IT'S LONELY AT THE BOTTOM: INVESTIGATING THE ROLE OF SOCIAL

INTEGRATION IN THE ASSOCIATION BETWEEN SOCIAL CLASS AND MENTAL

HEALTH

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Statement of Originality

I hereby certify that to the best of my knowledge and belief the work embodied in the thesis is my own work, conducted under normal supervision. The thesis contains no material which has been accepted, or is being examined, for the award of any other degree or diploma 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. I give consent to the final version of my thesis being made available worldwide when deposited in the University's Digital Repository, subject to the provisions of the Copyright Act 1968 and any approved embargo.

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Abstract

It has been widely established that working-class people tend to have poorer mental health compared to people from upper classes. Additionally, research suggests that the working class are less socially supported and connected. The present research investigated the role of social integration in the relationship between social class and mental health in both university populations and the general population. Starting with a university focus, Study 1 involved a three-wave longitudinal study ($N = 152$) conducted within the Australian university population, Study 2 was a longitudinal archival study ($N = 2,333$), and Study 3 included a cross-sectional study (Chapter 5, $N = 321$) conducted within the Australian university population. Consistent with my predictions, in Studies 1 and 3, I found that social integration mediated the relationship between social class and mental health. Study 2 demonstrated that the relationship between social class and social integration is pervasive and does not vary as a function of the type of institutions that students attend or where they are living. Further, Study 3's results suggested that working-class students are less socially integrated because they tend to be older and thus have less time available to socialise. I then extended my investigations into the general population with three studies I conducted within the general Australian population. Studies 4 ($N = 15,028$) and 5 ($N = 1,946$) included two large nationally representative cross-sectional archival studies. Study 6 involved cross-sectional study ($N = 461$) with participants recruited from the general Australian population. All studies showed that social integration mediated the relationship between social class and mental health. In addition, Study 6 demonstrated that working-class individuals had less money to socialise and were more uncertain about their place in society, and these differences predicted their lower integration and mental health. Overall, I suggest that social integration has the potential to improve the mental health of working-class individuals.

PREAMBLE

In the middle of my final year as an undergraduate student I had the misfortune of contracting tonsillitis and glandular fever at the same time. Because of this unfortuitous combination of ailments, I missed the enrolment openings for my second semester courses, and thus missed out on my first choice of classes. Included in these missed connections was a seminar series on Mindfulness, which I ended up having to replace with a series on Social Class. At the time, I was less than impressed. However this quickly changed once the series actually started. This seminar series was unlike any other course I had taken at university. Every week our small class of 20 odd students would dissect and discuss two recent research papers on social class. This was finally what I had always imagined university to be, but more to the point the subject matter was incredibly interesting. The research took something we had only ever learnt about in a health context - social and economic inequality - and framed it within a larger social picture.

As the seminar leader (who would later go on to become my PhD supervisor) Mark Rubin explained "social class has a profound influence on people's personality and behaviour. It predicts what clothes people wear, what food they eat, how they talk, their attitudes, values and preferences (e.g., political, musical, sport); even their physical and mental health." He also outlined how social class is understudied in psychology, a fact I found mind boggling having come from a working-class town and with a working-class family background (as an example, my dad has worked in the same steel mill in the same role since he was 16). The course covered papers on the relationship between social class and well-being, prejudice, mobility, hostility, self-perceptions, prosocial behaviour, and classism at university to name a few. Discussions about these papers generally divided the class, with some students refuting the notion of class

entirely, and others supporting the conclusions of the papers being discussed; that class exists

and is a force to be reckoned with.

Many of the debates I observed and often participated in are reflected in Scanlon's 2014

article from the Conversation "Bogans and hipsters: we're talking the living language of class".

In it, he described the conversations he had with students in his university classes. One student

of his in particular insisted that social class does not exist and that they just happen to go to a

private school and have CEO for a father because of "choices". In comparison, Scanlon

describes another one of his students, who was certain that social class exists because they live

in a low SES suburb and had to work while attending university. I concur with the latter student

in this regard: of course class exists! The cultural phenomenon of social and economic

hierarchies has not disappeared entirely, though it may look different to what we see on

Downton Abbey. The worldview of the first student, and others who share it, completely

disregards privilege and power and how those structures perpetuate inequality. As Scanlon goes

on to explain, perpetuating this idea of meritocracy and that class does not exist is beneficial for

some (for example, those at the top) but harmful to others (for example, those at the bottom). We

were having these same discussions in our seminar series and the papers we were discussing

opened my eyes to this neglected area of psychology. Moreover, the lack of social class in

psychology research now seemed like a glaring oversight to me. The question I was left asking

at the end of the series was – why aren't more people talking about this? And what inequalities,

discrimination and suffering are we missing while we ignore this topic area? And so, this leads

me to this thesis, which forms my first contribution to the burgeoning research on the social

psychology of social class.

CHAPTER 1

INTRODUCTION: SOCIAL CLASS, SOCIAL INTEGRATION AND MENTAL HEALTH

Good mental health and well-being are an essential part of overall health, and are considered to be a necessity in being a productive and fulfilled member of society (World Health Organisation, 2014). Despite the importance of mental health, in Australia and many other countries, the mental health of citizens is in crisis with record levels of clinical mental illness and dropping levels of happiness and well-being (Hall, 2015; Pash, 2018). For example, in Australia, diagnoses of depression, anxiety and stress-related disorders are alarmingly high, with one in every five Australians experiencing a mental illness each year (Australian Bureau of Statistics, 2007), while Australia continues to drop down the global happiness index (Sachs, Layard, & Helliwell, 2018).

At the personal level, poor mental health and well-being is associated with increased risks of instability (e.g., unemployment, homelessness, relationship breakdowns) and physical health problems (e.g., Butterworth, Leach, Pirkis, & Kelaher, 2012; Prince, Patel, Saxena, Maj, Maselko, Phillips, & Rahman, 2007; Rogers & Pilgrim, 2014). However, mental health also poses a problem at the economic level, with reports estimating the cost of mental ill-health at approximately $60 billion per annum (roughly $4,000 per taxpayer) in Australia in 2017 (National Mental Health Commission, 2016). Treatments for mental health issues and access to mental health care are more accessible than ever (Beyondblue, 2015), with more effective treatments being introduced as psychological and medical science progresses (Richards & Borglin, 2011). It would therefore seem that availability and quality of treatment is not a panacea, because mental health in the population remains high even as these factors improve. Another approach to improving the mental health and well-being of individuals is to identify

some of the antecedents of poor mental health and then to investigate how these can be remedied. In line with this approach, my research investigates the roles of social class and social integration as antecedents of poor mental health, with a particular focus on the Australian population.

It is now a widely established fact that being at the bottom of society in terms of wealth and status leads to poorer mental health (World Health Organisation, 2014). Research has demonstrated this phenomenon both within and across countries (e.g., Adler, Boyce, Chesney, Cohen, Folkman, Kahn, & Syme, 1994; Kendall, Nguyen, & Ong, 2018; Mirowsky & Ross, 2017) as well as across different aspects and conceptualisations of mental health (e.g., Hudson, 2005; Yang, 2008), different measures of social and economic status (e.g., Adler, Epel, Castellazzo, & Ickovics, 2000; Araya, Lewis, Rojas, & Fritsch, 2003), and different phases of the lifespan (e.g., Miech, Caspi, & Moffitt, 1999; Pinquart, & Sörensen, 2000). Living in impoverished social, economic, and physical environments not only increases the risk of developing a mental illness or disorder, but also provides untenable conditions for leading a happy and fulfilling life (Wilkinson & Pickett, 2010). As such, working-class (low socioeconomic status; SES) populations are considered some of the most at risk in terms of mental health and mental illness.

The connection between lower social and economic status and mental health could be one of the leading drivers of the increasing mental health crisis, because socioeconomic inequality is steadily increasing in most developed countries (Alvaredo, Chancel, Piketty, Saez, & Zucman, 2018; Patel, Burns, Dhingra, Tarver, Kohrt. & Lund, 2018). This trend means more people than ever are at the lower end of the socioeconomic spectrum, meaning more people than ever are at this heightened risk for mental ill health. Indeed, both inequality and mental health

issues are increasing, seemingly in tandem (Pickett & Wilkinson, 2010). For example, a 2018

Australian study showed that the lowest 50% of households hold less than 20% of the country's

wealth (Australian Council of Social Service, 2018), while the annual financial burden of mental

ill health in Australia has grown by 1.4% to $8.5 billion (Australian Medical Association, 2018;

Black Dog Institute, 2018). Although these statistics represent extreme ends of both the mental

health and inequality spectrums, they are indicative of the magnitude of these increasing social

problems. Thus, it is important to determine the mechanisms through which social class

influences mental health. In particular, it is important to identify those mechanisms that can be

most easily influenced in an economical and efficient way.

Many of the reasons cited for the connection between social and economic status and

mental health are inextricably linked to being part of a disadvantaged portion of society. For

example, it is well-documented that working-class people are exposed to more stressors on a

daily basis, including living in areas with higher crime rates, having poorer housing conditions,

facing discrimination/classism, and experiencing resource scarcity (Power, Stansfeld, Matthews,

Manor, & Hope, 2002; World Health Organisation, 2014). In fact, working-class individuals

experience more uncontrollable stressful life events compared to higher class individuals,

including both acute (one-off), and chronic (ongoing) stressors (Belle, 1990; Dohrenwend,

1975). Additionally, working-class people are more likely to lack both the time and money to

address mental health issues as they arise, exacerbating the likelihood of these issues reaching a

critical level (Kuruvilla & Jacob, 2007; Goddard & Smith, 2001). The experiences of being

exposed to stressors, and having limited time and money to deal with these stressors are difficult

to separate from the experience of simply being working-class people, because these are

defining features of social and economic inequality. Thus, it would be difficult to improve the

mental health of working-class individuals through these pathways without fixing inequality and its antecedents altogether.

While fixing inequality is a noble and necessary task, social change of such magnitude is a difficult and lengthy endeavour. Instead of these relatively immutable social structures, my research focuses on one of the more malleable proposed links between social class and mental health: social integration. Specifically, research suggests that people from lower classes have less supportive networks (e.g., Field & Minkler, 1988; Krause & Borawski-Clark, 1995; Turner & Marino, 1994) and are less integrated into society (e.g., Gracia, Garcia, & Musitu, 1995; Patel et al., 2018). This deficit is notable because these aspects of social integration are important protective factors for mental health (e.g., Hare Duke, 2017; Kawachi & Berkman, 2001). Additionally, research has demonstrated that increasing support networks and community ties can be achieved independently of social and economic circumstances (e.g., Laverack, 2006). Together, these findings indicate that (1) working-class people are less socially integrated, (2) lacking social integration is detrimental to mental health and well-being, and (3) improving social integration (and by proxy mental health) can be achieved despite social class. Consequently, this thesis aims to build a strong base of research investigating the importance of the social integration pathway through which social class influences mental health as a springboard for future research aimed at decreasing the mental health risk of working-class populations through social integration interventions.

The first half of my research investigates the roles of social integration in the relationship between social class and mental health in a specific population: university students. This research builds on and extends existing research linking the social class and mental health of university students to their integration into the social life of university (e.g., Rubin, 2012;

Rubin, Evans & Wilkinson, 2016; Rubin & Kelly, 2015). Using similar methodological approaches, the second half of this thesis extends the investigation into the general Australian population, where there is less psychological research linking social class, social integration and mental health together.

However, social class, social integration, and mental health and well-being are all multifaceted concepts with numerous interpretations and approaches to measurement. Consequently, I define, operationalise and justify my approach to each of these factors below.

Social Class

On a purely descriptive level, social class refers to the division in society along the lines of both economic and social status (Diemer, Mistry, Wadsworth, López, & Reimers, 2012; Sheppard & Biddle, 2017). While this explanation may seem simple, the actual application of this concept to society is much more complex and nuanced, especially in the modern era where long-held traditional class lines are increasingly blurred (Sheppard & Biddle, 2017). Although social class may change over time and cultures, the one constant is its widespread and indelible impact on people's lives (for a recent summary, see Manstead, 2018). The social and economic conditions that people grow up and live in have a powerful influence on their personal and social identities (e.g., Easterbrook, Kuppens, & Manstead, 2018; G. Evans & Mellon, 2016), opinions and behaviour (e.g., Carvacho, Zick, Haye, Gonzalez, Manzi, Kocik, & Bertl, 2013; Jetten, Mols, Healy, & Spears, 2017; Kraus, Piff, & Keltner, 2009), and on what they decide to do with their lives (e.g., Blustein, Chaves, Diemer, Gallagher, Marshall, Sirin, & Bhati, 2002; Cave, Fildes, Luckett, & Wearing, 2015). However, researcher's approaches to defining and measuring social class are not clear cut, with many different views on what constitutes class. Some important issues within the social class literature include the divergence and overlap

between social class and SES, whether social classes exist in various contemporary societies, what social class looks like today, and how best to measure social class, especially for psychological research purposes. I will now discuss each of these considerations in detail and provide some conclusions about the way I approach social class in this thesis.

Social Class or Socioeconomic Status

Social class is commonly used interchangeably with the term *socioeconomic status*. However, although these terms refer to overlapping concepts, they do have some critical distinctions. As mentioned previously, social class divides individuals across both economic, cultural and social status lines. In comparison, SES has a more specific focus on the economic situation of individuals and communities (Kraus & Stephens, 2012; Lareau & Conley, 2008; Manstead, 2018). More broadly, SES is an objective indicator of economic position based on the income, education and occupation levels of an individual or a community (Oakes & Rossi, 2003). In contrast, social class incorporates these economic factors with more subjective cultural and social concepts like family background and social class identification (Kraus & Stephens, 2012).

Social class and SES also differ in their form and functioning. Notably, because SES is based solely on economic factors, it is prone to change depending on individuals' economic circumstances, which are changeable depending on employment, relationship status, life stage, and so on. In contrast, social class is more stable over time because it relates to both the economic position of individuals as well as the way they perceive themselves in terms of status, prestige and cultural class background (Day, Rickett & Woolhouse, 2014; Kraus & Stephens, 2012; Rubin, Denson, Kilpatrick, Matthews, Stehlik, & Zyngier, 2014). These differences have implications for the use of these constructs in research. Notably, because it is relatively objective

and easily measured (e.g., postcode, income, dwelling size), SES is generally used at the community/suburb level to look at large scale effects across groups of people. In contrast, because social class is related to the personal characteristics of an individuals' background and economic situation, social class is more suited for investigating individual differences (Lareau & Conley, 2008; Oakes & Rossi, 2003). Because social class is a broader concept with more nuance, and my research is more concerned with more stable individual circumstances, I focus on social class rather than SES, although there are socioeconomic components involved in my measures of social class.

Social Class over Time

The structure, influence, and meaning of social class has changed over time, and never more so than in the last few decades where the bulk of working-class (blue collar) occupations have become obsolete or changed to the point of being unrecognisable (Rifkin, 1995) and other indicators of higher social class like home ownership and tertiary education have become more accessible (Andrews & Sánchez, 2011; Marginson, 2006). For example, due to rising inequality in Australia there are fewer differences between the working and middle-classes than ever before, though more differences between both of them and the upper-class. Indeed, the bulk of modern social class discourse focuses on two main considerations: (1) whether social class still exists in some societies, or (2) how the structure of social class has changed.

A commonly held belief in Australia and most Western developed countries is that social class no longer exists, or if it does, that it does not have an impact on the everyday life of individuals (Sheppard & Biddle, 2017). These beliefs surrounding the demise of social class come from the blurring of social and economic lines mentioned earlier, and also from the Western belief in meritocracy and upward mobility (Argy, 2006; Breen & Goldthorpe, 1999).

Each of these concepts suggest that people's economic and social circumstances are a result of their own personal effort rather than contextual circumstances. Admittedly, social class is not as visible or distinctive as it once was, and upward mobility is more of a possibility than it has been in the past. Nonetheless, the belief that social class does not exist in these societies seems to be unfounded. Most Western developed countries like Australia and the USA currently have record levels of income inequality and stagnant rates of upward mobility (e.g., Chetty, Grusky, Hell, Hendren, Manduca, & Narang, 2017; Chetty, Hendren, Kline, & Saez , 2014; Corak, 2013; Moroni, 2018), meaning that the economic divisions between classes are wider than ever, while movement between classes is more difficult. In Australia, for instance, wealth and income data demonstrate that, far from being a classless society, there are more differences than ever between those who earn the most and those who earn the least. A 2018 report found that the top 1% of earners in Australia earn in a fortnight what the bottom 5% earn in a year, while the top 20% of households own 62% of the wealth (Australian Council of Social Services, 2018).

One modern consideration for the structure of social class is the compacting of the middling and working class that is occurring due to trends in inequality. In particular, in most westernized countries the top percent of wealth are rapidly gaining more wealth while those in the middle and at the bottom are stagnant (Alvaredo, Chancel, Piketty, Saez, & Zucman, 2018; Patel, Burns, Dhingra, Tarver, Kohrt. & Lund, 2018). These trends mean there is relatively less economic difference between the working class and the middle class then there has been historically. However, while there may be less economic difference between the middle and working class, a cultural and status divide still exists (Sheppard & Biddle, 2017). Moreover, although working class and middle class individuals may now be placed in similar income brackets, there are still large differences between the kind of life you can lead on the bottom

compared to the top of an income bracket (Zaloom, 2018). Working class individuals are also

much more likely to have unstable finances and employment, thus while they may earn a similar

income to middle class people they are not in a position to accumulate wealth (Zaloom, 2018).

Consequently, although the spread of inequality has shifted there are still distinct differences

between the middle and working class.

Furthermore, Australian's as a whole are not unaware of social class. When asked, 94%

of Australians willingly categorise themselves within a social class (Sheppard & Biddle, 2015),

indicating there is at least some consciousness of class in Australian society. Hence, the

available evidence suggests that Australians do perceive themselves in terms of social class.

Furthermore, as I have discussed above, social class has empirically verifiable effects on

people's lives, and particularly on their mental health and well-being, which is the focus of this

thesis.

The second consideration is how contemporary social class differs from the historical

model of social class. Specifically, most recent research in the UK and Australia argues that the

traditional monikers of *upper-class*, *middle-class*, and *working-class* are no longer applicable,

because we have moved away from such rigid structure in society, and because the nature of

work has changed with technological advancement (Rifkin, 1995). A large survey in Britain

conducted in 2011 re-imagined the structure of social class along economic, cultural and social

lines, based on the work of Pierre Bourdieu (Savage et al., 2013). Based on over 161,000

responses, the researchers developed seven hierarchical social classes from the "elites" at the top

of the social ladder to the "precariat" at the bottom. The research highlighted social class as

existing along economic, cultural and generational divides. There were several distinctions made

within the middle and lower classes, based not only on income and occupation but on the types

of people they tended to engage with and the culture they consumed. However, although the

terms and distribution of these classes may have changed, the structure of class remains the

same, with those at the top having the most and those at the bottom the least.

A similar study in Australia surveyed the social and economic status of 1,200 Australian

individuals and arrived at a similar model of social class to that of Savage et al. (2013; Sheppard

& Biddle, 2017). The Australian hierarchical modern model of social class has six levels from

the "established affluent" at the top through to the "precariat" at the bottom. According to

Sheppard and Biddle, the missing class in Australia compared to Britain is the top class of

"elites" which is generally comprised of "old-money" families with generations of inherited

wealth. Australia, being a much younger country, is yet to develop this level of class. Like the

UK version, the classes are divided not only on income and wealth but also age and cultural

capital. Aside from this discrepancy, the distribution and content of the classes remains

relatively similar with those at the top having the most across all categories and those at the

bottom having the least.

Of most importance from this research is the finding that modern society, at least in

Britain and Australia, is stratified along lines of economic wealth and social status. This is a fact

that most Australians seem to be aware of, given that peoples' self-assessed social class

generally closely reflected their objectively assessed class (Sheppard & Biddle, 2017). What

modern social class research points out, however, is that the class characteristics of old are no

longer sophisticated enough to capture the complexities of modern social class. In other words,

the social and economic factors that separate individuals are broader and more nuanced than

ever. Consequently, social class measurement needs to reflect this modern complexity. As I

discuss further below, a logical extension of this more nuanced approach is to measure social

class in a continuous way.

Conceptualisation and Measurement of Social Class

As I have discussed, social class is an important but often ignored topic of research in certain disciplines. Psychology is slowly catching up to other disciplines, like sociology, in investigating the impacts of social class on individuals (e.g., Kraus & Stephens, 2012; Manstead, 2018). However, because social class is often invisible, overlooked, and denied, and has changed in form and content with changing economic and employment climates, there are some difficulties when studying social class from a psychological perspective. The ambiguity surrounding social class has led to most interpretations of social class in research considering only one factor (e.g., education or income) or considering only economic variables (Diemer et al., 2012; Kraus & Stephens, 2012; Manstead, 2018; Rubin et al., 2014). Such approaches provide insufficient pictures of social class, limiting the scope and missing out entirely on the social and cultural aspects of the construct. As many researchers have pointed out, it is imperative that research seeks to comprehensively conceptualize and measure social class, though the best method for conceptualising and measuring social class is a contentious issue (Diemer et al., 2012; Kraus & Stephens, 2012; Manstead, 2018; Rubin et al., 2014). I will now discuss the most common measures of social class including: educational attainment, income and wealth, occupation and occupational prestige, subjective social status, and self-categorisation of social class. Each of these approaches has informed my approach to measuring social class in the present thesis.

Education. One of the most common objective indicators of social class includes an individual's level of educational attainment (Diemer et al., 2012; Kraus & Stephens, 2012). Education, especially higher education, is considered to be the most important catalyst for the

other markers of social class, and for upward class mobility (Pascarella & Terenzini, 1991; Snibbe & Markus, 2005). That is, education provides access to more prestigious, high-power, and high-paying jobs which in turn provide the economic and cultural experiences and attributes of the upper and middle-classes (Domhoff, 1998). In contrast, a lack of education stalls an individual's upward trajectory and leads to lower-ranking, lower-paying, unskilled jobs with less economic and cultural benefit to the individual. For these reasons, level of education is considered one of the most fundamental measures of social class (Kraus & Stephens, 2012).

Income and wealth. Another common objective indicator of social class is income and wealth (Diemer et al., 2012; Kraus & Stephens, 2012). As outlined above, higher education affords higher incomes, which in turn provide opportunities for the accumulation of wealth. Thus, income and wealth are common outcomes of higher education and are markers of economic and social status (Howell & Howell, 2008; Kraus et al., 2009; Norton & Ariely, 2011). However, income and wealth provide information about social class above and beyond that provided by education measures, because it is quite possible to have a high income or a great deal of wealth without a high level of education (e.g., workers in the mining industry), and it is also possible to have a high level of education but low income and wealth (e.g., an unemployed university graduate). They also represent the most direct measure of an individual's access to material goods and services, and thus their affluence.

Occupation. An additional related indicator of social class is occupation, and more specifically, occupational prestige. Again, occupation is linked to education and wealth, in that high levels of education are needed for most high prestige jobs, and high prestige jobs are generally high paying (Diemer et al., 2012; Kraus & Stephens, 2012). More prestigious jobs are generally held in higher regard by others and involve skills, tasks, and activities that yield

greater social status. More specifically, working in prestigious professions (e.g., as a doctor or lawyer) generally involves being well-regarded by others and having a great deal of autonomy at work, and provides more opportunities for personal development, collaborating and networking with others (Kohn & Schoenbach, 1983; Kohn & Schooler, 1983). In contrast, less prestigious positions (e.g., manual labour or the service industry) are held in low regard by others and include repetitive menial tasks, generally with little autonomy and few opportunities for personal development. Evidently, prestigious jobs provide ample opportunity for the accumulation of economic and social status, while less prestigious jobs do not.

A large amount of the literature on research uses some combination of education, income, and occupation to represent the full gamut of social class indicators, providing a complete picture of an individual's social and economic status (e.g., Friedman, Laurison, & Miles, 2015; Lundberg, 1991; Stansfeld, Head, & Marmot, 2000). However, more recently, research has indicated that these indicators alone do not adequately capture the *social* side of status, because people's perceptions of their wealth and status relative to others is an important part of the social comparison processes that give power to these status indicators (Diemer et al., 2012; Kraus & Stephens, 2012; Manstead, 2018; Rubin et al., 2014).

Subjective social status. In particular, social class involves subjective perceptions of social status, such that how much people think they have compared to other people is just as important as how much they actually have (e.g., Adler et al., 2000; Kraus et al., 2011). Individuals with high levels of education, occupation or income can believe that they are relatively low in these indicators compared to others, while other individuals can consider themselves highly ranked compared to others while having relatively low wealth and lower education and occupation. Of course, subjective social status is somewhat related to objective

social class indicators, meaning that most people are at least partially aware of where they sit

objectively (Sheppard & Biddle, 2017). However, there is some discrepancy between subjective

social status, and indicators of education, income and occupation (Adler et al., 2000; Kraus, &

Keltner, 2013). Thus, although subjective social status is related to people's actual social and

economic position, it is also an independent marker of social class. Consequently, people's

subjective social status (i.e., where they rank themselves relative to other people in their

community or country) is another important indicator of social class.

      Social class identity. Finally, there is the socio-psychological approach to social class,

which takes into account participants' own identity as it relates to social class (e.g., Jetten, Iyer,

Tsivrikos, & Young, 2008; Ostrove & Long, 2007; Soria, Stebleton, & Huesman, 2013; Rubin et

al., 2014). This approach borrows from the long-standing sociological approach to social class

and asks participants to self-identify and categorise themselves into a social class, with options

that generally include "working-class", "middle-class", and "upper-class" (Jetten et al., 2008;

Ostrove & Long, 2007; Rubin et al., 2014). It should be noted that this measurement of social

class generally uses the traditional groupings of social class (working-class, upper-class, and

middle-class), rather than the new social class categories developed by Savage et al. (2013) and

Sheppard and Biddle (2017). These traditional terms continue to be used because the newer

structures and labels of social class are yet to permeate society and thus do not form a

meaningful cultural identity the way the traditional labels do. Thus, while the new

conceptualisations are useful in understanding the structure of modern societies, they do not

replace the traditional conceptualisation as part of the cultural zeitgeist.

      The measure of self-identifying social class is an important aspect of social class to

consider because it moves beyond the objective societal-level demographic-based

conceptualisation and instead captures the cultural and identity-based aspects of social class.

Asking people to select the social class they identify with requires them to consider not just their

economic position but also their cultural and family background and other aspects they believe

build their social class identity. In general, group identification and social identities derived from

these groups are strong indicators of health and other psychosocial variables (Jetten et al., 2008;

Soria et al., 2013; Tajfel, 1982). Thus, self-identifying social class is a powerful and vital

component of ascertaining social class.

The Integrative Approach to Social Class

Each of the measures outlined above form necessary but incomplete components of

social class, representing related but unique aspects of an individual's social and economic

position and background. Contemporarily, there is some agreement that social class must be

conceptualised and measured along all of the lines outlined above to form a complete

understanding of an individual's social class (Diemer et al., 2012; Kraus & Stephens, 2012). In

line with this change, most modern definitions of social class highlight the objective social and

economic indicators as well as the perceptions people have about their own status (Manstead,

2018). Moreover, the American Psychological Association's taskforce on SES concluded with a

recommendation that social class be measured using both objective and subjective measures

(Saegert, Adler, Bullock, Cauce, Ming Liu, & Wyche, 2007). Consistent with this

recommendation, I use measures of social class that incorporate education, income, occupational

prestige, subjective social status, and self-identified social class.

The combination of these indicators places individuals on a continuous spectrum of

social class, which incorporates their objective circumstances and subjective experiences. Using

this approach, it is not necessary to categorise people into discreet categories. Instead, social

class can be conceptualised as a continuous dimension that ranges from low to high. Hence, while I refer to "working-class" or "lower class" individuals in my thesis, these terms refer generally to people on the lower end of these social class spectrums rather than people specifically classified within the working-class. Similarly, "middle-class" and "upper-class" refer generally to those towards the middle or top of the social class spectrum.

In summary, social class is a pervasive and often misunderstood force in people's lives, which overlaps with but is broader and more nuanced than SES. The structure and content of social class has also changed over time and is context dependent. However, claims that it is no longer relevant are misguided. Finally, social class is difficult, though not impossible, to measure, requiring an integrated approach that captures both its social and economic components as well as the objective indicators and lived experiences of individuals. Consequently, in my research, I define social class as an individual's social and economic position and background, incorporating both economic indicators and individuals' own identity and perceived rank (Diemer et al., 2012; Kraus & Stephens, 2012). In terms of measuring social class, where possible, I take a multi-faceted approach that combines objective and subjective components.

Mental Health

As mentioned at the outset of this thesis, mental health is one of the most important factors related to leading a fulfilling and satisfying life (World Health Organisation, 2014). However, mental health issues and low levels of happiness and well-being are persistent in national and international populations (Hall, 2015; Pash, 2018). In Australia specifically, rates of mental illness remain high, while happiness levels are decreasing, indicating mental health overall is in decline (Australian Bureau of Statistics, 2007; Helliwell, Layard, & Sachs, 2018).

Poor mental health is costly to the public and the individual, increasing instability in people's

lives and creating a major public health burden (National Mental Health Commission, 2016).

However, it is not so clear-cut exactly what the term mental health refers to. Like social class,

mental health is a multi-faceted concept, which has often been misunderstood in psychology.

For example, the absence of mental illness was once believed to indicate the presence of mental

health. In contrast, recent definitions of mental health consider it to be distinct from mental

illness (Galderisi, Heinz, Kastrup, Beezhold, & Sartorius, 2015; Keyes, 2005; Keyes & Lopez,

2002; World Health Organisation, 2014). Similarly, mental ill health was thought to be

diametrically opposed to well-being and happiness. Again, modern interpretations dispute this

definition, instead positing that mental health and well-being are related but unique concepts

(Galderisi et al., 2015; Keyes, 2005; Keyes & Lopez, 2002). I will now define mental health,

unpack the above conceptualisations of mental health and discuss how this shapes my

understanding and measurement of mental health throughout the thesis.

Mental Health Definition

Mental health refers to the psychological and emotional state of an individual. The World

Health Organization (2004) operationalizes good mental health as "a state of well-being in

which the individual realizes his or her own abilities, can cope with the normal stresses of life,

can work productively and fruitfully, and is able to make a contribution to his or her

community." This definition is supported by many other interpretations of positive mental

health, which characterise being mentally healthy as being in a state of happiness with a strong

sense of mastery over one's environment (Diener, Suh, Lucas, & Smith., 1999; Keyes, 2005,

2014; Keyes & Lopez, 2002). However, such interpretations of mental health are skewed

towards positive affect, and as Galderisi and colleagues (2015) argue, fail to take into account

the human condition, and ebbs and flows of everyday life. More specifically, it is possible to be

at peak mental health and still be sad, unwell, disappointed, angry etc. Additionally, being happy

and productive can occur in people who are experiencing poor mental health or even mental

illness. In light of these nuances, Galderisi et al. (2015) define mental health as the internal

psychological and emotional state of an individual, with a focus on individuals being able to

function within the bounds of societal values, regulate their emotions, adapt and cope with

adverse events, and have empathetic harmonious relationships with others.

Mental Health as Opposed to Mental Illness

There is a long and illustrious history of studying mental illness in psychology. Mental

illness refers to a broad spectrum of clinically diagnosable disorders which cause difficulties

with an individual's cognitive, emotional, and social capacities (e.g., clinical depression,

schizophrenia, borderline personality disorder; e.g., Garrison, Schluchter, Schoenbach, &

Kaplan, 1989; Greenberg, Stiglin, Finkelstein, & Berndt, 1993; Keyes & Lopez, 2002). The

treatment and diagnosis of mental illness is one of the leading fields of research in psychology

and receives much of the psychology-based funding and attention. However, as noted by

Maddux (2002), this focus on the etiology and treatment of mental illness and disorders has not

been met with a decrease in the incidence of these issues. In fact, in most countries, the

proportion of people being diagnosed with clinical mental health issues has been steadily

increasing for a number of years (Twenge, 2014). Of course, part of this increase is due to the

increasing awareness and destigmatisation of these issues. However, Keyes and Lopez (2002)

argue that another root of this issue is the lack of focus on overall mental health. Specifically,

while research focuses on people who have reached a heightened level of poor mental health,

this research tells us little about mental health before it reaches these disruptive and dangerous

levels.

More recently, research in psychology has opened up to include a broader scope of mental health that includes but is not limited to mental illness. Such research recognises that understanding people's general mental health is essential to understanding how mental illness and disorders develop and are maintained (Diener et al., 1999; Keyes, 2005, 2014; Keyes & Lopez, 2002). From this perspective, mental health is important to study as a preventative approach to mental illness. In particular, understanding the factors that influence mental health in general provides insight into what can be done to stop poor mental health from turning into mental illness. However, as well as being preventative, mental health research is also economically beneficial independent of mental illness (Mental Health Australia & KPMG, 2018). Whereas mental illness is known to have a large economic cost across multiple domains, the cost of poor mental health is more extensive. This is because while not everyone has a mental illness, all people experience varying levels of mental health, and thus poor mental health affects more people across a broader range of areas. Additionally, mental health is something that can be approached at a societal level rather than individual level (World Health Organisation, 2004). Thus, research into mental health and mental ill health prevention can be broadly applied, making it cost effective compared to treating individuals.

Although research shows that working-class people are more likely to experience higher rates of mental illness and also poorer than average mental health (World Health Organisation, 2014), because of the reasons listed above, my thesis focuses on the broader concept of mental health as opposed to mental illness. Specifically, I believe that it is more valuable to focus on mental health more broadly and conduct investigations that can be applied in a broad societal sense. In this sense, my research focuses on how working-class populations can achieve good

mental health rather than simply avoid high levels of mental illness.

Mental Health and Well-being

Mental ill health is also often mistakenly characterised as being the opposite of happiness and well-being (Keyes, 2005). This conflation of the two concepts is likely due to overlaps between positive mental health and happiness and well-being. In particular, well-being, happiness, life satisfaction etc. are all positively related to mental health, such that those who have better mental health are likely to be happier, more satisfied with life, and report greater overall well-being than those with poorer mental health (Keyes, 2005). However, if good mental health was simply a high level of well-being, then there would be a perfect correlation between the two constructs. Research has consistently demonstrated that this parity does not exist; most correlations between mental health and well-being are around $r = .50$ (Keyes, 2005; Frisch, Cornell, Villanueva, Retzlaff, 1992; Ryff & Keyes, 1995). These results support the conclusion that mental health is not simply well-being or any of its constituents. Rather, well-being is often considered to be parallel to, general mental health. This conceptualisation fits with the definition of mental health outlined earlier, according to which mental health refers to one's ability to function socially, emotionally, and psychologically.

Complete-State Model of Mental Health.

Based on the concepts outlined above Keyes and Lopez (2002) construes mental health as existing along two continua: symptoms of mental illness, and subjective well-being. This conceptualisation allows for the mental health nuance introduced in Keye's (2005) definition of mental health. That is, this model accounts for people who are experiencing mental illness, or symptoms of mental illness, yet still feel a great deal of subjective well-being. Or alternately, people who feel poor well-being but are not experiencing any mental illnesses or symptoms.

In terms of measuring mental health, when taking into account this complete-state model, it is important to include measures of mental ill-health and well-being (Keyes, 2005). This dual approach to measuring mental health means that we are able to capture both aspects of mental health, thus providing a more comprehensive picture of an individual's mental health. In line with this approach, where possible in this thesis, I approach mental health by considering both measures of mental ill health, and subjective well-being.

Social Integration

Connections to other people is one of the fundamental needs of human beings (Turner & Turner, 2013). For example, classical philosophers like Aristotle, all the way through to modern philosophers like Martin Buber, have written in detail about how our social relationships with other people form the essence of our humanity (Turner & Turner, 2013). It is no wonder then, that social contact and relationships have been studied extensively in the social sciences. Much of this research focuses on both the presence and quality of one's relationships with other people (e.g., Lakey & Scoboria, 2005; Thoits, 2011; Vaux, 1988). Thus, there is an ever-broadening body of research investigating the impact that the structure, size, and perceptions of individuals' social networks and support systems has on their lives.

Debate about what constitutes social integration is ongoing, with more facets being added then taken away. However, the general consensus seems to be that social integration is complex and involves both the subjective experience of individuals and the objective nature of these relationships and behaviours (Turner & Turner, 2013). In this thesis in particular, I take a very broad outlook on social integration, including both behavioural, psychological and network components, as well as the quantity and quality of these facets. Throughout the thesis my conceptualisation of social integration includes but is not limited to, social support, social

network size, social contact with friends and family, socialising, trust in other

people/community, and support from public institutions. Consequently, I measure multiple

axioms of social integration to attempt to capture this important construct as comprehensively as

possible.

It is important to note that the study of these phenomena fall under numerous different

terms, including social support, social integration, social relations, and sense of coherence

(Turner & Turner, 2013). For the purposes of this thesis, I will use the term social integration.

However, it should be noted that this is an umbrella term that includes concepts related to social

support, relations and coherence. I will now briefly outline some of the concepts I will be

investigating under the catchall of social integration.

Social Support

Perhaps the most studied and widely known type of social integration is social support.

Broadly speaking, social support refers to the main outcome or utility of relationships with other

people (Turner & Turner, 2013). Specifically, social support is the assistance, attachment, love,

value, and nurturance that an individual gets from people within their support network. In terms

of studying social support, most research focuses on both the presence and content of social

support.

The presence of social support is generally thought of as being both the actual number of

people in a person's social network and the degree to which people feel the presence of this

network as a supportive resource to draw on (Barrera, 1986; Vaux, 1988). Consequently, as with

many of the concepts of social integration I will discuss, social support is conceptualised in both

realities and perceptions. In terms of social support, there is both the actual support individuals

receive from others, and the perceptions that individuals have about the availability of this

support. These perceptions refer to how certain people are that they can draw on different kinds of support from people and the degree of clarity they have about being loved and valued by others (Dahlem, Zimet, & Walker, 1991; Lakey & Scoboria, 2005). Because social support is often intangible and involves joint understandings between individuals, it is often said that perceptions of the presence of social support are more important than the reality of the presence of social support (Wethington & Kessler, 1986; Turner & Turner, 2013). This interpretation fits with the social psychology foundation that social situations are determined by the subjective experiences of the individuals involved (Thomas & Thomas, 1928).

In terms of the content of social support, research often refers to the quality and type of support being received (Blazer, 1982; Vandervoort, 1999). Again, quality can be measured objectively, through the behaviour or amount of support exerted by others (Wasserman & Faust, 1994; Wellman, 1981). However, quality is most often conceptualised subjectively, including people's feelings about their satisfaction with the support received from others (Turner & Turner, 2013; Zimet et al., 1988). The four most common types of social support are emotional, instrumental, informational, and appraisal support (Langford, Bowsher, Maloney, & Lillis, 1997). Each of these types of support differs in its level of intimacy, and their manifestations depend on the individuals' relationships with the support givers. For example, emotional support generally consists of expressions of love and empathy and is generally from close friends and family. In contrast, informational and appraisal support are advice, suggestions, or information about specific problems (informational) or about the receiver (appraisal) that can be provided by anyone. Finally, instrumental support refers to the tangible receipt of social support, or in other words the actual actions and behaviours that people undertake to assist you. Thus, instrumental support is perhaps the most intimate kind of social support but can come from any person

regardless of relationship. Each of these types of support has its own unique purpose, and all

form important parts of social integration.

Social Behaviour

Social integration also includes behavioural components such as how often people

contact, visit or socialise with friends and family as well as attendance at cultural events (e.g.,

sporting matches, theatre shows; Forrest & Kearns, 2001; Ziersch, Baum, MacDougall, &

Putland, 2005). These behaviours indicate an individual's level of engagement with social

networks, as well as with the social fabric of their community. A more recent development in

terms of social behaviour is online social engagement, including spending time on social media

sites (e.g., Facebook, Twitter) or interacting with online communities (e.g., Youtube, website

forums; Ellison, Steinfeld, & Lampe, 2007; Hobbs, Burke, Christakis, & Fowler, 2016).

Research comparing these two disparate types of social engagement is in its infancy, especially

given that forms of online social engagement are constantly changing. However, research

suggests that online contact with friends is just as beneficial as face-to-face contact (Grieve,

Indian, Witteveen, Tolan, & Marrington, 2013). Additionally, social networks developed online

have been shown to have extra benefits compared to traditional networks, because they are more

easily accessible across time and distance (Subrahmanyam, Reich, Waechter, & Espinoza, 2008).

Social Trust

Social trust is another facet of social integration, which widens the concept of social

integration beyond immediate social relationships. Specifically, social trust refers to the degree

to which individuals feel they can believe in and rely on the honesty, dependability, and integrity

of other people in their society or community (Ikenberry & Fukuyama, 1996). Whereas social

support refers to people the individual knows, social trust investigates a broader concept that

include beliefs people hold about strangers and/or a general concept of community.

Consequently, social trust indicates how much people feel they are supported or can seek

support from those around them (Barerra & Ainlay, 1983). Social trust is a subjective cognitive

appraisal that is not so dissimilar to the subjective cognitive appraisals that make up perceptions

of social support. As mentioned previously, perceptions of social support are more important

than the actual receipt of social support (Wethington & Kessler, 1986; Turner & Turner, 2013).

Thus, social trust is a measure of how comfortable and integrated people feel within their

communities that somewhat mirrors perceptions of social support on a broader scale.

Consequently, social trust is an important aspect of social integration.

Loneliness

Loneliness and isolation both represent the antithesis of social integration (Rook, 1984).

Namely, if someone is low in social integration, this usually indicates that they are socially

isolated and most likely experiencing loneliness. Social isolation is the objective removal from

or lack of social support networks, including a lack of integration into these networks (Sadler &

Weiss, 1975). In comparison, loneliness refers to the subjective experience of lacking these

connections and integration. Both of these concepts form important components of social

integration, however, because of its subjectivity, loneliness is thought to be the most influential

of the two (Rook, 1984).

Context of Social Integration

One last consideration for social integration is the context in which it takes place. The

sections above discuss a general concept of social integration in which the context is the

individual's broader social network and community. However, social integration can also be

context specific, involving individuals' connections with people within a given context such as

work or school (e.g., Rubin, 2012; O'Reilly, Caldwell, & Barnett, 1989). General and context-specific social integration involve similar concepts. However they exist independently from one another to varying degrees. For instance, it is possible for someone to have strong and engaged familial and social relationships with others but be socially isolated (i.e., lacking integration) at work. In this thesis, I first consider context-specific social integration (i.e., university student social integration) before extending the scope to general integration.

<center>**Overview of the Thesis**</center>

Overall, this thesis aims to develop a more nuanced understanding of the relationship between social class and mental health by focussing on the role that social integration plays in this relationship. In particular, I aim to test the following hypothesis that:

Social integration will mediate the positive association between social class and mental health.

Above I have introduced and outlined the key variables of this research to clarify the phenomena under investigation. I will now briefly explain and justify two of the approaches taken in this thesis: the quantitative social psychology approach and the initial focus on university students.

Theoretical and Methodological Approach

The present study takes a quantitative and social psychological approach to the study of social class and social integration. This approach is a departure from much of the previous research in this area, including much of the research cited above, which has taken a sociological and/or qualitative approach to these issues. Sociologists have been studying social class over the course of centuries (e.g., Durkheim, 1802; Marx & Engels, 1973; Weber, 1958). However, this study has generally been concerned with the classes as a group or as part of the structure of

society. Consequently, with sociology leading the charge of social class research, the

psychological impacts and correlates of social class have been underappreciated. As a result, in

terms of mental health and well-being, there is a large body of research demonstrating that

working-class people on the whole have poorer mental health (Adler et al., 1994; Cockerham,

2007; Adler et al., 2000; Araya et al., 2003). However, the psychological causes and

consequences of these social class disparities have not been widely studied. Although

psychological research on social class is in its infancy, it has numerous advantages (Diemer et

al., 2012; Kraus & Stephens, 2012). A quantitative approach is particularly useful to address this

area of research in order to determine the relationships between the key variables, and in the

case of longitudinal data, reach firmer conclusions about causal pathways. Moreover, using a

social psychological perspective with quantitative individual-level data, I am able to fill this gap

by considering the individual psychological experiences of individuals and how these help to

explain the experiences of class.

None of this is to suggest that I am ignoring the fact that social class is intimately bound

with sociological variables. In that sense, this thesis in many ways represents applied social

psychology in which the application includes sociological variables.

University Student Focus

Although this thesis investigates the relationships between social class, social

integration, and mental health in the general Australian population, this thesis begins with three

studies investigating these relationships in university student populations. Focussing on

university has a distinct advantage when examining social integration because commencing

studies at university involves entering and integrating into a new social world (Tinto, 1988).

When starting university, everyone starts from a baseline so it is a developing and dynamic

social nexus to integrate into and with. Social integration and its effects are likely to be most apparent when individuals join new systems, and so the first two studies in my thesis measure the social class, mental health and social integration of first year university students, in order to measure social integration at its beginnings. This approach allowed me to apply a longitudinal design to the research question in which I could measure the relevant variables during time points when changes are most likely to be occurring (i.e., at the first and each subsequent semester of university).

Of course, there are distinct differences between university student populations and the general public. Importantly, university students are more likely to suffer from mental health issues (Hefner & Eisenberg, 2009; Said, Kypri, & Bowman, 2013), and university student populations generally are not demographically representative of wider society, especially in terms of SES/social class where low SES people make up 25% of the population but only 15% of the student population (Department of Education, Employment, and Workplace Relations, 2008). Thus, to make sure that my findings are not constrained to the specific university context, my thesis concludes with three studies conducted using samples from the Australian general population. In summary, I use university studies to look at how these processes apply within a specific context, and then general population studies to replicate these findings in a broader societal context.

Overview of Chapters

To begin, Chapter 2 summarises and reviews relevant literature on the relationship between social class, social integration and mental health in general and at university. Overall, Chapter 2 establishes the statistical, methodological, and theoretical framework for investigating social class, social integration, and mental health within both my populations of interest.

Chapters 3, 4 and 5 detail empirical work that I have conducted on university student samples, investigating the relationships between social class, social integration, and mental health. The first study, outlined in Chapter 3, uses a fully-longitudinal design and provides evidence that the relationship between mental health and social class for students from a single university is partially explained by social integration over the course of three semesters. The study that follows in Chapter 4 addresses the generalisability issues of the previous study by using existing longitudinal data from a large national Australian dataset including students from multiple universities to test the same mediation model in which social integration mediates the relationship between social class and mental health in university students. Although this study fails to find a connection between social class and mental health, a robust relationship between social class and social integration is established. Finally, Chapter 5 uses a cross-sectional approach to provide further evidence for the core mediation model, as well as test some potential mediators between social class and social integration.

Following on from these studies on university students, Chapters 6, 7, and 8 cover three studies that I conducted on the Australian general population. Chapter 6, uses archival cross-sectional data from a large Australian research project. The study provides evidence that working-class people are less socially integrated and that this, in part, seems to explain their poorer mental health. The study that follows in Chapter 7 uses archival data from a different cross-sectional Australian study to test these same relationships, with a more articulated measure of social class and mental health. Again, this study finds a mediating role of social integration in the relation between social class and mental health. Lastly, Chapter 8 details a study using cross-sectional data from a survey I conducted on an Australian sample. This study uses comprehensive measures that correspond to those used in Chapters 3 and 5, and provides further

evidence for the mediational role of social integration and investigates some of the potential reasons why working-class people are less socially integrated.

Finally, Chapter 9 summarises the key findings of the thesis, discusses the strengths and limitations of the present body of work, and outlines the key methodological, theoretical, and practical implications of my research. In this chapter, I also make a case for future avenues of research and applications of the present findings.

In summary, this thesis begins by integrating the largely separate literatures connecting social class, social integration and mental health, to investigate whether social integration can help to explain why working-class people suffer poorer mental health. I then use different methodologies to investigate this problem in both a university context and the general Australia population. Finally, I synthesise the research to discuss the relevance, utility, and importance of my findings in the context of social and economic inequalities in mental health.

CHAPTER 2

IS IT LONELY AT THE BOTTOM? A REVIEW OF THE LITERATURE LINKING SOCIAL

CLASS, SOCIAL INTEGRATION AND MENTAL HEALTH

As mentioned previously, there is a substantial body of evidence to suggest that social

class is positively related to mental health, and that social integration is positively related to

mental health. In terms of social class, lower social class is related to poorer mental health and

higher social class is related to better mental health. This has proven to be a robust relationship

that holds when looking at the individual (e.g., Adler et al., 2000; Araya et al., 2003) or

neighbourhood level (e.g., Fone, Dunstan, Lloyd, Williams, Watkins, & Palmer, 2007). This

association has also been demonstrated numerous times within Australia (e.g., Glover, Hetzel, &

Tennant, 2004; Taylor, Page, Morrell, Carter, & Harrison, 2004), the USA (e.g., Williams &

Collins, 1995), the UK (Murali & Oyebode, 2004), and many other countries (e.g., Mackenbach

et al., 2008; Morasae, Forouzan, Majdzadeh, Asadi-Lari, Noorbala, & Hossenipoor, 2012).

Additionally, the World Health Organisation (2004) recognises social class (or SES) as one of

the key social determinants of mental health.

Similarly, it is firmly established that social integration is beneficial for mental health

(e.g., Cohen, 2004; Cohen & Wills, 1985; Kawachi & Berkman, 2001; Seeman, 1996). It is

generally accepted that having both the perception of available social support (e.g., Cohen &

Wills, 1985; Roohafza et al., 2014) and actual received support are good for mental health (e.g.,

Thoits, 2011; Wethington & Kessler, 1986). Conversely, social isolation and loneliness have

been repeatedly linked to poorer mental health (e.g., Cacioppo, Hawkley, & Thisted, 2010;

Plume, 2014). In fact, there is an increasing amount of research singling out social disconnection

and loneliness as one of the key causes of poor mental and physical health (e.g. Lim, 2018;

Winch, 2017). Thus, it is widely regarded that the presence of social support in one's life and a sense of connectedness are vital for psychological health and well-being.

Finally, in terms of social class and social integration, there is a growing body of literature demonstrating that working-class people are less socially integrated. However, the very idea that working-class people lack social integration runs counter to some theories of working-class cultures. More specifically, working-class culture includes an interdependent values system in which value is placed on familial and social connections compared to the independent success and achievement valued by the upper classes (Kraus & Stephens, 2012; Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012; Stephens, Fryberg, & Markus, 2011; Stephens, Markus, & Townsend, 2007). Thus, on a theoretical level, social class researchers would predict that working-class people would have greater levels of social integration than middle-and upper-class people. On a policy level, many politicians and commentators assume that reductions in welfare have a lesser impact on working-class communities because working-class people can rely on their extended inter-connected support systems (Roschelle, 1997).

In the past, ethnographic, qualitative and anecdotal evidence have supported the assumption that, because of these cultural differences, working-class individuals have higher degrees of social support and family cohesiveness (e.g., De Anda, 1984; Stack, 1974). However, quantitative research into social integration and social class reveals this is not the case, with the evidence suggesting that the middle classes are more socially integrated (Bell, LeRoy, & Stephenson, 1982; Krause & Borawski-Clark, 1995; Turner & Marino, 1994; Patel et al., 2018). The most common theory is that the social and economic deprivation associated with being working class weakens and strains social networks and inhibits participation in conventional

social experiences (Belle & Doucet, 2003; Edin & Lein, 1997; Mickelson & Kubansky, 2003; Patel et al., 2018; Riley & Eckenrode, 1986; Smith, 2009; Smyth, 2009; Wilkins, 1974). Some researchers have even suggested that social isolation and exclusion are defining features of the modern working class because being working class is indicative of a lack of equitable access to social resources like education, healthcare, and housing (Borges, 2014; Smith, 2010). Smith (2009) and Barry (2002) both suggest that public-life in itself is not class-inclusive because the ideas, opinions, and experiences of the working class are not represented. Consequently, this recent research seems to suggest that working-class people are less socially integrated than those in the middle and upper classes. However, it should be noted that Bianchi and Vohs (2016), had somewhat contradictory findings. Their research demonstrated that higher income predicted less time socializing with family and neighbours and more time alone. On the other hand, people with higher incomes spent more time socializing with friends compared to people with lower incomes.

Overall, there is substantiative research suggesting (a) working-class people have poorer mental health, (b) working-class people are less socially integrated, and (c) social integration is important for mental health. In other words, there is evidence that working class people represent a vulnerable population in terms of both their mental health and social integration. Furthermore, the substantial body of research demonstrating that social integration has a beneficial impact on mental health suggests that populations with lower social integration will also have poorer mental health. Thus, the next logical step would be to investigate whether working class people's poorer mental health is explained by their lower social integration. However, despite the literature linking each of the three variables to each other separately, relatively few studies have considered the relationship between all three.

Below, I review the research that has investigated the role of social integration in the relationship between social class and mental health. I begin with studies that investigate health in general, then studies investigating the moderating effect of social class or social integration, and then various papers investigating models similar to my central mediating hypothesis. I then summarise the key problems common to all of the reviewed research, specifically that the measures and statistical approaches used are not appropriate or informative enough for the research questions. This is followed by an explanation of the rationale for the approach that I take in this thesis, including my initial focus on university students. Finally, I review the existing literature relating to social class, social integration and mental health at university that has a similar methodological and statistical approach to the one I will be applying in this thesis.

Studies with General Health as an Outcome

Two studies conducted in 2012 looked at the role of social support and relationships in the association between socioeconomic status and general health (Salonna, Geckova, Zezula, Sleskova, Groothoff, Reijneveld, & van Dijk, 2012; Vonneilich, Jöckel, Erbel, Klein, Dragano, Siegrist, & von dem Kneseback, 2012). Salonna et al. investigated whether social support mediates or moderates socioeconomic status differences in adolescents' perception of their general health. The study collected data from 2,014 Slovakian school students (mean age 16.85) who completed self-report questionnaires. Overall, the results on the role of social support in the relationship between social class and mental health were mixed. Though no moderating effects were found, the researchers found that fatherly support mediated the association between various aspects of socioeconomic status and self-rated health. Similarly, Vonneilich et al. investigated the mediating effect of social relationships on the association between socioeconomic status and subjective general health. Data collected from 4,814 middle- to older-

age residents of a West German region over a five-year period revealed that social relationships mediated the association between socioeconomic status and subjective health. In summary, both of these studies, to various extents, demonstrate that the poorer general health associated with having a lower socioeconomic status is partially explained by these individuals having fewer social relationships/lower social support.

These studies are related to the present research to the extent that both consider subjective ratings of general health, which technically includes mental health. In both studies, participants indicated their self-reported general health by responding to an item asking about their "overall health status" over a period of time (Salonna et al., 2012; Vonneilich et al., 2012). This a widely used approach to general health, and it has been shown to predict health related outcomes like morbidity and mortality (e.g., Andresen, 2003; Idler & Benyamini, 1997). Because the complete state of health is now widely accepted to include both mental and physical health (Keyes, 2005), each of these studies technically demonstrate that social integration mediates the relationship between social class and mental health. However, because these results are confounded with physical health, they do not provide compelling evidence for the mediation effect of social integration on mental health alone.

Studies with Social Class as a Moderator

One study that does investigate mental health more specifically is that of Vonneilich et al. (2011). Using the same Western Germany sample as Vonneilich et al. (2012), this study investigated whether socioeconomic status moderated the association between social relationships and depressive symptoms. In this instance, depressive symptoms were measured using the Centre for Epidemiological Study – Depression Scale (Radloff, 1977). This scale assesses the prevalence of seven different depressive symptoms during the past seven days. The

study tested a different model of the variables I am interested in, in which they were investigating whether socioeconomic status moderated the relationship between social relationships and depressive symptoms rather than social integration mediating social class and mental health. Results indicated that socioeconomic status moderated the relationship between social integration and mental health, such that the combination of lower socioeconomic participants having poorer social relationships greatly increased the odds of their having more depressive symptoms.

A study with a similar approach to Vonneilich et al. (2011) is that of Phongsavan, Chey, Baumna, Brooks, and Silove (2006), which investigated the associations between social capital (social integration), socioeconomic status, and psychological distress in an Australian adult sample. This study used data from 13,008 participants from the 2003 New South Wales Population Health survey. Social integration was considered at the neighbourhood level and also at the individual level with nine items assessing participants' community participation, feelings of trust and safety in the community, and connections within the neighbourhood. In this study, socioeconomic status was considered at both the individual and neighbourhood level. Mental health was measured using the K-10 Kessler Distress scale (Kessler et al., 2002). Overall it was concluded that individual rather than neighbourhood socioeconomic status moderated the relationship between social integration and mental health. This research highlights the importance of taking an individual level approach to mental health inequalities. However, this research and Vonneilich et al. (2011) have the limitation of testing socioeconomic status as a moderator of mental health rather than testing social integration as the intervening variable.

The last two studies I have discussed investigated social class, social integration, and mental health but with social class as a moderator rather than social integration as a mediator.

Thus, although related to my thesis they do not provide evidence for my central hypothesis. The following studies investigate social integration as a mediator.

Studies with Social Integration as a Mediator

Gecková, Van Dijk, Stewart, Groothoff, and Post (2003) investigated the influence that social support has on the association between socioeconomic status and mental health in adolescents. The sample consisted of 2,616 adolescents sampled from 31 secondary schools in Slovakia. Social support was measured via five questions that asked participants the extent to which they had people they could talk to about a number of issues including school problems, relationships, the future, and mental and physical health. Socioeconomic status included both parents' education and occupation, and mental health was measured using the vitality and mental health scales of the RAND-36 (Van der Zee & Sanderman, 1993). The researchers found that the relationship between socioeconomic status and mental health was not impacted by varying levels of social integration. In other words, the socioeconomic status to mental health relation was not moderated by social integration. Additionally, they did not find evidence that social integration mediated the relationship between socioeconomic status and mental health. Although, they did establish that lower socioeconomic status adolescents were more likely to have lower social support and poorer mental health. Thus, this study does not provide evidence for my central mediation hypothesis. However, although this research had a similar line of enquiry to my thesis, in addition to other limitations that I will discuss further below, the focus of this study was adolescents (mean age 15) where my focus is on adults.

A similar study conducted by Huurre, Eerola, Rahkonen, and Aro (2007) looked at the role of social support in the relationship between socioeconomic status and depression in a longitudinal study from adolescence through to adulthood. The study surveyed South Finland

inhabitants three times over the course of 16 years, when participants were 16, 22, and 32 years of age. The final sample size of this study was 1,262 at the end of the third wave, with an attrition rate of roughly 43% over the 16 years. Socioeconomic status measurement varied across the waves, with *16 year-old* socioeconomic status being father's occupation, *22 year old* socioeconomic status being personal education level, and *32 year old* socioeconomic status being the participants' own current occupation. Mental health was only measured in the final wave of the study, with the 32 year olds' depression being measured using the 13-item Beck Depression Inventory (Beck & Beck, 1972). Like socioeconomic status, social integration was measured differently at each wave of the study. At *16 years* social integration measures included social support from a variety of sources including family, school, and friends. At *22 years* social integration items consisted of confiding support, family support, and the size of their social networks. Lastly, *at 32 years* social integration included family support, social network size, perceived availability of support, and satisfaction with support. The study found no support for the mediation hypothesis, because social integration did not account for a significant amount of variance in the association between socioeconomic status and mental health. However, the study did find evidence of a moderating effect in which poorer social relationships were more detrimental to the mental health of low socioeconomic participants. Despite being longitudinal, a large part of the main results of this study relied exclusively on the final wave of data and comparisons and controls of previous levels of most of the key variables were not possible in the current study because the variable measurements changed or were not measured at various points in the study. Thus, the current study did not provide evidence for the mediation hypotheses. However, I believe these null findings were due to problems with the methodology and measures used.

A mediation hypothesis has also been investigated by Lundberg (1991). The research used data from the 1981 Swedish Level of Living Study and consisted of 5,613 participants. Mental health was measured through participants indicating the presence or absence of a number of mental health indicators including nerves, depression, and mental illness. Social class was indicated using the Swedish socioeconomic index occupation groupings, which rank occupations from upper classes down to the unskilled workers. Finally, social integration was indicated by the presence or absence of social contacts. Overall, in support of my central hypothesis, the study found that social class differences in social ties partly explained social class differences in mental health. However, it should be noted that the present study looked at differences between the occupation (class) groupings noted above. Thus, unlike my individual level approach, this study examined the key interactions at the group level.

Two studies investigating the mediation hypothesis at the individual level used data from the Whitehall II study in which the participants were London based civil servants. Stansfeld, Head, and Marmot (1998) reviewed data from the first wave of the Whitehall II study including 10,038 participants in a cross-sectional analysis. Social class was measured using participants' grade of employment including three distinctions: administrative, executive, and clinical support. Social support included the frequency and number of contacts participants had with their relatives, friends and social groups. Stansfeld et al. included both mental health and well-being in their study. Mental health was measured using the Depression and Anxiety subscales of the General Health Questionnaire (Goldberg, 1972). Well-being was measured using the Affect Balance Scale (Bradburn, 1969). Overall, results indicated that social integration explained some of the relationship between social class and mental health. However, this result was deemed to be a fairly weak mediation effect because it explained less than a third of the

association. The researchers also found a moderation of the mediation effect with gender, whereby social support contributed more substantially to the association between social class and mental health for men compared to women.

Stansfeld, Head, Fuhrer, Wardle, and Cattell (2002) also used data from 7,270 participants from the Whitehall II study, investigating social integration as a mediator of social inequalities in depressive symptoms. This study investigated the effect of a range of risk factors including social support at Wave 1 on social inequalities in depressive symptoms at Wave 5. The same measures of employment grade, depressive symptoms, and social support as Stansfeld et al. (1998) were used again. Similar to Stansfeld et al. (1998), Stansfeld et al. found a limited mediation role for social support in the relationship between social class and mental health. However, although both of these studies demonstrate some support for the mediation model I am investigating, they are both drawn from a fairly specialised sample of employed mostly middle-aged office workers.

Finally, Turner and Marino (1994) also investigated this social integration mediation hypothesis. Their study consisted of 1,394 adults between the ages of 18 to 55 years of age from a metropolitan Canadian city. Social class was measured in terms of occupational prestige, as indicated by Hollingshead's (1957) occupational prestige indicators. The researchers recorded four domains of social support including reported support from spouses, relatives, friends and co-workers. Mental health was assessed using the Centre for Epidemologic Studies Depression Scale (Radloff, 1977). Like previous research, Turner and Marino found marked social class differences in social support, with working-class individuals reporting less social support overall. Moreover, social support accounted for approximately 15% of the association between social class and mental health. This somewhat limited influence of social integration was

reflected in many of the studies discussed previously. In this paper in particular, the researchers concluded that, because of this limited effect of social support, research must turn to other explanations for understanding the relationship between social class and mental health. However, I propose that the mixed and underwhelming findings of social integration in the relationship between social class and mental health thus far stems from methodological and statistical issues common to each of the studies discussed above.

General Criticisms of Prior Research

Measurement Issues

As I addressed in the previous chapter, social class and social integration are multi-faceted concepts that are best measured using multiple measures across multiple domains (Diemer et al., 2012; Kraus & Stephens, 2012; Saegert et al., 2006; Turner & Turner, 2013). Additionally, mental health is more than simply the presence or absence of mental illness and should be considered in terms of both mental health and well-being (Keyes, 2005). Each of the studies discussed above have differing measures of each of these three concepts, with none adequately measuring all three variables.

Social class. For a start, despite some papers referring to social class, all papers only included objective indicators of socioeconomic status. Specifically, Huurre et al. (2007), Lundberg (1991), Stansfeld et al. (1998, 2002), and Turner and Marino (1994) all only included different measures of occupation as a single indicator of social class. Other researchers employed double indicators of social class, with Vonnelich et al. (2011) including both income and education level, and Gecková et al. (2003) including education level and occupation. Salonna et al. (2012) used three measures including education level, family affluence, and financial strain. Similarly, Vonneilich et al. (2012) measured social class using income,

education, and occupational status. Phongsavan et al. (2006) took a more complex approach in

which social-economic status was determined by postcode taking into account the relative rates

of income, education, unemployment, and other factors. Thus, although varying in complexity,

all studies failed to comprehensively cover social class as I have defined it in this thesis,

especially the subjective status and cultural based aspects of social class. As I have outlined in

the previous chapter, the social and subjective components of social class are also important in

shaping peoples' lives and thus research that includes a more comprehensive approach to social

class is needed.

   Mental health. Similarly, most studies discussed above have limited measures of mental

health, which only consider mental illness or well-being separately. In particular, Salonna et al.

(2012) and Vonneilich et al. (2012) only investigated subjective general health. Although this

variable technically includes mental health as part of the broader concept of health, the results

from this study in regards to mental health in particular are unclear. Phongsavan (2006), Huurre

et al. (2007), Vonneleich et al. (2011), Turner & Marino (1994), and Stansfeld et al. (2002) only

measured one type of mental illness or psychological distress (e.g., depressive symptoms,

generalised distress). These results are somewhat limited in their application to understanding

mental health as a whole, because they consider only one kind of mental illness each and do not

consider well-being at all. Lundberg (1991) measured mental health via the presence or absence

of six mental health related indicators including tiredness, sleeplessness, nervous troubles,

depression, overstrain, and psychiatric disease. Although Lundberg takes a broader approach to

mental health, mental health is best measured using validated psychometric scales rather than

individual dichotomous variables (Rosenthal, 2007). In comparison, Gecková et al. (2003) and

Stansfeld et al. (1998) included measures of both mental illness (vitality, depression and

nervousness, and depression and anxiety respectively) and well-being (well-being and affect balance respectively). Thus, both these researchers covered both spectrums of mental health. However, for the most part, the literature largely ignores the well-being side of mental health. The measures also do not cover a broad range of mental health. As I outlined in the previous chapter, mental health is complex and exists along multiple continua meaning it should be measured as such. Thus, further research which incorporates a broader concept of mental health is needed.

Social integration. Additionally, all but three of the studies discussed considered only one aspect of social integration in their investigations. Specifically, Salonna et al. (2012), Stansfeld et al. (2002), Gecková et al. (2003), and Stansfeld et al. (1998) only included measures of perceived social support in their study, and Vonneilich et al. (2012), Phongsavan (2006), and Lundberg (1991) included only measures of general or community social capital. In comparison, Huurre et al. (2007), Vonneleich et al. (2011), and Turner and Marino (1994) included a broader array of social integration measures (e.g., existence and quality of social supports, social network structure, and social integration index). Thus, for the most part, research investigating these relationships has not covered a broad spectrum of social integration.

As discussed previously, social integration includes many different relationships, perceptions, and behaviours. The research discussed above has used a variety of very specific measures which may account for the somewhat divergent evidence regarding the role of social integration in the relation between social class and mental health. As noted by Haynes. Richard and Kubany (1995), divergent and narrow ideas about what defines a concept yield discordant results because these measures, while still valid in other ways, do not accurately or wholly represent the concept. This can be observed in the present literature where, for example,

research using provisions of social support as a measure of social integration (Turner & Marino, 1994) reached different conclusions compared to research using frequency and number of contacts with relatives and friends to measure social integration (Stansfeld et al., 1998, 2002). Although this fragmentation of social integration into smaller components has some benefits, including increasing specificity, it tells us very little about social integration as a whole. Because social integration is a broad concept that encompasses many different forms of integration, it is most accurately assessed using a broad range of measures in order to fully capture it (Turner & Turner, 2013). In order to have a good measure of social integration, and draw broad inferences about social integration, it is important to include measures that represent the full semantic space of social integration.

It is important to include comprehensive measures of social integration because the way that it is conceived and measured has implications for the inferences that can be drawn from the results (Haynes et al., 1995). Referring back to my explanation in the previous chapter, I take a very broad outlook on social integration, including not only individual social networks but also the wider social fabric of society. This is an approach that has not been taken in the literature thus far and is likely one of the main causes of the differing results about the existence and size of the effect of social integration. By employing a wider array of social integration constructs to investigate social integration's role in the relationship between social class and mental health, I can be more confident that I am addressing social integration broadly conceived and also draw broader inferences about social integration. Hence, in the present thesis, I not only look at a variety of different measures of social integration but also attempt to identify the convergence between them in order to reach firmer conclusions about social integration in general.

Statistical Issues

One further limitation of the existing literature on social class, social integration, and mental health is the statistical methods that have been applied to test their relationships. All ten of the articles discussed have used logistic regression and/or odds ratio modelling on their data. Because of this statistical approach, all the research discussed previously dichotomised its measures of mental health, while Lundberg, (1991), and Gecková et al. (2003) also dichotomised social integration, and Huure et al. (2007), and Vonneilich et al. (2011) dichotomised both social class and social integration as well as mental health. This statistical approach is problematic because, as numerous researchers have concluded, artificially dichotomising continuous variables poses problems to the strength of the analyses and results (e.g., DeCoster, Iselin, & Gallucci, 2009; MacCallum, Zhang, & Rucker, 2002; Maxwell & Delaney, 1993). MacCallum and colleagues (2002) in particular argue that dichotomizing continuous quantitative variables is rarely defensible and leads to a loss of information about individual differences, lowers the power of studies, creates spurious statistical significance and an overestimation of effect sizes in analyses with more than one independent variable, and leads to a loss of measurement reliability. Consequently, the research linking social class, social integration, and mental health suffers from these methodological flaws. To avoid these costs of applying dichotomous logistic-regression based models to data, MacCallum and colleagues recommend the use of standard methods of regression and correlational analyses on non-dichotomised data. In line with these suggestions, in this thesis I take a continuous and regression-based approach to examining the relationships between variables.

Additionally, while some of the research concluded that social integration was a significant mediator, these studies failed to determine whether the total effect and direct effect

were significantly different. In other words, they failed to demonstrate whether there is a significant indirect effect of social integration. More specifically, Turner and Marino (1994), Stansfeld et al. (1998, 2002), Lundberg (1991), and Gecková et al. (2003) all used logistic based regression and determined that the direct effect of social class on mental health was reduced when controlling for social integration but not whether the sizes of this reduction was itself significant. Thus, the current research as it stands has not convincingly demonstrated a significant mediation effect because it did not demonstrate significant indirect effects. I suggest that the reason some of these researchers have questioned the influence of social integration in the relationship between social class and mental health is because these previous studies have not investigated whether the mediation effect is significant. For example, Huure et al. (2007) concluded that other processes besides social support may play a more important role, and Turner and Marino (1994) concluded that research should "look elsewhere" for processes that explain socioeconomic status differences in mental health. However, none of the studies I have discussed have applied a statistical approach where they can determine whether this mediation effect is significant. Moreover, they have not used standardised effect sizes and thus cannot speak to the magnitude of the effects they have found. To address this shortfall, in this thesis, I take a more rigorous approach to testing this mediation model by using Hayes' (2018) PROCESS software. This state of the art approach allows me to distinguish between significant and nonsignificant mediation effects by testing the significance of the indirect effect in order to come to more decisive conclusions about whether social integration plays a significant role in the relationship between social class and mental health. Using this approach I will also obtain standardized indirect effects in order to make more accurate and informed decisions about the magnitude and importance of the mediation models.

Overall, the existing research on social class, social integration, and mental health has reached varying conclusions about social integration's role in social class mental health disparities. Although some studies have concluded that social integration plays some role in the relationship between social class and mental health, the relative size of this effect and its specific role (as moderator or mediator) has been inconsistent. Additionally, some studies have failed to demonstrate any moderating or mediating effect of social integration. Collectively, these studies have many strengths, including all having large sample sizes within the thousands. However, they all suffer from the same weaknesses of narrowly defined measures of social class, social integration and mental health and an inappropriate statistical approach. Consequently, there is a dearth of research investigating the role of social class in the relationship between social class and mental health in a methodologically rigorous and statistically appropriate way and as a result it is not certain whether social integration plays a role in the relationship between social class and mental health.

As I discussed in the previous chapter, this issue needs careful and comprehensive investigation, because mental health inequalities are growing and social integration is a potential remedy for these issues. My research aims to address the deficits of previous research by investigating the mediating and moderating role of social integration using comprehensive measures and regression-based analyses (Studies 4, 5, and 6). Most importantly, in this research I apply an approach to mediation that has not been used in the literature to date; namely, investigating the significance of the indirect effect to differentiate between significant and nonsignificant mediation effects. Together with my more complex approach to measurement, particularly of social integration, I will be able to reach firmer conclusions and more convincingly demonstrate the existence and significance of the mediation effects of social

integration.

My research begins in the one area that has employed the approaches I have outlined above: research on working-class university students. As mentioned in the previous chapter, the first half of my thesis discusses research investigating the role of social integration at university in the relationship between student social class and mental health. This initial focus on university has two key benefits. First, focussing on university provides a specific context into which people are integrating. Second, there is already some literature demonstrating the mediating role of social integration in the relationship between social class and mental health in the university context, which does not suffer from the methodological flaws outlined above. I will now discuss this literature on university students.

Studies on University Students

As well as being an issue in the general population, mental health is a growing concern for universities. As my colleagues and I summarised (Rubin, O. Evans, McGuffog, 2018), research has consistently demonstrated that university students have poorer well-being and higher rates of mental health issues compared to the general population (e.g., Hefner & Eisenberg, 2009; Said et al., 2013). For example, Stallman (2010) recently found high-range psychological distress in 19% of participants at two large Australian universities, which is much higher than the general population average of 3% (Stallman, 2010). Mental health has a profound impact on the satisfaction and success that students experience at university (e.g., Bewick, Koutsopoulou, Miles, Slaa, & Barkham, 2010; Cooke, Bewick, Barkham, Bradley, & Audin, 2006). Thus, research into protective and risk factors for students' mental health is a key priority for tertiary institutions. As within the general population, research has pinpointed social class as being a significant risk factor for mental health problems among university students

(e.g., Eisenberg, Gollust, Golberstein, & Hefner, 2007; Said et al., 2013). Additionally, research

has demonstrated that students from lower social classes are less socially integrated at university

(Rubin, 2012; Rubin & Kelly, 2015) and have support networks that are unsuitable to assist with

the university experience (Hefner & Eisenberg, 2009). As I have outlined previously, social

integration and social support are important aspects of the maintenance of well-being as well as

being protective factors against mental ill-health (Cohen, 2004). Thus, as in the general

population, one key hypothesis for the relationship between social class and mental health

amongst university students is that it can be explained by social class differences in social

integration.

        This area is of particular importance due to the current higher education climate where

efforts to increase the proportion of low SES students in university education have intensified.

The current target in Australia, set by the Bradley Report (Bradley, Noona, Nugent, & Scales,

2008), outlines that by 2020 20% of Australian university undergraduate students should be

from a low SES (working-class) background. Because of this target, university populations are

set to drastically change with an influx of working-class students. However, research has already

demonstrated that working-class students face unique challenges when pursuing higher

education (e.g., Martinez et al., 2009; Nunez & Cuccaro-Alamin 1998; Soria & Stebleton,

2012). In order to make current higher education equity targets effective and worthwhile, a

current and in-depth understanding of why these challenges arise for working-class students is

needed, including an investigation of their social experiences and mental health while attending

university.

        Research into social class and social integration at university has been a topic of research

for many years. However, it has often been viewed as a peripheral issue in relation to student

attrition and retention (e.g., Rubin, 2012a; Tinto, 2007). In recent years, the issue of social class, social integration and mental health at university has come into sharper focus with a select few papers zeroing in on the relations between these variables. Research has already demonstrated clear links between university students' social class, social integration, and mental health (Crowe, 2016; Rubin et al., 2016; Rubin & Kelly, 2015). However, unlike the research linking social class, social integration, and mental health together in the general population, this research on university students has generally taken a more in-depth approach to measurement and a regression-based approach to statistical analyses.

Crowe (2016) conducted a study linking social class, social integration and mental health together in a university student sample. However, unlike my research approach of investigating the role of social integration between social class and mental health, Crowe investigated the moderating role of social class in the relationship between social integration and mental health. The study included 623 undergraduate students from a US college who completed a cross-sectional survey. This study investigated both structural (i.e., network diversity) and functional (i.e., perceived support) support. Additionally, it used multiple measures of social class including parents' education, occupation and affluence, and subjective social status. However, in terms of mental health they only considered depression. Although Crowe found that greater perceived support was related to less depressive symptoms, the rest of the results were more mixed with greater network diversity being related to poorer mental health and social class not moderating the relationship between social support and mental health. In their discussion, Crowe suggested that using a singular measure for mental health and only a few measures for both social class and social integration may have limited their results. Thus, the study would have benefitted from the inclusion of more diverse measures of mental health. Additionally,

Crowe investigated the moderation properties of social class, as opposed to the mediational properties of social integration. Thus, Crowe's findings do not directly address the mediation model I am investigating.

A more relevant line of research comes from Rubin and Kelly (2015) who addressed the mediation approach that I am using in a study that investigated the mediational role of social integration in the relationship between social class and mental health. This study used a cross-sectional, self-report design with 410 participants from an Australian university to investigate whether parenting style and social integration mediate the relationship between social class and mental health. In terms of social integration, the results from this research indicated that general friendship and support, and social integration at university mediated the relationship between social class and mental health in university students. As outlined by the researchers, this finding highlights the importance of multifaceted and comprehensive measures of support and integration when considering the social proclivities of university students, as well as the importance of these factors to success and well-being at university. However, this research has some key limitations.

To begin with, the research sampled participants from a university that did not have a typical configuration of the target population for the research. Rubin and Kelly's (2015) participants consisted of undergraduate psychology students from a large public Australian university that had a higher than average number of students from low SES backgrounds compared to other universities in Australia (27.32% compared to 15.95%). Given the rather large difference from the national average, the validity of social class investigations undertaken at this specific university can be questioned. It is important to take into consideration the composition of a university's student body when conducting research in this field because the

size of minority group representation and institutional discrimination might play a role in social

integration (Naylor & James, 2016). In Australia, it has been established that students with a low

social class are particularly underrepresented and have a significant minority status in elite,

Group of Eight universities (Bradley et al., 2008). To address this issue, the second study in my

thesis includes a cross-institutional comparison in to assess the impact of university environment

on the relation between social class and social integration. This consideration of minority status

is not considered in my national sample studies because minority status cannot vary in this way

at a national level.

A second limitation of Rubin and Kelly (2015) is the cross-sectional design. The

researchers only measured the variables at one point in time, which limits the ability to

determine causal relationships between the variables. In Rubin and Kelly's study, it is not certain

that students who had existing mental health problems were struggling to fit in at university

rather than social integration at university causing mental health problems. In contrast, from

Rubin and Kelly's research I can be reasonably certain of the causal impact of social class given

previous research in this area (e.g., Hudson, 2005; Zimmerman & Katon, 2005) and the fact that

their measures of social class were based on factors that were present before the commencement

of university. Nonetheless, a longitudinal research design is needed to be more certain about the

causal pathways between variables.

Addressing this longitudinal gap, Rubin et al. (2016) conducted a half-longitudinal study

investigating the relationship between university student social class, social integration and

mental health. The study included 314 undergraduate non-psychology students from the same

university as Rubin and Kelly (2015). Participants completed the same survey twice over two

semesters. Social class was assessed using the MacArthur scale of subjective social status (Adler

et al., 2000), which asks participants to rank themselves on an 11-point scale relative to other

Australians. Social integration was measured using adhoc items relating to students' number of

friends at university and contact with said friends, and the Depression, Anxiety and Stress

subscales (Lovibond & Lovibond, 2004) were used to measure mental health. Overall, Rubin

and colleagues demonstrated that students who ranked themselves lower in subjective social

status had more depressive symptoms and this relationship was partly explained by their having

fewer friends and less social contact at university.

Rubin et al. (2016) suffered from the same limitation as Rubin and Kelly (2015) in that

the students were from the same university that has an unusually high number of low SES

students. Additionally, although the half-longitudinal design of Rubin et al. provides some

validation to the causal relationships between the variables, an additional wave of data is needed

in order to make it a fully-longitudinal design from which you can draw firmer causal

conclusions (Cole & Maxwell, 2003; Ployhart & MacKenzie, 2014). Finally, although Rubin et

al. found significant results for subjective social status, network size and contact, and depression

these results did not generalize to broader concepts of social class, social integration and mental

health. As discussed in the previous chapter, social class, social integration, and mental health

are all multifaceted concepts. Because of this complexity, the specificity of the results of Rubin

et al. is suspect and could be attributed to flaws in the methodology or statistical approach. Thus,

although Rubin et al.'s study provides a strong foundation for investigating the role of social

integration in the relationship between university student social class and mental health, further

work is needed. My research addresses these limitations by using multiple measures of social

class, social integration, and mental health in Studies 1 and 3, using a 3-wave fully-longitudinal

research design in Study 1, and extending past single-university samples by using a cross-

institutional research design in Study 2.

In summary, the existing research investigating the mediating role of social class and social integration has reached conflicting conclusions. In this thesis, I investigate this model with methodological and statistical rigor that has not previously been applied, to come to more definitive and convincing conclusions about these relationships. Beginning with university populations and then broadening to the general population, in this thesis I apply a multi-faceted, regression and indirect effect significance-based approach to investigate the role that social integration plays in the relationship between social class and mental health.

CHAPTER 3

AT UNIVERSITY: A LONGITUDINAL INVESTIGATION OF THE RELATIONSHIP

BETWEEN SOCIAL CLASS, SOCIAL INTEGRATION AND MENTAL HEALTH

As demonstrated in the previous chapter, there is some evidence to suggest that working-

class university students are less likely to integrate socially at university and that low levels of

social integration and lower social class are both related to poorer mental health in university

students (Rubin et al., 2016; Rubin, 2012; Rubin & Kelly, 2015; Rubin & Wright, 2015).

However, conclusive and targeted research on these relationships is scarce, with only a handful

of studies demonstrating that social integration mediates the relationship between social class

and mental health (Rubin et al., 2016; Rubin & Kelly, 2015). The most comprehensive and

specific investigation into this phenomenon is that of Rubin et al.'s (2016) longitudinal two

wave study, which demonstrated that social contact with friends from university is at least

partially responsible for the relationship between subjective social class and depression and

satisfaction with life. The present research extended the research project carried out by Rubin et

al. (2016) by using the original two waves of data and adding an additional third wave of data to

the study, as well as conducting some additional investigations.

There were several reasons for extending Rubin et al.'s (2016) research. One of the main

reasons is that Rubin et al. used a half longitudinal statistical design. In other words, their study

only measured the variables at two points in time, and not three as is the recommendation for

longitudinal studies testing three variables (Cole & Maxwell, 2003; Ployhart & MacKenzie,

2014). According to Ployhart and MacKenzie (2014), two waves is insufficient to make causal

claims. Moreover, two waves of data are theoretically only marginally more beneficial than a

cross-sectional study at determining causation when there are more than two sequential causal

paths being studied. Having two time points of data means you can only account for two of the causal pathways in any single analysis. To fully test a mediation model, at-least three waves are required; with the predictor at Time 1 predicting the mediator at Time 2 and the outcome at Time 3, and the mediator at Time 2 predicting the outcome at Time 3.

There is merit to Rubin and colleagues' (2016) approach because social class is a sociocultural construct with no definitive starting point in terms of its influence on other variables (Sullivan, Ketende, & Joshi, 2013). Thus, it is not theoretically possible to obtain a measure of the independent variable at the beginning of its influence on the mediator and outcome variable, as is the suggestion of Collins, Graham, and Flaherty (1998). Nevertheless, it remains important to add an additional wave of data to the study in order to make it a fully-longitudinal design, because it allows for a more direct test of social integration as a mediator (Cole & Maxwell, 2003).

An additional reason for conducting a fully longitudinal analysis rather than a half longitudinal analysis, is that the former does not rely on the assumption that the relations between the variables will remain the same over time (i.e., the assumption of stationarity; Cole & Maxwell, 2003). More specifically, a half-longitudinal design, as used by Rubin et al. (2016), assumes that the relationship between the mediator and outcome variable between Time 1 and Time 2 will be the same as the relationship between these variables at Time 2 and Time 3. The assumption of stationarity may not be warranted in the case of social integration and mental health in a university sample. Thus, the present study addresses this weakness in Rubin and colleagues' design by employing a three wave fully-longitudinal design in which the relationships between variables are free to differ over different time points.

In the first instance, this three wave longitudinal mediation design was used to test a

direct replication of the findings of Rubin et al. (2016). That is, I investigated whether subjective

social status at Time 1 would predict university social network size and contact at Time 2 which

in turn would predict depression at Time 3, controlling for prior levels of both depression and

network size and contact. However, I also extended on this work by considering broader

concepts of social class, social integration, and mental health. In their paper, Rubin et al. (2016)

noted that the relationships they were investigating did not generalise to broader concepts of

social class, social integration and mental health. In other words, although they tested multiple

measures of social class, social integration and mental health, they only found results for

subjective social status, network size and contact, and depression. The specificity of these results

was unexpected given that social class and social integration are both multi-faceted and best

conceptualised using multiple measures, as I explained in Chapter 1. I theorised that the

improvements in the methodology design and longer lag time between measurements may yield

results that generalise across multiple measures. Thus, in this study I also revisited the other

variables included in the methodology of Rubin and colleagues, to see whether this design

revealed significant pathways between the variables over three waves. Specifically, I

investigated the feasibility of creating global measures of both social class and social integration

out of the multiple measures of each included in the original survey. I then tested these

aggregate variables in a fully longitudinal mediation design.

One final reason for extending Rubin et al.'s, (2016) study comes from the consideration

of an additional part that social integration may have in the relationship between social class and

the mental health of university students. While Rubin and colleagues tested a model in which the

relationship between social class and mental health was mediated by social integration, in this

study I considered the possibility that social integration also moderates the relationship between

social class and mental health. According to this moderation model, social integration acts as a protective factor for the effects of social class on the mental health of university students. That is, the relationship between social class and mental health is weaker when social integration is high. There is substantial evidence to suggest that one's perceptions and use of social support is an effective buffer against the effects of stressful situations on stress, anxiety, and depression (for reviews see Cohen, 2004; Cohen & Wills, 1985). Believing that social support is available to assist you in a stressful situation, and actually receiving support from social networks are both important processes in protecting individuals from the detrimental effects of adverse circumstances on mental health. Thus, a sense of connection with social networks, and actual participation in these social networks are important factors in protecting people from stressful situations. University is a stressful endeavor for all students (Stallman, 2010), but it is particularly stressful for low SES students (Eisenberg et al., 2007). Thus, I proposed that social integration at university, including both perceptions of social relationships and actual contact with university social networks, would act as a moderator of the relationship between social class and social integration at university.

Overall, the aim of this study was to determine whether the relationship between the mental health and social class of university students is explained by social integration over the course of three semesters. In particular, I hypothesised that social class would be negatively related to mental health and positively related to social integration at university, and that social integration would be positively related to mental health. I expected to find that the relationship between social class and mental health in university students was at least partially explained by social integration at university. This approach included attempting to replicate Rubin et al. (2016) and also conducting additional studies using a wider array of measures. I also tested the

hypothesis that social integration operates as a protective factor such that the relationship between social class and mental health decreases as social integration increases.

Method

Participants

Participants were first-year domestic undergraduate students at a large publicly-funded Australian university of around 40,000 students. The initial round of recruitment was restricted to first-year undergraduate students because there is greater variability both between- and within-participants in the degree of social integration at university during this commencement period.

In Wave 1, 1,211 students attempted the survey. Of these, 305 did not provide their informed consent and a further 157 did not meet the criteria of being first-year students, undergraduate students, domestic students, or non-psychology students. Thus, 462 participants were excluded, leaving a total of 749 participants. In Wave 2, data was collected from 500 students. Of these, 83 did not provide their informed consent and a further 103 did not meet the above outlined eligibility criteria for participation. These exclusions left a total of 314 students. In Wave 3, data was collected from 343 students. Of these, 54 did not provide their informed consent and a further 31 did not meet the eligibility criteria for participation. These exclusions left a total of 258 participants who had completed Wave 3 of the study. Of the participants who completed Wave 3, 152 had also completed both Wave 1 and Wave 2. Thus the final sample size for this study was 152.

I performed analyses on data from the 152 students who completed all 3 Waves of the study and who met the eligibility criteria. This sample included 101 women (66.4%) and 51 men (33.6%). Relative to the university population, the sample overrepresented women (54.8%) and

underrepresented men (45.2%) by 11.6%. Participants ranged in age from 17 to 46 years with a

mean age of 23.04 ($SD = 6.98$).

The majority of participants self-identified as Caucasian (91.4%), with the remainder

identifying as Aboriginal or Torres Strait Islander (3.9%), "other" (2.6%), Asian (1.3%), or

African (0.7%). Finally, 34.2% of the sample was enrolled in degrees in the Faculty of Health

and Medicine, 32.9% were from the Faculty of Education and Arts, 12.5% were from the

Faculty of Business and Law, 10.5% were from the Faculty of Engineering and the Built

Environment, 9.2% were from the Faculty of Science and Information Technology, and 0.7% did

not identify a specific faculty.

Procedure

Wave 1 data was collected during Semester 1 2015 (March – May), Wave 2 data was

collected during Semester 2 (August – October), and Wave 3 data was collected during Semester

1 2016 (March – May). The mean lag time between Wave 1 and 2 was 20.29 weeks, with the

minimum and maximum lag times being 11.29 weeks and 28.71 weeks respectively. The mean

lag time between Wave 2 and 3 was 30.34 weeks, with the minimum and maximum lag times

being 24.14 weeks and 37.00 weeks respectively.

Students were recruited in Wave 1 from across the university. Students were recruited

from all faculties and degree programs through fliers and short presentations at lectures. Due to

overlapping content with similar studies, participants were not recruited from psychology

courses and were excluded from the study if they were enrolled in a psychology course.

Participants were recruited for Waves 2 and 3 via email reminders. Participation was voluntary

and incentivized with entry into a prize draw for online gift certificates.

Participation was anonymous. The data from each wave of the survey was linked by

means of a unique code that was generated by participants. The code consisted of their initials

and their date of birth.

The research instrument consisted of a 15-minute online self-report survey titled "Your

Relationships and Feelings during the Past Week." Participants completed the same survey

during Waves 1, 2 and 3. A copy of this survey can be found at https://bit.ly/2VEth5p. Included

in the survey were measures of social class, social integration, and mental health and well-being.

Social class measures were placed near the end of the survey in order to mask their relevance to

the measures of social integration, and mental health and well-being (Langhout, Drake, &

Roselli, 2009). University satisfaction, expected persistence at university, and alcohol and

marijuana use were also measures in the survey, however these items fall outside the scope of

this study and will not be discussed further.

Social class. In accordance with the approach to social class I outlined in Chapter 1,

multiple measures were used to conceptualise social class. In a similar approach to that of Rubin

and Kelly (2015), the survey included measures of parental education, parental occupation,

childhood wealth, self-reported social class identity, and subjective social status.

Education level is a common measure of social class and SES. However, in higher

education settings parental rather than individual education level is used as a proxy for social

class (for reviews, see Kraus & Stephens, 2012; Lareau & Conley, 2008; Oakes & Rossi, 2003;

Saegert et al., 2006). This approach is necessary because (a) university students' by-and-large

have the same occupation (i.e., university student) and education level and (b) are more likely to

be young adults who have not yet formed their own social class identity. In the present research

parental education was measured using two items that instructed participants to indicate their

mother's highest education level and their father's highest education level using the following

categories: *no formal schooling, primary school (kindergarten to year 6), secondary or high school (years 7 to 10), senior secondary school (years 11 & 12), technical and further education (TAFE), university - undergraduate degree (Bachelor degree), university - postgraduate degree (Masters or Phd).*

Occupation and income are also common measures of social class. For the same reasoning as education, in higher education settings it is common practice to use parental occupation and childhood wealth as proxies for social class (for reviews, see Oakes & Rossi, 2003; Rubin, 2012). In the present study, participants indicated how they thought most people would rate their mother's job and their father's job in terms of its prestige and status on an 11-point scale anchored *extremely high status and prestige* (11) and *extremely low status and prestige* (1). Participants also indicated their childhood wealth during childhood on three items using a 5-point scale anchored *strongly disagree* (1) to *strongly agree* (5). Participants were asked how strongly they agreed with the following statements "I felt relatively wealthy compared to other kids in my high school," "My family usually had enough money to buy things when I was growing up," and "I grew up in a relatively wealthy neighbourhood".

The survey also included three measures of self-identified social class (e.g., Jetten et al., 2008; Ostrove & Long, 2007; Soria et al., 2013; Rubin et al., 2014). Specifically, participants were asked to indicate the social class that they felt best described themselves, their mother, and their father using a 5-point scale: *working class*, *lower middle class*, *middle class*, *upper middle class*, *upper class*.

Subjective social status was assessed using a modified version of the MacArthur Subjective Social Status scale (Adler et al., 2000). This scale asks respondents to rank themselves relative to other people in terms of money, education, and occupation. In the present

study, the scale included a single item, which asked participants to rank themselves on an 11-point scale anchored *bottom level* (1) to *top level* (11), relative to other people in Australia.

Each of these measures were standardised and combined to form an aggregate variable of social class. The Cronbach alpha value for this and other variables in the study can be found in Table 3.1. For the measures of parental education, occupation, and social class identity *don't know* response options were included. These responses were coded as missing data. Items with missing data were included in the aggregate social class variable because in all cases <50% of the items used to form the aggregate variable did not have missing data (Graham, 2009).

Social integration and loneliness. Social integration and friendship at university was measured using several separate scales that assessed relationship satisfaction at university, loneliness, university network size and contact, sense of belonging at university, and community participation at university. The scales included the Revised UCLA Loneliness Scale (Russell, Peplau & Cutrona, 1980), modified Sense of Belonging scale (Hurtado & Carter, 1997), adapted Community Participation subscale of the Perceived Community Support Questionnaire (Herro & Gracia, 2007), and ad hoc measures of relationship satisfaction, number of friends, and social contact with university friends. Unless stated otherwise, participants responded by rating their agreement with statements on a 7-point scale ranging from *strongly disagree* (1) to *strongly agree* (7).

The 6-item Sense of Belonging scale was used to assess the extent to which participants felt included in the university community, (Rubin & Wright, 2015). Examples of the items included in this scale are "I saw myself as part of the university community" and "I felt like an outsider in the university community". Negatively worded items were reverse-scored.

Rubin and Wright's (2015) adapted version of the Community Participation subscale of

the Perceived Community Support Questionnaire was also used. Examples of the questions used in this scale are "I don't take part in sociorecreational activities at the university," and "I collaborate in organisations and associations at the university." Negatively-worded items on this scale were reverse scored.

Additionally, an ad hoc measure of relationship closeness and satisfaction at university was included. This scale included three items: "I am satisfied with my social life at the university," "I feel close to my friends at the university," and "I am satisfied with the quality of the relationships that I have with my university friends."

To measure the size and amount of contact participants had at university, a number of items were aggregated. Participants were asked to indicate (a) the number of friends they currently had at university, (b) the amount of time spent socializing with university friends and (c) the amount of communication participants had had with their university friends over the past week. For the communication item, there were five questions that each specified different kinds of communication including (1) face-to-face, (2) email, (3) social media, (4) phone, and (5) text messages. The question on communication via email was excluded from the overall social contact variables because it was detrimental to internal reliability. The scores for each of these social contact items were standardised and averaged to form a final measure of university network size and contact[1].

The Revised UCLA Loneliness Scale is a 20-item measure the included items related to loneliness and social isolation over the past week. Example items include "I was unhappy being

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[1] These items form the Social Contact with University Friends scale in Rubin et al.'s (2016) paper. However, because one of the items measures the number of university friends participants have, rather than contact with those friends, I changed the scale title to University Network Size and Contact to be more accurate

so withdrawn," and "I did not feel alone". Items pertaining to not feeling lonely were reverse scored.

Mental health and well-being. Following Rubin and Kelly (2015), mental health and well-being were measured using the Short-Form Depression Anxiety Stress Scale (DASS; Lovibond & Lovibond, 2004) and the Satisfaction with Life Scale (SWLS; Diener, Emmons, Larsen, & Griffin, 1985). The Short-Form DASS is a 21-item measure of depression, anxiety, and stress over the past week. The scale is divided to assesses depression, anxiety, and stress with items including "I felt I wasn't worth much as a person" (depression), "I found it hard to wind down" (anxiety), and "I found it difficult to relax" (stress). Participants responded using a 4-point scale on the frequency with which they had experienced these sensations from *never* (0) to *almost always* (3). Although the DASS can be divided into three separate subscales, for the aggregate variable analyses of this research I only report results from analyses using the DASS as a whole. I used this approach both to reduce the number of analyses being reported and because for the aggregate analyses I do not have any hypotheses specific to one kind of mental health issue, but rather to mental health as a whole. Any discrepancies in results between the DASS and its subscales are reported in the sensitivity analysis. However, for the replication of Rubin et al. (2016) I used the depression scale of the DASS.

The SWLS is a 5-item measure of well-being and life satisfaction over the past week. Example items are "I was satisfied with my life during the past week," and "in most ways, my life during the past week was close to my ideal."

Results

Power Analysis

Previous research on this topic has found that the relationship between social class and

the mental health of Australian undergraduate students had an effect size of $r = .15$ (Rubin &

Kelly, 2015). A power analysis revealed that my Wave 3 sample had a power of .59 to detect an

effect of this size using a two-tailed correlation test with an alpha of level of .05. This power

level is lower than recommended (.80; Cohen, 1988), and so the present results should be

viewed with some degree of caution.

Rubin et al. (2016) Replication

I first attempted to replicate the findings of Rubin et al. (2016) that Time 2 university

network size and contact mediates the relationship between Time 1 subjective social status and

Time 3 depression. To begin, I conducted an attrition analysis to determine whether there were

any significant differences in subjective social status, network size and contact, and depression

between participants in this study and Rubin et al.'s (2016). I then attempted to replicate the

mediation pathways from Rubin et al.

Attrition analyses. I conducted a series of independent samples t-tests, to compare the

responses of participants who only completed the first two waves of this research (i.e., are only

included in the Rubin et al. (2016) paper) with the participants who completed all three waves

(i.e., are included in Rubin et al. and this chapter). In these tests, I compared participants'

subjective social status, depression, and network size and contact scores at Times 1 and 2. There

were no significant differences between any of the variables at any time ($ps > .067$) with the

exception of Time 2 depression, $t (312) = 1.95$, $SE = 0.97$, $p = .044$. At Time 2, participants who

completed only two waves had significantly more depressive symptoms ($M = 9.11$, $SD = 9.42$)

than participants who went on to complete a third wave of the study ($M = 7.15$, $SD = 7.52$).

Mediation analyses. I first attempted to replicate the findings of Rubin et al. (2016) that

Time 2 university network size and contact mediates the relationship between Time 1 subjective

social status and Time 3 depression.

Consistent with my hypotheses and Rubin et al. (2016) network size and contact at Time 2 was negatively correlated with depressive symptoms at Time 3 ($r = -.34$, $p < .001$) and positively related to subjective social status at Time 1 ($r = .21$, $p = .008$). However, in contrast to my predictions and previous research, Time 1 subjective social status was not significantly related to Time 3 depression ($r = -.05$, $p = .585$). Thus, the conditions for meaningful mediation were not met, because the independent and dependent variable were not related to one another. Consistent with this lack of correlation, Time 1 subjective social status was not a significant predictor of Time 3 depression when controlling for Time 1 depression ($r = -.05$, $p = .889$). Thus I failed to replicate the findings of Rubin et al. (2016) across three waves of data. This lack of significant results may be explained by the results of the attrition analyses reported above.

Aggregate Variable Analyses

Exploratory factor analysis. I conducted exploratory principal axis factor analyses on the social class and social integration items in order to investigate the factor structure of these variables. The analytical approach outlined in this chapter is the same one that will be used in subsequent studies in this thesis.

Social class. I conducted an exploratory factor analysis on the Wave 1 social class items in order to determine the factor structure of these variables. It is important to note that I only analysed the Wave 1 social class data because this data is the predictor in all of my analyses. Wave 2 and Wave 3 social class data is not used in any subsequent analyses. In all cases, principal axis factor analysis was used with missing cases deleted listwise. Eleven variables were entered into a factor analysis to determine the structure of social class variables in this dataset: mother and father education level, occupation and social class, participants' own self-

identified social class, three items on childhood wealth, and subjective social status. For the

social class items, the Kaiser-Meyer-Olkin measure of sampling adequacy was substantially

greater than .50 (.85), indicating good sampling adequacy, and Bartlett's test of sphericity was

statistically significant ($X^2 = 612.79$, $df = 55$, $p < .001$), indicating that the included variables

were related to one another and suitable for structure identification. A principal axis factor

analysis on the standardised social class measures identified two factors with an eigenvalue

greater than one. The Cattell's (1966) scree plot also indicated two factors before the plot

changed direction at greater than 40% and tailed off. I also conducted a parallel analysis (Horn,

1965), as suggested by Russell (2002, p. 1637) and Wilson and Cooper (2008). A Monte Carlo

simulation (Watkins, 2000) was used to conduct factor analyses on 100 random data sets, each

consisting of 11 variables and 152 cases. This analysis revealed that only two factors in the real

data set had eigenvalues that were larger than the first two eigenvalues in the simulated data set

(5.06, 1.46), providing further evidence for a two factor solution. Consequently, I used a promax

rotation to extract two factors. However, the second factor only contained one variable, mother's

education level (.76), which cross-loaded on the first factor above the standard .40 cutoff (.49).

To keep the social class variable consistent with theory and literature, and because

mother's education loaded acceptably onto the first factor, I re-ran an analysis extracting a single

factor. This single factor accounted for 46% of the variance and had excellent internal reliability

($\alpha = .88$). All variables loaded onto this factor between .42 and .77. Consequently, I averaged

these items to form a single aggregate measure of social class.

Social integration. I conducted an exploratory factor analysis on the social integration

scales and items in both Wave 1 and Wave 2 in order to determine their factor structure. Only

Wave 1 and Wave 2 were considered here because Wave 3 social integration variables are not

used in the analyses being reported. The same analytical approach as outlined for social class

was used again, with relationship satisfaction at university, loneliness, university network size

and contact, sense of belonging at university, and community participation at university being

entered into the factor analyses separately for Waves 1 and 2. For both Waves 1 and 2, the

Kaiser-Meyer-Olkin measure of sampling adequacy was substantially greater than .50 (W1

= .78, W2 = .81), and Bartlett's test of sphericity was statistically significant (W1: X^2 = 338.73,

df = 10, p < .001, W2: X^2 = 463.18, df = 10, p < .001). For both waves, the principal axis factor

analysis on the standardised social class measures identified one factor with an eigenvalue

greater than one (W1 = 2.93, W2 = 3.31). The Cattell's (1966) scree plots and Monte Carlo

simulations also indicated one factor. All variables in both Waves 1 and 2 loaded onto a single

social integration factor in each wave between .51 and .89, with the exception of Wave 1

community participation which had a loading of .37. To maintain consistency across waves I

decided to include all items in a single Wave 1 social integration variable, despite Wave 1

community participation being below the standard .40 cut-off. All social integration items had

excellent internal reliability across both Wave 1 (.81) and Wave 2 (.87). Consequently, I

averaged all the social integration items together in each wave to form aggregate social

integration variables.

  Descriptives. Table 3.1 provides the means, standard deviations, minimum and

maximum values, Cronbach alpha values, and zero-order correlations coefficients for the key

variables.

  All variables showed the expected direction of relations across Waves 1, 2 and 3. W1

social class was significantly positively correlated with W2 social integration, and significantly

negatively correlated with W3 DASS. Hence, students with a lower social class had less social

integration at university in Semester 2, 2015 and lower mental health in Semester 1, 2016.

Notably, however, W1 social class was not significantly correlated with W3 satisfaction with life.

W2 social integration was significantly negatively related to W3 DASS and significantly

positively related to W3 satisfaction with life. Hence, students who were more socially integrated

at university in Semester 2, 2015 had better mental health and well-being in Semester 1, 2016.

Table 3.1
Descriptive statistics and zero order correlations

Measure	*M*	*SD*	Min	Max	α	1	2	3
1. W1 Social Class[†]	-.015	0.69	-1.69	1.29	.88	-		
2. W2 Social Integration[†]	0.00	0.81	-2.21	1.80	.81	.30**	-	
3. W3 DASS	25.17	19.11	0.00	82	.92	-.21*	-.46**	-
4. W3 SWLS	4.35	1.45	1.20	7.00	.92	.15	.33**	-.68**

Note. † indicates variables that have been standardised. $*p < .05$, $**p < .01$. W1 = Wave 1. W2 =
Wave 2. W3 = Wave 3. DASS= Depression Anxiety and Stress Scale. SWLS = Satisfaction with
Life scale.

Multiple Regression Analyses. To assess the mediating effect of university network size

and contact in the relation between social class and mental health and well-being, I followed

Rubin et al.'s (2016) approach and tested the following four multiple regression models:

1.   the effect of the Time 1 (T1) predictor variable (social class) on Time 3 (T3)

outcome variables (T3 DASS and T3 SWLS) controlling for T1 outcome variables (T1 DASS

and T1 SWLS),

2.   the effect of the T1 predictor variable (social class) on the T2 mediator variable

(T2 social integration variables) controlling for the T1 mediator variable (T1 social integration

variables),

   3.   the effect of the T2 mediator variable (social integration) on T3 outcome variables

(T3 DASS and T3 SWLS) controlling for T2 outcome variables (T2 DASS and T2 SWLS), and

   4.   the effect of the T1 predictor variable (social class) on T3 outcome variables (T3

DASS and T3 SWLS) controlling for T1 outcome variables (T1 DASS and T1 SWLS) and the

T2 mediator variable (T2 social integration).

   Tests 1, 2, and 3 established the preconditions for a meaningful mediation effect.

Namely, that social class is a significant predictor of mental health and well-being (Test 1), and

that the proposed mediator of social integration with university students is significantly related

to both the predictor variable (Test 2) and the outcome variables (Test 3). Test 4 then established

whether the size of the relations between social class and mental health and well-being is

reduced after controlling for the influence of social integration (the presumed mediator

variable). As Rubin et al. (2016) outlined, this approach to mediation analysis has the benefit of

measuring potential causal variables (W1 social class and W2 social integration) several weeks

earlier than the outcome variables (W3 mental health). This fulfils a key criterion for

establishing causation and additionally allows for earlier instances of the outcome and mediator

variables to be controlled for. This approach reduced the bias in analyses that occurs due to prior

levels of these variables (Cole & Maxwell, 2003).

   In Test 1, I regressed T3 mental health and well-being measures (DASS and SWLS) onto

T1 social class controlling for corresponding T1 measures of mental health. T1 social class was

a significant predictor of T3 DASS ($\beta = -.15$, $p = .045$). However, T1 social class was a not a

significant predictor of T3 SWLS ($\beta = .10$, $p = .196$). Hence, social class significantly predicted

DASS scores but not SWLS scores. Consistent with predictions, students who had lower social

class scores in Semester 1, 2015 had higher levels of mental health issues, even after controlling

for Semester 1, 2015 mental health issues.

In Test 2, I investigated whether T1 social class predicted T2 social integration,

controlling for T1 social integration. Consistent with predictions, T1 social class was a

significant predictor of T2 social integration (β = .14, p = .014). Hence, students who had a

lower social class in Semester 1, 2015 reported being less socially integrated in Semester 2,

2015.

In Test 3, I investigated whether T2 social integration predicted the mental health

variable that was predicted by T1 social class, namely T3 DASS. As before, I controlled for the

relevant T1 mental health measures. T3 DASS was significantly predicted by T2 social

integration (β = -.34, p < .001). Hence, students with lower social integration in semester 2 2015

had more mental health issues in Semester 1 2016.

Thus, one mediation model with social class predicting mental health through social

integration was established. In Test 4, I investigated whether the total effects (T1 social class on

T3 DASS) was smaller than the direct effect that was established after controlling for T2 social

integration and T1 DASS. The size of the effect of T1 social class on T3 DASS was both smaller

and no longer significant when controlling for T2 social integration (β = -.07, p = .333)

compared to in Test 1 when the proposed mediator was uncontrolled for (β = -.15, p = .045). The

mediation model summarising these regression results can be seen in Figure 3.1.

In summary, social class in Semester 1, 2015 positively predicted social integration in

Semester 2, 2015 and negatively predicted DASS in Semester 1, 2016. Controlling for the

relationship between social integration and mental health reduced the size and significance of

the relation between social class and mental health. This pattern of results is consistent with the

proposal that social integration at university mediates the relation between social class and

mental health.
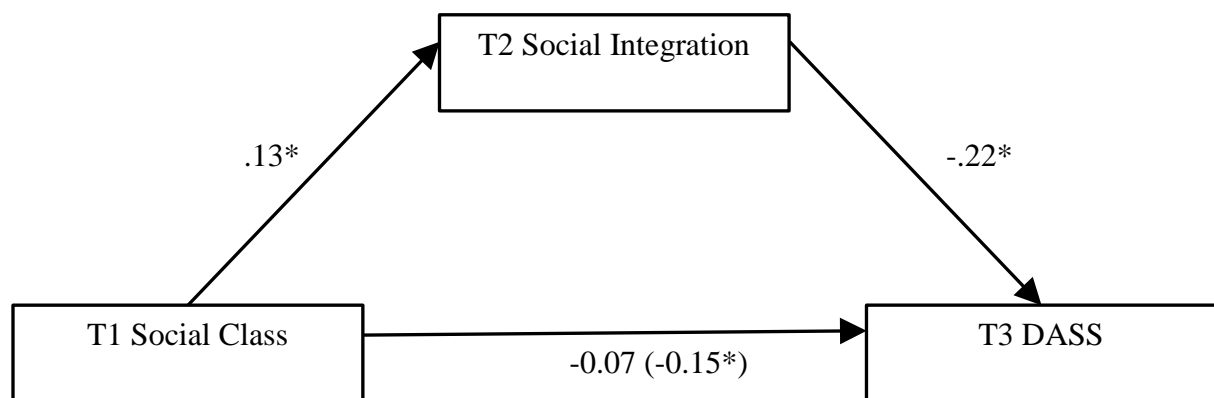
Figure 3.1. Model 1: The mediating effect of social integration in the relationship between social
class and DASS
Note: * indicates p < .05

Mediation PROCESS Analyses. Test 4 demonstrated that the total effects of T1 social

class on T3 DASS were larger than the direct effects that controlled for T2 social integration.

However, Test 4 did not test whether the size of these differences (i.e., the total effects minus the

direct effects) were statistically significant. It is important to test the significance of these

indirect effects in order to obtain more conclusive evidence of mediation. To this end, I

employed Hayes' (2018) PROCESS macro. PROCESS uses a path analytical framework and

bootstrapping to estimate direct and indirect effects in mediation models. I used PROCESS

Model 4 to test a mediation model in which T1 social class was the predictor variable, T2 social

integration was the mediator variable, and T3 DASS was the outcome variable, controlling for

T1 DASS. I used 1,000 iterations to obtain the bias-corrected and accelerated bootstrap 95%

confidence intervals. For all analyses using PROCESS coefficients are reported in

unstandardised form, with the exception of the completely standardised indirect effect, which is labelled as such.

For this model the total effect of T1 social class was significant, b = -4.15, SE = 2.05, p = .045, 95% CI (-0.10, -0.217), the direct effect was nonsignificant, b = -1.96, SE = 2.02, p = .334, 95% CI (-7.166, 1.400), and the indirect effect was significant, b = -2.18, SE = 0.86, 95% CI (-3.98, -0.59). The completely standardised indirect effect (CSIE) for this model was -.08 indicating a medium mediating effect of social integration (Kenny, 2014). This pattern of results indicates that the relation between T1 social class and T3 DASS was mediated by T2 social integration.

I also considered a reverse mediation model in which DASS mediated the relation between social class and social integration. Consistent with my proposed relationship between these variables, T2 DASS was not a significant predictor of T3 social integration when controlling for T2 social integration (b = -0.02, p = .814). Hence, in the present study, social integration predicted mental health, but mental health did not predict social integration, making the reverse mediation model untenable. Thus, the results conclusively demonstrated that the relationship between social class and mental health is mediated by social integration and not the other way around.

It should be noted that, although these relationships were demonstrated through the use of multiple regression models and PROCESS modelling, the commonly used structural equation modelling (SEM) was not employed in this instance. This was partly due to the relatively small sample size (N =151), and also the generally small effect sizes between the variables. A general rule of thumb for structural equation modelling is to have no less than 200 cases (e.g., Kline, 2011), however as noted by Wolf, Harrington, Clark, and Miller (2013), the number of cases

required for SEM exponentially increases in cases of (a) small effect sizes, (b) complex

modelling (e.g., mediation), and (c) missing data. Because each of these factors relate to the

current dataset, I decided to forgo modelling the data using SEM. Additionally, Hayes, Montoya

and Rockwood (2018) recently concluded that, in studies using observed variables with little to

no missing data, like the present study, the results from variable models using structural equation

modelling and PROCESS are largely indistinguishable.

Moderation PROCESS Analyses. I used PROCESS Model 1 to test the hypotheses

relating to the moderating effects of social integration. These moderation models tested the

moderation effects of T1 social integration on the relationship between T1 social class and T2

DASS and SWLS. In PROCESSS, T1 social class was entered as the predictor variable, T1

social integration was entered as the moderator variable, and T2 DASS and SWLS were entered

as the outcome variables. These models controlled for the relevant T1 outcome variable (i.e., T1

DASS or T1 SWLS).

Table 3.2 contains the results from these moderation models using T1 social integration

as a moderator of the relationship between T1 social class and T2 DASS and SWLS, controlling

for T2 DASS and SWLS respectively.

As can be seen in Table 3.2, there was no significant moderation effect for T1 SWLS.

However, there was a significant moderation effect of social integration for T2 DASS. T1 social

class and T1 social integration both had non-significant negative effects on T2 DASS. There was

a significant interaction between T1 social integration and T1 social class in predicting T2

DASS. To probe this interaction effect, I examined the conditional effects of T1 social class on

T2 overall DASS at mean, high, and low levels of social integration. Note that high levels are

the mean plus one standard deviation and low levels are the mean minus one standard deviation.

The negative relationship between T1 social class and T2 DASS was marginally significant when T1 social integration was at the low level, $b = -4.64$, $SE = 2.44$, $t(147) = -1.90$, $p = .060$, 95% CI (-9.46, 0.19), but was not significant at the mean level, $b = -1.28$, $SE = 1.80$, $t(147) = -0.71$, $p = .478$, 95% CI (-4.83, 2.27), or at the high level, $b = 2.07$, $SE = 2.50$, $t(147) = .83$, $p = .408$, 95% CI (-2.86, 7.02). Hence, lower social integration in Semester 1 was associated with a stronger negative relationship between Semester 1 social class and mental health in Semester 2. These results can be seen in Figure 3.2.

Table 3.2
Results from T1 social integration moderation PROCESS analyses

	b	SE	df	t	p	95% CI	
Dependent: T2 overall DASS							
T1 social class (X)	-1.28	1.80	147	1.96	.478	-4.83	2.27
T1 social integration (M)	-1.45	1.85	147	-7.9	.433	-5.10	2.20
X x M	4.44	2.24	147	1.98	.050	0.01	8.88
Dependent: T2 SWLS							
T1 social class (X)	0.31	0.15	147	2.05	.042	0.01	0.62
T1 social integration (M)	0.25	0.19	147	1.47	.145	-0.09	0.59
X x M	-0.06	0.19	147	4.07	.771	-.43	0.32

In summary, social class in Semester 1, 2015 marginally significantly negatively predicted DASS in Semester 2, 2015, but only for individuals with low social integration in semester 1, 2015. The size of the effect of social class on mental health increased as social integration decreased, consistent with the proposal that social integration at university buffers the relation between social class and mental health. However, it should be noted that this interaction was only marginally significant at the lowest level of social integration and not

significant at the other levels, and so these results should be interpreted with some degree of caution.
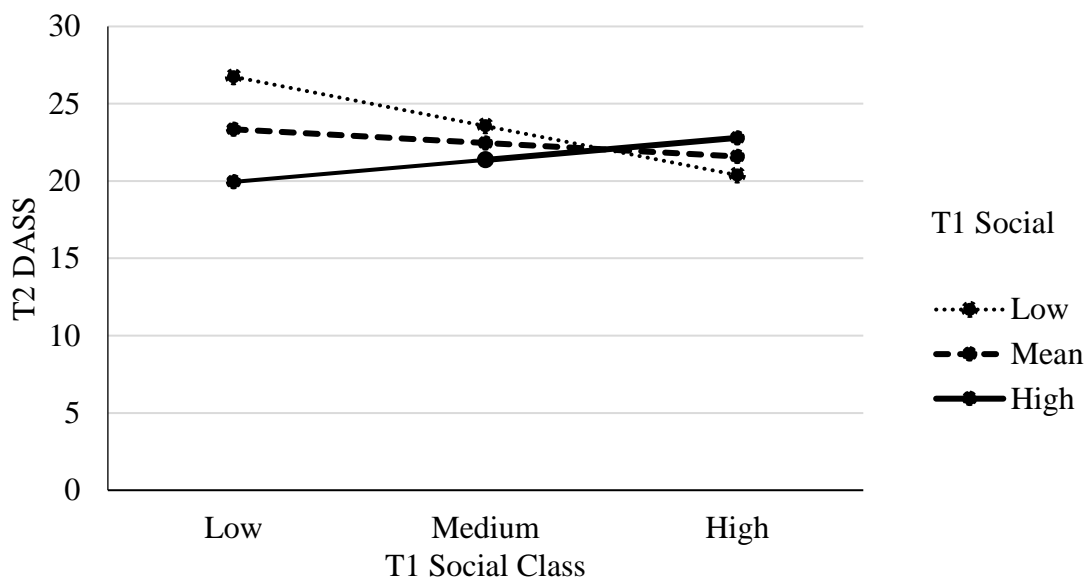
Figure 3.2 The relationship between T1 social class and T2 DASS as a function of T1 social integration

Sensitivity Analysis

I re-ran all tests reported above excluding outliers (identified at $\pm$ 3.0 *SD*s from the sample mean) and including control variables (i.e., age, gender, ethnicity, and faculty). Ethnicity and faculty were dummy coded for inclusion in the regression-based analyses. Due to the low numbers of participants with ethnicities other than Caucasian, ethnicity was dummy-coded as a dichotomous variable with two values, Caucasian (1) and non-Caucasian (0). Faculty was separated into separate variables for each faculty. The Science and IT faculty dummy-coded variable was left out of analyses to serve as a reference variable. The inclusion or exclusion of (a) univariate outliers and (b) control variables in my tests did not alter the pattern of significant results that are reported above.

I also re-ran the key analyses reported above using the subscales of the DASS as the outcome variables. In contrast to when the global DASS score was used, in mediation analyses using depression, anxiety, and stress the direct effects of social class were not significant and the total effects were not significant. Although, the confidence interval for the indirect effect of social integration in each of these tests did not pass through zero. In addition, the relationships between social class and both T2 depression and T2 stress were significantly moderated by T1 social integration. Both of these moderation effects were in the same direction as the DASS results, with the relationship between social class and depression/stress being stronger when social integration was low.

Similarly, I also re-ran the key mediation and moderation analyses reported above using the different measures of social integration rather than the aggregate social integration variable. From these analyses, loneliness, network size and contact, and relationship satisfaction were all significant mediators of the relationship between social class and the DASS. Relationship satisfaction and network size and diversity were also significant moderators of the relationship between social class and the DASS. Sense of belonging and community participation were neither significant moderators nor mediators of social class and the DASS.

Discussion

In Australia and many other countries, university students have poorer mental health than the general population (e.g., Eisenberg et al., 2007; Stallman, 2010). Previous research has outlined how mental health in the university population varies by social class (e.g., Said et al., 2013) and also by social integration at university (Rubin et al., 2016; Rubin & Kelly, 2015). Most recently, research by Rubin et al. (2016) demonstrated over the course of two semesters that social integration mediates the relationship between subjective social status and mental

health in first year university students. In the present study, I extended the research of Rubin and colleagues to investigate how social class and social integration interact to predict mental health into the second year of study. The goals of this extension were (a) to replicate Rubin et al.'s findings in a fully longitudinal design, using a longer lag time between variables, (b) to test the mediation model using aggregate measures of social class and social integration, and (c) to investigate the potential moderating effect of social integration.

Rubin et al. (2016) Replication

The present study failed to directly replicate the findings of Rubin et al. (2016) that university network size and contact mediates the relationship between subjective social status and depression. In particular, social class at Time 1 did not predict depression at Time 3. I suggest four potential reasons for these null findings. First it should be noted that, while the participants for this study were drawn from the same pool as Rubin and colleagues' study, there were a smaller number of participants in this sample. Consequently, the present study had markedly lower power compared to Rubin et al.'s study. This means that the study may have committed a type II error and failed to detect a relationship between the variables that had been demonstrated in Rubin et al.'s (2016) study.

Second, the relationships between the variables may have altered over the extra time added to this study. One potential interpretation of the results of the present study is that the effect of subjective social status on depression decreases over time as students' progress through their studies, such that the relationship can be detected over the first two semesters of university but not over three. However, this explanation is somewhat unlikely given that other research has demonstrated a relationship between other aspects of social class (e.g., SES, parental education) and mental health across all years of study (e.g., Said et al., 2013).

One additional consideration is that social class, social integration, and mental health are all associated with attrition, which may have led to a response bias in Waves 2 and 3. For instance, not socially integrating (Tinto, 2007), coming from a working-class background (Quinn, 2004), and suffering from mental health issues (Kitzrow, 2003) are all risk factors for dropping out of university. As another example, individuals with depressive symptoms are known to be difficult to retain for long-running studies (Hughes-Morley, Young, Waheed, Small, & Bower, 2015). Because participants needed to be continuing their studies to participate in each wave of the study and needed to opt in to participate, it is likely some of the attrition in the study is attributable to one or more of the three variables of interest. As noted in the attrition analyses, participants who only completed the first two waves of the study had significantly more depressive symptoms than those who completed all three waves. Thus, one explanation for the failure to replicate Rubin et al.'s (2016) findings is that more depressed participants were less likely to take part in the third part of this study.

Another possibility is that there was a Type 1 error in Rubin et al.'s (2016) research, and that network size and contact does not mediate the relationship between subjective social status and depression. However, given the arguments outlined above it seems more likely that the failure to replicate Rubin et al.'s findings is due to methodological issues with power and recruitment rather than a Type 1 error being committed originally. Additionally, Rubin et al.'s general finding of social integration mediating the relationship between social class and mental health was found in the present study using more general measures of each of these concepts.

Aggregate Variable Analyses

An additional purpose of the present study was to conduct the same mediation tests as Rubin et al. (2016), and some additional moderation models, using aggregate measures of social

class and social integration. Consistent with my hypotheses, I found that an aggregate measure of social class from Time 1 (Semester 1, 2015) positively predicted social integration at university during Time 2 (Semester 2, 2015), and that social class and these social integration measures negatively predicted mental ill health at Time 3 (Semester 1, 2016). More complex analyses found that social integration is a significant mediator in the relationship between social class and mental health. These findings were in line with my hypotheses in that the relationships between social class and mental health are mediated by social integration. However it should be noted that this model was only significant for my measure of mental health (DASS) and not my measure of well-being (SWLS).

Moderation analyses revealed Time 1 social integration as a significant moderator of the relationship between Time 1 social class and Time 2 mental health. These results were consistent with the buffering hypothesis that social integration moderates the relationship between social class and mental health. However, the relationship between Time 1 social class and Time 2 well-being was not moderated by Time 1 social integration.

Both these results reinforce previous research that has demonstrated the role that social integration plays in working-class students' mental health (e.g., Rubin et al., 2016; Rubin & Kelly, 2015) and also the protective properties of social integration (Cohen, 2004). While the mediations results demonstrate that students with a lower social class do not integrate as much as their peers, the moderation results demonstrate that lower social class students who do manage to integrate are better off in terms of their mental health. I can also be reasonably certain about the causal direction of these relationships, given that I was able to both control for previous levels of the outcome variables, and demonstrate that a reversed causal model is not significant.

It should be noted, however, that these results only apply to mental ill health, and that no significant results were found for well-being. It is not clear why social integration mediated the effect between social class and general mental ill health but not well-being. As I outlined in Chapter 1, well-being is not simply the absence of mental illness. Thus, it could be that the processes under investigation are relevant only to ill health and not well-being. It is also possible that the timeline between variables was too large to capture interactions with well-being, given that mental ill health is known to be chronic and slow-building while well-being is more transient (Burgess, Pirkis, & Slade, 2009).

Limitations and Future Research

Although both the mediation and moderation results were in line with my hypotheses, there are some caveats to consider when interpreting these results. As mentioned earlier, the sample size for this study was relatively small due to the high rate of attrition between each wave of the research. As the power analysis highlights, the small sample size did not provide an appropriate amount of power to detect relationships in the sample. Nonetheless, I was able to detect some differences in the data and these were in the expected direction, and fit within the models for my hypotheses. However the small sample size does raise questions about the reliability and validity of my findings, and also possibly explains some of the discrepancies in my expected findings. This limitation should be addressed in future studies that account for high attrition in their initial sample size.

A further limitation is that this study's sample was limited to students from one university in Australia. As suggested by Rubin et al. (2016), to test the generalisability of these findings, future research should test these relationships at different universities, across different years of study, in other countries, and in different institutional contexts. In particular, the

university that these participants attend has an abnormally large cohort of low SES students. In 2014 the University of Newcastle (29% low SES student body) had roughly double the national average (14% low SES student body) of enrolments from low SES students (Bradley et al., 2008; National Centre for Student Equity in Higher Education, 2014), meaning that it attracted a much larger number of students from lower social class backgrounds. One key hypothesis relating to why low SES students may not integrate as much at university is because they do not have similar people to relate to (Tinto, 2007). However, this theory is questionable given that low SES students were well-represented at the university where this study took place. That is, even when low SES students had around 29% of students from a similar social background, I still found low SES students to be less socially integrated than their peers. Nonetheless, the next study addresses this limitation using a large nationally representative sample from multiple universities.

Additionally, now that I have provided evidence that social integration may be one of the causes of working-class students' mental ill health, it is pertinent to establish what causes this lack of integration to determine how it can be improved. The next two studies investigate the moderators and mediators of the relationship between social class and social integration, as well as their flow-on effect for mental health.

CHAPTER 4

AT OTHER UNIVERSITIES: INVESTIGATING THE RELATIONSHIP BETWEEN

UNIVERSITY STUDENTS' SOCIAL CLASS AND SOCIAL INTEGRATION IN A

NATIONAL SAMPLE

The previous chapter discussed my first study, which demonstrated that a mediational

relationship exists between social class, social integration and mental health in university

students. The results indicated that social integration at university at least partially explained

why working-class university students had poorer general mental health than their peers. These

results are supported by other similar findings in this area (e.g., Rubin, 2012; Rubin, Evans, &

Wilkinson, 2016; Rubin & Kelly, 2015; Rubin & Wright, 2015). However, this prior research,

including Study 1, has some limitations. As I outlined in the previous chapter, there are

questions about the generalisability of these findings given that all participants in the studies

came from a single university, and that this university does not have a typical SES composition

of undergraduate students. To address this limitation, the current study uses a nationally

representative sample with students from a variety of universities. Using this representative

sample means I can be more certain that social integration mediating social class and mental

health is a nationwide issue and not endemic to one particular university.

In the present study, I aimed to replicate the findings of Study 1 in a nationally

representative sample of university students. In particular, I wanted to demonstrate that social

integration mediates and moderates the relationship between social class and mental health

amongst Australia's university students. In line with my central mediation hypothesis, I

hypothesised that working-class students would have poorer mental health and well-being and

that this relationship would be mediated by social integration. I also hypothesised that the

relationship between social class, and mental health and well-being would become smaller as social integration increased, such that working-class students who were more socially integrated had better mental health than those who were less socially integrated.

An additional reason for the present study was to investigate some of the potential moderators of social class differences in social integration. As mentioned in the previous chapter, it is important to understand what affects the relationship between social class and social integration in order to understand how social class differences in mental health can be improved through social integration. Previous studies have controlled for the effects of basic demographic information including ethnicity and gender (for a meta-analysis, see Rubin, 2012). However, to date, relatively few studies have explored the moderators of the relationship between social class and social integration. That is, while I am now quite certain that working-class students are less integrated at university, there is little evidence as to what factors affect this integration. Study 2 investigated some of these potential moderators.

In terms of the research on these moderators that already exists, Rubin's (2012) meta-analysis found that the social class-social integration relation did not vary as a function of either gender or year of study. However, as Rubin (2012) documented, there remain several theorised but as yet untested catalysts for the connection between social class and social integration. In this study, I tested two of these potential moderators: (a) the type of university students are attending and (b) their living situation while attending university.

Institution Type

In this study, I included two distinctions that can be made when looking at the type of university that students attend in Australia; (a) prestige, and (b) technical college vs. university. In terms of prestige, I tested whether the relationship between social class and social integration

was stronger for students at elite Group of Eight (Go8) universities relative to other less prestigious universities.

Go8 universities are the largest and oldest universities in Australia, and are known for outperforming other universities in terms of their research and other academic outcomes. Working-class students are in a smaller minority in Go8 universities than in other universities (Bradley et al., 2008), potentially making their working-class status more salient and increasing feelings of social exclusion (Reay, Crozier, & Clayton, 2010; Rubin, 2012). Thus, this study is testing the idea that minority group status is one of the reasons for working-class students being less socially integrated and having poorer mental health.

Additionally, older and more prestigious universities are more likely to hold elitist and middle-class values that are incompatible with working-class identities (Reay et al., 2010). Specifically, traditional university cultures espouse ideologies of individualism and support individualistic motivations, which prioritise personal development and success (Stephens et al., 2012). In contrast, working-class students come from an interdependent working-class culture, which is more likely to support interdependent values and motivations of working together (Stephens et al., 2012). Research by Stephens and colleagues outlines how this cultural mismatch makes the transition to university difficult for working-class students. I theorise that, older more traditional universities are more likely to have this mismatch of cultures. Accordingly, I hypothesised that the relationship between social class and social integration would be significantly stronger at Go8 institutions than at non-Go8 institutions.

The second institutional distinction I made was between universities and Technical and Further Education (TAFE) colleges. Australia's TAFE colleges provide vocational tertiary education courses that are aimed towards equipping students with the knowledge needed to be

qualified in certain vocational positions (e.g., electrical, hospitality, childcare). Because of its

focus on vocation, TAFE has a much broader student population and is considered to be a less

elite and high-status institution and less-likely to harbour middle-class values (James, 2000). I

hypothesised that working-class students who attend TAFE would be more socially integrated

than those who attend universities, because they form a larger portion of the student population

at these institutions and there is less of a cultural mismatch (James, Bexley, Anderson, Devlin,

Garnett, Marginson, & Maxwell, 2008). In other words, I expected that the relationship between

social class and social integration would be significantly larger for university students compared

to TAFE students.

Living Situation

As well as institution type, I investigated two types of living arrangements that are

thought to affect the relationship between social class and social integration. First, I examined

whether living on or off campus operated as a significant moderator. Presence on campus and

proximity to other students is a major predictor of social integration and friendship at university

(e.g., Brooman & Darwent, 2014; Holdsworth, 2006). Consequently, students who live on

campus tend to have higher levels of social integration (Bean & Metzner, 1985; Pascarella &

Terenzini, 1991). Because of this relationship between living on campus and social integration, I

theorised that living on campus would negate some of the barriers to social integration for

working-class students. Hence, I hypothesised that the effect of social class on social integration

would be weaker for students who live on campus.

The second living situation that I investigated was whether participants lived with their

parents. Australian university students in general are more likely than students from other

countries to live at home during university (Edwards & van der Brugge, 2012). Living at home

with parents while attending university decreases students' time spent on campus and feelings of

independence, as well as lowering their desire and ability to make friends and attend social

functions at university (Christie & Dinham, 1991). Living at home allows students to stay within

their existing support networks and therefore discourages the formation of new social ties.

Consequently, I hypothesised that the relationship between social class and social integration

would be stronger for students who lived at home.

It should be noted that each of these factors are likely to operate as mediators as well as

moderators. Specifically, working-class students are less likely to live on campus due to

financial constraints (e.g., Pascarella, Pierson, Wolniak, & Terenzini, 2004; Pike & Kuh, 2005).

Consequently, the lower rates of living on campus has been proposed as one of the reasons that

working-class students are less socially integrated at university (e.g., McConnell, 2000, p. 80;

Rubin, 2012). Moreover, working-class students are more likely to live at home in order to be

able to afford the cost of living while studying full-time. Again, this has been suggested as one

of the reasons for working-class students' lower social integration (e.g., McConnell, 2000, p. 80;

Rubin, 2012). Thus both these variables may account for some of the social class differences in

social integration as well as having a moderating effect on the relationships. However, it was not

possible to conduct mediation analyses with these dichotomous variables, therefore I could not

test mediation models using these variables.

Gender

In addition to these previously untested potential moderators of social class and social

integration, I also followed previous research by testing gender as a moderator of social class

and social integration (Rubin, 2012). Gender could potentially have an impact on the social

integration of university students, because male students tend to report lower belonging and

integration than females (Hurtado et al., 2007, Rubin, 2012). However, working-class students

tend to be pre-dominantly female (McConnell, 2000; Terenzini et al., 1996; for opposite

findings, see Pike & Kuh, 2005), meaning this gender difference is unlikely to explain social

class differences in social integration. As well as being unlikely to be a mediator, Rubin (2012)

did not find any significant results for gender as a moderator of the relationship between social

class and social integration. To corroborate Rubin's findings in an Australian sample, the present

study tested gender as a moderator of the relationship between social class and social

integration.

In summary, the aims of this research were to (a) attempt to replicate the social

integration mediation and moderation findings from Study 1 and (b) test some of the moderators

of the relationship between social class and social integration. The present study tested these

hypotheses using an existing longitudinal archival dataset of a nationally representative

Australian sample. This existing dataset used is known as the Longitudinal Surveys of

Australian Youths (LSAY).

An Archival Approach

The LSAY is a long-running national research project that recruits tens of thousands of

15 year old Australians every four years and tracks them through yearly follow-up surveys over

ten years. Data from the LSAY has generated hundreds of journal articles and research papers,

including many that look at SES differences and university (e.g., Athanasou, 2001; Marks,

Fleming, Long, Marks, 2007). The LSAY contains measures of social class, mental health and

social integration, however, to date no study has used data from the LSAY to examine the

relationships between these variables.

As well as containing all the information necessary to test my hypotheses, there was one

additional benefit to using the LSAY to investigate my research question. This benefit was that the longitudinal design of the LSAY allowed for changes in circumstances to be observed on a year-to-year basis controlling for age, which is often a key variable in social class differences at university (Rubin & Wright, 2015). Social class is inversely related to age of university students, and age has been found to be related to social integration and other related variables (Rubin & Wright, 2017). Thus, using data from a representative sample of participants with the same age offered a robust control of age differences and allowed me to specifically examine young adults.

Aims and Hypotheses

Overall, this study used longitudinal archival data from a nationally representative Australian sample of university students to replicate but also build on previous research. I first aimed to provide further evidence that the relationship between social class and mental health is mediated by social integration. However, I also aimed to determine whether the relationship between social class and social integration is contingent upon the type of university, including whether it generalises to other types of higher education, and their being in a smaller minority at these institutions. Additionally, I tested the theory that the relationship between social class and social integration is qualified by students' living situations. I also investigated gender differences in the social class-social integration relationship to test the conclusions of Rubin (2012). Lastly, this study provided a robust control for the effects of age on the relationship between social class and social integration because all participants were within the same 12-month age range. Hence, I also tested whether social class differences in students' social integration persisted in the absence of social class differences in age (Rubin & Wright, 2015, 2017).

Method

Participants

      This study used data from the 2006 cohort (Y06) of the Longitudinal Surveys of

Australian Youths (LSAY). The LSAY is a multi-wave longitudinal research project which

tracks nationally representative cohorts of 15 year old Australians for approximately ten years.

The aim of the study is to record and measure young people's transitions from school to further

education and the workforce. Because the LSAY has been running since 1995 there are six

cohorts and thus six sets of data to choose from. Out of these six LSAY cohorts, I determined

that the 2006 cohort (Y06) was the most appropriate for the purposes of this research. Y06

includes participants who were 15 year of age in 2006 and had completed all 10 waves of LSAY

research by 2016. Y06 also contains a comprehensive set of questions related to social class,

many of which were not included in the preceding or subsequent cohort questionnaires. Thus,

Y06 was the best choice because it was the most current completed cohort with a comprehensive

measure of social class at the time I was conducting this research.

      Y06 cohort participants were 15 years of age for the first wave in 2006 and were

interviewed every following year until 2015. A total of 14,170 participants completed the LSAY

survey in Wave 1, however participant numbers decreased in each subsequent year with 9,353

participants in Wave 2, 8,380 participants in Wave 3, 7,299 participants in Wave 4, 6,316

participants in Wave 5, 5,420 participants in Wave 6, 4,670 participants in Wave 7, 4,223

participants in Wave 8, 3,839 participants in Wave 9, and 3,563 participants in Wave 10. Further

information about the LSAY, including the research surveys, is available at:

http://www.lsay.edu.au.

      For the purposes of the current investigation, I focussed on participants who were in their

first year of university in Wave 4 (2009). This wave was chosen because it was the first wave

most students would be out of high school, and thus the year that most would commence tertiary

education. In line with this assumption, Wave 4 contains the highest number of students in the

first year of tertiary education (2,333). Because of this large sample size, I decreased the alpha

level of all analyses to .01. Based on a sensitivity analysis, even with this reduced alpha I was

able to detect effect sizes as small as 0.07.

Of the, 2,333 participants in their first year of tertiary education in Wave 4, 1,322

(56.66%) were female, and 1,011 were male. This ratio is similar to the representation of males

and females in Australian Universities, where 55.7% of students are female (Parr, 2015). In

addition, 2,043 were born in Australia, 267 were born in a country other than Australia, and the

remaining 23 participants did not provide data on this item. Fifty-seven (2.4%) participants were

recorded as being Aboriginal or Torres Strait Islander (ATSI). This number slightly over-

represents ATSI students, who form 1.4% of the Australian undergraduate population (Parr,

2015). Participants were sampled from all states and territories in Australia with the largest

number in Wave 4 coming from New South Wales ($n = 534$) and the smallest number coming

from the Northern Territory ($n = 46$), which is representative of the population density of those

states and territories. Note that age was a constant variable in this sample because all

participants were the same age (i.e., 18 years old in Wave 4).

Procedure

Data for the Y06 LSAY was collected using a yearly questionnaire completed by phone

interview or online. Questions in the LSAY covered the broad domains of academic

achievement and aspirations, school retention, social background, education and employment,

life satisfaction, physical and mental health, and socio-demographic characteristics. Core

components of the questionnaire remained the same from one wave to the next, however

question logic and exclusion criteria meant that not all questions were answered by all

participants in each wave. Additionally, some demographic information (including SES

variables) was only recorded in the first wave of the study. For the purposes of brevity, only the

variables and measures that are directly related to the current investigation will be described in

depth here. The variables of interest to this study include demographic variables such as gender

and social class, social integration at university, mental health, living arrangements, and student

status, including which tertiary institution participants were attending.

Measures

       Social class. The LSAY contained most of the typical measures of social class and SES.

Data on these variables was collected in Wave 1 only and focused on family/parental

characteristics in order to determine how these circumstances impact the outcomes of young

people (Lim & Gemici, 2011). Wave 1 of the 2006 LSAY included measures of parental

education and occupation, and several indicators of household wealth and resources, which are

some of the main components of the poverty and social disadvantage frameworks outlined by

Scutella, Wilkins and Horn (2007).

       As in the previous study, I used a measure of parental education level as a common

measure of social class and SES when considering young adults. In the first wave only of the

Y06 LSAY, parental education was classified using the International Standard Classification of

Education (ISCED; United Nations Educational, Scientific and Cultural Organization, 1997).

This system classifies educational attainment into seven levels starting from pre-primary,

kindergarten, pre-school through to PhD and professional doctorate. The categories in the

ISCED are ranked from zero to six. Participants were asked to indicate both their mother's and

father's highest levels of education from the following categories: *pre-primary, kindergarten, preschool (0), primary (1), certificate I and II (general enabling, bridging courses), certificate I and II (basic vocational) (2), higher school certificate, university enabling courses, AQF certificate III, AQF statement of attainment (3), certificate IV (4), bachelor with or without honours, master (research and coursework), diploma, advanced diploma, graduate certificate, graduate diploma (5), PhD, professional doctorate (6).*

The LSAY also used a measure of parental *occupation* as a proxy for social class. This dimension of SES was also used in Study 1, and is commonly used in research on young adults. In the first wave only of the LSAY Y06, mother's and father's occupations were recorded and coded according to the International Standard Classification of Occupations (ISCO; International Labour Organization, 1990). Numerical scores on the ISCO categorise people according to the field, role and level of an individual's job. ISCO scores are converted into a continuous scale of occupational prestige, known as the International Socioeconomic Index of Occupational Prestige (ISEI; Ganzeboom, De Graff, & Treiman, 1992). ISEI scores are based on analyses of international data on educational level and income of different professions and rank individual occupation categories from ISCO based on these factors. Note that the Y06 LSAY also measured the Australian and New Zealand Standard Classification of Occupations (ANZSCO; McMillan, Beavis, & Jones, 2009), however this variable was only measured in Wave 2. Because all other SES variables were measured in Wave 1, I decided to use the ISEI to ensure chronological consistency in the SES variables.

The Y06 LSAY also contained 21 questions pertaining to household items and resources. These questions asked about the presence of various status-linked household items including technology, art and cultural paraphernalia, and furniture. There were also questions related to the

density and privacy of living arrangements in the house, including whether participants had their own room and place to study. These are considered to be SES-related background characteristics because they signal the wealth and status of a child's family and household (Lim & Gemici, 2016). Sixteen of these items had a dichotomous *yes/no* response scale regarding the possession of various household items. These included whether the participant had their own desk, own room, own study place, and own computer and whether their household belongings included computer software, the internet, a calculator, literature, poetry, art, textbooks, a dictionary, a dishwasher, a DVD/VCR player, cable/pay TV, a digital camera, and a plasma TV. An additional four questions recorded the number of mobile phones, televisions, Central Processing Units and cars that participants had in their household on a four-point scale from *none* (0) to *more than three* (3). The responses to these 20 items were summed to form an overall score of household possessions. These items had marginally adequate internal reliability with a Cronbach's α of .69. Internal reliability did not increase if any of these items were removed. One final question asked about the number of books in the home on a six-point scale from *0-10* (1) through to *more than 500* (6). Because this item had a more nuanced scale than the other items in this category, it was kept separate from the other household possession items.

Demographics. Gender options in the LSAY included male and female. In the LSAY, country of birth is a dichotomous variable with the two values being (1) *born in Australia* and (2) *born in another country*. Similarly, ATSI status was dummy coded as (1) *yes* and (2) *no*.

Social integration. From Wave 2 through to Wave 6, participants who were in their first year of tertiary education were asked questions about their impressions of being a tertiary student. Participants who were apprentices or trainees were excluded from answering these questions. This measure of tertiary education social integration asked participants to indicate the

extent to which they agreed with five statements on a scale from *strongly agree* (1) through to

strongly disagree (5). The items for this scale were as follows: "you really like being a tertiary

student," "you think student life really suits you," "you really like the atmosphere on campus,"

"student life has lived up to your expectations," and "you've made friends at your current

educational institution." For the purposes of this study, I used Wave 4 (2009) of the LSAY social

integration questions because this wave coincided with the first year out of high school for most

of the participants, and it has the largest response rate for these items (W4 N = 2,629) (W2-W6

Ns < 867).

  Mental health. Mental health was measured using the Kessler Six Psychological

Distress Scale (K6; Kessler et al., 2002) and a series of ad-hoc questions about satisfaction with

various aspects of life. The K6 was administered in Waves 5 and 8 of the study. The scale

consists of 6 items designed to gauge non-specific psychological distress. The K6 does not

measure any specific mental illness but rather is used as a measure of a person's likelihood of

having or developing a diagnosable mental illness. Participants' were asked to consider over the

past four weeks how often they had felt "nervous," "hopeless," "restless or fidgety," "that

everything was an effort," "so sad that nothing would cheer you up," and "worthless."

Responses were indicated on a 5-point scale from *all of the time* (5) through to *none of the time*

(1).

  A broad concept of well-being was covered in this study using 12 items pertaining to life

satisfaction. Life satisfaction items were included in Waves 2 through to 10 of the study. These

were ad-hoc items developed by the LSAY researchers that addressed specific areas of

participants' lives. Items asked participants how happy they were with: "the work you do at

study, at home or in a job," "what you do in your spare time," "how you get on with people in

general," "the money you get each week," "your social life," "your independence," "your career prospects," "your future," "your life at home," "your standard of living," "where you live," and "your life as a whole." Responses to these items were made on a 4-point scale ranging from *very happy* (4) through to *very unhappy* (1). For the purposes of this study, I used life satisfaction items from Waves 4 and 5 of the LSAY. These waves were chosen in order to control for the outcome variable at the time of the social integration mediator variable (Wave 4) and provide an outcome measure that comes after the mediator (Wave 5).

Institution type. Tertiary education institutions were differentiated in two ways. The first approach was to differentiate between TAFE and university students who had answered the social integration questions. TAFE students comprised 20% of the sample ($n = 466$), and university students comprised 80% of the sample ($n = 1,867$). I also categorised participants based on whether they were attending Group of Eight (Go8) or non-Go8 universities. Go8 universities are Australia's leading research universities and are considered to be the most prestigious tertiary institutions in Australia because they are the highest ranked nationally and consistently rank within the top 200 universities internationally (Williams & Van Dyke, 2007). These eight universities are the University of Melbourne, the Australian National University, the University of Sydney, the University of Queensland, the University of Western Australia, the University of Adelaide, Monash University and University of New South Wales. Go8 university students made up 30% of the total ($n = 702$) and non-Go8 university students made up the remaining 70% ($n = 1,624$).

Living arrangements. I used two approaches to classifying students' living arrangements. The first determined whether participants were living on or off campus using responses to an item about accommodation that included the responses *shared house or flat,*

renting, buying, own outright, boarder in a private house, university or TAFE resident, hostel or boarding house, and *somewhere else*. I dichotomised this variable into on-campus and off-campus accommodation.

The second approach determined whether participants were or were not living with their parents. In Wave 4, 7% of participants were living in campus-based accommodation ($n = 163$) and 93% had living arrangements other than campus accommodation ($n = 2,170$). Additionally, 82% of participants were living with their parents ($n = 1,912$), and 18% were not living with their parents ($n = 421$). These numbers are representative of the living arrangements of university students in Australia (Australian Bureau of Statistics, 2014).

Results

Exploratory Factor Analysis

I conducted three exploratory factor analyses on (1) the social class variables, (2) the social integration items, and (3) the life satisfaction items. In all cases, principal axis factor analysis was used with missing cases deleted listwise.

Social class. All items pertaining to social class were standardised before commencing analysis. The following variables were entered into a factor analysis to determine the structure of social class variables in this dataset: mother ISCED, father ISCED, mother ISEI, father ISEI, household possessions, and number of books in household. For the social class items, the Kaiser-Meyer-Olkin measure of sampling adequacy was substantially greater than .50 (.70), and Bartlett's test of sphericity was statistically significant ($X^2 = 1,812.72$, $df = 10$, $p < .001$). Only one factor had an eigenvalue higher than 1.0, with Cattell's (1966) scree plot also indicating only one factor. A Monte Carlo simulation (Watkins, 2000) revealed that only one variable in the real data set had an eigenvalue that was larger than the first eigenvalue in the simulated data set

(1.08), providing further evidence for a one factor solution. This single factor accounted for 39.19% of the variance and had an eigenvalue of 2.35. These items had adequate internal reliability with a Cronbach's α of .69. Most items in this scale had positive loadings above the standard cut-off of .40 (ranging from .67 to .42), however the total possessions item had a factor loading of only .30. Given that the Cronbach's analysis demonstrated that the internal reliability of the scale decreased if this item was removed, I decided to keep this item in the scale. Consequently, I averaged these items to form one variable labelled as social class

   Social integration. For the social integration items, the Kaiser-Meyer-Olkin measure of sampling adequacy was substantially greater than .50 (.79), and Bartlett's test of sphericity was statistically significant ($X^2 = 2,868.66$, $df = 10$, $p < .001$). Only one factor had an eigenvalue higher than 1.0, with Cattell's (1966) scree plot and a parallel analysis also indicating only one factor. This single factor accounted for 53.06% of the variance and had an eigenvalue of 2.63. Items in the scale all had positive loadings on this factor ranging from .73 to .51. Consequently, I averaged these items to form one variable labelled as social integration. These items had adequate internal reliability with a Cronbach's α of .77.

   Life satisfaction. I tested both Wave 4 and Wave 5 life satisfaction items in separate exploratory factor analyses. Both Wave 4 and Wave 5 life satisfaction items had sampling adequacy greater than .50 (.92 and .92 respectively). Additionally, Bartlett's test of sphericity was significant for both Wave 4 ($X^2 = 7,886.55$, $df = 66$, $p < .001$) and Wave 5 ($X^2 = 8,899.26$, $df = 66$, $p < .001$). For Wave 4 and Wave 5 life satisfaction items, two factors had eigenvalues higher than 1.0. However for both waves, Cattell's (1966) scree plot indicated only one factor and a parallel analysis revealed that only one factor in each real dataset had eigenvalues larger than the first two factors in the simulated dataset (1.12 and 1.09). The Wave 4 single factor

accounted for 39.97% of the total variance and had an eigenvalue of 4.80. Similarly, the Wave 5

single factor accounted for 41.92% of the total variance and had an eigenvalue of 5.03. Given

these one-factor structures, I averaged these items to form one variable for each wave, labelled

as life satisfaction. In Wave 4, most items had positive loadings on this factor over .40

(ranging .73 to .52), however satisfaction with getting along with others had a loading of

only .36. Given that the Cronbach's analysis demonstrated that the internal reliability of the

scale (α = .85) did not increase if this item was removed, and the outcome for the same scale in

W5, I decided to keep this item in the scale. Items on the Wave 5 factor all had positive loadings

ranging from .73 to .45. Given this one-factor structure I averaged these items to form one

variable labelled as life satisfaction. These items had acceptable internal reliability with a

Cronbach's α of .87.

Correlations and Descriptive Statistics

Table 4.1 provides the means, standard deviations, minimum and maximum values,

Cronbach alpha values, and zero-order correlation coefficients for the key variables.

Table 4.1
Descriptive statistics and zero order correlation coefficients

Measure	*M*	*SD*	Min	Max	α	1	2	3	4
1. W1 Social Class[†]	0.26	0.61	-2.01	1.78	.69	-			
2. W4 Social Integration	4.11	0.59	1.60	5.00	.77	.10**	-		
3. W4 Life Satisfaction	3.38	0.35	1.92	4.00	.86	.13**	.33**	-	
4. W5 Life Satisfaction	3.37	0.35	1.92	4.00	.87	.12**	.21**	.59**	-
5. W5 Distress	1.76	0.62	1.00	5.00	.79	-.04	-.12**	-.25**	-.37**

Note. † indicates variables that have been standardised. W1 = Wave 1. W4 = Wave 4. W5 =
Wave 5. *p* < .05, ***p* < .01.

Most variables showed the expected relations across all included waves. W1 social class was significantly positively correlated with W4 social integration, W4 life satisfaction, and W5 life satisfaction. Hence, students with a lower social class had less social integration during their first year at university in 2009, and lower life satisfaction in 2009 and 2010. Notably, however, W1 social class was not significantly correlated with W5 psychological distress. This result indicates that lower social class university students were not significantly more distressed than their higher class peers. W5 distress was significantly negatively correlated with W4 social integration, life satisfaction as well as W5 life satisfaction, indicating that students who were more distressed in 2009 had lower life satisfaction that year and the year before. W4 social integration was also significantly positively related to W4 and W5 life satisfaction. Hence, students who were more socially integrated during their first year of university in 2009 had higher well-being in 2009 and 2010.

Independent Samples T-tests

I conducted two independent samples t-tests to confirm my assumptions that students who attend Go8 institutions have a higher social class on average than students who attend other institutions, and that students who attend TAFE have a lower social class on average than those who attend university.

As expected, W4 Go8 students ($M = 0.51$, $SD = .58$) had significantly higher social class scores than W4 non Go8 students ($M = 0.15$, $SD = .58$), $t(2,619) = -14.64$, $p < .001$. Also consistent with my expectations, W4 TAFE students ($M = -0.05$, $SD = .58$) had significantly lower social class scores than W4 university students ($M = 0.32$, $SD = .59$), $t(2,627) = 12.69$, $p < .001$. Thus my assumptions about social class differences across these types of institutions were upheld.

Multiple Regression Analyses

I used the same four multiple regression models used in Study 1, with some exceptions due to the lack of repeated measurements of distress and social integration. This approach involved testing the mediating pathways of models with social class as the independent variable, social integration as the mediator variable and life satisfaction, and distress as the outcome variables. The following successive multiple regression models were tested:

1.   the effect of the Time 1 (T1) predictor variable (social class) on Time 5 (T5) outcome variables (T5 distress and T5 life satisfaction) controlling for T4 outcome variables, where applicable (T4 life satisfaction),

2.   the effect of the T1 predictor variable (social class) on the T4 mediator variable (T4 social integration),

3.   the effect of the T4 mediator variable (social integration) on T5 outcome variables (T5 distress and T5 life satisfaction) controlling for T4 outcome variables, where applicable (T4 life satisfaction), and

4.   the effect of the T1 predictor variable (social class) on T5 outcome variables (T5 distress and T5 life satisfaction) controlling for T4 outcome variables, where applicable (T4 life satisfaction) and the T4 mediator variable (T4 social integration).

As in Study 1, a process of elimination was used whereby if one test did not work for a particular variable that variable was not tested in subsequent models. The reasoning behind using this regression approach was the same as within Study 1. However, unlike in Study 1, past levels of the mediator and past levels of distress were not controlled for in these tests. This lack of controlling for prior levels was due to the design of the LSAY: Social integration was only measured once for each participant during whichever wave they happened to begin tertiary

education and distress was only measured twice in Wave 5 and Wave 8.

For Test 1, I regressed T5 distress, and life satisfaction onto T1 social class, controlling for corresponding T4 measures of life satisfaction but not distress because this was not measured prior to T5. Additionally, life satisfaction was not measured in the first wave of the LSAY so I was unable to control for these outcome variables at T1 in this model. Contrary to my predictions, T1 social class was not a significant predictor of T5 distress (β = -.03, p = .167). T1 social class was a marginally significant predictor of T5 life satisfaction (β = .04, p = .017). Hence, social class was a predictor of life satisfaction but not distress, however the model including life satisfaction was only marginally significant given the decreased alpha level of the present study. In support of my predictions, students with a lower social class in 2006 had lower life satisfaction 4 years later in 2010, even after controlling for life satisfaction one year prior in 2009.

Test 2 regressed T1 social class onto T4 social integration. T1 social class was a significant predictor of T4 social integration (β = .10, p >.001). Hence, social class was a predictor of social integration of first year university students. In line with my hypothesis, students with a lower social class in 2006 were less socially integrated during their first year of tertiary education in 2009. Note that, because this measure was only taken in the first year of tertiary education, I was unable to account for prior levels of social integration in this model. Nonetheless, the causal direction remains relatively clear because it is unlikely that differences in social integration at university in 2009 caused social class differences in 2006.

In Test 3, I investigated whether T4 social integration predicted the marginally significant outcome variable from Test 1, T5 life satisfaction. T4 social integration was not a significant predictor of T5 life satisfaction (β = .02, p = .214). Thus, contrary to my predictions,

students who were less socially integrated at their tertiary institution in 2009 were not

significantly less satisfied with their lives one year later in 2010. Because these tests did not

yield consistent significant pathways, Test 4 was not conducted.

Moderation Analyses

Social integration as a moderator. I also tested the moderating properties of social

integration between social class and mental health. Inconsistent with my predictions, at an alpha

level of .01 there was no significant moderation effect of T4 social integration on the

relationship between T1 social class and either T5 distress ($p = .026$) or T5 life satisfaction ($p = .063$).

Moderators of social class and social integration. I used Hayes' (2018) PROCESS

Model 1 to test the moderating effects of university prestige (Go8/non-Go8), institution type

(university/TAFE), accommodation location (on-campus/off-campus), and living with parents

(yes/no) on the relationship between T1 social class and T4 social integration. I also took the

opportunity to corroborate existing evidence that there is no gender difference in the relationship

between social class and social integration (Rubin, 2012). Table 4.2 shows the results of these

analyses.

Contrary to predictions, there was no significant interaction effect between T1 social

class and any of the moderator variables when T4 social integration was the outcome (p's

$\geq .324$). These results indicate that the relationship between social class and social integration did

not differ significantly as a function of students' gender, living situation or the type of institution

that they attended.

Sensitivity Analyses

All analyses reported above were re-run with control variables (gender, ATSI status, and

country of birth) included and univariate outliers excluded. The inclusion or exclusion of (a)

univariate outliers and (b) control variables in my tests did not alter the pattern of significant and

nonsignificant results.

Table 4.2
Results from T1 gender and T4 type of institution and living arrangement moderation analyses

Dependent:T4 Social Integration	*b*	*SE*	*df*	*t*	*p*	*99% CI*	
T1 social class (X)	0.08	0.07	2,304	1.24	.215	-0.05	0.21
T1 gender (M)	-0.02	0.03	2,304	-0.65	.515	-0.07	0.04
X x M	0.01	0.04	2,304	0.26	.798	-0.07	0.09
T1 social class (X)	0.08	0.02	2,586	3.46	.001	0.04	0.13
T4 Go8 v non-Go8 (M)	0.07	0.03	2,586	2.24	.025	0.01	0.14
X x M	0.02	0.04	2,586	0.36	.721	-0.07	0.10
T1 social class (X)	0.03	0.05	2,303	0.67	.325	-0.06	0.13
T4 TAFE v uni (M)	0.14	0.03	2,303	4.59	.505	-0.06	0.13
X x M	0.05	0.05	2,303	0.98	.325	-0.05	0.16
T1 social class (X)	0.10	0.02	2,595	4.84	<.001	0.06	0.13
T4 living on campus (M)	0.37	0.06	2,595	6.57	<.001	0.26	0.48
X x M	-0.07	0.08	2,595	-0.89	.372	-0.23	0.09
T1 social class (X)	0.09	0.05	2,594	1.97	.049	0.00	0.18
T4 living with parents (M)	-0.16	0.03	2,594	-4.73	<.001	-0.22	-0.09
X x M	0.01	0.05	2,594	0.21	.831	-0.09	0.11

It is possible that the null results in this study are due to an invalid measure of social

integration. Specifically, four of the five items in my social integration measure may be

interpreted as assessing overall student satisfaction rather than social integration in particular

(i.e., "you really like being a tertiary student," "you think student life really suits you," "you

really like the atmosphere on campus," "student life has lived up to your expectations"). To

address this possibility, I also tested the "you've made friends at your current educational

institution" social integration item separately because it is the most face-valid social integration

item. The direction and significance of results did not change when using this item alone.

Discussion

The present research used archival data from the LSAY Y06 cohort to investigate social class, social integration, and mental health differences in Australian higher education students. Specifically, I used data from Waves 1, 4 and 5 of this dataset to test my hypotheses regarding the mediating and moderating role of social integration in the relationship between social class and mental health. Additionally, the present research sought to determine whether the relationship between social class and social integration is contingent upon the type of higher education, living situation, or gender of students. None of the proposed mediation of moderation hypotheses were supported. Nonetheless, the present study provides some compelling insights into social class differences in working-class students' social integration.

Social Integration as a Mediator of Social Class and Mental Health

In this study, I aimed to reproduce findings from the previous chapter and Rubin et al. (2016) demonstrating that the relationship between social class and mental health is mediated by social integration at university. This study failed to replicate these previous findings because social class at Time 1 did not predict distress at Time 5. Additionally, although social class at Time 1 marginally predicted life satisfaction at Time 5, social integration at Time 4 did not predict life satisfaction at Time 5. Although this study had many strengths, including its large sample size and longitudinal design, it suffered some methodological flaws that may account for these unexpected results.

First, the present study used measures of social class, social integration, and mental health and well-being that may not have been well-suited to the current research question. In terms of social class, the LSAY included only objective indicators of social class largely related

to economic rather than social position. My previous study and its predecessor (Rubin et al.,

2016) both used multifaceted objective and subjective measures of social class. As discussed in

Chapter 1, a multipronged approach to social class is the best approach to capture the

multidimensional construct of social class. However, the social class items in the present study

are common measures of socioeconomic status, which is part of social class. Moreover,

according to Lim and Gemici (2011), the LSAY socioeconomic status items were specifically

designed to form a rigorous indicator of socioeconomic status. Thus, although they do not cover

the full spectrum of social class, they meet international standards for measuring socioeconomic

status. Nonetheless, the current study failed to capture the full picture of social class, which may

account for the lack of significant results.

Second, in terms of social integration and life satisfaction, a series of adhoc, previously

untested items were used. Although factor analyses confirmed that the items loaded highly onto

one factor, there is no further evidence of the reliability or validity of any of these items. There

was only one item that seemed to measure social integration on face value (i.e., "you've made

friends at your current educational institution"). As mentioned in the results, I reconducted the

analyses using this single item and found the same null mediation results, providing some

evidence for the merit of the scale as a whole. Even so, the lack of significant results could be

due to this unrefined measure of the mediator variable.

Lastly, and most importantly, the measures of mental health included in the present study

were not well-suited to this study's purpose. In particular, the present study used the K6 as a

measure of mental health, wherease the DASS was used in previous research (Chapter 3, Rubin

et al., 2016). The K6 is not an ideal measure to use when examining long term mental health

changes, because it measures transient generalised feelings of distress, which are known to

fluctuate greatly over time (Drapeau, Beaulieu-Prevost, Marchand, Boyer, Preville, & Kairouz, 2010). Additionally, unlike the DASS, the K-6 has not been proven to have predictive validity over time (Ko & Harrington, 2016), meaning it may be ill-suited to longitudinal research designs. The current study looked at the relationships between variables over five years, with 12 months and five years lag time between the predictor variables and mental health measure. Given the transient nature of the kind of mental health (distress) that the K6 measures, it is likely that the lag time between variables was too long to capture relationships between social class, social integration, and mental health. Moreover, the measure of well-being was a series of ad-hoc items relating to life satisfaction. There is no evidence of the reliability or validity of these items, and thus they may be unsuitable for accurately measuring well-being over time.

Overall, although the social class, social integration and mental health measures available in this dataset were relevant to the research questions, they had some psychometric limitations. These psychometric issues, especially of the mental health variables, are the prime suspect for the unexpected results in this study, because their accuracy and ability to detect differences over time is questionable.

An alternative explanation for the null results is that social integration does not mediate the relationship between social class and mental health in Australian higher education students. However, this explanation is unlikely given the above mentioned methodological flaws and weaknesses, and the evidence in support of the mediational properties of social integration from studies with stronger methodologies (e.g., Rubin et al., 2016).

Social Class and Social Integration

One notable finding of the present study is that social class positively predicts social integration. This finding is noteworthy because it was demonstrated in a nationally

representative sample. Hence it contributes to this thesis by demonstrating that the relationship between social class and social integration is a pervasive widespread problem not centralised at one or two universities.

Of course, the current findings should be cautiously interpreted in light of the limitations highlighted above. However, although the measures are not ideal, they are still suitable to draw tentative conclusions about social integration and social class because they each measure parts of social class or social integration. Consequently, the current study is the first to demonstrate a connection between social class and social integration in a large representative Australian sample.

Another strength of the current study was that it provided a robust control for age, which has previously been found to explain the relationship between social class and social integration (Rubin & Wright, 2015). In the present study, social class remained related to social integration in a sample of students who were all of the same age. Consequently, this study demonstrated that social class is related to social integration above and beyond the influence of age. In fact, the present research demonstrated that the relationship between social class and social integration is remarkably robust, because, as well as age, it was found to be unaffected by several other theoretically related variables. I discuss these potential moderator variables below.

Moderators of Social Class and Social Integration

In this study, I also investigated some conditions that are thought to affect social class differences in social integration. That is, I looked at some of the variables that are theorised to affect student social integration or create situations in which working-class students are less likely to socially integrate compared to their higher class peers, including the type of higher education institution that they attend, their living situations, or their gender. None of the

moderation hypotheses were supported, because the relationship between social class and social integration did not vary as a function of type of institution (Go8 vs non-Go8 university; university vs. TAFE), students' living situations (with parents vs without parents; on-campus vs off campus), or gender. Thus, the present study did not provide any supportive evidence for any of the situational/contextual factors that are thought to moderate social class differences in social integration at university.

In particular, I did not find any differences in the relationship between social class and social integration based on the type of higher education institution that students attended. The size of the relationship between social class and social integration remained relatively constant regardless of whether this relationship was considered in Go8 universities, non-Go8 universities, or TAFE colleges. To my knowledge, this is the first study to demonstrate the robustness of the social class social integration connection, and the first to extend the findings beyond university to other higher education institutions. In terms of Go8 and non-Go8 universities, the results suggest that it is not only traditional "sandstone" universities with more elite reputations and less working-class students that working-class students struggle to integrate. In comparison, the TAFE results suggest that working-class students are less integrated even at institutions without the middle-class cultural background and student cohort. Together, these results indicate that the prestige and status of higher education institutions does not interact with students' social class to determine their social integration. These results also imply that social class differences in social integration do not vary as a function of students' minority status within these institutions. Rather, the results suggest that working-class students are less socially integrated due to more general reasons present at all higher education institutions, as opposed to properties specific to certain kinds of institutions.

Additionally, the current study failed to provide evidence that living off campus or living at home impacts social class differences in social integration. Living on campus is often cited as one possible solution to increasing the social integration of working-class university students (e.g., Rubin, 2012). Because the present findings indicate that living on campus does not mitigate the relationship between social class and social integration, these results suggest that this approach may not be particularly effective. Similarly, I did not find any evidence that remaining at home while attending university inflates the size of the relationship between social class and social integration. This result indicates that working-class students living situation does not exacerbate the relationship between social class and social integration.

Finally, the present study did not find any gender differences in the relationship between social class and social integration. This result was not unexpected given that male students generally have poorer social integration (Hurtado et al., 2007), but working-class students are more likely to be female (McConnell, 2000; for opposite findings, see Pike & Kuh, 2005). These results are supported by Rubin (2012), who also did not find gender differences in the relationship between social class and social integration.

Again, it should be noted that these results should be interpreted with some degree of caution given the limitations of the measures. Nonetheless, the results from this study suggest that the relationship between social class and social integration in higher education is remarkably pervasive and appears to be unaffected by many theoretically-relevant contextual factors. Consequently, further research is needed to investigate the reasons why working-class students are less socially integrated at university. In light of this need, my next study engages with existing theories and research to investigate some potential mediator variables that might help to explain the relationship between social class and social integration.

CHAPTER 5

WHY SO LONELY? AGE AND TIME TO SOCIALISE MEDIATE THE RELATIONSHIP

BETWEEN UNIVERSITY STUDENTS' SOCIAL CLASS AND SOCIAL INTEGRATION

The previous two studies investigated the relationships between social class, social integration, and mental health in Australian university student populations. The first study demonstrated that social integration mediates the relationship between social class and mental health longitudinally. From Study 1, I can be reasonably confident that working-class students, lack of social integration at university is at least partially responsible for their poorer mental health. Study 1 also demonstrated the moderating role of social integration, such that the social class gradient in mental health was reduced among students who were more integrated at university. Building on these findings, the second study used archival data from a large Australian research project to attempt to provide evidence on the generalisability of the relationships between social class, social integration, and mental health. Although Study 2 was unable to replicate the mediation models from Study 1, it did provide evidence that social class is positively related to social integration in a larger, nationally representative sample. Study 2 also demonstrated the robust nature of the relationship between social class and social integration, because social class's influence on social integration was not affected by type of higher education institution or living situation.

The present study used a pre-registered research protocol to reinforce and extend these studies in two ways. First, it attempted to replicate social integration as a mediator and moderator between social class and mental health using additional measures of social integration. As mentioned previously, social integration is a complex, multi-faceted concept that encompasses a range of social relationships, perceptions and behaviours (Turner & Turner,

2013). Study 2 used a limited measure of social integration that only included five ad-hoc items relating only to friendship and belonging at university. In contrast, Study 1 contained many more measures of social integration including sense of belonging, community participation, social network size and contact, relationship satisfaction, and loneliness. The present study added to this conceptualisation of social integration by including measures of perceptions of various social integration aspects including trust, friendships and social support. As outlined by Wethington and Kessler (1986), perceptions of social support and integration are often more important than the actual integration or support received by individuals in determining outcomes such as mental health and well-being. Consequently, perceptions of friendships and support at university are an important but thus far overlooked aspect of social integration.

Second, the current study extended on the previous two studies by continuing Study 2's aim of uncovering the reasons for working-class students being less integrated at university. This aim involved testing some mediating and moderating variables between social class and social integration. I then also investigated whether any of these mediators between social class and social integration serially mediate social class and mental health via social integration. The current study investigated three potential types of explanatory variables between social class and social integration: academic disengagement, interpersonal similarities, age, and time and money. O. Evans and Rubin (under review) recently explored these factors and I draw from this work below.

Academic Disengagement

One of the potential reasons why working-class students are less likely to socially integrate at university is that they may be less integrated into the academic side of university. Research has found that working-class students have lower academic engagement at university

(Soria & Stebleton, 2012). This includes working-class students attending fewer lectures and

tutorials, contributing less during class, and handing in assignments later or not at all.

Hausmann, Schofield, and Woods (2007) found that academic engagement is an important part

of developing students' social integration at university. They concluded that how well a student

adjusts to the academic side of university is associated with how well students engage with the

social side of university. Additionally, if students are less invested in their studies at university,

they are unlikely to branch out and make new friends and attend social activities at university

(Trowler & Trowler, 2010). Because working-class students are less likely to be academically

engaged, and academic disengagement is important for social integration, I hypothesised that the

relationship between social class and social integration would be partially explained by

working-class students being less academically engaged.

Interpersonal Similarity

As Rubin (2012) noted, interpersonal similarity is a predictor of social engagement and

friendship in general (for a meta-analysis, see Montoya, Horton, & Kirchner, 2008) as well as in

student populations (Mayer & Puller, 2008). Consequently, it is likely that aspects of

interpersonal similarity play a role in the relationship between social class and social integration

at university. As discussed previously, working-class students are atypical at university, because

university is generally attended by students from middle and upper-class backgrounds.

Historically, university was only available to the upper echelons of society, or those who could

afford to go (Gale & Tranter, 2011). This blatant classism in higher education changed some

time ago, and university education has since been opened and promoted for all (Gale & Parker,

2013). Nonetheless, the notion that university belongs to the upper classes remains (Langhout et

al., 2013). However, this general sense that university is not for working-class people is more

than just a perception, because university student populations by and large underrepresent

working-class people (Archer, Hutchings, & Ross, 2005). Thus there exists both the perception

and reality that working-class students are different from their peers. I theorised that this

interpersonal dissimilarity would be one of the reasons why working-class students are not as

socially integrated at university.

First, I tested general perceptions of similarity. That is, I hypothesised that working-class

students would feel less similar to other students, and that this general perception of

interpersonal dissimilarity would help to explain the relationship between social class and social

integration. Note that similarity may be seen as being a part of social integration. However, I

propose that it is a separate concept, because similarity precedes social integration by providing

the foundation on which social integration can be built (Rubin, 2012). Additionally, it is possible

to feel similar with other people and not be integrated with them, or conversely feel dissimilar

from people and be integrated with them. Consequently, I treat perceptions of similarity as being

separate from social integration within this study.

Second, I tested perceptions of the wealth and status of other students. Students are more

likely to strike up friendships and interact with students of a similar socioeconomic background

(Mayer & Puller, 2008). As outlined earlier, working-class students at univeristy are generally

outnumbered by higher class students, meaning they are more likely to feel other students are

higher in economic and social status than them. Therefore, working-class students may be less

integrated at university because they perceive other students as being wealthier and having more

status than them. I hypothesised that social class would be negatively associated with

perceptions of wealth of other students, and that this association would at least partially explain

the relationship between social class and social integration.

Third, I tested whether differences in motivations for attending university explained the relationship between social class and social integration. Prior research has shown that there is a cultural mismatch in working-class students' motivations for attending university (Stephens, Fryberg, Markus, Johnson, & Covarrubias, 2012). First generation (typically working-class) students are more likely to attend university based on interdependent motives (e.g., for the benefit of their family and community). These interdependent motives are incongruent with the more independent culture that is promulgated by universities and endorsed by continuing generation (typically middle-class and above) students, who attend university based on independent motives (e.g., for personal improvement and expansion). These differences in motivation have been found to predict academic achievement (Stephens et al., 2012). However, I hypothesised that these motivation differences would also affect social integration because they represent interpersonal differences between working-class and middle-class students. Hence, I hypothesised that working-class students would have more interdependent than independent motivations for attending university, and that this difference would mediate the relationship between social class and social integration.

Finally, I tested whether students' status uncertainty plays a role in the relationship between social class and social integration. Destin, Rheinschmidt-Same, and Richeson (2017) proposed that working-class students are in a state of status flux during their time at university, as they attempt to reconcile their working-class background with the middle-class university environment. Thus, status uncertainty is yet another result of cultural-mismatch between the working-class student and the university environment. Destin et al. (2017) hypothesised that increased status uncertainty, triggered by this cultural mismatch, would have numerous ramifications for working-class students including increasing feelings of "otherness" and thus

hindering their social integration at university. Consequently, I hypothesised that working-class students would be more uncertain of their status and that this difference would mediate the relationship between social class and social integration.

Age, Time and Money

In this study I also aimed to replicate Rubin and Wright's (2015, 2017) findings that age, time commitments and availability of time and money explain the relationship between social class and social integration. Like Rubin and Wright, I hypothesised that working-class students would be older, have less time and money to spend on university social activities, and that they would spend less time on campus, live further away from the campus resulting in a longer commute time, and spend more time working and minding children. I predicted that age and each of these time and money restraints would explain the relationship between social class and social integration.

Moderation Analyses

As outlined in the pre-registration for this study, I also expected that time and money for socialising, interpersonal similarity and academic disengagement would moderate the relationship between social class and social integration. These moderation hypotheses were based on the idea that having less barriers to social integration is especially beneficial for working-class students, who are the most disadvantaged in terms of social integration. Specifically, I hypothesised that the positive relationship between social class and social integration would become weaker as time and money availability increased. Similarly, I expected that having more independent motivations would moderate the relationship such that the relationship between social class and social integration is weaker for students who are more independently motivated. Finally, I hypothesised that the positive relationship between social

class and social integration would be weaker for students who are less uncertain about their status, and who view other students as being more similar to them in general and in terms of wealth and status.

Aims and Hypotheses

In this study, I used cross-sectional data from a university student sample to replicate and extend the previous two studies in this thesis. First, I aimed to provide further evidence that social integration mediates and moderates the relationship between the social class and mental health of university students. However, I combined a number of additional measures not used in the previous studies to create a more sensitive and nuanced measure of social integration. Second, I tested some potential mediators and moderators of social class and social integration including variables relating to academic disengagement and interpersonal similarity. Finally, I aimed to replicate the Rubin and Wright's (2015, 2017) findings that age, time, and money mediate the relationship between social class and social integration. The methodology and analyses for this study were preregistered on the Open Science Framework. A copy of this pre-registration can be found at: http://osf.io/45npd.

<div align="center">

Method

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Participants

Participants were recruited from the same large regional Australian university in New South Wales as in Study 1. The sample consisted of 362 undergraduate students who were enrolled in psychology courses and were awarded 1% course credit for completing the survey. Thirty-nine participants did not give informed consent for their data to be included in the analyses, and so their data were excluded. Two participants completed the survey twice and their second attempt was removed. Hence, the final number of participants was 321.

There was a marked gender imbalance in the sample, which is typical of psychology student samples. Only 20% of the sample were men (254 females, 64 males, 3 "other"). The mean age of participants was 23.69 years ($SD = 7.58$). The sample included 274 white, 9 Aboriginal and Torres Strait Islander, 6 African, and 15 Asian participants. An additional 14 participants reported their ethnicity as "other". Because white participants made up 85% of the sample, ethnicity was dichotomised into white and not-white. Most participants were first-year students ($n = 235$), with 33 second-year students, 39 third-year students, 9 fourth-year students, and 5 fifth-year or higher students.

Procedure and Measures

The study consisted of an online self-report survey titled "Experiences and Feelings at University." All items were randomised within scales. All scales were randomised within the survey with the exception of social class, demographic, social identification and status uncertainty questions, which were presented in a consistent order at the end of the survey. The survey design was pre-registered on the Open Science Framework. A copy of the full survey is available at: https://bit.ly/2FABoKS.

Social class. Following previous research in this area (e.g., Rubin et al., 2016; Rubin & Kelly, 2015) and the measures used in Study 1, I used the following measures of social class: parental education, parental occupation, childhood wealth, self-reported social class identity, and subjective social status. The wording and responses to these items remained the same from the approaches used in Study 1, with the exception of the subjective social status item. The response scale for the subjective social status item was changed from an 11-point response scale to a sliding scale between one and 100. See Chapter 3 for a full explanation of each of these social class measures and their response scales.

Social integration. To measure social integration, I used a range of pre-existing measures that assess social behaviour at university, social connections and friendship at university, feelings and perceptions of social support from other university students, and loneliness. Unless stated otherwise, participants responded by rating their agreement with statements on a 7-point scale ranging from *strongly disagree* (1) to *strongly agree* (7).

University network size and contact were measured using the same seven items as in Study 1 and Rubin et al. (2016). An additional item was added asking participants to indicate the number of hours in an average week that they spent socializing with other university students (*0* to *100* hours). As per Study 1, these items were standardised and averaged to form an index of university network size and contact ($\alpha = .88$).

Three items were adapted from the 2011 Australian Survey of Social Attitudes (A. Evans, 2010) to measure participants' general feelings of trust in other students and general feelings of support from other students. Participants responded to the following statements: "I feel that most students at uni can be trusted," "I feel that most students at uni would try to take advantage," and "I have no one at uni to lean on in times of trouble." These items had unacceptably low internal reliability ($\alpha = .52$) and so were treated separately.

The same three items from Study 1 were used to measure participants' satisfaction with their friendships at university and closeness to their university friends during the past seven days (Rubin et al., 2016). These items had good internal reliability ($\alpha = .87$) and were averaged to form an index of relationship satisfaction.

A modified version of the 24-item Social Provisions Scale (Cutrona & Russell, 1987) was used to measure participants' general perceptions of attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance in their social

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interactions at university. The scale included 12 positively worded items (e.g.,"there are people at uni I know will help me if I really need it") and 12 negatively worded items (e.g., "other people at uni do not think I am good at what I do"). This scale can be divided into six sub-scales, but for the purposes of this research I only considered the scale as a whole. These items had excellent internal reliability ($\alpha = .96$) and were averaged to form an index of social provisions.

A modified version of the 4-item Friend subscale from the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988) was used to measure participants' general perceptions of the support received from their university friends. Items from this scale included "I can count on my uni friends when things go wrong," and "I can talk about my problems with my uni friends." These items had excellent internal reliability ($\alpha = .94$) and were averaged to form an index of perceived social support.

The 5-item Friendship subscale from the Student-Institution Fit survey (Bowman & Denson, 2014) was included to assess participants' general perceptions about the reliability and functionality of their friendships with other students at university. Items from this scale include "I have a supportive group of friends at this uni," and "I have friends at this uni who I hang out with on a regular basis." Again, these items had excellent internal reliability ($\alpha = .94$) and were averaged to form an index of university friendship.

Inclusion[2] was measured using six items focused on respect from other students and university staff, inclusiveness of the curriculum and self-comfort on campus (Zimitat, 2003). Items in this scale included "teachers, tutors, and other uni staff treat me with respect," and "I

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[2] Inclusion was originally included in this study as a potential mediator variable of social class and social integration. Because of (a) this variable's strong correlation with the other social integration variables (average $r = .41$), (b) it loading onto a single factor with the other social integration items, and (c) the

am able to 'see' myself reflected in some of the examples used in the course notes, cases, and materials selected by teachers." These items also had acceptable internal reliability ($\alpha = .70$) and were averaged to form an index of perceptions of inclusion.

Finally, as in Study 1, the 20-item Revised UCLA Loneliness Scale (Russell et al., 1980) was included to gauge participants' loneliness and social isolation over the past week. This scale was coded such that higher scores indicated less loneliness. These items had excellent internal reliability ($\alpha = .96$) and were averaged to form an index of loneliness.

Academic disengagement. Academic disengagement was measured using the 4-item Academic Disengagement subscale from the Student-Institution Fit survey (Bowman & Denson, 2014). This subscale assessed how disengaged students were from their studies and academic duties. Participants responded how often they had engaged in a number of activities (e.g., not completing coursework on time, falling asleep in class) on a 5-point scale from *never* (1) to *all the time* (5).

Interpersonal similarity. I included two ad hoc items to assess perceptions of general student similarity: "the students at uni are quite different from me" (reverse scored) and "I am quite similar to other students at uni."

Perceptions of wealth and status of other students were measured using the 4-item Wealth/Materialism subscale from the Student-Institution Fit survey (Bowman & Denson, 2014). The internal reliability for this scale was well below the standard threshold level of .70 ($\alpha = .50$), but it improved substantially ($\alpha = .67$) if the reverse-scored item "most students are working-class" was removed. Consequently, I removed this item and only included the four

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items being closely related to belonging, which was included as a social integration variable in Study 1, I decided to include it as a social integration variable instead.

positively-worded items of this scale. Retained items included "most students at uni are from high socioeconomic backgrounds," and "most students at uni place a high value on material possessions."

Students' motivations for attending university were measured using an adapted version of the 12-item Motivations for Attending College scale (Stephens et al., 2012). Six items assessed interdependent reasons for attending university (e.g., family or community based motivations; "I am at university so I will be able to help my family out after I am finished"), and six items assessed independent reasons for attending university (e.g., self-improvement and career advancement; "I am at university to expand my understanding of the world"). The mean of the independent motivation items ($\alpha = .86$) was subtracted from the mean of the interdependent motivation items ($\alpha = .80$) to obtain a score that indicated how much more interdependent motivation than independent motivation each participant possessed.

I used the 12-item Status-Based Identity Uncertainty scale (Destin et al., 2017) to measure people's uncertainty about their own social standing and identity. The scale includes 10 negatively worded items (e.g., "my beliefs about where I stand in society seem to change frequently"), and 2 positively worded items (e.g., "In general I have a clear sense of where I stand in society"). The status uncertainty items had an acceptable internal reliability of .82.

Time and money. I included 11 items that assessed time and financial availability for socialising (based on Rubin & Wright, 2017). Seven items assessed participants' perceptions of the time and money that they had available to socialise with other university students. The time items included two positively worded items (e.g., "I have plenty of time to meet other students while I am at university") and one negatively worded item ("I do not have the time to socialise with other students from uni"). Money items included two positively worded items (e.g., "it

does not cost me a lot of money to socialise at uni") and two negatively worded items (e.g., "I can't afford to spend money on social activities at uni"). An additional four items assessed the number of hours during an average week that participants spent working for pay, looking after children, being on campus, and travelling to campus. Participants responded to these four items with a number of hours between *0* and *100*.

Mental health. The 21-item short form Depression, Anxiety and Stress Subscales (DASS; Lovibond & Lovibond, 2004) and 5-item Satisfaction with Life Scale (SWLS; Diener et al., 1985) used in Study 1 were again used to measure mental health and well-being. A description of these scales can be found in Chapter 3. Consistent with the analytical approach used in Study 1, the DASS was analysed holistically as an aggregate measure of mental health rather than being broken down into its subscales.[3]

Results

Power Analysis

I conducted a power analysis on the Study 3 data, using the current sample size and the effect size of social class and social integration ($r = .15$) that has been found in previous research (Rubin et al., 2016; Rubin & Wright, 2015, 2017). This power analysis revealed that the sample for Study 3 had a power of .77 to detect an effect of this size using a two-tailed correlation test

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[3] As outlined in the pre-registration for this study, I also included a measure of how much the participants identify with their social class, using a measure adapted by Rubin and Stuart (2017) from Leach et al.'s (2008) measure of in-group identification. This included three subscales with two items each. The subscales included perceived self-class similarity, importance of identity, and salience of identity. The items that formed each of these scales did not have acceptable split-half reliability. I conducted moderation analyses to test the hypotheses that the relationship between social class and mental health will become weaker as social class in-group ties and social class in-group similarity increase, and that the relationship between social class and mental health will become stronger as importance of social class identification similarity increases. These moderation tests did not yield any significant results as separate items or combined into scales, and will not be discussed in this chapter.

with an alpha of level of .05. This power level is only marginally lower than the recommended power for a study like this (.80; Cohen, 1988) and the power I stated I was aiming to achieve in the pre-registration for this study.

Exploratory Factor Analysis

As outlined in the pre-registration for this study, I conducted exploratory principal axis factor analyses on the social class and social integration items in order to investigate the factor structure of these variables. The same analytical approach outlined in previous chapters was used again. There were no missing data for any of these items.

Social class. The following factors were standardised and entered into a factor analysis to determine the structure of social class variables in this dataset: mother and father's education, occupation and social class, participants' own self-identified social class, childhood wealth, and subjective social status. Both the Kaiser-Meyer-Olkin measure of sampling adequacy (.79) and Bartlett's test of sphericity ($X^2 = 1,167.42$, $df = 36$, $p < .001$) were acceptable. Two factors had an eigenvalue greater than one (4.08, 1.20) and these values were greater than the eigenvalues of the first two factors of a Monte Carlo simulation (nine variables, 321 cases, 100 replications; 1.27, 1.67). However, Cattell's scree plot provided evidence for a one factor solution. Because of the scree plot, and to maintain consistency with my previous studies, I investigated the possibility of a one factor solution.

I used a promax rotation to extract one factor, which accounted for 45.33% of the variance and had an eigenvalue of 4.08. Most social class items loaded on this factor above the standard .40 cut-off point (.46 to .83). The exception was mother's education level, which had a loading of .36. A Cronbach's alpha analysis demonstrated excellent internal reliability ($\alpha = .84$) that only changed marginally when removing mother's education ($\alpha = .85$). Hence, I retained

mother's education and averaged all items to form a single aggregate social class variable.

Social integration. The following factors were standardised and entered into a factor analysis to determine the structure of social integration variables in this dataset: social contact, relationship satisfaction, perceptions of social support, perceived friend support, loneliness, friendship, someone to lean on, the positively and negatively worded trust items, and inclusion. Both the Kaiser-Meyer-Olkin measure of sampling adequacy (.91) and Bartlett's test of sphericity ($X^2 = 2,640.17$, $df = 45$, $p < .001$) were acceptable. A principal axis factor analysis on the standardised social integration measures identified two factors that had an eigenvalue greater than one. A follow up scree plot indicated only one factor. However, two factors in the real data set (5.75, 1.37) had eigenvalues larger than the first two eigenvalues in the simulated data set (1.26, 1.17). Again, because of the scree plot, and to maintain consistency with my previous studies, I investigated the possibility of a one factor solution.

Hence, I extracted one factor using a promax rotation. All social integration items loaded on the single factor above the .40 cut-off (.54 to .96) except for the two items relating to trust in other university students. The positively worded trust item loaded onto the factor at .37, and the negatively worded trust items loaded onto the factor at .25. A Cronbach's alpha analysis demonstrated excellent internal reliability ($\alpha = .90$) that changed to .91 when removing the positively worded trust item and .92 when removing the negatively worded trust item. Based on the factor loadings, I decided to include the positively worded trust item in the factor and drop the negatively worded item from further analysis.

Descriptives

Table 5.1 provides the means, standard deviations, minimum and maximum values, and Cronbach alpha values for the key variables. Table 5.2 provides the zero order correlation

coefficients for these same variables.

As predicted, social class was significantly positively correlated with social integration and satisfaction with life and negatively correlated with the DASS. Also as predicted, social class was significantly positively correlated with time and money to socialise and time spent on campus as well as significantly negatively related with age, and time spent minding children. However, contrary to predictions, there was no significant relationship between social class and academic disengagement, motivations for attending university, similarity with other students, perceptions of the wealth of other students, or time spent working or commuting to campus.

Table 5.1
Descriptive statistics

Measure	*M*	*SD*	Min	Max	α
Social class[†]	0.00	0.65	-2.02	1.73	.84
Social integration[†]	0.00	.78	-2.06	1.66	.90
DASS	14.92	12.50	0.00	63.00	.96
SWLS	4.30	1.51	1.00	7.00	.92
Academic disengagement	1.71	0.52	1.00	4.25	.62
Student similarity	4.10	1.28	1.00	7.00	.79
Perceptions of wealth	3.70	1.01	1.00	6.67	.67
Interdependent vs independent	-1.08	1.19	-4.67	2.00	-
Status uncertainty	3.66	0.86	1.58	6.00	.82
Age	23.68	7.58	18.00	61.00	-
Time to socialise	4.20	1.36	1.00	7.00	.77
Money to socialise	4.46	1.28	1.00	7.00	.80
Time on campus	18.53	19.62	0.00	100.00	-
Time commuting	3.23	2.45	0.00	10.00	-
Time working	14.62	14.26	0.00	100.00	-
Time childcare	8.74	23.84	0.00	100.00	-

Note. † indicates variables that have been standardised. "Interdependent vs independent" = interdependent vs independent motivations.

Table 5.2
Zero order correlation coefficients

Measure	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Social class	-														
2. Social integration	.20**	-													
3. DASS	-.20**	-.32**	-												
4. SWLS	.18**	.39**	-.61**	-											
5. Disengaged	-.09	-.04	.22**	-.13*	-										
6. Similarity	.11	.43**	-.20**	.18*	-.05	-									
7. Wealth.	-.04	-.08	.10	.06	.05	-.17**	-								
8. Motivation	-.10	-.14*	.14*	-.05	.04	-.17**	.12*	-							
9. Status uncertainty	.00	-.05	.27**	-.18*	.11*	-.13**	.11	.09	-						
10. Age	-.20**	-.18**	-.11*	-.00	-.09	-.27**	-.11	.08	-.05	-					
11. Time	.21**	.38**	-.10	.20**	-.03	.18*	-.05	-.16*	.03	-.30**	-				
12. Money	.23**	.15**	-.22**	.25**	-.16*	.06	-.24**	-.21**	-.12*	.03	.24**	-			
13. Time on campus	.16**	.19**	-.09	.03	-.02	.05	.05	.03	.01	-.15*	.14**	-.14*	-		
14. Time commuting	-.05	.00	.05	.02	.03	-.07	-.01	.05	.04	.04	-.03	-.01	-.11	-	
15. Time working	-.03	-.12*	.13*	-.09	.18**	.04	.03	.07	-.04	-.05	-.25**	-.01	-.21**	.03	-
16. Time on childcare	-.19*	-.11*	.00	.01	-.14*	-.14*	-.07	.29**	-.03	.54**	-.25**	-.07	-.10	.05	-.11**

Note. N = 321 for all correlations reported above except for correlations involving Age where N = 307. * indicates p < .05, ** indicates p < .01 (two tailed). "Disengaged" = Academic disengagement, "Wealth" = perceptions of wealth of other students, "Motivations" = interdependent vs independent motivations.

Consistent with predictions, social integration was significantly positively related to satisfaction with life, similarity to other students, money and time to socialise, and time spent on campus. Also as expected, social integration was significantly negatively related to the DASS, interdependent vs. independent motivations, time spent working and minding children, and age. However, contrary to predictions, social integration was not significantly related to academic disengagement, perceptions of other students' wealth, and time spent to campus.

The correlation between social integration and general perceptions of similarity support my earlier explanation that the two variables are conceptually close. However, this correlation is not so high as to suggest that they are the same construct. Consequently, I continued with my planned analyses, treating social integration and similarity as separate concepts.

Mediation Analyses

Social integration as a mediator between social class and mental health. In line with the pre-registered analyses for this study, I first tested the simple mediation model underpinning the premise of this research: that social integration mediates the relationship between social class and mental health. To test this model I used PROCESS Model 4, inputting social class as the predictor variable, social integration as the mediator variable, and DASS and SWLS separately as the outcome variables.

Consistent with predictions, social integration mediated the relationship between social class and both the DASS and the SWLS. For the model including DASS as the outcome, the total effect was significant, $b = -3.86$, $SE = 1.05$, $p < .001$, 95% CI (-5.92, -1.79), the direct effect was significant, $b = -2.75$, $SE = 1.02$, $p = .008$, 95% CI (-4.77, -0.73), and the indirect effect was significant, $b = -1.11$, $SE = 0.38$, 95% CI (-1.93, -0.45). For the model including the SWLS as the outcome, the total effect was significant, $b = 0.41$, $SE = 0.13$, $p = .001$, 95% CI

(0.16, 0.66), the direct effect was not significant, $b = 0.24$, $SE = 0.12$, $p = .049$, 95% CI (0.00, 0.48), and the indirect effect was significant, $b = 0.17$, $SE = 0.05$, 95% CI (0.05, 0.18). The CSIEs were -.06 for DASS and .07 for the SWLS, indicating small to medium mediating effects of social integration (Kenny, 2014).

As in Chapter 3, I tested these two significant mediation models in reverse to explore the possibility of an alternative model in which mental health variables predict social integration. For the same reasoning as mentioned in previous studies, I only reversed the order of social integration and the DASS and SWLS for these tests because it does not make theoretical sense to include social class as a mediator or outcome of these relationships. I have included these reversed order mediations to provide more information to the reader, however it should be noted that reversed mediations using cross-sectional data do not necessarily provide additional evidence about the causal direction of mediation relationships. Thus, unlike in Study 1 where the reversed mediation was conducted using longitudinal data, in this cross-sectional study comparing either the indirect effects or p values of the reversed mediation model with the primary mediation model is insufficient to provide evidence for one model over the other (Lemmer & Gollwitzer, 2017; Thoemmes, 2015). Nonetheless, I report these analyses for the interest of the reader.

Each of the reversed models tested were significant, with DASS mediating the relationship between social class and social integration, and the SWLS also mediating the relationship between social class and social integration. Social integration (CSIE = -0.06) was similar in effect size to the DASS (CSIE = 0.06), indicating that relations between the variables may work in both directions. This finding was the same for the SWLS (CSIE = 0.07) which had the same effect size as social integration (CSIE = 0.07) again indicating a bi-directional

relationship.

Although I cannot reach strong conclusions about the causal directions from this cross-sectional dataset, I can be reasonably certain that social integration mediates the relationship between social class and the DASS because Study 1 provides longitudinal evidence of the causal pathways in the hypothesised direction but not the alternative reversed direction.

Mediators of social class and social integration. In order to test my hypotheses relating to mediators of social class and social integration, as outlined in the pre-registration I tested each of the potential mediator variables in a parallel mediation model with social class as the predictor variable and social integration as the outcome variable. Because PROCESS limits the number of mediators in a single model to 10, I excluded variables that were not correlated with both social class and social integration. This approach also limited the potential for Type I errors (Yzberyt, Muller, Batailler, & Judd, 2018). Consequently, academic disengagement, perceptions of other students' wealth, status uncertainty, and time spent travelling to campus were not included in the analyses. I used Hayes' (2018) PROCESS Model 4 with 5,000 iterations to obtain bias-corrected and accelerated bootstrap 95% confidence intervals to test these mediation models. The results from a parallel mediation including all potential mediators can be seen in Table 5.3.

For the model including all mediators, the total effect of social class was significant and the direct effect was not significant. The indirect effect was only significant for time to socialise, and time spent on campus. The indirect effect was not significant for perceived student similarity, interdependent vs independent motivations, age, money to socialise, and time spent working or looking after children. The completely standardised indirect effects for time to socialise and time spent on campus were .05 and .02 respectively. Hence, the observed indirect

effects were small-to-medium in size (Kenny, 2014).

This general pattern of significant results remained the same when these variables were tested in separate models, with the exception of age. Although age was not a significant mediator when including the other variables, it was a significant mediator in the relationship between social class and social integration in a separate mediation analysis. For the model with only age as the mediator, the total effect was significant, $b = 0.25$, $SE = 0.07$, $p < .001$, 95% CI (0.11, 0.39), the direct effect was significant, $b = 0.22$, $SE = 0.07$, $p = .002$, 95% CI (0.08, 0.35), and the indirect effect was significant, $b = 0.03$, $SE = 0.02$, 95% CI (0.01, 0.07). This pattern of results suggests that the effect of age in the relationship between social class and social integration is accounted for by time to socialise and spent on campus.

Table 5.3
Mediators of the relationship between social class and social integration

Variables	Effect type	*b* (*SE*)	*95% CIs*	*t*	*p*	*CSIES*
	Total	0.25 (0.07)	0.11, 0.39	3.62	<.001	
	Direct	0.11 (0.06)	-0.02, 0.23	1.72	.086	
Student similarity	Indirect	0.05 (0.03)	-0.00, 0.10	-	-	.04
Motivation	Indirect	0.00 (0.01)	-0.01, 0.02	-	-	.00
Age	Indirect	-0.01 (0.02)	-0.04, 0.02	-	-	-.01
Time to socialise	Indirect	0.06 (0.02)	0.02, 0.11	-	-	.05
Money to socialise	Indirect	0.02 (0.02)	-0.02, 0.05	-	-	.01
Time on campus	Indirect	0.03 (0.01)	0.01, 0.05	-	-	.02
Time working	Indirect	0.00 (0.01)	-0.01, 0.01	-	-	.00
Time on childcare	Indirect	-0.00 (0.01)	-0.03, 0.20	-	-	-.00

Note. All Models have Dfs of 1, 319. *SE* = standard error. 95% CIs = the upper and lower 95% confidence intervals; SEs and CIs for indirect effects are bootstrapped. If CIs are both positive or both negative, then the indirect effect is significant at $p < .05$.

Rubin and Wright (2017) found that age precedes both time spent on campus and time available to socialise in mediating the relationship between social class and social integration. Based on these previous findings, and the present results in which the effect of age is confounded by the time variables, I decided to test Rubin and Wright's model in an exploratory analysis. I used PROCESS Model 81 to test the indirect effect of social class on social integration via age and then time to socialise and time spent on campus in parallel.

The results from this model can be seen in Figure 5.1. The total effect of social class was significant, $b = 0.25$, $SE = .07$, $p < .001$ 95% CI (0.11, 0.39), and the direct effect of social class on social integration was significant, $b = 0.14$, $SE = 0.07$, $p = .034$ 95% CI (0.18, 0.12). Additionally, the parallel serial indirect effect was significant for age through time to socialise, $b = 0.02$, $SE = 0.01$, 95% CI (0.01, 0.04), and time spent on campus, $b = 0.00$, $SE = 0.00$, 95% CI (0.00, 0.01). In support of Rubin and Wright's (2017) findings, these results indicate a significant parallel serial mediation effect in which age, then time to socialise and time spent on campus mediate the relationship between social class and social integration.

Thus, my predictions were generally supported; time to socialise and time spent on campus mediated the relationship between social class and social integration separately and in parallel. Additionally, my hypotheses relating to student similarity, interdependent vs independent motivations, money to socialise, and time spent working, or looking after children were not supported either in parallel or separate mediations. The exploratory results also supported Rubin and Wright's (2017) findings that age serially mediates the relationship between social class, time, and social integration. However, it should be noted that the effect for time spent on campus is quite small.
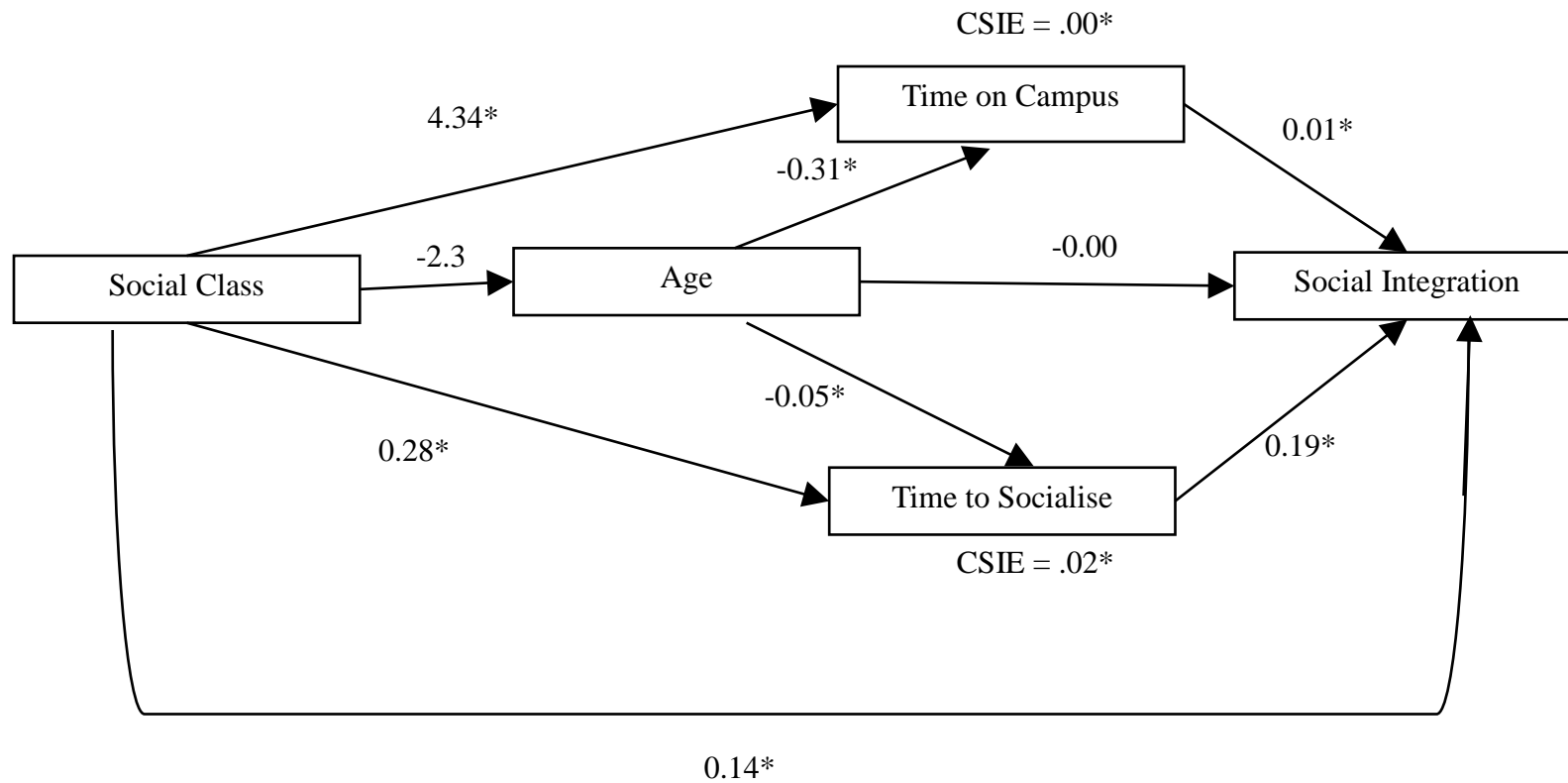
Figure 5.1. Parallel serial mediation model of age mediating the mediation of time spent on campus and time to socialise in the relationship between social class and social integration.
Note: * indicates p < .05, CSIE = completely standardised indirect effect

Serial mediations with mental health. I also conducted non-preregistered analyses

extend the serial mediation model including age, and time to socialise and time spent on campus

mediating the relationship between social class and mental health. I used PROCESS Model 6 to

test the indirect effect of social class on mental health via the parallel mediator variables of age

followed by time to socialise, and time spent on campus and the single mediator variable of

social integration. Because PROCESS does not include a model with parallel mediators and

more than one additional mediator, I tested separate models for each of the time variables.

Time to socialise. The results from the model with DASS as the outcome and age, time

to socialise, and social integration as the serial mediators indicated a significant serial mediation.

The total effect of social class was significant, $b = -3.62$, $SE = 1.06$, $p = .001$ 95% CI (-5.72, -

1.53), and the direct effect of social class on DASS was significant, $b = -3.08$, $SE = 1.03$, p

$= .003$ 95% CI (-5.11, -1.05). Additionally, the total serial indirect effect was significant, $b = -$

0.12, $SE = 0.05$, 95% CI (-0.24, -0.04). These results indicate that social class is negatively

related to age, which in turn negatively predicts time to socialise, which in turn negatively

predicts social integration, which then negatively predicts mental health problems.

The results from the model with SWLS as the outcome and age, time to socialise, and

social integration as the serial mediators indicated a significant serial mediation. The total effect

of social class was significant, $b = 0.43$, $SE = 0.13$, $p = .002$ 95% CI (0.16, 0.70), and the direct

effect of social class on SWLS was significant, $b = 0.27$, $SE = 0.13$, $p = .034$ 95% CI (0.02,

0.53). Additionally, the total serial indirect effect was significant, $b = 0.02$, $SE = 0.01$, 95% CI

(0.00, 0.03). These results indicate that social class is negatively related to age, which in turn

negatively predicts time to socialise, which in turn negatively predicts social integration, which

then positively predicts satisfaction with life.

Time spent on campus. The results from the model with DASS as the outcome and age, time spent on campus, and social integration as the serial mediators indicated a significant serial mediation. The total effect of social class was significant, $b = -3.62$, $SE = 1.06$, $p = .001$ 95% CI (-5.72, -1.53), and the direct effect of social class on DASS was significant, $b = -3.00$, $SE = 1.03$, $p = .004$ 95% CI (-5.04, -0.96). Additionally, the total serial indirect effect was significant, $b = -0.02$, $SE = 0.01$, 95% CI (-0.05, -0.01). These results indicate that social class is negatively related to age, which in turn negatively predicts time spent on campus, which in turn negatively predicts social integration, which then negatively predicts mental health problems.

The results from the model with SWLS as the outcome and age, time spent on campus, and social integration as the serial mediators indicated a significant serial mediation. The total effect of social class was significant, $b = 0.43$, $SE = 0.13$, $p = .002$, 95% CI (0.16, 0.70), and the direct effect of social class on SWLS was significant, $b = 0.30$, $SE = 0.13$, $p = .021$, 95% CI (0.05, 0.56). Additionally, the total serial indirect effect was significant, $b = 0.00$, $SE = 0.00$, 95% CI (0.00, 0.01). These results indicate that social class is negatively related to age, which in turn negatively predicts time to socialise, which in turn negatively predicts social integration, which then positively predicts satisfaction with life.

Thus, the present study provided tentative evidence that Rubin and Wright's (2017) findings of age and then time to socialise and time spent on campus mediating the relationship between social class and social integration extends to mental health. This relationship is such that working-class students are more likely to be older, which in turns means they are more likely to have less time to socialise and spend less time on campus, which in turn predicts their lower social integration, which in turn predicts their poorer mental health.

Moderation Analyses

       Social integration as a moderator of the relationship between social class and mental health. I used PROCESS Model 1 to conduct the pre-registered test of the hypotheses relating to the moderating effect of social integration on the relation between social class and mental health. Social class was entered as the predictor variable, social integration was entered as the moderator variable, and DASS and the SWLS were entered separately as outcome variables.

       There was no significant moderation effect of social integration for DASS (b = -0.29 SE = 1.31 t (317) = -0.22, p = .824) or the SWLS (b = 0.12 SE = 0.16 t (317) = 0.75, p = .456). These results demonstrate that the size of the effect of social class on mental health did not change as a function of social integration. This pattern of results is not consistent with my proposal that social integration buffers the relation between social class and mental health.

       Moderators of social class and social integration. As outlined in the pre-registration, I also used PROCESS Model 1 to test time and money for socialising, perceptions of other students' wealth and status, academic disengagement, motivations for attending university, student similarity, and status uncertainty as moderators of social class and social integration. Most of the results from these moderation analyses were not significant, with the exception of student similarity. There was a significant interaction between social class and perceptions of student similarity in predicting social integration b = 0.10, SE = .05, t(317) = - 1.13, p = .027, 95% CI (0.01, 0.19). To probe this interaction effect, I examined the conditional effects of social class on social integration at mean, high, and low levels of student similarity. Note that high levels are the mean plus one standard deviation and low levels are the mean minus one standard deviation. The negative relationship between social class and social integration was not

significant when student similarity was at the low level, $b = 0.09$, $SE = 0.07$, $t(317) = 1.17$, p

$= .244$, 95% CI (-0.06, 0.23), but was significant at the mean level, $b = 0.19$, $SE = 0.06$, $t(317) =$

3.15, $p = .002$, 95% CI (0.07, 0.30), and at the high level, $b = 0.34$, $SE = 0.09$, $t(317) = .3.73$, p

$< .001$, 95% CI (0.16, 0.52). Hence, students perceiving themselves to be more similar to other

students was associated with a stronger positive relationship between social class and social

integration, which is the opposite of what I predicted. This finding suggests that feeling some

degree of similarity with other students is a prerequisite for the relationship between social class

and social integration to emerge. A visual representation of this moderation effect can be seen in
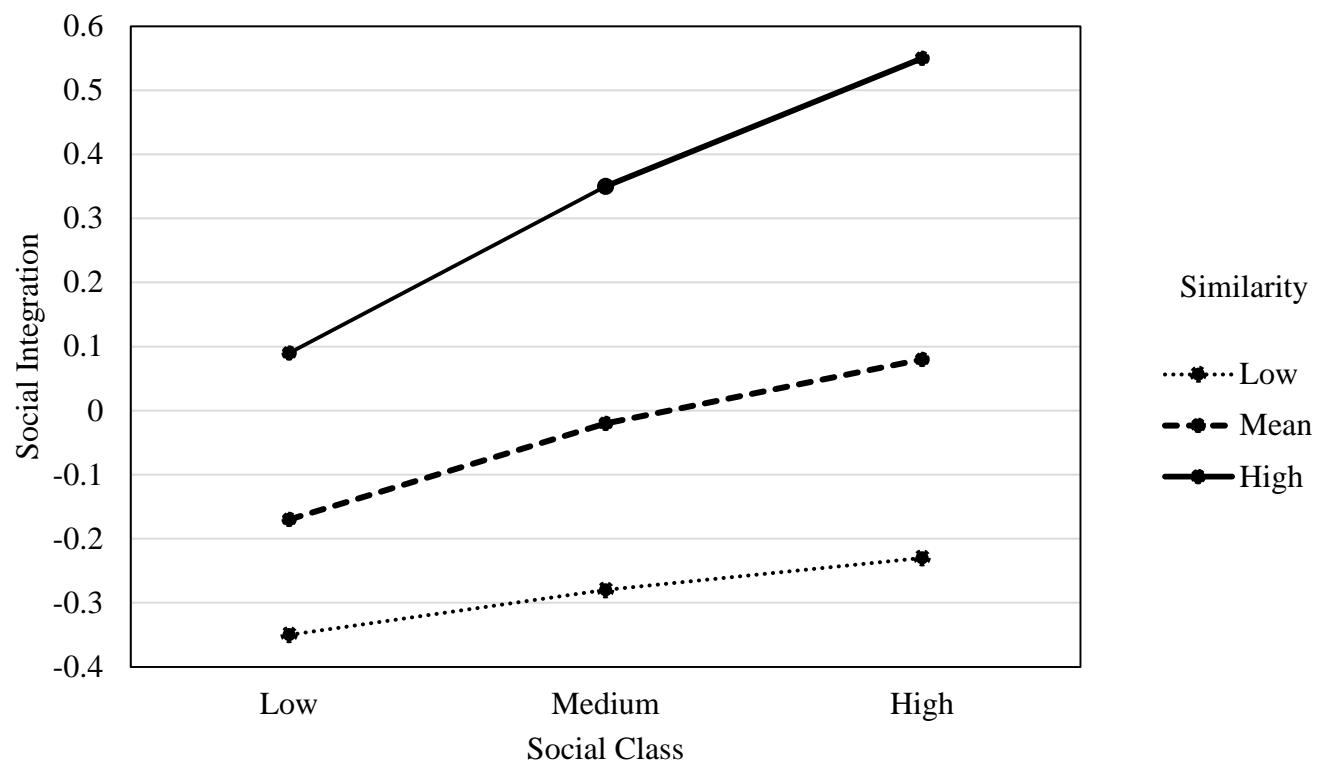
Figure 5.2.

Figure 5.2 The relationship between social class and social integration as a function of student similarity

Sensitivity Analyses

All analyses reported above were conducted with outliers and without control variables. The inclusion or exclusion of (a) univariate outliers) and (b) control variables (gender and ethnicity) in the tests did not alter the pattern of significant results reported above with one notable exception. Time spent on campus was not a significant separate, parallel or serial mediator when outliers were excluded. Time spent on campus was also unacceptably skewed and not normally distributed (Skewness = 3.04, Kurtosis = 9.67). After log10 transforming this variable it was no longer a significant mediator separately, in parallel or in serial, with or without outliers. Consequently, the significant results related to time spent on campus may be attributable to anomalies in the data and should be interpreted with caution.

Like in Study 1, I also re-ran the key analyses reported above using the subscales of the DASS as the outcome variables. Social integration was a significant mediator of the relationship between social class and each separate subscale of the DASS. I also re-ran the key mediation analyses reported above using the different measures of social integration rather than the aggregate social integration variable. From these analyses, all variables included in the aggregate social integration item were significant mediators between social class and the DASS with the singular exception of trust in others. Additionally, all variables included in the aggregate social integration variable were significant mediators when satisfaction with life was the outcome with the exception of trust, and network size and diversity.

Discussion

Consistent with Study 1, Study 3 provides further evidence that social integration mediates the relationship between social class and mental health in university students. Although the present study is cross-sectional and uses many of the same measures of social class and

mental health as Study 1, the present study has the advantage of using a more comprehensive

measure of social integration that included the extra components of trust, friendship, and social

support. Additionally, extending from Study 1, the present study tested some potential mediators

between social class and social integration and whether they serially mediate this relationship.

Consistent with predictions, time to socialise consistently mediated this relationship. Contrary to

predictions, money, time spent on various activities, academic disengagement, and interpersonal

similarity did not mediate this relationship. Moreover, the exploratory serial mediations further

suggested that this might be due to working-class students being older than middle-class

students. Thus, the current study replicates some of the findings of Rubin and Wright (2017) that

working-class students who are older in turn report having less time to socialise and are then

less socially integrated. The present study also expanded on this model by demonstrating that

this series of relationships statistically explain some of the relation between social class and

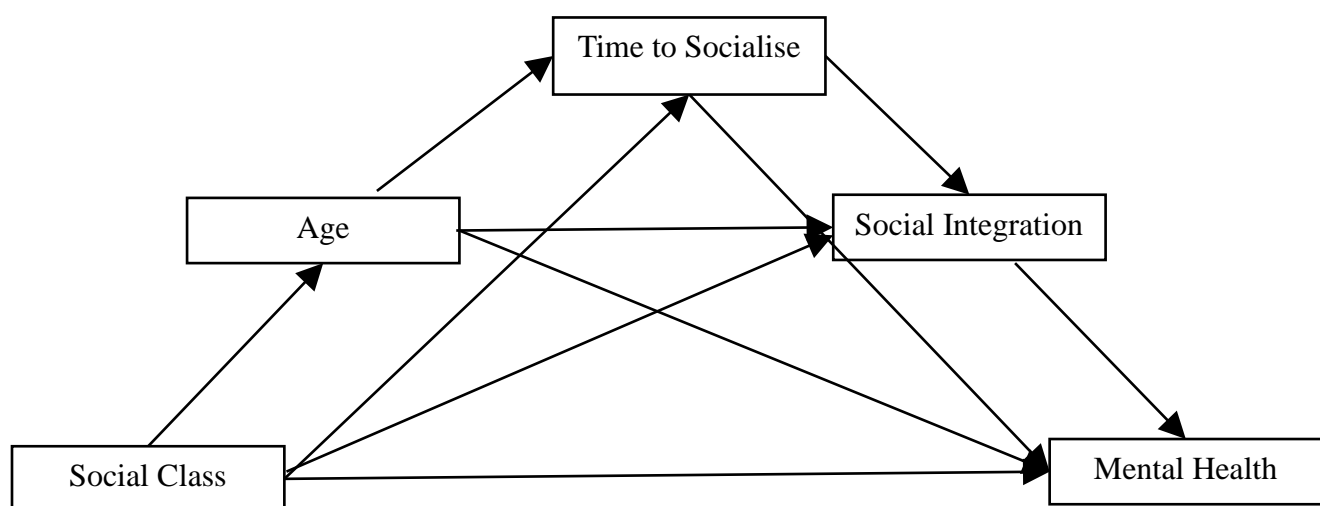mental health. A visual representation of these relationships can be seen in Figure 5.3.

Figure 5.3. Visual representation of the serial mediation model of age then time to socialise then
social integration mediating the relationship between social class and mental health.

Finally, the present study also tested academic disengagement, interpersonal similarity variables, and time and money as moderators of the relationship between social class and social integration. Inconsistent with predictions, most of these variables did not moderate the relationship between social class and social integration. The singular exception was perceptions of similarity, however this interaction was in the opposite direction to what was expected. The findings suggested that the significant positive relationship between social class and social integration only emerges when perceptions of similarity are high rather than low. I discuss this unexpected finding later in this section.

Social Class, Social Integration, and Mental Health

In comparison to Studies 1 and 2, the present study incorporated a greater number of variables in its conceptualisation of social integration. These variables loaded onto a single factor and had high internal reliability, indicating that each of these separate concepts of social integration are highly related and cohesive. Additionally, as explained in the Sensitivity Analysis section, each of these additional variables, excluding trust, independently mediated the relationship between social class and mental health. Thus, the present study demonstrates the generalizability of the mediating effect of social integration across multiple domains. Overall, in terms of the central research question of this thesis, this study provides more evidence for social integration as an explanatory variable for the relation between social class and mental health. Although the present study is cross-sectional and the sample was taken from one university, I can be fairly confident of the causal pathways and generalizability of the findings of the present study given Study 1's longitudinal findings and Study 2's national sample.

The present study did not find that social integration moderated the relationship between social class and mental health. This is inconsistent with the findings of Study 1, in which social

integration moderated the relationship between social class and the DASS, although it should be

noted that the conditional effects in Study 1 were only marginally significant. Thus, the present

study is not consistent with the idea that social integration at university buffers the relation

between social class and mental health. However, my consistent mediation findings suggest that

social integration is a potential site of intervention for improving social class differences in

mental health.

Mediators and Moderators of the Relation between Social Class and Social Integration

In addition to replicating the central mediation model from Study 1, Study 3 expanded

on previous research by investigating some potential mediators and moderators between social

class and social integration. The most notable mediation finding is the replication of Rubin and

Wright's (2017) finding that age and then time available to socialise help to explain the

relationship in serial mediation models. Additionally, time spent on campus somewhat explained

the relationship between social class and social integration; however, this effect was not as

robust and should be interpreted with caution. Study 3 also failed to replicate any of the other

findings of Rubin and Wright (2017). That is, although age and time to socialise formed a

significant serial mediation pathway, none of the other time measures or the measure of money

availability mediated the relationship. The present study also failed to find evidence for several

other potential mediators of social class and social integration. Specifically, in the present study

there was no significant relationship between social class and (a) academic disengagement, (b)

perceptions of student similarity, (c) perceived wealth of other students, and (d) motivations for

attending university. Thus, Study 2 replicates the findings of Rubin and Wright (2017) that age

and time to socialise mediate the relationship between social class and social integration and

fails to provide evidence for some of the other theorised reasons for working-class students' lack

of integration.

Study 3 expands on the findings of Rubin and Wright's (2017) by demonstrating the flow on effects of working-class students being older and time poor. More specifically, the present study suggests that working-class students being older, having less time to socialise, and being less socially integrated as a result partially explains their poorer mental health and well-being. However, based on the findings in Study 2, in which the relationship between social class and social integration persisted in a sample of the same age, I can be fairly certain that age is not the only explanation for why working-class students are less integrated and have poorer mental health. Hence, research should continue to investigate other pathways that are unrelated to age and that may explain the relationship between social class and social integration.

One surprising finding of the present study was the moderating role of student similarity on the relationship between social class and social integration. Although I was expecting student similarity to moderate this relationship, I was expecting that the relationship would become weaker as student similarity increased. In other words, I expected that students feeling similar to other students would reduce social class based differences in social integration. Instead, the results demonstrate the opposite effect, in which the relationship between social class and social integration becomes more pronounced as student similarity increases.

Although unexpected, these student similarity results may be indicative of the general importance of student identity for social integration at university. Previous research has demonstrated that student identification is an important factor in student experiences (Jetten et al., 2008). The current study's findings support this; in general, students who perceive they are not similar to other university students (i.e., that they are not prototypical group members) are less likely to socially integrate. However, the results also suggest that when students do feel

some similarity with other students, and do see themselves as one of the in-group, then the extent to which they are prototypical of the group in the relevant dimensions (i.e., their social class) influences how much they integrate and feel included within the group. In other words, when working-class students feel similar to other students, their social class holds them back from socially integrating into the student in-group. Thus, the present study may be demonstrating that student similarity is a necessity for social integration at university, but simply feeling similar to other students is not enough to overcome the other difficulties working-class students have when integrating at university. However, because these findings were unexpected and there were only two items measuring student similarity, this interpretation is only tentative and further research is needed. In particular, future research should investigate student identification and prototypically and their intersection with social class as potential moderators of social integration at university.

Limitations and Future Research

In terms of the causal directions of the variables in the present study, I can be relatively confident about the causal direction between social class, and social integration and mental health due to the generally slow changing nature of social class within individuals. That is, social class is much more likely to cause changes in social integration and mental health than the other way around. Additionally, as mentioned previously, I can be fairly certain of the causal directions of these relationships given the congruent longitudinal findings from Study 1. Nonetheless, longitudinal research is needed to demonstrate the causal direction of the mediational effects of age and time to socialise.

An additional limitation is the underrepresentation of men in this sample. However, Rubin's (2012) meta-analysis found no gender differences in the relationship between social

class and social integration, and Study 2 also found no gender differences despite sampling approximately equal numbers of men and women. Consequently, I can be reasonably certain that the findings of Study 3 are not exclusively applicable to female students.

One further limitation of Study 3 is that the study's sample was limited to students from one university in Australia. As suggested by Rubin et al. (2016), to test the generalisability of these findings, future research should test these relationships at different universities, across different years of study, in other countries, and in different institutional contexts. As mentioned in Study 1, the university that these participants attend has an unusually large cohort of low SES students. In 2014, the University of Newcastle had roughly double the national average. In particular, the University of Newcastle had roughly 29% low SES students compared to 14% at the University of Sydney (National Centre for Student Equity in Higher Education, 2014). From Study 2 I can be relatively certain that the relationship between social class and social integration is consistent across universities. However I cannot be certain that the reason for this relationship is consistent across universities. Thus, although most of the mediators tested in the present study did not significantly mediate the relationship between social class and social integration in this sample, they may mediate the relationship at universities with more prestige and/or a lower representation of low SES students.

Future research should continue to explore the relationship between social class, social integration, and mental health to determine what can be done to improve the experiences of working-class students at university. For example, Rubin (2012) suggested that perceived minority group status may explain the relationship between social class and social integration. Study 2's finding of the pervasiveness of this relationship across multiple institutions suggests that working-class students are generally less integrated regardless of the representation of low

SES students. However, future research should look beyond numerical representation and investigate whether social class identity, and in particular being part of a minority group like the working class, mediates the relationship. Research should also investigate student identity as a mediator given that Iyer, Jetten, Tsivrikos, Postmes, & Haslam (2009) found that working-class students are less likely to identify as a student or see their class and student identities as being compatible, which may explain their lower social integration.

Summary of Studies 1, 2 & 3

Overall, the first three studies of my thesis provided three separate demonstrations that working-class students are socially disadvantaged at university, with Studies 1 and 3 providing evidence of the impact this is having on their mental health. The size of the relationship between social class and social integration varies slightly between Studies 1 ($r = .30$), 2 ($r = .10$), and 3 ($r = .20$), with all studies indicating a small positive correlation size on average. These findings are particularly notable given the current higher education climate in Australia in which policies outline that higher education should be made accessible and of equal benefit to all Australians (Gale & Tranter, 2011). In line with this change, many Australian universities are slowly increasing the number of working-class students in their student population (Parker, 2016). Because of this change, there is a need for a comprehensive and nuanced understanding of working-class students at university. One particular issue is their mental health, which has repeatedly been shown to be much worse than that of middle-class students (Said et al., 2013; Rubin et al., 2016). Studies 1-3 of this thesis investigated one possible explanation for the relationship between student social class and mental health: social integration.

Prior research has already linked social class, social integration and mental health at university, finding that low SES psychology students' higher levels of depression were predicted

by a lack of social integration (Rubin et al., 2016; Rubin & Kelly, 2015). However, Studies 1-3 in this thesis expand on this research in several important ways by (a) using a fully longitudinal design to test the relationships over time, (b) using a large nationally representative sample, (c) exploring moderators and mediators of the relationship between social class and social integration, and (d) using more comprehensive measures of all three key variables.

Consequently, Studies 1-3 in my thesis provide a comprehensive and multifaceted understanding of working-class students and how their integration at university influences their mental health and experience of tertiary education. From this research, I can be relatively certain that this is a causal effect in which social class affects social integration which in turn affects mental health. I have also demonstrated that it is a remarkably invariant effect that is present across all universities in Australia and does not change as a function of living situation or type of institution. Finally, my third study provided further evidence that working-class students' lack of social integration is attributable to their unique circumstances, in particular their older age and lack of free time. The next three chapters in my thesis discuss research on social class, social integration and mental health within the general population.

CHAPTER 6

FOCUSING ON THE GENERAL POPULATION: INVESTIGATING THE ROLE OF SOCIAL

INTEGRATION IN THE RELATIONSHIP BETWEEN SOCIAL CLASS AND MENTAL

HEALTH IN A LARGE NATIONAL SAMPLE

The three previous chapters demonstrated that, within university student populations, social integration mediates the relationship between social class and mental health. More specifically, Chapters 3 and 5 demonstrated that working-class university students are less likely to integrate socially at university, and that low levels of social integration and lower social class are both related to poorer mental health in university students. Furthermore, Chapter 4 provided evidence for the generalisability of working-class students being less socially integrated. However, the overall focus of this thesis is about the relationships between social class, social integration, and mental health in general. My initial focus on university students was useful because it provided a specific context for integration and had a pre-existing evidence-base for applying this research approach to these relationships. However, it is not certain whether this lack of integration I have demonstrated thus far is university specific or indicative of a chronic lack of integration in working-class populations in society at large. More specifically, I cannot be certain whether my results were due to the participants being working-class university students, or just being working-class people. Moreover, the primary aim of this thesis is to investigate the relationship between social class, social integration and mental health in the Australian population, which cannot be achieved by studying only university students. To address these issues, the next three studies investigate these relationships in the general Australian population.

As discussed in Chapter 1, in Australia, like in many developed countries, there is a

general belief that social class and its influence are fading with time. However research

consistently demonstrates this is not the case. Australian research has demonstrated that there

are marked differences in terms of wealth, status, and social capital between the classes, with

roughly 24% of Australian's falling into the working-class category and 25% into the upper-

class category (Sheppard & Biddle, 2017). Moreover, research consistently demonstrates that

Australians' social class plays a large part in our day-to-day life including where we live, where

we go to school, what careers we end up in, and our hobbies and interests (Kemp, 1978;

Sheppard & Biddle, 2017). Importantly, in Australia, there are consistent social class disparities

in mental health such that working-class people on average have poorer mental health than

people in the upper-classes (Australian Institute of Health and Welfare, 2016). Consequently, it

is important to understand what is causing this mental health gradient. In this thesis, I have

proposed and discussed research on the potential explanatory role of social integration in this

relationship. However, of the 10 papers discussed in Chapter 2, only one investigated the

relationship between mental health and social class in an Australian population (Phongsavan et

al., 2006), and this research investigated social class as a moderator of social integration and

mental health. Thus, to date there is no research investigating the role of social integration and

mental health in the relationship between social class and mental health in Australia.

Returning to my initial explanations in Chapter 2, there are already some studies

addressing the role that social integration plays in the relationship between social class and

mental health. However, each of these studies have made conflicting conclusions about the role

that social integration plays in the relationship between social class and mental health. In terms

of my central mediation hypothesis, there are five studies that demonstrate that social integration

mediates the relationship between social class and mental health, although they all reach

different conclusions about the magnitude of this effect (Gecková et al., 2003; Lundberg, 1991; Stansfeld et al., 1998; Stansfeld et al., 2002; Turner & Marino, 1994). Turner and Marino (1994) in particular concluded that, because social support only accounted for a nominal portion of the relationship between social class and mental health, researchers should look elsewhere for explanations of this relationship. Moreover, Gecková et al. (2003) and Huure et al. (2007) found no evidence that social support mediated the relationship between social class and mental health. Thus, from the research as it currently stands there is no consensus as to whether social integration has a role in the relationship between social class and mental health.

However, as discussed in Chapter 2, each of these studies have various statistical and methodological weaknesses, which I believe explain their inconsistent findings. In particular, they all use limited measures of mental health, social integration, social class, or all three. Additionally, they take a dichotomous logistic regression approach when social class, social integration, and mental health would be better represented as continuous variables (DeCoster et al., 2009; MacCallum et al., 2002; Maxwell & Delaney, 1993; McClelland, 2003). Each of the studies reached different conclusions about the strength and significance of social integration as a mediator of social class and social integration. However all of these conclusions are not as informative as they could be, given that the measures were limited and the statistical approach loses much of the individual nuance from the data. Consequently, Chapters 6, 7 and 8 of my thesis contain studies that take the same statistical and methodological approach used in Chapters 3, 4 and 5, and applies it to studies of the general Australian population. This thesis is the first research to use this more informative and rigorous methodological and statistical techniques to address the question of whether social class mediates the relationship between social class and mental health. Using these improved approaches, I expected to find more

consistent and robust mediation effects for social integration.

The Present Study

Like the previous research discussed in Chapter 2, the present study investigated the role of social integration in the relationship between social class and mental health, with some key differences. First, this study used multiple measures of social class and social integration. As discussed in Chapters 1 and 2, and demonstrated in Chapters 3, 4, and 5, social class and social integration are both best conceptualised with multiple measures to capture their complexity (Diemer et al., 2012; Kraus & Stephens, 2012; Saegert et al., 2006; Turner & Turner, 2013). Secondly, the present study takes a continuous, regression-based approach to investigating the relationships between variables. Again, as I have discussed and demonstrated previously, this approach is more suitable to the present research because it is more sensitive to individual differences and increases the strength of the analysis (e.g., DeCoster et al., 2009; MacCallum et al., 2002; Maxwell & Delaney, 1993; McClelland, 2003). Consequently, the current study takes a multifaceted regression based approach to investigate my central hypothesis.

The present study also investigates the moderating role of social integration between social class and mental health. Thus, like in Studies 1 and 3, I tested whether social integration acts as a protective factor for the effects of social class on the mental health. More specifically, I sought to determine whether the relationship between social class and mental health becomes weaker as social integration increases. As mentioned in Chapter 1, social support has been found to be an effective buffer against the effects of stressful situations on mental health (for reviews see Cohen, 2004; Cohen & Wills, 1985). Thus, like in previous chapters, I proposed that social integration in general would act as a moderator of the relationship between social class and social integration in the general population.

General Social Survey

In a similar approach to the studies discussed in Chapter 2, the present study uses archival data from a large national survey program. In particular, the present study uses data from the Australian Bureau of Statistics' 2010 General Social Survey, which collects data from Australian adults across a range of social variables. Consequently, the present study has the advantage of a large and representative sample size ($N = 15,028$), meaning I can be fairly certain of the generalisability of the findings to the Australian population.

However, because the present study uses archival data there are the same limitations as found in the literature discussed in Chapter 2. Specifically, social class, social integration and mental health are all measured by ad-hoc items that do not come from validated psychometric scales. Fortunately, there were multiple measures related to social class and social integration which could be combined together (pending a factor analysis) to form more complex and nuanced measures. On the other hand, the survey only contained a single measure related to mental health, which asks about respondents' life satisfaction. Thus, although social class and social integration were somewhat adequately represented in the present study, mental health was not.

Finally, the present study was pre-registered in the interest of open science practices. The pre-registration of this study is located on the Open Science Framework at: https://osf.io/tegcd/. The study was registered before I commenced analysis on the data to avoid hypothesising after the results are known, and to make a clear distinction between exploratory and confirmatory analyses. Overall, this study used archival data from a nationally representative Australian sample to conduct a preregistered research protocol to provide comprehensive, regression-based evidence that the relationship between social class and mental health is mediated and moderated

by social integration in Australia's general population.

Method

Participants

  This study used data from the 2010 Australian General Social Survey (GSS). The GSS is a cross-sectional survey run every four years by the Australian Bureau of Statistics. The survey is designed to collect data from an array of Australians over the age of 18 on a range of social dimensions, including demographics, education, employment, family and community involvement, crime and feelings of safety, social networks and participation, health, disability, and well-being. Sampling for the GSS was designed to provide representative national and state level samples of the population. Sampling for the GSS entailed dividing Australia into sampling areas based on a number of geographic, demographic and social characteristics and randomly sampling from these areas based on population density. The Australian Bureau of Statistics used results of previous GSS's to ensure an adequate representation of people experiencing disadvantage was obtained in their sampling procedure. This approach included mapping out specific sampling areas, marking particular areas of disadvantage and oversampling these populations to ensure adequate representation. Private dwellings within each of the areas were randomly selected to participate in the survey. In total, 17,158 applicable households were initially contacted to participate, with a final total of 15,028 dwellings responding to the survey.

  GSS sampling was conducted by dwelling, because many of the items pertain to the house itself or the combination of all persons within the household. However, one person from each dwelling elected to complete the survey and thus items about individual characteristics, circumstances etc., pertain only to them. For the purposes of this study, I have elected to consider the individual rather than the household, thus the total sample size for this study is

15,028. Because of this large sample size, I decreased the alpha level of all analyses to .01. Based on a sensitivity analysis, even with this reduced alpha I was able to detect effect sizes as small as 0.04.

Females comprised 53.8% of the sample, with males making up the other 46.2%. Relative to the Australian population, the sample adequately represented the proportion of males (49.3%) and females (50.7%; ABS, 2016). Participants ranged in age from 18 to 85 and over. Age was recorded in grouped intervals, with 2.17% of participants being 18-19 years old, 6.47% 20-24 year olds, 8.58% 25-29 year olds, 8.90% 30-34 year olds, 9.73% 35-39 year olds, 9.24% 40-44 year olds, 8.89% 45-49 year olds, 8.18% 50-59 year olds, 7.93% 60-64 year olds, 8.28% 60-64 year olds, 6.67% 65-69 year olds, 5.36% 70-74 year olds, 4.05% 75-79 year olds, 3.35% 80-84 year olds and 2.21% being 85 years and over.

Procedure

Data for the 2010 GSS was collected using face-to-face interviews with a computer-assisted interviewing questionnaire. Individual participants were randomly selected from each of the randomly selected dwellings once the basic information about all household members was obtained. The GSS contained approximately 800 individual variables covering numerous topics, including health, income, occupation, access to transport, and living situation. For the purposes of brevity, only the variables and measures that are directly related to the current research project will be discussed in depth. The variables of interest for this study include age, gender, married status, social class, social integration, and mental health. The preparation of this data and the analysis for this study was pre-registered on the Open Science Framework. The pre-registration for this project can be found at: https://osf.io/tegcd/.

Measures

      Social class. The GSS included nine variables related to social class and socioeconomic status. Unlike my previous studies, all of these variables were objective indicators because there were no subjective indicators of social class included in the survey. Although the lack of subjective indicators of social class represents a departure from the approach taken in the other studies in my thesis, objective indicators alone are commonly used in social class research (Diemer et al., 2013). The variables related to social class and socioeconomic status in this dataset consisted of: consumer debt, dissaving actions (spending more than they earn), education, occupation, number of bedrooms, financial stressors, occupation status, difficulty paying bills, and personal gross weekly income. In comparison to my previous studies, these measures referred to the education, occupation, and income of the participants themselves rather than their parents. This approach is more suitable in the present study because this sample represented the general public rather than university students in which the typical approach for university students is to use parent social class as a proxy for student social class.

      Highest level of education included the following categories: *year 8 or below including never attended school, year 9, year 10, year 11, year 12, certificate not further defined, certificate I/II, certification III/IV, advanced diploma/diploma, bachelor degree,* and *postgraduate degree, graduate diploma/graduate certificate.*

      Occupation was recorded and coded using the Australian and New Zealand Standard Classification of Occupations (ANZSCO; Trewin, Trewin, & Pink, 2006). Numerical scores on the ANZSCO categorise people according to the field, role, and level of an individual's job. ANZSCO scores were converted into a continuous scale of occupational prestige, known as the Australian Socioeconomic Index of Occupational Prestige (AUSEI06). AUSEI06 scores are

based on analyses of national data on educational level and income of different professions, and they rank individual occupation categories from ANZSCO based on these factors (Trewin et al., 2006).

A number of measures of income and economic situation were included in the GSS. These included questions that asked participants to report their personal and household income, which were both then converted into 10 deciles. Participants were also asked to indicate whether or not they had experienced a number of different financial stressors in the last 12 months from a list of nine specific problems, including not being able to pay bills or rent on time, pawning belongings from a need for cash, and going without food. The number of problems participants indicated having was then summed to form a total number of financial stressors. Participants were also asked to indicate whether they had consumer debt and the total value of any consumer debt that they had. Responses were then recorded on a scale from 0 to 4, with 0 being *no consumer debt*, 1 being *less than $5,000*, 2 being *$5,000 - $9,999*, 3 being *$10,000 - $49,999, and 4 being *$50,000 or more*. Participants were asked to indicate whether or not they had enacted a number of dissaving actions in the last 12 months from a list of nine specific problems, including reducing home loan repayments, taking out a personal loan, and increasing the balance owing on a credit card. The number of actions participants indicated having taken was then summed to form a total number of dissaving actions. Lastly, participants were asked to indicate the number of times they had experienced difficulty paying bills in the last 12 months. Responses to this item were recorded on a scale ranging from 0 to 6, with 0 being *no troubles*, 1 being *once*, 2 being *twice*, 3 being *3 – 5 times*, 4 being *6 – 9 times*, 5 being *10 – 19 times*, and 6 being *20 times or more in the last 12 months*.

Participants were also asked to indicate the number of bedrooms in their dwelling, as an

indication of house size. House size is a common indicator of socioeconomic status (Lahelma, Laaksonen, Martikainen, Rahkonen, Sarlio-Lähteenkorva, 2006). Responses to this item were recorded on a scale from 1-5 with 1 being *bedsitter/one bedroom* through to 5 being *five or more bedrooms*.

Life satisfaction. A single item measuring life satisfaction was used as a measure of well-being. There were no other measures related to mental health in this dataset. This single item asked participants "How do you feel about your life as a whole, taking into account what has happened in the last year and what you expect to happen in the future?". Participants responded on a 7 point scale from *delighted* (1) to *terrible* (7).

Social integration. The GSS included a number of different measures relating to social support. These measures included: the number of organisations/institutions where the participant personally knows someone they can contact for help and advice, the frequency with which participants contacted friends and family, the number of family members and friends participants had to confide in, how much the participant feels they can have a say with family and friends and the community, the level of trust they have in other people, and their ability to ask for and receive small favours from others[4]. Additional measures including, the number of different people participants can turn to in times of crisis and the number of different social activities participants engaged in were included as well**.** I discuss each of these variables in turn.

Participants were asked to select from a list the institutions/organisations in which they personally knew someone who they could turn to for help and advice. This list included state or

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[4] The number of friends of the same age and ethnicity as the participant was included as social support/integration items in the pre-registration of this study. This was a mistake because these items are measures of social network composition rather than quality or quantity of support or integration. Consequently, these items were not included in the analyses.

territory government departments, federal government departments, local council, the legal

system, healthcare, trade unions, political parties, media, University/TAFE/Business College,

religious/spiritual groups, school related groups, big business, and small business. The number

of options selected was summed to form a count of the participants' institutional and

organisational support.

Participants were also asked a number of questions about their face-to-face and non-

face-to-face contact with friends and family members who they do not live with. This included

asking participants whether they had seen family or friends who they did not live with within the

last three months, the last month, the last week or whether they saw them everyday. The same

kinds of questions were asked for mobile and landline phone calls, email and chatrooms, text

messages, mail and fax, and other unspecified types of contact. Face-to-face and other contact

with family and friends was reported as a frequency of contact from *no recent contact* (5), to *at*

least once in three months (4), to *at least once a month* (3), to *at least once a week* (2), to

everyday (1). Participants were also given the option to respond that they did not have any

family or friends. Because having no friends or family at all is fundamentally different to not

having any contact with family and friends, responses of "no family or friends" were coded as

missing data. Responses of "no family or friends" comprised less than .05% of the data, with

only 35 of this type of response in total.

The number of confidantes a participant had was measured using two items. The first

item asked about the number of family members who they did not live with that the participant

felt they could confide in. The second item asked participants the number of friends who they

felt they could confide in. Participants responded to both questions with either *none* (0), *1-2* (1),

3-4 (2), or *5 or more* (3).

The level of inclusion participants felt in their friend and family groups and the wider community was measured using two items. The first asked participants how often they felt they were able to have a say with their family or friends on issues that are important to them. The second asked participants how often they felt they were able to have a say in the general community on issues that are important to them. Both responses scales asked participants to select an option on a 5 point scale from *all of the time* (5) through to *none of the time* (1).

The ability for participants to ask for small favours was measured using a single dichotomous variable. Participants responded either *yes* (1) or *no* (0) to the question "if you needed to, could you ask someone who does not live with for help with these type of things". "These type of things" referred to a prompt card which participants were shown listing a number of types of scenarios, including taking care of pets and children, borrowing equipment, collecting mail, or helping when the participant is sick of injured. The number of items participants responded *yes* to was summed to form a count of the participants' number of small favours.

Participants level of social trust was measured using a single item. Participants were asked to respond to the question "how strongly do you agree or disagree with the following statement: that most people can be trusted" on a 5 point scale from *strongly agree* (5) to *strongly disagree* (1).

To measure the number of different kinds of people and organisations participants could turn to in a time of crisis, participants were presented with a list of examples of crisis situations and a range of different potential sources of support. The examples of crises, included advice, emotional support, help with family or work responsibilities, and emergency money, accommodation or food. Participants then indicated which of the following sources they would

be able to receive support for these kind of crises from including friends, neighbours, family

members, work colleagues, community/charity/religious organisations, local council or

government services, health/legal/financial professionals, and "other". The number of options

selected was summed to form a count of the participants' number of available crisis supporters.

Lastly, participants were asked whether they had participated in a range of social

activities over the past three months, including visiting or being visited by a friends, going out

or meeting a group of friends for indoor activities and outdoor activities, spending time on the

internet socially, and other informal social activities. The number of options selected was

summed to form a count of the social activity of participants in the last three months.

Results

Exploratory Factor Analysis

I conducted exploratory factor analyses on the social class and social support items in

order to investigate the factor structure of these variables. All items were standardised before

analysis. In all cases, principal axis factor analysis was used with missing cases being deleted

listwise. All social class and social integration items had less than 10% of data missing. No

action was taken to address missing data because items with missing data did not comprise

>50% of the items used to form the aggregate scores (Graham, 2009).

Social class. The following factors were entered into a factor analysis to determine the

structure of social class variables in this dataset: highest education levels, occupation status,

personal income, household income, financial stressors, consumer debt, dissaving actions,

difficulty in paying bills, and number of bedrooms. Both the Kaiser-Meyer-Olkin measure of

sampling adequacy (.60), and Bartlett's test of sphericity ($X^2 = 15,133.18$, $df = 28$, $p < .001$)

were acceptable. An eigenvalue analysis, scree plot, and Monte Carlo simulation (eight

variables, 2,500 cases, 100 replications) all provided evidence for a three factor solution.

Thus a factor analysis was re-run extracting 3 factors using a promax rotation. The resulting factor structure had two items with very poor loadings, number of bedrooms (.12) and consumer debt (-.19). Research indicates that consumer debt (largely from credit cards) is a characteristic of the middle class (Hodson, Dwyer, & Neilson, 2014). When the analysis was run again excluding consumer debt, number of bedrooms continued to load onto its own factor. Number of bedrooms alone would be a weak indicator of social class. Given these poor loadings, and that the remaining factors were uninterpretable, these items were removed from the analysis and the factor analysis was re-run.

In this new analysis, the Kaiser-Meyer-Olkin measure of sampling adequacy (.59), and Bartlett's test of sphericity ($X^2 = 14,648.15$, $df = 15$, $p < .001$) were again acceptable. This time, the eigenvalues, scree plot, and Monte Carlo simulation (six variables, 2,500 cases[5], 100 replications) suggested a two factor solution.

A factor analysis was re-run extracting two factors using the promax rotation method. The two factor solution explained 66.65% of the variance. The promax rotation identified four items that loaded onto the first factor, and two items that loaded onto the second factor above the standard .40 cut-off. The first factor contained the items personal income (.76), household income (.74), occupation (.53), and education (.48). Given that income, education, and occupation are the traditional markers of social class (e.g., Rubin & Wright, 2015), I labelled this factor social class. The second factor contained the items dissaving actions (.91) and financial stress (.89). These variables describe participants' financial state, and thus I labelled it

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[5] NB the number of cases in a Monte Carlo simulation should reflect the number of participants. In this instance the number of participants exceeded the maximum number of cases that could be entered

financial strain. A Cronbach's and split half reliability analysis respectively confirmed that items

in both social class (.71) and financial strain (.85) had acceptable internal reliability.

     Social integration. An exploratory factor analysis was conducted on all the items

pertaining to social integration, including organisational support, contact with family and

friends, friend confidantes, family confidantes, inclusion in community, inclusion with family

and friends, small favours, social trust, crisis support, and social activity. The Kaiser-Meyer-

Olkin measure of sampling adequacy (.81), and Bartlett's test of sphericity ($X^2 = 19,912.01$ $df =$

45, $p < .001$) were both adequate. The computed eigenvalues and scree plot, and a Monte Carlo

simulation (10 variables, 2,500 cases, 100 replications) all pointed towards a one factor solution.

Hence, I used a promax rotation to extract one factor, which accounted for 29.29% of the

variance and had an eigenvalue of 2.93. Most items had factor loadings greater than the standard

cut-off of .40, except for trust (.29), small favours (.37), and contact with family and friends

(.35). However, a Cronbach's alpha analysis demonstrated an acceptable internal consistency

between the items (.72) and this did not improve if any of these three items were removed. Thus,

I averaged all ten items together to form a global measure of social integration.

Descriptives

     Table 6.1 provides the means, standard deviations, minimum and maximum values,

Cronbach alpha values, and zero-order correlation coefficients for the key variables.

     All variables showed the expected direction of relationships with one another. Social

class and financial strain were both significantly positively related to social integration, and life

satisfaction. However, the correlation coefficient between social integration and social class

(.42) was much higher than that for social integration and financial strain (.06). Life satisfaction

was also significantly positively related to social integration. Thus, lower social class was

associated with lower life satisfaction and social integration. Additionally, lower life satisfaction was associated with lower social integration.

Table 6.*1*
Descriptive statistics

Measure	*M*	*SD*	Min	Max	α	1	2	3
1. Social Class[†]	-0.07	0.79	-1.79	1.69	.72	-		
2. Financial Strain[†]	0.00	0.83	-3.49	0.61	.85	.07**	-	
3. Life Satisfaction	5.08	0.89	1.00	7.00	-	.22**	.21**	-
4. Social Integration[+]	0.17	1.00	-1.84	1.89	.72	.41**	.06**	.35**

Note. † indicates variables that have been standardised. $**p < .01$

Mediation Analyses

I used PROCESS Model 4 to test mediation models in which social class and financial strain separately were the predictor variables, social integration was the mediator variable, and life satisfaction was the outcome variable. The confidence level for all of these tests was 99%.

In the first model, social integration was the mediator between social class and life satisfaction. The total effect of social class was significant, $b = 0.35$, $SE = .01$, $p = <.001$, 99% CI (0.31, 0.38), the direct effect was significant, $b = 0.14$, $SE = .01$, $p = <.001$, 99% CI (0.11, 0.18), and the indirect effect was significant, $b = 0.21$, $SE = 0.01$, 99% CI (0.19, 0.22). The completely standardised indirect effect was .13, indicating a medium effect of social integration (Kenny, 2014).

In the second model, social integration was the mediator between financial strain and life satisfaction. In this case, the total effect of social class was significant, $b = 0.29$, $SE = 0.01$, $p =$

<.001, 99% CI (0.26, 0.32), the direct effect was significant, $b = 0.26$, $SE = 0.01$, $p = < .001$, 99% CI (0.24, 0.29), and the indirect effect was significant, $b = 0.03$, $SE = 0.00$, 99% CI (0.02, 0.04). The completely standardised indirect effect was .02, indicating a small effect of social integration (Kenny, 2014)

Both of these models indicate that the relation between social class/financial strain and life satisfaction was mediated by social integration: higher social class/financial strain was associated with greater levels of integration, which was associated with higher satisfaction with life. However it should be noted the effect of social integration was larger for social class (0.13) than financial strain (0.02).

Reverse models. As in the previous studies, I tested the two significant mediation models in reverse to explore the possibility of an alternative reversed causal direction. For the same reasoning as mentioned in previous studies, I only reversed the order of social integration and life satisfaction for these tests because it does not make theoretical sense to include social class as a mediator or outcome of these relationships. Also, as stated in Chapter 5, the utility of these reversed mediations is questionable given that comparing either the indirect effects or p values of the reversed mediation models with the primary mediation models using cross-sectional data is insufficient to provide evidence for one model over the other (Lemmer & Gollwitzer, 2017; Thoemmes, 2015). Nonetheless, I again report these analyses for the interest of the reader.

Each of the reversed models tested were significant, with life satisfaction mediating the relationship between social class and social integration, and life satisfaction also mediating the relationship between financial strains and social integration. Social integration (0.13) was a stronger mediator than life satisfaction (0.06) when social class was the independent variable.

Indicating that relations between the variables may work in both directions but that social integration may have a stronger influence. Life satisfaction (0.08) was a stronger mediator than social integration (0.02) when financial strain was the independent variable. These results indicate that relations between the variables may work in both directions, but that social integration may have a stronger influence for social class, and life satisfaction may have a stronger influence for financial strain.

Moderation Analyses

I used PROCESS Model 1 to test the hypotheses relating to the moderating effects of social integration. These moderation models tested the moderating effects of social integration on the relationship between social class and life satisfaction, and financial strain and life satisfaction. Social class and financial strain were separately entered as the predictor variables, social integration was entered as the moderator variable, and life satisfaction was entered as the outcome variable. Table 6.2 contains the results from these moderation tests.

Table 6.2
Results from life satisfaction moderation PROCESS analyses

	b	*SE*	*df*	*t*	*p*	99% CI	
Dependent: Life Satisfaction							
Social Class (X)	0.15	0.01	14,965	10.80	<.001	0.11	0.18
Social Integration (M)	0.75	0.02	14,965	36.76	<.001	0.70	0.80
X x M	-0.06	0.02	14,965	-2.42	.016	-0.12	-0.00
Dependent: Life Satisfaction							
Financial Strain (X)	0.26	0.01	14,965	25.81	<.001	0.24	0.29
Social Integration (M)	0.81	0.02	14,965	44.62	<.001	0.76	0.85
X x M	-0.16	0.02	14,965	-8.38	<.001	-0.21	-0.11

The moderating effect of social support on the relationship between social class and life satisfaction was marginally significant at the .01 level ($p = .016$). When social class was the predictor variable, the relationship between social class and life satisfaction was significant at all levels of social support–integration. The negative relationship grew stronger as social integration decreased, however this effect was not significant when considering the decreased alpha level of the current study.

In contrast, the moderating effect of social integration was significant at the .01 level for financial strain. The relationship between financial strain and life satisfaction was significant at all levels of social integration. However, the negative relationship grew stronger as social integration decreased. The positive relationship between financial strain and life satisfaction was strongest when integration was at the low level, $b = 0.34$, $SE = .01$, $t(14,965) = 24.30$, $p = <.001$, 99% CI (0.31, 0.38), compared to the mean level, $b = 0.26$, $SE = 0.01$, $t(14,965) = 25.80$, $p = <.001$, 99% CI (0.24, 0.29), and the high level, $b = 0.18$, $SE = 0.01$, $t(14,965) = 12.46$, $p = <.001$, 99% CI (0.14, 0.21). This pattern of results is consistent with the proposal that social integration buffers the relation between social class and mental health. A visual representation of this moderation effect can be seen in Figure 6.1.

Sensitivity Analyses

I re-ran all the analyses reported above excluding univariate outliers and including control variables. In line with the previous studies, age and gender were included as control variables. I also controlled for marital status because interpersonal relationships are known to have significant impacts on social support (Cultrona, 1996). The inclusion or exclusion of (a) univariate outliers and (b) control variables in my tests did not alter the pattern of significant results that are reported above, with the exception of social integration moderating the

relationship between social class and life satisfaction. Social integration moderating the

relationship between social class and life satisfaction was not significant even at the $p < .05$

level when marital status was included as a covariate and was not significant in any case when

univariate outliers were excluded. Given the inconsistencies in this model and the very large

sample size of this study, I concluded that this model was not significant.
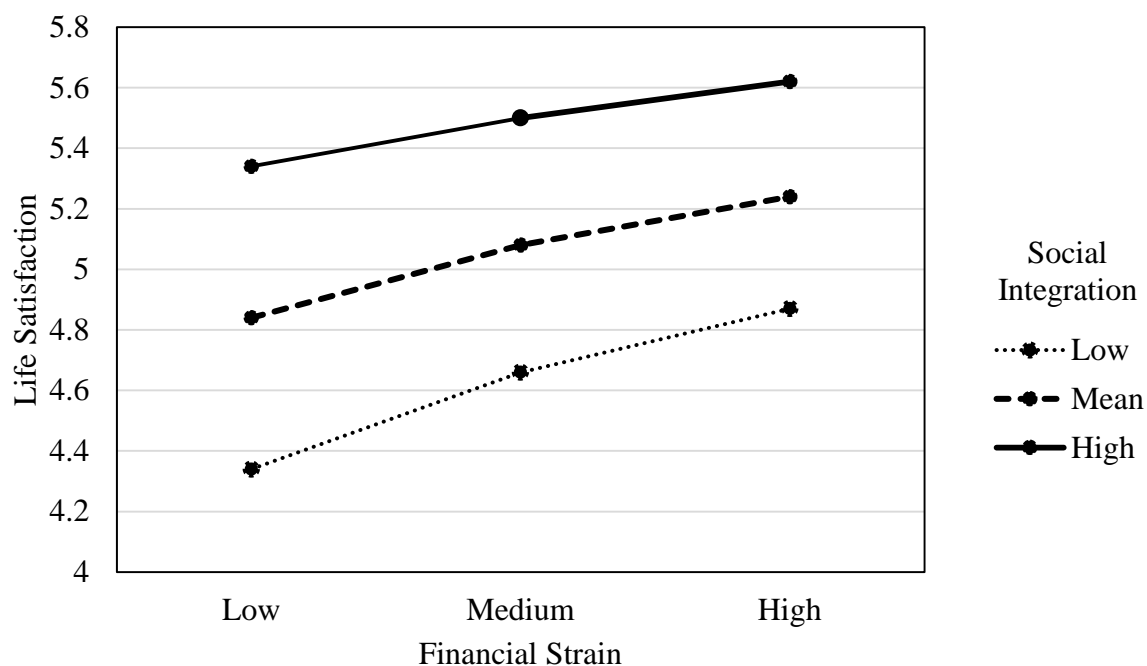
Figure 6.1 The relationship between social class and social integration as a function of student similarity

Additionally, because social class and financial strain are theoretically related I also

reconducted all social class analyses controlling for financial strain and all financial strain

analyses controlling for social class. The pattern of significant results did not change when these

variables were controlled for.

Discussion

The present research used archival data from the 2010 GSS to investigate social class,

social integration, and mental health differences in the general Australian population. Specifically, I used a pre-registered research protocol to test my central hypotheses regarding the mediating role of social integration in the relationship between social class and mental health and to also test for a moderating effect of social integration. In general, I found that social integration, as measured by various items relating to social support, social contact, and trust, mediated the relationship between both social class variables and well-being. I also found some evidence for a moderating effect of social integration, in which the relationship between social class and mental health was stronger when social integration was low. However this result was only consistently significant for financial strain.

The Role of Social Integration in the Association between Social Class and Well-being

The present study supports the key argument of this thesis, namely that a lack of social connections and support is one of the reasons for working-class peoples' mental health, or in this case well-being. Of particular interest in the present study was the two factor solution for the social class variables, and the disparate findings yielded from these two factors. Specifically, the variables I proposed would measure social class in the pre-registration split into two factors, one which included the traditional markers of social class (education, occupation and income) and one that encompassed participants' financial strain, in particular their financial stress. Although both of these factors were related to both social integration and well-being, the correlations and mediation effect size was much larger for the social class variable. In contrast however, social integration only consistently moderated the relationship between financial strain and well-being and not social class and well-being.

Overall, these findings suggest that social class is different from financial strain, and that the two have different functions. Of note is the finding that social integration mediates the

relationship between social class and well-being more strongly than it mediates the relationship

between financial strain and well-being. This supports my general hypothesis that the effects of

social class on social integration are a complex interplay of social, cultural and economic factors

rather than simply a difference in finances. This hypothesis was supported by the findings from

the Sensitivity Analysis section, in which the mediation results for social class remained

significant when financial strain was included as a covariate and vice versa. However, the

present study only included objective measures of social class. As discussed in Chapter 1,

subjective social class is an important aspect of social class that is often more predictive of

health outcomes (e.g., Adler et al., 2000; Kraus, & Keltner, 2013; Ostrove & Long, 2007), and

thus further evidence using subjective measures is needed to corroborate this interpretation.

Another interesting finding of the current study is that the measure of social integration

is largely based on quantitative measures of the amount of contact, number of supports and

amount of social activity. These factors are in contrast to most of the literature on social

integration, which generally focuses on perceptions of the quality and availability of social

support (Turner & Turner, 2013). This subjective approach to social integration has often been

reported as being a stronger predictor of mental health and well-being compared to objective

quantity measures like the ones used in this study (Wethington & Kessler, 1986; Turner &

Turner, 2013). Additionally, the present study included a measure of institutional support, which

has not typically been considered as part of social integration. The results from the factor

analysis revealed that all these factors loaded onto a single factor, demonstrating the

convergence of disparate facets of social integration. Further, the mediation results demonstrate

that social integration, as conceptualised broadly, mediated the relationship between social class

and well-being. Thus the present study builds on previous research by demonstrating the

expansive nature of social integration and how it helps to explain social class differences in mental health, specifically well-being.

Finally, the present study demonstrated that social integration moderates the relationship between financial strain and well-being, and not the relationship between social class and well-being. These results suggest that social integration is most beneficial in situations in which financial strain rather than social class is impacting on well-being. However, like in Study 3, I propose that this lack of a moderating effect for social class does not necessarily indicate that social integration is not a protective factor for mental health, or is not beneficial for working-class people in particular. This is because my mediation findings suggest that improving social integration will have flow on effects to the mental health of working-class people.

Limitations and Future Research

The most obvious limitation of the present research is that it only included a simplistic measure of well-being and no measure of mental health. As mentioned in Chapter 1, mental health is not simply the absence of well-being or any of its constituents, and well-being is only mildly correlated with mental health (Keyes, 2005; Frisch et al., 1992; Ryff & Keyes, 1995). Consequently, the present study only provides evidence that social integration mediates the relationship between social class and well-being and further research is needed to demonstrate this relationship across multiple domains of mental health.

This issue is symptomatic of the somewhat limited methodological design of the present study. More specifically, none of the variables were measured using comprehensive and validated measures, but rather were measured using a series of ad-hoc items devised by the Australian Bureau of Statistics. This is an issue that is shared by all of the previous literature I have discussed, which also utilised existing datasets that were not specially designed to answer

their research questions. Like this previous research, the less than ideal measures in the present study are somewhat compensated for by the large representative sample. Additionally, the approach of combining different variables and taking a regression-based approach that distinguishes between significant and nonsignificant mediation effects means I can be more certain of the validity and reliability of the present results. Nonetheless, future research should investigate the role of social integration between social class and mental health using the same statistical approach with more nuanced and validated measures of social class, social integration, and mental health.

Overall, the results from this study suggest that the relationship between social class and well-being is mediated by social integration in a nationally representative sample, and that this effect is bigger for social class compared to financial strain. However, it should be noted that these results should be interpreted with some degree of caution given the limitations of the measures, in particular that social class was only measured subjectively and only well-being was represented. In light of these weaknesses in the present study, my next study conducted a similar investigation using another archival dataset with more appropriate measures of social class and mental health.

CHAPTER 7

BETTER MEASURES: INVESTIGATING THE ROLE OF SOCIAL INTEGRATION IN THE

RELATIONSHIP BETWEEN SOCIAL CLASS AND MENTAL HEALTH WITH IMPROVED

MEASURES OF SOCIAL CLASS AND MENTAL HEALTH

The previous chapter demonstrated that social integration mediates the relationship

between social class and well-being in the general population. More specifically, the results

demonstrated that, in the general population, working-class people have lower social integration

and that these low levels of social integration help to explain the relationship between social

class and well-being. However, Study 4 had measurement issues, particularly with its measures

of social class and mental health.

In particular, Study 4 only contained objective measures of social class including

occupation, education, and household income. Thus, the study failed to take into account the

subjective aspect of social class, which has been found to be a stronger predictor of mental

health than objective measures (Adler et al., 2000). Similarly, the previous study only measured

well-being in the form of life satisfaction and did not include a measure of mental ill health. As

discussed in Chapter 2, well-being and mental health are not interchangeable concepts (Keyes,

2005; Frisch et al., 1992; Ryff & Keyes, 1995). Consequently, I cannot be certain whether the

findings from the previous study generalise across all domains of mental health. The present

study aims to address these two limitations by investigating the same research question using a

measure of social class that incorporates both objective and subjective items and by considering

mental ill health rather than well-being.

Like the previous study, the present study investigated the role of social integration in the

relationship between social class and mental health using an existing dataset. Consistent with the

approach I have taken in previous studies in this thesis, this study used multiple measures of

social class, social integration and mental health, as well as a regression based approach to

testing mediation and moderation hypotheses. The present study tested both the mediating and

moderating role of social integration in the relationship between social class and mental health.

Specifically, I tested whether the relationship between social class and mental health is partially

explained by working-class people's lower social integration and whether this relationship

between social class and mental health is weaker when social integration is high.

Australian Survey of Social Attitudes

The present study is similar to the study discussed in the previous chapter, with some key

differences. As with the previous study, this study uses archival data from a large national survey

program – in this case, the data is from the 2011 Australian Survey of Social Attitudes (AuSSA;

Evans, A., 2010). The AuSSA is a biennial survey that provides cross-sectional information on

the social attitudes and behaviour of Australians, which is published in regular reports by the

Australian National University. In 2011, the AuSSA had a dual focus on health and the

environment. This particular iteration of the survey included questions on social class, mental

health, and social support, making it the most suitable version available at the time I was

planning my thesis.

Of particular importance for the purposes of my thesis are the subjective measure of

social class and income that was included in this version of the AuSSA. This measure is similar

to the MacArthur scale of subjective social class (Adler et al., 2000). The inclusion of this item

means I can expand on the previous study by more comprehensively conceptualising

participants' social class using both subjective and objective indicators. Additionally, the 2011

AuSSA included multiple items relating to mental health. Thus, the present study also improves

on the study discussed in the previous chapter by including a multifaceted measure of mental health rather than simply well-being.

However, one limitation of the present study is the limited measures of social integration. Specifically, there are only three items relating to social integration in the 2011 AuSSA. Two of these items relate to social trust and one relates to perceptions of social support. Thus, the present study makes up for the lack of nuanced measures of social class and mental health in the previous study, but unlike the previous study does not comprehensively cover social integration.

Overall, this study replicated the aims and approach used in the previous study on a different archival dataset. More specifically, using a subjective and objective measure of social class and multifaceted measure of mental health, I aimed to provide comprehensive, regression-based evidence that the relationship between social class and mental health is mediated and moderated by social integration.

Method

Participants

This study used data from the 2011 Australian Survey of Social Attitudes (AuSSA). The AuSSA is a cross-sectional survey based research project in which Australians are asked about their attitudes, behaviours and opinions on a wide range of social issues. Participants were randomly selected Australian residents registered on the Australian Electoral Commission's Electoral Role. The AuSSA is a biennial survey and has a different focus for each survey. The 2011 AuSSA had a dual focus of environment and health (A. Evans, 2012).

The total sample size for the 2011 AuSSA was 1,946. Like in Studies 2 and 4, because of this large sample size I decreased the alpha level of all analyses to .01. Based on a sensitivity analysis, even with this reduced alpha I was able to detect effect sizes as small as 0.08. Females

comprised 52.8% of the sample, with males making up the other 47.2%. Relative to the

Australian population, the sample adequately represented the proportion of males (47.8%) and

females (52.2%; ABS, 2016). Participants ranged in age from 18 to 97 years with a mean age of

55.1 (*SD* = 16.3). Self-identified Aboriginal and Torres Strait Islander people comprised 1.6% of

the sample. This is an underrepresentation of the Indigenous Australian population, which is

estimated as representing 3% of Australia's total population (ABS, 2016). At the time this

research was conducted, 633 participants in this sample live in NSW, 477 lived in Victoria, 358

lived in Queensland, 188 lived in South Australia, 178 lived in Western Australia, 62 lived in

Tasmania, 9 lived in the Northern Territory, and 41 lived in the Australian Capital Territory.

Procedure

Data for the 2011 AuSSA was collected using a mail-out questionnaire sent to the home

addresses of participants. Questions in the AuSSA covered numerous topics including, general

issues facing Australia, the environment, health, government policy and services, kindness,

historical Australians, the law and authority, and personal demographics. For the purposes of

brevity, only the variables and measures that are directly related to the current research project

will be discussed in depth. The variables of interest for this study include age, gender, ATSI

status, social class, social support, and mental health.

Measures

Social class. As in the previous studies, and in alignment with the recommendations of

Diemer et al. (2012), multiple measures were used to conceptualise social class. The AuSSA

included eight variables related to social class. These included the traditional objective measures

of education, occupation, and personal and household income, as well as some subjective

measures of social status and personal feelings and comparisons of income. Like in the previous

chapter, because this sample represented the general public rather than university students, these measures referred to the education, occupation, and income of the participants themselves rather than their parents.

In the present research, highest personal education qualification was measured using an item that instructed participants to indicate their highest education qualification completed outside of school. Highest level of education included the following categories: *less than year 12*, *year 12*, *certificate I – IV*, *diploma or advanced diploma*, and *bachelors or above*.

Occupation was recorded and coded using the Australian and New Zealand Standard Classification of Occupations (ANZSCO; Trewin et al., 2006), which were converted intoAUSEI06 scores (Trewin et al., 2006). For more information about ANZSCO and AUSEI06 see Chapter 6.

Subjective measures of income were also included in this study. These measures asked participants to compare their family income to Australian families in general and to indicate how well they are managing on their current income. When comparing their family income to Australian families, participants ranked themselves on a 5-point scale ranging from *far below average* (1) to *far above average* (5). When indicating how well they managed on their current income, participants ranked themselves on a 4-point scale from *finding it very difficult to get* (1) by to *living comfortably* (4). The AuSSA also included objective measures of personal and household income. These measures asked participants to report their total personal and household monthly incomes before tax. According to the original researchers for this project (A. Evans, 2011), many participants struggled to answer these questions resulting in a large number of inaccurate answers and missing data. For this reason, the AuSSA researchers advised that these income measures should be used with caution and thus these items were not used in the

present study.

Subjective social status was assessed using a modified version of the MacArthur Subjective Social Status scale (Adler et al., 2000). This scale asks "in our society, there are groups which tend to be towards the top and groups which tend to be towards the bottom. Below is a scale that runs from the top to the bottom. Where would you put yourself on this scale?" Participants responded on a 10-point scale from *top* (10) to *bottom* (1).

Lastly, participants were asked whether participants had private health insurance during the current financial year (*yes* (1)*/no* (0)). In Australia, private health insurance is considered a non-essential expenditure and is associated with higher income and overall SES.

Social integration. Social integration was measured using three ad hoc items pertaining to perceptions of available support and feelings of trust in the society. A single item was used to measure participants' perceptions of social support. Participants responded the extent to which they agreed with the statement "I have no one to lean on in times of trouble" on a 7-point scale ranging from *strongly disagree* (1) to *strongly agree* (7). Two items were used to measure participants' feelings of trust in society. The first question asked participants whether most people could be trusted or not. Participants responded on a 5-point scale ranging from *you can't be too careful* (1) through to *most people can be trusted* (5). The next question asked participants whether they thought most people were fair or would try to take advantage of them. Participants responded on a 5-point scale ranging from *most people would try to take advantage* (1) through to *most people would try to be fair* (5).

Mental health and well-being. Mental health was measured using four ad hoc items. The first item asked participants how happy or unhappy they were with their life in general on a 7-point scale ranging from *completely unhappy* (1) through to *completely happy* (7). The other

items asked participants how often during the past four weeks they had felt unhappy and depressed, had lost confidence in themselves, and had felt that they could not overcome their problems. Responses were made on a 5-point scale ranging from *never* (1) to *very often* (5). All four items were standardised and combined to form an aggregate variable of mental health.

Results

Exploratory Factor Analysis

I conducted exploratory factor analyses on the social class, social integration, and mental health items with the aim of developing global indices of each of these variables. In all cases, principal factor analysis was used with missing cases being deleted listwise.

Social class. All items pertaining to social class were standardised before commencing analysis. The following items were entered into a factor analysis to determine the structure of social class variables in this dataset: subjective social status, perceptions of income compared to other Australians, perceptions of managing current income, highest education level, occupation, and the possession of private health insurance. In this analysis, the Kaiser-Meyer-Olkin measure of sampling adequacy was substantially greater than .50 (.71), and Bartlett's test of sphericity was statistically significant ($X^2 = 1,246.71$, $df = 15$, $p < .001$). Two factors had an eigenvalue higher than 1.0. However, Cattell's (1966) scree plot test indicated only one factor before the scree plot changed direction at greater than 40% and tailed off. Consequently, and as in the previous studies, I used a Monte Carlo simulation to conduct factor analyses on 100 random data sets, each consisting of 6 variables and 1,014 cases. This analysis revealed that only the first factor in the real data set had an eigenvalue that was larger than the factors in the simulated data set, providing further evidence for a one factor solution. This single factor accounted for 33.66% of the variance and had an eigenvalue of 2.53. Given this one-factor structure, I

averaged the social class items to form one variable labelled social class. These items had

adequate internal reliability with a Cronbach's α of .70. All items in this scale had positive

loadings above the standard cut-off of 0.4 (ranging from .65 to .42).

Social integration. An exploratory factor analysis was conducted on all the items

pertaining to social integration, including trust in most people, beliefs about people taking

advantage, and participants having someone to lean on. For the social support items, the Kaiser-

Meyer-Olkin measure of sampling adequacy was greater than .50 (.53), and Bartlett's test of

sphericity was statistically significant ($X^2 = 797.67$, $df = 3$, $p < .001$). Only one factor had an

eigenvalue higher than 1.0, Cattell's scree plot indicated only one factor, and a Monte Carlo

simulation revealed that only one variable in the real data set had an eigenvalue that was larger

than the factors in the simulated data set. Hence, I extracted one factor that accounted for

40.43% of the variance and had an eigenvalue of 1.64. The two items relating to trust had

loadings of $\geq$ .66 on this factor. However, the someone to lean on item had a factor loading

of .22. Additionally, the Cronbach's for this factor was .56 but changed to .72 if the someone to

lean on item was removed. Given these results, someone to lean on was removed from the scale

and instead used as a separate item in these analyses named social support perceptions. The trust

and taking advantage items were combined to create a general trust variable titled trust in others.

Mental health. The following mental health variables were entered into an exploratory

factor analysis: participant happiness, unhappiness over the past 4 weeks, loss of confidence

over the past 4 weeks and inability to overcome problems in the past 4 weeks. The Kaiser-

Meyer-Olkin measure of sampling adequacy was substantially greater than .50 (.79), and

Bartlett's test of sphericity was statistically significant ($X^2 = 2,978.25$, $df = 6$, $p < .001$). Only

one factor had an eigenvalue higher than 1.0, and Cattell's (1966) scree plot indicated only one

factor before the scree plot changed direction. In addition, a Monte Carlo simulation revealed that only the first factor in the real data set had an eigenvalue that was larger than the factors in the simulated data set, providing further evidence for a one factor solution. This single factor accounted for 56.57% of the variance and had an eigenvalue of 2.67. Given this one-factor structure, I averaged these items to form one variable labelled mental health. These items had adequate internal reliability with a Cronbach's α of .83. All items in this scale had positive loadings above the standard cut-off of 0.4 (ranging from .85 to .59).

Descriptives.

Table 7.1 provides the means, standard deviations, minimum and maximum values, Cronbach alpha values, and zero-order correlation coefficients for the key variables.

Table 7.1
Descriptive statistics

Measure	*M*	*SD*	Min	Max	α	1	2	3
1. Social Class[†]	0.90	0.69	-1.29	3.09	.88	-		
2. Mental Health	0.00	0.83	-1.66	4.36	.86	-.25**	-	
3. Trust in Others	-0.00	0.89	-2.03	1.43	.96	.25**	-.24**	-
4. Social Support Perceptions	0.00	1.00	-2.4	.83	.92	.19**	-.27**	.18**

Note. † indicates variables that have been standardised. *p* < .05, **p* < .01

All variables showed the expected direction of relationships with one another. Social class was significantly positively related to trust in others and social support perceptions, and significantly negatively related to mental health. Mental health was also significantly negatively related to trust in others and social support perceptions.

Mediation Analyses

To test my mediation hypotheses, I used Hayes' (2018) PROCESS macro using the same specifications from the previous chapters. I used PROCESS Model 4 to test mediation models in which social class was the predictor variable, trust in others and social support perceptions were the mediator variables, and mental health was the outcome variable.

In the first model, trust in others was the mediator between social class and mental health, the total effect of social class was significant, $b = -0.30$, $SE = .02$, $p < .001$, *99% CI* (-0.37, -0.24), the direct effect was significant, $b = -0.25$, $SE = 0.03$, $p < .001$, *99% CI* (-0.32, -0.18) and the indirect effect was significant, $b = -0.06$, $SE = 0.01$, *99% CI* (-0.08, -0.03). This pattern of results indicates that the relation between social class and mental health was mediated by trust in others: Higher social class was associated with greater trust in others, which was associated with better mental health. The completely standardised indirect effect was -.05, indicating a small effect of trust (Kenny, 2014).

In the second model, social support perceptions was the mediator between social class and mental health. In this case, the total effect of social class was significant, $b = -0.30$, *SE* $= .03$, $p < .001$, *99% CI* (-0.37, -0.23), the direct effect was significant, $b = -0.25$, $SE = 0.02$, *p* $< .001$, *99% CI* (-0.32, -0.18), and the indirect effect was significant, $b = -.05$, $SE = 0.03$, *99% CI* (-0.08, -0.03). This pattern of results indicates that the relation between social class and mental health was mediated by having strong beliefs about the social support available. The completely standardised indirect effect was .04, indicating a small effect of social support (Kenny, 2014).

Reverse models. As in the previous studies, I tested the significant mediation models in reverse to explore the possibility of an alternative reversed causal direction. For the same

reasoning as mentioned in previous studies, I only reversed the order of social trust and

perceptions of social support, and mental health for these tests. Again, the informativeness of

these reversed models is questionable because of the cross-sectional design of the present study.

Nonetheless I report these findings to provide further information to the reader.

      Each of the reversed models tested were significant, with mental health mediating the

relationship between social class and both social trust and social support. Social trust and mental

health had the same size indirect effect (0.05), indicating that relations between the variables

may work in both directions. Mental health (0.06) was a stronger mediator than social support

(0.04), indicating that relations between the variables may work in both directions but that

mental health may be a stronger mediator.

Moderation Analyses

      I used PROCESS Model 1 to test the hypotheses relating to the moderating effects of

social support. These moderation models tested the moderating effects of trust in others and

social support perceptions on the relationship between social class and mental health. Social

class was entered as the predictor variable, trust in others and social support perceptions were

entered as the moderator variables, and mental health was entered as the outcome variable. Table

7.2 contains the results from these moderation tests.

      Only trust in others had a significant moderation effect on the relationship between

social class and mental health. For this model, the relationship between social class and mental

health was significant at all levels of trust in others. However, the negative relationship grew

stronger as trust in others decreased. The negative relationship between social class and mental

health was strongest when trust in others was at the low level, $b = -0.36$, $SE = .04$, $t(1,934) = -9.47$, $p <.001$, $99\% \ CI$ (-0.46, -0.26), compared to the mean level, $b = -0.26$, $SE = 0.03$, $t(1,934)$

= - 9.82, p <.001, *99% CI* (-0.33, -0.19), and the high level, b = -0.13, *SE* = 0.04, $t(1,934)$ = -

3.44, p = .001, *99% CI* (-0.23, -0.03). Hence, lower trust in others is associated with a stronger

negative relationship between social class and mental health. These results can be seen in Figure

7.1.

Table 7.2
Results from mental health moderation PROCESS analyses

	b	*SE*	*df*	*t*	*p*	*99% CI*	
Dependent: Mental Health							
Social Class (X)	-0.25	0.03	1,934	-9.26	<.001	-0.31	-0.18
Trust in Others (M)	-0.16	0.02	1,934	-7.75	<.001	-0.22	-0.11
X x M	0.11	0.03	1,934	4.07	<.001	0.04	0.19
Dependent: Mental Health							
Social Class (X)	-0.25	0.03	1,934	-9.39	<.001	-0.32	-0.18
Social Support Perceptions (M)	-0.19	0.02	1,934	-10.42	<.001	-0.24	-0.14
X x M	0.03	0.03	1,934	1.10	.271	-0.04	0.09

In summary, the size of the effect of social class on mental health decreased as trust in

others increased. This pattern of results is consistent with the proposal that social support buffers

the relation between social class and mental health.

Sensitivity Analyses

All analyses reported above were conducted with outliers and without control variables.

The inclusion or exclusion of (a) univariate outliers and (b) control variables (gender and

ethnicity) in the tests did not alter the pattern of significant results reported above.
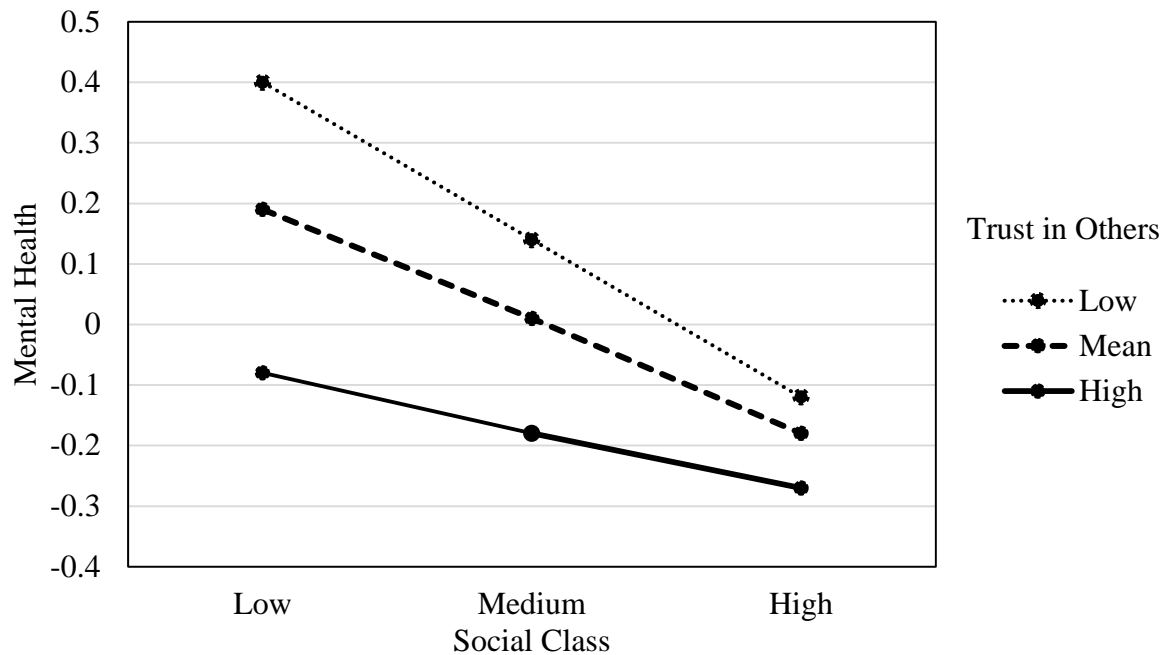
Figure 7.1. The relationship between social class and mental health as a function of trust in others

Discussion

The present research provides further evidence for the central research hypothesis regarding social integration mediating the relationship between social class and mental health. Specifically, I used existing data from the 2011 AuSSA to investigate social class, social integration, and mental health differences in the general Australian population and found that social integration (trust and perceptions of social support) partly explained the relationship between social class and mental health. I also found some evidence for a moderating effect of social trust, whereby the relationship between social class and mental health was weaker when social trust was high. Consequently, the present study corroborated the findings of the previous chapter in support of my central mediation hypothesis.

Social Integration as a Mediator of Social Class and Well-being

Like the previous chapter, the current study provides further evidence for the key

argument of this thesis, namely that working-class people's lower social integration is one of the

reasons for their poorer mental health. The key difference between the previous study and this

one was the inclusion of a subjective component to the measure of social class and items related

to mental health rather than well-being. Thus, the present study supplemented the study

discussed in the Chapter 6 by incorporating more appropriate measures of social class and

mental health.

Another notable difference between the present study and Study 4 is that this study had a

limited measure of social integration. Although both social trust and perceptions of social

support fall within the scope of social integration as I define it in this thesis, there were only

three items in total to measure these concepts. Like the previous chapter, this is an issue that is

typical of the limitations of using existing datasets that are not specially designed to answer a

specific research question. Thus, although the present study has a large representative sample,

this sample comes at the cost of the comprehensiveness and specificity of the measures. This

lack of validated measures may also explain why social support and trust do not load onto the

same factor in the present study when similar measures did load onto a single factor in the

previous study. The next study addresses these limitations by investigating the role of social

integration between social class and mental health using the same statistical approach with more

nuanced and validated measures of social class, social integration, and mental health.

Social Integration as a Moderator of Social Class and Well-being

An interesting finding of the present study was that social trust but not social support

moderates the relationship between social class and mental health. Consequently, the results

suggest that social trust buffers the effects of social class on mental health. Moreover, this implies that improving people's trust in others should reduce social class differences in mental health. Unexpectedly, the same effect was not found for social support. However, I maintain that, given the consistent mediation findings demonstrating the positive effects of social integration on mental health, improving social integration is likely to reduce social class differences in mental health.

In summary, the present study replicated the findings of the previous chapter that social integration is one of the reasons why working-class individuals have poorer mental health. However, in order for this information to be useful we must also understand what causes this lack of integration to occur and how it can be improved. Thus, like Study 3 did in the university context, the next study investigates some potential mediators of the relationship between social class and social integration, as well as incorporating more nuanced and validated measures of social class, social integration, and mental health to investigate the role of social integration between social class and mental health.

CHAPTER 8

STRAPPED FOR CASH AND CERTAINTY: MONEY AND STATUS IDENTITY

UNCERTAINTY MEDIATE THE RELATIONSHIP BETWEEN SOCIAL CLASS AND

SOCIAL INTEGRATION

Studies 4 and 5 explored the relationship between social class, social integration, and mental health. In particular, Study 4 utilised an existing dataset that included objective measures of social class, a measure of well-being and numerous measures of social integration to demonstrate that social integration mediates the relationship between social class and well-being. Similarly, Study 5 used data from a different existing dataset, which included objective and subjective measures of social class, multiple measures of mental health, and social trust and social support. Study 5 demonstrated the same mediation model as Study 4, whereby working-class individuals' lower social integration partly explained their poorer mental health. Both studies also demonstrated some moderation effects, however these were more inconsistent, with social integration moderating the relationship between financial strain and well-being but not social class and well-being in Study 4, and only social trust moderating the relationship between social class and mental health in Study 5. Each study also demonstrated the robust nature of these relationships because they were not changed by the exclusion of outliers or inclusion of theoretically related variables including age, gender, ethnicity, and marital status (only Study 4). Thus, Studies 4 and 5 reflect the findings from Studies 1 and 3 but in the general population rather than within the university student population.

Building from these two studies, the present study used a pre-registered research protocol to reinforce and extend these findings in two ways. First, it attempted to replicate social integration as a mediator and moderator between social class and mental health using multiple

validated measures of social class, social integration, and mental health. More specifically, I

included many of the same measures used in Studies 1 and 3, which more comprehensively and

reliably measure each of these concepts as I define them in this thesis. Thus, unlike the previous

two studies, the present study took a multi-faceted approach to measuring social class, social

integration, and mental health, meaning the results are more validly and reliably representative

of the relationships between each of these concepts.

Second, the current study investigated some of the reasons why working-class people are

less integrated. As mentioned previously in this thesis, it is important to understand what affects

the relationship between social class and social integration in order to understand how social

class differences in mental health can be improved through social integration. In Chapter 2, I

briefly discussed some of the reasons why working-class people are less socially integrated,

however all of the reasons put forth were only theories (e.g., Belle & Doucet, 2003; Edin &

Lein, 1997; Mickelson & Kubansky, 2003; Riley & Eckenrode, 1986; Smith, 2009; Wilkins,

1974). Thus, no studies that I could find have actually investigated mediators or moderators of

the relationship between social class and social integration. To address this gap in the literature,

the present study tested a limited number of mediators and moderators of social class and social

integration but in the general population. I then investigated whether any of these mediators

between social class and social integration serially mediate social class and mental health via

social integration. In particular, the present study tests status uncertainty, and Rubin and

Wright's (2017) time and money variables as mediators and moderators between social class and

social integration. I discuss the relevance of these mediators and moderators below.

Status Uncertainty

I tested whether status uncertainty plays a role in the relationship between social class

and social integration. The original status uncertainty research by Destin et al. (2017) focused on university students. They proposed that working-class students are likely to be uncertain of their status while they are trying to reconcile their working-class background with the middle-class university experience and that this uncertainty would hinder social integration. In terms of the general population, I theorised that working-class people may be uncertain of their status given the increasing inequality in Australia. That is, the gap between the very rich and the rest of society is expanding, while the differences between those in the middle and at the bottom shrink, and this trend could be causing uncertainty (Australian Council of Social Services, 2018; Destin et al., 2017). Additionally, the demographics of the working class is changing as immigration increases in western countries. This is because a large portion of migrants and especially refugees begin their life in their new country with relatively low economic and social status (Gest, 2016; Sydes, 2019). These changes in the way wealth and status is stratified and the changing demographics of the typically White working class may be leading to decreases in the sense of community and camaraderie of the working class, because people are unsure who the working class even are or whether they fit into the working class anymore. This theory fits with the research discussed in Chapter 1, where social classes are changing and the lines between some classes are becoming more blurred (Andrews & Sánchez, 2011; Marginson, 2006).

In addition, I propose that this uncertainty would be affecting working-class populations in particular, because many of the typical occupational fields that were considered archetypal of the working class have greatly diminished in the last few years or disappeared entirely (Haddon, 2015; Kingston, 2000; Pakulksi, 2005). Industries like mining, manufacturing, and steel-work that were once the key institutional affiliations of the working class have largely disappeared, and the jobs that have replaced them are said to lack the solidarity and social networks of the

past (Bloodworth, 2018). Additionally, as a minority group, the working class historically have been more homogenous than the middle class, however due to the changes listed above are losing their homogeneity to become more amorphous like the middle class (Mullen & Hu, 1989). This would likely lead to greater status uncertainty within working-class populations in particular. Consequently, I predicted that social class would be negatively related to status uncertainty and I hypothesised that working-class people's greater status uncertainty would predict their poorer social integration, and in turn their poorer mental health.

Time and Money

The present study also aimed to replicate Rubin and Wright's (2017) findings that time commitments and availability of time and money explain the relationship between social class and social integration. This research also focused on university students and here I applied this explanation within the general rather than university population. However, my reasoning for including these variables in the present study was much the same as that of Rubin and Wright (2017). More specifically, I hypothesised that having less time and money to socialise and spending more time working and minding children would not be specific to working-class students but rather would be the experience of working-class people in general. Consequently, I hypothesised that working-class people's lack of time and money to socialise and greater time spent at work and on childcare would explain their poorer social integration and in turn their poorer mental health.

Moderation Analyses

As outlined in the pre-registration for this study, I also expected that status uncertainty, and time and money for socialising would moderate the relationship between social class and social integration. Like in Study 3, this expectation was based on the idea that having fewer

barriers to social integration is especially beneficial for working-class people, who are the most

disadvantaged in terms of social integration. Like in Study 3, I hypothesised that the positive

relationship between social class and social integration would become weaker as time and

money availability increased and status uncertainty decreased.

Aims and Hypotheses

The present study uses cross-sectional data from the general population to replicate and

extend the previous two studies in this thesis and test some moderators and mediations of social

class and social integration. Most importantly, I aimed to provide further evidence that social

integration mediates and moderates the relationship between social class and mental health in

the general population. However, the present study aimed to provide more comprehensive, valid,

and reliable evidence of these relationships by using a comprehensive and validated battery of

scales to measure social class, social integration, and mental health. I also tested some potential

mediators and moderators of social class and social integration, specifically status uncertainty,

and time and money. The methodology and analyses for this study were preregistered on the

Open Science Framework. A copy of this pre-registration can be found at: https://osf.io/y4n2q.

Method

Participants

Participants were recruited through paid advertisements on the social media website

Facebook. In total, 781 people attempted the survey, however 309 dropped out partway through

the study and therefore did not complete the informed consent question at the end of the survey.

A further 11 declined their informed consent. Consequently, the final number of participants was

461[6].

There was a relatively equal gender balance in the sample between males and females. Females comprised 53.4% of the sample (246 females, 213 males, 2 "other"). Participants' age ranged from 18 to 83 years with a mean age of 52.42 years (SD = 15.58). Most participants were White (n = 428), with five Aboriginal or Torres Strait Islanders, 16 Africans, and 12 listing their ethnicity as "other." Because of the low numbers of other ethnicities beside White, ethnicity was dichotomised into White and not-White.

Procedure and Measures

The study was advertised via Facebook's paid advertising feature. Advertisements ran on Facebook and Instagram from September 1st through to October 25th 2017. Advertisements were directed towards Australian residents over the age of 18, however at certain times in the recruitment process the demographics scope was changed to males only. Female participants were recruited much faster than male participants (e.g., 17 days after recruitment commenced the sample consisted of 162 females and 12 males), and so this approach was necessary to ensure a balance of male and female participants.

Participants were incentivised to participate with a prize draw in which they had a 1 in 20 chance of winning a $100 e-gift voucher for completing the survey. This incentivisation was made clear to participants in the Facebook ad.

The research consisted of an online self-report survey titled "Your Experiences and Feelings." All items were randomised within scales, and all scales were randomised within the survey with the exception of social class, demographic, social identification and status

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[6] The target sample size in the pre-registration for this study was 320. I decided to continue recruitment to increase the power of the study (see the power analysis section below). The data was not analysed prior to making this decision.

uncertainty questions, which were presented in a consistent order at the end of the survey. The

survey design was pre-registered on the Open Science Framework. A copy of the pre-

registration and full survey can be found here: https://bit.ly/2QQTCd3.

   Social class. Following previous research in this area (e.g., Rubin et al., 2016; Rubin &

Kelly, 2015) and the measures used in Chapters 3 and 5, I used the following measures of social

class: parental education, parental occupation, childhood wealth, self-reported social class

identity, and subjective social status. Please see Chapter 3 for a full explanation of these

measures. Because this study involved the general public, and therefore was expected to have a

much higher mean age, I also included items measuring the participants' own education and

occupation in addition to the items measuring mother and father education and occupation.

   Social integration. To measure social integration, I used a range of pre-existing

measures that assessed social behaviour, connections, friendship, perceptions of social support,

and loneliness. Unless stated otherwise, participants responded by rating their agreement with

statements on a 7-point scale ranging from *strongly disagree* (1) to *strongly agree* (7).

   Network size and contact was measured using modified versions of the 8-items used in

Chapters 3 and 5. Instead of referring to the university context, these questions were altered to

refer to general social network size and contact. For example, the item "how many student

friends do you currently have at university" was changed to "how many close friends do you

currently have?" Together, these items had acceptable internal reliability ($\alpha = .74$) and were

averaged to form an index of network size and contact.

   Three items from the 2011 Australian Survey of Social Attitudes (A. Evans, 2010) were

used to measure participants' general feelings of trust in others and general feelings of support

from others. Participants responded to the following statements: "I feel that most people can be

trusted," "I feel that most people would try to take advantage," and "I have no one to lean on in times of trouble."

Three items from Chapters 3 and 5 measuring university relationship satisfaction and closeness were adapted to measure participants' general satisfaction with their friendships and closeness to their friends during the past seven days (Rubin et al., 2016). As an example, the original item "I am satisfied with the quality of relationship that I have with other uni students" was changed to "I am satisfied with the quality of the relationships that I have." These items had good internal reliability ($\alpha = .80$) and were averaged to form an index of relationship satisfaction.

The 24-item Social Provisions Scale (Cutrona & Russell, 1987) was used to measure participants' general perceptions of attachment, social integration, reassurance of worth, reliable alliance, guidance, and opportunity for nurturance in their social interactions. The scale included 12 positively worded items (e.g., "there are people I know will help me if I really need it") and 12 negatively worded items (e.g., "other people do not think I am good at what I do"). As in Chapter 5, I considered the scale as a whole rather than its six subscales. These items had good internal reliability ($\alpha = .95$) and were averaged to form an index of social provisions.

The 12-item Multidimensional Scale of Perceived Social Support (Zimet et al., 1988) was used to measure participants' general perceptions of the support received from their family, friends, and partner. Items from this scale included "I can count on my friends when things go wrong," and "there is a special person who is around when I am in need." To maintain consistency with Chapter 5, where the scale was divided and only the friend scale was used, this scale was divided into its three sub-scales, which each had good internal reliability: partner ($\alpha = .96$), family ($\alpha = .93$), and friends ($\alpha = .94$).

Finally, as in Chapters 3 and 5, the 20-item Revised UCLA Loneliness Scale (Russell et al., 1980) was included to gauge participants' loneliness and social isolation over the past week. This scale was coded such that higher scores indicated less loneliness. These items had excellent internal reliability ($\alpha = .96$) and were averaged to form an index of loneliness.

Status uncertainty. I used the same 12-item Status-Based Identity Uncertainty scale (Destin et al., 2017) from Chapter 5 to measure people's uncertainty about their own social standing and identity. For more information about this scale and example items refer to Chapter 5. This scale had good internal reliability ($\alpha = .87$) so all items were averaged to form an overall score of status uncertainty.

Time and money. I adapted nine of the items from Chapter 5 that assessed time and financial availability for socialising (based on Rubin & Wright, 2017). These items were adapted to refer to general rather than university specific activities. Seven items assessed participants' perceptions of the time and money that they had available to socialise. The time items included two positively worded items (e.g., "I have plenty of time to meet others") and one negatively worded item ("I do not have the time to socialise with others"). Money items included two positively worded items (e.g., "it does not cost me a lot of money to socialise") and two negatively worded items (e.g., "I can't afford to spend money on social activities"). Both the time ($\alpha = .87$) and money ($\alpha = .82$) items had good internal reliability so the respective items were averaged to form measures of time and money available to socialise. An additional two items assessed the number of hours during an average week that participants spent working for pay and looking after children. Participants responded to these items with a number of hours between *0* and *100*.

Mental health. The 21-item short form Depression, Anxiety and Stress Subscales

(DASS; Lovibond & Lovibond, 2004) and 5-item Satisfaction with Life Scale (SWLS; Diener et

al., 1985) used in Chapters 3 and 5 were again used to measure mental health and well-being. A

description of these scales can be found in Chapter 3. Consistent with the analytical approach

used in previous chapters, the DASS was analysed holistically as an aggregate measure of

mental health rather than being broken down into its subscales. Both the DASS ($\alpha = .95$) and

SWLS ($\alpha = .91$) items had excellent internal reliability. The SWLS items were averaged

together to form an overall score of life satisfaction. The DASS items were summed to form an

overall measure of mental health.[7]

Results

Power Analysis

I conducted a power analysis on the Study 6 data, using the current sample size and the

smallest effect size of social class and social integration ($r = .19$) from the previous two studies[8].

This power analysis revealed that the sample for Study 6 had a power of .99 to detect an effect

of this size using a two-tailed correlation test with an alpha of level of .05. Consequently this

study was very well powered.

Exploratory Factor Analysis

As per the pre-registration for this study, I conducted principal axis exploratory factor

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[7] As outlined in the pre-registration for this study, I also included a measure of how much the
participants identify with their social class, using a measure adapted by Rubin and Stuart (2017) from
Leach et al.'s (2008) measure of in-group identification. These scales are the same as the ones described
in Chapter 5. Like in Study 3, the items that formed each of these scales did not have acceptable split-half
reliability. I conducted moderation analyses to test the same hypotheses as outlined in Chapter 5. Again,
these moderation tests did not yield any significant results as separate items or combined into scales and
will not be discussed in this chapter.

[8] The pre-registration for this study included a power analysis that used the same effect size that
was used to calculate power in Studies 1 and 2. Given that this effect size relates to university students
rather than the general population, I decided to conduct a post-hoc power analysis using the effect sizes
found in my two previous general population studies instead.

analyses on the social class and social integration items in order to investigate the factor structure of these variables. The approach from previous chapters was used again. There was no missing data for any of these items.

Social class. The following factors were entered into a factor analysis to determine the structure of social class variables in this dataset: mother, father, and personal education level, occupation and social class, childhood wealth, and subjective social status. The Kaiser-Meyer-Olkin measure of sampling adequacy (.75), and Bartlett's test of sphericity ($X^2 = 1,900.52$, $df = 55$, $p < .001$) were satisfactory. An eigenvalue analysis indicated three factors with an eigenvalue greater than one. Cattell's scree plot and a Monte Carlo simulation (11 variables, 461 cases, 100 replications) both provided further support for a three factor solution. Consequently, I used a promax rotation to extract three factors.

The first factor accounted for 35.27% of the variances and consisted of three variables: mother's occupation (.65), father's occupation (.78), and childhood wealth (.43). The second factor accounted for an additional 11.39% of the variances and consisted of four variables: mother's education (.68), father's education (.57), mother's social class (.54), and father's social class (.48). The final factor accounted for an additional 17.12% of the variance and consisted of the four items referring to the participants' own education (.75), occupation (.68), social class (.66), and subjective social status (.58). Because I am interested in the participants' social class not that of their parents, I proceeded with the third factor only. The approach of using participant rather than parent social class indicators is consistent with that used in Studies 4 and 5. This approach is different from the first three studies of my thesis (i.e., Studies 1, 2 and 3) but it is suitable because this general population sample are older than my university student samples and thus participants are more likely to have social class indicators that have diverged from that

of their parents. Consequently, participant education, occupation, social class, and subjective social status were averaged together to form one factor labelled social class ($\alpha = .94$).

Social integration. The following variables were entered into a factor analysis to determine the structure of social integration variables in this dataset: social network size and contact, relationship satisfaction, social provisions, perceived family, friend, and partner support, loneliness, friendship, trust, taking advantage, and someone to lean on. Both the Kaiser-Meyer-Olkin measure of sampling adequacy (.93), and Bartlett's test of sphericity ($X^2 = 3{,}076.13$, $df = 45$, $p < .001$) were acceptable. A principal axis factor analysis on the standardised social integration measures identified one factor with an eigenvalue greater than one. This factor accounted for 54.5% of the variance and had an eigenvalue of 5.82. A follow up scree plot and Monte Carlo analysis (ten variables, 461 cases, 100 replications) provided further support for a one factor solution. Hence, I extracted one factor using a promax rotation. All items loaded on the factor above the .40 cut-off (.46 to .93). A Cronbach's alpha analysis of the measures that loaded on the first factor demonstrated excellent internal reliability ($\alpha = .91$). Hence, I averaged all social integration variables together to form a single factor of social integration.

Descriptives

Table 8.1 provides the means, standard deviations, minimum and maximum values, Cronbach alpha values, and zero order correlation coefficients for the key variables.

As predicted, social class was significantly positively correlated with social integration and satisfaction with life and negatively correlated with DASS. Also as predicted, social class was significantly positively correlated with status uncertainty and money to socialise as well as being significantly negatively related to time spent minding children. However, contrary to predictions, there was no significant relationship between social class and time to socialise.

Table 8.1
Descriptive statistics and zero order correlation coefficients

Measure	*M*	*SD*	Min	Max	α	1	2	3	4	5	6	7	8
1. Social class[†]	0.00	0.74	-1.84	1.60	.73	-							
2. Social integration[†]	0.00	0.75	-2.11	1.39	.91	.38**	-						
3. DASS	16.50	11.58	0.00	57.00	.95	-.34**	-.52**	-					
4. SWLS	3.72	1.61	1.00	7.00	.91	.34**	.50**	-.58**	-				
5. Status uncertainty	3.45	1.03	1.25	6.08	.87	-.32**	-.37**	.40**	-.24**	-			
6. Time to socialise	4.11	1.24	1.00	6.00	.87	.07	.16**	-.23**	.23**	-.14**	-		
7. Money to socialise	3.71	1.28	1.00	6.00	.82	.53**	.37**	-.36**	.38**	-.26**	.23**	-	
8. Time working	20.97	22.22	0.00	100.00	-	.30**	.10*	-.06	-.01	-.10*	-.30**	.26**	-
9. Time childcare	12.25	25.47	0.00	100.00	-	-.10*	-.02	.03	.06	.08	-.17**	-.11*	-.02

Note. †indicates variables that have been standardised. $N = 461$ for all correlations reported above. * $p < .05$, ** $p < .01$

Additionally, time spent working was significant positively related to social class, which is the opposite of the expected direction.

Consistent with predictions, social integration was significantly positively related to satisfaction with life as well as time and money available to socialise. Also consistent with expectations, social integration was significantly negatively related to DASS and also to status uncertainty. However, contrary to predictions, social integration was not significantly related to time spent minding children. Additionally, social integration was significantly positively related to time spent working, however this was in the opposite direction to what was expected.

Mediation Analyses

Mediators of social class and mental health. In line with the pre-registered analyses for this study, I first tested the central mediation model for this research: social integration mediating the relationship between social class and mental health. To test this model, I used PROCESS Model 4 inputting social class as the predictor variable, social integration as the mediator variable, and DASS and satisfaction with life separately as the outcome variables.

Consistent with predictions, social integration mediated the relationship between social class and both the DASS and the SWLS. For the model including DASS as the outcome, the total effect was significant, $b = -5.33$, $SE = 0.68$, $t(459) = -7.79$, $p < .001$, 95% CI $(-6.68, -3.99)$, the direct effect was significant, $b = -2.59$, $SE = 0.66$, $t(459) = -3.92$, $p < .001$, 95% CI $(-3.89, -1.29)$, and the indirect effect was significant, $b = -2.74$, $SE = 0.66$, 95% CI $(-3.65, -1.97)$. For the model including the SWLS as the outcome, the total effect was significant, $b = 0.74$, $SE = 0.10$, $t(459) = 7.76$, $p < .001$, 95% CI $(0.46, 0.34)$, the direct effect was significant, $b = 0.37$, $SE = 0.09$, $t(459) = 4.03$, $p < .001$, 95% CI $(0.19, 0.56)$, and the indirect effect was significant, $b = 0.36$, $SE = 0.05$, 95% CI $(0.27, 0.47)$. The CSIEs were -.18 for DASS and .17 for the SWLS,

indicating medium mediating effects of social integration (Kenny, 2014).

As in Chapter 5, I again tested these two significant mediation models in reverse to explore the possibility of an alternative model in which mental health variables predict social integration. Again, I only reversed the order of social integration and the DASS and SWLS for these tests because social class does not theoretically fit as a mediator or outcome of these relationships.

Each of the reversed mediation models were significant, with both DASS and SWLS mediating the relationship between social class and social integration. DASS (*CSIES* = .15) had a similar mediation effect size as social integration (*CSIES*= .18), indicating that relations between the variables may work in both directions. Additionally, the SWLS (*CSIES*= .14) had a similar mediation effect compared to social integration (*CSIES*= .17) again indicating a bi-directional relationship. However, I cannot reach strong conclusions about the causal directions because this is a cross-sectional dataset.

Mediators of social class and social integration. As outlined in the pre-registration for this study, I tested each of the variables that I hypothesised would mediate the relationship between social class and social integration (i.e., status uncertainty, time, money, and time spent working or looking after children) in a parallel mediation model with social class as the predictor variable and social integration as the outcome variable. I used Hayes' (2018) PROCESS Model 4 with the same specifications as before. The results from a parallel mediation including all potential mediators can be seen in Table 8.2.

As seen in Table 8.2, for the parallel mediation including all potential mediators, both the total and direct effect was significant. The indirect effect was not significant for time to socialise, time spent working, or time spent looking after children. The indirect effect was

significant for status uncertainty and money to socialise. The CSIES for status uncertainty and

money to socialise were .08 and .11 respectively, indicating medium indirect effects (Kenny,

2014). This general pattern of significant results remained the same when these variables were

tested in separate models.

Table 8.2
Mediators of the relationship between social class and social integration

Variables	Effect type	*b* (*SE*)	*95% CIs*	*t*	*p*	*CSIES*
	Total	0.39 (0.04)	0.30, 0.47	8.86	<.001	
	Direct	0.21 (0.05)	0.11, 0.31	4.14	<.001	
Status uncertainty	Indirect	0.08 (0.02)	0.05, 0.11	-	-	.08
Time to socialise	Indirect	0.01 (0.01)	-0.00, 0.02	-	-	.01
Money to socialise	Indirect	0.10 (0.03)	0.04, 0.17	-	-	.10
Time working	Indirect	-0.00 (0.01)	-0.03, 0.02	-	-	-.00
Time on childcare	Indirect	-0.01 (0.00)	-0.02, 0.00	-	-	-.01

Note. All Models have Dfs of 1, 459. *SE* = standard error. 95% CIs = the upper and lower 95% confidence intervals; SEs and CIs for indirect effects are bootstrapped. If CIs are both positive and negative, then the indirect effect is significant at *p* < .05.

Thus my predictions were somewhat met, in that money to socialise and status

uncertainty mediated the relationship between social class and social integration separately and

in parallel. However, my hypotheses related to time to socialise and time spent working or

minding children were not supported.

Serial mediations. As in Study 3, I also conducted non-preregistered analyses to

determine whether the mediators of the relation between social class and social integration

operated in parallel when they were included in a serial model that included social class, social

integration, and mental health. I used PROCESS Model 80 to test the indirect effect of social

class on mental health via the parallel mediator variables (status uncertainty, time to socialise,

money to socialise, and time spent working or minding children) and the single mediator variable of social integration.

The results from the model with DASS as the outcome can be seen in Figure 8.1. The total effect of social class was significant, $b = -5.33$, $SE = 0.68$, $t(459) = -7.79$, $p < .001$ 95% CI (-6.68, -3.99), and the direct effect of social class on DASS was not significant, $b = -1.29$, $SE = 0.73$, $t(459) = -1.75$, $p = .081$, 95% CI (-2.73, 0.16). Additionally, the parallel serial indirect effect was only significant for status uncertainty, $b = -0.43$, $SE = 0.11$, 95% CI (-0.68, -0.24), and money to socialise, $b = -0.57$, $SE = 0.19$, 95% CI (-0.98, -0.22) and not any of the other parallel mediators. These results indicate that having a lower social class is related to having more status uncertainty and having less money to socialise, which in turn both predict less social integration, which then predicts poorer mental health.

The results from the model with the SWLS as the outcome can be seen in Figure 8.2. The total effect of social class was significant, $b = 0.74$, $SE = 0.10$, $t(459) = 7.76$, $p < .001$, 95% CI (0.55, 0.92), and the direct effect of social class on SWLS was significant, $b = 0.28$, $SE = 0.10$, $t(459) = 2.71$, $p = .007$, 95% CI (0.08, 0.48). Again, the parallel serial indirect effect was significant for status uncertainty, $b = 0.06$, $SE = 0.16$, 95% CI (0.04, 0.10), and money to socialise, $b = 0.08$, $SE = 0.03$, 95% CI (0.03, 0.14) but not any of the other parallel mediations. These results indicate a significant parallel serial mediation effect in which status uncertainty and money to socialise, and then social integration, mediate the relationship between social class and satisfaction with life.

To investigate the robustness of these results, I tested status uncertainty and money to socialise in a Model 80 analysis without the other non-significant parallel mediators. When entered into Model 80 without the other parallel mediators, status uncertainty and money to

Figure 8.1. Parallel serial mediation model in which status uncertainty, money, and social integration mediate the relationship between social class and mental health.

Note: The non-significant parallel mediators (time to socialise, and time spent working and minding children) were excluded from this diagram for the purposes of clarity. * indicates *p* < .05, CSIE = completely standardised indirect effect
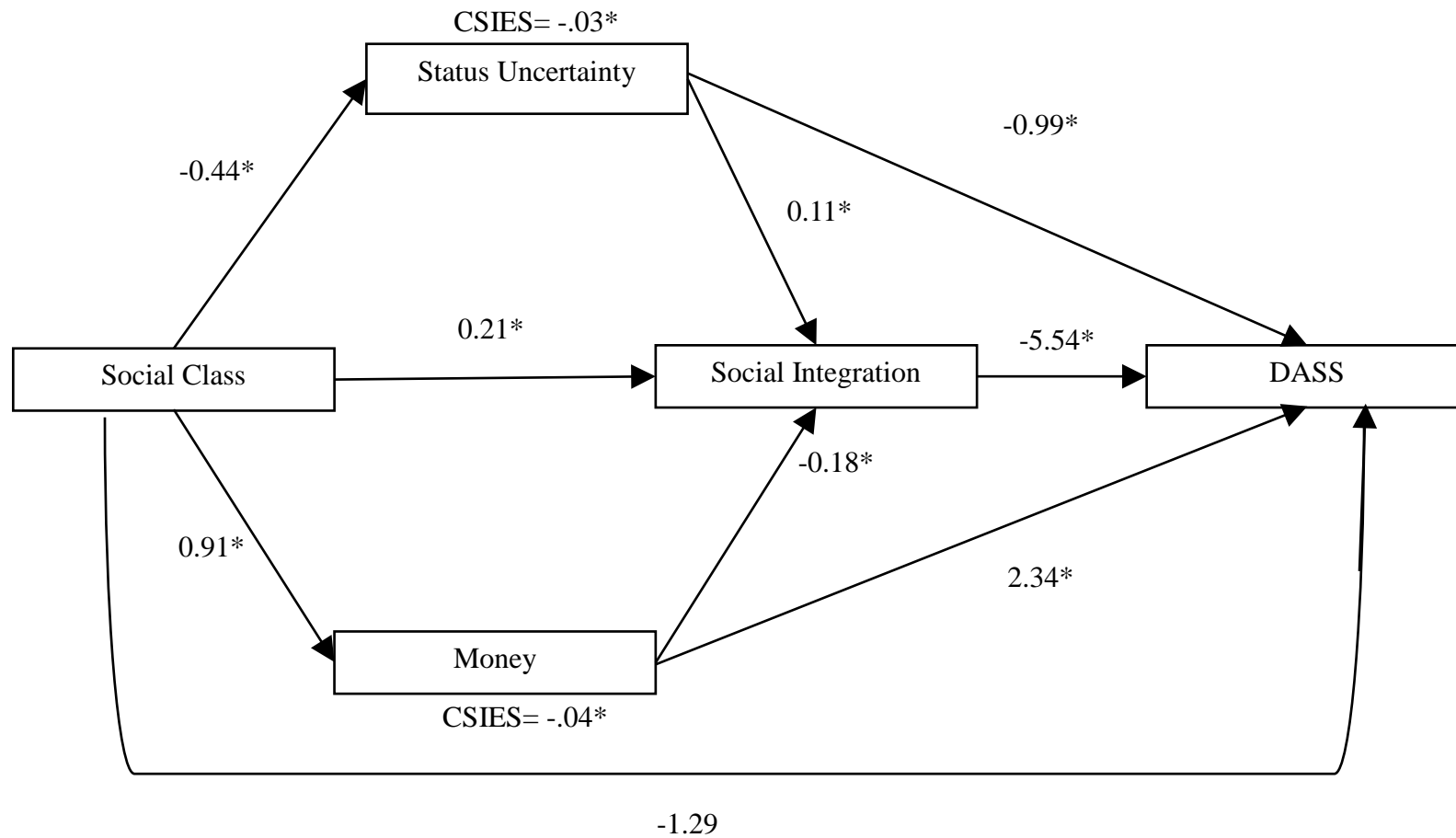
Figure 8.2. Parallel serial mediation model in which status uncertainty, money, and social integration mediate the relationship between social class and well-being.

Note: The non-significant parallel mediators (time to socialise, and time spent working and minding children) were excluded from this diagram for the purposes of clarity. * indicates $p < .05$, CSIE = completely standardised indirect effect.
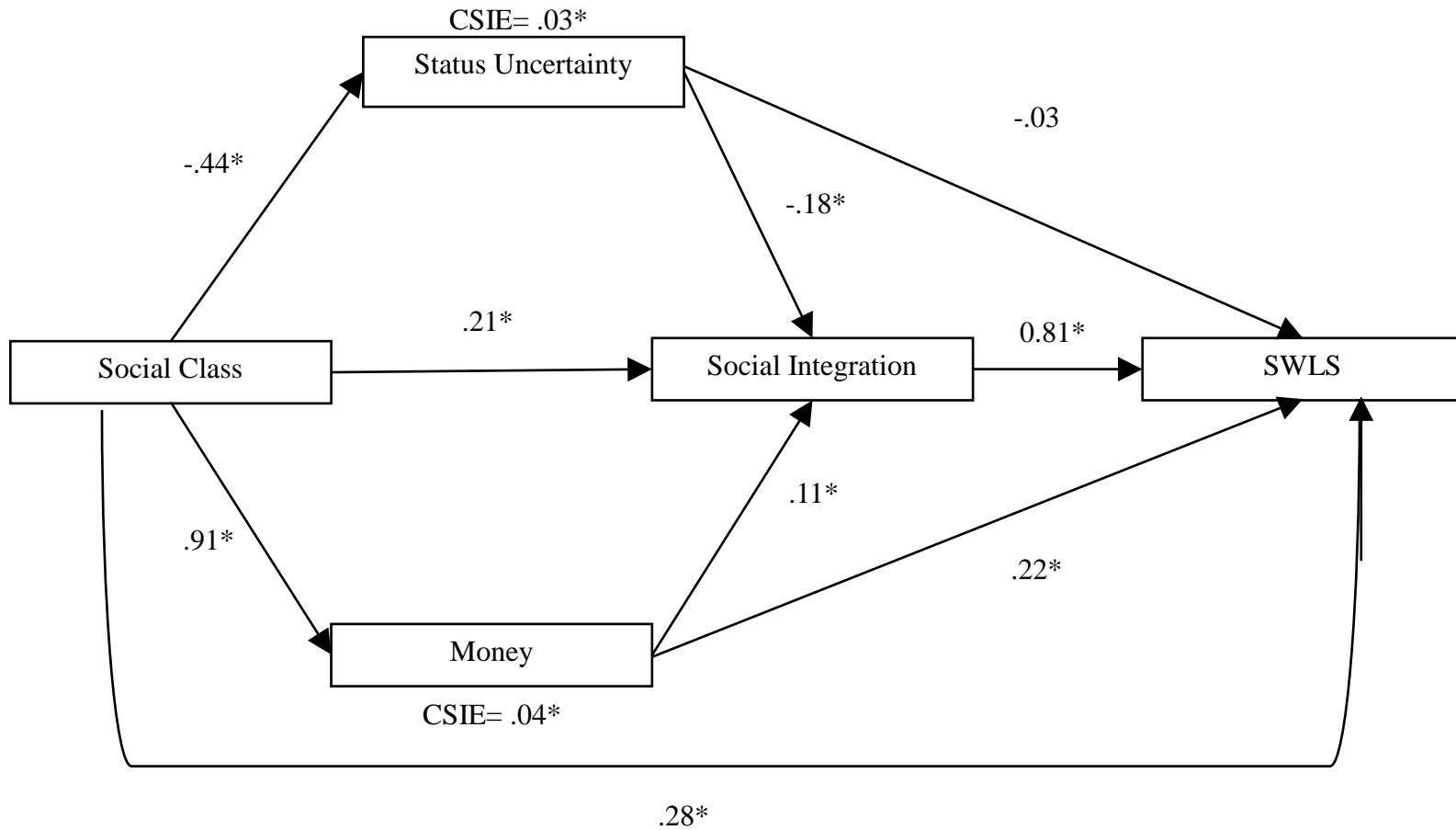
socialise both remained significant parallel serial mediators. These results indicate that the significant relationships in this model are not contingent upon any of the other parallel mediators being included.

Together, the mediation results provide some tentative evidence that status uncertainty and money to socialise work both in tandem and independently to mediate the relationship between social class and mental health via social integration. That is, lower social class predicts being less certain of status and having less money to socialise, which both in turn predict being less socially integrated, which in turn predicts poorer mental health and lower satisfaction with life.

Moderation Analyses

Social integration as a moderator of the relationship between social class and mental health. I used PROCESS Model 1 to test the hypotheses relating to the moderating effect of social integration on the relation between social class and mental health. Social class was entered as the predictor variable, social integration was entered as the moderator variable, and the DASS and its subscales as well as the SWLS were entered separately as outcome variables.

There was no significant moderation effect of social integration when DASS was the outcome, $b = 1.19$, $SE = 0.82$, $t(457) = 1.45$, $p = .147$. However, the relationship between social class and satisfaction with life was significantly moderated by social integration, $b = 0.26$, $SE = 0.11$, $t(457) = 2.23$, $p = .026$). The positive relationship between social class and satisfaction with life was only significant when social integration was at the high level, $b = .59$, $SE = .13$, $t(457) = 4.41$, $p < .001$, $95\%\ CI$ (0.33, 0.85), and at the mean level $b = 0.42$, $SE = 0.09$, $t(457) = 4.42$, $p < .001$, $95\%\ CI$ (0.23, 0.60), but not at the low level $b = 0.18$, $SE = 0.13$, $t(457) = 0.14$, p

= .152, *95% CI* (-0.07, 0.43). These results demonstrate that the size of the effect of social class on well-being changes as a function of social integration. However, the direction of this effect was in the opposite direction to what was expected, with the relationship between social class and well-being becoming larger rather than smaller as social integration increases. A visual representation of this moderation effect can be seen in Figure 8.3.
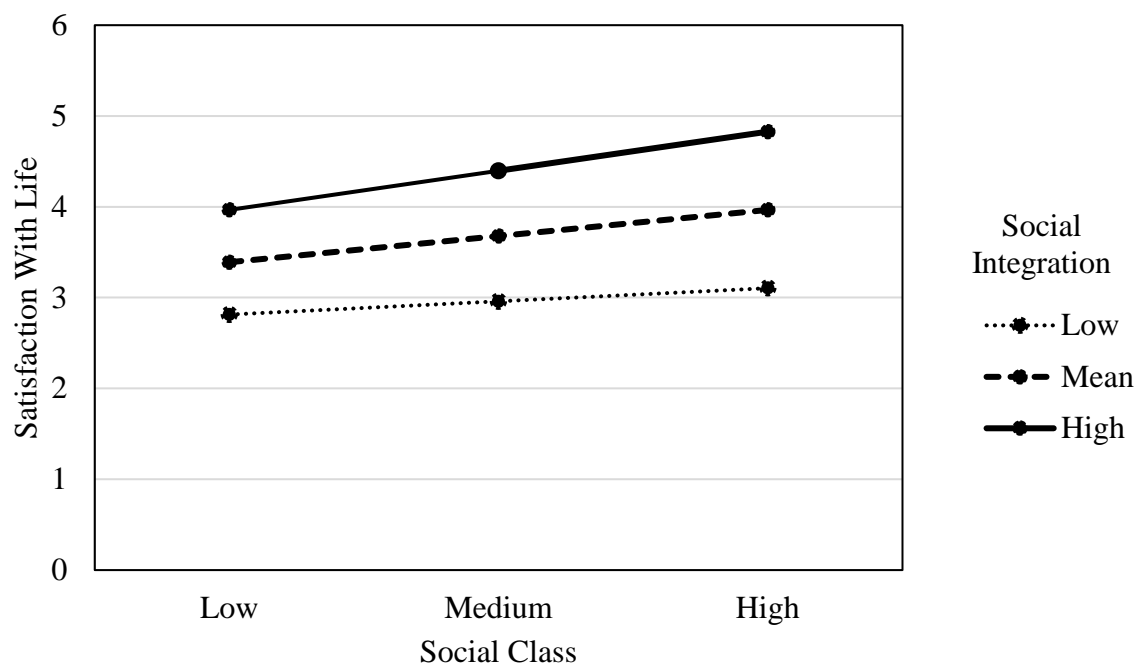
Figure 8.3 The relationship between social class and satisfaction with life as a function of social integration

Moderators of social class and social integration. As outlined in the pre-registration, I also used PROCESS Model 1 to test time and money for socialising and status uncertainty as moderators of social class and social integration. None of the results from these moderation analyses were significant. Thus my hypotheses that the relationship between social class and social integration would become weaker as time and money availability increased and status uncertainty decreased were not supported.

Sensitivity Analyses

All analyses reported above were conducted with outliers and without control variables. The inclusion or exclusion of (a) univariate outliers and (b) control variables (age, gender and ethnicity) in the tests did not alter the pattern of significant results reported above.

Like in Chapters 3 and 5, I also re-ran the key significant analyses reported above using the subscales of the DASS as the outcome variables. Social integration was a significant mediator of the relationship between social class and each separate subscale of the DASS. Similarly, I also re-ran the key mediation analyses reported above using the different measures of social integration rather than the aggregate social integration variable. From these analyses, all variables included in the aggregate social integration item were significant mediators between social class and the DASS and SWLS. However, only perceptions of social support was a significant moderator of social class and satisfaction with life. When breaking this variable down further into the family, friend and significant other subscales, only family support was a significant moderator of social class and satisfaction with life. All these moderation effects were in the same direction as the aggregate analysis reported above, with the relationship between social class and satisfaction with life increasing as perceptions of social support increased.

<div align="center">

Discussion

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In accord with Studies 4 and 5, Study 6 again demonstrates that social integration mediates the relationship between social class and mental health in the general population. Study 6 also conflicts with the moderation findings from the previous studies, because the relationship between social class and mental health became stronger rather than weaker as social integration increased. Additionally, the present study extended on Studies 4 and 5 by investigating some potential mediators between social class and social integration and whether

they serially mediate the relationship between social class and mental health via integration. Contrary to predictions, variables related to time did not mediate the relationship between social class and social integration. However, consistent with predictions, money to socialise and status uncertainty both significantly mediated the relationship between social class and social integration. Moreover, the exploratory parallel serial mediations demonstrated that money and status uncertainty predicted working-class people's lower social integration, which in turn predicts their poorer mental health. Overall, the present study used more comprehensive measures of social class, social integration, and mental health than the previous studies to demonstrate the mediating and moderating properties of social integration and also identifies some potential reasons why these relationships exist.

Social Class, Social Integration, and Mental Health

In comparison to Studies 4 and 5, the present study included multiple validated measures of social class, social integration and mental health. More specifically, I used the same scales that I used in Studies 1 and 3 to measure social class, social integration, and mental health, but in the general population rather than university population. Thus the present study compensates for Study 4's lack of subjective measures of social class and singular measure of well-being as well as Study 5's lack of validated mental health measures and comprehensive social integration items. The present study complements Studies 4 and 5 by demonstrating this relationship for the third time but with more powerful predictors of each of the key variables. Thus, in contrast to the previous research discussed in my literature review, I have taken a multifaceted and regression based approach to this question and provided compelling and consistent evidence that social integration may be partly responsible for the poorer mental health and well-being of working-class people in general.

This study also demonstrated that social integration moderated the relationship between social class and satisfaction with life but not the DASS. However, the direction of this moderation effect was unexpected, with the relationship between social class and satisfaction with life becoming stronger rather than weaker as social integration increased. Subsequent analyses indicated that social support was the only separate social integration item significantly moderating this relationship, indicating that social support may be driving this effect. Furthermore, when breaking social support down into its subscales only family social support was a significant moderator, indicating that not just social support in general, but family support in particular is driving the mediation effect. This was the first study that tested perceptions of family support directly. Thus, although the results contradict previous findings of the moderating effect of social integration they appear to represent the unique role that familial connections play in the relationship between social class and mental health. Overall, the results are mixed about whether social integration buffers the relation between social class and mental health. However, as with my previous studies, despite the inconsistent moderation findings, I am reasonably confident that improving social integration of working-class populations in the general population would lead to improvements in mental health.

Mediators and Moderators of Social Class and Social Integration

In addition to replicating the mediation model from Studies 4 and 5, the present study expanded on previous research by investigating some of the mediators and moderators between social class and social integration. Specifically, I tested time and money available to socialise, time spent working, time spent minding children and status uncertainty. Although none of these variables moderated the relationship between social class and social integration, lack of money available to socialise and status uncertainty both consistently mediated the relationship between

social class and social integration and also serially mediated the relationship between social

class and mental health via social integration. Thus, the present study suggests that the reason

social integration explains the relationship between social class and mental health may be

because working-class people have less money available for socialising and are more uncertain

of their status in society.

These findings are interesting given that they were included in the present study based

on research about university students. More specifically, Rubin and Wright (2017) found that

working-class university students reporting having less money to socialise at university partly

explained their lower social integration. However, as outlined in the introduction, I believe that

having a lack of funds for luxuries like socialising is not an experience specific to working-class

university students but is relevant to working-class people in general. Therefore, it is not

surprising that working-class people reported having less money to socialise and this in turn

predicted their lower social integration and poorer mental health.

In terms of status uncertainty, Destin et al. (2017) suggested that working-class

university students would feel uncertain about their status as they attempted to reconcile their

working-class background with the middle-class university environment and that this may

explain their poorer social integration. I believed a similar theory may apply to working-class

populations in general, whereby the changes in distribution of wealth in society and decrease in

archetypal working-class occupations and demographics have led to a sense of status uncertainty

and loss of community among the working class. The strong correlations between status

uncertainty and both social class and social integration, as well as the mediation findings,

tentatively support this idea. That is, working-class people are much more likely to be uncertain

of their status and people who are uncertain of their status are less socially integrated and have

poorer mental health. However, further research is needed to comprehensively validate this

theory.

In contrast, the present study did not support my hypotheses that time available to

socialise and time spent working and minding children explains the relationship between social

class and social integration. In fact, time spent working was significantly related to social class

in the opposite direction to that which I expected, with middle-class people working more than

working-class people. Like the above mediators, these variables were adapted from Rubin and

Wright's (2017) research on university students. Thus, one potential explanation for these null

findings is that these time variables do not generalise to the general population. In particular,

Rubin and Wright's findings were based on the idea that working-class students are more likely

to take on extra work to support themselves through university, while middle-class students are

less likely to need to do so. In addition, needing to work on top of studying means that working-

class students have less free time available to them. In contrast, working-class people in the

general population are more likely to be unemployed or underemployed (Weis, 2013), and do

not have the added time pressure of being students, which was the main reasoning for this

association in Rubin and Wright (2017). Additionally, at university working-class students are

more likely than other students to have children. However in the general population working-

class people are not more likely to have children and thus, this is not applicable to the general

population. Because social class differences in working and minding children do not apply

outside of the university context, they are unlikely to be mediators of working-class differences

in social integration. Indeed, the lack of correlation between social class and time variables

suggests that everyone is time poor, which fits with current narrative about diminishing levels of

free time for adults (The Economist, 2014). Thus, the present study demonstrates that money

and status uncertainty but not time explains some of the relationship between social class, social integration and mental health.

Limitations and Future Research

One potential limitation of the present study is that I recruited participants through Facebook. Facebook has 1.37 billion daily active users, including 15 million Australian users (Sensis, 2018), which means that Facebook users form a substantial portion of the general Australian population. Nonetheless, given that Facebook is a site explicitly designed for social purposes (e.g., connecting with friends, sharing personal information), it is likely that people who use Facebook will differ in their social integration compared to people who do not use Facebook. From Studies 4 and 5, which both demonstrate the same effect in large nationally representative samples, I can be reasonably certain that the mediational effects of social integration generalise across non-Facebook users. However, the reasons for working-class people not being as socially integrated may differ between Facebook users and non-Facebook users. Thus, future research should investigate the parallel and serial mediation effects from this study in samples recruited from sources other than Facebook.

An additional issue with the present study is that I only tested a small number of potential mediators between social class and social integration. There are many additional explanations for why working-class people are less integrated that need to be tested, and the present study does not represent an exhaustive investigation. For example, in my literature review, I outlined research that has suggested social and economic deprivation (Belle & Doucet, 2003;; Edin & Lein, 1997; Mickelson & Kubansky, 2003; Riley & Eckenrode, 1986; Smith, 2009; Wilkins, 1974), access to resources (Borges, 2014; Smith, 2010), and a lack of representation in public life (Barry, 2002) as potential reasons for working-class populations

lacking social integration. Consequently, future research should test these and more potential mediators of social class and social integration.

Summary of Studies 4, 5 & 6

Overall, the last three studies of my thesis demonstrated three times that working-class people are less socially integrated, and this in turn partly explains their poorer mental health. The completely standardised indirect effect of the relationship between social class and social integration varied slightly between Studies 4 (*average CSIE* = .08), 5 (*average CSIE* = .05), and 6 (*average CSIE* = .10), with all studies indicating small to medium effects of social integration (Kenny, 2014). Thus, unlike the research that came before it (discussed in Chapter 2), and consistent with my central mediation hypothesis, the present research consistently demonstrates that social integration mediates the relationship between social class and mental health. Specifically, all three studies demonstrate that working-class people are less socially integrated and this in turn predicts their poorer mental health. These studies are the first clear evidence of this mediation effect in the general population. I have provided more conclusive and consistent evidence than previous research, by taking a more appropriate statistical and methodological approach using regression-based analyses and multiple measures of each of the key concepts. Thus, the present studies meaningfully expand on previous research and demonstrate the suitability of this type of approach to this type of research question.

All three studies had many strengths including the equal representation of men and women, widespread representation of participants from across Australia, and large sample sizes. Thus, I can be relatively certain of the pervasiveness of these relationships, that they are not specific to one gender or one part of Australia, and that I have not committed a Type II error.

The most prominent limitation of Studies 4, 5 and 6 is that they are cross-sectional.

Because the measures of social class, social integration, and mental health in all three studies were taken at the same time, I cannot be certain of the causal influence of any of these variables. Like in Studies 1 through 3, I can be relatively confident that social class causes changes in social integration and mental health rather than the other way around. However, I cannot be certain that social integration causes changes in mental health. In fact, the reversed models I conducted for each study suggest that the relationship between social integration and mental health may be bi-directional. However, as discussed in previous chapters, the implications of these reversed models is debatable (Lemmer & Gollwitzer, 2017; Thoemmes, 2015). Based on the longitudinal findings from Study 1, I can be somewhat confident that social integration mediates the relationship between social class and the mental health because that study provides longitudinal evidence of the causal pathways. However, Study 1 provides evidence for the proposed causal direction in a university sample only, which may not necessarily generalise to the general population. Consequently, future research should conduct a longitudinal study using a general population sample.

Overall, Studies 4-6 in my thesis provide a comprehensive and multifaceted base of evidence to suggest that lower levels of social integration may be partly responsible for the poorer mental health in working-class populations. Because of my large and widely representative samples, I have demonstrated that this is a widespread effect that is not affected by a number of variables including gender, age, and marital status. Additionally, Study 6 demonstrates some of the reasons why social class differences in social integration may exist including working-class people having less money for socialising and being more uncertain of their status identity. The next chapter in my thesis summarises the key findings from all six of my thesis studies and discusses their methodological, theoretical and practical implications.

CHAPTER 9

SO, IT IS LONELY AT THE BOTTOM? A DISCUSSION OF MY KEY FINDINGS AND

THEIR IMPLICATIONS

It has been widely established that working-class people tend to have poorer mental health compared to people from upper classes, and that this problem is increasing as inequality continues to rise nationally and internationally (Adler et al., 1994; Cockerham, 2007; Murali & Oyebode, 2004). Although being socially and economically disadvantaged is inherently risky for mental health, there are other factors related to the poorer mental health of working-class populations that can be changed. In this thesis, I aimed to develop a more nuanced understanding of the role that one such factor, social integration, plays in the relationship between social class and mental health. My primary aim was to test the central hypothesis that: *social integration will mediate the positive association between social class and mental health.*

I applied a multi-faceted and regression-based approach to conduct six studies demonstrating the mediating role of social integration in the relationship between social class and mental health. Through these studies, I have demonstrated that social integration mediates the relationship between social class and mental health, or in other words that working-class people's lower social integration predicts their poorer mental health. I have demonstrated this effect (a) within university populations, (b) within the general Australian population, (c) across a broad spectrum of concepts of social integration, (d) across multiple measures of mental health and social class, (e) within local and national samples, and (f) when controlling for theoretically relevant covariates (e.g., age, gender, ethnicity). Thus, this thesis provides consistent and compelling evidence in support of my central research question and has important methodological, theoretical, and practical implications for the field.

In this chapter, I will discuss (a) the findings relating to social integration as a mediator, (b) the findings relating to social integration as a moderator, (c) the mediators and moderators between social class and social integration, (d) some general limitations of my research, and (e) the methodological, theoretical, and practical implications of my research. Consistent with the rest of this thesis, when I refer to "working-class" or "lower class" I am referring generally to people on the lower end of the social class spectrum rather than people specifically classified within the working-class. Similarly, "middle-class" and "upper-class" refer generally to those towards the middle or top of the social class spectrum.

Social Integration as a Mediator

The first three studies of my thesis investigated the mediating role of social integration in the relationship between social class and mental health within the university population. Study 1 applied a three-wave longitudinal research design and demonstrated that social integration mediates the relationship between social class and mental health longitudinally. Because of Study 1's longitudinal design, I can be reasonably confident that working-class students' lack of social integration at university is at least partially responsible for their poorer mental health.

Study 2 extended on these findings using archival data from a large Australian research project. Study 2 was unable to replicate the mediation models from Study 1, however I attributed this to issues with the measurement of mental health included in the study. Importantly, Study 2 provided evidence that social class is positively related to social integration in a larger, nationally representative sample and demonstrated the robust nature of the relationship between social class and social integration. In particular, the study demonstrated that social class's influence on social integration was not affected by type of higher education institution or living situation.

Study 3 complimented Study 1 by providing further evidence that social integration mediates the relationship between social class and mental health in university students. Additionally, it replicated the findings of Rubin and Wright (2017) that age and time to socialise mediate the relationship between social class and social integration. Further, Study 3 provided evidence that working-class students' are more likely to be older, and in turn have less time to socialize, and so be less socially integrated which then predicts their poorer mental health.

Moving beyond the focus on university students, Studies 4 – 6 involved research I conducted using general population samples. Studies 4 and 5 both used existing data from large Australian research surveys to investigate the relationship between social class, social integration, and mental health and well-being. Both studies found evidence that social integration mediates the relationship between social class and mental health/well-being, although there were issues in Study 4 and 5 with the construct validity of some of the measures.

To build from these two studies and extend on the research question, Study 6 involved a research study that I conducted myself with participants recruited from the general Australian population. This study used comprehensive measures of social class, social integration, and mental health. Using these more comprehensive measures, Study 6 demonstrated that social integration mediates the relationship between social class and mental health. Like Study 3, Study 6 also explored some of the reasons for the relationship between social class and social integration, but in the general rather than university population. The results suggested that working-class people's lower social integration and subsequent poorer mental health is at least partially explained by their having less money to socialize and being more uncertain of their status in society.

Consequently, this thesis provides consistent and convincing evidence for my central

mediation hypothesis. More specifically, my findings support the theories that working-class people are less socially integrated and that this lack of social integration is detrimental to their mental health and well-being. Thus, as I intended from the outset, this thesis forms a strong base of research establishing the importance of the social integration pathway through which social class influences mental health.

Social Integration as a Moderator

The central theme of this thesis was to test social integration as a mediator of social class and mental health. However, I also tested its role as moderator. These moderation analyses were conducted to assist with my argument about how improving social integration would improve the mental health for working-class populations. More specifically, I wanted to establish whether social integration acts as a protective factor for the effects of social class on mental health, such that higher social integration would reduce the size of the relationship between social class and mental health. There is a substantial body of research demonstrating that various aspects of social integration are important for protecting individuals from the detrimental effects of adverse circumstances on mental health (for reviews, see Cohen, 2004; Cohen & Wills, 1985). Thus, a sense of connection with social networks, and actual participation in these social networks, are important factors in protecting people from stressful situations. Consequently, being able to determine that increased social integration weakens the effect of social class on mental health would build from my mediation findings to demonstrate that social integration not only explains the social class-mental health relationship but can also buffer against it. However, the results from my moderation analyses were much more inconsistent than my mediation findings.

In terms of my university-based studies, Study 1 found that social integration moderated the relationship between social class and mental health longitudinally, however Study 3 was

unable to replicate these findings in a cross-sectional dataset. Thus, my findings were not

reliably consistent with the idea that social integration at university buffers the relation between

social class and mental health. Additionally, the moderation findings in my general population

studies were quite inconsistent. In Study 4, social integration moderated the relationship

between financial strain and well-being but not social class and well-being. Study 5

demonstrated that trust but not perceptions of available social support moderated the

relationship between social class and mental health. In Study 6 social integration moderated the

relationship between social class and well-being, however this was an amplifying rather than

buffering effect whereby the relationship between social class and mental health became larger

as social integration increased.

By far the most inconsistent and unexpected finding from these moderation analyses

was the finding from Study 6 that social integration amplifies the relationship between social

class and well-being thereby seeming to increase rather than decrease social class differences in

mental health. However, this moderating effect of social integration largely disappeared at the

lower level components of my social integration aggregate, with only perceptions of social

support proving to be a significant moderator alone. Moreover, only the family support was a

significant moderator when breaking this scale down further into its three components. These

results suggest that it is perceptions of social support from family members driving this

amplification effect. Interestingly, Study 6 is the only study in this thesis to directly measure

perceptions of familial support, which is most likely the reason this amplification only arises in

Study 6 and not in any of the other studies.

It is not entirely clear why increasing family support would increase the relationship

between social class and social integration. One likely explanation is that family support is a

distinct form of support that is more attached to social class than the other more general and friendship based measures of social support. Research on social class differences in families has found that working class families tend to be more dysfunctional than middle and upper class families (Furstenberg, 2010). In particular, working class families are much more likely to experience negative events (e.g. death, poor health, unemployment) and have less resources available to protect themselves from the consequences of these events. Working class parents are also more likely to have strained and argumentative relationships with their children, even into adulthood (Laraeu, 2010). Consequently, it is possible that although working class individuals may perceived that they are supported by their family, this support from their working class family is not as nurturing to their mental health as the support a middle or upper class individual receives from their middle or upper class family. This is not to say that working class families are unable to provide support, but that their ability to do so is hindered by the stress placed upon them by their economic and social position. These findings point towards the difference between family and other types of social integration when considering social class. However, this was only one finding from one cross-sectional study and requires further investigation before firmer conclusions can be drawn. Future research should investigate social class differences in family support in order to better understand this amplification effect.

In terms of my other moderation findings, although it would have been useful to demonstrate a consistent moderation effect of social integration in both my populations of interest, I do not believe these inconsistent results pose a problem to my overall proposition that social integration is one of the keys to improving social inequalities in mental health. As I have discussed in previous chapters, there is a great deal of research demonstrating the positive impact that social integration has on mental health (e.g., Cohen, 2004; Kawachi & Berkman,

2001; Seeman, 1996), meaning that I can be relatively certain that improving social integration would weaken the effect of social class on mental health. The significant moderation results I did find support this idea because, in all cases, the relationship between social class and mental health was weaker when social integration was high. These significant results suggest that working-class people generally have better mental health when they are more socially integrated. The nonsignificant results on the other hand may suggest that this relationship is susceptible to other confounding factors and is part of a more complicated process. Additionally, there is already some evidence to suggest that social support buffers the relationship between socioeconomic status and stressful situations (Hooker, Campos, Zoccola, & Dickerson, 2018; Viseu, Leal, Neaves de Jesus, Pinto, Pechorro, & Greenglass, 2018). Future research should continue along these lines to investigate the moderating role of social integration.

Mediators and Moderators concerning Social Integration

As well as investigating social integration as a moderator, another additional line of enquiry in this thesis was to investigate the variables that explain and moderate the relationship between social class and social integration. This line of investigation was included because it is important to understand what underpins inequalities in social integration in order to change them. More specifically, knowing what factors explain these differences as well as their flow-on effect for mental health is necessary in order to develop effective interventions. Studies 2 and 3 explored these moderators and mediators at university, while Study 6 did so in the general population.

Social Integration at University

In terms of what moderates the relationship between social class and social integration, Study 2 found that the relationship between social class and social integration did not vary as a

function of the type of institution students were attending (Go8 vs non-Go8 university; university vs. TAFE) or where they were living (on campus or at home). As for mediation, Study 3 found that the relationship between social class and social integration was not explained by some of the personal perceptions and characteristics thought to mediate social class differences in social integration, including academic disengagement, perceived similarity with other students, perceived wealth of other students, similarity of motivations, availability of finances, and time spent (a) commuting to campus, (b) working, and (c) caring for children. However, Study 3 did replicate the findings of Rubin and Wright (2017) that age and then time to socialise mediated the relationship between social class and social integration. Taken together, this pattern of results supports Rubin's (2012) finding that social class differences in social integration at university is a remarkably invariant effect. The current evidence also adds to previous findings by demonstrating, as per Rubin and Wright (2017), that some of this relationship is accounted for by the individual characteristics of university students including their age and time commitments. The findings from Study 3 also demonstrated that working-class students being older, having less time to socialise, and being less socially integrated as a result, partially explains their poorer mental health and well-being.

Social Integration in General

Study 6 mirrored Study 3 by testing some of the same mediators between social class and social integration in the general rather than university population. In contrast to the age and time findings in the university sample, money available to socialise and status uncertainty both consistently mediated the relationship between social class and social integration. Money and status uncertainty also serially mediated the relationship between social class and mental health via social integration. Consequently, Study 6 and Study 3 demonstrate that in comparing the

general and university contexts, different factors explain the relationship between social class

and social integration. However, it should be noted that Rubin and Wright (2015) found that

money mediated the relationship between university student social class and social integration,

indicating that the effect of money may occur in the university population as well. Nonetheless,

this research highlights the importance of considering context when investigating these

relationships.

Both my studies on university students and the general population were limited in that

they only tested a small number of potential mediators and moderators between social class and

social integration. As discussed in the previous chapter, there are many additional potential

explanations for why working-class people are less integrated at university and in general. Some

suggestions from the literature include, social and economic deprivation (Belle & Doucet, 2003;

Edin & Lein, 1997; Mickelson & Kubansky, 2003; Riley & Eckenrode, 1986; Smith, 2009;

Wilkins, 1974), access to resources (Borges, 2014; Smith, 2010), and a lack of representation in

public life (Barry, 2002). Additionally, research in the university context suggests that other

aspects of the cultural mis-match like methods of making friends (Archer, Hutchings, & Ross,

2005) and inclusion in class and in the curriculum (Reay et al., 2010) may explain their lower

social integration. Research should continue to investigate and test these pathways to better

understand and work towards increasing the social integration of working-class people and

students.

<p align="center">**Limit**ations</p>

Methodological Design

As discussed in the previous chapter, one of the major limitations of the second half of

my thesis is that all the studies relating to the general population are cross-sectional. Thus, I

cannot be certain that social class causes differences in social integration which in turn causes

poorer mental health. Moreover, the reversed mediations in each of my results sections provide

some evidence that the relationships between social class and social integration may be bi-

directional. As I have previously discussed, I can be relatively certain of social class's role in

these relationships because of its pervasive and enduring effect. However, it should be noted that

there is some evidence to suggest that people with poorer mental health and who lack supportive

networks are more likely to find themselves in economically and socially disadvantaged

situations (Fox, 1990; Hudson, 2005). Nonetheless, there is more evidence for the reverse effect

in which those already low in money and status are more likely to experience poor mental health

and social integration (Hudson, 2005; Power et al., 2002; World Health Organisation, 2014).

In terms of the relationship between social integration and mental health, there is more

ambiguity about whether impoverished social networks lead to poorer mental health, or having

mental health problems weakens your ability to form and maintain social networks (Saeri,

Cruwys, Barlow, Stronge, & Sibley, 2018). Both manifestations are likely to be true, however

Saeri et al. (2018) have provided evidence that social connectedness is the stronger and more

consistent predictor of mental health on a year-to-year basis. Additionally, Garrison and Rodgers

(2018) concluded that there is more evidence for environmental compared to genetic causes of

socioeconomic status differences in mental health. Thus, there is more support for a model in

which social class causes differences in social integration which then causes differences in

mental health. Even so, it is imperative that future research investigate the relationships between

these variables over time, controlling for previous levels of both the mediator and outcome, to

reach firmer conclusions about the causal pathways between them. The causal directions of

these relationships could also potentially be tested experimentally by manipulating participants'

social class and observing changes in social integration and mental health. Social class

manipulations have been effectively used to alter behavior in previous research (Jetten, Mols &

Postmes, 2015).

One additional limitation of the methodology applied in this thesis is that I only used

self-report measures of social integration, in which participants were asked about their

perceptions of various social integration concepts or they were asked to report more objective

social integration measures e.g., how many friends they have. It is well-known that self-report

measures are prone to issues with bias and accuracy (Austin, Gibson, Deary, McGregor, & Dent,

1998; Hoskin, 2012; Rosenman, Tennekoon, & Hill, 2014). Self-report measures were used for

all aspects of my research including social class and mental health. However, social class and

mental health are both concepts that are not easily measured outside of self-report. In particular,

social class as I define it within this thesis involves the lived experience of social and economic

status, which, because it is the experience of an individual, is largely unable to be accurately

observed. Moreover, mental health and well-being are both largely wholly subjective

experiences of mental states and emotions. In contrast, numerous components of social

integration can be observed rather than relying on self report. For example, social network

analysis could be used to determine both the size and density of an individual's social networks

(Borgatti, Mehra, Brass & Labianca, 2009). Additionally, social behaviours such as how often

participants contact friends and family or socialise with others can be recorded or observed by

researchers (Baker, 2006). However, as mentioned in Chapter 1, research has demonstrated that

perceptions of social integration are just as important, if not more important, than actual social

integration, especially in relation to mental health (Cohen & Wills, 1985; Wethington & Kessler,

1986; Turner & Turner, 2013). Thus, I believe that my use of self-report in this thesis is justified.

Nonetheless, future research should employ a mixed methods approach using both self-report and observation to minimise the bias of a self-report only approach.

Generalisability over Time

Another potential limitation of the present thesis is that the relationships between social class and social integration are likely to change over time. Specifically, it is likely that the relationship between social class and social integration will change in line with changes to inequality, or even major international events. In other words, there are context specific factors that are likely to moderate the relationship between social class and social integration, such that the relationship becomes bigger or smaller as a result of surrounding events and context. As an example, there is evidence that social integration changes when major global events that add to inequality occur. Researchers found that, after the global financial crisis occurred (Wilkinson & Pickett, 2009; Buttrick and Oishi, 2017), generalised trust decreased and this change was most prominent for low SES individuals (van der Cruijsen, de Haan, & Jansen, 2016). Although, it should be noted Navarro-Carrillo, Valor-Segura, Lozno, and Moya (2018) found that decreases in trust after the global financial crisis occurred independent of socioeconomic status. The global financial crisis in this case impacted financial situations and increased inequality, which were likely reasons for the increase in the strength of the relationship between social class and social integration. However, there may also be circumstances in the future where global or national events cause this relationship to become weaker.

Additionally, in terms of my findings from Study 6, I hypothesise that the relationship between social class and status uncertainty will wane over time, which according to Destin et al. (2017) would lead to increases in social integration. In terms of increasing inequality, it is possible that the working class and the middle class will compress together entirely, which could

also increase solidarity and cohesiveness among working-class populations. Examples of this

can already be seen in political efforts such as the Occupy Wall-Street protests, which brought

middle and working-class individuals together to protest against the elite 1% (Van Gelder,

2011).

Overall, there is some reason to believe that at least part of the relationship between

social class and social integration that I have demonstrated in this thesis is prone to change in

terms of political and social contexts. In terms of my general population studies, there is a seven

year gap between Study 6, and Studies 4 and 5, indicating that this effect has some longevity.

Nonetheless, it would be beneficial to utilise existing datasets from past decades to determine

the relationships of these variables over time. Additionally, this phenomenon is something that

should be monitored into the future, perhaps with a protracted longitudinal design across the

lifespan.

Generalisability over Countries

One further limitation of the research discussed in my thesis is that all of my samples are

Australian, meaning my results may only apply to the Australian population. This national focus

was intentional on my part because I am Australian and therefore have the most access to

samples from Australia and knowledge about Australian cultures. However, I have no reason to

suspect that the relationships that I found would not extend beyond Australia, especially to other

Western industrialised countries and countries with similar patterns of social and health

inequalities. In terms of my university specific samples, there is some research demonstrating

the relationships between student social class, social integration, and mental health separately in

other countries (for a review, see Rubin, 2012). However, the research demonstrating social

integration as a mediator of social class and mental health is presently only from Australia

(Rubin et al., 2016; Rubin & Kelly, 2015). In terms of the general population, the studies

discussed in Chapter 2 that examined the relationships between social class, social integration

and mental health were from various countries, however these all had major methodological and

statistical limitations. Thus, there is a need to apply the same statistical and methodological

approach that I have taken in this thesis to examine these variables in other countries and

determine whether these relationships extend beyond Australia.

Is it just a Minority Group Status Effect?

One potential explanation for working-class people being less socially integrated that

was not explicitly tested within my thesis is that the working class form a minority group within

society, which is a known predictor of both social integration and mental health. It has been

previously demonstrated that being part of a minority group is related to being less socially

integrated into society (Simon, Aufderhedie, & Kampmeier, 2003; Tajfel, 1978) and to having

poorer mental health (Halpern, 1993). Thus, the minority status of working-class people is one

potential explanation for why they may be less socially integrated and have poorer mental

health. However, in Study 2 it was demonstrated that the relationship between social class and

social integration did not vary as a function of what type of institution students were attending,

or more specifically, as a function of the size of their minority status within the student body.

Additionally, if this finding was simply a minority group effect, then I would expect that the

relationship between (a) social class and social integration and (b) social class and mental health

would be curvilinear, because upper-class people form a minority group in society as well. To

investigate this possibility, I reinvestigated the Study 6^9 data to determine whether there is a

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[9] Study 6 was chosen in this instance because it has the most cohesive and appropriate measures
of all three variables.

curvilinear relationship between social class, and both social integration and mental health. I squared social class and entered it into a hierarchical regression model with social class as the first step and the squared product as the second step, predicting measures of mental health and my social integration aggregate separately. In all cases, the squared product of social class was not a significant predictor of mental health or social integration after controlling for the initial linear effect of social class. This analysis indicates that there is not a significant curvilinear effect in the data. In other words, upper-class people are not more likely than the middle class to have poorer mental health or report being less socially integrated. Thus, I have some evidence to suggest that the relationship between social class and social integration is not wholly explained by minority status. Nonetheless, future research should attempt to rule out this possibility with more rigorous tests of this theory.

In summary, there were some limitations with the scope and methodology of the present research. Future research should continue to build on this research by applying longitudinal designs, investigating the generalisability of this effect, and expanding the scope of investigations to attempt to identify and rule out additional mediators and moderators.

Implications

There are several methodological, theoretical, and practical implications from the results presented in this thesis. I discuss these implications below.

Methodological Implications

The methodological implications from this research largely relate to the comprehensive measurement and regression-based statistical approaches I applied to each research project, which differs from the approach taken by the bulk of prior research. I discuss the results of these approaches and their outcomes below.

A multifaceted approach to measurement. As I addressed in Chapter 2, all the existing research linking social class, social integration, and mental health in the general population took an incomplete and narrow approach to measuring each of these three variables, which is problematic. In contrast, the research I discussed using university samples had a more comprehensive approach to measuring these variables, particularly Rubin and Kelly (2015), who used multiple measures of social class, social integration and mental health. I applied a similar approach in the present thesis by (a) combining multiple measures of social class to capture objective and subjective experiences of class, (b) investigating both mental health and well-being wherever possible, and (c) using multiple measures of social integration separately as well as investigating the convergence between these measures to reach firmer conclusions about social integration in general.

Social class. In all six studies of my thesis, I combined multiple concepts related to social class together to form global measures of social class. For each study, I conducted a factor analysis, which, with some small caveats, demonstrated that the variables related to social class all share some commonality and load onto one factor. In the studies of my own design (Studies 1, 3, and 6), I used subjective measures of occupation, childhood wealth, self-selected social class, and subjective social status as well as an objective measure of education. The archival studies (Studies 2, 4 and 5) had objective measures related to occupation, education, and income, however Study 5 also included a single measure of subjective social status. Regardless of the approach taken to measuring social class, I found consistent evidence for social integration as a mediator of social class and mental health. This represents a substantial divergence from previous literature, which has usually treated social class variables separately (Diemer et al., 2012; Kraus & Stephens, 2012). In contrast, this thesis demonstrates the

convergence of social class variables and their collective influence on social integration and

mental health, and it provides compelling evidence for taking a multi-faceted approach to

measuring social class.

One notable difference in the formulation of social class across the studies in my thesis is

the different approach that I utilised in my university samples compared to my general

population samples. In particular, many of the social class variables in my university samples

were focussed on the social and economic situation of their parents (e.g., mother's education,

father's education, mother's occupation, and father's occupation). In contrast, in the general

population samples I referred to the participants' own attributes instead. As explained in Study 1,

using parent social class factors as a proxy for student social class is necessary because

university students generally have the same full-time occupation (i.e., university student), the

same education level, and are also less likely to have developed their own social class identity

(for reviews, see Kraus & Stephens, 2012; Oakes & Rossi, 2003; Saegert et al., 2007). Logically,

these same restraints do not apply to the general population where people can have any

occupation or education level and there is a wider distribution of age. In support of this logic,

the factor analysis I conducted in Study 6 demonstrated divergence between parental-based

measures of social class and personal measures of social class. This result is in contrast to

Studies 1 and 3 which, despite using the same social class measures, had all social class items

loading onto one factor. Consequently, my thesis demonstrates the importance of considering

context when measuring social class.

Mental health. In this thesis, where possible, I also considered both mental health and

well-being. In particular, all the studies of my own design (Studies 1, 3, and 6) included a

comprehensive measure of mental health (the DASS) and well-being (life satisfaction). As

discussed in Chapter 1, mental health is not simply well-being or any of its constituents. Instead, well-being is often considered to be part of, or parallel to, general mental health (Keyes, 2005). In line with this idea I found a consistently strong but not perfect correlations between the Depression Anxiety and Stress Scale and Satisfaction with Life Scale in Studies 1, 3 and 6 (average $r = -.62$). Additionally, some of my research found differing results between mental health and well-being. In my studies about university students, Study 1 found social integration mediated and moderated the relationship between social class and mental health but not well-being. In contrast, Study 3 found significant mediation results for both mental health and well-being but no moderation results for either of these outcomes. In this instance, the results from Study 1 provide more compelling evidence because these relationships were observed controlling for previous levels of mental health and well-being. In terms of the general population, Study 6 demonstrated that social integration mediated the relationship between social class and mental health and well-being, but only moderated the relationship between social class and well-being. Thus, my research differs from previous research which, for the most part, largely ignores the well-being side of mental health. The differing findings between the two variables reinforces the idea that these variables represent different psychological experiences and that both are needed to capture the full spectrum of mental health.

     Social integration. I employed a comprehensive approach to measuring social integration in this thesis, which has rarely been taken in previous research. Employing this wider array of social integration constructs meant that I could be more confident that I was covering most aspects of social integration and also draw broader inferences about the effects of social integration. In studies in which I used validated scales of social integration, I not only combined the measures together but also tested them separately. With only a few exceptions, results

remained consistent regardless of whether these variables were tested separately or as part of an aggregate variable. Thus, I identified a strong and consistent convergence between various aspects of social integration, including social support, social contact, network size, social trust, and socialising. In fact, regardless of whether the variables were from existing scales or were ad-hoc items, my results demonstrated they all loaded strongly onto a single factor of social integration. One notable exception to this convergence were the items in Study 5, in which social trust and social support did not load onto the same factor. However, I propose this unexpected divergence occurred because there were only three items in total, which made it a less sensitive measure of social integration and more prone to variance (Van Ty Smith, McCarthy, & Anderson, 2000). In support of this conclusion, Studies 3, 4, and 6 found items relating to social trust and social support loaded together when included with other scales.

This comprehensive approach to measuring social integration represents an important advancement in the literature because it allows me to draw clearer conclusions about (a) social integration as a broad construct and (b) the effect of social class on a range of different aspects of social integration. Compared to previous research, because of the broad scope I have applied to social integration, I can reach firmer conclusions about social integration in general. More specifically, I have established that working-class people are less socially integrated across a broad spectrum of different aspects of social integration and that social integration broadly conceived also explains their poorer mental health. My comprehensive approach to social integration yielded more consistent results than the previous literature discussed in Chapter 2, demonstrating the principle that accurately measuring a construct leads to more cohesive and reliable results (Haynes et al., 1995). This is not to suggest that specific measures are not useful. In fact, knowing which specific components of social integration are affected may be necessary

when designing specific interventions to solve problems. However, I propose that my comprehensive approach to social integration is more appropriate for the present research question, where I am seeking to investigate broad social trends.

      Statistical approach to mediation. In terms of my statistical approach, in this thesis I applied a continuous, regression-based approach to determining the relationships between variables. This approach is in contrast to previous literature on the general population, which exclusively used dichotomized variables in logistic-regression models. In Chapter 2, I proposed that this approach was one of the reasons for the conflicting findings of previous research and for why there was no consensus on whether social integration mediates the relationship between social class and social integration. Applying this approach yielded more consistent mediation results across my studies in both university and general population samples. The singular exception to this trend was Study 2, which did not find a significant relationship between social class and mental health. However, as I argued in Chapter 4, this anomaly is most likely due to issues with the measure of mental health used. Overall, this thesis provides more consistent and compelling evidence for using regression and correlational analyses on continuous variables that deal with individual differences.

      Another important aspect of the statistical approach I applied in this thesis was the use of PROCESS (Hayes, 2018) to determine the significance of indirect effects and generate completely standardised indirect effects. As I argued in Chapter 2, the prior research in the general population that had found a mediation effect had determined that the direct effect of social class on mental health was reduced when controlling for social integration but not whether the size of this reduction was itself significant. In this thesis, I distinguished between significant and nonsignificant mediation effects by testing the significance of the indirect effect.

Using this approach, I was able to more decisively and convincingly conclude that social integration does play a significant role in the relationship between social class and mental health. Thus, this thesis demonstrates that utility of establishing significant indirect effects when testing mediation models.

Overall, the measurement and statistical approaches I adopted in this thesis appear to be more reliable and valid approaches to the present research question, meaning I can be more confident in my findings. Consequently, the key methodological implications from this thesis are to (a) use multiple measures to assess social class, (b) consider age and context when devising social class questions, (c) include both mental ill health and well-being when investigating mental health, (d) conceptualise social integration across multiple domains, (e) employ a regression-based approach to investigate mediating effects, and (f) determine the significance of indirect effects in order to draw firmer conclusions about the size and utility of mediation results.

Theoretical Implications

There are some notable theoretical implications to be derived from my findings. Most notably, my research provides sound evidence for theories relating to the importance of social integration for mental health. Additionally, some of the findings fit within or extend on aspects of social identity theories. I discuss these implications for theory below.

The link between social class and mental health. A consistent and important finding throughout most of my studies is that lower social class is related to poorer mental health and well-being. This finding fits with the large body of research demonstrating the relationship between social and economic status and mental health (e.g., Adler et al., 2000; Araya et al., 2003; Fone et al., 2007; Glover et al., 2004; Taylor, Page, Morrell, Carter, & Harrison, 2004).

Consequently, my research adds yet more evidence to the ways in which inequality and deprivation harm health and well-being. Although this thesis focuses on social integration as a pathway through which this effect occurs, this general finding of social class and mental health points towards the necessity of reducing inequality wholesale. In particular, on a broad societal level these findings can add to policy debates about improving material and socioeconomic conditions to address national mental health crises.

The link between social class and social integration. Past theories on social class would predict that working-class people should have greater levels of social integration than middle-and upper-class people. This is because working-class culture includes an interdependent values system in which value is placed on familial and social connections compared to the independent success and achievement valued by the upper classes (Kraus & Stephens, 2012; Kraus et al., 2012; Stephens et al., 2011; Stephens et al., 2007). Additionally, Bianchi and Vohs (2016) found that higher income was associated with less socialization with family and neighbors and more alone time. In contrast, my research supports theories that suggest that the working-class experiences includes isolation and a lack of support (Borges, 2014; Smith, 2010). More specifically, across all 6 of my studies I found consistent small to medium correlations between social class and social integration within university samples (*average r* = .20) and general population samples (*average r* = .31). My consistent finding that social class is positively related to social integration supports the proposition that social and economic deprivation weaken social networks and reduces participation in conventional social experiences (Belle & Doucet, 2003; Edin & Lein, 1997; Mickelson & Kubansky, 2003; Patel et al., 2018; Riley & Eckenrode, 1986; Smith, 2009; Wilkins, 1974). The divergence of my findings from that of Bianchi and Vohs (2016) is likely attributable to my wider measurement of both social

class and social integration, again demonstrating the need to consider broad conceptualisations of these concepts. In addition, I have built on these theories by demonstrating some of the reasons for these relationships. As I discussed above, at university, I found that age and time explained the relationship, as opposed to in the general population where a lack of money and uncertainty about status explained the relationship. Thus, one key theoretical implication from my research is that that the influence of social class on social integration is not bound to one specific context, but that context does play a part in determining why social integration may be lacking.

My research also supports the social consequences of social class proposed by Kraus and colleagues (2009). In particular, my measure of social class often incorporated a measure of rank-based social class (the MacArthur scale), which they found plays a significant role in the social and behavioral consequences of social class. For example, they predicted that subjective social-class rank would hinder the social integration of working-class university students because of comparisons with the predominantly middle-class student cohort. This proposal is supported by my research on university students. However, my research extends Kraus et al.'s work to demonstrate that rank-based social class affects the social behavior and integration of individuals at a broader societal level. This is likely the same effect of comparison occurring at a broader level.

The link between social integration and mental health. In terms of the link between social integration and mental health, I found consistent small to medium correlations between social integration and mental health at university (*average r* = .20) and in the general population (*average r* = .20). This consistent finding that higher social integration (including social support, social contact, network size etc) is related to higher well-being and poorer mental health,

supports theories that outline the benefits of social integration for mental health. This includes Cohen and Wills (1985) Stress Buffering Theory, which explains that social support buffers the effects of stressful events on mental health, as well as the Main Effect Theory between social support and mental health, where social support has a direct effect on mental health (Lakey & Cronin, 2008). However, much of this theory hinges on social support and not social integration in general. Consequently, my research builds on previous theory by demonstrating that social integration broadly conceived, as well as its separate parts, predicts mental health.

The importance of social identity? One recurring theme of note in the present study is the importance of social identity in relation to social class. Although I have not specifically taken a social identity approach to my research question, social identity is included as an integral component of my measure of social class and forms the basis of some of the interpretations of results in my studies including my findings relating to student similarity and status uncertainty.

Social identity in social class. In Studies 1, 3 and 6 I included a single measure of self-identifying social class in my measurement of social class, in which participants self-identify and categorise themselves into a social class (Jetten et al., 2008; Ostrove & Long, 2007; Rubin et al., 2014). This item requires participants to consider their economic position as well as their cultural and family background and other aspects they believe build their social class identity. Social identities like this have proven to be strong indicators of health and other psychosocial variables (Jetten et al., 2008; Soria et al., 2013), and this effect has been demonstrated in the findings from my studies in which social class identity was included. Additionally, the social class identity items consistently loaded onto the same factor as other social class variables, indicating that social class identity is closely related to other indicators of social class.

Perceptions of similarity and social class. In terms of my university-based studies, Study 3 also demonstrated some links to social identity, specifically the findings related to student similarity. The general finding was that students who feel similar to other students are in general more likely to be social integrated. This is not surprising, given that interpersonal similarity is a central part of social identity (Byrne, 1961; Festinger, 1954; Jetten, Spears, & Manstead, 2001) and has been found to predict feelings of belonging (Easterbrook & Vignoles, 2013). However, the moderation results indicated that the relationship between social class and social integration becomes more pronounced as student similarity increases. Thus, the results suggest that feeling similar to other students is an enhancing component for social integration for middle and upper-class students, in that their social integration increases as perceived similarity increases. However, working-class students are less socially integrated regardless of how similar they feel to other students. These results imply that general similarity may not be enough to increase belonging and integration for all group members. In this case, despite generally feeling similar to other university students, the social class of working-class students means they are not prototypical of the student in-group and this may be why they are less engaged with that in-group. I propose that simply feeling similar to other group members is not always beneficial if you are not actually similar to other group members. However, because this finding was unexpected, it is largely speculative. Future research should continue this line of investigation by applying a social identity approach to social integration and social class at university and more directly measuring student in-group identity and similarity.

An alternative interpretation of this similarity moderation effect could be that social class dictates the way students perceive the student in-group. Easterbrook and Vignoles (2013) found that perceived intragroup similarity predicted belonging only in groups that were perceived as

social categories. The same effect did not apply to social groups that were perceived as networks. In this case, categories are defined as large homogenous collectives that are founded on shared characteristics, and networks are formed around sets of relationships based on interdependence. Upper and middle-class students' familiarity with university and student culture may mean they have a greater potential to view the university culture and identity as a homogenous collective. In contrast, working-class students are more likely to be the first in their family or community to attend university and so have a more unsophisticated conception of university and the university identity. Consequently, they may see university as more of a fractured social network due to their lack of familiarity. Thus, it is possible that working-class students see the student body as a network, while middle and upper-class students view it as a social category, which would then explain why student similarity improves social integration for students from higher classes. However, again, this is largely speculative and requires further research.

Finally, this finding could imply that not feeling similar to other students is particularly detrimental to the social integration of middle and upper-class students, while similarity has no effect on working-class students either way. This supports Burris, Branscombe, and Klar's (1997) work, which outlined that being discrepant from the in-group leads to greater psychological maladjustment in high-status groups compared to low status-groups. The similarity results support this theory to an extent, in that there were greater similarity differences in social integration for middle and upper-class students, indicating that, for these higher status groups, similarity is a key part of feeling socially integrated. However, this theory does not entirely fit the present findings because the central group identity in question is one that encompasses all the individuals involved i.e., the university student identity.

Status uncertainty and social class. In the general population, the status uncertainty

results from Study 6 can be interpreted as being a result of changing social identities. I tested

status uncertainty as a mediator of social class and social integration because I suspected that

people at the bottom in terms of wealth and status in Australia (i.e., the working class) may be

becoming more uncertain of their status because the gap between the very rich and the rest of

society is expanding while the differences between those in the middle and at the bottom shrink

(Australian Council of Social Services, 2018). I also proposed that this uncertainty would affect

working-class populations in particular because the key occupational markers of the working

class have changed dramatically, and these changes are causing an identity crisis (Bloodworth,

2018). Furthermore, the heterogeneity of poor and working class populations is increasing with

increasing immigration (Gest, 2016; Sydes, 2019). Destin et al. (2017) proposed that status

uncertainty hinders social integration processes. I extrapolated on this point to suggest that these

changes in the distribution of wealth and status may be weakening intra-class ties among the

working class because it is not clear who the working class are anymore and because the

existing homogeneity of the working class has been dissolving. Study 6's results supported this

idea because working-class people were much more likely to be uncertain of their status, and

people who were uncertain of their status were less socially integrated.

In terms of social identity theory, I suggest this explanation is a macro approach to the

social identity model of identity change (Jetten & Pachana, 2012). More specifically, rather than

this social identity change taking place for one person, shifting inequality distributions and

labour forces are causing an identity change for working-class populations as a whole. This

collective identity change fits with the idea proposed in sociology of a working-class identity

crisis, in which the clear social markers of what constitutes being working class are quickly

disappearing (Bloodworth, 2018; Diemer et al., 2012; Sheppard & Biddle, 2017). In particular,

the rapid loss of typical working-class industries in Australia, like the manufacturing industry,

and the increased access to low-cost "luxury" consumer goods mean both the occupational and

cultural markers of a working-class identity are changing. As the original iteration of the model

of identity change posits, my research suggests that a loss of distinct working-class identity may

be one of the reasons for the poorer mental health in working-class populations.

To explore this possibility further, I reinvestigated the data from Study 6, in particular

the social class identity items from Rubin and Stuart (2017) that I described in footnotes 3 and 7.

More specifically, I expected that the items that refer to class similarity and intra-class ties

would be related to social class, status uncertainty and social integration. Because each of the

two items in each of these scales did not have acceptable split-half reliability, I treated the items

separately. In line with my predictions, the items "the people in my social class are quite

different from me", "I am quite similar to the other people in my social class", and "I find it

difficult to form a bond with other people in my social class" were all significantly correlated

with social class, social integration and status uncertainty. In general, feeling dissimilar to other

people of the same social class and having weaker intra-class ties was significantly associated

with a lower social class (*average r* = .17, *ps* < .001), being less certain of status (*average r*

= .36, *ps* < .001), and being less socially integrated (*average r* = .26, *ps* < .001).

Moreover, the items "the people in my social class are quite different from me" and "I

find it difficult to form a bond with other people in my social class" serially mediated the

relationship between social class and social integration via status uncertainty in parallel. This

model was such that having a lower social class predicted lower feelings of similarity (*CSIE*

= .01) and class-ties (*CSIE* = .01), which in turn predicted more status uncertainty, and in turn

predicted lower social integration. These results support my proposal that my findings about status uncertainty are attributable to a change in the cohesion and ties among the working class. However, it should be noted that I did not find similar significant results for the items relating to class identity (e.g. "My social class is a significant aspect of my identity") or for the other items relating to social class similarity and ties. The other two items relating to similarity and ties are quite similar to the items that did yield significant results and thus they should have yielded comparable results. The fact that these additional items were not significant serial mediators suggest that the present findings may be spurious. Thus, these results should be treated with caution and only provide very preliminary evidence in support of my theory. Because of the inconsistencies in findings and the issues with the internal reliability of the items used to measure these constructs, further research is needed using more reliable and valid measures of social class identity and bonds.

Overall, although I did not explicitly aim to take a social identity approach in this thesis, social identity ideas and processes have emerged within my research. Studies 1, 3 and 6, provide evidence that social class identity is a viable and important component of measuring social class. Additionally, the results from Study 3 indicate that there are additional forces at play beyond feelings of similarity that are hindering the social integration processes of working-class students. Moreover, Study 6 suggests that social identity changes within the working class may be an important component in explaining their poorer mental health. However, it should be noted that both Studies 3 and 6 are only preliminary investigations into these relationships, and so more direct tests of these phenomena are needed.

Practical Implications

The right to health and well-being is enshrined within the Universal Declaration of

Human Rights, making mental health and its detractors an important topic of research. Social class has been consistently highlighted as a significant risk factor for mental health, such that those on the bottom of society are more likely to experience mental distress, have poorer well-being, and are more likely to be diagnosed with a mental illness (Power et al., 2002; World Health Organisation, 2014). This thesis provides evidence that social integration may be at least partially responsible for working-class people's poorer mental health. Thus, in terms of practical implications, my research suggests improving social networks and relationships as a potential route for improving social class differences in mental health.

My research is the first to demonstrate a significant mediation effect of social integration in the general population, and the first to demonstrate that the size of the effect of social integration on the relationship between social class and mental health is small to medium in size. In the context of the present research question, in which I am addressing a large social problem that is costing upwards of $60 billion per annum in Australia, I advocate that a small to medium effect is not unimportant because the mental health gradient is a huge issue that is likely to have multitudes of factors contributing to it. In other words, I propose that the small to medium effect size of the role of social integration that I have found is to be expected given the expansive nature of the relationship between social class and mental health. Social integration is only a small piece of larger puzzle but it is a piece nonetheless. Establishing and understanding the role of social integration is an important step towards improving social inequalities in mental health.

As I outlined in Chapter 1, improving social class differences in mental health is difficult to achieve. The present research suggests that improving social integration may be a potential pathway for reducing social class disparities in mental health (Cohen & Wills, 1985; Kawachi & Berkman, 2001). Social integration involves support, friendship, and a sense of belonging,

which are all immensely beneficial for mental health and well-being (Cohen, 2004; Kawachi & Berkman, 2001; Seeman, 1996). The present research contradicts dominant cultural narratives about working-class populations, which have often been characterised as being interconnected and unified (Kraus & Stephens, 2012; Kraus et al., 2012; Stephens et al., 2011; Stephens et al., 2007). Instead, my research supports previous research, which has demonstrated that working-class people tend to have fewer friends and close social supports, feel less supported, and generally be less socially integrated (Belle, 1990; Krause & Borawski-Clark, 1995; Turner & Marino, 1994). In terms of what can be done to improve social integration, my research demonstrates some different pathways through which social class differences in social integration can be influenced, in both the general and university population.

  At university. Part of my thesis demonstrates that working-class students are less socially integrated within the university population, where it is more expected that people from a working-class background would have trouble fitting in and socialising. Supporting previous research, my thesis demonstrates that working-class students' lower social integration is at least partly responsible for their poorer mental health. It is important to note that, from an interventionist perspective, it is easier and more effective to change the institutional context of universities rather than to change the life circumstances of working-class students. Thus, the onus should be on universities to adapt to working-class students and so universities must attempt to increase the social integration of working-class students. As explained by Engstrom and Tinto (2008), "access without support is not opportunity" (p. 50), meaning governments and universities have a responsibility to provide support at multiple levels as well as access to underrepresented students. Additionally, as my colleague and I explained in an interview with Times Higher Education (Ross, 2019), interventions need to be organic and fit the students'

needs without it feeling like they are being forced. My research suggests that age and time are important considerations in this respect, in that working-class students come to university at a later stage in life compared to most students, and have less time available to engage in the social activities associated with integrating at university. Moreover, the findings in this thesis suggest that it is not enough for students to feel similar to other students in order to feel integrated. Thus, the unique and atypical circumstances of working-class students need to be taken into account when cultivating campus climate and devising social integration programs. My colleagues and I discuss this issue in our forthcoming work (Rubin et al., 2018)

In terms of practical suggestions for achieving these objectives, Rubin and Wright (2015, 2017) suggested on campus accommodation needs to be made more affordable and accessible to students, particularly mature-aged students with family commitments, and flexible childcare should be incorporated as well. Similarly, social activities need to be carefully considered in terms of their cost both economically and in terms of time, as well as the age group they are pitched at. In particular, many campus social activities tend to include some aspect of youth culture and focus heavily on alcohol consumption (Hebden, Lyons, Goodwin, & McCreanor, 2015), which may alienate older students. Rubin and Wright (2015, 2017) suggest implementing forms of social integration that do not require campus attendance, such as online social media, including Facebook. Research has already demonstrated that Facebook use is associated with greater social integration at university (e.g., Komarenko, 2016; Morioka, Ellison, & Brown, 2016; for a review, see Ternes, 2013) and that certain types of Facebook use improve mental well-being among university students (e.g., Hu, Kim, Siwek, & Wilder, 2017; Zhang, 2017; for reviews, see Frost & Rickwood, 2017). Thus social media may be one pathway to increasing the social integration of working-class students, which addresses the issue of time that I have found

in my research.

One final consideration is the importance of student identity and social integration. As discussed previously, working-class students are also less likely to adopt a student identity and are less likely to view a student identity as being compatible with their existing identities (Iyer et al., 2009). My findings suggest that this is not simply because working-class students do not feel similar to other students. This lack of identity could be due to the university environment generally being thought of as a middle-class environment propagating middle-class values. In order to support and integrate working-class students, universities need to begin more long-term cultural changes to remove the middle-class veneer of university, making university a more inclusive space for students of all backgrounds, or as we explain in Rubin et al. (2018) "learn and adopt the values of their students as much as students need to learn and adopt the values of universities".

In the general population. The second half of my thesis demonstrates that working-class people in general have poorer mental health and are less socially integrated, and it provides some evidence that social integration may explain the relationship between social class and mental health. In terms of previous research, this thesis is the first to demonstrate the significance of these relationships and use appropriate measures of social class, social integration and mental health. This research strongly suggests that poor social integration is one of the many keys necessary to improve social class disparities in mental health. Furthermore, my research suggests two potential factors to consider when attempting to improve the social integration of working-class individuals.

First, the results indicate that a lack of money is partly responsible for the poorer mental health of working-class people. That working-class people have less money than middle and

upper-class people is not an interesting finding within itself. However my results demonstrate that this lack of funds is inhibiting their social integration. Thus, in order to improve working-class mental health via social integration, low-cost options for socialising are needed. One suggestion is to create more free public spaces for people to meet up and socialise in. Public spaces for socialisation are particular an issue at nighttime, because safety is a concern and the nightlife of inner cities excludes working-class people (Wolifson & Gibson, 2016).Moreover, city planning features designed to inexpensively increase social cohesion, like walkability and community space initiatives, are also more likely to be focussed in high income areas (Knight, Weaver, & Jones, 2018). Thus, more needs to be done to improve public spaces and city planning in disadvantage areas to provide spaces for cost effective social integration.

Additionally, the increasing cost of living means that common socialising activities such as going to the movies, meeting up for a coffee, or having smashed avocado on toast in a café, are luxuries that some cannot afford (Taylor, 2018). Making engagement with these classic customs of social integration less cost prohibitive may be another way to increase social integration. One successful example of this approach can be seen in the Sydney's Wayside Café (Yasa, 2018). Formerly a soup kitchen, the Café now offers a full paid menu but with prices as low as 20c for a coffee and $4 for a main course dish. As Yasa reports, the Wayside Café provides the experience of attending a café for those who generally otherwise could not afford it, with its main aim being to stave off isolation and generate a sense of community. Similar approaches should be taken elsewhere and with other typical socialising activities to reduce the impact that a lack of funds has on social integration of working-class people.

Another potential remedy could be to encourage more online social engagement because social media is generally free to use. As mentioned in the previous section, social media is a free

and easily accessible way to connect with immediate and extended social support networks.

Research indicates that online social connections are just as effective as face-to-face interactions

in providing support (e.g., Grieve, Indian, Witteveen, Tolan, & Marrington, 2013), and thus

could be a viable option for increasing the social support of working-class people. However, it

should be noted that social media use can be related to isolation and mental health issues. For

example, Facebook use has been associated with increased levels of depression (Frison &

Eggermont, 2016; Tandoc Jr., Ferrucci, & Duffy, 2015). Research indicates that whether

Facebook is detrimental or beneficial for mental health and social connectedness depends

largely on how people use it (Frost & Rickwood, 2017; Steers, 2016; Verduyn et al., 2015;

Verduyn, Ybarra, Résibois, Jonides, & Kross, 2017). In particular, actively using Facebook to

engage and connect with others has positive outcomes while passively consuming content has

negative outcomes (Verduyn et al., 2015). Consequently, encouraging social media use would

not be efficacious by itself. Instead, interventions employing social media should encourage

targeted and engaged use to increases connectedness and improve mental health.

Second, my research suggests that working-class people's status uncertainty partly

explains their poorer social integration and mental health. I have previously discussed why I

believe working-class people are more uncertain of their status identity. However the way to

amend this inhibitor of social integration is not as clear or straightforward. As Jetten et al.

(2012) outline, increasing social identification is related to improvements in mental health.

However, Rubin and Stuart (2017) demonstrated that in the case of low status groups, only

group similarity buffered the relationship between low status group membership and well-being,

while importance and salience exacerbated the issues. Thus, it may not be beneficial to increase

status certainty in this case, because it would involve reminding or informing people that they

are in a lower social and economic position, which would likely lower self-esteem and well-being (Rubin & Stuart, 2017). An additional suggestion would be to instead promote other social identities and group memberships, which in terms of the social identity model of identity change, has been shown to be a protective factor for the negative influence of identity change (Jetten & Pachana, 2012). However, such an approach may be difficult to apply at a group level. The solution I propose is to increase community identification and cohesion, particularly within working-class communities. Community projects and events are having something of a renaissance in recent years, with more and more community-led activities such as markets, street-festivals, and concerts popping up. However, these community initiatives are generally held in inner-city, high SES suburbs, meaning they are likely excluding working-class populations and community engagement is also poorer in low SES areas (Moore, McDonald, McHugh-Dillon, West, 2016). Thus, more needs to be done to foster a sense of community identity and support community events in working-class areas.

On a broader scale, my research adds to the burgeoning literature on the psychology of poverty, class and inequality. This research, with its focus on the causal impact of social conditions on well-being and decision-making is equipped to speak towards interventions at higher levels than the individual or social group. Research like mine, demonstrating how and why deprivation and inequality harm well-being, provide evidence to fixing structural and inequality issues in society. Moreover, the findings add a sense of urgency to the need to fix these issues as they uncover the scope and depth of these issues in a way that has not been previously documented. Thus, although social integration seems to be one pathway through which to ease social class differences in mental health, an overarching and necessary goal is reducing inequality entirely.

In conclusion, my results suggest that poorer mental health and well-being are not necessarily obligatory experiences of being socially and economically disadvantaged. Rather, I have consistently demonstrated that social integration, which can be improved upon, plays a role in social class differences in mental health. Social inequalities in mental health are an issue that is costly, not just in terms of economics, but also to individuals and communities. Consequently, these issues need to be addressed, potentially via some of the pathways that I have outlined above. In the future, I intend to continue investigating these relationships and implementing some of these strategies. On a broader level, I hope I have demonstrated that (a) social class is an important force that is not to be ignored, (b) social psychology has a key role to play in unpacking and understanding its influence, and (c) sometimes getting glandular fever with tonsillitis can have unexpected and life altering consequences.

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