuscript of Paper for Publication

4.3.1 Abstract.

Aim. Aimed at exploring academic and mental health outcomes for relocated first-year university students (17 - 20 years), this study investigated perceived available social support and other social factors in three types of residence, together with intrinsic meaning-in-life.

Method. Participants ($N = 121$) from three universities completed an online survey of demographics and measures of perceived available social support, domestic support, oral English use, greeting network, meaning-in-life (presence and search), pass rate, intention to persist, and psychological distress.

Results. International participants resided in flats/houses (56.5%), “villages” (28.2%), and colleges (15.4%). Regional, rural, and remote (RRR) Australian participants resided in colleges (52.3%), flats/houses (33.9%), and “villages” (13.8%). Frequency of oral English use in international participants’ residences showed no association with outcomes. For all relocated participants, levels of perceived available social support, domestic support, and greeting network were lowest in flats/houses, highest in colleges, and not significantly different between flats/houses and “villages”. Perceived available social support showed a small, positive association with pass rate and moderate, inverse association with psychological distress. Domestic support was not associated with outcomes. Greeting network showed a moderate, inverse association with pass rate. Presence of meaning-in-life showed a moderate, positive association with intention to persist and moderate, inverse association with psychological distress. Search for meaning-in-life had a moderate, positive association with psychological distress.

Conclusion. Type of residence determined level of perceived available social support, domestic support, greeting network, and oral English use. As perceived available social support increased, pass rate increased while psychological distress decreased. As greeting network increased, pass rate and psychological distress decreased. As presence of meaning-in-

life increased, intention to persist increased and psychological distress decreased. As search for meaning-in-life increased, psychological distress increased.

Key words. relocated first-year students, type of residence, social support, meaning-in-life, academic success, mental health

4.3.2 Key points.

What is known.

1. As emerging adults, relocated first-year international and RRR tertiary students (17 - 20 years) are at risk of mental illness affecting their academic success.
2. Perceived available social support buffers effects of relocation stressors on mental health, and contributes directly to academic success.
3. Meaning-in-life is associated with mental health.

What this paper adds.

1. Type of residence determines relocated students' level of perceived available social support, domestic support, greeting network, and oral English use.
2. Increases in perceived available social support are associated with increased pass rate and decreased psychological distress, while increases in greeting network are associated with decreased pass rate and psychological distress.
3. The presence of meaning-in-life is positively correlated with perceived available social support, and increases are associated with increased intention to persist and decreased psychological distress, while increases in search for meaning-in-life are associated with increased psychological distress.

4.3.3 Introduction.

Here presented are findings from a study of relocated first-year students, aged 17 - 20 years, at three public universities in Adelaide, South Australia. The cross-sectional study aimed to investigate factors associated with such students' academic success and psychological distress, and the role of their type of residence

Until the beginning of the global COVID-19 pandemic in 2020 and following it, thousands of students left homes and communities for university. International students enrolled in Australian universities comprised 27% (Australian Department of Education and Training [DET], 2018) of all first-year students. Australian students from regional, rural, and remote (RRR) locations comprised a further 21.5% (DET, 2017). Thus, nearly half of all first-year university students relocated.

Research with international students has sought predictors of adjustment to unfamiliar academic, social, and cultural environments especially in a Western host-country (Skromanis et al., 2018; Vasilopoulos, 2016). In contrast, research with RRR students has investigated financial, educational, and social difficulties associated with access to university, participation, and withdrawal (Wilson et al., 2013). To a greater or lesser extent, however, all relocated students meet greater accessibility, participatory, financial, academic, psychological, and socio-cultural challenges (Fleming & Grace, 2017; Napthine et al., 2019; Vasilopoulos, 2016; Wilson et al., 2016) than do their peers commuting to university from home.

Relocated first-year students, typically aged 18 - 20 years (Australian Trade and Investment Commission [Austrade], 2016; Napthine et al., 2019), are in the 18 - 25 years range of "emerging adulthood" (Arnett, 2004, pp. 3 - 8). Emerging adults have four key developmental tasks, namely, leaving home (Lapsley & Woodbury, 2016), laying foundations for a satisfying job or career, developing supportive peer-relationships (Seiffge-Krenke, 2016), and establishing personal meaning-in-life (Maysless & Karen, 2014; Trevisan et al., 2017) particularly in the inter-related spheres of work and romantic relationships (Cotton Bronk et al., 2009).

Emerging adults are less risk averse than at other stages of the lifespan (Somerville et al., 2010). Nevertheless, relocating from a familiar place to one unfamiliar and geographically distant is a stressful life-event (Sokratous et al., 2013). Personal meaning-in-life can assist with relocated students' coping and adjustment (Trevisan et al., 2017), as can caring support from others (Lee & Dik, 2017). However, while some relocated students may have attained a personal meaning-in-life while others search for one, all lose physical proximity to parents and friends, acquaintances, and peer-groups.

On arrival, relocated students seek to begin friendships (Wilson et al., 2016) and make acquaintances to re-establish social support. Such relationships may develop at university. However, students return daily to residences which may or may not facilitate social interactions and offer other kinds of support.

Relocated students secure accommodation in a host city either before or on arrival. South Australian universities' websites inform students of options ranging from single-occupancy private rentals through to buildings accommodating 500+ students.

Private rentals supply single and shared rooms in flats and houses, and require independent living skills. University or affiliated colleges provide first-year students dormitories of single rooms, shared facilities, domestic and other supportive services. Universities have constructed and manage multi-storeyed buildings ("villages") with single rooms in apartment style, while their share houses offer single rooms. Such residences may offer some domestic and other supportive services, and, similarly, "villages" built by commercial entities may do so. Relationships between designs of residences, students' academic success, and psychosocial health are complex (Bronkema & Bowman, 2017).

Residences designed for large numbers of students would appear to hold greatest potential for compatible students to meet, interact, develop networks, and access social support. However, capacity alone may not predict levels of social support perceived as available. For example, an unpublished doctoral study of first-year US college students determined that levels of perceived available social support in halls were similar across

capacities (small = -150, medium = 150 - 350, large = 350+) (Suitor, 2014).

Social support may consist of items or assistance (“tangible”), group companionship (“belonging”), or confidants with whom to discuss problems (“appraisal”) (Cohen & Hoberman, 1983). Social support enables individuals to obtain some resources lost through changes in life (Hobfoll et al., 1990), such as relocation.

The perception that support is available from friends and caring others affects students’ short-term (Richardson et al., 2012) and longer-term (Rabia & Karkouti, 2017; Tinto, 1993, p.122) measures of academic success, and mental health (Lau et al., 2018; Li et al., 2018; Rankin et al., 2018). Social support moderates or buffers psychological strain associated with changes in life (Cohen & Hoberman, 1983; Lee & Dik, 2017).

While confronted by increased stressors, relocated students are at risk of decreased available social support (Hechanova-Alampay et al., 2002). Parents have typically been not only the main source of social support for emerging adult students (Laible et al., 2004; Lau et al., 2018) but also of domestic support at home.

First-year students leaving home are unlikely to have had sole responsibility for performing the daily and regular domestic tasks that maintain physical and mental health. Such tasks include cooking, cleaning, laundering, and associated tasks such as shopping, paying for utilities, budgeting, and time-management (Forbes-Mewett & Sawyer, 2016).

The researcher found no studies investigating the effects on relocated, first-year students of the loss or maintenance of domestic support, yet food insecurity and health concerns related to poor nutrition are prevalent among tertiary students (Bruening et al., 2016; Cady, 2014; Gallegos et al., 2014; Hughes et al., 2011). Further, eating food with family or friends is associated with a sense of belonging (Dunbar, 2017), a sub-scale of social support. Communal meals necessarily require recognising and acknowledging others with whom there is a connection.

The eye contact of mutual recognition conveys a sense of belonging (Wesselmann et al., 2012). Relocation distances first-year students from existing groups and communities

where they are known and acknowledged. Humans are sensitive to behavioural acknowledgements which signal a connection, however tenuous, since well-being and ultimately survival depend on connection with others (Wesselmann et al., 2012),

After finding a residence and becoming oriented to location, relocated students prioritise establishing groups of friends and wider associations (Wilson et al., 2016). Students' co-residents might form a friendship group and/or a network of associations marked by recognition and greeting when out. No research with students and greeting network seems to exist. Yet such a greeting network might facilitate the development of friendships, including cross-cultural, and provide opportunities to use English for international students from non-English speaking backgrounds.

Proficiency in English is related to academic and social adjustment for international students (Robertson et al., 2000). Speaking English is more difficult than listening, has effects on oral participation in tutorials, including asking questions (Andrade, 2006), and improves with practice.

Relocation for tertiary education disrupts social factors for emerging-adult students which some, but not all, may perceive as a necessary part of their intrinsic meaning-in-life. Meaning-in-life may be defined as "...the sense made of, and significance felt regarding, the nature of one's being and existence" (Steger et al., 2006, p. 81). The presence and search for meaning-in-life are associated with the development and formation of personal identity and purpose (Mayseless & Keren, 2014). Search for meaning-in-life (SML) among emerging adults is associated with such disruptions as relocation for tertiary education, can precipitate questioning of values and beliefs, and is experienced as stressful (Webster et al., 2018). However, beginning in emerging adulthood, presence of meaning-in-life (PML) is a psychological resource strongly associated with general well-being and mental health across the life span (Steger et al., 2009).

The first year at university is critical for longer-term academic success (Cherastidtham et al., 2018; Li & Carroll, 2017). However, meeting both academic and daily living requirements may be beyond the coping abilities of some relocated first-year students (Denovan & Macaskill, 2013). Emerging adulthood is the developmental stage when serious mental health disorders occur (Kessler et al., 2007). Mental health difficulties, including stress, is one of the likeliest personal reasons which first-year students give for withdrawal from university (Harvey & Szalkowicz, 2017).

More RRR students withdraw from university than international and other first-year students (DET, 2018). However, the ultimate withdrawal of suicide was the subject of an investigation ordered by the Coroners Court of Victoria into 27 deaths of international students in the state between 2009 and 2015. The Coroners Preventive Unit (CPU) issued a report. With acknowledgement that the number of suicides was likely to have been greater than 27, the CPU recommended the collection of data to inform interventions aimed at assisting international students to engage with mental health services (“Coroner warns.” 2019).

Universities are generally aware of the need and advertise contact details for services such as counselling face-to-face, by telephone, or on-line at all hours. International students need assistance in overcoming psychological and sociocultural barriers to engaging with mental healthcare (Lu et al., 2014). A greater understanding of how best to encourage international first-year students to seek help early could also assist RRR students suffering anxiety, depression, and other symptoms indicative of relocation strain (Naphtine et al., 2019).

Mental health is related to academic success (Lipson & Eisenberg, 2018; Orygen, The National Centre of Excellence in Youth Mental Health [TNCEYMH], 2017). In terms of mental health, how students are coping may be measured by level of psychological distress. Completing a degree requires students to overcome obstacles and persist. Self-reported intention to persist is strongly associated with actual graduation (Morrow &

Ackermann, 2012; Savage et al., 2019). How students cope academically and succeed in achieving their long-term goal may be measured in the shorter-term by Grade Point Average (GPA) (Richardson et al., 2012) or, as in this study, the number of units taken and passed (Li & Carroll, 2017). Like intention to persist, university students self-reported and actual academic results correlate strongly (.90) (Sticca, et al., 2017).

The literature, reviewed above, lacked comparisons of relocated first-year international and RRR university students. However, there was evidence of direct and indirect effects of perceived available social support, international students' oral use of English, and meaning-in-life on students' outcome measures. The review also identified a lack of research with constructs of domestic support and greeting network associated with an undergraduate's type of residence.

Therefore, this study will explore academic success and psychological distress in a sample of relocated international and RRR first-year students, whether type of residence determines the level of the consistent predictor, perceived available social support, and other social factors as well as intrinsic meaning-in-life.

The current study tested the following hypotheses 1) There will be no differences between first-year international and RRR students in this sample, 2) There will be differences in levels of perceived available social support, domestic support, greeting network, and oral English use between types of residence, 3) There will be significant positive associations between oral English use in residences and international students' academic outcomes and an inverse association with psychological distress, 4) There will be significant positive associations of perceived available social support, domestic support, and greeting network with the academic outcomes of all participants and inverse associations with psychological distress, 5) There will be significant positive associations of the academic outcomes of all participants with presence of meaning-in-life and inverse associations with search for meaning-in-life.

4.3.4 Method.

The School of Psychology sub-committee of The University of Adelaide Human Research Ethics Committee approved the research (Code: H-2017-17/78).

4.3.4.1 Participants.

Participants responded to recruitment posters (Appendix A) and flyers distributed across three public universities, flyers emailed within residential colleges, a hall, and “villages” (university managed and commercial), and a notice posted on the Research Participation Scheme for first-year psychology students at The University of Adelaide. All materials contained the purpose and proposed use of the study, inclusion and exclusion criteria for participation, a link to the online survey, options to enter a draw for cinema tickets and/or have results emailed, names of the researcher and supervisors, and the Human Research Ethics Committee approval code. Participants were relocated, first-year university students ($N = 121$) aged 17 - 20 years ($M = 18.89$, $SD .83$) at the beginning of years 2017 ($n = 67$), 2018 ($n = 50$), and 2019 ($n = 4$). All were aged 18 - 20 years at the end of years 2017 and 2018.

Most stated international participants ($N = 39$) were from mainland China ($n = 14$, 35.9%), Hong Kong ($n = 2$, 5.1%), Malaysia ($n = 7$, 18%), and south-east Asia ($n = 5$, 12.8%). Others were from Africa, Europe, the Middle East, North and South America, and South Asia ($n = 11$, 28.2%).

Most stated Australian participants ($N = 65$) were from RRR areas of South Australia ($n = 45$, 69.2%), New South Wales, and Victoria ($n = 15$, 23.1%). Others were from Tasmania, Queensland, and Western Australia ($n = 5$, 7.7%).

Participants with unstated home location ($n = 17$, 14.05%) were identifiable as relocated by their responses to type of residence: rooming houses ($n = 3$), colleges ($n = 4$) and “villages” ($n = 10$).

Participants ($N = 121$) were male ($n = 45$, 37.2%) and female ($n = 76$, 62.8%)

students at The University of Adelaide (UofA) ($n = 100$, 82.6%), The Flinders University of South Australia (FUSA) ($n = 6$, 5%), The University of South Australia (UniSA) ($n = 14$, 11.6%), and UofA/FUSA ($n = 1$, 0.8%). Participants represented a broad range of undergraduate degrees. Participants resided in flats/share houses ($n = 37$, 31%), rooming houses ($n = 10$, 8%), university-affiliated colleges ($n = 45$, 37%), and “villages” (university $n = 26$, 22%, commercial $n = 3$, 2%).

4.3.4.2 Measures.

The questionnaire included demographic, social psychological, and academic items and scales. Standardised scales and sub-scales were tested for reliability using Cronbach’s alpha and results are shown in Table 1, below. The standardised scales consisted of items measured on Likert scales. The means of summed scales were the interval level data necessary to meet the assumption of normal distributions for parametric tests, which are nevertheless robust for anomalies (Norman, 2010; Wigley, 2013).

Demographic items. Home country or Australian home postcode and term-time postcode were requested. Participants indicated their type of residence, sex, and age. A text-box enabled participants to comment on their residence.

Social support. *The Interpersonal Support Evaluation List for college students (ISEL;* Cohen & Hoberman, 1983). The following three of four sub-scales were used: Tangible, for example, “Someone would bring me my meals if I were sick”; Belonging, for example, “I belong to a group that meets regularly or does things together regularly”; Appraisal, for example, “I know someone who I see or talk to often with whom I would feel perfectly comfortable talking about problems I might have”. Sub-scales consisted of 12 statements for disagreement or agreement on a six-point Likert-scale from 1 (*Disagree*

strongly) to 6 (*Agree strongly*) allowing participants nuance in responding. Higher scores indicated higher perceived available social support.

The ISEL was modified in three ways: (a) language to suit the South Australian context; (b) disagreement or agreement with each statement on the six-point Likert-scale instead of 1 (*Probably true*) or 2 (*Probably false*); and (c) the Self-esteem sub-scale was excluded, since Meaning-in-life was measured as internal psychological resource.

Domestic support. The author constructed a novel scale of the following four items to measure domestic support in residences: meals, cleaning of common areas, cleaning of students' rooms, and laundering of linen. Participants indicated 1 (*Yes*) or 2 (*No*) such that higher scores indicated less domestic support.

Greeting network. The author constructed a novel measure of the size of greeting-networks. Participants indicated an estimated number of co-residents acquainted well enough to greet when out, namely, 0, 1, 2, 3, 4, or 5 individuals, or numbers of individuals in one of the following ranges 6 - 10, 11 - 20, 21 - 50, 51 - 100, 101 - 150, 151+. Estimations were ordered 1 - 12 such that higher estimations indicated larger greeting networks.

Oral English use. Participants indicated how often they used English with co-residents ranging from 1 (*Always*) to 6 (*I live alone*). Higher scores indicated less English use.

Meaning-in-life. The 10-item Meaning-in-Life Questionnaire (MLQ) (Steger et al., 2006) measured presence of, and search for, meaning. Two sub-scales, Presence and Search, each posited five statements. Participants indicated how true each statement was personally, on a seven-point Likert scale from 1 (*Absolutely untrue*) to 7 (*Absolutely true*) (Steger et al., 2006). Higher scores indicated greater levels of Presence and Search.

Academic success. Pass rate and intention to persist defined short-term and intermediate-term academic success respectively.

Pass rate was calculated as follows and recorded. Participants gave the number of subjects in which they enrolled for their entry semester and the number passed (Li & Carroll, 2017).

Intention to persist was measured by participants affirming one of five statements as personally true. Two statements indicated intention to persist with tertiary education and three statements indicated otherwise.

Psychological distress. The short, 12-item General Health Questionnaire (GHQ) developed by Goldberg (1992) and used in a wide variety of contexts, measured psychological distress, specifically anxiety and depression. Participants indicated how well they had been feeling in the past few weeks on a four-point Likert scale from 0 (*More than usual*) to 3 (*Much less than usual*). The cut-off score for mental health was 12, such that increases in scores higher than 12 indicated increases in psychological distress (Bratas et al., 2014).

4.3.4.3 Procedure.

The Human Research Ethics Committee at the University of Adelaide granted ethics approval. Data were collected by online survey following first semester examinations in consecutive years (August - November 2017 and July 2018 - March 2019), and subsequently aggregated ($N = 121$).

Desired alpha level, power level, and size of effect were entered into the G*Power 3 analysis program (Faul et al., 2009). Output showed that correlational and regression analyses required a sample of 111 participants.

Access. Participants accessed the survey a) using information printed on notices and flyers distributed at all campuses of the three universities (except one regional campus), (b) activating a hyperlink embedded in a flyer emailed by staff of colleges and “villages” to all first-year residents; or (c), at one university, using the first-year psychology Research Participation System.

Instrument. The introductory letter re-stated eligibility and ineligibility criteria for participation; an estimated 20 minutes to complete the questionnaire; counselling support-services; benefits of the research; voluntary participation in all or parts; assurance of anonymity in results; confidentiality; title of the study; code of clearance for human research ethics (H-2017-17/78) and contact details of the committee; and telephone numbers of the researcher, principal supervisor, and co-supervisor. Thus informed, participants indicated consent to proceed.

Participants using the Research Participation System received .5 hour of psychology course credit. Other participants were invited on completion of the survey to enter a draw for cinema vouchers. All participants could choose to have a summary of the research results sent to them. Only the researcher saw the email addresses required to enter the draw and receive the summary.

Missing data. Frequencies obtained following the first collection of data (2017) showed 17 cases with international or Australian home location missing. Home location was a required field for the second collection (2018/19). Aggregated data showed that 17 (14%, $N = 121$) of participants had Home location missing. Frequency and descriptive statistics of international and RRR participants are shown in Tables 11 and 12 below. Unidentified participants are included in Table 12 as a separate group. All other statistical analyses were conducted with relocated students as a whole and any missing data managed by excluding cases pairwise.

Recoding. Variables and items of continuous variables which began at the high end of a range or scale were reverse coded such that higher scores indicated greater levels. Thus, all results were in the same direction of low to high. Of note, however, is that lower GHQ scores indicated less anxiety and depression, thus less psychological distress, and greater mental health.

Four nominal variables were recoded after obtaining frequencies and summary statistics. First, type of residence was recoded from six to three categories. Flat, share house, and rooming house were combined, as were university and commercially managed “villages”. Each category had sufficient participants for comparisons. Statistical analysis proceeded using three types of residence.

Greeting network was dichotomised 1 (*1 - 10*), 2 (*11 - 151+*) for preliminary analysis only. Two variables were dichotomised as follows: English use 0 (*I live alone, Never, Not often, Sometimes*) and 1 (*Most often, Always*); and Intention to persist 0 (*No/unsure*) and 1 (*Yes*).

Scale reliability. Table 10 below, shows obtained Cronbach’s alpha for the four scales, three sub-scales of the ISEL, and two sub-scales of the MLQ.

Table 10*Obtained Reliability Coefficients for Scales and Sub-scales*

	<i>N</i>	No. of Items	Cronbach's Alpha
<i>Interpersonal Support Evaluation List (ISEL)</i>	112	36	.96
Tangible	116	12	.85
Belonging	117	12	.90
Appraisal	117	12	.92
<i>Domestic support</i>	121	4	.83
<i>Meaning-in-life (MLQ)</i>			
Presence	120	5	.90
Search	119	5	.86
<i>General Health Questionnaire (GHQ)</i>	117	12	.85

4.3.4.4 Statistical analysis.

Collected data were compiled and analysed using IBM SPSS Statistics (Version 26) predictive analytics software. Parametric analyses were conducted where assumptions were met. Non-parametric analyses were used for correlations and examining differences between unequal independent groups.

Spearman's rank correlation coefficients were categorised as for Pearson's product moment correlation coefficients as small ≥ 0.1 , medium ≥ 0.3 , large ≥ 0.5 (Cohen, 1988). Multiple and logistic regressions found sizes of effect on relationships between continuous predictors and outcomes. Effect sizes (η^2 or r^2 change) were categorised small ≥ 0.01 , medium ≥ 0.06 , and large ≥ 0.14 (Cohen, 1988, pp. 79-81) including when measured by the magnitude of difference between means (Cohen, 1988, pp. 284-287).

The alpha level to determine significance was .05 for all statistical tests.

4.3.5 Results.

Hypothesis 1.

There will be no differences between first-year international and RRR students.

First, the data of International and RRR participants were analysed and compared. The descriptive statistics shown in Table 11 indicated that international and RRR participants had similar pass rates, intention to persist, and psychological distress but had different levels of perceived available social support and domestic support.

Table 11

Descriptive Statistics of Social Support, Domestic Support, Pass Rate, Intention to Persist, and Psychological Distress for Identified International and RRR Participants

Identified Participants	Social support		Domestic support								
	<i>N</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>				
International	39	35	144.20	31.81	39	5.23	1.37				
RRR	65	62	163.58	34.77	65	6.09	1.61				
	Pass rate				Intention to persist		Psych. Distress				
	<i>N</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>No/Unsure</i>	<i>Yes</i>	<i>n</i>	<i>M</i>	<i>SD</i>		
International	39	34	95.50	11.74	2	5.1%	37	94.9%	37	17.87	3.75
RRR	65	64	95.45	11.94	5	7.7%	60	92.3%	63	18.19	3.92

Independent samples *t*-tests confirmed no significant difference between International and RRR participants for Pass rate ($t(96) = .02, p = .99$, two-tailed), and Psychological distress ($t(98) = -.41, p = .96$, two-tailed).

A Chi-square test generated a 2 by 2 table for Intention to persist (*Yes* or *No/Unsure*) by Home location (*International/RRR*). The test showed two cells (50%), both indicating no Intention to persist, violated the assumption of an expected count of five (SPSS minimum 2.63) in each cell. Fisher's Exact Probability was not significant (0.71 (2-tailed)). Thus, there was no association of Intention to persist with either International or RRR participants and by interpretation no difference between them.

However, independent samples *t*-tests of perceived available Social support and Domestic support found significant differences in scores. International participants had less perceived available Social support than did RRR ($t(95) = -2.72, p = .01$, two-tailed) and less Domestic support compared to RRR participants ($t(90.35) = -2.91, p = .01$, two-tailed). Effect sizes, measured by magnitude of differences in means, for perceived available Social support (mean difference = -19.38, 95% CI: -33.54 to -5.22) and Domestic support (mean difference = -.86, 95% CI: -1.45 to -.27) were moderate.

Thus, the first hypothesis was accepted for outcomes but rejected for factors.

Frequencies by type of residence showed that a higher percentage of RRR than international participants resided in colleges (see Table 12) where perceived available Social support and Domestic support scores were highest. Thus, type of residence appeared to explain the differences between factors for first-year international students compared with RRR students.

Table 12

Frequencies of All, International, RRR, and Unidentified Participants by Residence

Participants	N	Flat/house		College		Village	
		n	%	n	%	n	%
All	121	47	38.8	45	37.2	29	24.0
International	39	22	56.4	6	15.4	11	28.2
RRR	65	22	33.9	34	52.3	9	13.8
Unidentified	17	3	17.7	5	29.4	9	52.9

Similar numbers of all relocated participants (see Table 11) resided in flats/houses and colleges, and one less than a desired 30 resided in "villages". Numbers of identified international and RRR participants in flat/houses were equal. However, the highest percentage of international participants resided in flats/houses and that of RRR participants resided in

colleges. International and RRR participants' data were combined into "Relocated" for further analyses.

Hypothesis 2.

There will be differences in levels of perceived available social support, domestic support, greeting network, and oral English use between types of residence.

Descriptive statistics of continuous factors and outcomes are shown in Table 13.

Table 13

Descriptive Statistics for All Participants of Continuous Variables by Residence

Factors	Flat/house N = 47			College N = 45			Village N = 29		
	n	M	SD	n	M	SD	n	M	SD
Social support	44	144.42	33.57	41	174.46	26.92	27	146.19	35.82
Domestic support	47	4.96	1.33	45	7.22	0.64	29	4.62	0.98
Meaning-presence	47	20.68	6.69	44	22.41	6.07	29	23.97	6.62
Meaning-search	47	25.72	5.81	43	25.69	6.08	29	24.86	4.89
Outcomes									
Pass rate	43	96.72	10.74	45	94.93	12.80	26	96.15	9.20
Psych. distress	46	18.09	3.75	43	18.51	3.97	28	17.46	3.47

Descriptive statistics of binary factors and outcomes are shown in Table 14 below.

Table 14*Descriptive Statistics for All Participants of Binary Variables by Residence*

		Flat/house		College		Village	
		<i>N</i> = 47		<i>N</i> = 45		<i>N</i> = 29	
Factors		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Greeting network	<i>1 – 10</i>	45	96	4	11	18	62
	<i>11 - 151+</i>	2	4	31	89	11	38
English use	<i>Never-Sometimes</i>	17	36	0	0	2	7
	<i>Most often-Always</i>	30	64	45	100	27	93
Outcome							
Intention to persist	<i>No/Unsure</i>	3	6	2	4	3	10
	<i>Yes</i>	44	94	43	96	26	90

Table 13 shows apparent differences in the means of perceived available Social support and Domestic support in types of residence. Means for Flat/house (capacity 1 - 10) and Village (capacity 400 - 500) appear similar while those for College (capacity (185 – 240) appear highest. One-way, between-groups analyses of variance (ANOVAs) were used to examine differences.

Table 14 shows apparent differences in binary predictors Greeting network, oral English use, and Intention to persist between residences. Participants residing in Flats/houses apparently greeted fewest co-residents and used oral English the least, those in Villages more of each, and those in Colleges greeted the most co-residents when out and used English the most. Cell sizes did not meet the assumption ($n \geq 5$) for Chi-square tests for differences. Further analysis proceeded directly to correlations and multiple regressions with English use (binary), and Intention to persist (binary). Greeting network was used as a continuous measure of the full range (0 - 151+) to produce greater accuracy, and nuance.

Differences in perceived available social support between types of residence.

An ANOVA showed a significant difference in Social support between types of residence ($F(2, 109) = 11.01, p < .001$) with a large effect size ($\eta^2 = 0.17$). Tukey's HSD post-hoc comparison test found that the mean score of Social support for College was significantly greater than means for Flat/house ($p < .001$) and Village ($p < .001$). There was no significant difference between the means of Flat/house and Village ($p = .975$). Thus, participants residing in flats/houses or "villages" reported similar levels of perceived available social support and those in colleges the highest level.

Differences in domestic support between types of residence.

Descriptive statistics of each item of the domestic support scale for Flat/house, College, and Village are shown in Table 15.

Table 15

Descriptive Statistics for All Participants of Domestic Support Items by Residence

	Flat/house		College		Village	
Capacity	1 – 10		185 – 240		400 – 500	
	$N = 47$		$N = 45$		$N = 29$	
Items	n	%	n	%	n	%
Meals provided	12	25.5	43	95.6	3	10.3
Cleaning: Common areas	13	27.6	44	97.8	9	31.0
Cleaning: Rooms	12	25.5	44	97.8	5	17.2
Laundering: Bed linen	5	10.6	14	31.1	1	3.4

Across types of residence, participants indicated cleaning of common areas (66) most frequently, followed by cleaning of rooms (61), and provision of meals (58). Participants indicated laundering of bed linen (23) least frequently.

An ANOVA showed a significant difference in amounts of total Domestic support (see Table 13) between types of residence ($F(2, 118) = 76.44, p < .001$) with a very large effect size ($\eta^2 = 0.56$). Tukey's HSD test found that the mean score of Domestic support for College was significantly greater than means for Flat/house ($p < .001$) and Village ($p < .001$). There was no significant difference between Flat/house and Village ($p = .36$). Thus, participants residing in either flats/houses or "villages" reported similar levels of domestic support and those in colleges the highest level.

Correlational analysis preceded analysis by regression. Spearman's Rho analysed data from interval, ordinal, and binary "dummy" variables. Correlations showed that male participants were somewhat younger than female ($r_s = -.26, N = 80, p = .021$). However, all participants were 17 - 20 years old. There were no other significant correlations with sex and none with age. The two variables were excluded from further analysis.

All other correlations are given in Table 16, including significant positive inter-correlations between Social support, Domestic support, Greeting network, and English use. However, only Social support had significant correlations with any outcome. As Social support increased so too did Pass rate and PML while Psychological distress decreased.

In addition to Social support, PML showed significant correlations with Intent to persist and Psychological distress. As PML increased so too did Intent to persist while Psychological distress decreased. However, as SML increased so too did Psychological distress.

Table 16*Spearman's Rho Correlational Coefficients (2-tailed) for all Participants of Factors, and Outcomes*

Factors	1	2	3	4	5	6	7	8	9
1.Social support	1								
2.Domestic support	.43****	1							
3.English use (binary)	.24*	.07	1						
4.Greeting network	.48****	.64****	.29**	1					
5.Meaning-presence	.37****	.10	.19*	.17	1				
6.Meaning-search	-.11	-.03	.05	-.02	-.07	1			
Outcomes									
7.Pass rate	.19*	-.07	-.08	-.16	-.00	-.08	1		
8.Intention to persist (binary)	.15	-.02	.07	-.06	.25**	-.11	.04	1	
9.Psych. distress	-.25**	-.16	.04	-.18	-.20**	.28**	-.05	-.17	1

$p = .02-.05$ * $p = .002-.01$ ** $p = .001$ or less ***

Hypothesis 3.

There will be a significant positive association between oral English use in residences and international students' academic success and an inverse association with psychological distress.

The association of Residence with English use was salient for international participants ($n = 39$) only. A separate correlational analysis indicated an increasing frequency of English use by international participants from least in Flat/house, more in Village, and most in College ($r_s = .58, p < .001$). However, there were no significant correlations of English use with Pass rate, Intention to persist, or Psychological distress. Thus, hypothesis 3 was rejected and English use was excluded from further investigation.

Hypothesis 4.

There will be significant positive associations of perceived available social support, domestic support, and greeting network with the academic outcomes of all participants and inverse associations with psychological distress.

Regression analyses examined effect sizes of (a) factors associated with type of residence (Model 1), and (b) meaning-in-life (Model 2) on Pass rate, Intention to persist, and Psychological distress. Model 1 comprised Social support, Domestic support, and Greeting network. Model 2 comprised PML and SML. Preliminary analyses showed no violation of normality, linearity, multi-collinearity, or homoscedasticity.

Model 1 consisted of Social support, Domestic support, and Greeting network. The model was entered into standard multiple regressions on Pass rate and Psychological distress and into a logistic regression on Intention to persist. Model 1 as a whole was not significant in predicting variance in Pass rate (7%, $F(3, 102) = 2.45, p = .068$) but significantly predicted variance in Psychological distress (7.5%, $F(3,105) = 2.84, p = .042$).

Social support showed a unique, small, positive effect size of 5% on Pass rate (Part Correlation $.225^2 = .051, p = .021$) and a unique, small, inverse effect size of 5% on

Psychological distress (Part Correlation $.228^2 = .052$, $p = .017$). Domestic support and Greeting network failed to predict significant variances in Pass rate (Part Correlations $-.141^2 = .02$, $p = .143$; $.029^2 = .001$, $p = .766$, respectively) and Psychological distress (Part Correlations $-.06^2 = .00$, $p = .524$; $.05^2 = .00$, $p = .6$, respectively). Table 17 gives the standardised coefficients for Model 1.

Table 17

Standard Multiple Regressions of Model 1 (Social Support, Domestic Support, and Greeting Network) on Pass Rate and Psychological Distress

Pass rate	β	t	Sig.	95.0% CI	Correlations Part
Social support	.27	2.35	.02	[.01, .16]	.23
Domestic support	-.19	-1.48	.14	[-3.21, .47]	-.14
Greeting network	.04	2.98	.77	[-1.26, 1.71]	.03
Psych. Distress					
Social support	-.27	-2.43	.02	[-0.05, -0.01]	-.23
Domestic support	-.08	-0.64	.52	[-0.8, 0.41]	-.06
Greeting network	.07	0.53	.6	[-0.36, 0.62]	.05

The logistic regression on Intention to persist showed that Model 1 was not significant, thus failing to identify correctly responses of 0 (*No/Unsure*) and 1 (*Yes*) ($\chi^2(3, N = 104) = 3.66$, $p = .30$). Social support showed a tendency to influence Intention to persist ($\chi^2(1, N = 104) = 3.45$, $p = .06$).

Thus, first, Hypothesis 4 was accepted for the inverse association of the combined factors with psychological distress but rejected for pass rate. However, further analysis showed unique, significant associations of Social support with pass rate and psychological distress. Second, Hypothesis 4 was rejected for an association of the combined factors with intention to persist, while noting the very strong majority of participants intending to persist, and that Social support tended to influence intention to persist.

Hypothesis 5.

There will be significant positive associations of the academic outcomes of all participants with presence of meaning-in-life and inverse associations with search for meaning-in-life.

Model 2 consisted of PML and SML. The associations of PML and SML with Pass rate, Psychological distress, and Intention to persist were assessed using hierarchical regression analyses. The Model was entered into standard multiple regressions on Pass rate and Psychological distress and into a logistic regression on Intention to persist. Model 2 as a whole failed to explain a significant amount of variance in Pass rate (1.6% ($F(2, 111) = .88$, $p = .42$) but did so in that of Psychological distress (11.9% ($F(2, 113) = 7.63$, $p = .001$).

PML ($r^2_{\text{change}} = .061$) and SML ($r^2_{\text{change}} = .058$) each showed moderate effect sizes as unique contributors to Psychological distress. Table 7, below, shows that as PML increased, Psychological distress decreased, while as SML increased so too did Psychological distress.

The hierarchical logistic regression on Intention to persist showed that Model 2 was significant, thus identifying correctly responses of *No/unsure* ($n = 8$) and *Yes* ($n = 111$) ($\chi^2 = (2, N = 119) = 10.11$, $p = .01$) and explaining between 8.1% (Cox & Snell $r^2 = 0.081$) and 21% (Nagelkerke $r^2 = 0.209$) of the variance. Meaning-presence was a significant, unique positive contributor ($\chi^2 = (1, N = 119) = 6.904$, $p = .01$). Table 18 shows the standardised coefficients.

Table 18

Hierarchical Regressions of Model 2 (Meaning Presence, and Meaning Search) on Pass Rate, Psychological Distress, and Logistic Regression on Intention to Persist

Pass rate	β	<i>t</i>	<i>Sig</i>	95.0% <i>CI</i>		
Meaning-presence	.06	0.67	.50	[-0.22,	0.44]	
Meaning-search	-.11	-1.15	.25	[-0.59,	0.16]	
Psych. Distress						
Meaning-presence	-.22	-2.51	.01	[-0.23,	-0.03]	
Meaning-search	.24	2.73	.01	[0.04,	0.28]	
Intention to persist	<i>S.E.</i>	<i>Wald</i>	<i>Sig</i>	<i>Exp(B)</i>		
Meaning-presence	.07	6.70	.01	1.19	[1.04,	1.35]
Meaning-search	.08	.61	.44	.94	[0.81,	1.09]

4.3.6 Summary.

The results showed that levels of perceived available social support, domestic support, oral use of English, and greeting network were lowest in flats/houses and highest in colleges. Results confirmed previous research finding small, positive effects of perceived available social support on relocated undergraduates' academic success and mental health. Domestic support, greeting network, and, for international students, oral use of English showed no associations with either academic success or psychological distress.

Establishing PML is a fundamental developmental task and there is evidence of its positive effects among relocated university students (Pan et al., 2007). The current study found no association of either PML or SML with relocated first-year undergraduates' pass rate. However, as PML increased so too did Intention to persist while SML had no significant association. PML also had a small alleviating effect on psychological distress, while SML exacerbated psychological distress.

4.3.7 Discussion.

This paper reports a cross-sectional study of international and RRR first-year university students ($N = 121$), aged 17 - 20 years, in the early stages of emerging adulthood. As emerging adults, the students' key tasks were to found a career, positive relationships (including romantic), and meaning-in-life (Mayseless & Keren, 2014). The relocated students gave information about their perceived available social support, type of residence and associated domestic support, greeting network, and use of oral English. Participants also provided information about the status of their meaning-in-life (either present, or sought), pass rate, intention to persist with tertiary education or not, and level of psychological distress. Thus, the study increased psychological knowledge of emerging-adult university students who relocate for tertiary education and of the role which types of residence may have in providing proximal social resources.

The study first examined the outcomes, and two factors which reflected substantial social losses on relocation, for any differences between first-year international compared with RRR students. The study established that

- a) there were no significant differences in the pass rates, intention to persist, and psychological distress of first-year international compared with RRR students, but
- b) there were significant differences in levels of perceived available social support and domestic support.

4.3.7.1 Implications of factors associated with type of residence, and outcomes.

Analysis of the combined data of international, RRR, and participants from undisclosed home locations found that perceived available social support, domestic support, greeting network, and oral English use were most strongly correlated with type of residence. Since any effect of the use of oral English in residences was salient for international participants only, such data were investigated separately and will be discussed first.

Use of oral English was lower in flats/houses and “villages” than in colleges. More

international participants resided in flats/houses and “villages” than did RRR participants. Correlational results indicated that international participants residing in “villages” and colleges used English more often than those residing in flats/houses. There was, however, no indication that residential English use affected pass rate, intention to persist, or psychological distress. The result confirmed that of a systematic review showing that international students’ use of conversational English had no effect on academic achievement (Andrade, 2006), but did affect sociocultural adjustment (Andrade, 2006). Andrade (2006) suggested that friendships with host-nation students also have a positive effect on adjustment, although may be difficult to form. An implication of the finding is that students desiring to develop oral English skills should be advised that type of residence will affect opportunities to do so.

International students have typically reported more loneliness, homesickness, anxiety, stress, and less social support than host-nation students (Andrade, 2006). International participants in the current study did not report more psychological distress than did RRR participants. Relocating for tertiary education seems to have affected both groups similarly. However, international participants reported less perceived available social support than did RRR participants. Type of residence could be a partial explanation for the finding, since few international participants ($n = 6$, 15.4%) resided in colleges.

An investigation of perceived available social support across types of residence found that participants residing in flats/houses (capacity 1 - 10) and “villages” (capacity 400 - 500) perceived similar levels of available social support. However, participants residing in colleges/hall (capacity 185 - 240) perceived significantly more available social support. The finding confirmed that of Suiter (2014), namely, the greater capacity of a hall of residence compared with smaller halls, does not predict students’ perception of greater available social support. The finding has implications for both international and RRR first-year students, their families, and accommodation counsellors.

Significant differences between colleges and other types of residence were also found for domestic support and greeting network. Social support, domestic support, and greeting

network comprised Model 1 to determine associations with pass rate, intention to persist, and psychological distress. Model 1 showed moderate associations with pass rate and psychological distress but none with intention to persist.

The greatest unique contributor to the variance in pass rate was greeting network. The mean pass rate of participants with a small greeting network of co-residents (1 - 10) was somewhat higher (96.95%) than that of participants with a larger (10 +) greeting network (93.42%).

Acknowledgement between persons is related to belonging and a sense of community (Wesselmann et al., 2012). Belonging was a sub-scale of perceived available social support. Low sense of community and social support predict psychological distress (Suitor, 2014). However, the moderate inverse effect of greeting network on pass rate was unexpected. Since a search revealed no studies using greeting network, the finding warrants further investigation. It would be useful, for example, to differentiate any associations with type of residence, personality, or prioritising mutual belonging support over academic success particularly in the first year at university following relocation.

Perceived available social support was the second unique contributor to pass rate. It showed a small positive association consistent with findings of the meta-analysis by Richardson et al. (2012). Domestic support had an insignificant small association.

Perceived available social support contributed close to all of the association of Model 1 with psychological distress. The unique moderate contribution was such that as perceived available social support increased, psychological distress decreased.

First-year students typically report stress associated with meeting the demands of university academic requirements. Those also coping with their first year of living away from home, however, may also experience homesickness, loneliness, and loss (Sun et al., 2016). Such symptoms of psychological strain are exacerbated by distance from home and well documented among international students, as is diminished social support (Patron 2014). As demonstrated and recommended by the report of the Coroners Court of Victoria,

measures to assist international students maintain mental health are necessary. An implication of the finding is that implementing measures which encourage access to mental health professionals might be necessary but not sufficient in the absence of opportunities to develop supportive peer relationships. In addition, there appears to be little investigation of similar effects among RRR students who may be hundreds, if not thousands of kilometres, from a home with a distinct climate and cultural characteristics.

Domestic support is an under-recognised variable in the lives of relocated, first-year university students. Many first-year students work as well as study, although it is considered inadvisable to do so and international students are subject to a restriction on hours worked per fortnight. How such students in residences with no domestic support manage time between study, domestic tasks, and employment has not been fully explored, neither has the effect of different work-load combinations on academic success and mental health. Furthermore, there are additional nutritional, health, and time-management factors to be considered (Bruening et al., 2016; Cady, 2014) in the provision of meals. Meals provided in Adelaide's colleges and hall are prepared on-site and served in dining halls. Such provisions may also facilitate a sense of community and belonging (Dunbar, 2017).

4.3.7.2 Implications of meaning-in-life associated with outcomes.

The second model for regression analysis consisted of presence of meaning-in-life and search for meaning-in-life (Model 2). Overall, the Model had a moderate association with psychological distress. Meaning-in-life presence had a unique, moderate association with psychological distress, such that as it increased psychological distress decreased. However, as search for meaning-in-life increased, so too did psychological distress.

Extrapolating the findings, the presence of meaning-in-life appeared to mitigate the potentially deleterious effects on mental health of leaving home, relocation, and commencing tertiary studies. While the search for meaning-in-life may differ across the lifespan (Steger et al., 2006), it seemed an additional negative stressor for the relocated emerging adults in this

study. The finding was consistent with that of previous research (Chen et al., 2021; Trevision et al., 2017). Secondary and tertiary education counsellors could find that initially identifying the presence and search for meaning-in-life useful when assisting students seeking course-assistance and career-assistance. Reaching a satisfying resolution would be an achievement in students' transition to work-related, adult independence.

Students could also be assisted in clarifying meaning-in-life through their romantic and social relationships. Research on belonging, particularly related to “satiation and substitution” (Baumeister & Leary, 1995), indicates that a sense of belonging is necessary for mental health. A sense of belonging within a community of like-minded individuals, may support students with meaning-in-life and those searching for meaning. This study found an association of the presence of meaning-in-life with perceived available social support, which includes a Belonging sub-scale, and a beneficial effect on mental health. The finding is consistent with previous research (Lambert et al., 2013).

4.3.7.3 Strengths and limitations.

This study was conducted with focus and rigour such that the results presented are valid. However, the study was limited by the cross-sectional, survey design and thus, the sample consisted of non-randomly selected voluntary participants. Another limitation was the relatively small number of participants. That 17 participants (Collection 1) failed to disclose themselves voluntarily as international or Australian, limited inter-group comparisons but not analyses of data for relocated participants in total. The sample-size ($N = 121$) did, however, caution against comparisons between smaller groups of international with RRR participants, for example, to elicit any sex differences in residences. Future research with larger sample might investigate sex and other differences between first-year undergraduates by type of residence.

4.3.7.4 Conclusion.

The finding that residential use of oral English did not affect the academic success, or mental health of international students, was consistent with previous research of social, conversational English use. The study confirmed previous findings of the significant positive contributions of perceived available social support for relocated first-year university students' outcomes. No previous investigations of such students' domestic support and greeting network were found.

The findings of this study suggest that, while divers factors contribute to the academic and mental health outcomes of relocated first-year students in South Australia, factors associated with their type of residence make significant contributions. A comparative study of students' perceived available social support across types of residences in more university cities, both in Australia and abroad, would be particularly useful. As the findings of this study indicate, it would also be useful to determine whether perceived available belonging support and sense of community differ across types of residence.

Universities have sought increasingly to provide and facilitate opportunities for the optimal academic achievement and healthy psychosocial development of their emerging-adult students. It is in the interest of universities to do so since relocated students are likely to remain a large minority of the undergraduate population (Australian Trade & Investment Commission [Austrade], 2022; Naphthine et al., 2019).

4.4 Transition from Study Two to Study Three

4.4.1 Introduction.

Study Two found that the level of perceived available social support was greater in colleges/hall than other types of residence and that it had significant beneficial associations with academic and mental health outcomes. The researcher hypothesised that one sub-scale of

the ISEL could be contributing more to lowering psychological distress than the other two used.

4.4.2 Method.

An exploratory correlational analysis was conducted using data from Study Two.

4.4.3 Results.

Table 19 shows the result of exploring factors associated with type of residence. Strength of correlation was determined as small $r = .10$ to $.29$, medium $r = .30$ to $.49$, large $r = .50$ to 1.0 (Cohen, 1988, pp. 79-81). The alpha level to determine significance was $.05$.

Table 19

Spearman's Rho Correlational Coefficients (2-tailed) for All Participants of Tangible, Belonging, and Appraisal Support (ISEL Sub-scales), Greeting Network, Meals, Total Domestic Support, Meaning Presence, Meaning Search, and Psychological Distress

Factors	1	2	3	4	5	6	7	8	9
1. Tangible	1								
2. Belonging	.80***	1							
3. Appraisal	.83***	.84***	1						
4. Meals	.35***	.45***	.35***	1					
5. Total domestic support	.38***	.46***	.32***	.86***	1				
6. Greeting network	.36***	.46***	.31***	.52***	.53***	1			
7. Meaning-presence	.26**	.34***	.33***	.08	.11	.15	1		
8. Meaning-search	-.07	-.24**	-.07	-.00	-.07	-.04	-.10	1	
Outcome									
9. Psych. Distress	-.15	-.31***	-.25**	-.09	-.15	-.09	-.25**	.27**	1

$p = .02 - .05$ *

$p = .002 - .01$ **

$p = .001$ or less ***

4.4.4 Discussion.

The ISEL belonging sub-scale measures the extent to which students perceive themselves as inter-relating and regularly connecting with others. Compared with other types of residence, belonging is greatest in colleges and shows (see Table 19 above) medium-sized, positive correlations with those variables also greatest in colleges (meals, total domestic support, greeting network). Belonging also has a medium-sized, positive correlation with presence of meaning-in-life (PML). Further, belonging has a small inverse correlation with the search for meaning-in-life (SML) and a medium-sized correlation with psychological distress. The above findings, and the following review of the evidence, indicated Study Three.

Students who report a high inter-relationship and connection with their co-residents, have less psychological distress than those with a lower perception of such connection. That is, those residing on-campus at university, for example, hall of residence; with a partner and/or children; or with parents at home, had lower distress than those living alone or in other off-campus residences, including sharing a dwelling with others (Eisenberg et al., 2007; Stallman, 2010). Inter-relatedness and connectedness did not seem to be analogous to social support. Students residing with peers or others would potentially have some social support within their residence but perhaps have less accountability, responsibility, or obligation than those residing with more connected co-residents (Stallman, 2010).

The participants in Study Two who indicated their residence as “college” resided in one of the following: a rural, on-campus college; five off-campus, independent, university-affiliated colleges; or an on-campus, collegiate hall. The foregoing residences are hereafter referred to as “college”.

Study Two found that perceived available social support was higher in colleges than in flats, share houses, and student “villages” (apartment-style design), with perceived available belonging support independently greatest in colleges. The greater inter-relatedness and connection of co-residents in colleges were further supported by the significant, positive correlation of perceived available belonging support with greeting network.

Participants who resided in colleges recognised and greeted more co-residents than did those in other types of residence. Mutual recognition and acknowledgement in greeting indicate an initial level of inter-relatedness and connection requiring only opportunity for acts associated with belonging to occur (Egilsson et al., 2021; Sumsion & Wong, 2011).

The strength of the correlation between perceived available social support and greeting network showed that the variables were discrete (.41, $p < .001$). Thus, perceived available social support is, as Stallman (2010) concluded, not analogous to inter-relatedness and connectedness. The relationship of perceived available social support to greeting-network, as an indicator of inter-relationships and connections, appears to be that of a function. Such an interpretation suggests that participants connected to extensive college networks had greater access to social support than their peers in other types of residence, regardless of capacity. The greater perceived available social support in colleges compared with other types of residence, supports such an interpretation.

Inter-related and/or connected individuals not only recognise, but know each other in the sense of shared interpersonal and collective experiences, for example, in families, sporting-teams, organised religious groups, military units, or small rural townships. Such individuals perceive themselves as belonging to named groups or populations. Most relocated students want new connections and friendships (Wilson et al., 2013), since prior connections and friends are geographically distant, and belonging is a human need (Baumeister & Leary, 1995). Belonging and unity are the etymological roots of “comm-unity”.

Like undergraduates, typical military recruits are relocated emerging adults, that is, aged 17 - 20 years (Campbell-Sills et al., 2020; Manning, 1994), facing the same age-related, key tasks, and under greater stress than peers remaining at home. Recruits immediately enter a unit, an entity of 10 to 299 members. While concepts and measures of the phenomenon vary, researchers seem to agree that for optimal individual and group functions, such entities should develop a connectedness or bond between members. The terms “cohesion” and

“psychological unity” are most frequently used, however, Manning (1994) also suggested “social support”.

Psychosocial researchers investigating “cohesion” have found strong relationships with environmental factors and individuals’ mental health/well-being (Bartone et al., 2002; Campbell-Sills et al., 2020; Cota et al., 1995; Manning, 1994). One such factor is the provision of meals (Manning, 1994). Correlational analysis of Study Two data conducted for the transition to Study Three found that the provision of meals was more highly correlated with perceived available belonging support, greeting network, presence of meaning-in-life, and mental health than other items of domestic support, that is, cleaning and laundry.

Study Two also found that although two participants reported the provision of meals in share houses, it was predominantly a characteristic of colleges. Entities small and large use communal eating to facilitate, or generate, belonging (Dunbar, 2017). Colleges have dining halls where students and staff eat daily meals together. Social eating increases sense of community and psychological well-being (Dunbar, 2017).

Study Three examines the relationships between a total of supportive characteristics found across four types of residence, perceived available belonging support, sense of community, and psychological well-being for relocated emerging adult undergraduates, aged 18 - 20 years.

4.4.5 Impact of COVID-19 pandemic on the tertiary sector.

The foregoing outlined the general context for Chapters 3 and 4 of this thesis. In December 2019, broadcasters reported, with graphic images, an epidemic in Wuhan (China) caused by the novel SARS-CoV-2 virus. International and national priorities changed abruptly and the tertiary education sector responded to policies of restriction implemented by Federal and State Governments. The pandemic-related closures of international and state borders were unforeseen and unpredictable events between the second and third studies reported in Chapters 4 and 5 respectively. The impact illustrates the higher external risk to

relocated undergraduates' academic success and mental health compared with their peers commuting from home. The order of events is chronicled in the following prologue to Study Three.

Chapter 5. Relocated University Undergraduates: Type of residence, integrated support, belonging, sense of community, academic success, well-being, and distal peer contact

5.1 Prologue: International and National Context of Study Three.

The following chronicle of events, recorded and compiled by the author, had a grave impact on relocated students.

30th January 2020: The World Health Organization (WHO) declared the outbreak of the disease COVID-19 a “Public Health Emergency of International Concern”.

1st February 2020: Australia’s Federal Government halted all travel to and from mainland China. Most international students were mainland Chinese and universities began moving courses online for teaching remotely.

24th - 28th February 2020: Universities’ orientation week occurred for commencing students.

2nd March 2020: Teaching for Semester 1 (2nd March – 15th June 2020) began on campus and online.

11th March 2020: WHO declared COVID-19 a pandemic.

20th March 2020: Australia’s international borders closed to all incoming and outgoing travellers. Continuing students who were Australian citizens or residents were permitted to return from abroad, although mandated to quarantine for two weeks. The Federal Government advised all international students unable to support themselves financially to return home. The international students’ visa permitted twenty hours of paid work per week, however, health restrictions resulted in a large decline in available jobs. Many international students worked in the hospitality sector which was severely affected by the restrictions. The population of international students residing in Australia decreased abruptly and substantially. As a consequence, universities and ancillary service providers sustained very large, real, and notional financial losses during 2020 and 2021.

24th March 2020: Borders between member states of the Commonwealth of Australia closed. Most inter-state students returned home, as did many intra-state RRR students.

27th July 2020: Teaching for Semester 2 (27th July - 30th November) began on campus and online. International and inter-state students who had remained and most intra-state RRR students were in their term-time residences.

Study Three includes an opportunistic, retrospective test of regular contact with distal co-residents and university peers while participants were at home during Semester 1. Participants who remained in their Adelaide residences were excluded since peers were proximal even if masked and “socially distanced”. The test indicates whether dispersed participants actively maintained perceived available belonging support and sense of community using online and/or telecommunication resources. Data were collected July – November 2020 (Semester 2, 2020).

South Australian state borders were re-opened on 23rd November 2021 and Australia’s international borders on 15th December 2021.

5.2 Statement of Authorship

Statement of Authorship

Title of Paper	Relocated University Undergraduates: Type of residence, integrated support, belonging, sense of community, academic success, well being, and distal peer contact
Publication Status	<input type="checkbox"/> Published <input type="checkbox"/> Accepted for Publication <input type="checkbox"/> Submitted for Publication <input checked="" type="checkbox"/> Unpublished and Unsubmitted work written in nonjournal style
Publication Details	N/A

Principal Author

Name of Principal Author (Candidate)	Susan F. Straub
Contribution to the Paper	Conception, aim, design, data acquisition, analysis, interpretation, and preparation of manuscript.
Overall percentage (%)	80%
Certification:	This paper reports on original research I conducted during the period of my Higher Degree by Research candidature and is not subject to any obligations or contractual agreements with a third party that would constrain its inclusion in the thesis. I am the primary author of this paper.
Signature	Date 08/11/22

Co-Author Contributions

By signing the Statement of Authorship, each author certifies that:

- the candidate's stated contribution to the publication is accurate (as detailed above);
- permission is granted for the candidate to include the publication in the thesis; and
- the sum of all co-author contributions is equal to 100% less the candidate's stated contribution.

Name of Co-Author	Helen Winefield
Contribution to the Paper	Supervised, advised on preparation for publication in a peer-reviewed journal, reviewed drafts. (10% contribution)
Signature	Date 6/11/22

Name of Co-Author	Peter Strelan
Contribution to the Paper	Co-supervised and reviewed statistical analysis. (10% contribution)
Signature	Date 8/11/22

Please cut and paste additional co-authors

5.3 Manuscript of Paper for Publication

5.3.1 Abstract.

Aim. Aimed at ascertaining factors associated with the achievement of key, emerging-adult tasks by International and Australian rural, regional, and remote (RRR) undergraduates (18 - 20 years) relocated to Adelaide, South Australia, this study investigated factors associated with residence, university, academic success (work domain), and psychosocial well-being (self and relationships domains).

Method. Participants ($N = 122$) from three public universities completed an online survey during Semester 2, 2020 while in term-time residences but when Australian international and state borders were closed to contain the COVID pandemic. The survey consisted of demographics and measures of integrated support in residence, perceived available belonging support, sense of community in residence, sense of community at university, estimated Grade Point Average (GPA), intention to persist, psychological well-being, and regular contact during Semester 1 with then geographically dispersed (“distal”), co-residents and university peers.

Results. Most international participants ($n = 48$) resided in share houses (40%), followed by flats (25%), “villages” (25%), and colleges (6%). Most RRR participants resided in colleges (52 %), followed by flats (27 %), share houses (11%), and “villages” (11%). Integrated support was lowest in flats, highest in colleges, and associated with increased perceived available belonging support and sense of community in residence. Perceived available belonging support had a positive, small association with estimated GPA, moderate-strength association with psychological well-being, and was a stronger predictor of regular contact with distal co-residents (odds ratio 1.08) than was sense of community in residence. University sense of community had a positive, moderate-strength association with psychological well-being but no association with either intention to persist or regular contact

with distal university peers. There was no association between sense of community in residence and that at university.

Conclusion. Findings of this study show that participants with higher perceived available belonging support had increased estimated GPAs, psychological well-being, and regular contact with distal co-residents. Participants' sense of community at university was also positively associated with psychological well-being. Greater integrated support in participants' residences was associated with increased perceived available belonging support and sense of community. Participants residing in colleges reported greater integrated support, perceived available belonging support, and contact with distal co-residents than did those residing in flats, share houses, and "villages". The difference in perceived available belonging support between colleges and "villages" was not significant. Thus, factors related to the type of residence which participants occupied were associated with academic success and psychosocial well-being.

Key words relocated undergraduates type of residence integrated support
belonging sense of community GPA well-being peer contact

5.3.2 Key points.

What is known.

1. According to Arnett (2004), undergraduates (17 - 20 years) are emerging adults (18 - 25 years).
2. Three key tasks of emerging adulthood are to establish satisfying relationships in the domains of work, self, and peers (including romantic).
3. Risks to relocated undergraduates' academic success (work) and psychosocial well-being (self-, and peer-relationships) are high.

What this paper adds.

1. Type of residence determines level of integrated support for relocated international

and Australian undergraduates while living away from home.

2. Greater integrated support in residences is strongly associated with greater perceived available belonging support and sense of community.
3. Greater perceived available belonging support is associated with greater academic success, psychological well-being, and regular contact with distal co-residents, while greater sense of community at university and greater psychological well-being are also associated.

5.3.3 Introduction.

This paper presents findings from a study of International and Australian rural, regional, and remote (RRR) undergraduates, aged 18 - 20 years, at three public universities in Adelaide, South Australia. The cross-sectional study aimed to investigate factors related to relocated undergraduates' type of residence, and university, and the associations between such factors with the achievement of key, emerging-adult tasks in the work, self, and relationships domains.

International students and those from regional, rural, and remote (RRR) areas either inter-state or intra-state combine to represent nearly half (48.5%) of the total undergraduate population (Department of Education and Training [DET], 2017, 2018). Governments, universities, and businesses work to increase the numbers of both such groups of relocated students. The remaining students (51.5%) typically commute to university from a metropolitan family home. Relocated undergraduates occupy various types of residence in the private rental, commercial, university managed, and independent, not-for-profit sectors.

This study, first, posits a construct termed “Integrated support”, measures its levels in four types of residence occupied by undergraduates (flat, share house, college, “village”), and investigates its associations with perceived available belonging support, and sense of community (residence). Second, the study examines the relationships between perceived available belonging support, sense of community (residence), sense of community

(university), and students' outcomes, specifically, estimated Grade Point Average (GPA), intention to persist, psychological well-being, contact of students who returned home with co-residents, and with university peers.

5.3.3.1 Population.

Undergraduates, aged 18 - 20 years, are in the "emerging adulthood" stage of life span development (18 - 25 years) identified by Arnett (2004, pp. 3 - 8). Such students begin to establish a future career and interpersonal relationships with peers, including romantic, which are two primary and inter-related tasks for emerging adults (Cotton Bronk et al., 2009).

Relocating for tertiary education enables international and RRR undergraduates to complete a third life-span task often years earlier than their metropolitan peers. Relocated undergraduates have left the family home and begun to learn living independently, that is, without the immediate oversight and protection of parents (Seiffge-Krenke, 2016).

Geographical relocation, academic demands of university, and residing with peers, each require major psychological adjustments. Most relocated undergraduates manage to cope with what are the usually transient stressors of nostalgia for home ("homesickness"), loneliness, lifestyle change, and for many international students, language difficulties. Nevertheless, the mental health and psychological well-being of relocated undergraduates are at greater risk than those of their metropolitan peers residing at home (Bouteyre et al., 2007). Metropolitan students continue to reside in a familiar small and wider socio-spatial environment while relocated students do not so continue. Stress is the most common personal reason students give for withdrawal from university, especially in the critical first year (Harvey & Salkowicz, 2017). Undergraduates' term-time residence might be associated with factors that increase, or decrease, risks to well-being following relocation.

5.3.3.2 *Types of residence and independent-living skills.*

Securing a residence is a high priority for relocated students and universities offer assistance in the search. The type of residence relocated students choose in the host city, determines the level of independent-living skills required. For example, residing in a flat or house with, or without, co-residents requires organising meals, cleaning, laundry, and household-management tasks, while colleges provide all meals, cleaning, and management.

Flat or house rental and residency entail communication with a landlord or agent when problems arise. Most international students reside in privately rented residences and, because of associated difficulties, change residences more often than do other students (Obeng-Odoom, 2012). Whereas, staff of a college, hall, or “village” support students in resolving issues with the residence, or with co-residents (Obeng-Odoom, 2012). A social environment with integrated, supportive structures may provide emerging-adults with socio-educational experiences which assist in the transition from dependence on family to the individuation necessary for peer inter-dependence.

5.3.3.3 *Integrated support.*

This study uses “Integrated support” as a construct and measure of the material comfort, ease of communication, commonality of purpose, and interpersonal care within residences as social entities. Residences influence the social organisation of those who occupy them by location, design, and purpose (Bronkema & Bowman, 2017). Flats and houses accommodate single, or few, residents while a hall, college, or “village” typically accommodate hundreds. Thus, individuals or groups of undergraduates occupying various types of residence can be investigated from a psychosocial perspective as entities.

A comparison of undergraduates with another population of emerging adults aged 18 – 20 years is useful. Like undergraduates, fresh military recruits leave home and relocate to reside with others of common purpose. Thus, recruits also face the demands of relocation, residing with others and preparing for a future job and/or career. However, co-resident

recruits immediately join a unit which is a communal, social entity.

Military psychiatry observes and studies individuals and groups exposed to the highly stressful conditions of combat. Psychiatrists find that the cohesion of a unit (small entities of 7 - 14 personnel) is more likely to determine psychiatric casualty, or recovery, from high stress than are an individual's characteristics (da Costa et al., 2020; Griffith, 2022; Manning, 1994; Rugo et al., 2020).

Cohesion may be defined as psychological unity and is associated with the sum of material comfort, open communication, commonality of purpose, and interpersonal care evident in the unit (Manning, 1994, p. 4). For the individual, material comfort and psychological unity with other members enable feelings of safety and security, freedom of speech, common identity and purpose, and worth (Manning, 1994). Psychological unity develops through interpersonal ties and interactions that reinforce feelings of integration and belonging (da Costa et al., 2020; Griffith, 2022). Viewed on a continuum, belonging is at one end and loneliness at the other (Lim et al., 2021).

5.3.3.4 *Belonging.*

Belonging is defined as a sense of connection between an individual and others who share experiences of being valued and needed (Hagerty et al., 1992). When the universal human need to belong (Baumeister & Leary, 1995) is unmet, feelings of loneliness emerge (Lim et al., 2021). The sometimes severe, enforced social restrictions implemented under public health policies, resulted in prevalent social isolation and increased loneliness among the general population. Individuals aged 18 - 24 years (emerging adults) reported the highest levels of loneliness (Australian Institute of Health and Welfare [AIHW]). Loneliness, induced by isolation from family and other social groups, has deleterious effects on mental health and well-being (Leigh-Hunt et al., 2017). Loneliness may be perpetuated when a period of anxiety and/or depression is associated with social anxiety (Lim & Australian Psychological Society [APS], 2018). Isolated by geographical distance from familiar places, social groups, and

communities, relocated undergraduates are at greater psychosocial risk than their native, metropolitan peers. International and RRR undergraduates, enrolled at their university become members of a large entity with academic purpose. A priority for relocated students is the establishment of a network of friends among fellow students for belonging and other interpersonal support (Wilson et al., 2016).

Opportunities to interact with others are necessary for satisfying the need to belong (Baumeister & Leary, 1995; Lim et al., 2021). Such opportunities may occur at university and in undergraduates' residences. Characteristics of some types of residence may facilitate interactions and the development of belonging and commitment between student co-residents. Belonging and commitment are fundamental to a sense of community (McMillan & Chavis, 1986).

5.3.3.5 *Sense of community.*

McMillan (1976, cited in McMillan and Chavis, 1986) defined sense of community as "...a feeling that members have of belonging, that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together."

The benefits of the ties of belonging and a sense of community are the psychological, physical, and social well-being of members of an entity, large or small (Allen et al., 2021; Lim et al., 2021). Sense of community may be experienced within a small group of close associates, or a large group of individuals with distant associations such as in a neighbourhood, organisation, or village. Even small interactions, such as a hand wave, or smile, between distant acquaintances, have a positive effect on belonging and well-being (Sandstrom & Dunn, 2014) and indicate a sense of community.

Among university students, a sense of community correlates with academic success, such that the higher the perception of sense of community, the higher is Grade Point Average (GPA) (Karakus, 2017).

GPA is a measure of short-term academic success. Re-enrolment is an empirical, medium-term measure of academic success and graduation a long-term measure. Intention to persist is strongly associated with re-enrolment (Hausmann et al., 2007). The risks to GPA and intention to persist for relocated undergraduates are a period of loneliness, nostalgia for home (“homesickness”), more external stressors than those affecting metropolitan students, and a greater severity of potential stressors. Such stressors may include unfamiliar academic requirements, familial expectations, financial obligations, and unforeseeable events. Universities seek to mitigate the risks to mental health for international students. However, all relocated students depart university daily and return to a residence.

Students and their co-residents might, or might not, function as a community capable of demonstrating belonging and other kinds of social support. While GPA is associated with sense of community (Karakus, 2017), sense of belonging predicts first-year undergraduates’ intention to persist at university (Hausmann et al., 2007) and actual persistence (Tinto, 2017). Thus, sense of community and belonging affect academic success and prevent undergraduates from becoming the casualties of attrition from universities (Tinto, 2017). This study uses estimated GPA and intention to persist to measure academic success, and investigates relationships with the perception of available belonging support and sense of community of undergraduates residing in flats, share houses, colleges or hall of residence, and multi-storeyed “villages”.

Loneliness and “homesickness” affect many relocated students, especially those from overseas (Baba, 2014). However, research evidence of the relationships between undergraduates’ perception of available belonging support, sense of community, and their psychological well-being, appears lacking.

5.3.3.6 Academic success.

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persist is strongly associated with re-enrolment (Hausmann et al., 2007). The risks to GPA and intention to persist for relocated undergraduates are a period of loneliness, nostalgia for home (“homesickness”), more external stressors than those affecting metropolitan students, and a greater severity of potential stressors. Such stressors may include unfamiliar academic requirements, familial expectations, financial obligations, and unforeseeable events.

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Loneliness and “homesickness” affect many relocated students, especially those from overseas (Baba, 2014). However, research evidence of the relationships between undergraduates’ perception of available belonging support, sense of community, and their psychological well-being, appears lacking.

5.3.3.7 *Psychological well-being.*

Well-being is a concept of positive psychology which complements, but is not a substitute for, mental health. The absence, or presence and severity, of mental disorders are used to assess mental health (Luhmann et al., 2012), whereas well-being is assessed from a

positive mental health perspective. Assessment of well-being may be in its hedonistic aspect, as subjective well-being” (Diener, 1984), and/or eudaemonic aspect, as psychological well-being.

Diener (1984) defines subjective well-being as a pleasant affective and cognitive state, sometimes designated happiness (Luhmann et al., 2012). Subjective well-being is closer to being relaxed, untroubled by problems, and happy (Ryan & Deci, 2001). In contrast, eudaemonic well-being is conceptually much broader, encompassing satisfying interpersonal relationships, energy, clear thinking, self-acceptance, personal development, competence, and autonomy (Tennant et al., 2007). Psychological well-being occurs in striving to realise true personal potential (Ryan & Deci, 2001).

Federal and state restrictions imposed in 2020 to manage the COVID-19 pandemic were a considered risk to the psychological well-being of the general population. Those most adversely affected by loneliness during the social restrictions associated with the global pandemic were in the emerging-adult age range (18 - 24 years) (AIHW, 2021).

For undergraduates, the level of stress-related risk to psychological well-being appeared greater for those who had relocated than for those residing in metropolitan homes with family. Relocated students were at risk of job loss with associated financial, food, accommodation, and other insecurities. In Semester 1 (March to June 2020), international undergraduates had to return to homes abroad. Many students from inter-state, or RRR areas, also returned home. All such students relied on technical support, equipment, and infrastructure to meet academic requirements and maintain social connections with peers. Others, also reliant on technology, remained but lost part-time jobs, for example, in the hospitality industry. Without jobs, relocated students became particularly vulnerable and suddenly faced food insecurity, homelessness, loss of transport, and associated stressors.

The public service broadcaster, Special Broadcasting Services (SBS), reported that universities across Australia initiated emergency financial and other support programs for international students and others in crisis following job loss (Florez, 2020). Relocated

students who remained in Adelaide but resided in colleges were assured of their rooms, meals, and other support even when unable to pay costs. At least one college incurred debt to maintain students' welfare and well-being (personal communication, 2020, June 3). In addition, students in a college, hall, or "village" could interact with co-residents even if they followed mask and social distancing rules. Students who returned home had to use technological means of contact with co-residents and university peers.

5.3.3.8 *Contact with dispersed, distal peers.*

This study uses contact with abruptly, geographically dispersed co-residents and university peers as outcomes. The outcomes are used as indicators of participants' *sense or feelings* of belonging and connection with distal co-residents, and with distal university peers, who were no longer physically available. The pandemic restrictions precipitated a second loss of proximal belonging support for relocated undergraduates. Those in first year were probably most affected. The author found no research with emerging-adult undergraduates measuring levels of regular contact, or communication, with newly formed peer groups dispersed by the COVID-19 pandemic restrictions.

5.3.3.9 *Aim.*

In the context of the 2020 global pandemic, this cross-sectional study sought to ascertain factors associated with relocated undergraduates' academic success (estimated GPA and intention to persist) and psychosocial health (psychological well-being and maintenance of contact with distal peers). The reviewed literature suggested evidence of (a) a combined positive effect of material comfort, ease of communication, commonality of purpose, and interpersonal care on the psychological unity of entities with members under stress; and (b) direct and indirect effects of perceived available belonging support, and sense of community, on academic success and psychological health and well-being.

The review identified the lack of a psychological measure, and research, of a construct which included material comfort, vertical and lateral communication, commonality, and interpersonal care. The researcher termed the combination of the foregoing factors “*integrated support*” and constructed a scale of items relevant to relocated undergraduates’ residences.

Therefore, this study will explore academic success, well-being, and contact with distal co-residents and university peers in a sample of relocated international and RRR undergraduates. It will also explore whether type of residence determines levels of integrated support, perceived available belonging support, and sense of community, and whether there are any relationships between such factors, university sense of community, and outcomes.

The current study tested the following hypotheses. 1) There will be differences in levels of integrated support, perceived available belonging support, and/or sense of community between relocated undergraduates occupying different types of residence. 2) Integrated support will be associated with perceived available belonging support and sense of community in residences. 3) Perceived available belonging support, and sense of community in residences and at university, will be associated with estimated GPA. 4) Perceived available belonging support, and sense of community in residences and at university, will be associated with intention to persist. 5) Perceived available belonging support, and sense of community in residences and at university, will be associated with psychological well-being. 6) Perceived available belonging support, and sense of community in residences, will be related to regular contact with distal co-residents. 7) Perceived available belonging support, and sense of community at university, will be related to regular contact with distal university peers. 8) Participants’ residence sense of community will not be associated with that at university.

5.3.4 Method.

The School of Psychology sub-committee of The University of Adelaide Human Research Ethics Committee approved the research (Code: H-2020-20/61).

5.3.4.1 Participants.

Participants were relocated university students ($N = 122$), aged 18 - 20 years ($M = 19.46$, $SD = .68$) at 31st December 2020. Most international participants ($N = 48$) were from Southeast Asia ($n = 19$, 39.6%), East Asia ($n = 13$, 27.1%), and South Asia ($n = 10$, 20.8%). One each came from various countries ($n = 6$, 12.5%).

Most RRR participants ($N = 74$) were from South Australia ($n = 51$, 68.9%), New South Wales, and Victoria ($n = 13$, 17.6%). Some RRRs were from other states, the Northern Territory ($n = 8$, 10.8 %), and undisclosed ($n = 2$, 2.7%). Participants were male ($n = 22$, 18.0%), female ($n = 98$, 80.3%), undisclosed ($n = 2$, 1.7%), enrolled at The University of Adelaide (UofA) ($n = 98$, 80.3%), The Flinders University of South Australia (FUSA) ($n = 11$, 9.0%), The University of South Australia (UniSA) ($n = 11$, 9.0%), and undisclosed ($n = 2$, 1.7%). Participants represented a broad range of undergraduate degrees.

Participants resided in flats ($n = 32$, 26.2%), share houses ($n = 28$, 23.0%), a university collegiate hall ($n = 6$, 4.9%), a university college and university-affiliated colleges ($n = 36$, 29.5%), and “villages” (university $n = 8$, 6.6%, commercial $n = 12$, 9.8%).

5.3.4.2 Measures.

The questionnaire included demographic, psychological, and academic items and scales. Standardised scales consisted of items measured on Likert scales. The means of summed scales were the interval-level data necessary to meet the assumption of normal distributions for parametric tests, which are nevertheless robust for anomalies (Norman, 2010; Wigley, 2013).

Demographic items. Participants gave their home country, or Australian home post-code, post-code of term-time residence, and indicated type of residence, sex, and age. A text box allowed comment on residence.

Novel 12-Item Integrated Support Scale (ISS; Straub, 2020).

The measure consisted of the following constructs.

Comfort (material): Participants indicated 1 (*No*), or 2 (*Yes*) to items related to comfort, that is, a four-item sub-scale measuring amount of domestic support, for example, “Are most meals provided for you?”, and the following additional questions: “Would it be quite easy to get things fixed when not working properly or broken?” and “Are there spaces where you can meet with others? Or relax?”

Communication (ease): Participants indicated 1 (*No*) or 2 (*Yes*) to two items tapping ease of communicating with (a) those in control of the residence, and (b) with co-residents.

Commonality (purpose): Participants indicated 1 (*No*) or 2 (*Yes*) to the question “Like you, are other residents mostly students?” and three questions related to academic support, for example, “Is all the technology you need for your studies available?”

Care (interpersonal): Two questions related to the care and valuing of residents. Participants indicated 1 (*No*) or 2 (*Yes*) to the question “Do more senior residents check on how the younger are doing or feeling?” Participants then indicated how many co-residents they would greet when out, ranging from 0 (*None*), to 8 (*150+*). The dichotomous and ordinal responses were summed.

The 12-item belonging sub-scale of the Interpersonal Support Evaluation List for College Students (ISEL; Cohen & Hoberman, 1983).

The measure included such items as, for example, “I don’t have friends who would comfort me by showing some physical affection, like giving me a hug.”, “I belong to a group that meets regularly or does things together regularly”. Responses to the items of the sub-scale were modified from 1 (*Probably true*) or 2 (*Probably false*) to a five-point Likert scale ranging from 1 (*Disagree strongly*) to 5 (*Agree strongly*).

The Psychological Sense of Community Scale (PSCS; Jason et al., 2015).

The measure consisted of nine items. Five items related to the entity (macro-system), three to membership (micro-system), and one to both entity and membership. Items were modified to apply to both small and large communities in residence, for example, “For me, this community of people is a good fit” (Entity), “The people with whom I live can depend on each other” (Membership), “I feel good being involved in this community (Entity), and in helping the others (Membership)”. A five-point Likert scale measured responses from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Participants who resided alone indicated 0 (*N/A – I live alone*).

To measure psychological sense of community at the universities, items of the PSCS were modified as follows. University was the entity, for example, “For me, this university is a good fit”, and students were the members of the entity, for example, “Students can depend on other members of this university.”

Academic outcomes. Estimated GPA and intention to persist defined short-term and intermediate-term academic success respectively. For GPA estimate, participants reported end-of-course grades which were allotted points according to the system of the university at which participants were enrolled, for example, High Distinction = 7 points, Distinction = 6 points, and so on. The total of each participants’ points was multiplied by the number of units allotted to each subject (for example, 4.5), and subsequently divided by 18, the total number of possible units.

For intention to persist, participants affirmed as personally true one of two statements of intention to persist with tertiary education, or one of three statements indicating the contrary.

Well-being. The 14-item Warwick-Edinburgh Mental Well-Being Scale (WEMWBS; Tennant et al., 2007).

The measure included such statements of well-being as, for example, “I’ve been feeling relaxed”, “I’ve been feeling close to other people”, “I’ve been interested in new things”. The scale was modified from a 7-point Likert scale to a 5-point scale 1 (*Less than usual*), 2 (*Same as usual*), and 3 (*More than usual*). In its development, the scale showed a significant moderate inverse correlation with the General Health Questionnaire-12 (GHQ-12) (Tennant et al., 2007).

Well-being, contact with distal co-residents, and contact with distal university peers defined psychosocial outcomes. For contact with distal co-residents and university peers, participants indicated 1 (*No*) or 2 (*Yes*) to the questions, “If you went home during the pandemic, did you stay in regular contact with any friends in your accommodation?” and “... at the university?”

5.3.4.3 Procedure.

The cross-sectional study was conducted online by questionnaire survey (see Appendix F). Data were collected following the first semester examination period August - November 2020 ($N = 122$). Participants had remained in South Australia

A priori, the desired alpha level (0.05), power level (0.95), and effect size (0.3) were entered into the G*Power 3 analysis program (Faul et al., 2009) to determine the sample size for correlational and regression analyses. Output showed that a sample of 111 participants was sufficient.

Access. Participants accessed the survey (a) using information printed on notices and flyers distributed at all campuses of the three universities (except one regional campus), (b) activating a hyperlink embedded in a flyer emailed by staff of student

villages and colleges to all first-year residents; or using a Research Participation System to receive .5 hour of course credit as did first-year psychology students at one university.

Instrument. The introductory letter stated (a) title of the study, (b) University of Adelaide School of Psychology human research ethics' code of clearance (H-2020-20/61) and details for contacting the committee, (c) eligibility and ineligibility criteria for participation, (d) estimated 12 minutes to complete the questionnaire, (e) voluntary nature of participation, (f) assurance of anonymity in results, (g) confidentiality, (h) benefits of the research, (i) list of counselling services, and (j) telephone numbers of researcher, principal supervisor, and co-supervisor. Thus informed, participants indicated consent to proceed.

Participants, other than Research Participation System psychology students, were invited on completion of the survey to enter a draw for cinema vouchers and/or have a summary of the research results sent to them. Both options required an email address seen only by the researcher.

Missing data. Missing data were managed by excluding cases pairwise in the final analyses ($N = 122$). Missing data accounted for small fluctuations in sample sizes (N and n) across analyses, except for contact with distal co-residents and university peers which each had $N = 100$ (22 missing cases). The 22 missing cases for the contact variables were those of participants who stayed, that is, did not return home in Semester 1, 2020.

Recoding. Two categorical variables were recoded after obtaining frequencies and summary statistics. Type of residence was recoded from six to four categories. The categories "Flat" and "Share house" were retained. Organisationally similar residences were combined, that is, collegiate Hall ($n = 6$) and Colleges ($n = 36$), and commercial ($n = 12$) and university "Village" ($n = 8$). Statistical analysis proceeded using four types of residence. Intention to persist was dichotomised, (*No/unsure*) and 1 (*Yes*), for analysis by logistic

regression. Similarly, binary values of Contact co-residents and Contact university peers were recoded to 0 (*No*) and 1 (*Yes*).

Scale Reliability. Table 20, shows obtained Cronbach’s alpha for each of the four scales, and the Belonging sub-scale of ISEL. The alphas indicate internal reliability of good (.60 - .70) to very good (> .80). Alpha for Residence community (R-community) indicates some redundancy (> .95) (Hulin et al., 2001). A factor analysis confirmed the internal reliability of the novel ISS (see Appendix J).

Table 20

Obtained Reliability Coefficients for Scales and Belonging Support Sub-scale

	<i>N</i>	No. of Items	Cronbach’s Alpha
Integrated support	121	14	.74
Belonging (ISEL sub-scale)	119	12	.91
Residence community	122	9	.96
University community	119	9	.87
Well-being	121	14	.94

5.3.4.4 Statistical analysis.

Collected data were compiled and analysed using IBM SPSS Statistics (Version 27) predictive analytics software. All continuous variables were scored in the direction of low to high. Frequencies and descriptive statistics were obtained.

One-way between-groups analyses of variance (ANOVAs) found the effect size of each type of residence (Flat, Share house, College, “Village”) on levels of Integrated support, perceived available Belonging, sense of Residence community (R-community), and sense of University community (U-community).

Parametric tests were conducted where assumptions were met and non-parametric

alternatives where not. Pearson’s product-moment correlation coefficients and Spearman’s rank correlation coefficients were categorised small ≥ 0.1 , medium ≥ 0.3 , large ≥ 0.5 (Cohen, 1988, pp. 79-81). Multiple and logistic regressions found sizes of effect on relationships between continuous factors and outcomes. Effect sizes (η^2 or r^2 change) were categorised small ≥ 0.01 , medium ≥ 0.06 , and large ≥ 0.14 (Cohen, 1988, pp. 79-81) as was magnitude of difference between means (Cohen, 1988, pp. 284-287).

The alpha level to determine significance was .05 for all statistical tests.

5.3.5 Results.

Frequencies of all relocated, international, and RRR participants residing in flats, share houses, colleges, and “villages” were obtained and are given in Table 21. There were two missing cases for international participants ($N = 48$).

Table 21

Frequencies of All, International, and RRR Participants by Residence

Participants	<i>N</i>	Flat		Share house		College		Village	
		<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
All relocated	120	31	25.8	27	22.5	42	35.0	20	16.7
International	46	12	26.1	19	41.3	3	6.5	12	26.1
RRR	74	19	25.7	8	10.8	39	52.7	8	10.8

Approximately 25% of both international and RRR respondents resided in flats. Most International respondents resided in share houses and most RRR participants in colleges. Data for international and RRR participants were aggregated, and further analyses conducted for all relocated participants.

Descriptive statistics of continuous predictors and outcomes for all relocated participants residing in four types of residence are shown in Table 22 below.

Table 22*Descriptive Statistics for All Participants of Factors and Outcomes by Residence*

	Flat			Share house			College			Village		
Capacity	1 – 5			1 – 10			195 – 240			400 – 500		
	<i>N</i> = 32			<i>N</i> = 28			<i>N</i> = 42			<i>N</i> = 20		
Factors	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
Int. support	31	19.10	3.27	27	20.33	2.39	42	28.10	2.40	20	20.35	2.06
Belonging	29	36.76	10.01	27	36.78	9.69	41	47.51	9.03	20	40.40	11.77
R-community	31	18.00	16.58	27	28.04	12.63	42	37.64	8.15	20	24.85	15.37
U-community	29	34.59	4.79	27	34.93	4.47	42	36.43	5.43	19	35.21	5.44
Outcomes												
GPA estimate	30	5.55	0.96	27	5.61	0.91	42	5.69	1.17	20	5.44	0.85
Intent persist	31	No	2	27	No	1	42	No	1	20	No	1
		6.5%			3.7%			2.4%			5%	
		Yes	29		Yes	26		Yes	41		Yes	19
		93.5%			96.3%			97.6%			95%	
Well-being	31	43.68	10.47	27	44.22	10.05	41	42.15	8.37	20	40.65	12.82
R-contact	28	No	12	18	No	9	36	No	3	16	No	6
		42.9%			50.0%			8.3%			37.5%	
		Yes	16		Yes	9		Yes	33		Yes	10
		57.1%			50.0%			91.7%			62.5%	
U-contact	29	No	10	19	No	9	36	No	11	17	No	10
		34.5%			47.4%			30.6%			58.8%	
		Yes	19		Yes	10		Yes	25		Yes	7
		65.5%			52.6%			69.4%			41.2%	

Across types of residence, levels of Integrated support appear similar except in

colleges, where they are highest. Levels of perceived available Belonging in flats and share houses appear similar, higher in “villages”, and highest in colleges. Levels of R-community (residence sense of community) appear lowest in flats, higher in “villages”, higher still in share houses, and highest in colleges. Levels of U-community (university sense of community) appear similar across types of residence. Levels of outcomes, namely, GPA-estimate, Intent persist (intention to persist), and Well-being, also appear similar across types of residence. R-contact with distal co-residents appears highest for colleges, while U-Contact with distal university peers appears lowest in “villages”, higher in share houses, and similarly highest in flats and colleges.

A separate analysis showed that 45 ($n = 48$) international and 72 ($n = 74$) RRR participants intended to persist with university education, a total of 117, 96% ($N = 122$), with no apparent difference between the two groups.

***Hypothesis 1.** There will be differences in levels of integrated support, perceived available belonging support, and/or sense of community between relocated undergraduates occupying different types of residence.*

An ANOVA tested for differences in means of Integrated support between four types of residence ($F(4, 116) = 64.97, p < .001$) finding a very large effect size ($\eta^2 = 0.691$ [CI .588, .746]). Levene’s Statistic (3.51[4,116], $p = .010$) showed violation of homogeneity of variances based on means, however, robust tests of equality of means confirmed significant differences in levels of integrated support between types of residence (Welch 59.19[4, 7.4], $p < .001$); (Brown-Forsythe 32.65[4,2.38], $p = .018$).

Tukey’s HSD post-hoc comparison test, which is robust for violations of assumptions (Jaccard, et al., 1984), found that the mean score of Integrated support for College ($n = 42, M = 29.10, SD = 2.40$) was significantly higher than means for Flat ($n = 31, M = 19.77, SD = 3.61, p < .001$), Share house ($n = 27, M = 21.33, SD = 2.39, p < .001$), and Village ($n = 19, M = 21.16, SD = 2.12, p < .001$). There were no significant differences between

means of Flat and Share house ($p = .214$), Flat and Village ($p = .433$), or Share house and Village ($p = 1.000$).

An ANOVA showed a significant difference in Belonging between four types of residence ($F(4, 114) = 6.903, p < .001$) with a large effect size ($\eta^2 = .195$ [CI .061, .296]). Tukey's HSD post-hoc comparison test found that the mean score of Belonging for college ($n = 41, M = 47.51, SD = 9.03$) was significantly higher than means for Flat ($n = 29, M = 36.76, SD = 10.01, p < .001$) and Share house ($n = 27, M = 36.78, p < .001$), and approached significance for Village ($n = 19, M = 40.11, SD = 12.01, p = .065$). There was no difference between the means of Flat and Share house ($p = 1.000$), Flat and Village ($p = .79$), or Share house and Village ($p = .80$).

An ANOVA tested for differences in means of Sense of Community between four types of residence ($F(4,117) = 10.87, p < .001$) with a large effect size ($\eta^2 = 0.265$ [CI .131, .379]). Levene's Statistic ($10.87[4,117], p < .001$) showed a violation of homogeneity of variances based on means, however, the robust tests of equality of means confirmed significant differences in Sense of Community between residences (Welch $11.16[4,15.91], p < .001$); Brown-Forsythe $12.06[4,77.62], p < .001$).

Tukey's HSD post-hoc comparison test found that the mean score of Sense of Community for College ($n = 42, M = 37.64, SD = 8.15$) was significantly higher than the means for Flat ($n = 31, M = 18.00, SD = 16.58, p < .001$), Share house ($n = 27, M = 28.04, SD = 12.63, p = .03$), and Village ($n = 19, M = 24.32, SD = 15.60, p = .003$). There was a significant difference in Sense of Community between Share house and Flat ($p = .03$) but none between Share house and Village ($p = .87$), and Flat and Village ($p = .45$).

Thus, Hypothesis 1 was accepted. There were significant differences in integrated support, perceived available belonging support, and sense of community in residences. All three factors were highest in colleges.

An additional ANOVA confirmed that there were no differences in means of University Sense of Community between Flat, Share house, College, Village ($F(4,114) = .683, p = .61$).

Correlational analysis preceded analyses by regression. Spearman's Rho was selected to accommodate ordinal and rank-order ratings (Pallant, 2013).

Correlations indicated that female participants had a somewhat greater perception of community at university than had male ($r_s = .182, N = 119, p = .048$) and younger rather than older participants were somewhat more likely to have returned home during 2020 severe pandemic restrictions ($r_s = -.254, N = 119, p = .006$). There were no other significant correlations with sex or age and neither were a focus of the investigation, hence both were excluded from further analysis. Table 23 shows the correlational matrix of all included factors and outcomes.

Table 23*Spearman's Rho Correlational Coefficients (2-tailed) for All Participants of Factors, and Outcomes*

	1	2	3	4	5	6	7	8	9
1.Integrated support	1								
2.Belonging	.53***	1							
3.Residence community	.64***	.54***	1						
4.University community	.16	.21**	.14	1					
5.GPA-estimate	.00	.15	.05	.04	1				
6.Intent persist	.02	.20*	.04	.22*	.09	1			
7.Well-being	.07	.38***	.17	.35***	.02	.10	1		
8.Co-resident contact	.45***	.40***	.40***	.07	.17	-.06	.09	1	
9.Uni.-peer contact	.10	.21*	.02	.13*	-.02	-.09	.10	.20*	1

$p = .02 - .05$ * $p = .002 - .01$ ** $p = .001$ or less ***

Integrated support, Belonging, and Residence community are strongly but discretely, positively inter-correlated and each moderately positively correlated with Co-resident contact, such that increases in one are related to increases in the others (see Table 23).

The total number of participants ($N = 122$) allowed regression analyses by nine predictors based on the formula $N \geq 50 + [8m] = x$ used to determine sample size (Tabachnick & Fidell, 2013, p. 123).

Standard multiple regressions analysed the data of continuous variables, Belonging, Residence community, University community, Well-being, and GPA-estimate. Logistic regressions analysed the binary, categorical variables, Intention to persist, Co-resident contact and University peer contact. Preliminary analyses showed no violation of normality, linearity, multi-collinearity, or homoscedasticity.

***Hypothesis 2.** Integrated support will be associated with perceived available belonging support and sense of community in residences.*

The model, Integrated support, consisting of Comfort, Communication, Commonality, and Care, was entered into a standard multiple regression on Belonging and Residence community. The model as a whole was significant, predicting 31% of the variance in Belonging ($r^2_{\text{change}} = .31$, $F(4, 102) = 11.44$, $p < .001$) and 40% in Residence community ($r^2_{\text{change}} = .40$, $F(4, 105) = 17.15$, $p < .001$).

Thus, Hypothesis 2 was accepted. Integrated support showed a large size of effect on perceived available belonging support, and residence sense of community.

Table 24 shows that Care was a unique, significant contributor to Belonging explaining 42% of the variance with a medium effect size ($r^2_{\text{change}} = \text{partial } .33^2 = .11$). Care was also the greatest, significant, unique contributor to Residence community explaining 32% of the variance with a medium effect size ($r^2_{\text{change}} = \text{partial } .27^2 = .07$). Communication contributed a further 29% to the variance in Residence community with a medium effect size

($r^2_{\text{change}} = \text{partial } .31^2 = .10$). The unique contribution of Commonality (17%) to the variance in Residence community was close to significant.

Table 24

Standard Multiple Regressions of Residence Comfort, Communication, Commonality, and Care (Model 1) on Belonging, and Residence Community

Belonging						Correlations	
Factors	β	t	Sig.	95.0% CI		Partial	Part
Comfort	-.02	-.16	.870	[-1.63,	1.38]	-.02	-.01
Communication	.15	1.56	.122	[-0.56,	4.74]	-.15	.13
Commonality	.12	1.19	.237	[-1.00,	4.00]	.12	.10
Care	.42	3.56	.001	[0.83,	2.91]	.33	.29
Residence community							
Factors	β	t	Sig.	95.0% CI		Partial	Part
Comfort	.03	0.29	.769	[-1.61,	2.17]	.03	.22
Communication	.29	3.30	.001	[2.22,	8.87]	.31	.25
Commonality	.17	1.88	.063	[6.11,	6.10]	.18	.14
Care	.32	2.88	.005	[0.59,	3.12]	.27	.22

Hypothesis 3. *Perceived available belonging support, and sense of community in residences, and at university, will be associated with estimated GPA.*

The model, comprising Belonging, Residence community, and University community, was entered into a standard multiple regression on GPA-estimate.

The model as a whole was not significant in predicting variance in GPA-estimate ($r^2 = .04$, $F(3,112) = 1.63$, $p = .19$). However, Belonging made a significant, unique

contribution of 23% to the variance ($\beta = .23$, $t = 2.18$, $p = .032$, [CI .00, .04]), with a small effect size ($r^2_{\text{change}} = .20^2 = .04$).

Thus, Hypothesis 3 was rejected noting, however, a small effect of perceived available belonging support on estimated GPA.

Hypothesis 4. Perceived available belonging support, and sense of community in residences and at university, will be associated with intention to persist.

The same model, as above, was entered into a logistic regression on Intention to persist. Neither the model as a whole nor any contributor explained a significant amount of variance in Intention to persist. However, there was a small, significant correlation between perceived available belonging support and intention to persist (see Table 23) such that the variables share 4% of variance ($r_s^2 = .20^2 = .04$).

Thus, Hypothesis 4 was rejected noting again, however, the very large majority of participants intending to persist, and a small effect of perceived available belonging support on the variance in intention to persist.

Hypothesis 5. Perceived available belonging support, and sense of community in residences and at university, will be associated with psychological well-being.

The model, comprising Belonging, Residence community, and University community, was entered into a standard multiple regression on Well-being. The model as a whole was significant, explaining 31% of the variance in Well-being ($r^2 = .31$, $F(3, 112) = 16.39$, $p < .001$).

Table 25 below, shows that Belonging and University community were each unique, significant contributors, 40% and 30% respectively, to the variance in Well-being with medium-sized effects ($r^2_{\text{change}} = .38^2 = .14$, $r^2_{\text{change}} = .33^2 = .11$).

Table 25*Standard Multiple Regression of Belonging, Residence Community, and University**Community on Well-being*

Well-being Factors	β	<i>t</i>	<i>Sig.</i>	95.0% <i>CI</i>	<i>Correlations</i>	
					<i>Partial</i>	<i>Part</i>
Belonging	.40	4.35	.000	[.21, .55]	.38	.34
R-Community	-.05	-0.53	.596	[-.15, .09]	-.05	-.04
U-Community	.30	3.64	.000	[.28, .10]	.33	.29

Thus, Hypothesis 5 was accepted insofar as perceived available belonging support and university sense of community each made unique, moderate-sized contributions to the variance in psychological well-being. However, sense of community in residence made no unique contribution to the variance. The latter finding can be explained by the high correlation (see Table 23, above) between perceived available belonging support and sense of community in residence.

Hypothesis 6. *Perceived available belonging support, and sense of community in residences and at university, will be related to regular contact with distal co-residents.*

Belonging and Residence community comprised Model 1 which was entered into a logistic regression on the binary Co-resident contact. Model 1 as a whole was significant, thus identifying correctly responses 0 (*No*) and 1 (*Yes*) ($\chi^2(2, N = 122) = 20.375, p < .001$). The Model explained between 18.9% (Cox and Snell R Square) and 26.5% (Nagelkerke R Square) of the variance in Co-resident contact and classified correctly 76.3% of cases. Table 7, below, shows the odds ratio (1.08) of Belonging as a small (8%), unique, significant contributor to Co-resident contact while the contribution of Residence community was insignificant.

Hypothesis 7. *Perceived available belonging support, and sense of community at university, will be related to regular contact with distal university peers.*

Belonging and University community comprised Model 2 for testing on University peer contact. The Model as a whole approached significance in identifying correctly responses 0 (*No*) and 1 (*Yes*) ($\chi^2(2, N = 122) = 5.587, p = .061$). The Model explained between .056 (Cox and Snell R Square) and .076 (Nagelkerke R square) of the variance in University peer contact and classified correctly 61.9% of cases. Table 26 shows the unique contribution, which approached significance, of Belonging on the variance in University peer contact, whereas University community shows no significant effect.

Table 26

Logistic Regressions of Model 1 and Model 2 on Contact with Co-residents and Contact with University Peers respectively

Co-resident contact						95% C.I.	
Model 1 Factors	B	S.E.	Wald	Sig	Exp(B)	Lower	Upper
Belonging	.08	.03	9.47	.002	1.08	[1.03,	1.14]
R-community	.03	.02	2.39	.122	1.03	[.99,	1.06]
University peer contact							
Model 2 Factors							
Belonging	.04	.02	3.01	.083	1.04	[.10,	1.08]
U-community	.04	.05	.76	.384	1.04	[.95,	1.15]

Thus, perceived available belonging support had a small, significant positive effect on contact with distal co-residents and a positive influence on contact with distal university peers. However, neither sense of community in residence, nor at university, showed unique, significant effects on distal contact with co-residents and university peers. The latter finding

was explained by the correlations (see Table 23, above) of perceived available belonging support with contact with distal co-residents and contact with university peers.

***Hypothesis 8.** Participants' residence sense of community will not be associated with that at university.*

The coefficient of determination for an association between Residence community and University community was .02, the square of $r_s^2 = .14$ shown in Table 4, above. Thus, sense of community in residence and at university explained only two percent of the respective variances.

There were moderate correlations between Integrated support and Co-resident contact, Residence community and Co-resident contact, a large correlation between Belonging and Residence community, and a small correlation between Belonging and University community (see Table 23, above). The respective coefficients of determination ($r_s^2 = .45^2 = .20$), ($r_s^2 = .40^2 = .16$), and ($r_s^2 = .54^2 = .29$) showed large effect sizes ($> .14$) and a small effect size ($r_s^2 = .21^2 = .04$) ($< .06$) (Cohen, 1988, pp. 79-81).

Thus, Integrated support and Co-resident contact explain 20% of the respective variances, Residence community and Co-resident contact explain 16%, Belonging and Residence community explain 29%, and Belonging and University community do so for 4%. The associations are included in Figure 2.

5.3.6 Summary.

Participants residing in flats, share houses, and “villages” reported similar levels of integrated support but significantly lower than those residing in colleges. Participants residing in colleges perceived significantly more available belonging support than those residing in flats and share houses, and the difference between colleges and “villages” was close to significant. Sense of community in residences was also greatest in colleges and greater in share houses than in flats. However, there was no significant difference in sense of

community for participants residing in “villages” compared with those in flats or share houses. There were also no significant differences between types of residence for sense of community at university.

Significant, positive direct and indirect or mediated associations between all factors and outcomes are summarised and presented in Figure 2.

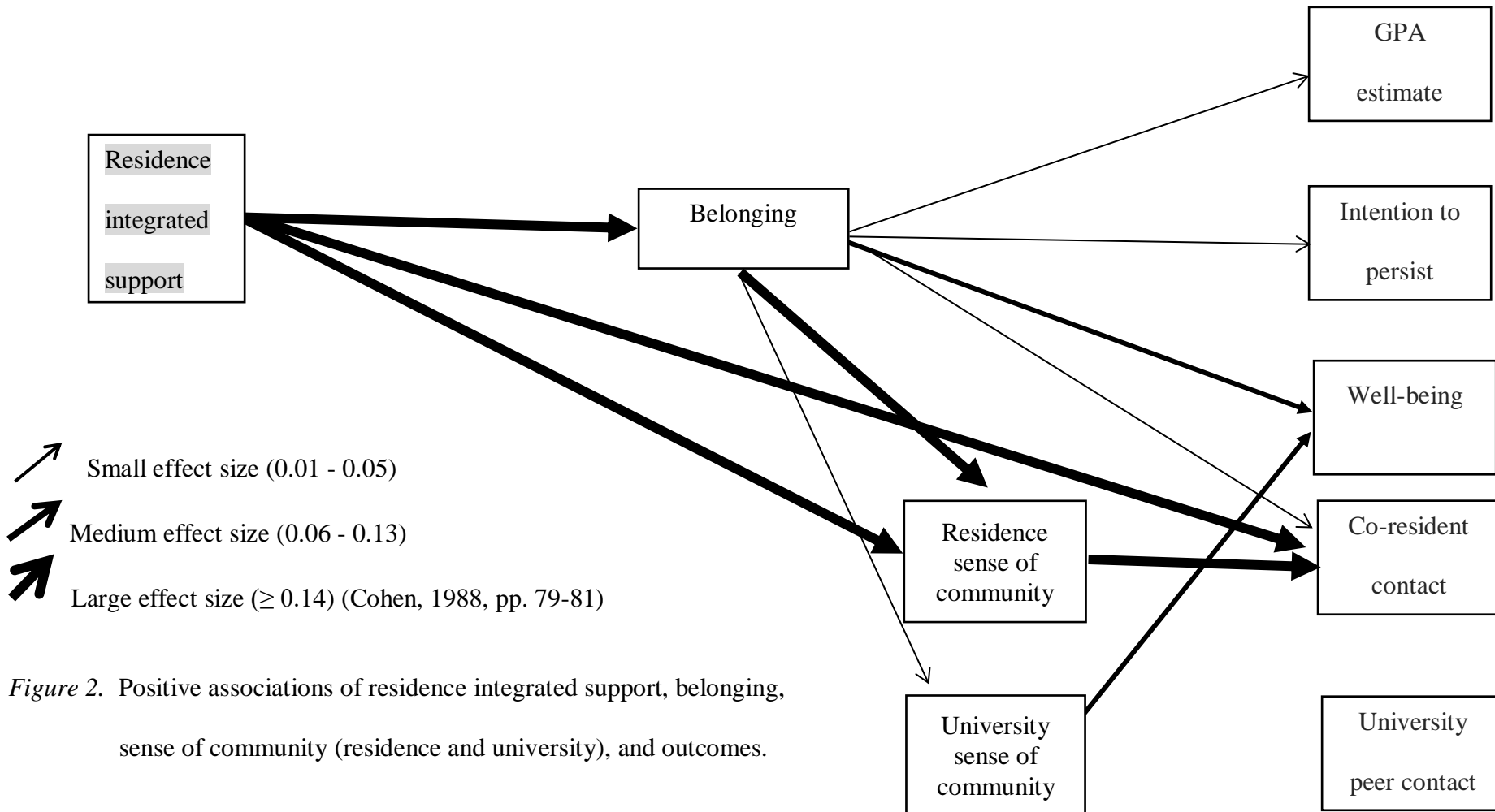


Figure 2. Positive associations of residence integrated support, belonging, sense of community (residence and university), and outcomes.

5.3.7 Discussion.

This study of relocated Australian undergraduates (18 - 20 years) aimed to determine predictors of GPA estimate, intention to persist, psychological well-being, and regular contact between distal co-residents and university peers. Participants ($N = 122$) completed an online survey questionnaire designed to investigate the relationships between the factors integrated support in a residence, participants' perceived available belonging support, residence sense of community, and university sense of community, and between factors and outcomes. The participants residing in four types of residence were first compared for similarities and differences in the levels of factors and outcomes.

Relocated undergraduates from abroad, and from Australian regional, rural, and remote areas, may choose between private, university, and university-affiliated residences. The author's previous study (see Chapter 4) found that perceived available social support (tangible, belonging, and appraisal) was lowest in flats and "villages", higher in share houses, and highest in colleges. "Villages" have the greatest student capacity, thus, the finding confirmed Suitor's (2014) conclusion that perceived available social support is not determined by the comparatively greatest student capacity of a residence.

Typical relocated undergraduates are emerging adults. Three key tasks of emerging adulthood are to establish a career, found long lasting, positive relationships with peers (including romantic), and develop the self (Arnett, 2004). This paper describes a study of the relationships between supportive factors associated with undergraduates' types of residence and university, and their life-stage related tasks. Furthermore, the study shows differences in levels of supportive factors between flats, share houses, colleges, and "villages".

Findings from the study contribute evidence to the body of literature concerned with the development of emerging adults, particularly students who have relocated for tertiary education, and have greater need of perceived available belonging support and sense of

community than has the general population. In addition, this study contributes the Integrated Support Scale (ISS) as a measure of material comfort, ease of communication, commonality of purpose, and interpersonal care in residences. Obtained Cronbach's alpha found the ISS internally consistent. A factor analysis confirmed the finding (see Appendix J).

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5.3.7.1 Implications for the tertiary sector.

In analysis to determine which socially oriented factor was most strongly associated with undergraduates' outcomes, the study found that integrated support in residences made a large contribution to perceived available belonging support and a larger contribution to residence sense of community. This study also found differences in the levels of integrated support between the four types of residence occupied by participants. Participants residing in flats had the least supportive environment (integrated support), perceived available belonging support, and sense of community, while those in colleges had the most of each. Furthermore, levels of integrated support, perceived available belonging support, and sense of community were not only higher in colleges than in flats but also than in share houses, and "villages", although the difference in perceived available belonging support between college and "village" approached, rather than reached, significance. However, while levels of integrated support and perceived available belonging support in flats, share houses, and "villages" were not significantly different, sense of community (residence) was higher in share houses than in flats. Thus, participants in this study residing in share houses appear to perceive a connection to their co-residents as a group, or entity, but not necessarily as individuals.

This paper shows evidence that increases in integrated support in relocated undergraduates' residences is strongly associated with increases in perceived available belonging support, sense of community among co-residents, and greater regular contact with distal co-residents. Levels of material comfort are largely constrained by the capacity and

architectural design of the four types of residence, and any services provided. However, material comfort and commonality show lesser contributions to perceived available belonging support and residence sense of community than do interpersonal care and ease of communication. The results suggest that the contributions of material comfort and commonality are indirect, that is, they may provide opportunities for interpersonal care and ease of communication to occur.

Thus, interventions to encourage vertical and lateral care and communication in groups of undergraduates both in residences and universities, should be feasible. However, such interventions might not achieve high levels of perceived available belonging support and sense of community where opportunities for proximal (“face-to-face”) interactions are limited by architecture, course design, or restricted during a pandemic.

Participants with higher perceived available belonging support also show a higher sense of community in their residence and at university. The investigation of relationships between factors and academic success shows mixed results. Perceived available belonging support accounts for a small amount of the variance in GPA-estimate and, consistent with the literature, as it increases so too there is a small increase in intention to persist. However, unlike Karakus (2017), this study found no associations of sense of community in residences, or at universities, with measures of academic success.

In determining associations of perceived available belonging support and sense of community with psychological well-being, this paper reports the following. Increases in participants’ perceived available belonging support had a medium-sized effect on the variance in psychological well-being. Residence sense of community, however, did not contribute significantly to psychological well-being. Nevertheless, belonging is an attribute of sense of community (McMillan & Chavis, 1986), as well as a characteristic of perceived available social support (Cohen & Hoberman, 1983). Like increased perceived available belonging

support, increased sense of community at university also made a moderate contribution to psychological well-being. Thus, perceived available belonging support in residences and sense of community at university show balanced contributions to relocated undergraduates' psychological well-being and both are to be encouraged.

This paper also reports that increased integrated support has a direct association with regular contact with distal co-residents and that the size of effect is large. Increased perception of available belonging support was also associated with increased regular contact with distal co-residents and was a positive influence on contact with distal university peers. Further, regular contact with distal peers by participants who returned home for Semester One was, like integrated support, perceived available belonging support, and sense of community, greatest in colleges. Noteworthy is that college participants who returned home did so after a relatively short period of approximately four to five weeks of co-residency.

The study found a positive, medium-sized effect on the association between sense of community in residence and regular contact with distal co-residents. However, controlling for perceived available belonging support, the contribution of sense of community became insignificant to the outcome. University sense of community showed no relationship with regular contact with distal university peers.

Maintaining regular contact using current audio-visual technology can be seen as not only an indication of perceived available belonging support but also a means of continuing to give and receive other kinds of social support. Technological contact can be used to seek help, discuss problems (appraisal support), engage in reassurance and confidence building (self-esteem), as well as sharing in, or joining, an online activity with others. However, in general, use of technology to maintain contact may be perceived as a useful adjunct to, but not a substitute for, interactions in person.

5.3.7.2 Strengths and Limitations.

To the author's knowledge, no other study has investigated how the characteristics of residences affect undergraduates' achievement of tasks in the work, relationships, and self-domains of emerging adulthood. Additional strengths were the construction, reliability, and testing of the novel ISS with a sample of emerging adults under stress, that is, had left home and relocated for university education. Using undergraduates' residences as entities, the ISS measured integrated support consisting of material comfort, ease of communication, commonality of purpose, and interpersonal care across four types of residence. Rigorous statistical analysis found strong relationships between integrated support, perceived available belonging support, and sense of community. The study also used existing standardised validated measures and reported all nil effects found.

The cross-sectional survey design of this study would usually be considered a limitation and the sample consisted of non-randomly selected voluntary participants. However, the design enabled this study to collect unusual data, namely, the frequency of contact students had with distal co-residents and university peers after returning home for Semester 1 during the 2020 pandemic. Thus, differences between types of residence and relationships between perceived available belonging support, sense of community, and contact with distal co-residents and university peers, could be found and explored. Nevertheless, the study retains the limitation of being descriptive.

The numbers of participants in share houses ($n = 27$) and "villages" ($n = 20$) were less than advisable (≥ 30). However, the finding that residents in share houses had a greater sense of community than did those in "villages", as well as those in flats, can now be investigated further.

5.3.7.3 Conclusion.

This paper presents findings which add valuable evidence to the literature concerned with international and RRR undergraduates' life-stage development and residences while at university. The paper describes an investigation of four types of residence, factors associated with residences and universities, and relationships between factors and students' outcomes. Integrated support, a novel measure of supportive characteristics in the environment of a residence, had large effect sizes on participants' perceived available belonging support, sense of community in residences, and regular contact with distal co-residents. Furthermore, increases in perceived available belonging support were associated with increases in academic success (GPA and intention to persist), psychological well-being, regular contact with distal co-residents, and influenced regular contact with distal university peers. Sense of community at university was also positively associated with psychological well-being. Interpersonal care was a unique, significant contributor to perceived available belonging support and, together with ease of vertical and lateral communication, also to sense of community in residences. The study's limitations do not detract from the findings which should be useful for student accommodation providers and advisors, counsellors, parents, guardians, and students. The study also provides a reliable measure of residence environments. Future researchers of perceived available belonging support and sense of community may consider use of the integrated support measure, with items appropriately modified, for entities other than student-residences.

Chapter 6. Discussion

6.1 Preamble

This thesis begins with a systematic review of the literature as Study One. By using a systematic rather than a narrative approach, this thesis rigorously examines the research evidence to establish a basis for the two quantitative studies which follow in logical sequence. The thesis gives comprehensive outcomes related to seven factors which differ in levels between international and RRR university students' residences, as well as students' meaning-in-life (presence and search), and sense of community at university. This thesis also identifies the risks to relocated students' accomplishment of key developmental tasks, their mental health, and psychological well-being. Chapter 6 gives a summary of the findings from the three studies conducted, outlines the contributions of the findings to the literature, universities, and providers of accommodation for relocated undergraduates, and discusses the implications of the outcomes. Finally, this chapter discusses methodological limitations and strengths with suggestions for future research.

6.2 Summary of Findings

This thesis takes Arnett's (2004) theory of emerging adulthood as a framework for the research, since participants were typical undergraduates who had relocated for tertiary education. Based on gaps found in the literature, the thesis proceeds to investigate relationships between socially supportive factors in residences, meaning-in-life, sense of community at university, pass rate, estimated GPA, intention to persist, mental health, psychological well-being, and regular contact with dispersed, distal peers. The author constructed and tested a novel measure of residence environment, termed *Integrated support*.

The three studies comprising this thesis follow a logical progression aimed at increasing knowledge of optimal support in residences to ensure the age-related psychosocial

development of relocated, typical university undergraduates. Relocated undergraduates are defined as coming from abroad (international students) and regional, rural, or remote areas intra-state and inter-state (RRR students). The investigations were based on the common needs of emerging adults on relocation, without neglecting international students' need to practise oral English-language skills.

6.2.1 Relationship of perceived available social support with academic success and mental health.

Study One (Chapter 3) is a systematic review of research conducted with relocated first-year university students. The review aimed to find the strength of evidence that social support in the residences of first-year international and other relocated students is associated with academic success and mental health. The results show evidence for consistent, small, positive direct and indirect effects of social support on indicators of relocated students' short- and medium-term academic success and mental health. The finding added to the strong evidence of the meta-analysis conducted by Richardson et al. (2012) among others. However, the review also found a lack of research investigating levels of social support among relocated students occupying different types of residence. The gap in research indicated a quantitative study.

6.2.2 Relocated first-year university students, residences, factors, and outcomes.

Study Two (Chapter 4) was a quantitative, cross-sectional, survey study which aimed to extend Study One by exploring associations between factors found in residences, intrinsic meaning-in-life, and the academic and mental health outcomes of international and RRR first-year university students.

This study had two objectives, first, to establish if there were any differences in levels of factors and outcomes for relocated students occupying flat/houses, colleges, or “villages”; second, relationships of factors with students’ outcomes and the sizes of effect of factors on the variances of outcomes.

Frequency statistics showed that most international students resided in flats/houses, followed by “villages”, and few in colleges, whereas most RRR students resided in colleges, followed by flats/houses, and few in “villages”. Descriptive statistics were similar for international and RRR students’ outcomes, warranting no further investigation. Thus, international or RRR status did not confound results. Further statistical analyses were conducted with international, RRR, and 17 unspecified, combined into one sample of relocated, first-year university students. However, there was one exception, namely, a regression analysis for effects of oral English use on the pass rate of international students only.

Study Two found, first, differences in levels of factors between students residing in flats/houses, colleges, and “villages”, but not in levels of outcomes. Levels of perceived available social support, domestic support, oral English use, and greeting network were significantly higher in colleges than other types of residence. The finding that perceived available social support is highest in colleges confirms that of Suitor (2014), that is, type of residence with greatest capacity (“village”) does not predict greatest perceived available social support. As expected, meaning-in-life (presence and search) was not associated with type of residence.

The Study found, second, the following relationships of factors with outcomes, and sizes of effect, beginning with academic success. Students with large greeting networks had lower pass rates than those who recognised and greeted up to ten co-residents. The effect was medium-sized. It could be that some first-year undergraduates, probably RRR students,

residing in colleges, prioritise social relationships rather than pass rate. Nsizwana et al., (2017) provided evidence that undergraduates with lower pass rates prioritise attending to social networks over academic work. Nevertheless, participants in Study Two with greater perceived available social support achieved higher pass rates, albeit the size of effect was small. The finding is consistent with that of the meta-analysis by Richardson et al., (2012). Other factors greater in colleges, namely, domestic support and oral English use had no significant effects on pass rates. Students with higher presence of meaning-in-life were somewhat more likely to intend to persist with tertiary education, however, a logistic regression found the size of effect insignificant.

Study Two findings for mental health were consistent with the literature. Participants with a perception of greater available social support reported less psychological distress than others (Lau et al., 2018; Li et al., 2018). Participants with greater presence of meaning-in-life also reported less psychological distress than others (Steger et al., 2009). Each factor showed a medium-sized effect on the variance in psychological distress. Increased search for meaning-in-life, however, was associated with greater psychological distress (Webster, 2018). for participants. Although perceived available social support, unlike the presence or search for meaning-in-life, was greatest for relocated students residing in colleges, there were no significant differences in psychological distress between types of residence.

6.2.3 Transition from Study Two (chapter 4) to Study Three (chapter 5).

Psychological research has found consistently positive, small but pervasive effects of perceived available social support on university students' academic achievement and mental health. However, the author found a lack of research on generative, or facilitative, factors of social support. With evidence from Study Two that perceived available social support was greatest in colleges for relocated, first-year students, the author constructed a correlational

matrix from the collected data. The matrix included the factors perceived available support “Tangible”, “Belonging”, “Appraisal” (sub-scales of social support), domestic support, and greeting network. The greater inter-relatedness and connection of co-residents in colleges, indicated by perceived available belonging support, was further supported by a positive correlation with greeting network.

The first-year participants in Study Two residing in colleges, recognised and greeted more co-residents than did those in other types of residence. According to Egilsson et al. (2021) and Sumsion and Wong (2011), mutual recognition and acknowledgement in greeting indicate an initial level of inter-relatedness and connection requiring only opportunity for acts associated with belonging to occur. Thus, greeting network seemed a probable generator, or facilitator, of perceived available belonging support.

A broader search of the literature identified “cohesion” as a concept related to belonging. Investigations of “cohesion” have found strong relationships between environmental factors within small military units (10 - 299 members), cohesion, and members’ mental health/well-being (Bartone et al., 2002, Campbell-Sills et al., 2020; Cota et al., 1995; Manning, 1994). Like international and RRR undergraduates, typical military recruits are aged 17 - 20 years (Campbell-Sills et al., 2020; Manning, 1994) and, thus, emerging adults facing the same age-related key tasks following relocation. Furthermore, both relocated undergraduates and military recruits are under greater stress than peers living at home. The foregoing, together with the relatively high correlations found between perceived available belonging support, domestic support (material comfort), and oral English use (communication) indicated the aims and methodology for Study Three.

6.2.4 Relocated undergraduates, integrated support in residence environment, associated factors, and outcomes.

Study Three (Chapter 5) is the second quantitative, cross-sectional, survey study. This study aimed to extend Study Two by investigating the associations of constructs in residence environments with participants' academic success and psychosocial well-being. The constructs, material comfort, ease of communication, commonality of purpose, and interpersonal care, were combined into a novel scale termed "Integrated support".

Study Three had three objectives. First, the Study sought to determine any differences in the levels of integrated support, mediating factors, and outcomes for groups of participants residing in flats, share houses, colleges, and "villages". Second, the Study sought to ascertain any associations of integrated support in residences with probable mediators, namely, perceived available belonging support and residence sense of community, and effect sizes. Third, the Study sought the factors with the strongest associations with the following outcomes: GPA estimate, intention to persist, psychological well-being, regular contact with distal co-residents and university peers.

Study Three (Chapter 5) found, as did Study Two (Chapter 4), that most international students resided in flats and share houses, followed by "villages", whereas most RRR students resided in colleges, followed by flats and share houses. Data were further analysed in aggregate for all relocated students. The findings of Study Three were novel since integrated support in undergraduates' residences has not previously been investigated.

Comparisons between the four types of residence showed that participants residing in colleges had greater integrated support, perceived available belonging support, sense of community, and contact with distal co-residents than had those in flats, share houses, and "villages". The differences found between residences were significant, except for one. However, the difference in the level of perceived available belonging support between

colleges and “villages” was close to significant. Comparisons also determined that participants residing in share houses had a significantly greater sense of community than had those in flats.

The Study found no differences between the four types of residence for the factor, sense of community at university, or for most outcomes. The one exception was regular contact with distal co-residents. A much higher percentage of participants residing in colleges contacted distal co-residents regularly than did those in flats, share houses, or “villages”, while participants in flats did so more than those in share houses, or “villages”.

Relationships within factors, and between factors and outcomes were investigated. The findings are as follows. Integrated support in residences had a positive, large size of effect on the variances of two factors and one outcome. As integrated support increased, so too did perceived available belonging support, residence sense of community, and contact with distal co-residents. The findings are consistent with research examining the impact on group cohesion of the environmental variables within an entity (da Costa, 2020).

Perceived available belonging support had a positive effect on the variances of all outcomes except contact with distal university peers. The factor contributed to a large increase in residence sense of community, a medium-sized increase in psychological well-being, and small increases in GPA estimate, and intention to persist, consistent with the social support literature. The factor also contributed to a small increase in contact with distal co-residents, and, while not significant, was a positive influence on contact with distal university peers.

The perceived available belonging support of the ISEL (Cohen & Hoberman, 1983) is distinct from *feelings or sense* of belonging. Previous research investigating belonging and community has defined “belonging” in terms of “fitting in” and, as such, it has been included

in measuring sense of community (Jason et al., 2015). The large contribution of perceived available belonging support to the variance of sense of community was a novel finding.

Sense of community in residences contributed a large proportion of the variance in contact with distal co-residents, while university sense of community had a positive, medium size of effect on the variance in psychological well-being.

In summary, academically (emerging-adult work domain) and individually (emerging-adult self-domain), all relocated undergraduate participants were progressing well with the developmental tasks of achieving eventual financial independence and self-actualisation. However, on variables within the emerging-adult relationships domain, participants in colleges generally outperformed those in flats, share houses, and “villages”. Undergraduates residing in a flat, share house, or “village” have fewer opportunities to interact with as many co-residents as those in colleges. Considering the pervasive, positive effects of perceived available belonging support on the measures of academic success and psychosocial well-being, relocated students, would be ill advised, for this alone, to reside in a flat for their first year.

6.3 Contributions to Psychological Knowledge

The three studies comprising this thesis have contributed significantly to the literature of developmental and educational psychology by increasing knowledge of typical undergraduate university students, relocated from abroad and Australian RRR areas, and their specific, age-related needs and priorities.

6.3.1 Contribution to the developmental and educational literature.

This thesis contributes to developmental and educational literature by defining typical undergraduate students as emerging adults, focussing on those who have relocated and their

residences, and comparing the effects of factors associated with residences on developmental risks, tasks, and supports.

Perceived available social support, domestic support, and greeting network are salient factors for relocated undergraduates, especially in the first year of leaving the family home. So, too, is the use of oral English for international students. This thesis contributes statistically obtained evidence that levels of such factors differ significantly between residences, that is, a flat, share house, college, or “village” and are not entirely related to student capacity. While colleges have greater capacity than do flats and share houses, they have typically less than half that of “villages”. Study Two found that the higher level of perceived available social support in colleges compared with “villages” is significant while Study Three found greater perceived available belonging support in colleges close to significantly different from that in “villages”.

Perceived available belonging support in share houses was the same as in flats, while sense of community was higher. When perceived available belonging support in share houses is evaluated in combination with sense of community, results suggest that residents perceived co-residents as a congenial group, or entity, rather than as individuals with whom to interact for belonging support. As did Suitor (2014), this thesis finds that levels of factors associated with residence are not entirely related to greater residence capacity.

Meaning-in-life affects the mental health of typical relocated undergraduates. The finding confirms previous research, such that as presence of meaning-in-life increases, so psychological distress decreases. However, as search for meaning-in-life increases, so too does psychological distress.

A novel research scale (ISS) was constructed and tested as a measure of integrated support. Integrated support consists of constructs of the environmental characteristics of an entity, namely, physical comfort, ease of communication, commonality of purpose, and

interpersonal care. Study Three (Chapter 5) shows that integrated support is strongly associated with perceived available belonging support, sense of community in relocated undergraduates' residences, and contact with distal co-residents.

Consistent with the finding that low social support and sense of community are factors contributing to the psychological distress of emerging-adult students (Suitor, 2014), the strengths-based approach of Study Three (Chapter 5) shows that increases in both perceived available belonging support associated with residence, and sense of community at university, are associated with greater psychological well-being. Well-being is in the emerging-adult Self-domain. Moreover, during a period of stressful dispersal, in this case pandemic-induced, established perceived available belonging support has small, positive associations with work-domain outcomes (GPA estimate and intention to persist), and is associated with relationships-domain outcomes (regular contact with distal co-residents and university peers). The finding is likely to be generalisable to emerging adults in other stressful, dispersal events.

6.3.2 Contribution to the social support literature.

This thesis confirms perceived available social support as a small but pervasive contributor to the variances in relocated undergraduates' outcomes and shows that the level differs between the types of residence such students typically occupy in Adelaide, South Australia. The level of perceived available social support is significantly higher in colleges than smaller capacity flats/houses and larger capacity "villages". Study Two participants residing in small capacity flats/houses and large capacity "villages" reported similar levels of perceived available social support. Study Three participants confirmed the finding for perceived available belonging support. Items of the tangible and appraisal support sub-scales are also oriented towards proximity and peers. However, there are other similarities between flats, share houses, and "villages", and differences from colleges.

First, “Villages” are multi-storeyed, secure buildings consisting of flats. Whether or not in a “Village”, flats may have similar interior architecture to share houses and both are designed for small numbers of cohabitants. While “villages” typically have separate spaces for television, games, and gym where interaction between residents may occur, they do not include dormitories with shared facilities, dining halls, or outdoor sports areas which ensure increased personal interaction between more residents (Bronkema & Bowman, 2017). Second, the level of integrated support in flats, houses, and “villages” is similar, and significantly lower than in colleges.

6.3.3 Contribution to the belonging and sense of community literature.

Study Three of this thesis shows perceived available belonging support has positive associations with typical undergraduates’ academic success (GPA estimate and intention to persist) and psychosocial health (psychological well-being, and regular contact with distal co-residents and university peers).

The comments of two college residents, one who remained during the pandemic and one who had had to return home after a month and then rely on telecommunication, exemplify the positive effects perceived available belonging support may have on academic success and psychosocial well-being:

... As I couldn’t go home (interstate) it was made clear to me that I was welcomed, belonged and would be looked after at college. They communicated well with us and ran great programs to keep us active and busy and give us something more to do than just study.

... I believe that having the support from everyone in my college helped me get through the pandemic and the time I had to spend back home. Without them I would have been less motivated and may have dropped out.

This thesis also shows associations of perceived available belonging support (ISEL, Cohen & Hoberman, 1983) with *sense* of community which inherently includes feelings of belonging (PSCS, Jason, et al., 2015). The former is measured by perceptions of physical proximity to available interpersonal activity, while the latter is measured by affirmations of loyalty, trust, fit, and mutual benefit as a member of an entity. Thus, it seems reasonable to conclude that perceived available belonging support is a generator and facilitator of *sense* of belonging within a community.

However, perhaps the greatest contribution to the belonging and sense of community literature is the large effect size of residence integrated support on both perceived available belonging support and sense of community. The finding was for a sample of relocated emerging-adult university students. However, the effect of integrated support (material comfort, ease of communication, commonality of purpose, and interpersonal care) could have implications for many kinds of groups, large and small. As previously noted, belonging and loneliness are at two ends of a continuum, and Study Three found the positive association of perceived available belonging support with psychological well-being.

6.4 Implications of the Findings

The findings of this thesis have implications for educational counselling, ancillary service providers, and policy.

6.4.1 Implications for educational counselling.

Prospective, first-year international and RRR students should be advised, first, that type of residence can enhance academic success, mental health/psychological well-being, and social support; second, that residing in a flat, perhaps to avoid distractions, may not be the best option in their first year. They could also be advised that emerging adulthood is a critical

period for developing interpersonal attachments and thereby increasing the probability of future mental health (Bean et al., 2019).

There is compelling evidence, confirmed again in this thesis, of the effect of meaning-in-life on the mental health of university undergraduates. Meaning-in-life presence and search could be raised with first-year university students in an application-interview, counselling session, or on following-up the results of a pre-intake screening questionnaire. In clinical practice with typical undergraduates, and emerging adults more generally, meaning-in-life should be addressed.

The Australian Strategy for International Education 2021-2030 (Australian Government, n.d.) aims to assist the sector with post-pandemic recovery. Concomitantly, the Australian government aims to increase RRR students' participation in higher education (Naphthine et al., 2019). With a GHQ – 12 cut-off score of 12, Study Two found similarly elevated psychological distress for both international and RRR undergraduates (see 4.3.5, Table 11). A significant increase in this at-risk population would require universities to ensure timely, professional support and care. The visibility and introduction of university counsellors to relocated first-year undergraduates during orientation week, with later follow-up, might assist in overcoming any hesitation to access help.

6.4.2 Implications for ancillary service providers.

The findings of Study Two have implications for university and commercial providers of student “villages”. On arrival, typical undergraduates from abroad, or RRR areas of Australia, lack and need mutually supportive relationships with peers. This thesis shows that the small capacity of flats/houses and the large capacity of “villages” generate similar levels of perceived available social support, including belonging, and that nearly two thirds (62%) of first-year undergraduates in “villages” had a greeting-network of only 1 -10 co-residents. The

findings are consistent with Bronkema and Bowman's (2017) contention that the current apartment design of student "villages" effectively isolates students.

New "villages" could include dormitories for first-year undergraduates, while existing "villages" might consider ways of increasing opportunities for personal interactions.

6.4.3 Implications for policy

This thesis shows a large effect size for integrated support on perceived available belonging support and sense of community in residences. At universities, it is in the faculties, schools/departments, year cohorts, and smaller groups or entities that trusted relationships may develop between students and staff, and between students. However, not all university entities may have the same commitment to the characteristics of integrated support.

In the first semester of 2020, traditional universities strived to meet the challenges of the pandemic to the academic success, mental health, and well-being of undergraduates. The imposition of social, interpersonal, and travel restrictions, however, accelerated sharply an already increasing trend for universities to deliver courses on-line, exacerbating the diminution of personal interactions.

Yet universities, as large entities within the higher education sector, recognise the benefits of engendering belonging and a sense of community among their undergraduates, while facilitating academic excellence. Policies which include demonstrating and encouraging simple affirmations of individual value, such as greetings, ease of communication, and other kinds of integrated support could increase undergraduates' satisfaction. The satisfaction of current students is related to future donations to the university (McDearmon & Shirley, 2009). Furthermore, current students' satisfaction is associated with belonging and sense of community (Elliott, 2002) and both are also related to post-graduate philanthropy (Drezner & Pizmony-Levy, 2021).

6.5 Methodological strengths, limitations, and prospective future research

6.5.1 Strengths

The strengths of this thesis begin with Study One. The systematic review (Chapter 3), establishes the fundamental weight of evidence for prioritising social support for emerging adult students who relocate for tertiary education. The rigour and focus of the systematic review give credibility to its findings. The seven studies, eligible for inclusion in the review met the Joanna Briggs Institute (JBI) checklist of criteria for assessing quality. A further strength of the review was the inclusion of two studies written as unpublished doctoral dissertations/theses extracted from the “grey” literature. The studies provided more detailed information than that available in word-limited journal articles. One reported no significant differences in a comparison of perceived available social support and sense of community in residence halls of small, medium, and large capacity (Suitor, 2014). The other suggested that students from rural areas cope with cultural as well as geographic relocation (Bitz, 2013). Findings from the latter dissertation were published a year later (Bitz, 2014). However, Suitor’s (2014) findings have yet to be published, perhaps reflecting an example of a publication bias towards positive results.

Study One (Chapter 3) progressed logically to Study Two (Chapter 4) and Study Two, via a transitional statistical analysis and literature review, to Study Three (Chapter 5). This investigative approach ensured a rigorous methodology for the thesis as a whole. Further, as for Study One, the methodology of the two, ensuing, quantitative, cross-sectional studies was also rigorous and focussed. For example, the surveys collected data from international and RRR undergraduates who met the inclusion criteria, while those who did not were excluded. Each quantitative study tested hypotheses derived from the research questions which the thesis aimed to answer. Study Two used standardised questionnaires for most factors and for psychological distress. Study Three also used standardised questionnaires for factors and

psychological well-being. However, the Study also introduced a novel questionnaire based on concepts found in military, psychological research. The novel questionnaire was tested for reliability using Cronbach's Alpha, and factor analysis.

6.5.2 Limitations

The systematic review (Chapter 3 – Study One) has the following limitations. The scope of the review is limited to the seven English-language studies found eligible for inclusion and critical appraisal. With this limitation, not all studies include measures of academic success and mental/psychological health. Only one study uses a short-term measure of academic success (GPA). Design of the eligible studies was limited to the quantitative, cross-sectional survey. Thus, the review lacks the perspectives and findings of researchers using other designs, for example, longitudinal, or qualitative. A further limitation is geographic region since all studies were conducted in the USA where, unlike in Australia, it is customary and sometimes mandatory for all first-year students to reside in colleges or halls.

Analyses of data in Study Two (Chapter 4) were limited by invalid responses to Rotter's (1966) 29-item and 13-item Internal vs. External Locus of Control Scale sufficient to necessitate exclusion. Thus, associations between locus of control, other predictors, and outcomes remain unexplored.

Study Two (Chapter 4) and Study Three (Chapter 5) were cross-sectional in design such that temporal fluctuations were unrecorded. Furthermore, participants responded to advertisements and self-reported for each study online. Thus, there was a risk of subjective bias.

6.5.3 Prospective future research

The Australian government endeavours to increase the populations of both

international students and those from regional, rural, and remote areas in its universities. The needs of such relocated students and the factors affecting their academic success, mental health, and well-being is a field open for Australian research. In finding such a limited number of investigations related to the research questions, the implication that more research is needed becomes clear.

Furthermore, future research could determine the relationship of meaning-in-life (presence and search) with locus of control and investigate effects on academic success, mental health, and psychological well-being. Use of a non-dichotomous instrument, for example, the Tertiary Student Locus of Control Scale (TLCS) (Santokhie & Lipps, 2020) could produce valid data and results helpful in educational counselling and clinical practice, particularly with first-year university students.

The stressful demands of relocation and commencing tertiary education seem to have affected the mental health of International and RRR undergraduates similarly. If Australian research with larger samples of both first-year groups confirm this finding, then a useful comparison could be made between relocated and domestic, metropolitan first-year students. Results from such a comparison conducted, for example, during the mid-semester break to avoid the initial euphoric period, could quantify the effect of relocation to commence tertiary studies on the mental health and psychological well-being of first-year students. Such results might provide evidence for university schools and health providers to promote and sustain policies using the integrated support construct with the objectives of addressing duty of care concerns, increasing student satisfaction, and future philanthropy.

The regression analyses showed a strong, direct relationship of integrated support in residences and contact with distal co-residents, as well as with belonging and residence sense of community. Figure 1 shows the direct relationships with integrated support. However, the

figure also indicates that future research could explore the relationships using a mediational model of analysis.

6.6 Conclusion

This thesis has investigated the relationships between factors associated with undergraduates' residences, meaning-in-life, university sense of community, and emerging adult developmental tasks following relocation for tertiary education. The results contribute significantly to current understanding of relationships between relocated students' type of residence, perceived available belonging support, sense of community in a residence, sense of community at university, academic success, and psychosocial measures. Methodological rigour and a strong theoretical foundation were used to show the findings. The findings highlight the strength of relationships between factors and outcomes.

The thesis adds original findings to the fields of social, developmental, educational, and positive psychology. For example, while a similar proportion of both international and RRR students resides in flats and share houses, more of the former choose a "village" while the latter choose a college. Integrated support consisting of material comfort, ease of communication, commonality of purpose, and interpersonal care in undergraduates' residences is strongly associated, perhaps engenders, perceived available belonging support and sense of community. In addition, residence integrated support, perceived available belonging support, and residence sense of community are each directly and strongly associated with contact among co-residents, even when geographically distant from each other for a period of months. Whereas university sense of community is not associated with contact with geographically distant peers. However, the foregoing factors within residences and sense of community at university are each positively related to one, or all, of the emerging-adulthood domains of work, interpersonal relationships, and Self.

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APPENDIX A. Study Two Recruitment Posters and Flyers - 2017 and 2018



**INTERNATIONAL STUDENTS
AND
AUSTRALIAN STUDENTS
FROM REGIONAL & REMOTE AREAS**

**LIVING IN A FLAT, SHARE-HOUSE, ROOMING-HOUSE,
COLLEGE, STUDENT 'VILLAGE' OR HOSTEL**

**First year
Aged 18-20 years
(or 18th birthday this year)
Full-time**

**YOU ARE INVITED TO PARTICIPATE IN
RESEARCH
investigating what helps students,
who have moved away from home,
do well at university and feel good about life as a student.**

Please email the researcher, susan.traub@adelaide.edu.au to receive more information and a link to the anonymous on-line questionnaire (approx. 20 mins. to complete).

**You could win a double cinema ticket and
have a summary of the results made available to you.**

The researcher is Susan Traub. The research will form the basis for a PhD in Psychology at The University of Adelaide. Supervisors: Professor Helen Winefield and Dr. Peter Strelan. Human Research Ethics Committee approval number H-2017-1778).

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Regional & Remo
For information
email: susan.traub

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**INTERNATIONAL STUDENTS AND
AUSTRALIAN STUDENTS
FROM REGIONAL & REMOTE AREAS**

**LIVING IN A FLAT, SHARE-HOUSE, ROOMING-HOUSE,
COLLEGE, HALL OR STUDENT 'VILLAGE'**

**Bachelor degree – Full time
Aged 18-20 years (on 31st December 2020)**

YOU ARE INVITED TO PARTICIPATE IN
research investigating what helps students
who have moved away from home,
do well at university and feel good about life as a student:
especially in this year of the CoVID-19 pandemic.

Please go to:
https://adelaidcunisop.syd1.qualtrics.com/jfe/form/SV_5hWJQxPHZ6knNDD
take a tag, or scan the QR Code



to complete the **anonymous** on-line questionnaire (12 mins. approx.).
You could win a double cinema ticket, and
opt to have a summary of results sent to you.

The researcher is Susan Straub. The research will form the basis for a PhD in **Psychology at
The University of Adelaide**. Supervisors: Professor Emeritus Helen Winefield and
Dr. Peter Sirelan. Psychology Ethics Sub-Committee approval number H-2020-20/61.

Research -
Regional/Re
<https://adelaideics.com/jfe>

Email: susan

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Email: susan

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<https://adelaideics.com/jfe>

Email: susan

APPENDIX C. Correspondence to Residence Principals and Managers - 2017



7th September 2017

Dear

Re: Re-located Students – Accommodation – Academic Success & Mental Health

Most relocated students come from abroad or from regional and remote areas of Australia. Retention of such students beyond their first year at university is important to the students, their families, communities, and the universities. How well students adjust to the role of university student is likely to affect their subject pass rate and decision about continuing with tertiary education. Practical and social factors associated with their living accommodation may be influential.

As part of a PhD project, I am conducting research examining the effects on academic success and mental health of the kind of accommodation chosen for a first-year university student, who is living away from home. For example, students in private rental accommodation may have fewer opportunities to develop friendships than students in colleges. Personal perceptions could also have an effect. The project is within the School of Psychology at The University of Adelaide, ethics approval No. 17/78. Participants would be anonymous.

With your permission, I would like to advertise for participants at A printed copy of the proposed email is attached. It could be sent to your administrator for forwarding by a group email to your new students. The advertising email would have two attachments, namely, an information letter and hyperlink to an online questionnaire. The letter would form the preamble to the questionnaire. Should you wish, I could also supply notices and flyers in addition to, or instead of, the email.

The results of the research would be submitted for publication in peer reviewed journals, the PhD thesis, and form the basis for presentations at, for example, conferences and other gatherings. A summary of the results would be sent to you.

Please do not hesitate to contact me should you have any queries, comments, or if you would like me to meet with you, your staff and/or student leaders at Aquinas. Looking forward to hearing from you,

Yours sincerely,

Susan F. Straub (The Rev'd)
Provisional PhD Candidate
School of Psychology
The University of Adelaide
Adelaide SA 5005
Tel 83161760 Mobile 0407607675
Email susan.sraub@adelaide.edu.au

Encl.

1

Email

12th September 2017

Dear (Name),

Thank you for your supportive email in response to my letter dated 7th September regarding the research project.

Following this email, I am sending an email with attachments, namely, an information letter and a document with a link to the research questionnaire. As the measurement of 'academic

success', the questionnaire asks the number of subjects students took and passed in first semester; and of their intention to persist with university studies next year.

The email inviting students to participate in the research and the attached documents would be for forwarding by group email. I hope that it will be not too much trouble for a member of your staff to select them for a group. If you would like me to drop off hard-copies of posters or flyers, I would be glad to do so.

With kind regards

Susan

Susan F. Straub
Provisional PhD Candidate
School of Psychology
The University of Adelaide
Adelaide SA 5005
Tel 83161760

8th March 2018

Dear,

**Re: 'First-Year International and Regional/Remote Area University Students:
Factors associated with accommodation, academic success and mental health'**

First, I would like to thank you and your staff for facilitating the participation of Aquinas' students in this research. At this stage of the research process, I am pleased to be able to give you and other heads of colleges some preliminary results, which are not for wider publication.

The eligible participants for the study numbered 67 (N=67). This number was sufficient for some analyses, such that I was able to identify a number of correlations and associations between the variables of interest.

The emerging picture is one of significant correlations between a student's **type of accommodation** (e.g. college, student 'village' or share-house, unit/flat) and

- the size of his/her **social network** (how many other students would be greeted if out somewhere);
- the proportional **mix of bachelor and higher-degree students**; and
- **domestic support** (e.g. meals, cleaning, and so on).

The size of **network** itself, seems to indicate (positive correlations) the level of **social support** students perceive is available to them; and also the amount of time they would use **conversational English** in their type of accommodation. Other studies have found that the more international students use English socially, the higher their academic results, performance in class, social integration and acculturation.

Unfortunately, the number of international students, as a group of participants in my study, was insufficient for me to obtain any association or effect of the use of conversational English on subject pass-rate or mental health.

Other studies of first-year students have also found that as social support increases so do academic achievement and mental health. I found positive correlations between **social support** and

- subject pass-rate;
- the presence of meaning-in-life; and
- mental health

Further analysis showed an association between social support, subject pass-rate and mental health, such that for all participants, social support had a positive effect.

These preliminary results give a rather promising view of what more in-depth analyses might show us. It could be useful to know, for example, the size of the contribution towards academic success and mental health, of the various factors I found were directly or indirectly correlated with type of accommodation.

The question which would then arise, is whether there are any differences between groups of first-year students, who have left home in order to study at a university in Adelaide. I would like to compare, for example, those students living in a unit/house with those in more communal residences; and male with female students. The results from this and other comparisons would be helpful for future students, their parents, and all those involved in the provision of support and accommodation. After all, it is what happens within the walls of a residence that makes it a 'home-away-from-home' - or not.

However, more in-depth analyses would require at least another 60 students to bring the total number to 127. This would be a minimum and more participants would be preferable. To this end, the study will be re-opened in July for on-line participation by the 2018 first-year international and regional/remote area students, aged 17/18 to 20 years.

At your convenience, I would very much appreciate hearing from you regarding your interest in participating in the second round of the research. In the meantime, I hope that you will find the above preliminary results helpful.

With kind regards,

Yours truly

Susan F. Straub (The Rev'd)
PhD Candidate
School of Psychology
The University of Adelaide
Adelaide SA 5005
Tel 83133978 (Changed) Mobile 0407607675
Email susan.straub@adelaide.edu.au

P.S. I had heart-warming 'thank-you' emails from winners of the cinema tickets.

APPENDIX E. Study Two correspondence to Residence Principals and Managers - 2018

Email

July 2018

DearName,

Referring to our email correspondence in March this year, I was pleased to hear that you have a good number of first-years in residence, even though none of them are international students. I should be able to reach them in other ways, but having the participation of Australian students who have moved to Adelaide for their studies is just as important. Attached are the 'Information Letter' and the notice containing the link to the online questionnaire survey.

Many thanks for your assistance in reaching the first-years in college at (Name),

Kind regards

Susan

Susan F. Straub
PhD Candidate
School of Psychology / Faculty of Health and Medical Sciences
Hughes Building
THE UNIVERSITY OF ADELAIDE
Adelaide SA 5005
T: +61 8 83133978 / E: susan.straub@adelaide.edu.au

APPENDIX F. Study Three Correspondence to Residence Principals and Managers - 2020

Email

12th May 2020

Hi (Name),

Many thanks for your reply to my email about a possible meeting. Given what I've been aware of elsewhere in relation to the pandemic restrictions, I can imagine the very high level of organisation and responsibility with which you've been dealing. In spite of that, I hope that most of your students are still in College.

I emailedPrincipal atCollege this afternoon to suggest a meeting and am waiting to hear fromDean at Colleges. I shall look forward to meeting with you perhaps as and when your situation becomes more settled.

With sincerest best wishes,

Susan

Susan F. Straub
PhD Candidate
School of Psychology / Faculty of Health and Medical Sciences
Hughes Building
THE UNIVERSITY OF ADELAIDE
Adelaide SA 5005
T: +61 8 83133978 / E: susan.straub@adelaide.edu.au

Email

19th May 2020

DearName,

Thank you for your email with the list of times you andPrincipal would be available to meet.

Very much looking forward to meeting with you both to hear of your experiences and those of your students, at 10.30 am on Friday 22nd May,
kind regards,

Susan

Susan F. Straub
PhD Candidate
School of Psychology / Faculty of Health and Medical Sciences
Hughes Building
THE UNIVERSITY OF ADELAIDE
Adelaide SA 5005
T: +61 8 83133978 / E: susan.straub@adelaide.edu.au

APPENDIX G. Study Two Online Questionnaire Survey (Survey Monkey) - 2017

First-year International and Australian Regional and Remote Area Students: Factors associated with academic success and mental health

INTRODUCTION

Dear Student,

Thank you for showing your interest in this research project. The research is about finding what contributes to doing well at university for students like you, who have left home to study in Adelaide. Doing well is not only about academic results, but also about how you are coping.

Professor Helen Winefield and Dr. Peter Strelan are supervising the research, which is being conducted by Susan Straub in the School of Psychology at The University of Adelaide.

You are invited to participate, if **ALL** of the following apply to you:

- **international student OR**
- **Australian student from a regional, rural or remote area**
- **aged 18-20 years old (or 17 turning 18 years old this year)**
- **first-year**
- **full-time**
- **at University of Adelaide, Flinders University or University of South Australia**
- **living in a flat, share-house, rooming-house OR residential college, hall, student 'village'**

The research would not apply to you if you are living with family, relatives or older adults responsible for running the household.

The following questionnaire should take approximately 20 minutes to complete. At the end, you may choose to enter a draw with the chance to win a double Union Cinema ticket.

Are there any risks associated with participating in this project?

There are no foreseeable risks. However, should the unforeseen occur, you may seek independent counselling by contacting the following:

University of Adelaide Counselling	Tel 83135663
Flinders University Counselling	Email: counselling@flinders.edu.au
University of S.A. (General Enquiries)	Tel 1300 301703 or 83026611 - request campus counsellor
Life-Line (24/7 – Crisis)	131114 OR Beyond Blue (24/7) Support, Advice
1300224636	

The benefits of the research project

Simply answering the questions may give you a clearer understanding of your term-time situation, who you are, and how you are feeling. However, the results of the research would also assist:

- you or your family in making decisions about what kind of accommodation it might be best to choose for the rest of your degree, for another family member or a friend; -
- secondary-school, university and other counsellors;
- student groups, clubs and societies;
- the universities' administration and accommodation support services.

First-year International and Australian Regional and Remote Area Students: Factors associated with academic success and mental health

INFORMATION & CONSENT

Participation and withdrawal

Participation in this project is completely voluntary. If you agree to participate, you can withdraw at any time before the 3rd November 2017, the end date for data collection. You may also choose to leave a question unanswered, however, please be aware that doing so could compromise the research.

Your information and confidentiality

The researcher will use statistical analysis and you would NOT be personally identifiable. You would be anonymous. The research and results would be reported and publicised in journal articles, the PhD thesis, and in presentations. A summary of the results will go on university notice-boards. You may also choose to have the summary emailed to you.

All information and records relating to the project, including the collected data, will be stored on a password protected computer and USBs held by the researcher, in order to maintain confidentiality. Only the principal supervisor, co-supervisor, Head of the School of Psychology, and researcher will have authority to access the computer and USBs. The information and records will be kept for five years.

Contacts for any questions about the project

The following contacts are there to answer any questions you may have about the research project:

Helen Winefield, Professor	8313317	helen.winefield@adelaide.edu.au
Peter Strelan, Senior Lecturer	83135662	peter.strelan@adelaide.edu.au
Susan Straub, Provisional PhD Candidate	83161760	susan.straub@adelaide.edu.au

The title of the study

‘First-year International and Australian Regional and Remote Area Students: Factors associated with academic success and mental health.’

Complaints or Concerns

The Human Research Ethics Committee at the University of Adelaide has approved this study (approval number H-2017-17/78). If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult Prof. Helen Winefield. If you wish to speak with an independent person regarding a concern or complaint, the University’s policy on research involving human participants, or your rights as a participant, please contact the Human Research Ethics Committee’s Secretariat on: Phone: +61 8 8313 6028; by email: hrec@adelaide.edu.au; or by Post: Level 4, Rundle Mall Plaza, 50 Rundle Mall, ADELAIDE SA 5000

Any complaint or concern will be treated in confidence and fully investigated. You will be informed of the outcome.

Finally

At the end of the questionnaire are two boxes. By writing your email address in the first box, you will receive a summary of the results of the survey. By writing your email address in the second box, you will be entered in the draw to win one of five double Union Cinema tickets.

Yours sincerely,

Helen Winefield
Professor
Candidate

Peter Strelan, Senior Lecturer
Senior Lecturer

Susan Straub
Provisional PhD

1. I am satisfied with the foregoing introduction and information, and I give my consent to participate in the research

Agree

First-year International and Australian Regional and Remote Area Students: Factors associated with academic success and mental health

PART 1

PLEASE COMPLETE THE QUESTIONNAIRE IN ONE GO, however, if you cannot, you may stop and re-start.

There are six parts.

**Write your answers in the blank spaces and click to check circles/boxes.
Part 1 is about where you live and especially your accommodation in Adelaide.**

1. International Students: what is your home country?

2. Australian Students: what is your home post-code?

3. When did you arrive in Adelaide?

For Semester 1

For Semester 2

4. What is your term-time accommodation post-code?

5. Which best describes your term-time accommodation?

Student College or

Rooming-house

Student 'Village' - university

Share-house

Student 'Village' - commercially

Unit or flat/apartment

Other (please

6. Are most meals provided for you as part of your accommodation?

Yes

No

7. In a week, do you buy most meals ready-made e.g. take-away, fast-food or eat out?

Yes

No

8. Is cleaning of common areas done for you, e.g. bath-room, lounge/sitting-room?

Yes

No

9. Is your room vacuum-cleaned for you?

Yes

No

10. Is bed-linen laundered/washed for you?

Yes

No

11. How many people from your accommodation would you greet or say "Hello", when you are out somewhere?

N/A - I live alone

1

2

3

4

5

6-10

11-20

21-50

51-100

101-150

151+

12. Which of the following best describes the people living in your accommodation?

N/A - I live alone

Bachelor degree student(s)

Mostly bachelor degree students and one or more higher degree/diploma students(s)

Mostly higher degree/diploma students and one or more bachelor degree students

Other(s) who understand the demands of Uni study

Other(s) with NO understanding of the demands of Uni study

13. ...odation are from non-English speaking homes? imate.

If you live in a college or 'village', just give your est

100%

75%

50%

25%

0%

...you use English in conversation?

14. With people In your accommodation, how often do

Always

Not often

Most often

Never

Sometimes

I live alone

15. You may like to make a comment about anything to do with your accommodation.
Remember, what you write will be kept confidential.

PART 2

This is NOT A TEST YOU NOW.

1.

1. I know someone who would lend me \$20 if I needed it.

2. There is someone I like with whom I can go out whenever I want.

3. I know someone, who I see or talk to often, with whom I would feel perfectly comfortable talking about any problems I might be having in meeting people.

4. I don't know anyone who would give me some old furniture if I needed it.

5. If I needed it, my family would give me some money for living

...t available to companionship, & support you

WHAT IS TRUE? Agree Agree strongly

...at is most true statements on tr

...h the statement on up to 'Agre

...ght or wrong a

...ort you have fi

Disagree strongly

Disagree

Disagree somewhat

Agree somewhat

expenses and a bit
of pocket-money.

Disagree

Disagree

strongly

Disagree
somewhat

somewhat
Agree

Agree
strongly

6. I spend time in a friend's room or at their place quite a lot.

7. If I wanted a partner for a party next weekend, I know someone who would go with me or who could arrange it.

8. I know someone, who I see or talk to often, with whom I would feel perfectly comfortable talking about problems I might have balancing my study and social life.

9. I don't know anyone at Uni or in Adelaide, who would spend a couple of hours helping me study for an exam.

10. I'm not a member of any organised groups (such as clubs, sporting teams, church or religious groups, and so on).

11. I know someone, who I see or talk to often, with whom I would feel perfectly comfortable talking about any problems I might have with drugs.

12. I know someone who would lend me \$150 to help pay my Uni fees or books.

13. I don't know anyone at Uni or in Adelaide who helps make my problems clearer and easier to understand.

14. I know someone who would give me some old dishes, towels or other small household items if I needed them.

Disagree

Disagree

strongly

Disagree
somewhat

somewhat
Agree

Agree
strongly

15. I don't often get invited to do things with other people.

16. There isn't anyone at Uni or in Adelaide with whom I would feel perfectly comfortable discussing any sexual problems I might have.

17. I know someone who would bring my meals to me if I were sick in bed.

18. I don't usually spend two evenings on the weekend doing something with others.

19. There isn't anyone at Uni or in Adelaide with whom I would feel perfectly comfortable talking about my feelings of loneliness or homesickness.

20. If I were sick, I don't know anyone at Uni or in Adelaide who would get assignments for me from my lecturers.

21. People visit me during the day or in the evening.

22. I know someone, who I see or talk to often, with whom I would feel perfectly comfortable talking about sexually transmitted diseases.

23. I don't know anyone who would lend me several hundred dollars to pay a medical or dental bill.

24. I belong to a group that meets, or does things together, regularly.

Disagree

Disagree

strongly

Disagree
somewhat

somewhat
Agree

Agree
strongly

25. There isn't anyone at Uni or in Adelaide with whom I would feel perfectly comfortable talking about any problems I might have making friends.

26. I don't know anyone who would lend me their car for a couple of hours or give me transport if I needed it.

27. There are people with whom I regularly run, exercise or play sports.

28. There isn't anyone with whom I would feel perfectly comfortable talking about any problems I might have getting along with my parents.

29. Even if I needed it, my family would or could not give me money for Uni fees and books.

30. I don't have friends who would comfort me by showing some physical affection, like giving me a hug.

31. There isn't anyone with whom I would feel perfectly comfortable talking about difficulties with my social life.

32. I know someone, who I see or talk to often, with whom I would feel perfectly comfortable talking about any problems I might have adjusting to life as a Uni student.

Disagree strongly Disagree Disagree somewhat Agree somewhat Agree Agree strongly

33. I talk to, or message, a member of my family at least once a week.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

34. Lately, when I've been troubled, I've been keeping things to myself.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

35. If I decided at dinner-time to take a study-break this evening and go to a movie, I could easily find someone to go with me.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

36. Lately, I often feel lonely, like there's no one to keep me company.

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

First-year International and Australian Regional and Remote Area Students: Factors associated with academic success and mental health

PART 3

Part 3 is about saying how much control you believe people have you agree with MORE than the other, environment

Here are some statements, which describe common opinions about statements are shown in pairs as 'A' or 'B'.

From EACH PAIR OF STATEMENTS, please select 'Agree' to EITHER agree with MORE. There are no right or wrong answers.

If you do not agree with either statement, just even if you do not agree with the statement entirely.

Your first reaction is the best, so do not think very long about each

1. How much control people have over things around them.

1.A. Children get into trouble because their parents punish them too much.

B. The trouble with most children nowadays is that their parents are too easy with them.

2.A. Many of the unhappy things in people's lives are partly due to bad luck.

B. Many of the unhappy things in people's lives result from the

Agree

mistakes they
make.

Agree

3.A. One of the major reasons we have wars is because people don't take enough interest in politics.

B. There will always be wars, no matter how hard people try to prevent them.

4.A. In the long run, people get the respect they deserve in this world.

B. Unfortunately, an individual's worth often passes unrecognized no matter how hard he or she tries.

5.A. The idea that teachers are unfair

to students is
nonsense.

B. Most
students don't
realise the extent
to which their
marks/grades are
influenced by
accidental
happenings.

6.A. Without luck,
one cannot be an
effective leader.

Agree

B. Capable people who fail to become leaders have not taken advantage of their opportunities.

7.A. No matter how hard you try, some people just don't like you.

B. People who can't get others to like them don't understand how to get along with others.

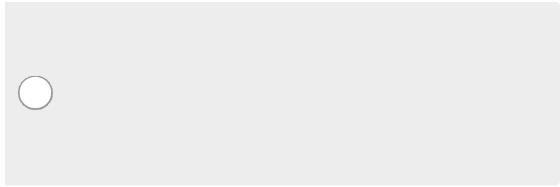
8.A. Heredity or genetics play the major role in determining one's personality.

B. It is one's experiences in life, which determine what you are like.

9.A. I have often
found that what is
going to happen
will happen.

B. Trusting to
fate has never
turned out as
well for me as
making a
decision to take
a definite course
of action.

10.A. In the case
of the well-
prepared
student, there is
rarely if ever,
such a thing as
an unfair test.



Agree

B. Many times exam questions tend to be so unrelated to coursework that studying is really useless.

11.A. Becoming a success is a matter of hard work.

Luck has little or nothing to do with it.

B. Getting a good job depends mainly on being in the right place at the right time.

12.A. The average citizen can have an influence in government decisions.

B. This world is run by the few people in power, and there is not much the small

person can
do about it.

13.A. When I
make plans, I am
almost certain that
I can make them
work.

B. It is not always
wise to plan too
far ahead because
many things can
turn out to be
a matter of good
or bad fortune
anyhow.

14.A. There are certain people who are just no good.

B. There is some good in everybody.

15.A. In my case, getting what I want has little or nothing to do with luck.

B. Many times we might as well decide what to do by flipping a coin.

16.A. Who gets to be the boss often depends on who was lucky enough to be in the right place first.

B. Getting people to do the right thing depends upon ability, luck has little or nothing to do with it.

Agree

17.A. As far as
world affairs are
concerned, most
of us are the
victims of forces
we can
neither
understand nor
control.

B. By taking
an active part in
political and
social affairs, the
people can
control
world events.

Agree

18.A. Most people don't realise the extent to which their lives are controlled by accidental happenings.

B. There really is no such thing as 'luck'.

19.A. One should always be willing to admit mistakes.

B. It is usually best to cover up one's mistakes.

20.A. It is hard to know whether or not a person really likes you.

B. How many friends you have depends upon how nice a person you are.

21.A. In the long
run, the bad
things that
happen to us are
balanced by the
good ones.

B. Most
troubles are the
result of lack of
ability, ignorance,
laziness or all
three.

22.A. With
enough effort, we
can wipe out
political
corruption.

Agree

B. It is difficult for people to have much control over the things politicians do in office.

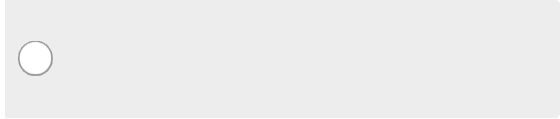
23.A. Sometimes, I can't understand how teachers arrive at the marks/grades they give.

B. There is a direct connection between how hard students study and the marks/grades they get.

24.A. Good leaders expect people to decide for themselves what they should do.

B. Good leaders makes it clear to

everybody what
their jobs are.



25.A. Many times,
I feel that I have
little influence over
the things that
happen to me.

B. It is
impossible for me
to believe that
chance or luck
plays an
important role in
my life.

26.A. People are
lonely because they
don't try to be
friendly.

Agree

B. There's not much use in trying too hard to please people: if they like you, they like you.

27.A. There is too much emphasis on athletics in high school.

B. Team sports are an excellent way to build character.

28.A. What happens to me is my own doing.

B. Sometimes I feel that I don't have enough control over the direction my life is taking.

29.A. Most of the time I can't understand why politicians behave the way they do.

B. In the long run, the people are responsible for bad government on a national as well as on a local level. ---

First-year International and Australian Regional and Remote Area Students: Factors associated with academic success and mental health

PART 4

Remember that this is NOT A TEST. Mostly in sense of n Can't Say , only : true for

Untrue

 True or
 False

1. Your sense of meaning in your life.

Absolutely Untrue Somewhat True Mostly True Absolutely True

1. I understand my meaning

2. I am looking for something that makes my life feel meaningful.

3. I am always looking to find my life's purpose.

4. My life has a clear sense of purpose.

5. I have a good sense of what makes my life meaningful.

6. I have discovered a satisfying life purpose.

7. I am always searching for something that makes my life feel significant.

8. I am seeking a purpose or mission for my life.

9. My life has no purpose

10. I am searching for meaning in my life.

First-year International and Australian Regional and Remote Area Students: Factors associated with academic success and mental health

PART 5

Part 5 deals with how well you feel

The following twelve questions are about how you have been feeling lately, that is, over the past few weeks.

Please check ONE of the circles, which indicates the answer which you think most nearly applies to you: how you are feeling THESE DAYS compared with how you have USUALLY felt in the past few years.

1. How well you have been feeling in the past few weeks.

	More than usual	Same as usual	Less than usual	Much less than usual
1. Have you been able to concentrate on whatever you have been doing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Have you lost much sleep over worry?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Have you felt that you are playing a useful part in things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Have you felt capable of making decisions about things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Have you felt constantly under stress/pressure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Have you felt that you could not overcome your difficulties?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Have you been able to enjoy your normal day-to-day activities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Have you been able to face up to your problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Have you been feeling unhappy and depressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Have you been losing confidence in yourself?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Have you been thinking of yourself as a worthless person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Have you been feeling reasonably happy, all things considered?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

First-year International and Australian Regional and Remote Area Students: Factors associated with academic success and mental health

PART 6

The following questions about your life at university.

1. Where are you enrolled? (More than one may apply.)

- Adelaide University
- Flinders University
- University of South Australia

2. Please name your Bachelor Degree.

3. What is your study-load?

- Full- time study-load
- Part-time study-load

4. Please write how many:

First-semester
you

First-semester
you

First-semester
you took
(supplementary)

Full-year subjects you
pass

Full-year subjects you
failing, but believe you
achieve an overall

Full-year subjects you
certain you will

5. Which statement is true for you?

- I intend to continue with my degree in I don't know yet if I will be able to return to Uni in 2018
- I intend to change degrees and/or transfer to another Uni I don't know if I will be able to return to Uni in 2018
- I don't know if I will be able to return to Uni in 2018

6. What is your gender/sex?

- Male
- Female

7. What is your age-range in years?

- 17-18
- 19-20
- 21-22

8. Thank you for completing this questionnaire. Now for something we can do for you.

If you would like a 'Summary of Results' emailed to you, please write your email address below.

Yes.
Email

9. Another thing we can do.

To enter the draw for a double Union Cinema ticket, please write your email address below.

Yes.
Email

10. Click 'Done'.

I shall be unable to return to Uni in 2018.

INTRODUCTION

Dear Student,

Thank you for showing your interest in this research project. The research is about finding what contributes to doing well at university for students like you, who have left home to study in Adelaide. Doing well is not only about academic results, but also about how you are coping.

Professor Emeritus Helen Winefield and Dr. Peter Strelan are supervising the research, which is being conducted by Susan Straub in the School of Psychology at The University of Adelaide.

You are invited to participate, if **ALL** of the following apply to you:

- **international student OR
Australian student from a regional, rural or remote area**
- **aged 17 20 years old (if 17, turning 18 this year)**
- **first-year**
- **full-time**
- **at University of Adelaide, Flinders University or University of South
Australia**
- **living in a flat, share-house, rooming-house OR residential
college, hall, student 'village'**

The research would not apply to you if you are living with family, relatives or older adults responsible for running the household.

The following questionnaire should take approximately 20 minutes to complete. At the end, you may choose to enter a draw with the chance to win a double Union Cinema ticket.

However, if you are a University of Adelaide first year psychology student using the

Research Participation System (RPS), you will receive course-credit instead: simply enter your Research Participation ID code in the box provided.

Are there any risks associated with participating in this project?

There are no foreseeable risks. However, should the unforeseen occur, you may seek independent counselling by contacting the following:

University of Adelaide Counselling Tel 83135663

Flinders University Counselling Email: counselling@flinders.edu.au

University of S.A. (General Enquiries) Tel 1300 301703 or 83026611 - request campus counsellor

Life-Line (24/7 – Crisis) 131114 OR Beyond Blue (24/7) Support, Advice
1300224636

The benefits of the research project

Simply answering the questions may give you a clearer understanding of your term-time situation, who you are, and how you are feeling. However, the results of the research would also assist:

- you or your family in making decisions about what kind of accommodation it might be best to choose for the rest of your degree, for another family member or a friend;
- secondary-school, university and other counsellors;
- student groups, clubs and societies;
- the universities' administration and accommodation support services.

INFORMATION & CONSENT

Participation and withdrawal

Participation in this project is completely voluntary. If you agree to participate, you can withdraw at any time before the 3rd November 2018, the end date for data collection. You

may also choose to leave a question unanswered, however, please be aware that doing so could compromise or invalidate the research.

Your information and confidentiality

The researcher will use statistical analysis and you would NOT be personally identifiable.

You would be anonymous. The research and results would be reported and publicised in journal articles, the PhD thesis, and in presentations. A summary of the results will go on university notice-boards. You may also choose to have the summary emailed to you.

All information and records relating to the project, including the collected data, will be stored on a password protected computer and

USBs held by the researcher, in order to maintain confidentiality. Only the principal supervisor, co-supervisor, Head of the School of Psychology, and researcher will have authority to access the computer and USBs. The information and records will be kept for five years.

Contacts for any questions about the project

The following contacts are there to answer any questions you may have about the research project:

Helen Winefield, Professor Emeritus

helen.winefield@adelaide.edu.au

Peter Strelan, Senior Lecturer 83135662

peter.strelan@adelaide.edu.au

Susan Straub, PhD Candidate 83133978 susan.straub@adelaide.edu.au

The title of the study

‘First-year International and Australian Regional and Remote Area Students: Factors associated with academic success and mental health.’

Complaints or Concerns

The Human Research Ethics Committee at the University of Adelaide has approved this study (approval number H-2017-17/78).

If you have questions or problems associated with the practical aspects of your participation in the project, or wish to raise a concern or complaint about the project, then you should consult Prof. Helen Winefield. If you wish to speak with an independent person regarding a concern or complaint, the University's policy on research involving human participants, or your rights as a participant, please contact:

Secretariat

The Human Research Ethics Committee's

Phone: +61 8 8313 6028

Email: hrec@adelaide.edu.au

Postal Address: Level 4, Rundle Mall

Plaza

50 Rundle Mall

ADELAIDE SA 5000

Any complaint or concern would be treated in confidence and fully investigated. You would be informed of the outcome.

Finally

At the end of the questionnaire are two boxes. By writing your email address in the first box, you will receive a summary of the results of the survey. By writing your email address in the second box, you will be entered in the draw to win double Union Cinema tickets.

Alternatively, if you are a University of Adelaide first year psychology student, you may enter your research participant's ID code to receive course-credit.

Yours sincerely,

Helen Winefield Peter Strelan Susan F. Straub

Professor Emeritus Senior Lecturer

* 1. I am satisfied with the foregoing introduction and information, and I give my consent to participate in the research

Agree

PART 1

PLEASE COMPLETE THE QUESTIONNAIRE IN ONE GO, however, if you cannot, you may stop and re-start.

There are six parts.

Write your answers in the blank spaces and click to check circles/boxes.

Part 1 is about where you live and especially your accommodation in Adelaide.

Before you begin, though, please be aware that at the end of the survey you will be asked to confirm your age as:

17 (and turning 18 this year), 18, 19 or 20 years

AND

enter your subject pass-rate for the semester

* 2. What is the name of your **home country**?

3. **Australian Students:** what is your **home post-code**?

4. When did you arrive in Adelaide?

For Semester 1

For Semester 2

5. What is your term-time accommodation post-code?

6. Which best describes your term-time accommodation?

Student College or

Rooming-house

Student 'Village' - university

Share-house

Student 'Village' - commercially

Unit or flat/apartment

Other (please

7. Are most meals provided for you as part of your accommodation?

Yes

No

8. In a week, do you buy most meals ready-made e.g. take-away, fast-food or eat out?

Yes

No

9. Is cleaning of common areas done for you, e.g. bath-room, lounge/sitting-room?

Yes

No

10. Is your room vacuum-cleaned for you?

Yes

No

11. Is bed-linen laundered/washed for you?

Y

e

s

N

o

12. How many people from your accommodation would you greet or say "Hello", when you are out somewhere?

N/A - I live alone

6-10

1

11-20

2

21-50

3

51-100

4

101-150

5

151+

13. Which of the following best describes the people living in your accommodation?

N/A - I live alone

Mostly higher degree/diploma students and one or more bachelor degree students

Bachelor degree student(s)

Other(s) who understand the demands of Uni study

Mostly bachelor degree students and

one or more higher

degree/diploma students(s)

Other(s) with NO understanding of the demands of Uni

study

14. Including yourself, how many people in your accommodation are from non-English speaking homes?

If you live in a college or 'village', just give your estimate.

100%

75%

25%

50%

0%

15. With people In your accommodation, how often do you use English in conversation?

Always

Not

Most often

often

Sometimes

Never

I live
alone

16. You may like to make a comment about anything to do with your accommodation.

Remember, what you write will be kept confidential.

PART 2

Part 2 is about how you see the support you have from others.

Sometimes we look to others for companionship, assistance or other types of support.

Some people have more support available to them than others do.

Please read each of the following statements on the left-hand side quickly, but carefully.

Click the circle under the heading that is most true for you.

For example, if you disagree strongly with the statement, click 'Disagree strongly'. If you agree to a very small extent, click on 'Agree somewhat', and so on up to 'Agree strongly'.

This is NOT a test. There are no right or wrong answers, but only WHAT IS TRUE FOR YOU NOW.

17. **How you see the support you have from others.**

Disagree

Disagree

	strongly	Disagree	somewhat	Agree somewhat	Agree	Agree strongly
1. I know someone who would lend me \$20 if I needed it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. There is someone I like with whom I can go out whenever I want.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I know someone, who I see or talk to often, with whom I would feel perfectly comfortable talking about any problems I might be having in meeting people.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. I don't know anyone who would give me some old furniture if I needed it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. If I needed it, my family would give me some money for living expenses and a bit of pocket-money.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Disagree

Disagree

1. I don't often invited to do things other

10). There isn't

11. I know someone, who I see or talk to often, with whom I would feel perfectly comfortable talking about any problems I might have with drugs.

12. I know someone who would lend me \$150 to help pay my Uni fees or books.

13. I don't know anyone at Uni or in Adelaide who helps make my problems clearer and easier to understand.

14. I know someone who would give me some old dishes, towels or other small household items if I needed them.

at Uni or in Adelaide with whom I would feel

perfectly comfortable discussing any sexual

Disagree Disagree

strongly Disagree somewhat Agree somewhat Agree Agree strongly

problems I might have.

17. I know someone who would bring my meals to me if I were sick in bed.

18. I don't usually spend two evenings on the weekend doing something with others.

19. There isn't anyone at Uni or in Adelaide with whom I would feel perfectly comfortable talking about my feelings of loneliness or homesickness.

20. If I were sick, I don't know anyone at Uni or in Adelaide who would get assignments for me from my lecturers.

21. People visit me during the day or in the evening.

22. I know someone,

who I see or talk to often, with whom I would feel perfectly comfortable

talking about sexually transmitted

diseases

2. I don't know who would lend several hundred to nav a medical dental

2. I belong to a that meets. or things together.

Disagree

Disagree

strongly

Disagree

somewhat Agree somewhat

Agree

Agree strongly

25. There isn't anyone at Uni or in Adelaide with whom I would feel perfectly comfortable talking about any problems I might have making friends.

26. I don't know anyone who would lend me their car for a couple of hours or give me transport if I needed it.

27. There are people with whom I regularly run, exercise or play sports.

28. There isn't anyone

with whom I would feel perfectly comfortable talking about any

problems I might have getting along with

my

parents

2. Even if I needed my family would or not give me money Uni fees and

3. I don't have who would comfort by showing physical affection. giving me a

3. There isn't with whom I would perfectly talking about with my social

3. I know

who I see or talk to often, with whom I would feel perfectly comfortable talking about any

problems I might have adjusting to life as a Uni

student.

	Disagree		Disagree				
	strongly	Disagree	somewhat	Agree	somewhat	Agree	Agree strongly
33. I talk to, or message, a member of my family at least once a week.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34. Lately, when I've been troubled, I've been keeping things to myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35. If I decided at dinner-time to take a study-break this evening and go to a movie, I could easily find someone to go with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36. Lately, I often feel lonely, like there's no-one to keep me company.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PART 3

Part 3 is about saying how much control you believe people have, more or less, over their social environment

**Here are some statements, which describe common opinions about social problems.
The statements are in pairs of 'A' and 'B'.**

**Read both 'A' and 'B' quickly, but carefully,
Please respond to statement 'B' after reading 'A'**

Click the circle under the heading that is now closest to your way of thinking about STATEMENT 'B'.

Go with your first response: remember, there are no right or wrong answers.

Disagree

Disagree

strongly

Disagree

somewhat Agree somewhat

Agree

Agree strongly

18. **How much control do you think people have over things around them?**

1. A. Many of
unhappy things
people's lives are
due to bad

B.
misfortunes result
the mistakes they

--

2. A. One of the
reasons why we

have wars is

because people

don't take

enough interest in

politics.

B. There will always be wars, no matter how hard people try

to prevent them.

3. A. In the long
neone get the
they deserve in
world

B. Unfortunately,
individual's worth
passes unrecognised
matter how
hard he or
tries



4. A. The idea that
teachers are unfair to
students is nonsense.

B. Most students don't realise the extent to which their marks/grades are
influenced by
accidental happenings.

5. A. Without the right
lucky breaks,
cannot become
effective

B. Capable
who fail to
leaders have not
advantage of

6. A. No matter
hard you try, some
people just don't
like you.

B. People who can't get others to like them don't understand how to

get along with others. -----

7. A. I have often
that what is going
happen will

B. Trusting to
has never turned out
well for me as
decision

take a
course of



8. A. In the case of
well prepared

student, there is

rarely, if ever,

such a thing as

an unfair test.

B. Many times exam questions tend to be so unrelated to course-



work that studying is really useless.

9. A.
success is a matter
hard work: luck has
or nothing to
with

B. Getting a good
depends mainly
being in the right place
the right time.



10. A. The average
citizen can have an
influence in
government
decisions.

B. This world is run by the few people in power, and there is not



much the

ordinary

person can do about
it.

1 . A. When I
plans. I am
certain that I can
them

B. It is not
wise to plan too
ahead. because
things turn out to be
matter of
anvwa



1 . A. In my
getting what I

want has little or

nothing to do with

luck.

B. Many times, we might just as well decide what to do by
flipping a coin.

1 . A. What happens
me is my own

B. Sometimes I
that I don't have
control over the
my life



PART 4

Part 4 is about your sense of meaning in your life

Again, please read each of the following statements quickly, but carefully.

**Click on the scale as it applies to YOU, from
'Absolutely Untrue' to 'Absolutely True'.**

**Remember that this is NOT a test. There are no right or wrong answers, but only what is true
for you now.**

19. Your sense of meaning in your life.

	Absolutely Untrue	Mostly Untrue	Somewhat Untrue	Can't Say True or False	Somewhat True	Absolutely Mostly True	True
1. I understand my life's meaning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I am looking for something that makes my life feel meaningful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. I am always looking to find my life's purpose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. My life has a clear sense of purpose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. I have a good sense of what makes my life meaningful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. I have discovered a satisfying life purpose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. I am always searching for something that makes my life feel significant.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I am seeking a purpose or mission for my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. My life has no clear purpose.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. I am searching for meaning in my life.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PART 5

Part 5 deals with how well you feel

The following twelve questions are about how you have been feeling lately, that is, over the past few weeks.

Please check ONE of the circles under the answer, which you think most nearly applies to you:

how you are feeling THESE DAYS compared with how you have USUALLY felt in the past few years.

20. How well you have been feeling in the past few weeks.

	More than usual	Same as usual	Less than usual	Much less than usual
1. Have you been able to concentrate on whatever you have been doing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Have you lost much sleep over worry?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Have you felt that you are playing a useful part in things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Have you felt capable of making decisions about things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Have you felt constantly under stress/pressure?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Have you felt that you could not overcome your difficulties?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Have you been able to enjoy your normal day-to-day activities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Have you been able to face up to your problems?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Have you been feeling unhappy and depressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Have you been losing confidence in yourself?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Have you been thinking of yourself as a worthless person?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Have you been feeling reasonably happy, all things considered?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PART 6

The following questions about you and your life at university.

21. Where are you enrolled? (More than one may apply.)

- Adelaide University
-
- Flinders University

22. Please name your Bachelor Degree.

23. What is your study-load?

Full- time study-load

Part-time study-load

24. Please write how many:

First-semester
you

First-semester
you

First-semester
you took
(supplementary)

Full-year subjects you
passed

Full-year subjects you
failing, but believe you
achieve an overall

Full-year subjects you
certain you will

25. Which statement is true for you?

I intend to continue with my degree in 2019. I don't know yet if I'll be **able** to return to

Uni in 2019.

I intend to change degrees and/or transfer to another Uni. I shall be unable to return to

Uni in 2019.

I don't know if I **want** to return to Uni in 2019.

26. What is your gender/sex?

Male

Female

27. What is your age in years?

17 (18 by end of this year)

18

19

20

28. Thank you for completing this questionnaire. Now for something we can do for you.

If you would like a 'Summary of Results', please write your email address below.

Yes, please.

Email address:

29. Another thing we can do.

First Year University of Adelaide Psychology Students: to receive your **course-credit**, please write your 5-digit student **research ID code** in this box. [This is **NOT** the same as your student ID].

ALL OTHER First Year Students: for a chance to win **cinema tickets**

please write your email address. (You are not a Psychology Student at The University of Adelaide.)

Yes, please.

Research ID Code

OR

Email address:

Dear Student,

Thank you for showing your interest in this research project. The research is about finding what contributes to doing well at university for students like you, who have **left home to study in Adelaide**. Doing well is not only about academic results, but also about how you have been coping, especially in view of the pandemic restrictions this year.

Professor Emeritus Helen Winefield and Dr. Peter Strelan are supervising the research, which is being conducted by Susan Straub in the School of Psychology at The University of Adelaide.

You are invited to participate, if **ALL** of the following apply to you:

- **relocated (internationally, inter-state, or elsewhere in South Australia)**
- **aged 18-20 years old (on 31st December 2020)**
- **full-time**
- **student at The University of Adelaide, Flinders University or University of South Australia**
- **living in a flat, share-house, rooming-house OR college, hall, ‘village’.**

The research would not apply to you

If you are living with family, relatives, or older adults responsible for running the household.

Completing the questionnaire

To begin the questionnaire you will be asked to give your consent to participate. Once you have done so, follow the prompts. The questionnaire should take about 12 minutes to complete.

At the end, you may choose to enter a draw with the chance to win a voucher for cinema tickets. However, if you are a University of Adelaide first year psychology student using the Research Participation system (RPS), you will receive course-credit instead, by providing your RPS ID code.

Are there any risks associated with participating in this project?

There are no foreseeable risks. However, should the unforeseen occur, you may seek independent counselling by contacting the following:

University of Adelaide Counselling	Tel 83135663
Flinders University Counselling	Email: counselling@flinders.edu.au
University of S.A. (General Enquiries)	Tel 1300 301703 or 83026611 – request campus counsellor
Life-Line (24/7 – Crisis) 131114	OR Beyond Blue (24/7) Support, Advice 1300224636

The benefits of the research project

Simply answering the questions may give you a clearer understanding of yourself, how you are feeling, and your term-time situation. However, the results of the research would also assist:

- you or your family in making decisions about what kind of accommodation it might be best to choose for the rest of your degree, for another family member or a friend;
- secondary-school, university and other counsellors;
- student groups, clubs and societies;
- the universities' administration and accommodation support services.

Participation and withdrawal

Participation in this project is completely voluntary. Please try to answer all questions, as not doing so could compromise or invalidate the research. However, if you agree to participate and then change your mind, you may withdraw at any time before submitting the survey. Withdrawing will not affect your studies now or in the future.

Your information

You will be anonymous. The researcher will use statistical analysis and you will not be personally identifiable. The research and statistical results will be reported and publicised in scholarly journal articles, the PhD thesis, and in presentations. You may choose to have a summary of results emailed to you. The researcher alone would see your email address.

Confidentiality

All information and records relating to the project, including the collected data, will be stored on a password protected computer and USBs held by the researcher. Only the principal supervisor, co-supervisor, Head of the School of Psychology, and researcher will have authority to access the computer and USBs. The information and records will be kept for five years, and may be used in future research.

Contacts for any questions about the project

The following contacts are there to answer any questions you may have about the research project:

Helen Winefield, Professor Emeritus			helen.winefield@adelaide.edu.au
Peter Strelan, Senior Lecturer	83135662		peter.strelan@adelaide.edu.au
Susan Straub, PhD Candidate	83133978		susan.straub@adelaide.edu.au

The title of the study

'Relocated university students aged 18-20 years: Belonging, well-being, and academic success.'

Complaints or Concerns

The Human Research Ethics Committee at the University of Adelaide has approved this study (approval number H-2020-20/).

If you have questions or problems associated with the practical aspects of your participation in the research, or wish to raise a concern or complaint about the

research, then you may consult Professor Emeritus Helen Winefield. If you wish to speak with an independent person regarding a concern or complaint, the University's policy on research involving human participants, or your rights as a participant, please contact:

The Human Research Ethics Committee's Secretariat

Tel +61 8 8313 6028 Email hrec@adelaide.edu.au

Postal Address Level 4, Rundle Mall Plaza
50 Rundle Mall
Adelaide SA 5000

Any complaint or concern would be treated in confidence and fully investigated.

You would be informed of the outcome.

Yours sincerely,

Helen Winefield
Professor Emeritus

Peter Strelan, Senior Lecturer
Senior Lecturer

Susan Straub
PhD Candidate

Relocated students

Start of Block: Default Question Block

Information letter [Participants' information letter](#)

Double click on the link above.

Consent I have read the letter of introduction and information, and give my consent to participate in the research.

Agree (1)

Instruction **Please complete the questionnaire in one go. However, if you cannot do so, you may stop and re-start.**

It should take 12 minutes (approx.) to complete. There are three parts.

Write your answers in the text boxes and click to check circles/boxes.

Part 1 requests your **home-location** and is especially concerned with your **accommodation in Adelaide.**

Before you begin, please be aware that at the **end of the survey** you

will be asked to **confirm** your age as **18, 19 or 20 years**

(on 31st December 2020) **AND**

to enter your **grades** for **first semester** subjects.

First-year psychology research students at The University of

Adelaide, will be asked to enter the **5-digit RPS code**

for course-credit.

[This is NOT the student ID No.]

*1. What is the name of your **home country**?

2. **Australian Students:** What is your **home post-code**?

3. Did you go home to stay during the pandemic restrictions?

No (1)

Yes (2)

Return to Adelaide - Semester 1 (3)

- Semester 2 (4)

4. What is your term-time accommodation **Adelaide post-code**?

5. Which best describes your term-time accommodation?

College or Hall (1)

Student 'Village' - university managed (2)

Student 'Village' - commercially managed (3)

Share-house or rooming-house (4)

Apartment/flat/unit (private) (5)

Other (please specify) (6) _____

6.

Following are some questions about your accommodation.

Are most meals provided for you?

No (1)

Yes (2)

7. Is cleaning of common areas done for you, e.g. bath-room, lounge/sitting-room?

No (1)

Yes (2)

8. Is your room vacuum-cleaned for you?

No (1)

Yes (2)

9. Is bed-linen laundered/washed for you?

No (1)

Yes (2)

10. Would it be quite easy to get things fixed when not working properly or broken (e.g. plumbing, windows, appliances)?

No (1)

Yes (2)

Don't know. (3)

11. Are there spaces where you can meet with others? Or relax?

No (1)

Yes (2)

12. Do you have enough space and quiet to study?

No (1)

Yes (2)

13. Is all the technology you need for your studies available?

No (1)

Yes (2)

14. Is personal academic support readily available when you need it: someone you can ask for help?

No (1)

Yes (2)

15. Do you feel at ease communicating with those responsible for running things, or in any way assisting?

Alternatively, do you feel at ease communicating with your landlord or their agent.

No (1)

Yes (2)

16. Is it generally easy to communicate/talk with other residents?

No (1)

Yes (2)

N/A - I live alone (3)

17 Like you, are other residents mostly students?

No (1)

Yes (2)

N/A - I live alone (3)

18 Do more senior residents check on how the younger are doing or feeling?

No (1)

Yes (2)

N/A - I live alone (3)

19. How many people from your accommodation would you greet or say "Hello", when you are out somewhere?

None (1)

1-5 (2)

6-10 (3)

11-20 (4)

21-50 (5)

50-100 (6)

101-150 (7)

150+ (8)

End of Block: Default Question Block

Start of Block: Part 2

Instruction

Part 2 is about how you see the **support** you have from others.

We look to others for companionship, and assistance of various kinds.

Some people have more support available to them than others do.

Please read each of the following statements quickly, but carefully.

Click the circle under the heading that is most true for you.

This is NOT a test.

There are no right or wrong answers, but only **WHAT IS TRUE FOR YOU NOW**.

20.

How you see the support you have from others.

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
1. There is someone I like with whom I can go out whenever I want. (1)					
2. I spend time in a friend's room or at their place quite a lot. (2)					
3. I'm not a member of any organised groups (such as clubs, interest groups, sporting teams, church or religious groups, and so on). (3)					
4. I don't often get invited to do things with other people. (4)					
5. I don't usually spend two evenings on the weekend doing something with others. (5)					
6. People visit me during the day or in the evening. (6)					
7. I belong to a group that meets, or does things together regularly. (7)					
8. There are people with whom I regularly run, exercise, play sports or games. (8)					

9. I don't have friends who would comfort me by showing some physical affection, if they could, like giving me a hug. (9)

10. If I decided at dinner-time to take a study-break this evening and go out, I could easily find someone to go with me. (10)

11. Lately, I often feel lonely, like there's no-one to keep me company. (11)

12. Most days, I have regular meal-times with others. (12)

21.

**The following statements are about how you view your fellow residents as group/
community.**

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)	N/A - I live alone or with one other person (6)
1. I think that those with whom I live make a good community. (1)						
2. I am not planning on leaving these people. (2)						
3. For me, this community of people is a good fit. (3)						
4. The people with whom I live can depend on each other. (4)						
5. The people with whom I live can get help from each other if they need it. (5)						
6. The people in this community are secure in sharing opinions or asking for advice. (6)						
7. This community of people is important to me. (7)						
8. I have friends in this community. (8)						
9. I feel good being involved in this community and in helping others. (9)						

22.

Now for some similar statements about how you view your university and your fellow students.

	Strongly disagree (1)	Disagree (2)	Neither agree nor disagree (3)	Agree (4)	Strongly agree (5)
1. I think that this university is a good university. (1)					
2. I am not planning on leaving this university. (2)					
3. For me, this university is a good fit. (3)					
4. Students can depend on other members of this university. (4)					
5. Students can get help from other members of the university if they need it. (5)					
6. Students at this university are secure in sharing opinions or asking for advice. (6)					
7. This university is important to me. (7)					
8. I have friends at this university. (8)					
9. I feel good being involved at the university and helping others. (9)					

Start of Block: Part 3

Part 3 is about how well you have been feeling and doing.

First, are some statements about how you have been feeling in the past few weeks.

Please check **one** of the circles, which you think most nearly applies to you: how you are feeling **these days** compared with how you have usually felt in the **past year** or so.

23.

How well you have been feeling in the past week or so.

	Much less than usual (1)	Less than usual (2)	Same as usual (3)	More than usual (4)	Much more than usual (5)
1. I've been feeling optimistic about the future. (1)					
2. I've been feeling useful. (2)					
3. I've been feeling relaxed. (3)					
4. I've been feeling interested in other people. (4)					
5. I've had energy to spare. (5)					
6. I've been dealing with problems well. (6)					
7. I've been thinking clearly. (7)					
8. I've been feeling good about myself. (8)					
9. I've been feeling close to other people. (9)					
10. I've been feeling confident. (10)					
11. I've been able to make up my own mind about things. (11)					
12. I've been feeling loved (cared for, that I matter). (12)					
13. I've been interested in new things. (13)					
14. I've been feeling cheerful. (14)					

The next items are about you and your academic life.

24. Where are you enrolled?

(More than one may apply.)

- Adelaide University (1)
 - Flinders University (2)
 - University of South Australia (3)
-

25. Please name your Bachelor Degree.

26. Please give the number of **subjects**
you **took** in first semester.

27. Please give the number of **subjects**
you **passed** in first semester.

28. Please give the **grades** you achieved
for your subjects in Semester 1.

For a full-year subject give your
grade/standing for Semester 1.

	High Distinction (1)	Distinction (2)	Credit (3)	(UniS A P1) (4)	Pass (UniS A P 2) (5)	Non- Grade d Pass (6)	(UniS A Sup./Conc.Pas s) (7)	Fai l (8)	(UniS A Fail 2) (9)
Subject 1 (1)									
Subject 2 (2)									
Subject 3 (3)									
Subject 4 (4)									
Subject 5 (5)									
Subject 6 (6)									

29. Which statement is true for you?

I intend to continue my degree in 2021. (1)

I intend to change degrees and/or transfer to another Uni. Or defer. (2)

I don't know yet if I'll be **able** to return to Uni in 2021. (3)

I shall be **unable** to return to Uni in 2021. (4)

I don't intend to continue at Uni. (5)

30. What is your sex?

Male (1)

Female (2)

Prefer not to answer (3)

31. What will be your age in years

on 31st December 2020?

18 (1)

19 (2)

20 (3)

32. If you **went home** during the **pandemic**, did you stay in regular contact with any friends in your accommodation?

- No (1)
 - Yes (2)
-

33. Or at the university?

- No (1)
 - Yes (2)
-

34.

Thank you for completing this questionnaire. Now for something we can do for you. If you would like a 'Summary of Results', please write your email address.

35. Another thing we can do.

You may enter the draw for
cinema tickets. Please write your
email address below, so that we
can notify you if you are a winner.

First-year psychology students at
The University of Adelaide, please
enter your **5-digit RPS Code here**
(NOT your email address).

36. Optional for ALL students

If you wish to comment on your accommodation and/or experiences, please do so here.

End of Block: Part 3

APPENDIX J. Study Three Factor Analysis of Integrated Support Scale (ISS)

GET

```
FILE='C:\Users\al730411\PhD\StatisticalAnalysis\Analyses.2020Data\NovModifiedData\Nov2020\FINAL.11May21from6Jan21.Created.TDomSup4Items.GreetBinary.sav'.
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FACTOR
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/PLOT EIGEN
/CRITERIA MINEIGEN(1) ITERATE(25)
/EXTRACTION PC
/ROTATION NOROTATE
/METHOD=COVARIANCE.
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----- F A C T O R A N A L Y S I S -----

Factor Analysis

[DataSet1]
C:\Users\al730411\PhD\StatisticalAnalysis\Analyses.2020Data\NovModifiedData\Nov2020\FINAL.11May21from6Jan21.Created.TDomSup4Items.GreetBinary.sav

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
DomSup1.to.MeetSpace	9.1475	1.65481	122
Ease communicating residents	1.7213	.60661	122
Like you, uni students	1.6721	.63562	122
Seniors care	1.4262	.65452	122

Correlation Matrix

		DomSup1.to.Me etSpace	Ease communicating residents	Like you, uni students
Correlation	DomSup1.to.MeetSpace	1.000	.288	.298
	Ease communicating residents	.288	1.000	.726
	Like you, uni students	.298	.726	1.000
	Seniors care	.476	.656	.537

Sig. (1-tailed)	DomSup1.to.MeetSpace		.001	.000
	Ease communicating residents	.001		.000
	Like you, uni students	.000	.000	
	Seniors care	.000	.000	.000

Correlation Matrix

		Seniors care
Correlation	DomSup1.to.MeetSpace	.476
	Ease communicating residents	.656
	Like you, uni students	.537
	Seniors care	1.000
Sig. (1-tailed)	DomSup1.to.MeetSpace	.000
	Ease communicating residents	.000
	Like you, uni students	.000
	Seniors care	

Covariance Matrix^a

--

a. Determinant = .036

KMO and Bartlett's Test^a

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.694
Bartlett's Test of Sphericity	Approx. Chi-Square	188.981
	df	6
	Sig.	.000

a. Based on correlations

Communalities

	Raw		Rescaled	
	Initial	Extraction	Initial	Extraction
DomSup1.to.MeetSpace	2.738	2.676	1.000	.977
Ease communicating residents	.368	.062	1.000	.170
Like you, uni students	.404	.069	1.000	.170
Seniors care	.428	.146	1.000	.342

Extraction Method: Principal Component Analysis.

Total Variance Explained

Component

Initial Eigenvalues^a

Extraction Sums of Squared Loadings

		Total	% of Variance	Cumulative %	Total	% of Variance
Raw	1	2.953	74.980	74.980	2.953	74.980
	2	.709	18.007	92.987		
	3	.184	4.671	97.658		
	4	.092	2.342	100.000		
Rescaled	1	2.953	74.980	74.980	1.659	41.466
	2	.709	18.007	92.987		
	3	.184	4.671	97.658		
	4	.092	2.342	100.000		

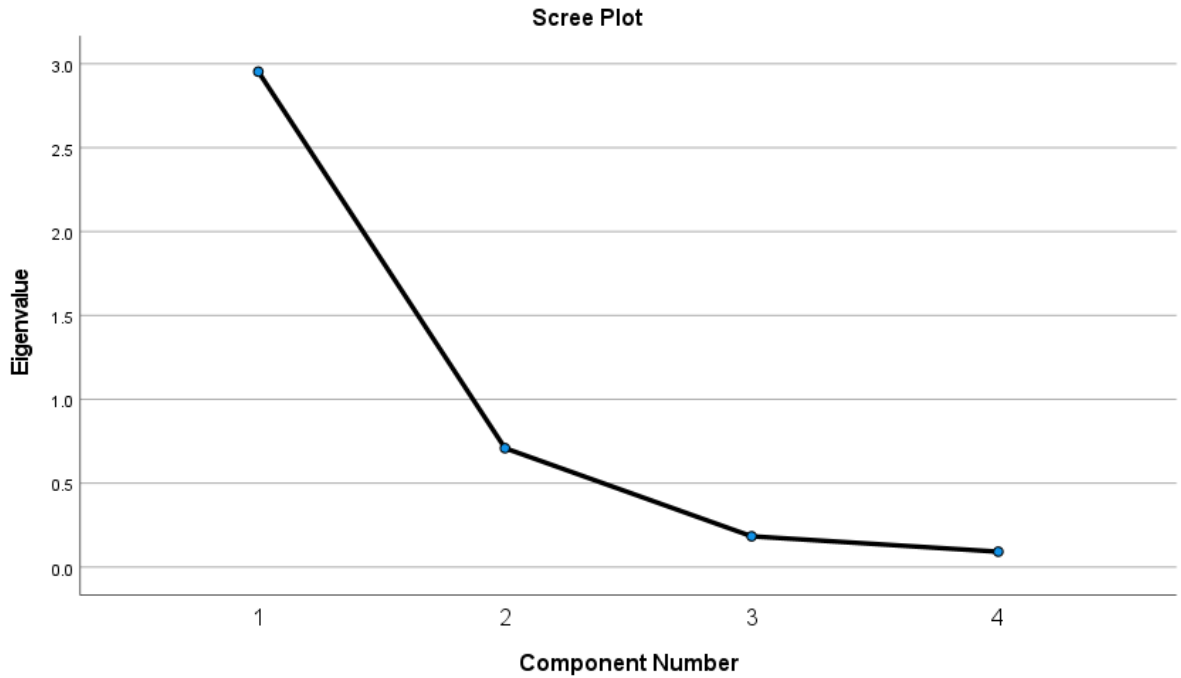
Total Variance Explained

Extraction Sums of Squared Loadings^a

	Component	Cumulative %
Raw	1	74.980
	2	
	3	
	4	
Rescaled	1	41.466
	2	
	3	
	4	

Extraction Method: Principal Component Analysis.

a. When analyzing a covariance matrix, the initial eigenvalues are the same across the raw and rescaled solution.



Component Matrix^a

	Raw Component 1	Rescaled Component 1
DomSup1.to.MeetSpace	1.636	.988
Ease communicating residents	.250	.412
Like you, uni students	.262	.412
Seniors care	.383	.585

Extraction Method: Principal Component Analysis.^a

a. 1 components extracted.

Component Score Coefficient Matrix^a

	Component 1
DomSup1.to.MeetSpace	.917
Ease communicating residents	.051
Like you, uni students	.056
Seniors care	.085

Extraction Method: Principal Component Analysis.^a

a. Coefficients are standardized.

Component Score Covariance Matrix

Component	1
1	1.000

Extraction Method:
Principal Component
Analysis.