To what extent does a sense of belonging and control affect stress and happiness in students?

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Dissertation submitted in partial fulfilment of the requirements of Cardiff Metropolitan University for the degree of Bachelor of Science
Declaration

I hereby declare that this dissertation is the result of my own independent investigation under the supervision of my tutor. The various sources to which I am indebted are clearly indicated. This dissertation has not been accepted in substance for any other degree, and is not being submitted concurrently for any other degree.
Acknowledgements

I would first like to thank my supervisor. He has been incredibly helpful throughout this process, and I could not have done all of this work without him. Thank you ever so much. I thoroughly enjoy this area of psychology and I hope our paths cross in the future so as to continue researching the wonderful subject that is happiness.

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Finally, I would like to thank my mother and father. Through school work, university essays, and now my dissertation you have supported me. Your support not only in my work but in my ability with everything has kept me driven to succeed in all my endeavours. I’m sure this won’t ever stop, but considering this is a significant milestone in my academic career I thought it best to stop and acknowledge how grateful I am to you both. Thank you mum, and thank you dad.
Abstract

Every year millions of people move from school to University, and in this transition a sense of belonging and control can be lost. Year on year students are experiencing increased levels of depression, anxiety, and stress. Although we have this information and understand it, research is yet address this gap. Therefore, this study aimed to look at the extent to which a sense of belonging and a sense of control effects stress and happiness in university students. It hypothesized that both an increased sense of belonging and sense of control will correlate to increased happiness and decreased stress. Similarly, a decreased sense of belonging and sense of control will correlate to decreased happiness and increased stress. The data collected comprised of 100 participants through opportunity sampling. Participants completed four questionnaires and they included; the General Belongingness Scale; the MIDI Sense of Control scale; the Subjective Happiness Questionnaire; and the Perceived Stress Scale. The results highlight the predictor model can significantly predict happiness and stress. Moreover, all four variables are significantly correlated with one another. The overall findings align with previous research in that sense of belonging and sense of control are important to happiness and stress. Although these findings give some insight into why there is increased anxiety depression and stress at university, it doesn’t fully explain the problem. Further research should aim to outline other concepts that effect stress and happiness in order to fully understand why students are experiencing increased stress and decreased happiness.
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1. Introduction

Life is challenging. Throughout everyone’s life challenges will arise and can range from counting to ten, writing an essay, to changing schools. One of the biggest challenges in a person’s life is transition (Tamir, 2007). Transitional periods are prominent in many lives and can make a person depressed, happy or even euphoric (Tamir, 2007; Keeton, Sayer & Jenkins, 2008). Every year millions of people move from school to University and in this transition a sense of belonging and control can be lost (Pillay & Ngcobo, 2010). Year on year students are experiencing increased levels of depression, anxiety and stress (Mahmoud & Staten, 2012). Although we have this information and understand that stress levels are increasing and the happiness of the average student is on the decline, the relationship between this and, sense of belonging and sense of control are consistently overlooked as an area of research (Mahmoud & Staten, 2012). This study will therefore research further into the relationship between sense of belonging, happiness and stress, as well as the relationship between sense of control, happiness and stress. This introduction will outline the definitions of each concept, highlight the links each variable has with the others, and underline the instruments used to measure each of the theories. This will enable the reader to understand the rationale behind the study providing the context for the hypothesis.

1.1: Sense of Belonging

Darwin (1859) outlines that at the base of every species’ existence, the motivation to belong is key to survival, reproduction and evolution. From an evolutionary perspective, the motivation for a human to belong is central to our existence and culture (Malone, Pillow & Osman, 2012). Maslow (1943) clarifies this innate nature of humans in the ‘Hierarchy of Needs’ by suggesting that the third need for any human after physiological and safety needs is belongingness and love. According to Maslow (1943, 1954) belongingness and love needs are integral to a person’s psychology in reference to motivation, and if anyone - especially a student - lacks this quality, mental distress follows (Baumeister & Leary, 1995). In addition Humphrey & McCarthy (1998) and Lambert, Stillman & Hicks (2013) imply that a lack of sense of belonging can cause an increase in stress and a decrease in happiness due to a lack of meaningful relationships. A sense of belonging was considered a robust measure for predicting meaningfulness as β = .31, p < .001, and Lyubomirsky (2008, p.2) states that happiness is the ‘Holy Grail – “the meaning and purpose in life”’ (Lambert et al., 2013). Therefore, as sense of
belonging is a robust predictor of meaningfulness, it could be considered a robust measure for predicting stress and happiness.

The term ‘belonging’, or ‘belongingness’ is an ambiguous term in psychology and can be used interchangeably with subjects such as desire for interpersonal attachments, place identity and attachment, social identity or even social support (Malone, Pillow & Osman, 2012). Sense of belonging has been defined in a number of different, but very similar ways, for example Hagerty, Lynch-sauer, Patusky, Bouwsema & Collier (1992) believe that a sense of belonging is an experience of personal involvement in a system or environment, as well as being accepted as an integral part of both these key facets. Similarly, Goodenow (1993, p. 81) described belongingness in a schooling context as the extent to which a pupil ‘needs to feel personally accepted, respected, included and supported by others in the school social environment’. This suggests that from both accounts acceptance is an integral aspect for a student to obtain a sense of belonging. Similarly, both studies highlight the importance of this concept as they state that if a sense of belonging is not achieved then depressive symptoms may follow. However, if it is achieved then people remain content, comfortable or even happy (Hagerty et al. 1992; Goodenow, 1993; Cockshaw, Shochet & Obst, 2012).

Defining ‘belonging’ or ‘belongingness’ proves a simple task for some researchers but measuring the concept is a completely different prospect. There are a number of measurements of belonging, or belongingness for example there is the General Belongingness Scale (GBS), and the Sense of Belonging Instrument (SOBI; Hagerty & Patusky, 1995; Malone, Pillow & Osman, 2012). The Sense of Belonging Instrument focuses on two separately scored but equally important aspects; psychological state (SOBI-P) and antecedents (SOBI-A; Hagerty & Patusky, 1995). SOBI-P is considered a valid and reliable measure however SOBI-A is not, therefore additional research is required for the SOBI to be considered a sound measure when measuring sense of belonging (Hagerty & Patusky, 1995). ‘The General Belongingness Scale’ developed by Malone, Pillow & Osman (2012) is broken down into two areas, acceptance/inclusion and rejection/exclusion. Although ‘The General Belongingness Scale’ is very simplistic, or general in its approach to measuring one’s sense of belonging, it is reliable and valid. Therefore, it can be used as a robust measure when used in researching the extent to which a sense of belonging, or belongingness effects happiness and stress.
1.2: Sense of Control

History has taught us that all animals strive to obtain what they need in order to avoid any unwanted outcomes (Snyder & Lopez, 2005). Humans are considered to be unmatched in their ability to control and manipulate the environments in which they live to ‘obtain the necessities for life, to protect themselves from misfortune, and to obtain desired levels of comfort and ease’ (Darwin, 1859; Snyder & Lopez, 2005, p. 202). According to Skinner (1996) the ability to control, or control theory, is crucial to psychological functioning in humans and years of research in psychology reveals that a sense of control is a good predictor of psychological well-being (Baumgardner & Crothers, 2010). Therefore, it could be a good predictor of stress and happiness (Baumgardner & Crothers, 2010).

The term sense of control is discussed in psychology in a number of forms, for example, personal control, locus of control, cognitive control, control theory etc. (Skinner, 1996). For the purposes of this report the term ‘sense of control’ will be used, and it will be defined as a construct broken into two components (Lachman & Weaver, 1998). The first component is personal mastery (Lachman & Weaver, 1998; Baumgardner & Crothers, 2010). This facet relates to the success and effectiveness of one’s ability to reach goals (Lachman & Weaver, 1998; Baumgardner & Crothers, 2010). The second component is perceived constraints (Lachman & Weaver, 1998; Baumgardner & Crothers, 2010). This explores the idea that an individual believes there are factors beyond their control that prevent them from reaching the goals they intend to reach (Lachman & Weaver, 1998). Many researchers believe that attaining a high sense of control allows for proactive behaviour and positive psychological wellbeing, or happiness (Langer & Rodin, 1976; Baumgardner & Crothers, 2010). Likewise, a lack of a sense of control is associated with negative psychological well-being, or states such as depression, anxiety and stress (Langer & Rodin, 1976; Baumgardner & Crothers, 2010). These arguments suggest the importance of investigating the extent to which a sense of control effects stress and happiness.

In addition, unlike a sense of belongingness, sense of control has a number of scales or instruments that are widely used to measure it (Lachman & Weaver, 1998). The most widely used measure is Rotters (1966) Internal-External Locus of Control Scale. Rotters (1966) scale is a general measure of locus of control and its 23-items focus on whether a person has a tendency to think situations and events are under their own control or under the control of external influences (Halpert & Hill, 2011). Although it is used extensively Borich & Paver (1974) state that this scale is not measuring what it claims to be measuring and that the reverse
questions do not deter participants from answering the questions in a socially desirable way (Kestenbaum & Hammersla, 1976; Halpert & Hill, 2011). Lachman & Weaver (1998) created a scale called the MIDI sense of control that is not as general, or widely used as Rotters (1966) Locus of Control Scale. However, it does focus on being out of control such as uncontrollable events much like the event of transitioning to university (Lachlan & Weaver, 1998; Halpart & Hill, 2011). Although it isn’t a generic measure of locus of control it is a measure of a sense of control, and a measure that focuses on difficult times (Rotters, 1966; Halpert & Hill, 2011). Therefore, it is a far better scale to measure the extent to which a sense of control predicts happiness and stress, especially in contemporary society when students have increased stress, anxiety, depression and a significant decrease in happiness.

1.3: Happiness

Happiness as a branch of psychology is expanding, however contemporary researchers still see happiness as a ‘soft’ and ‘fuzzy’ topic according to Lyubormirsky (2008). Only recently is well-being beginning to be explored widely in psychological research let alone happiness, and as a result researchers have yet to agree on the specific definition for the term happiness. Lyubomirsky (2008) describes it as feeling great and fulfilled, while others such as Henderson & Knight (2012) say it is broken into two components: hedonia and eudaimonia. Hedone in Greek translates to the word pleasure, and from the hedonic perspective of happiness, maximizing one’s pleasurable encounters is considered to be happiness (Lyubomirsky, 2008). Whereas, the eudaimonic approach deriving from the Greek word eudaimon meaning ‘good spirit’ suggests that living a life of virtue, self-actualizing, or actualizing one’s inherent desires is happiness (Henderson & Knight, 2012). There are however those who say they cannot describe happiness, but know the feeling when they are happy (Baumgardner & Crothers, 2010; Cannizzaro & Elwick, 2017). This suggests that happiness is considered to be a clear emotion, but one that is different from person to person (Lyubomirsky, 2008).

In contemporary academia, there are two clear ways to measure happiness, the Oxford Happiness Questionnaire and the Subjective Happiness Scale (Lyubomirsky & Lepper, 1999; Hills & Argyle, 2002). Hills & Argyle (2002) outline through the Oxford Happiness Questionnaire (OHQ) that happiness is personal and a separate entity to subjective well-being. By tapping into self-esteem, sense of purpose, social interest, kindness, sense of humour and aesthetic appreciation within the OHQ, Hills & Argyle (2002) are defining and showing that happiness is its own topic (Kashdan, 2004). However, in doing so this clearly goes against the
idea that happiness as an emotion is felt differently from person to person (Lyubomirsky, 2008). By defining happiness Hills & Argyle (2002) are taking a particular view of happiness and imposing it on the participants undertaking the OHQ. In contrast to the OHQ, the Subjective Happiness Scale (SHS) allows for personal perspective on the term happiness as it is a measure of overall subjective happiness based on the respondent’s personal point of view. Therefore, in this report happiness will be referred to as subjective happiness, and as it is subjective, a definition of happiness is not needed as it allows for each participant to determine what happiness is in their own right.

Understanding what affects happiness and to what extent, seems to be an area of importance that is yet to be comprehensively addressed (Lybomirsky. & Lepper, 1999; Hills & Argyle, 2002). Lyubomirsky (2008) highlights interventions that can improve one’s happiness and reduce negative emotions such as stress, anxiety and depression. From physical exercise to setting goals to practicing religion and spirituality each of these interventions are focused on gaining control. According to Sniehotta, Scholz & Schwarzer (2005) using discipline to undertake physical exercise requires control, and this concept is called the intention-behaviour gap. Similar to this, when one sets goals, locus of control is key to determining one’s self-efficacy with regards to the goal, therefore having control is key to undertaking the goal set (Phillips & Gully, 1997). In addition to the aforementioned happiness interventions control is considered a fundamental aspect of most if not all happiness interventions (Lyubomirsky, Sheldon & Schlade, 2005; Lyubomirsky, 2008). Lyubomirsky, Sheldon & Schkade (2005) state that research is too focused on how happiness can be increased and sustained as opposed to the possibility of being permanently controlled. Each happiness intervention needs to work synergistically with one’s own discipline and control to achieve increased happiness (Lyubomirsky, Sheldon & Schkade, 2005). Thus, it is definitely clear that control is integral to improving happiness (Lyubomirsky, 2008).

Similar to a sense of control, a sense of belonging, or belongingness, is also seen as a clear variable that can significantly affect one’s happiness (Hout & Greeley, 2012). According to King (2003) religion gives religious people a sense of identity. King (2003) also states that a sense of identity is an interchangeable term with such concepts as sense of belonging. Congruent to King (2003), Lyubomirsky (2008) postulates that happiness interventions such as practicing religion and spirituality increase one’s happiness. This suggests that sense of belonging and happiness are linked. In addition, Strayhorn (2012) states that a sense of
belonging is key to a student’s success, and this is because of a number of significant outcomes such as increased personal happiness and comfort (Walton & Cohen, 2011). If students had a decreased sense of belonging, they would have decreased happiness. This highlights that a sense of belonging, or belongingness is such a significant concept that it has the power to cause one’s happiness to increase and decrease (Strayhorn, 2012; Lambert et al., 2013). Therefore, although it is yet to be tested, there is far greater congruence in the effects a sense of control and a sense of belongingness have on happiness. Both sense of belonging and a sense of control can increase and decrease happiness depending on whether or not one has a sense of belonging and a sense of control (Humphrey & McCarthy, 1998; Lambert et al., 2013; Cannizzaro & Elwick, 2017).

1.4: Stress
In contrast to happiness, or positive psychology, stress can be seen as a positive and negative emotion (Psychological state) (Humphrey et al. 1998; Damasio, 2004). It can be positive in the sense that the feeling (human’s interpretation of an emotion) arises as a form of excited agitation in apprehension of undertaking a challenge, although one could argue these are positive aspects of a negative emotion (Selye, 1956; Humphrey et al. 1998; Damasio, 2004). Usually researchers study stress as an emotion, or a perceptual phenomenon that yields negative qualities due to an uneasiness at coping with external demands, such as moving to university (Cox, 1978; Humphrey et al. 1998). This emotion, or perceptual phenomenon can arise in an acute or chronic form (Cohen, Kessler & Gordon, 1997). Acute stress according to the American Psychological Association (2018) is the most common type of stress and arises due to the demand and pressures of the recent past and the anticipated demands and pressures of the near future. Whereas chronic stress according to Sinha (2008) can occur due to the response of poorly managed or ignored stressors as well as exposure to traumatic events. This suggests that stress is perceived in different ways similar to happiness.

Unlike happiness, stress has many different instruments, or scales that are widely used to measure it (Gross & Seebass, 2016). From the Standard Stress Scale (SSS) to the Effort - Reward Imbalance Scale (ERI) to the Perceived Stress Scale (PSS) researchers have created many ways to measure stress (Cohen, 1994; Siegrist, Starke, Chandola, Godin, Marmot, Niedhammer, & Peter, 2004; Gross & Seebass, 2016). The SSS measures stress over one’s whole life as opposed to how stress is perceived in the moment (Gross & Seebass, 2016). The ERI loosely measures stress through an imbalance between effort and reward because it
‘assumes that negative emotions occur when the effort made by a person is much higher than
the reward the person receives’ (Siegrist et al., 2004; Gross & Seebass, 2016, p. 3). The ERI
on the other hand does not focus on stress, it focuses on negative emotions as a whole, and
stress is not the only negative emotion (Gross & Seebass, 2016). The PSS however, according
to Cohen (1994) measures the degree to which situations in one’s life are perceived as stressful,
and it does allow for participants to determine what stress is for them. With questions such as
‘In the last month, how often have you felt nervous and “stressed”? ’ one can determine what
stress is (Cohen, 1994). This enables participants to perceive stress in the way they experience
it, as opposed to imposing a definition of stress upon the participants (Cohen, 1994). Therefore,
in this report stress will be referred to as perceived stress (Cohen, 1994). Needless to say,
although one’s own perception of stress will be directly measured in the PSS, it does not clarify
what causes stress, and to what extent.

Stress as a psychological concept is one that is very prominent in today’s society as highlighted
in a number of the aforementioned sections. If one is able to understand what causes stress, and
to what extent then contemporary academics can be one step closer to reducing the levels of
anxiety, stress, and depression seen at universities (Mahmoud & Staten, 2012). Lyubomirsky
(2008) states that happiness interventions allow for greater sense of control and if undertaken
in the appropriate manner will increase happiness. According to Schriffen & Nelson (2010)
this dictates that stress can be decreased if a sense of control is increased due to the significant
inverse relationship between happiness and perceived stress. This suggests that happiness
interventions are not only considered to be a way of increasing one’s happiness but also a way
of dealing with one’s stress. Therefore, it can be considered that sense of control affects stress
too. The significant inverse relationship between happiness and perceived stress, along with
the importance of control in happiness interventions, suggests that sense of control significantly
effects ones perceived stress (Lyubomirsky, 2008; Schriffen & Nelson, 2010).

In addition to sense of control, it has been argued that sense of belonging has the ability to
interact with stress in a similar way (Choenarom, Williams & Hagerty, 2005). From a sample
of 956 students, Humphrey & Mcarthy (1998) found that a student’s experience at university
is not an unpleasant one if a student engages with the opportunities for intellectual, sporting
and leisure activities that a University offers. This is because a student will begin to not only
feel in control but they will begin to feel a sense of belonging, and if one does not engage with
these opportunities negative emotions such as stress can increase (Humphrey & Mearthy, 1998;
Choenarom, Williams & Hagerty, 2005). In addition to this Bay, Hagerty, Williams, Kirsch &
Gillespie (2002) state that chronic stress can be caused by a decreased sense of belonging. This highlights that time and again research indicates that there is a relationship between stress, sense of belonging, and sense of control yet time and again explicit research is not undertaken.

1.5: Conclusion

Humphrey & Mcarthy (1998), and Cannizzaro & Elwick (2017) suggest that stress and happiness are two significant emotions that can impact any person’s life dramatically, especially a student’s life. Two psychological phenomena that are continuously linked with these emotions are, a sense of belonging and a sense of control (Humphrey & Mcarthy, 1998; Cannizzaro & Elwick, 2017). It can be deduced from academic research that increased sense of belonging improves an individual’s well-being by reducing stress and increasing happiness (Hills & Argyle, 2002; Choenarom, Williams & Hagerty, 2005; Schriffen & Nelson, 2010; Hout & Greeley, 2012). Similarly, if an individual increases their sense of control there will be an improvement in their well-being due to an increase in happiness and a decrease in stress (Hills & Argyle, 2002; Choenarom, Williams & Hagerty, 2005; Schriffen & Nelson, 2010; Hout & Greeley, 2012). However, the extents to which sense of belonging and sense of control affects a student’s happiness and stress is not known. Cannizzaro & Elwick (2017) and Humphrey & Mcarthy (1998) highlight the aspects of university that impact a student’s happiness and stress, and it is suggested that for future studies one should look at student’s sense of belonging and sense of control. Understanding if the relationship is significant between the predictor could allow a better understanding of the extent to which these variables affect a student’s happiness and stress at university and may give insight as to why students are experiencing increased levels of depression, anxiety and stress. Therefore, as there is clearly a gap in the research, this study aims to look at the extent to which a sense of belonging and a sense of control affects stress and happiness in university students. It hypothesizes that both an increased sense of belonging and sense of control will correlate to increased happiness and decreased stress. Similarly, a decreased sense of belonging and sense of control will correlate to decreased happiness and increased stress.
2. Method

2.1: Sample

The sample consisted of a hundred students of which 75 were female and 25 were male. The average age of the participants was 21.9 (St dev. = 3.77). All of the participants were recruited through opportunity sampling on a voluntary basis through a university programme called participant panel, and through a link on Facebook.

2.2: Design

The study took the form of a survey measuring the extent to which a sense of belonging and sense of control correlates with happiness and stress. Sense of belonging and sense of control are the predictor variables and, happiness and stress are the criterion variables. Sense of belonging was measured by using the General Belongingness Scale (Malone et al. 2012). Sense of control was measured by the MIDI Sense of Control Scale (Lachman & Weaver, 1998). Happiness was measured by the use of the Subjective Happiness Scale (Lyubomirsky, 2008). Stress was measured by the use of the Perceived Stress Scale (Cohen, 1994).

2.3: Materials

The materials participants used to undertake this study were: a computer, or a phone; a programme called Qualtrics; the universities participant panel, or Facebook; and four scales. These scales were inputted into a computer programme called Qualtrics. The scales were then uploaded to the university database called participant panel, and Facebook via an anonymous link generated on Qualtrics.

The first psychometric scale, subjective happiness scale categorises participants by 4 items measured on a 7 point Likert scale ranging from not a very happy person to a very happy person (Lyubomirsky, 2008). The perceived stress scale categorizes participants by the use of 10 items measured by a 5 point Likert scale ranging from 0 – never to 4 – very often (Cohen, 1994). The General Belongingness scale determines a participant’s belongingness through 12 items measured on a 7 point Likert scale ranging from strongly disagree to strongly agree (Malone et al. 2012). Lastly, the MIDI Sense of Control scale determines one’s sense of control through 12 items measured by a 7 point Likert scale (Lachman & Weaver, 1998).
2.4: Procedure

Prior to undertaking the study participants will be given an information page on the computer, and consent will be given by the participant’s continuation onto the first scale. Participants will be asked to undertake the task in an environment with minimal distractions however this cannot be policed. The task will be formed of four psychometric scales in the following order; The General Belongingness Scale (and a visual analogue scale); MIDI Sense of Control (and a visual analogue scale); Subjective-Happiness Scale and the Perceived Stress Scale. Overall, each scale took 5-10 minutes, therefore the overall time it takes to participate in this study is between 20-40 minutes.

2.5: Method of Analysis

Multiple regression analysis is the most appropriate form of analysis for this report as it enables the measurement of the relationship of the predictor variables (sense of belonging and control) against the criterion (predicted – stress and happiness) variables.

2.6: Ethical Consideration

Prior to undertaking the study, participants were made aware of the fact that they could withdraw from the study at any time even after consent was given. Participants were also made aware that the data was anonymous. If the participants had any concerns contact details were provided in order to give the people the appropriate support. Ethically there were no concerns, therefore ethics was granted by Cardiff Metropolitan University ethics board – Project Reference Number: 9918.
3. Results

Table 1. below show the means and standard deviation for the predictor model (sense of belonging and sense of control) as well as the dependent variables (perceived stress and subjective happiness) (Cohen, 1994; Lachman & Weaver, 1998; Lyubomirsky, 2008; Malone et al. 2012). The standard deviation of sense of belonging equates to just over one whole score on the General Belongingness Scale, where as the standard deviation of sense of control equates to just under one score on the MIDI Sense of Control Scale (Cohen, 1994; Lachman & Weaver, 1998; Malone et al. 2012). Similar to sense of control perceived stress’s standard deviation equates to just under one whole score on the Perceived Stress Scale (Cohen, 1994; Malone et al. 2012). In complete contrast the subjective happiness standard deviation shows a deviation of close to 1.5 times a whole score on the Subjective Happiness Scale (Lyubomirsky, 2008).

<table>
<thead>
<tr>
<th></th>
<th>Mean (s.d)</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sense of Belonging</td>
<td>5.03(1.09)</td>
<td>1.42</td>
<td>7.00</td>
</tr>
<tr>
<td>Sense of Control</td>
<td>4.73(0.94)</td>
<td>2.17</td>
<td>7.00</td>
</tr>
<tr>
<td>Perceived Stress</td>
<td>2.07(0.81)</td>
<td>0.20</td>
<td>3.70</td>
</tr>
<tr>
<td>Subjective Happiness</td>
<td>4.42(1.36)</td>
<td>1.25</td>
<td>7.00</td>
</tr>
</tbody>
</table>

Table 1.1: Std. Deviations and means of the predictor model and the dependent variables.

Figure 1.1 depicts a negative, or inverse relationship between Perceived Stress score and MIDI Sense of Control score as it is clear that as a sense of control increases perceived stress score decreases (Cohen, 1994; Lachman & Weaver, 1998). Similarly, Figure 1.2 highlights an inverse relationship as well, as General Sense of Belonging increases the Perceived Stress decreases (Cohen, 1994; Malone et al. 2012).
Figure 1.1: Perceived Stress score against MIDI Sense of Control score (Cohen, 1994; Lachman & Weaver, 1998).

Figure 1.2: Perceived Stress score against General Sense of Belonging score (Cohen, 1994; Malone et al. 2012).

In contrast to Figure 1.1 and 1.2, Figure 1.3 and 1.4 show clear positive relationships. In Figure 1.3, as the MIDI Sense of Control increases, the Subjective happiness scores increase (Lachman & Weaver, 1998; Lyubomirsky, 2008). Similarly, in Figure 1.4, as the General
Sense of Belonging increases the Subjective Happiness scores increase (Lyubomirsky, 2008; Malone et al. 2012). All correlation coefficients can be seen in Table 1.2.

**Figure 1.3**: Subjective Happiness score against MIDI Sense of Control score (Lachman & Weaver, 1998; Lyubomirsky, 2008).

**Figure 1.4**: Subjective Happiness score against General Sense of Belonging score (Lyubomirsky, 2008; Malone et al. 2012).
A multiple regression analysis was used to determine if the hypothesis, a strong sense of belonging and sense of control will correlate to increased happiness and decreased stress, was reinforced by the data.

### 3.1: Correlations

<table>
<thead>
<tr>
<th></th>
<th>Sense of Belonging</th>
<th>Sense of Control</th>
<th>Perceived Stress</th>
<th>Subjective Happiness</th>
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*Table. 1.2: Pearson Correlation results and Sig. (2-tailed).*

### 3.2: Multiple Regression Analysis

Multiple regression was performed with sense of control and sense of belonging as the predictor model and perceived stress as the dependent variable. The model was a significant predictor of stress score ($F(2,99) = 61.8, p<0.001$) accounting for 55.1% of the variance in stress score ($\text{adj}R^2 = 0.551$). Predictor coefficients can be seen in table 1.3.
Multiple regression was also performed with a sense of control and sense of belonging as the predictor model and happiness as the dependent variable. The model was a significant predictor of happiness score \( (F_{(2, 99)} = 66.59, p<0.001) \) accounting for 57% of the variance in happiness score \( (\text{adj}R^2 = 0.570) \). Predictor coefficients can be seen in table 1.3.
4. Discussion

4.1: Introduction

Research indicates that sense of belonging and sense of control are inherently related to happiness and stress. From Maslow's (1943, 1954) hierarchy of needs to Skinner's (1996) perception of control theory to more modern work from Lyubomirsky (2008) and Cannizzaro & Elwick (2017) it is clear that these four variables are connected. Although evidence indicates a clear relationship between these four variables, there is a lack of research testing the relationships. This study sought to fill this gap by analysing correlational and multiple regression data to see if the predictor model significantly predicted stress and happiness, and if so, to what extent. The following discussion will provide an overview of the findings, an interpretation of the findings in relation to previous research, and a conclusion.

4.2: Main Findings

This study sought to test if a sense of belonging and a sense of control could predict happiness and stress in university students. Through a correlational analysis and a multiple regression one can see that a sense of belonging and a sense of control significantly predict happiness and stress in university students. The correlational analysis in section 3.1 shows that the predictor model correlated significantly with both happiness and stress, as \( p < .001 \). in addition the variables within the predictor model correlated with one another as did the criterion variables because, \( p < .001 \).

The multiple regression analysis in section 3.2 also highlights that the predictor model was a significant predictor of subjective happiness score, and perceived stress score. The regression analysis on all accounts highlighted significant results. However, what was very interesting and not yet recorded in previous research was the extent of difference in effect that sense of belonging and sense of control had on stress and happiness. The standardized coefficients in Table. 1.3, section 3.2 show that with every increase of one standard deviation
in sense of belonging, a student's perceived stress decreases by –.167 standard deviations. Highlighting that although the relationship is significant the effect is not that great. On the other hand, the model shows that with every increase of one standard deviation in sense of control, a student's perceived stress is decreased by -.638 standard deviations. This suggests that although sense of belonging can predict stress, sense of control has the ability to predict stress to a greater extent. Similarly with regards to happiness, sense of belonging has a greater effect as it is highlighted that with every increase of one standard deviation in sense of belonging happiness increases 0.476, whereas sense of control yields an increase of 0.377 standard deviations. This suggests that although it is marginal, sense of belonging increases happiness to a greater extent than sense of control, whereas sense of control has a greater effect on stress than sense of belonging. Furthermore, the predictor model accounted for 57% of the variance in one’s subjective happiness score, and 55.1% of the variance for one's perceived stress score (See Appendix A). This suggests that to a great extent the predictor model does predict a student’s happiness and stress.

4.3: Overall Interpretation

The present study obtained results from 100 students and although the weighting of male to females was very different from study to study, the average of students was relatable to previous research. The mean age for this study was 21.9 years similar to that of Scifin & Nelson (2010) and Humphrey & Mcarthy (1998). Humphrey & Mcarthy (1998) state that 10% of the student sample in their study were over 23, and this is important as it makes the samples more comparable, and relatable to the present study when referring to prior research. Unlike previous research this study used a correlational analysis and a multiple regression to measure the relationship between the predictor model and the criterion variables. However, it also measured the two other correlations. The first correlation was between a sense of belonging
and sense of control, and the second between subjective happiness and stress, both of which yielded significant results. Sense of belonging and sense of control were correlated against one another for the first time in this study which clearly highlights a possible new area of research for the future. However, this is not the first time for happiness and stress. As stated in the introduction Schriffen & Nelson (2010) found similar results when studying stress and happiness. Schriffen & Nelson (2010) state that the linear correlations between happiness and perceived stress were significant, for example, r = -.42, p < .001. Similarly, in this study it was found that subjective happiness and perceived stress yielded a similar correlational relationship as r = -.0.657, p < .001.

Although previous research did not address the extent to which sense of belonging and sense of control effected stress and happiness, it did suggest that the relationship was significant. According to Goodenow (1993, P. 81) sense of belonging is a key area when it comes to one’s emotions and wellbeing because students need “to feel personally accepted, respected included and supported by others in the school social environment” in order to stop depressive symptoms. The results of the present study clearly reiterate the findings from Goodenow (1993) as a sense of belonging can significantly predict and is correlated to happiness. In addition to this, sense of belonging can also predict and is correlated to stress, with the aforementioned evidence from Schriffen & Nelson (2010) of an inverse relationship between happiness and stress, this shows how important sense of belonging is to students.

In addition to Goodenow (1993), Lambert et al., (2013) state that sense of belonging is a robust measure for meaningfulness as β = .31, p < .001. Similarly, Lyubomirsky (2008) states that happiness is the ‘Holy Grail – “the meaning and purpose in life”. This study therefore inferred that as sense of belonging can significantly predict meaningfulness, sense of belonging can also predict happiness. The present study reiterates the statement from Lyubomirsky (2008) and the regression coefficients from Lambert et al., (2013) because sense of belonging
was a significant predictor of happiness and stress as seen in section 3.2. This highlights how meaningful sense of belonging is to a student’s happiness and stress whilst at university. Prior research clearly highlights the significance sense of belonging has on one’s emotion and wellbeing, and this study evidently suggests similar results in that sense of belonging has a significant impact on a student’s happiness and stress.

Lastly, Skinner (1996) highlighted how crucial a sense of control is to one’s psychological wellbeing, and through the results one can see that Skinner (1996) is correct (Baumgardner & Crothers, 2010). Sense of control significantly predicted both happiness and stress, not only that but as stated above for every increase in one standard deviation for sense of control, a student’s perceived stress is decreased by -0.638, which is a great extent. This clearly suggests that sense of control is crucial for decreasing stress in students as stress is considered to be a key aspect of wellbeing (Skinner, 1996). On the other hand, although sense of control is crucial to one’s wellbeing, and in this case stress the predictor model only accounts for 57% of stress, which begs the question, what other concepts effect stress. What makes up the other 43%? Similarly, with happiness the predictor model accounted for 55.1%. What other concepts like sense of belonging and sense of control make up the missing 44.9%. These are clearly questions to address for future analysis.

Although there are questions arising for future analysis, there are also limitations to the present research that could be addressed before one undertakes further research. For example MIDI Sense of Control scale is a mid-life inventory, and the average age of the students within this study is 21.9 which is not mid-life (Lachman & Weaver, 1998). Although it was useful indicator of sense of control during transitional periods, one may be able to gain better results if a different sense of control scale is used in further analysis.
4.4: Conclusion

In conclusion the present study provided evidence to highlight a clear significant relationship between the predictor model (sense of belonging and sense of control) happiness and stress. Furthermore, it highlighted that sense of belonging and sense of control are significantly correlated, as are happiness and stress in an inverse relationship. Due to a dearth amount of research focusing on these four variables, this study provides a base for further research. The extent to which a sense of belonging and sense of control effect happiness and stress, combined with adjusted R square figures highlights the need for further research to be done. Conducting further research will give better insight into why students at university today are less happy and are experiencing increased levels of depression, and stress.
5. References


Appendices

Appendix A

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Table. 1.5: Predictors: (Constant: Stress), Control, Belonging

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Table. 1.6: Predictors: (Constant: Happiness), Control, Belonging
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