EXPLORING MĀORI EXPERIENCES AT UNIVERSITY: IMPACT ON RETENTION AND WELLBEING

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Holly Rianna Coombes

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ABSTRACT

The effects of the self-beliefs, social support, and perceptions of the university environment on academic nonpersistence decisions and psychological wellbeing were investigated among a non-random sample of 95 Māori university students studying at Massey University. Self-beliefs, social support, and perceptions of the university environment were explored in terms of direct effects on academic nonpersistence. In contrast, self-beliefs and social support were hypothesized to act as mediators or moderators in the relationship between perceptions of the university environment and psychological wellbeing.

Major findings are that (a) self-beliefs, social support, and perceptions of the university environment had significant effects on academic nonpersistence decisions, with social support having the largest effect; (b) social support was an effective buffer between perceptions of the university environment and psychological wellbeing, however further exploration of this complex relationship is needed; (c) self-efficacy was a mediator and self-esteem was a moderator of the relationship between perceptions of the university environment and psychological wellbeing. Despite limitations, these findings have important implications for Māori university students, tertiary education providers in general, and those involved in the development and implementation of tertiary education policy. The findings also highlight the need for further research aiming to optimize positive academic and psychological outcomes for Māori students who attend university.

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He mihi mahana ki a koutou mo o tautoko ki ahau.
Ma te huruhuru, ka rere te manu.
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CHAPTER ONE - INTRODUCTION

> *No country can get ahead if a significant proportion of its citizens are left behind...Higher education for Māori is a critical challenge ...closing the appalling gaps will not be easy, but we have to make a start, in the interest of all New Zealanders.* The Right Honorable Helen Clark, Prime Minister, 2000.

The *Tertiary Education Strategy for 2002 to 2007* is halfway through its term. The strategy contends that the tertiary educations system plays a critical role in New Zealand's development as a "knowledge society", and aims to better support the growth of, among other things, Māori development (Ministry of Education, 2001). One of the specific assurances is "expect...improved achievement of outcomes as Māori learner needs are understood and met by the tertiary education system" (Ministry of Education, 2001, p. 33).

Increasingly, education is being seen as the key to Māori socio-economic development. Education will "provide people with the skills and knowledge that enable them to lead fulfilling lives and to contributes to building the nation's wealth and communities...supporting and enhancing New Zealand's unique identity, culture and values. It contributes...to all aspects of life in New Zealand" (Ministry of Education, 2001, p.21). This view has been widely accepted, and as a result, more Māori are opting for tertiary education than ever before. Māori participation in university education has been steadily increasing over the last decade, and in the last four years in particular: Māori have gone from being under-represented at all levels of tertiary education, to having the highest participation rate of any ethnic group (Ministry of Education, 2004a). In 2003, the Māori rate of participation in tertiary education stood at 20.2 per cent, compared with 13.4 per cent for all students (Ministry of Education, 2004a). The majority of this growth in participation comes from enrolments at Wananga and polytechnics, and is centered on certificate-level study (Ministry of Education, 2004a). Growth in Māori enrolments at degree-level and above has been much slower: In 2003, the Māori rate of participation for students studying at degree-level was 3.2 per cent, below the participation rate for all

students at 4.1 per cent (Ministry of Education, 2004a). However, whilst initial participation (as measured by enrolment) is improving, effective outcomes are not being achieved.

It is clear that at present, to a large extent, universities in particular are not meeting Māori learner needs. This is evidenced by poor retention rates for Māori attending university. At higher levels of tertiary education, Māori experience the lowest retention and completion rates of all the ethnic student groups. In a recent investigation of five-year retention rates for tertiary students, it was found that below degree-level, Māori retention rates were up to 8 per cent *higher* than the average retention rates for other ethnic students (Ministry of Education, 2004b). However, retention rates for Māori students studying at degree-level were up to 17 per cent *lower* than the average retention rates for other ethnic students: after five years, 51 per cent of Māori students studying at degree-level were neither completed nor were still enrolled (Ministry of Education, 2004b). Interestingly, retention rates for Māori studying at degree-level at colleges of education were reported to be particularly high: Five-year rates for Māori starting a qualification in 1999 were 61 per cent for colleges of education, but only 44 per cent for Māori in the same position at a university (Ministry of Education, 2004a). The information available raises concerns for the number of Māori students who do not complete their course of study. It is important to note that "dropping out is not necessarily an indication of failure by individual students, (but) high dropout rates may indicate that the education system is not meeting the needs of its clients" (OECD, 2000).

The situation is made more urgent by the fact that many Māori students, and by association their whānau, are accessing student loans to pay for their education. More than 26,000 Māori used the Student Loan Scheme in 2003, 7 percent up on 2002 and an increase of around 55 percent since 2000. (Ministry of Education, 2004a) Māori represented 20 percent of all borrowers with a declared ethnicity in 2003, compared with 18 percent in 2000 (Ministry of Education, 2004a). The 2003 figure is comparable to the proportion of all students who were Māori (20 percent). If a student has taken out a loan to pay for their course and does not complete the course, the student will have no qualification to show for their studies, or to help them pay the loan back. New research shows there are differences among different ethnic

groups in repayments three years post-study. In 2000, just 10 percent of Māori who had last borrowed and studied in 1997 had repaid their loans, compared with 20 percent for European and 29 percent for Asian groups (Ministry of Education, 2004a). Conversely, nearly two thirds of Māori and Pasifika students had not reduced their debt at all three years after study, compared with 41 percent and 47 percent for European and Asian groups, respectively (Ministry of Education, 2004). This situation decreases the chances that the student will re-enroll in tertiary education, and results in a loss of potential that affect not just the individual, but also their whānau, and the whole of Aotearoa/New Zealand.

More Māori are accessing university education than ever before, thus there is increased responsibility for universities to be more responsive to these Māori learners, and to ensure that the teaching, research, and support systems they offer assist in building a tertiary-educated Māori population. The *Tertiary Education Strategy* supports this (Ministry of Education, 2001). The first step in becoming more responsive to Māori needs is investigating and understanding these needs. What might contribute to retaining Māori students, and what are some of the reasons why Māori students decide to leave? Discussions on this very issue were held at a Hui at Auckland University in 1999: *Te Toi Tauira mo te Matariki* (Rowe, 1999). Common themes from the discussions included that Māori are often the first in their family to make it to university, and that can often result in isolation. Whilst parents may be supportive, they may find it difficult to understand the stresses of this particular lifestyle. Financial difficulties are also common. It is difficult to concentrate on an assignment if there are more pressing worries such as food and rent payments. Another issue raised at the Hui was that Māori students may feel a sense of marginalisation, of disconnectedness with the university community, and this can have an effect on self-image and wellbeing (Rowe, 1999). Anecdotal evidence such as this is valuable, however, empirical studies investigating Māori students' experience of studying at university is needed before conclusions can be drawn and appropriate action taken.

The importance of higher education for Māori development has been established. However, the best way to ensure that the goals of education for Māori are being met is still under discussion. At the Hui Taumata Matauranga in 2001, Professor Mason

Durie put forward a framework for considering Māori Educational advancement. Within this framework, he clarified three broad goals for the education of Māori, and detailed principles and pathways to implement in order to achieve these goals. (Durie, 2001).

The first goal is that education should be consistent with the goal of enabling Māori to live as Māori. This was further defined as having access to te ao Māori - language, tikanga, marae, and resources such as iwi land, whānau, and kaimoana. Education is meant to prepare people for participation in society, and for Māori, this includes participation in Māori society. Education should be as much about reality in Aotearoa as it is about literacy and numeracy (Durie, 2003). The second goal is that equally, education is about preparing people to actively participate as citizens of the world. Education should open the doors to technology, to the economy, to the arts and sciences, to understanding others, and to making a contribution to a greater good (Durie, 2003). In order for Māori to advance through education, they must have gained some readiness to confront the world and to actively participate in it. The third goal for education is linked to wellbeing. Education should make a major contribution to health, wellbeing, and a decent standard of living. Durie defines a successful education under this goal as "one that lays down the groundwork for a healthy lifestyle and a career with an income adequate enough to provide a high standard of living" (2003, p. 55).

Durie goes on to details three principals that must be upheld in order to achieve these goals. The first is that of best outcomes. Durie states: "It is unacceptable for Māori students to leave [education] without achieving the best possible outcome. Unless all students have made significant and measurable progress towards reaching all three identified broad goals, then the system has failed them" (2003, p. 55). The second principle is one of integrated action. Durie maintains that success or failure in the education system is the result of many forces acting together: university and community, staff and parents, students and their peers, Māori and the state. The third principle is that of indigneity. The principle of indigeneity is about acknowledging the rights of Māori as the indigenous people of Aotearoa / New Zealand. These rights have implications for the type of education Māori might expect. In order for education to be successful for Māori, it must first meet the needs of Māori learners.

Thus an important area of research is investigating the experiences of Māori learners in order to explore how aspects of these experiences may impact on learning outcomes. Durie's framework for considering Māori education goes on in detail to outline possible pathways and capacity to assist in attaining the three broad goals outlined above (Durie, 2003).

Retention of Māori students at university in New Zealand is a crucial part of achieving the three broad goals of education as described by Professor Mason Durie. The attrition rate of Māori students at university is clearly in conflict with the principle of best outcomes. Durie expanded on the principle of best outcomes by identifying the need for zero tolerance of educational failure. Educational failure leads to those people who have dropped out becoming trapped in lifestyles that are essentially incompatible with healthy growth and development (Durie, 2003). The three goals will not be met as long as Māori continue to leave university education prematurely in such high numbers. The third goal especially is affected by high Māori attrition rates: If a student does not complete his or her course, not only will they likely lack the means to maintain a decent standard of living, but they will also, in all likelihood, be left with a fast-increasing loan as an added burden of their time in the education system. The student may, thus, be worse off in their standard of living and health and wellbeing than they were prior to entering the education system.

Both Māori leaders and the New Zealand government have drawn attention to the need for quality outcomes for Māori attending university in order for Māori as a people to continue to grow. However, there currently exists a dearth of research into the factors that may hinder or enhance Māori success at university. Guided by recent research in the area of minority students' experiences at university in other countries, this study aims to utilize a broad contextual, social, and psychological view of factors that are theorized to play important roles in academic nonpersistence decisions and psychological wellbeing. The primary objective of the current study is to investigate quantitatively how the experiences of Māori students at university affect academic persistence decisions and psychological wellbeing.

This section will first present rationale for investigating the academic nonpersistence

decisions and psychological wellbeing of Māori university students. Following this, three specific clusters of personal, social, and contextual variables that have been proven to have significant effects with other minority student populations will be presented. These are social support, self-beliefs, and perceptions of the university environment. Adding to the empirical evidence, qualitative enquiry into the factors affecting minority university students' academic adjustment reveal themes that add support to the importance of personal, social, and contextual variables.

1.1 Academic Nonpersistence

Universities the world over have a vested interest in the academic progress of their students. Key to this is encouraging students to remain in their studies and to complete their courses. The rate at which students either complete a qualification or continue studying is variously termed 'retention' or 'academic persistence'. Conversely, the rate that refers to those students who neither complete a qualification nor continue studying is termed 'attrition', 'academic nonpersistence', or sometimes 'dropout' rate (Ministry of Education, 2004c). Enrolment stability, the university's financial concerns, wasted human resources, and student development are some of the areas affected by attrition rates.

One of the most comprehensive conceptual models for explaining and predicting the dropout process is Tinto's Theory of Individual Departure from Institutions of Higher Education (1975, 1993). This model postulates that individual's bring with them an initial commitment to study, which is made up of the individual's personal characteristics (eg. personality, self-beliefs), plus their demographic and background characteristics (eg. being a minority student, gender, age). These individual attributes interact with the social components of the institution, including cultural congruity (or 'institutional fit'), interactions with faculty and peers, perceptions of the environment) (Tinto, 1975, 1993). Together, these factors are theorised to determine the extent of the individual's commitment, and therefore persistence (Tinto, 1993). Tinto asserts that "it is the individual's integration into the academic and social systems of the college that most directly relates to his continuance in that college" (Tinto, 1975, p. 96). Tinto went on to note that the absence of integration appears to arise from two sources, which he labelled "incongruence" and "isolation".

Tinto defined incongruence as "that state where the individuals perceive themselves as being substantially at odds with the institution" (Tinto, 1993, p. 50). Incongruence has also been referred to in the literature as 'cultural congruity' and 'institutional fit'. For minority students attending an educational institution built on the principals valued by the majority culture, there are unique challenges of incongruence to be faced.

A qualitative exploration into the experiences of Māori students at Victoria University uncovered themes that reflect a sense of incongruence. In her dialogues with Māori students, Kidman states that several of the students described a sense of "displacement" within the university: "a feeling of being in the wrong place at the wrong time, or of not knowing the rules of university life" (1994, p.2). The students interviewed also commented that they found the university to be "a very Pakeha place…Māori who wish to combine their own cultural knowledge with academic meanings sometimes find that the patterns of academic discourse inhibits them" (1994, p.2).

The other main barrier to academic and social integration is isolation: "the absence of sufficient interactions whereby integration may be achieved" (Tinto, 1993). Again, Kidman's research with Māori university students reflects that isolation is a real phenomenon for these students. The students reported "an over-riding sense of loneliness…This sense of isolation was exacerbated by the realisation that indeed many Māori students do operate alone because there are often no other Māori in their courses" (Kidman, 1994, p. 14).

Various studies considering the construct validity of Tinto's model have been carried out, with the results confirming Tinto's conception of the sociological and psychological nature of attrition and retention (eg. Gloria & Robinson Kurpius, 2001; Lamport, 1993; Pascarella & Terenzini, 1977; Pascarella & Terenzini, 1980). A review of literature focusing on the common themes found that many of the findings in relation to attrition assimilate with Tinto's model. For example, in his review of literature on attrition Miller stated, when reporting the ten most common findings, that students who integrate into the university tend to stay, while those who are not

integrated tend to withdraw (Miller, 1997). Other most common findings included that withdrawal is multi-causal, that withdrawal often follows specific interactions between individual and institution (eg. where a student feels that an institution has been unsupportive or indifferent), and that the availability of social interaction opportunities on campus reduces attrition (Miller, 1997).

Using an empirical, longitudinal research design, Cabrera, Castaneda, Nora and Hengstler (1992) aimed to examine the predictive and construct validity of Tinto's theoretical framework of college departure decisions. This extensive study found that Tinto's structural model accounted for 38 percent of the variance observed in actual persistence decisions (through a review of student records), and for 36 percent of the variance observed in intent to persist (Cabrera et al., 1992). Further to this, of the thirteen structural relations hypothesized in Tinto's model of college student departure, nine were found to be statistically significant, providing empirical support for 70 percent of Tinto's hypotheses (Cabrera et al., 1992). In addition, the study identified the presence of the direct effect of academic integration on persistence that was not hypothesized in the model (Cabrera et al., 1992). The researchers concluded that Tinto's model is correct in presuming that academic persistence is the product of a complex set of interactions among personal and institutional factors, as well as in presuming that intent to persist is the outcome of a successful match between the student and the institution (Cabrera et al., 1992).

Using Tinto's theoretical model of attrition as a base, Pascarella and Terenzini constructed a measure that aimed to specifically assess academic and social integration in order to significantly discriminate between persisters and voluntary dropouts (Pascarella & Terenzini, 1980). Subsequent research using the measure showed that the Persistence/Voluntary Dropout Decisions Scale significantly discriminated between persisters and non-persisters 81.7 and 80.8 per cent of the time respectively, confirming the construct validity of Tinto's model (Pascarella & Terenzini, 1980). In their studies, race/ethnicity and gender were statistically controlled in order to increase the generalizibility of the scale's use with different student samples. Strengthening the reliability of the scales use with minority populations, the scale has been used effectively with American Indian (Gloria & Robinson Kurpius, 2001), African American (Gloria et al., 1999), Asian American

(Gloria & Ho, 2003), and Māori university student samples (Murray & Flett, 2003).

Due to the fact that minority students in general tend to dropout of university at higher rates than their non-minority counterparts, there is a growing body of research investigating the link between the experience of being a minority student at university, and academic nonpersistence decisions. Given recent statistics which find comparable results for Māori attending university, exploring the link between the experience of being a Māori university student and academic nonpersistence decisions is an important area for research consideration.

1.2 Psychological Wellbeing

In considering university academic adjustment and success, it is important to take into account a range of academic, social/environmental, and personality factors (Russell & Petrie, 1992). A major indicator of successful academic adjustment is psychological wellbeing (Russell & Petrie, 1992). For the purposes of the current study, psychological wellbeing was operationalised in terms of two constructs: the experience of distress related to psychological symptoms, and global perceived stress. This section will consider each of these in the context of university student adjustment.

1.2.1 Psychological Symptoms

Multifactorial symptom or distress inventories are often used by researchers studying clinical and nonclinical populations of university students. These measures are usually based on the widely used psychological disorder classification system – the Diagnostic and Statistical Manual. In this study, psychological symptoms were assessed using the 21-item version of the Hopkins Symptom Checklist (HSCL-21; Green, Walkey, McCormick & Taylor, 1988).

Green et al. sought to produce a brief but acceptably reliable version of the HSCL, which originally consisting of 58 items (Derogatis, 1974). Green et al. (1988) specifically aimed for the brief HSCL to capture three specific factors: General Feelings of Distress, Somatic Distress, and Performance Difficulty. The General Feelings of Distress subscale assessed items such as loneliness and sadness, Somatic Distress assessed the presence of actual physical symptoms, and Performance

Difficulty assessed the ease with which everyday tasks such as speaking and remembering information are accomplished. All together, the scale aimed to provide a general indication of psychological distress. Following correlation matrices, 21 items were selected and the resulting HSCL-21 was piloted with a group of New Zealand university students. Analysis of the pilot sample found that the three subscales displayed high reliability (Green et al., 1988). On the basis of the HSCL-21's psychometric properties and its short length, the authors highlighted the value of the HSCL-21 for both clinical purposes and research.

The HSCL-21 has been extensively used with university student populations (eg. Capeda-Benito & Short, 1998; Deane & Chamberlain, 1994; Snow-Turek & Finch, 1998). An investigation into the cross-cultural equivalence of the HSCL-21 in European American, African American, and Latino university students found that the three-factor model was valid and robust across the three samples (Cepeda-Benito & Gleaves, 2000). Most significantly in terms of the present research, the HSCL-21 has been utilized with a population of Māori university students attending Massey University. In his research investigating the effect of student problems and cultural identity on academic achievement, Bennett (2001) reported Cronbach's alphas of .85 for the overall scale, and subscale reliabilities ranging from .73 to .82.

Given that the HSCL-21 appears to maintain its factor structure across ethnically diverse university students, and that it is relatively undemanding, the HSCL seems to be an ideal measure for the present study.

1.2.2 Perceived Stress

In the research investigating stress, there is some question as to whether stress should be assessed as the number of stressful events experienced (eg. Sarason, Johnson & Siegel, 1978), or as one's appraisal of the impact of such experiences on one's life (Perkins, 1982). In addressing the conceptual and evaluative limitations of life events checklists to assess an individual's experience of the stressful events, Cohen (Cohen, 1986; Cohen, Karmarck & Mermelstein, 1983) argued that the appraisal of one's stress level may be a more important determinate of how one copes physically and emotionally. Cohen was interested in capturing the degree to which individuals find their lives to be unpredictable, uncontrollable, and overloading. Cohen et al.

(1983) also noted that global perceived stress can be viewed as an outcome variable.

Following from this view, perceived stress can be defined as the extent to which an individual is conscious of the imbalance between their appraisal that a situation or environment is threatening, and the extent of their ability to cope. That is, the level of perceived stress and worry over the inability to handle life's demands.

Research into the experience of stress in a university setting has found that university students perceive academic life as stressful and demanding (cf. Hammer, Grigsby, & Woods, 1998; Wan, 1992). Stress can occur for students for any number of reasons, although common amongst these potential stressors are coping with the transition from home to university (Fisher, 1994), social connectedness (Lee, Keough & Sexton, 2002), and perceptions of the university environment (Gloria & Ho, 2003; Lee, Keough & Sexton, 2002). Global perceived stress has been related to a number of undesirable outcomes, including greater depressive symptoms and lower life satisfaction (Chang, 1998).

The present study will use a measure of global perceived stress that was designed for use with community samples with at least a junior high school education (Cohen, Karmarck & Mermelstein, 1983). The Perceived Stress Scale (PSS; Cohen, Karmarck & Mermelstein, 1983) was developed in order to provide a psychometrically sound global measure of perceived stress. Accordingly, the PSS was specifically described as a measure of the degree to which general situations in one's life are appraised as stressful (Cohen, Karmarck & Mermelstein, 1983). Extensive normative data on 2 387 people has been generated on the 14-item, 10-item, and 4-item versions of the PSS, providing normative data which is a valuable reference when studying perceived stress across gender, socio-economic status, age groups, race, and other demographic indices (Cohen & Williamson, 1988). Although all three versions of the PSS provide strong psychometrical data, Cohen and Williamson (1988) note the relative superiority of, and therefore recommend, the 10-item version. Of pertinence to the current study, the PSS-10 was reliably employed with a sample of Māori university students, with a reported Cronbach's alpha of .88 (Bennett, 2001).

1.3 Social Support

Social support has been conceptualised and measured in numerous ways. A frequent criticism of social support research is the lack of consensus about a definition and how to measure social support (Uchino, 2004). One of the most commonly used definitions is "information leading the subject to believe that he is cared for and loved (Cobb, 1976, p.30). The majority of research in the area of social support has tended to focus both on the individual's subjective perception of the adequacy of social support in relation to his or her needs (ie. The individual's satisfaction), and on objective appraisals of the individual's social support network (Eg. Pearson, 1990; Vaux, Phillips, Holly, Thomson, Williams, & Stewart, 1986).

In studies investigation academic success, social support is increasingly looked at as a retention and enrichment strategy for university education (eg. Astin, 1977; Gloria and Robinson Kurpius, 2001; Pascarella & Terenzini, 1977; Tracey & Sedlick, 1985). A large number of empirical studies have established that social support is effective in buffering people from the negative effects of stress, and this appears to hold true in student populations also (eg. Ostrow, Paul, Dark, & Berhman, 1986). Social support is also key in enhancing integration into the university environment, and therefore encouraging persistence in education. Mentoring in particular may play an important role: Mentors could promote a feeling of belonging among students by offering them acceptance, validation, and friendship (Jacobi, 1991).

For the present study, social support was operationalised in terms of two constructs that were relevant for minority university student populations: perceived social support and mentoring.

1.3.1 Perceived Social Support

In this study, perceived social support encompasses both the number of perceived social supports in a person's life, and the degree to which they are personally satisfying. In order to gather this subjective information, the Social Support Questionnaire - short form was utilised (Sarason, Sarason, Shearin, & Pierce, 1987).

The original SSQ was developed following a series of studies involving several hundred participants (Sarason, Levine, Basham, & Sarason, 1983). Based on this pilot work, 27 items were selected that examined both the both the number of perceived available social supports, and the level of satisfaction with these supports (Sarason et al., 1983). Each item asked a two-part question consisting of (a) listing the people to whom they can turn to and rely on in a given set of circumstances, and (b) indicating how satisfied they are with these social supports (Sarason et al., 1983). Following four studies piloting the SSQ, it was reported that the SSQ was high in reliability and validity (Sarason et al., 1983). Further, as a result of these four studies, Sarason et al. (1983) concluded that those who experience high social support seem to experience more positive events. Conversely, low levels of social support appeared related to difficulty in persisting on a task that does not yield a ready solution (Sarason et al., 1983).

Following on from this research, a short form of the SSQ (the SSQ6) was developed in an attempt to create a brief scale that could serve as an adequate substitute for the original 27-item SSQ. Using three independent samples of university students, plus statistical analyses, Sarason et al. identified six items that displayed high test-retest reliability, high internal reliability (.90 to .93), and exhibited similar correlations with a varied group of social support indices as those displayed by the original SSQ (Sarason, Sarason, Shearin & Pierce, 1987). The resulting SSQ6 was purported to be highly similar to the original SSQ, with the added bonus of being more resistant to skew and kurtosis (Sarason et al., 1987). As the SSQ6 provides a brief but reliable measure of perceived social support, and since it was normed with a population of university students, the SSQ6 was selected for the purposes of the present study.

Research exploring the effects of social support in the lives of university students has found that social support has significant effects on both retention/attrition and psychological wellbeing. In particular, satisfaction with perceived social support is implicated. Almost twenty years ago, perceptions of insufficient social support were shown to predict attrition of both Black students and White students at university (Mallinckrodt, 1988). More recently, studies of factors that affect retention continue to find that perceived social support is an important factor in enhancing retention and predicting attrition. In their six-year longitudinal study of undergraduates'

adjustment to the university environment, Gerdes and Mallinckrodt (1994) found that integration into campus life, including satisfaction with social support, was an important predictor of academic persistence. In recent studies investigating the influence of social support on the academic persistence decisions of African American, American Indian, and Asian American university students, social support has been consistently demonstrated to be a strong predictor of academic persistence (Gloria et al., 1999, Gloria & Robinson Kurpius, 2001; Gloria & Ho, 2003). Also, a recent literature review of barriers to persistence among African American intercollegiate athletes found that the level of integration/isolation, (as measured by involvement in and gaining support from the campus community), was the most important noncognitive variable affecting academic persistence for this group of students (Hyatt, 2003).

In regards to the effect of perceived social support on the psychological wellbeing of university students, it appears that increased social support has positive effects. Research into social support as a moderator of stress in university students found that social support satisfaction was significantly, negatively related to higher depressive symptomology at average levels of perceived stress (Pengilly, 1997). Another study looked at psychological symptomology among university students as mediated by career development, social support, parental attachment, and gender (Widlansky, 1997). This study found that satisfaction with social support (as measured by the SSQ6) was one of only two significant predictors of psychological distress (Widlansky, 1997). Similarly, Finch, Okaun, Pool and Raehlman (1999) found that ratings of perceived social support were strongly related to reduced psychological distress, and that social support was a stronger (predictor) of reduced psychological distress than actual received social support measures.

More recently, a studying exploring the relationships between social support, coping style, and mental health of students found that those students who reported higher social support showed higher mental health levels on the SCL-90 (Hui-ming, 2003). Comparably, Wen (2004) found that social support was positively correlated with subjective wellbeing in his study of the influence of a range of variables on subjective wellbeing in university students.

1.3.2 Mentoring

Another important source of social support for university students in particular is the presence of a mentor. The mentoring relationship within an educational environment is commonly seen as being made up of three components: (1) emotional and psychological support, (2) direct assistance with career and professional development, and (3) role modelling (Jacobi, 1991). Based on a review of the literature regarding mentors and university students, mentors tend to have greater experience, influence, and achievement when compared with their protégés, and the relationship between a mentor and a protégé is personal and reciprocal (Jacobi, 1991). Studies have found that having contact with faculty both inside and outside the classroom is critical to students academic persistence (eg. Griffin, 1992; Gloria & Robinson Kurpius, 2001; Pascarella & Terenzini, 1980).

A common difficulty with identifying mentors for minority students is that there is often a relative scarcity of minority faculty to call upon. Meznek, McGrath, and Garcia (1989. Cited in Jacobi, 1991) explain that mentors of the same ethnic background as their students can assist in resolving apparent conflicts between the values of one's culture or community and the values of the educational institution: the mentors may demonstrate that success is possible without having to abandon cultural identity.

Research examining the effects of having a mentor with minority students has found that access to mentors significantly affects academic persistence decisions. Brown and Robinson Kurpius (1997) showed that positive contact with the faculty/staff was the critical noncognitive variable related to American Indian students' persistence decisions, in their study of psychosocial factors influencing such decisions. Further research specifically assessing the effects of social support on American Indian persistence decisions supported this, stating that when specific aspects of social support were examined, the role of faculty/staff mentoring had the strongest correlation with persistence (Gloria & Robinson Kurpius, 2001). Similar research with African American and Asian American student populations maintains these conclusions, strengthening the call for mentoring programs for minority students to be widely established at universities in order to enhance retention rates (Gloria et al.,

1999; Gloria & Ho, 2003).

1.4 Self-Beliefs

Self-beliefs and their role in relation to positive mental health, psychological wellbeing, and a vast range of human behaviour have long been investigated by psychologists and sociologists alike. One of the most frequently investigated aspects of self-beliefs is the evaluative component of self-esteem.

1.4.1 Self-Esteem

Self-esteem has been defined as "a positive or negative attitude towards...the self" (Rosenberg, 1965, p. 30). This definition was further clarified by Rosenberg (1965), stating that although the individual with positive self-esteem views him- or herself as a person of worth, they do not necessarily consider themselves superior to others. In general, self-esteem is widely seen as a broadly relevant conceptual tool to explore how people view and evaluate themselves, both as a consequences of basic social conditions, and as a predisposition for subsequent behaviours (Wells & Marwell, 1976). The impetus behind much of the self-esteem research is the hope that if we understand how self-efficacy is related to behaviour, enhancing self-efficacy could make a significant difference in individuals' lives and perhaps to society in general.

A thorough meta-analysis examining whether general self-esteem reflected a state or a trait construct was recently carried out by Trzesniewski, Donnellan, and Robbins (2003). Using data from published journal articles and nationwide studies, the authors concluded that self-esteem showed substantial continuity over time, and that the stability of the self-esteem construct was comparable to the stability found for personality traits (Trzesniewski et al., 2003). Adding weight to this finding, the study also found that self-esteem stability did not vary substantially by gender, measure used, nationality (US versus non-US), or year of assessment (Trzesniewski et al., 2003). This study also aimed to explore whether self-esteem stability remained constant across the lifespan. Covering age 6 to 83, the evidence demonstrated that self-esteem levels follow a curvilinear pattern where self-esteem stability is relatively low during childhood, and increases throughout adolescence and early adulthood, peaks between the 20s and 40s, and then declines during midlife and old age (Trzesniewski et al., 2003).

Studies have linked self-esteem to many indicators of psychological wellbeing, mental health, and a variety of behaviours including persistence. In a major review of the available empirical literature on self-esteem reveals considerable support for the idea that achieving a high level of self-esteem, or perhaps more importantly, avoiding low self-esteem, is important for health and wellbeing throughout the life span (Harter, 1999). This evidence includes numerous prospective investigations in which higher levels of self-esteem have predicted more positive outcomes at follow-up even after controlling for initial levels of outcomes and other potential confounds (Harter, 1999). For example, research has linked self-esteem to many positive outcomes, including occupational success (eg. Judge & Bono, 2001), persistence in the face of failure (eg. Shrauger & Sorman, 1977), and improved coping and regulation skills (eg. Greenberger et al., 1999). Conversely, individuals who report low self-esteem are significantly more likely to experience increased perceived stress (Mruk, 1999), health problems (eg. Vingilis, Wade & Adlaf, 1998), and report more psychological symptomology, particularly anxious and depressive symptoms (Harter, 1999; Skager & Kerst, 1989). Low self-esteem has been linked to suicidal ideation (De Man & Gutierrez, 2002), depression (De Man, Gutierrez & Sterk, 2001; Roberts, Shapiro & Gamble, 1999), emotional distress (Roberts, Ciesla, Direnfeld & Hewitt, 2001), and general subjective wellbeing (Cha, 2003).

A growing body of evidence indicates that self-esteem is one of the most predictive factors of academic adjustment. Some studies report that a sense of self-worth can predict academic adjustment and persistence (Cohorn & Giulliano, 1999; Gerdes & Mallinkrodt, 1994; Gloria & Robinson Kurpius, 2001). Self-esteem has also been found to be negatively correlated with increased loneliness (Ginter & Dwinell, 1994) and positively correlated with perceived social support (Gloria & Ho, 2003), which in turn is a strong predictor of student adjustment (Gloria & Ho, 2003; McWirter, 1997). Although self-concept (including self-esteem, self-confidence, and general self-concept) was not found to be a predictor of academic persistence in a recent meta-analysis of psychosocial factors and university outcomes, the authors noted that the construct of "self-concept" was broad, and as such is more likely to predict broad criteria, such as general life satisfaction (Robbins, Lauver, Davis, Langley, & Carlstrom, 2004). Broad predictors are not likely to be highly predictive for narrow

criteria (c.f. Hamish, Hulin & Ranzewski, 1998). In regards to retention of minority university students, self-esteem has been consistently and significantly linked to academic persistence decisions with a range of ethnicities (eg. Gloria et al., 1999; Gloria & Robinson Kurpius, 2001; Gloria & Ho, 2003).

In their extensive meta-analysis of self-esteem research, Trzesniewski et al. (2003) reported that the most commonly used measure of self-esteem was the Rosenberg Self-Esteem Scale (RSES). Based on his view that self-esteem reflects an individual's attitude towards him- or herself, Rosenberg created a scale to capture this construct. Consisting of ten items, this scale was developed to provide a measure of self-esteem ranging from high to low self-esteem (Rosenberg, 1965). Although the RSES was originally developed for use in large-scale studies of youth, the RSES has been widely used with adult populations. For example, in a substantial longitudinal study of American adults aged 25 to 96, the RSES was found to be a reliable measure of self-esteem (Trzesniewski et al., 2003).

1.4.2 Self-Efficacy

Self-efficacy has been conceptualised principally in two different ways: generalised self-efficacy and situation-specific self-efficacy. Generalised self-efficacy theorists propose that specific self-efficacies for a variety of situations can act in a cumulative fashion. Thus individuals with positive self-efficacy in a wide range of situations will have higher general self-efficacy than those who have positive specific self-efficacy in a comparatively limited range of situations (Watt & Martin, 1994). Higher generalised self-efficacy has been found to be associated with lower depressive symptoms, higher-functioning immune systems, endurance, and test performance (Lightsey, 1996). However, a literature review examining the research into generalised self-efficacy found that in several studies, specific forms of self-efficacy may be particularly tied to wellbeing when they are particularly salient to important outcomes (Lightsey, 1996).

Self-efficacy and its relation to academic success (including academic performance, persistence, and psychological wellbeing) has received much research attention. According to Bandura, (1977, 1982, 1997) self-efficacy expectations are judgements about how well an individual can organise and carry out courses of behaviour

necessary to cope with prospective situations involving ambiguous, unpredictable, and stressful elements. Self-efficacy determines whether coping behaviour will be initiated, and how long it will be sustained. Specific self-efficacy in the educational context has been related to persistence, achievement, and psychological health (Gloria & Robinson Kurpius, 2001; Karademas & Kalantzi-Azizi, 2004; Zimmerman, 1989). A meta-analysis of research in education settings found the self-efficacy was related both to academic performance ($r = .38$) and to academic persistence ($r = .34$; Multan, Brown, & Lent, 1991). Students high in academic self-efficacy make greater use of effective cognitive strategies in learning, manage their time and learning environments more effectively, and are better at monitoring and regulating their own efforts (Zimmerman, 1995).

Academic self-efficacy, also referred to in the literature as college self-efficacy, has been repeatedly found to be significantly and positively related to academic persistence for university students. A recent meta-analysis investigated whether psychosocial factors predicted collage outcomes, including achievement and retention (Robbins et al., 2004). Based on an extensive review of theoretical education persistence models and motivational theory, Robbins et al. (2004) determined that there were nine broad constructs theoretically linked to academic persistence and success, one of which was academic self-efficacy. This study utilised a comprehensive literature search including a computer search of psychological databases, plus a manual search of numerous journals, (including the Journal of Counselling Psychology and Research in Higher Education) to double check results obtained from the electronic databases. From this search, Robbins et al. (2004) gathered 109 studies which reported usable data, (that is, correlations), and which included both a measure of the psychosocial factors of interest and outcome measures of academic success. Following extensive meta-analyses, Robbins et al. concluded that academic self-efficacy is highly, positively related to academic persistence, with the mean operational validity estimated to be .259 (Robbins et al., 2004). Further analysis revealed that academic self-efficacy maintained a positive relationship with retention when included in a regression equation with the traditional predictive factors of socio-economic status and high grade point average (Robbins et al., 2004). Supporting the meta-analytical findings, Chemers, Hu and Garcia's (2001) study of academic self-efficacy and first-year college student's

performance and adjustment found compelling support for the role of self-efficacy in college student's academic success, including persistence. In this study, self-efficacy directly and indirectly showed powerful relationships to academic performance: even after statistically accounting for high school GPA, academic self-efficacy continued to have predictive power for academic performance and expectations for performance (Chemers, Hu & Garcia, 2001).

Academic self-efficacy has particularly been implicated in predicting academic persistence with minority students. In studies investigating the influences of psychosocial factors on the academic persistence of Chicano/a, African American, American Indian and Asian American college students, it has been repeatedly found that college self-efficacy is significantly related to academic persistence: students who have more positive perceptions of their ability to complete college-related tasks making fewer nonpersistence decisions (Gloria, 1993; Gloria, Robinson Kurpius, Hamilton & Willson, 1999; Gloria & Robinson Kurpius, 2001, Gloria & Ho, 2003; Solberg, O'Brien, Villarreal, Kenner & Davis, 1993; Wilson, 1997).

A holistic view of academic success incorporates psychological wellbeing along with students along with more common indicators such as academic performance and persistence. High self-efficacy has also been related to better health outcomes (Wilson, 1997). Research generally indicates that self-efficacy may moderate the effects of stress on wellbeing. A review of the literature looking at the effects of situation-specific self-efficacy on psychological wellbeing shows that domain-specific self-efficacy has been used to predict immunological enhancement, personal-emotional adjustment, and reduced distress (Mruk, 1999). It has been proposed that self-efficacy has an impact on affect and wellbeing through its effect on the ability to control and manage potentially negative emotions (Chemers, Hu & Garcia, 2001). That is, the way in which an individual construes the demands placed by the environment can have a dramatic ability on his or her ability to cope with that environment. Specifically, theorists have made distinctions between regarding demands as "threats" versus "challenges" (Lazarus & Folkman, 1984). Bandura (1997) also argued that a high sense of coping efficacy encourages individuals to adopt courses of action designed to change hazardous environments. Thus self-efficacy can have an effect on the perceived distress of psychological symptoms. For

example, a recent study examined academic self-efficacy effects on first-year university students' adjustment, including perceived stress and physical and mental health symptoms or problems (Chemers, Hu & Garcia, 2001). They found significant mediated effects of academic self-efficacy on both perceived stress and mental health (Chemers, Hu & Garcia, 2001). Specifically, students with a higher level of self-efficacy also experienced less stress, which in turn resulted in less health problems (Chemers, Hu & Garcia, 2001). Adding weight to this finding, research focusing on the relationship between self-efficacy expectations and psychological health of university students following a stressful encounter, (in this case, an examination period), found that self-efficacy exerted both a direct and an indirect influence on psychological health (Karademas & Kalantzi-Azizi, 2004). Expressly, self-efficacy expectations were significantly negatively related to psychological symptoms ($r = -.32$; Karademas and Kalantzi-Azizi, 2004).

In order to investigate academic self-efficacy with Māori students in this study, the College Self-Efficacy Inventory (Solberg, O'Brien, Villareal, Kennel, & Davis, 1993) was selected. Building on Bandura's theory, Solberg et al. (1993) operationalised college self-efficacy as the degree of confidence students have in their ability to successfully perform a variety of college-related tasks. In order to develop a tool to investigate this construct, Solberg et al. (1993) surveyed college self-help manuals to collate a pool of items addressing various college-related issues. Following this, six judges independently rated the initial 40-item pool to identify items they felt were: a) important, b) stated in a specific and clear manner, and c) representative of the college experience (Solberg et al., 1993). From this process, 20 items were selected and piloted with a sample of 164 Chicano second- and third-year university students. The final measure consisted of 19 items representing three sub-scales of Roommate Efficacy, Course efficacy and Social Efficacy (Solberg et al., 1993). Reliability was estimated for internal consistency using coefficient alpha. Coefficient alpha estimates for the pilot study were .93 for the total CSEI, and .88 for each of the subscales. The study also found that the three subscales displayed good convergent and discriminant validity, plus strong internal consistency (Solberg et al., 1993). The researchers described the purpose of establishing a valid and reliable college self-efficacy measure to provide opportunity to study the relationship between academic self-efficacy and academic persistence, as well as relationships

with models of mental health (Solberg et al. 1993). This tool was developed to be utilised with different cultures in order to allow cross-cultural comparisons, and to capture university students' experiences in general (Solberg et al., 1993).

In investigating the relationship between perceptions of the university environment, self-beliefs, social support, and psychological wellbeing, the transactional model of stress as described by Lazarus and Folkman (1984) was used to guide the research. The transactional model holds that stress does not reside solely in the individual or solely in the environment, but is *relational* in nature, involving some sort of transaction between the two (Lazarus, 1999). The model holds that stress is a transaction between situational and personal characteristics that leads a person to perceive an event or an environment as stressful (Lazarus, 1999). This approach draws attention to the importance of the fundamental process of appraisal. The two basic types of appraisal within the model are described as primary and secondary, although Lazarus (1999) points out that this does not mean that one is more important than the other, but rather that they differ in content and function. Primary appraisal is where the individual considers what is at stake, and evaluates the stressful encounter as a threat, harm, or a challenge (Lazarus, 1999). If a situation is seen as a threat to wellbeing, then the secondary appraisal is concerned with the identification and availability of coping resources (Lazarus, 1999). The central feature of this model is that activation of coping resources is dependent on the appraisal of an event or environment as "stressful" (ie a threat, or harmful). Coping in turn can involve both a problem and an emotion focus. This approach draws attention to the importance of examining how the event or environment is cognitively appraised by the individual, and then the coping strategies drawn upon to deal with the event or the environment that is appraised as stressful.

Two pathways by which self-efficacy and self-esteem can influence the relations between comfort in the university environment and psychological wellbeing are moderation and mediation (refer Figure 1, Baron & Kenny, 1986). In stress-moderation, the presence of the moderator reduces or increases the relations between comfort in the university environment and psychological wellbeing, thus acting as a stress-buffer or stress-exacerbate. In stress-mediation, level of comfort in the university environment influences the mediator, (in this case self-beliefs), which in

turn impacts on psychological wellbeing. Both stress-moderation and stress-mediation are useful models in that they allow researchers to understand underlying processes related to psychological wellbeing and have important implications for intervention design (Frazier, Tix, & Barron, 2004).

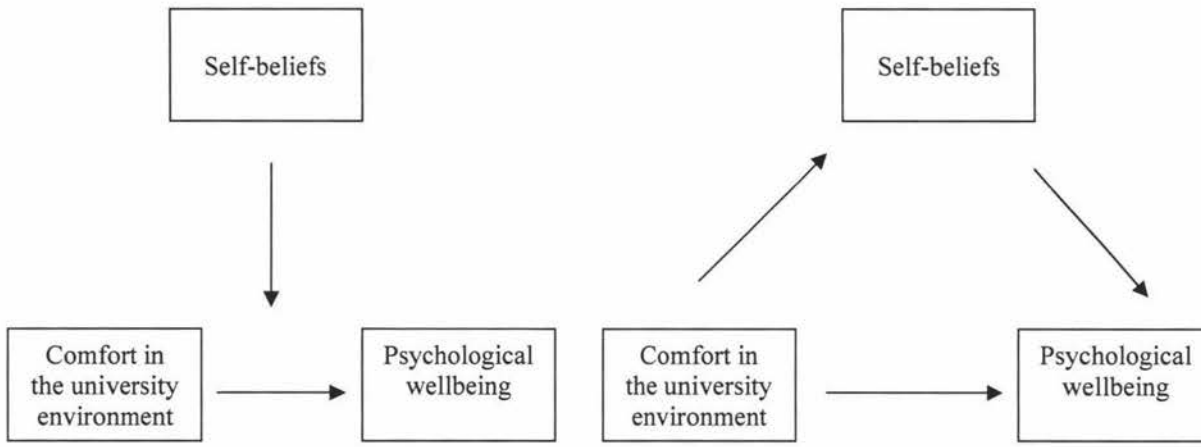

Figure 1. The left figure illustrates the theoretical model of self-beliefs as a stress-moderator. The right figure illustrates the theoretical model of self-beliefs as stress-mediators of psychological wellbeing.

Lazarus and Folkman (1984) posited that when individuals appraise an event or environment as stressful, they perceive their self-image to be threatened. This threat may have consequences for an individual's self-evaluation of worth (self-esteem), and their ability to identify and access coping resources (self-efficacy). In turn, and individual's level of self-esteem and self-efficacy is posited to directly effect whether increased levels of psychological distress are experienced.

Self-esteem has been found to be an effective mediator between remembered parental rejection and post-partum depressive symptoms (Crokenberger & Leerkes, 2003); stressful life-events and depression in Russian elders (MacFarlane, 2000); perceived parenting and psychological distress in young offenders (Chambers, Power, Loucks, & Swanson, 2000); and perceived stress and depressive symptoms in Hispanic adolescents aged 15 to 20 years (Katragadola, 1998). Similarly, self-efficacy has appeared to act as a mediator in a range of stress-distress relationships, including acute stress responses and long-term distress following natural disasters (Benight & Harper, 2002).

1.5 Perceptions of the University Environment

When exploring the experiences of minority students at university, one of the major themes of research in this area is that of comfort in the university environment. Incorporating institutional fit, cultural congruence, and perceptions of stress related to the university environment, this construct has been examined in regards to its relationship with academic success. In their meta-analysis of the psychosocial factors related to academic performance and retention, institutional fit was identified as one of the nine major constructs commonly considered in this research area.

Tinto (1993) proposed that the interactions between a student and his or her educational environment has a direct effect on students' intentions to persist with their studies. Tinto (1993) identified academic and social integration in particular as having key roles in contributing to institutional commitment, which is theorised to have a direct effect on intent to persist. A recent longitudinal study aiming to provide empirical support for Tinto's theory discovered that social and academic integration had significant, positive effects on institutional commitment, which in turn had a significant positive correlation with intent to persist (Cabrera, Castaneda, Nora, & Hengstler, 1992). This research provided practical substantiation for Tinto's theoretical view of the processes that affect university students' nonpersistence decisions, in particular, the importance of the role that comfort in the university environment appears to play.

The interactions between the university environment and individual students has been conceptualised and explored in a number of ways. A common way of conceptualising the relationship between the university environment and individual students is the construct of psychological sense of community (PSOC). The most widely used and accepted theory describing PSOC is the put forward by McMillan and Chavis (1986) based on an indepth review of the literature on PSOC. From this, McMillan and Chavis (1986) suggested that PSOC consisted of four elements, which they identified as Membership, Influence, Integration and Fulfilment of Needs, and Shared Emotional Connection. Membership refers to the feeling of belonging, of

being part of a collective (McMillan & Chavis, 1986). This dimension includes boundaries: if one belongs to a particular community, then the implication is that there are those who don't belong (McMillan & Chavis, 1986). The second dimension is that of Influence. This concept is bi-directional: an individual must feel that they have some control and influence over the group, and the group must also influence its individual members in order to be cohesive (McMillan & Chavis, 1986). The third dimension, Integration and Fulfilment of Needs, refers to the idea that in order for a community to maintain a positive sense of togetherness, association with the group must be rewarding for the individual members (McMillan & Chavis, 1986). The final dimension is that of Shared Emotional Connection. McMillan and Chavis (1986) suggested that this is in part based on a sense of shared history and identification with the community: the more people interact, the more likely they are to form close relationships. McMillan and Chavis stated that these aspects of community contribute to create each of the dimensions, which in turn work together to create and maintain an overall sense of community. PSOC is most typically operationalised as a perceptual construct; it assumes that situational and individual characteristics interact to produce a third set of perceptual variables (Davidson & Cotter, 1993).

Universities have long been considered as having a sense of community (Lounsbury & De Neui, 1996). Researchers interested in the possible benefits of having a PSOC in the university context have found significant correlations between PSOC and loneliness (Pretty, Andrews & Collett, 1994), experiences of burnout (McCarthy, Pretty & Catano, 1990), introversion (Lounsbury & De Neui, 1996), and psychological symptoms (McCarthy et al., 1990). PSOC has also been implicated in subjective wellbeing (Davison & Cotter, 1991) and interpersonal networks and support (Pretty, 1990). When exploring PSOC for members of minority groups who form a relational community embedded within a community dominated by the culture of a majority group, research recommends that the struggles between maintaining cultural identity and the need for belonging within the larger community are considered (Fisher & Sonn, 1999). Although this issue would appear to be particularly salient when looking at the experiences of minority students at university, there has been no published research investigating this in regards to academic outcomes such as retention, completion, or subjective wellbeing.

Focusing on the experiences of minority students attending mainstream universities, Hurtado and her colleagues centred their attention on the "campus climate". Hurtado, Milem, Clayton-Pederson and Allen (1998) conducted an extensive multidisciplinary analysis on the sources and outcomes of campus climate and based on this, developed a framework for understanding and describing the campus climate. They conceptualised campus climate as consisting of four dimensions: "a) an institution's historical legacy of inclusion or exclusion of various racial/ethnic groups, b) its structural diversity in terms of numerical representation of various racial/ethnic groups, the psychological climate of perceptions and attitudes between and among groups, and d) the behavioural climate dimension, characterised by intergroup relations on campus" (Hurtado et al., 1998, p. 282). Hurtado et al. (1998) noted that these four dimensions are connected, and can have effects on each other.

Based largely on studies carried out in America and Britain, Hurtado et al. (1998) observed that most "predominately White" institutions of higher education have a history of limited access and exclusion of racial/ethnic minorities. This *historical legacy* can have a direct effect on the prevailing climate and influence current practices (Hurtado, 1992). Hurtado et al. remarked that research has documented the impact of the historical context on the current climate for diversity, and on attempts to create a supportive climate for minority students (eg. Richardson & Skinner, 1991. Cited in Hurtado et al., 1998). Research also indicates that universities that have a history of including minority students provide more social and psychological support, lead to higher levels of students satisfactions and sense of community, and have a greater likelihood that students will persist and complete their degress (eg. Allen, 1992; Allen, Epps and Haniff, 1991; Jackson & Swan, 1991. Cited in Hurtado et al., 1998). The *structural diversity* of an institution refers to the representation of minority groups in the institution. Hurtado et al. contend that increasing the structural diversity by increasing the number of minority enrolments can give the impression that the campus is hospitable and more welcoming towards minority students (1998). However, Hurtado et al. caution that while an increase in the structural diversity of an institution may contribute to the overall campus climate, increasing the number of minority students alone will not have a substantial effect and may in fact cause additional problems if institutional policies and support

services are not also addressed. The *psychological dimension* of campus climate involves individuals' attitudes and perceptions in regards to group relations and diversity (Hurtado et al., 1998). Recent research has shown that minority students tend to view the campus climate differently than members of the majority culture (Ancis, Sedlacek & Mohir, 2000; Cabrera, Nora, Terenzini, Pascarella & Hagedorn, 1999). These perceptual differences are significant, as perception is both a product of the environment and a potential determinant of future interactions and outcomes (Tierny, 1987). Hurtado et al. (1998) include this psychological dimension of campus climate as it has been shown to have a direct effect on outcomes such as grades (Smedley, Myers & Harrell, 1993), a sense of alienation and isolation (Cabrera & Nora, 1994; Lin, LaCounte & Eder, 1988), and academic and psychological adjustment (Hurtado, Carter & Spuler, 1996). Finally, the *behavioural dimension* of campus climate is theorised to consist of actual reports of general social interaction, interaction between and among individuals from different backgrounds, and the nature of integroup relations on campus (Hurtado et al., 1998).

Although the importance of how minority students' perceive their university environment has been supported in qualitative, conceptual, and empirical literature, there are few measures that have been developed to capture this phenomenon. Three measures which were developed specifically to capture different aspects of minority students' perceptions of the university environment stand out as having been successfully used with a range of minority groups.

1.5.1 Cultural Congruity

Based on a review of the literature, Gloria and Robinson Kurpius (1996) developed an instrument that aimed to assess more affective- and belief-based perceptions of university life. The foundation for the Cultural Congruity Scale (CCS) came from Ethier and Deaux's six-item Perceived Threat Scale, which assessed perceptions of threat among racial/ethnic students attending Ivy League universities in America. Gloria and Robinson Kurpius added to this based on their own experiences as a racial/ethnic student and as mentors of racial/ethnic students. The resulting 14-item scale assessed issues relating to hiding or changing one's values to feel accepted, or feeling unaccepted because of one's language or appearance (Gloria & Robinson

Kurpius, 1996). In support of similar studies, research utilizing the CCS with a range of minority university student populations has found that student's perceptions of the cultural sensitiveness* of the university environment has a direct, significant effect on academic persistence decisions (cf. Gloria & Robinson Kurpius, 1996; Gloria et al., 1999; Gloria & Robinson Kurpius, 2001; Gloria & Ho, 2003). Students who perceive a greater cultural fit between themselves and the university they attend are more likely to persist with their education.

1.5.2 University Environment

Taking a broader view, the University Environment scale focused on concerns expressed in interviews with racial/ethnic students on university campuses, as reported by Baron, Vasquez and Valdez (1981). Gloria and Robinson Kurpius (1996) generated a 14-item scale to capture students' perceptions of whether the university setting was cold, insensitive, and uncaring, or inviting, helpful and "user-friendly". Based on these expressed concerns and other issues raised in the literature, the University Environment Scale (UES) measures perceptions that there are individuals within the university that will assist and offer advice and tutoring if needed (Gloria & Robinson Kurpius, 1996). Responses to the UES are primarily based on observations and perceptions of the emotional and physical helping behaviours of others (Gloria & Robinson Kurpius, 1996). Perceptions of the university environment have repeatedly been found to be an important predictor of persistence decisions for minority students at university (eg. Gloria & Robinson Kurpius, 2003). The UES provides a reliable instrument based on empirical and anecdotal research to capture these perceptions particularly for minority university students.

1.5.3 College Environmental Stress

In his investigation into areas of stress for Chicano university students, Munoz aimed to create an instrument that would capture three particular types of stress that his study revealed: frustration, conflict, and pressure (Munoz, 1987). Munoz (1987) described frustration as occurring when the ability to achieve a desired goal is impeded or blocked, as in the case of a student who must leave scholl because of financial problems. Conflict, in contrast, may occur when a choice must be made between two or more goals, and pressure involves demands that force an individual

to intensify their efforts (Munoz, 1987). For his research, Munoz (1987) saw these types of adjustive demands as closely inter-related, and as forming* part of the total stress pattern. Munoz developed a 39-item measure in order to provide a quantitative expression of common stressors experienced at university by minority students. His College Environmental Stress Index (CESI) consists of four subscales: financial, academic, personal, and familial. For the present study, only the 7-item financial subscale and 11 items from the academic subscale were used (omitted items assessed GPA issues). This modified version of the CESI has been used to demonstrate that perceptions of stress from the university environment make a direct contribution to the academic persistence decisions of a range of minority student groups (Gloria et al., 1999, Gloria & Robinson Kurpius, 2001, Gloria & Ho, 2003).

Taken together, these measures provide a broad view of student's perceptions of the university environment's cultural congruity, warmth and helpfulness, and stressfulness. In keeping with the view of the College Student departure model that what one perceives is real and has real consequences, it is hypothesized that Māori student's perceptions of the university environment with have a direct effect on both their decisions to continue or withdraw from their studies, and their psychological health. This broad view of perceptions of the university environment aims to capture and reflect the themes that have been revealed though dialogues and anecdotes concerning Māori students' experiences at university.

1.6 Summary and Research Goals

This introduction has attempted to present the broader context in which the current study has been conducted. It is hoped that by drawing on overseas research exploring the experiences of minority students at university, and referring to qualitative research conducted with Māori university students, I will achieve a focused, empirical study exploring personal, social, and contextual factors which are hypothesised to impact upon both nonpersistence decisions and psychological wellbeing.

Objective 1.

To explore the influence of self-beliefs, social support, and comfort in the university environment on the academic nonpersistence decisions of Māori university students.

The first objective of the present research is to replicate overseas research that has identified three specific clusters of variables that have significant effects on the academic persistence decisions of a range of minority student populations (Gloria & Robinson Kurpius, 1996; Gloria & Robinson Kurpius, 2001; Gloria, Hird, & Navarro, 2001; Gloria, Robinson Kurpius, Hamilton, & Willson, 1999). Given the retention issues faced by universities in Aotearoa / New Zealand with respect to Māori students, targeted empirical research into factors that may affect the academic persistence decisions of Māori university students is essential. The current study aims to achieve that. It is hypothesised that positive self-beliefs, higher levels of social support, and more comfort in the university environment will be associated with decreased nonpersistence decisions.

Objective 2.

To investigate whether social support acts as a buffer between perceptions of the university environment and psychological wellbeing.

The second objective of this study is to examine how social supports might act as a protective feature for those Māori students who perceive the university environment to be cold, uncaring, unwelcoming, and culturally incongruous. Numerous studies have found social support to be an effective buffer in a number of stress – health relationships, thus this study aims to explore the possible buffering effects of social support for Māori university students.

Objective 3.

To explore the role of self-beliefs in the relationship between perceptions of the university environment and psychological wellbeing.

Self-beliefs have been widely researched as both mediators and moderators in a range of stress – wellbeing relationships. Following from this, the final objective for

the current study aims to clarify the role of self-beliefs in psychological wellbeing, and how this may differ with different perceptions of comfort in the university environment.

It is anticipated that the fulfillment of the objectives of this research will facilitate suggestions for future research endeavors, as well as allowing guided recommendations to be made for policies and practices.

CHAPTER TWO - METHOD

2.1 Participants

Participants were drawn from Māori students enrolled in courses at Massey University. Massey University was established in 1927 in Palmerston North as a primarily agricultural university. In more recent times, Massey offers over 100 different degrees and programs, and prides itself on its reputation for encouraging and supporting Māori students in particular. Massey University has proven itself very popular with Māori students, and is second only to Te Wananga o Aotearoa in Māori enrolments. Massey is unique in comparison to other universities in New Zealand in that it has three campuses: the original Palmerston North campus, plus campuses at Wellington and Auckland. It also caters for extramural study, with 48 percent of its students studying through this mode in 2003.

Participants for this study were gathered using a whakawhānaungatanga or non-probability convenience sample collected through the snowballing method. Participants were approached through acquaintance, using email to initiate contact. Those who were interested in taking part replied via email stating how many questionnaires they would like. Information posters inviting Māori students to take part in a study on "Māori Tertiary Students' Experiences at University" were also displayed on student notice boards at each of Massey's three campuses.

Of the 231 questionnaires that were distributed, a total of 95 were returned, yielding a response rate of 41 percent. Such a response rate is comparable, and in some cases superior to other studies that utilise student samples.

2.2 Instrumentation

The questionnaire package included a cover letter, a booklet containing the eleven scales used in the study, and a feedback request form. The cover letter introduced the researcher including iwi and hapu information. The letter went on to describe the research aims, why it was being carried out, and what specifically it would entail for the individual respondent. Respondents were informed that their responses would be

anonymous and confidential. Also included were contact details for the researcher. The feedback request form provided means for participants to request a summary of the research and its findings. Separate prepaid envelopes were provided to enable the anonymity of the respondent to be protected.

A total of eleven measures were chosen in order to integrate psychological, social, and environmental influences in understanding Māori students' education experiences. The Self-Beliefs variable set consisted of two scales: the College Self-Efficacy Index (Solberg et al., 1993) and the Rosenberg Self-Esteem Scale (Rosenberg, 1965). The Social Support variable set also comprised two scales: the Mentoring Scale (Gloria et al., 1999) and the Sarason Social Support Scale (Sarason et al., 1985). The Comfort in the University Environment variable set included the Cultural Congruity Scale (Gloria & Robinson Kurpius, 1996), the University Environment Scale (Gloria & Robinson Kurpius, 1996), and the College Environmental Stress Index - Modified (Munoz, 1986). The Subjective Well-Being variable set contained three scales: the Generalised Self-Efficacy Scale (Jerusalem & Schwarzer, 1992), the Perceived Stress Scale (Cohen et al., 1983), and the Hopkins Symptom Checklist - 21 (Green et al., 1988). Finally, the Persistence / Voluntary Dropout Decisions tool developed by Pascarella and Terenzini (1980) was used to predict intent to persist/academic persistence. The questionnaire took approximately 15 minutes to complete, and was completed in private by each respondent.

2.2.1 Self-Beliefs variable set

Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) The RSES is a well-known educational and psychological scale that assesses feelings of self-worth. On a scale of (1) *strongly disagree* to (4) *strongly agree*, respondents indicated the extent to which they agree with statements such as "I feel I do not have much to be proud of". The scale is comprised of ten questions, with a higher score reflecting a more positive perception of the self. This tool has also been used effectively with minority student populations, including African Americans (α = .84; Gloria et al., 1999), American Indians (α = .82; Gloria & Robinson Kurpius, 2001), and Asian Americans (α = .88; Gloria & Ho, 2003). The coefficient alpha was .82 for this study sample.

College Self-Efficacy Inventory (CSEI; Solberg et al., 1993). The CSEI was originally developed for and validated with Latino American university students (Solberg et al., 1993). The CSEI assess the degree of confidence that students have in their ability to complete specific university-related tasks. The original CSEI consists of three sub-scales: Course Efficacy, Social Efficacy, and Room-Mate Efficacy (Solberg et al., 1993). Since many Māori students at Massey University live off-campus, only the Course and Social Efficacy scales were used in this study. The resulting twelve-item scale was scored on a likert-type scale ranging from (1) *not at all confident* to (7) *extremely confident*, generating a single score for college self-efficacy. Specific tasks described in the CSEI included "write a letter", "manage time effectively", and "talk to university staff". With these modifications, the CSEI's internal coefficients have proven adequate when used with African Americans (α = .93; Gloria et al., 1999), American Indians (α = .73; Gloria & Robinson Kurpius, 2001), and Asian American students (α = .88; Gloria & Ho, 2003). The CSEI was modified in this study by changing some words to those more commonly used in New Zealand. Specifically, "professor" became "lecturer", and "term paper" became "essay". With these changes, a coefficient alpha of .93 was gained with this sample.

2.2.2 Social Support variable set

Mentoring Scale (Gloria et al., 1999). The Mentoring Scale was developed by Dr Gloria for her study of psychosocial factors influencing the academic persistence of Chicano/a undergraduate students (1993). The Mentoring Scale examines the degree to which students perceive that they have a mentor within the academic community at their university. Five items assess if students feel that they have staff who have encouraged them, staff who have "taken them under their wing", a mentor on campus, someone on campus who cares about their educational success, and someone who is a role model. The response options asked them to identify the number of staff who fit the questions with response options including *no one*, *one person*, *two/three persons*, and *four or more persons*. Possible scores range from 0 to 3. Adequate internal consistencies have been reported for the Mentoring Scale when used with African Americans (α = .76; Gloria et al., 1999), American Indians

(α = .78; Gloria & Robinson Kurpius, 2001), and Asian Americans (α = 71; Gloria & Ho, 2003). A modified version of this scale has been used successfully with a Māori student population, yielding a coefficient alpha of .83 (Murray & Flett, 2004). The internal consistency for this sample of Māori university students was .90

Social Support Questionnaire Short-Form (SSQ6; Sarason, Sarason, Shearin & Pierce, 1987). This measure consists of two subscales: The SSQ6-Number and the SSQ6-Satisfaction scales. The SSQ6-Number scale provided six probes aiming to elicit the number of providers of six types of social support. Participants were asked to list up to six initials of people who provided the support described. Example probes included "whom can you count on to help you feel better when you are very upset?" and "who do you know who you can trust with information that could get you into trouble?". For the SSQ6-Satisfaction scale, participants were then asked to rate their degree of satisfaction with the perceived availability of each type of support described. A 6-point scale anchored at (1) *very satisfied* to (6) *very dissatisfied* was used to indicate support satisfaction. The SSQ6 yields a composite satisfaction and number score, computed as the mean satisfaction rating across six items for each subscale.

2.2.3 Comfort in the University Environment variable set

University Environment Scale (UES; Gloria & Robinson-Kurpius, 1996). The UES was developed by Gloria and Robinson Kurpius based on concerns expressed in interviews with "racial/ethnic minority" students (Baron et al., 1981), along with other issues raised in literature (Gloria & Robinson-Kurpius, 1996). The UES utilizes a seven-point Likert response format, with anchors ranging from (1) *not at all true* to (7) *very true*. Five items are reverse-scored. A perceived university environment score is obtained by summing across the 14 items. Scores can range from 14 to 98, with higher scores reflecting a more positive perception of a university's environment. For the pilot sample, the UES yielded a Cronbach's alpha of .84 (m = 66.63, SD = 12.21; Gloria & Robinson Kurpius, 1996). In more recent studies using the UES with a range of minority student populations, the Cronbach's alpha has ranged from .81 to .85 (Gloria et al., 1999; Gloria & Robinson Kurpius, 2001; Gloria & Ho, 2003). The Cronbach's alpha was .88 in the present study.

Cultural Congruity Scale (CCS; Gloria and Robinson Kurpius, 1996). The CCS was also developed by Gloria and Robinson Kurpius, based on the Perceived Threat Scale (Ethier & Deaux, 1990), in order to investigate "racial/ethnic" students' sense of cultural fit with the university environment (Gloria and Robinson-Kurpius, 1996). The CCS consists of twelve items rated on a seven-point scale that ranges from (1) *not at all* to (7) *a great deal* for items that include "I feel that I have to change myself to fit in at university". For this study, the word 'ethnic' was replaced with the word 'Māori ", eg. "As a Māori student, I feel as if I belong on this campus". The CCS has been used effectively with a variety of racial and ethnic minority students, with reported Cronbach's alphas ranging from .77 to .89 (Gloria & Robinson Kurpius, 1996; Gloria et al., 1999; Gloria & Robinson Kurpius, 2001; Gloria & Ho, 2003). In the present study, the Cronbach's alpha for the CCS was .64.

College Environmental Stress Index - Modified (CESI-M; Munoz, 1986). This scale was based on a 39-item instrument developed by Munoz to assess levels of college stress in Latino students. Four scales are available in the original CESI: Financial, Academic, Personal, and Familial, with a higher score reflecting increased levels of education-related stress. For this study, only the financial and academic subscales were used. One item referring to Grade Point Average was also omitted from this study, as the researcher was interested in retention and personal well-being as opposed to GPAs. The resulting 18-question scale was rated on a 5-point Likert-type scale with anchors at (1) *not at all stressful* to (5) *highly stressful*, similar to that used and validated with other minority student populations, including African Americans, American Indians, and Asian Americans. Reported Cronbach's alphas for this scale with minority student populations range from.81 to .85 (Gloria & Robinson Kurpius, 1996; Gloria et al., 1999; Gloria & Robinson Kurpius, 2001; Gloria & Ho, 2003). For this study, a Cronbach's alpha of .86 was gained.

2.2.4 Subjective Wellbeing variable set

Perceved Stress Scale (PSS; Cohen et al., 1983). The PSS is well-established as a reliable and valid method of investigating perceived stress (Cohen et al., 1983; Cole,

1999; Levenstein, Prantera, Varvo, Scribano, Berto, Luzi, & Andreoli, 1993). This 10-item scale requires participants to respond to a series of statements regarding their personal experience of stress over the past month using a 5-point scale with anchors at (1) *never* and (5) *very often* (Cohen et al., 1983). Sample questions include "In the last month, how often have you felt nervous and stressed". This tool was used successfully with a sample of Māori undergraduate university students, yielding a Cronbach's alpha of .88 (Bennett, 2001). For the present study, a Cronbach's alpha of .90 was generated.

Hopkins Symptom Checklist - 21 (HSC-21; Green et al., 1988). The HSC-21 was selected to provide an indication of psychological symptoms. This version of the Hopkins Symptom Checklist was developed and evaluated with both New Zealand and American respondents, and found to demonstrate high reliability (Green et al., 1988). In their pilot study, Green et al. (1998) reported alpha reliability coefficients ranging from .75 to .86 for the subscales, and .90 for the total scale.

The HSC-21 requires participants to indicate the degree to which they have found a number of psychological symptoms distressing using a 4-point Likert scale anchored at (1) *not at all* and (4) *extremely*. Possible scores range from 21 to 84, with higher scores denoting higher levels of discomfort as a result of psychological symptomology. This tool has been widely used in numerous studies, and has also been used with Māori populations. An alpha of .91 was reached with the present sample.

2.2.5 Academic Persistence Decisions variable set

Persistence / Voluntary Dropout Decisions Scale (PVDD; Pascarella & Terenzini, 1980) The PVDD was used to measure the other main outcome variable of interest, academic nonpersistence decisions. This self-report scale consists of 30 items that assess a student's nonpersistence decisions regarding his or her studies. The PVDD is composed of five subscales: peer group interactions, interactions with faculty, institutional and goal commitment, concern for student development, and academic and intellectual development. Using a five-point scale, respondents were asked to

indicate the extent to which they agree or disagree with statements such as "most students at this university have values and attitudes different from my own". Ten of the thirty questions were reverse-scored, with higher scores indicating increased likelihood of persisting with their education.

In the pilot study, Pascarella and Terenzini reported that the scale discriminated between persisters and non-persisters, classifying students into their correct persistence group 81.7 per cent and 80.8 per cent of the time, respectively (Pascarella and Terenzini, 1980). In their pilot study, Pascarella and Terenzini controlled for race/ethnicity and gender, among other things, to increase the generalizibility of the scale's use with different student samples. For the present study, the coefficient alpha was .88.

2.3 Ethical approval

The survey was entirely anonymous, with the return of a questionnaire seen as acceptance to participate in the research. All guidelines of the New Zealand Psychological Society were observed. The questionnaire and the associated protocol were subjected to a process of ethical peer review.

CHAPTER THREE - RESULTS

Data was initially coded and entered into the Statistical Package for Social Sciences (SPSS). Reverse-scored items were re-coded, and scale totals were calculated. No omitted items were found; therefore no data sets were omitted. In screening for the internal reliability of the scales using Cronbach's alpha, it was found that the Cultural Congruity Scale did not demonstrate strong reliability with this sample (α = .64). Closer inspection revealed three questions that did not correlate adequately with the other items. These items were deleted from subsequent analyses, resulting in a modified Cultural Congruity Scale of nine items with a Cronbach's alpha of .80.

3.1 Descriptive Statistics

A broad synopsis of the participants can be gained by viewing demographic statistics, as well as the means and standard deviations of the various scales used in analyses. Table 1 presents the demographic variables related to the present sample.

Table 1.
Demographic characteristics of respondents

Variable	Level	n	%
Gender	Male	15	15.8
	Female	80	84.2
Age	20 – 30	10	10.5
	31 – 40	35	36.9
	41+	50	52.6
Study Mode	Full-time	10	10.5
	Part-time	85	89.5
Level of Study	Postgraduate	50	52.6
	Undergraduate	45	47.4

As shown in Table 1, participants in this research were mostly female and of varying age-ranges. The vast majority (89.5%) were part-time students, though there was an almost even representation of undergraduate and postgraduate students.

Table 2 presents descriptive statistics for the measures for all clusters of variables investigated: social support, self-beliefs, comfort in the university environment, psychological wellbeing, and academic nonpersistence decisions. Although norms are not available for these measures with a Māori university student population, a sense for the means can be gained by referring to the range of possible scores for each of the scales. The range of possible scores for each scale is presented in brackets.

Table 2.
Summary of Possible Range, Means, Standard Deviations, and Cronbach's Alphas for Measures

Variable	Measure	Mean	SD	α
Self-beliefs	Rosenberg Self-Esteem Scale (10 – 40)	18.84	4.37	0.82
	College Self-Efficacy Inventory (12 – 84)	54.42	15.73	0.93
Social Support	Mentoring Scale (5 – 20)	14	3.87	0.90
	Social Support Questionnaire – Number (0 – 9)	3.97	2.19	0.95
	Social Support Questionnaire – Satisfaction (1 – 6)	1.33	0.51	0.92
Perceptions of University	University Environment Scale (14 – 98)	76.63	15.07	0.88
	Cultural Congruity Scale (12 – 84)	30.63	9.90	0.64
	Modified Cultural Congruity Scale (9 – 63)	21.00	9.48	0.80
	College Environmental Stress Index (18 – 90)	53.74	15.07	0.86
Psychological Wellbeing	Hopkins Symptom Checklist (21 – 84)	38.42	10.26	0.91
	Perceived Stress Scale (10 – 40)	22.79	4.71	0.90
Academic Nonpersistence	Persistence/Voluntary Dropout Decisions (29 – 145)	114.89	12.68	0.88

3.2 Analyses – Academic Non-Persistence Decisions

Prior to analysis, the variables were screened for assumptions of statistical analysis. Following the guidelines of Tabachnick and Fidell (1989) that conventional but conservative alpha levels ($p < .001$) be used to evaluate the significance of skewness and kurtosis, a square root transformation was applied to the SSQ6 – Number scale. Following this, the distribution of the SSQ – Number scale was significantly improved. Assessment of the SSQ6 – Satisfaction scale exposed high levels of both skewness and kurtosis, and closer inspection revealed very little variance in the scores ($SD = .51$). Due to the high levels of skewness and kurtosis, even following a log10 transformation, and the limited variance in scores, the SSQ6 – Satisfaction

scores were not used in any further analyses. The data was examined for univariate outliers, with no univariate outliers being identified. Additionally, no cases were detected through Mahalanobis distance as being multivariate outliers with $p < .001$.

Potential gender differences were examined for each of the nine instruments to be used in analyses using student's *t*-test, with the significance level set at $p < .001$. For significant differences, effect sizes were calculated using the eta^2 statistic. Eta^2 values range from 0 to 1, and represent the proportion of variance in the dependent variable that is explained by the independent variable (Cohen, 1988). Cohen (1988) provides guidelines for interpreting the eta^2 value, with 0.01 signifying a small effect size, 0.06 signifying a moderate effect size, and 0.14 and above indicating a large effect size (Cohen, 1988). Significant differences were revealed for the College Environmental Stress Index, with the effect size for this significant difference ($eta^2 = 0.13$) being in the moderate range as described by Cohen (1988). Potential differences between means were also investigated for mode of study (fulltime versus part-time) and level of study (postgraduate versus undergraduate). For mode of study, significant differences at the $p < .001$ level were found on the Mentoring Scale, the College Environmental Stress Index, and the Modified Cultural Congruity Scale, with effect sizes ranging from moderate to large ($eta^2 = 0.12$, 0.32, and 0.29 respectively). The level at which participants were studying also had significant effects on the College Self-Efficacy Inventory, the College Environmental Stress Index, and the Perceived Stress Scale ($p < .001$), with large effect sizes evident ($eta^2 = 0.36$, 0.17, and 0.22 respectively). Due to these significant differences, gender, mode of study and level of study were statistically controlled for in all regression analyses.

Correlations between the study's variables were examined in regards to academic nonpersistence decisions (refer Table 3). All hypotheses in regards to academic nonpersistence decisions were significantly supported by correlations. Fewer nonpersistence decisions were significantly correlated with higher college-related self-efficacy ($r = .36$, $p < .01$), higher self-esteem ($r = -.27$, $p < .01$), perceptions of being mentored ($r = .57$, $p < .01$), a more positive perception of the university environment ($r = .68$, $p < .01$), less stress related to university ($r = -.28$, $p < .01$), higher cultural congruity ($r = .31$, $p < .01$), and a higher number of social supports (r

= .60, $p < .01$). In addition, many significant correlations were detected between predictor variables. Those who perceive themselves to have a higher number of mentors also reported more positive perceptions of the university environment (r = .68, $p < .01$), had less stress related to university (r = -.38, $p < .05$), saw the environment as more culturally congruous (r = .22, $p < .05$), and had more sources of social support (r = .43, $p < .01$). Those who saw had a higher sense of self-esteem also saw themselves as more able to cope with the demands of university (r = -.33, $p < .01$), saw the university environment as more welcoming (r = .26, $p < .01$), and perceived less stress related to the university environment (r = -.53, $p < .01$). Those who viewed the university environment as warm and welcoming also experienced less university-related stress (r = -.59, $p < .01$), saw the environment as more culturally congruous (r = .67, $p < .01$), and noted more people who they could count on for support (r = .41, $p < .01$). Also, those who saw the university as more in line with their cultural beliefs experienced significantly less stress related to the university environment (r = .46, $p < .01$).

Table 3.
Correlations between variables in regards to academic nonpersistence decisions

	1	2	3	4	5	6	7	8
1. College Self-Efficacy	-	**-.330****	.181	.198	**.256***	.043	**-.533****	**.361****
2. General Self-Esteem		-	.003	-.163	**-.332****	**-.336****	**.381****	**-.265****
3. Mentoring			-	**.431****	**.675****	**.219***	-.379	**.573****
4. Number of Social Supports				-	**.407****	-.078	**-.206***	**.595****
5. University Environment					-	**.671****	**-.590****	**.677****
6. Cultural Congruity						-	-.462	**-.314****
7. College Environmental Stress							-	**-.281****
8. Academic NonPersistence Decisions								-

*$p < .05$, **$p < .01$

To examine the influence of self-beliefs, social support, and perceptions of the university environment on academic nonpersistence decisions, a series of hierarchical regressions were conducted with each familywise error set at .001. The error was set at this level to decrease the risk of Type II error while specifically testing for the separate contribution of each cluster of variables with a small sample size (Cohen, 1988).

To test for main effects of each of the variables on academic nonpersistence

decisions, a two-step hierarchical regression was carried out, with gender, mode of study and level of study being entered into the first step to control for possible confounds. The results of the regression analysis are presented in Table 4. This table displays the standardized regression coefficients (beta), R, R^2, adjusted R^2 and change in R^2 (R^2 change). The difference between R^2 and adjusted R^2 reflects "...adjustment made for expected inflation in sample R" (Tabachnick & Fidell, 1989, p. 160) as a function of sample size, number of independent variables, and the value of R^2.

Table 4.
Hierarchical multiple regression of individual and contextual variables and the main effects of social support, perceptions of the university environment, and self-beliefs on academic nonpersistence decisions showing standardised beta coefficients, R, R^2, and adjusted R^2

Variable		Step 1: β	Step 2: β
Gender		-.048	**.353*** **
Mode of Study		-.134	-.001
Level of Study		.004	-.437
Self-Beliefs	College Self-Efficacy		**.512*** **
	Self-Esteem		**-.198** **
Social Support	Mentoring		**.511*** **
	Number of Social Supports		.122
Perceptions of University	University Environment		**.342** **
	Modified Cultural Congruity		-.021
	College Environmental Stress		**.404*** **
R		.133	**.862*** **
Adjusted R^2		-.015	.713
Change in R^2		.018	**.726*** **

*$p < .05$, **$p < .01$, ***$p < .001$

As can be seen from Table 4, the R for the second step of the regression was significantly different from zero, $F(10, 84) = 24.34$, $p < .001$. Self-beliefs, social support, and perceptions of the university environment contributed significantly to prediction of academic nonpersistence decisions, and altogether 86 % (71% adjusted) of the variability in academic nonpersistence decisions was predicted by knowing scores on these non-cognitive and control variables. An individual's perception of their college self-efficacy and general self-esteem had significant direct effects on their academic nonpersistence decisions. The number of mentors and individual has in the university also had a significant main effect. Additionally, an individual's

view of the environment as warm and welcoming or cold and unfriendly, and the amount of stress they perceive to be associated with university had significant main effects on their academic nonpersistence decisions. Although both cultural congruity and the number of social supports had significant correlations with academic nonpersistence decisions (refer Table 3), this was not upheld in the regression process. This would seem to indicate that the initial correlations are actually a function of the intercorrelation between other predictor variables (Pedhazur, 1997).

To assess the unique contribution of each cluster of variables (self-beliefs, social support, and perceptions of the university environment), a series of three-step hierarchical regressions were conducted. The first step of all regressions performed contained the gender, mode of study, and level of study variables to control for any confounding effects. The second step was used to stabilise each equation and allow for the assessment of the unique contribution of the third step. Due to this, the information for the first and second steps are not presented, as these regressions were specifically to investigate the unique contribution of each cluster. The self-beliefs cluster was composed of the Rosenberg Self-Esteem Scale and the College Self-Efficacy Inventory. The social support cluster consisted of the Mentoring Scale, and the SSQ6 – Number subscale. The perceptions of the university environment cluster included the University Environment Scale, the Modified Cultural Congruity Scale, and the College Environments Stress Index.

First, the impact of social support and university environment on nonpersistence decisions while controlling for the effects of gender, mode of study, and level of study, was tested with a three-step hierarchical regression analysis. The control variables were entered on the first step. After the university environment cluster was added to the predictive equation (step two), adding in the social support variables (step three) resulted in an R^2 change of .09, $\Delta F\ (2,86) = 9.71, p < .001$. When social support was added in step two, the R^2 change due to adding university comfort (step three) was .11, $\Delta F\ (3,86) = 8.47, p < .001$. These data indicate that both social support and university comfort clusters predict academic nonpersistence; however, perceptions of the university environment accounts for a larger proportion of the variance. Table 5 presents the complete data for the analysis, $\Delta F\ (8,86) = 17.02, p <$

.001.

Table 5.
Hierarchical regressions for social support, perceptions of the university, and self-beliefs predicting academic nonpersistence decisions for Māori university students

Variable	β	R	Adjusted R^2	ΔR^2	ΔF
Social Support		.783	.577	.087[a]	**9.711*** **
Mentoring	.103				
Number of Supports	**.341*** **				
University Environment		.783	.577	.114[a]	**8.466*** **
Environment	**.629*** **				
Cultural Fit	.214				
College Stress	.061				
Self-Beliefs		.826	.657	.184[b]	**25.197*** **
College Self-Efficacy	**.471*** **				
Self-Esteem	**-.225*** **				
Social Support		.826	.657	.396[b]	**54.269*** **
Mentoring	**.686*** **				
Number of Supports	.081				
University Environment		.799	.605	.352[c]	**27.947*** **
Environment	**.890*** **				
Cultural Fit	**.203***				
College Stress	**.357****				
Self-Beliefs		.799	.605	.113[c]	**13.468*** **
College Self-Efficacy	**.452*** **				
Self-Esteem	-.082				

[a] F (8,86) = 17.017, $p < .001$. [b] F (7, 87) = 26.710, $p < .001$. [c] F (8,86) = 18.996, $p < .001$.

*$p \leq .05$. ** $p \leq .01$. *** $p \leq .001$.

In the second set of hierarchical regressions, after the social support cluster was added to the predictive equation (step two), the R^2 change for self-beliefs (step three) was .18, ΔF (2, 87) = 25.20, $p < .001$. When the social support cluster was added into the equation (step 3) after the self-beliefs cluster (step two), the R^2 change was .40, ΔF (2, 87) = 54.27, $p < .001$. Again, both the social support and the self-beliefs cluster predict academic nonpersistence. In this regression, social support made a much larger contribution to the variance in academic nonpersistence decisions.

In the final set of hierarchical regressions investigating the unique contributions of each variable set on academic nonpersistence decisions, perceptions of the university environment and self-beliefs were tested. University comfort (step three) when added after self-beliefs (step two) resulted in a significant R^2 change of .61, ΔF (3, 86) = 27.95, $p < .001$. When self-beliefs were added as the third step and university

comfort was added as the second step, the R^2 change of .11 was also significant, ΔF (2, 86) = 13.47, $p < .001$. The omnibus equation for these two clusters was also significant, ΔF (8, 86) = 18.99, $p < .001$. Both self-beliefs and university comfort were significant predictors of academic nonpersistence decisions, with university comfort accounting for 61% of the variance in the dependent variable in this equation, even after controlling for gender, mode of study, and level of study.

3.3 Relationships between variables in regards to psychological wellbeing

Correlations between the study's variables were also examined in regards to psychological wellbeing (refer Table 6). Each predictor variable was significantly related to both global perceived stress and psychological symptoms in the manner expected, with one notable exception. In this study, individuals who reported higher perceptions of having a mentor within the university also reported more psychological symptomology and distress. This relationship was weak ($r = .24$) but statistically significant ($p < .05$). More predictably, individual's who perceived less global stress also described having higher college-related self-efficacy ($r = -.44$, $p < .01$), a more positive perception of the university environment ($r = -.37$, $p < .01$), and more mentors in the university ($r = -.26$, $p < .01$). Also as expected, people who experienced less psychological symptoms and distress had higher college self-efficacy ($r = .44$, $p < .01$), higher general self-esteem ($r = .64$, $p < .01$), and less stress related to university ($r = .59$, $p < .01$).

Table 6.
Correlations between variables in regards to psychological wellbeing

	1	2	3	4	5	6	7	8	9
1. College Self-Efficacy	-	**-.330****	.181	.198	**.256***	.043	**-.533****	**-.439****	**-.442****
2. General Self-Esteem		-	.003	-.163	**-.332****	**-.336****	**.381****	**.209***	**.636****
3. Mentoring			-	**.431****	**.675****	**.219***	-.379	**-.259***	**.237***
4. Number of Social Supports				-	**.407****	-.078	**-.206***	.004	-.005
5. University Environment					-	**.671****	**-.590****	**-.373****	**-.218***
6. Cultural Congruity						-	-.462	**.226***	**.243***
7. College Environmental Stress							-	**.746***	**.587***
8. Global Perceived Stress								-	**.559***
7. Psychological Symptoms									-

$^*p < .05$, $^{**}p < .01$

3.4 Analyses – Testing Social Support as a Moderator

A hypothesis of the current research is that social support would have a significant buffering effect for Māori students who perceive the university environment as culturally incongruent, cold and unwelcoming, and as stressful. It was conceptualised that more discomfort in the university environment would have a less negative impact on general psychological wellbeing in the presence of a high number of identified social supports.

Correlation coefficients suggest that perceptions of the university environment are significantly related to psychological wellbeing (refer Table 6). In particular, perceived stress related to the university environment had 55% of its variance in common with global perceived stress, and 34% in common with psychological symptoms. In light of this finding, the moderating potential of social support was assessed.

Following the recommendations of Rose, Holmbeck, Millstein and Franks (2004), the current research investigated the hypothesised moderational effects of social support using a series of three-step multiple regressions. Before the analyses were run, all the variables were centred around zero by converting the scores to deviation scores. The deviation scores were created by subtracting the sample mean for each variable from the individual scores. To allow for testing of interaction terms, new variables were created consisting of all possible two-way products of the centred predictor variables (Rose et al., 2004). These new variables were tested as interaction terms in the regression analyses.

First the relationship between perceptions of the university environment and global perceived stress were explored, with social support conceptualised as a buffer. Two regressions were carried out, to allow for both measures of social support to be looked at separately. The number of identified social supports captured on the SSQ6 Number Scale provides an indication of the perceived availability of supports, while the mentoring scale captures individual's perceptions of having identified mentors at the university.

3.4.1

To test the hypothesis that perceptions of being mentored would buffer the impact of negative perceptions of the university environment, a hierarchical multiple regression with global perceived stress as the dependent variable was conducted. Gender, mode of study, and level of study were entered at step one to control for possible confounding effects. The university environment cluster variables (cultural congruity, college-environmental stress, and perceptions of the environment) and the perceptions of being mentored were entered into the predictive equation at step two. A vector formed by calculating the cross product term of the variables deviation scores was then added at step three. In this way, the variance accounted for by the interaction terms were assessed after controlling for the main effects of each of the variables. Table 7 presents the results of the three-step hierarchical regression. As can be seen, after step two, with the main effects of the university environment cluster and perceptions of mentoring in the equation, $R^2 = .86$, $F(7, 87) = 33.77$, $p < .001$. After step three, with the addition of the interaction terms to the equation, $R^2 = .863$, $F(10, 84) = 24.43$, $p < .001$. The addition of the interaction terms to the equation resulted in a small increment in R^2 (R^2 change = .01), however this change was not significant. When each interaction term was examined individually, there were no significant effects for any of the interaction terms. It appears that mentoring does not have a significant buffering effect between perceptions of the university environment and global perceived stress for Māori university students.

Table 7.
Hierarchical multiple regression of individual and contextual variables and the interaction of perceived mentoring on global perceived stress showing standardised beta coefficients, R, R^2, and adjusted R^2

Predictor	**Step 1: β**	**Step 2: β**	**Step 3: β**
Gender	**.384*** **	**.509*** **	**.388*** **
Level of Study	**-.762*** **	**-.435*** **	-.251
Mode of Study	**.400*** **	.150	.063
Cultural Congruity		**-.205***	**-.258** **
College Stress		**.752*** **	**.841*** **
University Environment		-.226	-.080
Mentoring		**.365*** **	**.277***
Mentoring x Cultural Congruity			-.046
Mentoring x College Stress			-.056
Mentoring x University Environment			.133
R	**.636*** **	**.855*** **	**.863*** **
R^2	.404	.731	.744
Adjusted R^2	.384	.709	.714
Change in R^2		**.327*** **	.013

A three-step hierarchical regression was also executed to investigate the hypothesis that perceptions of being mentored have a buffering effect on the relationship between comfort in the university environment and psychological distress (refer to Table 8). Step one of the predictive equation contained the possible confounds of gender, level of study, and mode of study. The main effects were entered into step two, resulting in $R^2 = .88$, $F(7, 87) = 43.39$, $p < .001$. When the interaction effects were entered into step three of the predictive equation, the $R^2 = .88$, $F(7, 87) = 43.39$, $p < .001$. Together, the university environment and mentoring variables explain 78% (76% adjusted) of the variance in psychological symptomology. When the interaction terms are entered however, the model explains 86% of the variance (85% adjusted). Therefore, the model that views mentoring as a buffer variable provides a better fit for predicting the variance in psychological symptoms. The addition of the interaction terms to the equation resulted in a significant increase in R^2 (R^2 change = .09, $F(10, 84) = 53.44$, $p < .001$).

Table 8.
Hierarchical multiple regression of individual and contextual variables and the interaction of perceived mentoring on psychological symptoms showing standardised beta coefficients, R, R^2, and adjusted R^2

Predictor	**Step 1: β**	**Step 2: β**	**Step 3: β**
Gender	.050	**.486*** **	**.550*** **
Level of Study	**-.318** **	**-.245** **	**-.269** **
Mode of Study	.192	.095	**.161***
Cultural Congruity		**-.343*** **	**-.276*** **
College Stress		**.763*** **	**.676*** **
University Environment		**-.657*** **	**-.587*** **
Mentoring		**1.086*** **	**1.065*** **
Mentoring x Cultural Congruity			**-.337*** **
Mentoring x College Stress			.104
Mentoring x University Environment			-.136
R	**.292***	**.882*** **	**.930*** **
R²	.085	.777	.864
Adjusted R²	.055	.759	.848
Change in R²		**.692*** **	**.087*** **

When each interaction term was examined individually, only one was found to be significant: the interaction between mentoring and cultural congruity. A schematic representation of the interaction between mentoring and cultural congruity is presented in Figure 2. This data was derived by conducting a median split on the measures of cultural congruity and perceptions of being mentored. Figure 2 illustrates that mentoring moderates the effects of cultural congruity on psychological symptoms.

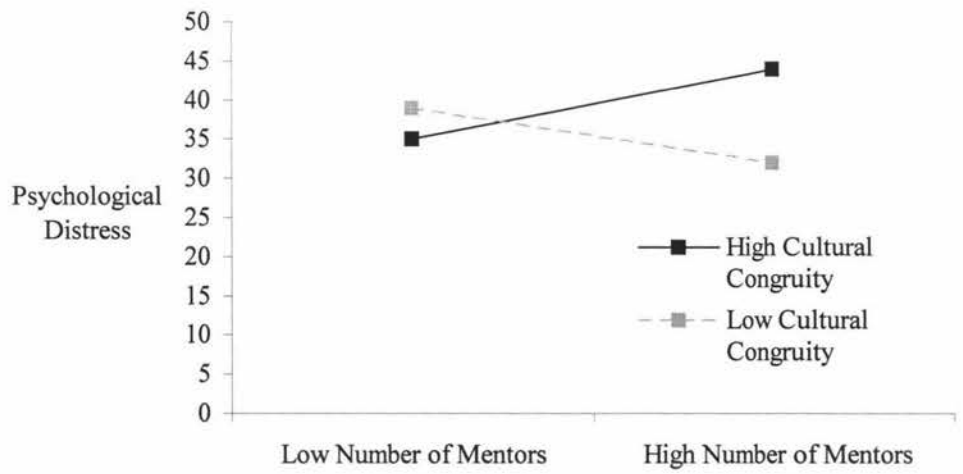

Figure 2. Schematic representation of the mentoring x cultural congruity interaction in the prediction of psychological distress.

As can be seen from Figure 2, for those who perceive the culture of the university to be incongruous with their own cultural values, having a high number of mentors within the university significantly lowers scores of psychological distress. However, contrary to expectations, for those who perceive the university environment as culturally congruous, having a high number of mentors appears to increase psychological distress.

In sum, the relationship between perceptions of being mentored, comfort in the university environment, and psychological wellbeing are complex. Mentoring does not appear to act as a buffer between university environment perceptions and global perceived stress. Mentoring was found to act as a moderator...

3.4.2

To test the hypothesis that numbers of identified social support people would buffer the impact of negative perceptions of the university environment on psychological wellbeing, hierarchical multiple regressions with global perceived stress and psychological symptoms as the dependent variables were conducted. Gender, mode of study, and level of study were entered at step one in both of these regressions to control for possible confounding effects. Presented first is the regression that was used to test the buffering effects of social support on the relationship between comfort at university and global perceived stress. The university environment cluster variables (cultural congruity, college-environmental stress, and perceptions of the environment) and the social support variable were entered into the predictive equation at step two. As in previous regressions, a vector formed by calculating the cross product term of the variables deviation scores was then added at step three in order to assess the variance accounted for by the interaction terms after controlling for the main effects of each of the variables. Table 9 presents the results of the three-step hierarchical regression.

Table 9.
Hierarchical multiple regression of individual and contextual variables and the interaction of number of social supports on global perceived stress showing standardized beta coefficients, R, R^2, and adjusted R^2

Predictor	**Step 1: β**	**Step 2: β**	**Step 3: β**
Gender	**.384*** **	**.332*** **	**.313*** **
Level of Study	**-.762*** **	**-.266*** **	**-.307** **
Mode of Study	**.400*** **	.039	.067
Cultural Congruity		-.114	-.179
College Stress		**.796*** **	**.595*** **
University Environment		.025	.018
Social Supports		.094	-.017
Social Supports x Cultural Congruity			**-.210***
Social Supports x College Stress			-.115
Social Supports x University Environment			.062
R	**.636*** **	**.832*** **	**.854*** **
R^2	.404	.693	.730
Adjusted R^2	.384	.668	.697
Change in R^2		**.289*** **	**.037***

Step one of the predictive equation contained the possible confounds of gender, level of study, and mode of study. After entering the main effects at step two, $R^2 = .69$, $F(7, 87) = 28.03, p < .001$. That is, knowing the gender, and level and mode of study, and knowing the scores on the SSQ6 – Number scale and university environment variable cluster predicted 69% (67% adjusted) of the variability in global perceived stress. When the interaction effects were entered into step three of the predictive equation to assess social support as a moderator variable, 73% (70% adjusted) of the variability in perceived stress was explained ($R^2 = .73$, $F(10,84) = 22.67, p < .001$). The model of social support as a buffer variable provides a better fit for predicting the variance in global perceived stress. The increase in R^2 between the second and third steps of the equation was significant (R^2 change = .04, $F(3, 84) = 3.81, p < .05$). Only one significant interaction effect was detected, and this is illustrated in Figure 3.

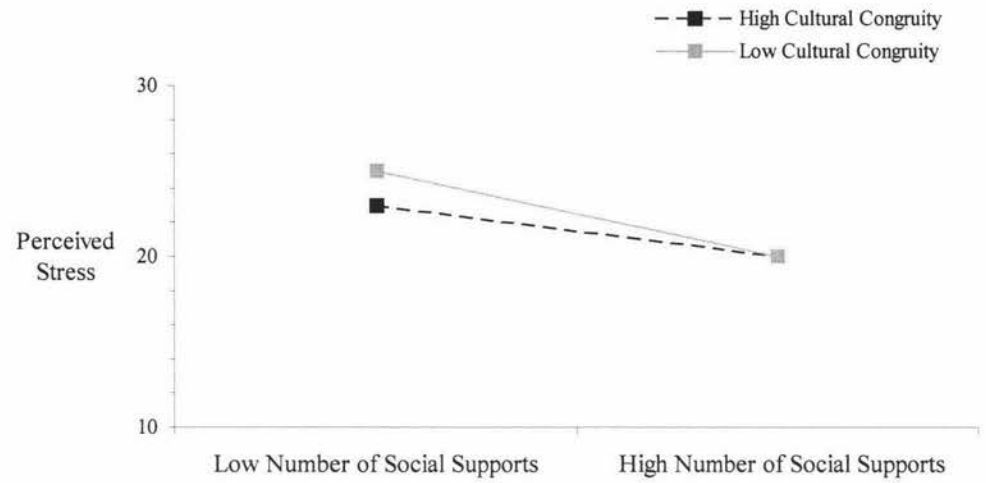

Figure 3. **Schematic representation of the number of social supports x cultural congruity interaction in the prediction of global perceived stress**

Figure 3 presents a schematic representation of the buffering effect of the number of identified social supports on the relationship between the perceived cultural congruity of the university environment and global perceived stress. This figure shows that Māori students who perceived the university environment as having different cultural values to their own report significantly higher levels of stress than students who see the university as more culturally congruous under the condition of having a low number of social supports. Under the condition of having a high number of social support people, students who see the university environment as clashing with their cultural values report similar levels of stress to those who view the environment more favorably in terms of cultural congruity. It also appears that having a high number of social support people reduces global perceived stress in both those who see the university environment as congruous with their own culture, and those who see the university environment as culturally incongruous.

To explore the model of social support as a moderator between comfort in the university environment and psychological distress, an additional three-step regression was carried out with psychological symptoms as the dependent variable (refer to Table 10).

Table 10.
Hierarchical multiple regression of individual and contextual variables and the interaction of number of social supports on psychological symptoms showing standardised beta coefficients, R, R^2, and adjusted R^2

Predictor	**Step 1: β**	**Step 2: β**	**Step 3: β**
Gender	.050	.026	**-.230***
Level of Study	**-.318****	**-.857*****	.161
Mode of Study	.192	-.163	-.062
Cultural Congruity		.006	-.075
College Stress		**.857*****	**.640*****
University Environment		.218	.170
Social Supports		.100	-.108
Social Supports x Cultural Congruity			-.148
Social Supports x College Stress			**.329****
Social Supports x University Environment			**.585*****
R	**.292***	**.632*****	**.790*****
R^2	.085	.399	.625
Adjusted R^2	.055	.351	.580
Change in R^2		**.314*****	**.225*****

After entering possible confounding variables (step one), the university environment cluster and the number of social supports variable were added at step two to test for main effects. At step two, $R^2 = .40$, $F(7, 87) = 8.26$, $p < .001$. Altogether 40% (35% adjusted) of the variability in psychological symptoms was predicted by knowing the gender, and level and mode of study, and knowing the scores on the SSQ6 – Number scale and university environment variable cluster. When the interaction effects were entered into step three of the predictive equation to assess social support as a moderator variable, 63% (58% adjusted) of the variability in psychological distress was explained ($R^2 = .63$, $F(10,84) = 13.97$, $p < .001$). Once again, the model of social support as a buffer variable provides a better fit for predicting the variance in psychological distress. The increase in R^2 between the second and third steps of the equation was significant (R^2 change = .23, $F(3, 84) = 16.79$, $p < .001$). In this analysis, two significant interaction effects were noted. Both number of social supports x cultural congruity and number of social supports x perceptions of the university environment significantly predicted psychological distress. These interaction effects are presented schematically in Figure 4 and Figure 5 respectively.

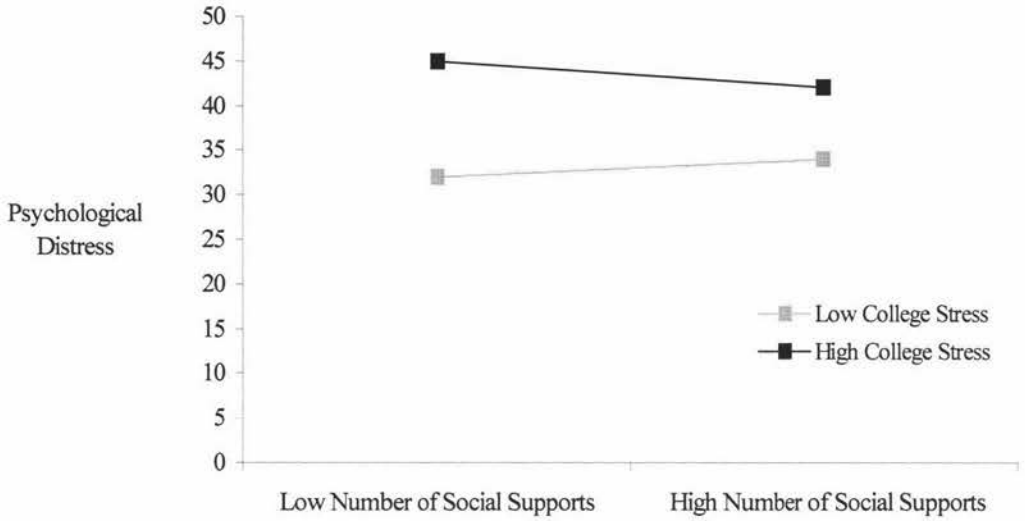

Figure 4. Schematic representation of the number of social supports x college stress interaction in the prediction of psychological distress

Figure 4 presents a schematic illustration of the effect that social support has as a moderator on the relationship between college stress and psychological symptoms. This diagram shows that the level of psychological distress experienced by Māori students with low levels of stress related to the university environment remains relatively stable whether the students have a low number of social supports or a high number of support people. In contrast to this, having a high number of social supports significantly improves psychological symptomology levels for those who experience high levels of university-related stress. Figure 4 also shows that under the condition of having a low number of social supports, Māori students who described having more stress related to university also reported significantly higher levels of psychological distress than students who experience low university-related stress.

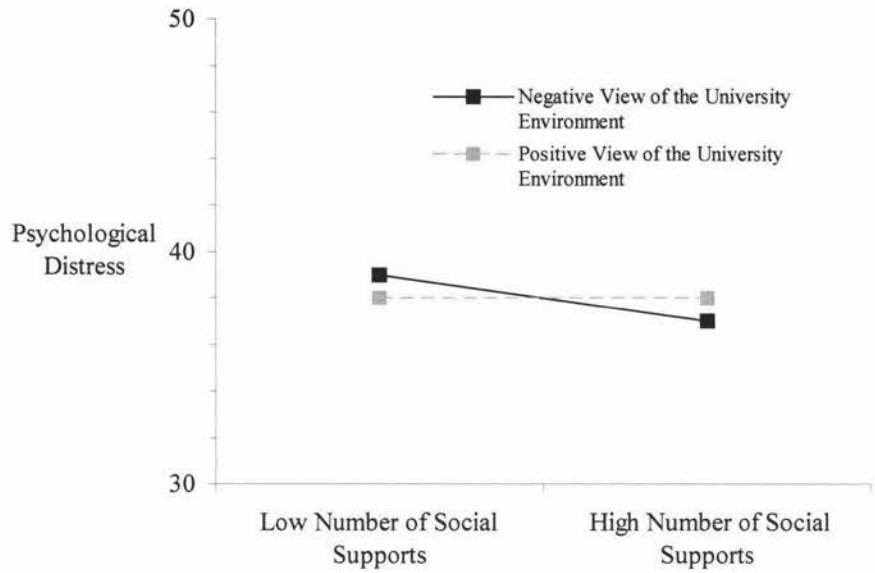

Figure 5. **Schematic representation of the number of social supports x view of the university environment interaction in the prediction of psychological distress**

Figure 5 shows that for Māori students who view the university environment as warm, welcoming, and helpful, having a high or a low number of number of people who provide support does not have an effect on psychological distress levels. In contrast, Māori students who view the university environment as cold and uncaring experience higher levels of psychological distress if they have few social supports. Correspondingly, social support appears to play a protective role for Māori students who see the university environment as hostile, reducing their levels of psychological symptoms.

Social support operated as an effective buffer in a number of areas. Social support acted to reduce psychological distress amongst Māori students who perceived the university environment as cold, uncaring, and culturally incongruous. The number of people who could provide support also significantly reduced the stress levels of Māori students who saw conflict between the values of the university environment and their own cultural values.

3.5 Analyses – Testing Self-Beliefs as Mediators.

In order for a mediational model to be supported, Rose et al. (2004, p. 65) specify

four statistical criteria that need to be fulfilled: "(1) the predictor variable is significantly associated with the criterion outcome variable; (2) the predictor variable is significantly associated with the mediator; (3) the mediator is significantly associated with the outcome variable, after controlling for the predictor; and (4) the previously significant predictor outcome relationship is significantly diminished when effects of the mediator are controlled". In order to test these four conditions, three multiple regression analyses were run for each relationship investigated. The first regression analysis of each group examined the significance of the predictor – mediator path, after controlling for any covariates. The predictor – outcome path is examined for statistical significance in the second regression. The third regression has both the predictor and the mediator entered simultaneously into the predictive equation in order to examine the last two conditions advocated for by Rose et al. (2004).

Following the procedure outlined above, a number of multiple regression analyses were run in order to test college self-efficacy and general self-esteem as mediators of the relationship between comfort in the university environment and psychological wellbeing.

3.5.1

Initially, college self-efficacy was considered as a mediator. Table 11 presents the results of the mediation analyses investigating college self-efficacy as a mediator on perceived stress levels.

Table 11.
Mediation analyses for college self-efficacy: Comfort in the university environment cluster and global perceived stress.

Regression	Predictor	Outcome	Step 1: β	Step 2: β
Regression 1:	Gender	Perceived Stress	**.384*** **	**.366*** **
	Level of Study		**-.762*** **	**-.311** **
	Mode of Study		**.400*** **	.077
	Cultural Congruity			-.072
	University Environment			.092
	College Stress			**.776*** **
R			**.636*** **	**.829*** **
R²			.404	.688
Adjusted R²			.384	.667
Change in R²				**.283*** **
Regression 2:	Gender	College Self-Efficacy	-.115	-.070
	Level of Study		**.672*** **	.388
	Mode of Study		-.051	.161
	Cultural Congruity			.147
	University Environment			.149
	College Stress			**-.412** **
			.616* **	**.711*** **
R²			.379	.505
Adjusted R²			.359	.471
Change in R²				.126***
Regression 3:	Gender	Perceived Stress	**.384*** **	**.353*** **
	Level of Study		**-.762*** **	**-.420*** **
	Mode of Study		**.400*** **	.069
	College Stress			**.706*** **
	College Self-Efficacy			.120
R			**.636*** **	**.827*** **
R²			.404	.684
Adjusted R²			.384	.667
Change in R²				**.280*** **

*$p \leq .05$, ** $p \leq .01$, *** $p \leq .001$

When looking at the relationship between the university comfort variable cluster and perceived stress, only college stress was a significant predictor of global stress levels (refer Table 11). As college stress levels increased, global perceived stress levels also increased ($\beta = .77$, $p \leq .001$). Similarly, in the second regression it can be observed that of the comfort in the university variable cluster, only college stress was

a significant predictor of college self-efficacy ($\beta = .41$, $p \leq .01$). As college stress levels increased, perceptions of college self-efficacy declined. The third regression examined whether college self-efficacy is significantly associated with perceived stress after controlling for college stress, and whether the previously significant college stress – global stress relationship is significantly diminished when effects of college self-efficacy are controlled. College self-efficacy was not proven to be a significant predictor of global stress levels ($\beta = .77$, $p \leq .001$). Since this criterion was not met, college self-efficacy could not act as a mediator in the relationship between college stress and global stress levels.

College self-efficacy was also tested as a mediator in the comfort in the university environment and psychological symptoms relationship. As previously, a set of three multiple regressions were carried out to test the hypothesis that college self-efficacy would effectively mediate the relationship between comfort in the university environment and psychological symptomology and distress. Table 12 presents the beta, R, R2, and change in R2 values for these equations.

Table 12.
Mediation analyses for college self-efficacy: Comfort in the university environment cluster and psychological symptoms.

Regression	Predictor	Outcome	Step 1: β	Step 2: β
Regression 1:	Gender	Psychological Symptoms	.050	.062
	Level of Study		**-.318****	.125
	Mode of Study		.192	-.122
	Cultural Congruity			.051
	University Environment			**.290*****
	College Stress			**.836*****
R			**.292****	**.627*****
R²			.085	.393
Adjusted R²			.055	.352
Change in R²				**.308*****
Regression 1:	Gender	College Self-Efficacy	-.115	-.070
	Level of Study		**.672*****	.388
	Mode of Study		-.051	.161
	Cultural Congruity			.147
	University Environment			.149
	College Stress			**-.412****
R			.616***	.711***
R²			.379	.505
Adjusted R²			.359	.471
Change in R²				**.126*****
Regression 3:	Gender	Psychological Symptoms	.050	.042
	Level of Study		**-.318****	.256
	Mode of Study		.192	-.088
	College Stress			**.760*****
	College Self-Efficacy			**-.257***
R			**.292***	**.652*****
R²			.085	.425
Adjusted R²			.055	.386
Change in R²				**.340*****

In the first regression, both perceptions of the university environment and college-related stress were revealed to be significant predictors of reported psychological symptoms (refer Table 12). As perceptions of the university environment were more negative, and as college stress levels increased, reports of psychological distress increased correspondingly (university environment $\beta = .29$, and college stress $\beta = .84$, $p \leq .001$). The second regression found that college stress was again the only significant predictor of college self-efficacy ($\beta = -.41$, $p \leq .01$). The third regression

revealed that college self-efficacy was a significant predictor of psychological symptoms, with $\beta = -.26, p \leq .05$. As college self-efficacy is reduced, psychological distress tends to increase. In investigating the final criterion put forward by Rose et al. (2004), it was found that, as hypothesised, the effect of college stress on psychological distress is weakened when college self-efficacy is controlled for. When the effect of college self-efficacy is not controlled, college stress has a strong significant effect on psychological symptoms ($\beta = .84, p \leq .001$). However, when college self-efficacy is included in the predictive equation, the effect size of college stress on psychological distress is reduced ($\beta = .76, p \leq .001$). This illustrates that college self-efficacy significantly mediated the effect of college stress on psychological distress levels of Māori university students. This relationship is presented schematically in Figure 6

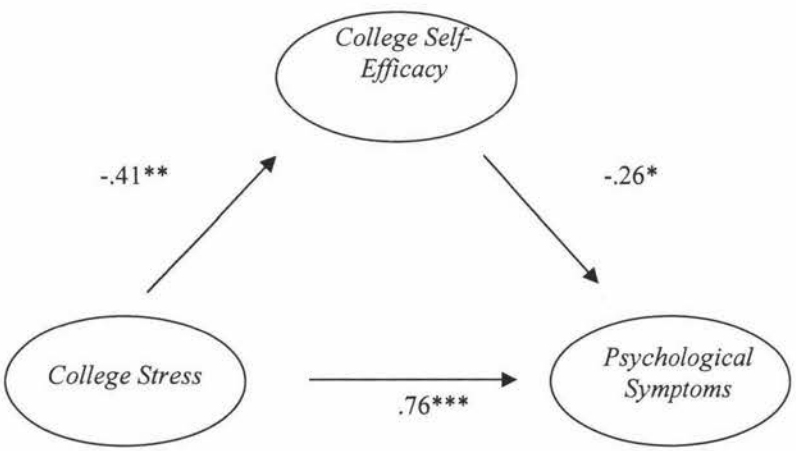

Figure 6. Schematic representation of college self-efficacy as a mediator between college stress and psychological symptoms showing beta values.
*p ≤ .05, ** p ≤ .01, *** p ≤ .001

3.5.2

In the current research, general self-efficacy was also hypothesised to play a mediating role in the relationship between comfort in the university environment and psychological wellbeing. Following the recommendations of Rose et al., multiple regression analyses were carried out to test this hypothesis. Using data from the previous analyses, it was confirmed that college stress and perceptions of the university environment were significant predictors of perceived stress and

psychological symptoms, fulfilling the first criterion put forward by Rose et al. (2004). Next, regressions were performed in order to test the second criterion: whether predictor variables (in this case the comfort in the university environment cluster) are significantly associated with the proposed mediator variable, general self-esteem. The results of this equation are presented in Table 13.

Table 13.
Hierarchical multiple regression of individual and contextual variables and effect of comfort in the university environment on general self-esteem showing standardised beta coefficients, R, R^2, and adjusted R^2

Predictor	**Step 1: β**	**Step 2: β**
Gender	.129	.071
Level of Study	-.253	-.094
Mode of Study	.049	-.148
Cultural Congruity		.219
College Stress		.265
University Environment		-.058
R	.215	**.469*** **
R^2	.046	.220
Adjusted R^2	.015	.167
Change in R^2		**.174*** **

As can be seen, although the model was statistically significant at step two ($R^2 = .22$, $F(3, 88) = 6.53$, $p < .001$), no significant associations were found between any of the predictor variables and general self-esteem. Since comfort in the university environment does not have a significant effect on self-esteem, self-esteem cannot be tested as a mediator according to the guidelines advocated for by Rose et al. (2004).

3.6 Analyses – Testing Self-Beliefs as Moderators

Self-beliefs were also investigated as to the possible buffering effect they may provide for Māori students who perceive the university environment as culturally incongruent, cold and unwelcoming, and as stressful. It was conceptualised that more discomfort in the university environment would have a less negative impact on

general psychological wellbeing in the presence of a high self-esteem and college self-efficacy.

As previously mentioned, perusal of the correlation coefficients (Table 6) indicates that perceptions of the university environment are significantly related to psychological wellbeing. In light of this finding, the moderating potential of self-beliefs were assessed.

The present research investigated the hypothesised moderational effects of self-beliefs using a series of three-step multiple regressions. Following the recommendations of Rose et al. (2004), all the variables to be investigated were centred around zero by converting the scores to deviation scores prior to running the analyses. New variables were created consisting of all possible two-way products of the centred predictor variables in order to allow for testing of interaction terms in the regression analyses.

3.6.1

First the relationship between perceptions of the university environment and psychological wellbeing were explored, with college self-efficacy viewed as a buffer. To allow for both the perceived stress and psychological symptomology aspects of psychological wellbeing to be looked at, two regressions were executed. Table 14 presents the results of the hierarchical multiple regression investigating the moderating effects of college self-efficacy on global perceived stress.

Table 14.
Hierarchical multiple regression of individual and contextual variables and the interaction of college self-efficacy on global perceived stress showing standardised beta coefficients, R, R^2, adjusted R^2, and change in R^2.

Predictor	Step 1: β	Step 2: β	Step 3: β
Gender	.384***	**.375*** **	**.364** **
Level of Study	**-.318** **	**-.245** **	**-.269** **
Mode of Study	.400***	.057	.025
Cultural Congruity		-.090	-.025
College Stress		**.826*** **	**.797*** **
University Environment		.074	.106
College Self-Efficacy		.123	.057
College Self-Efficacy x Cultural Congruity			-.323
College Self-Efficacy x College Stress			-.046
College Self-Efficacy x University Environment			-.377
R	**.636*** **	**.834*** **	**.847*** **
R^2	.404	.695	.717
Adjusted R^2	.384	.670	.683
Change in R^2		**.291*** **	.022

In looking at college self-efficacy as a buffer for the effects of comfort in the university environment on global perceived stress, the general model is found to be significant with $R^2 = .71$, $F(10, 84) = 21.29$, $p < .001$. However, on closer inspection it is revealed that no significant interaction effects were exposed, and the R^2 change is also not significant (change in $R^2 = .02$, $F(3, 84) = 2.18$). Thus it can be concluded that college self-efficacy does not perform a moderating role on global perceived stress levels.

Similarly, Table 15 reveals that college self-efficacy does not act as a buffer on psychological distress levels. Once more the overall model was found to be significant with $R^2 = .47$, $F(10, 84) = 7.49$, $p < .001$, however there were no significant interaction effects and the R^2 change was again not significant (change in $R^2 = .04$, $F(3, 84) = 2.24$).

Table 15.
Hierarchical multiple regression of individual and contextual variables and the interaction of college self-efficacy on psychological symptoms showing standardised beta coefficients, R, R^2, adjusted R^2, and change in R^2.

Predictor	Step 1: β	Step 2: β	Step 3: β
Gender	.050	.043	.143
Level of Study	**-.318****	.230	.008
Mode of Study	.192	-.078	.053
Cultural Congruity		.091	-.022
College Stress		**.725*****	**.768*****
University Environment		**.330*****	**.449*****
College Self-Efficacy		**-.270*****	-.004
College Self-Efficacy x Cultural Congruity			-.046
College Self-Efficacy x College Stress			.399
College Self-Efficacy x University Environment			.643
R	**.292***	**.655*****	**.687*****
R^2	.085	.429	.471
Adjusted R^2	.055	.383	.471
Change in R^2		**.344*****	.042

These results together indicate that college self-efficacy does not appear to act as an effective buffer in the relationship between comfort in the university environment and psychological wellbeing.

3.6.2

The relationship between perceptions of the university environment and psychological wellbeing were also looked at with self-esteem examined as a buffer. Again, two separate multiple regressions were executed with global perceived stress and psychological symptoms as respective outcome variables. Table 16 presents the results of the hierarchical multiple regression investigating the moderating effects of general self-esteem on global perceived stress.

Table 16.
Hierarchical multiple regression of individual and contextual variables and the interaction of general self-esteem on global perceived stress showing standardised beta coefficients, R, R^2, adjusted R^2, and change in R^2.

Predictor	Step 1: β	Step 2: β	Step 3: β
Gender	**.384*** **	**.375*** **	.108
Level of Study	**-.318** **	**-.322*** **	-.122
Mode of Study	**.400*** **	.059	**-.191** **
Cultural Congruity		-.046	**-.248** **
College Stress		**.807*** **	**.923*** **
University Environment		.085	**.209***
General Self-Esteem		-.119	**-.132***
General Self-Esteem x Cultural Congruity			.349
General Self-Esteem x College Stress			**.719*** **
General Self-Esteem x University Environment			**.693*** **
R	**.292*** **	**.836*** **	**.903*** **
R^2	.404	.698	.815
Adjusted R^2	.384	.674	.794
Change in R^2		**.294*** **	**.117*** **

Gender, mode of study, and level of study were entered at step one of the regression to control for possible confounding effects. The university environment cluster variables (cultural congruity, college-environmental stress, and perceptions of the environment) and general self-esteem were entered into the predictive equation at step two. Finally, vectors formed by calculating the cross product term of the variables deviation scores were added at step three. By entering the variables in this order, the variance accounted for by the interaction terms could be assessed after controlling for the main effects of each of the variables.

As can be seen, after step two, with the main effects of the university environment cluster and general self-esteem in the equation, $R^2 = .70$, $F(7, 87) = 28.79$, $p < .001$. Together the university comfort cluster of variables and general self-esteem levels explain 70% (67% adjusted) of the variance in global perceived stress levels. After step three, with the addition of the interaction terms to the equation, $R^2 = .82$, $F(10, 84) = 37.13$, $p < .001$. The addition of the interaction terms to the equation resulted

in a significant increment in R^2 (R^2 change = .12, $F(3, 84) = 17.76$, $p < .001$). The model that considers self-esteem as a moderating variable provides a better fit for predicting global perceived stress levels, explaining 82% (79% adjusted) of the variance. In addition, the interaction terms between self-esteem x college stress and self-esteem x perceptions of the university environment were found to be significant. Figures 7 and 8 present schematic diagrams of each of the significant interaction terms.

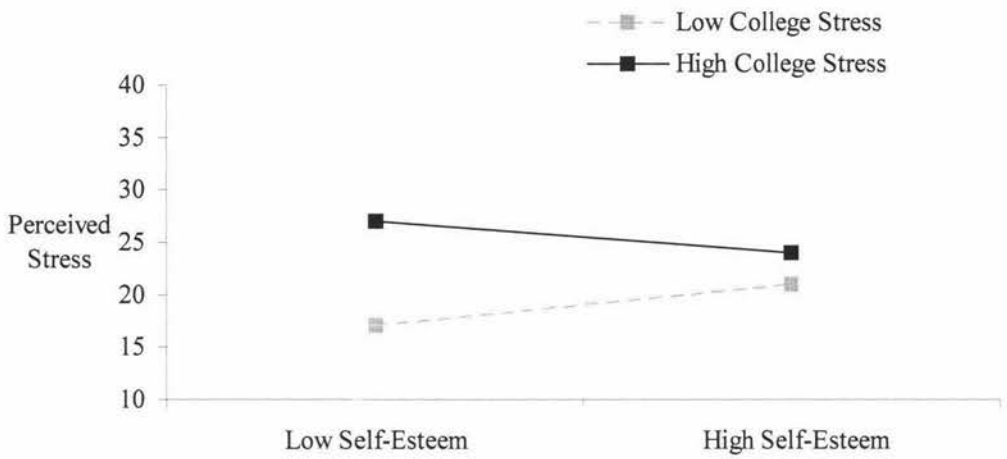

Figure 7. Schematic representation of the self-esteem x college stress interaction in the prediction of perceived stress

Figure 7 illustrates that under the condition of low self-esteem, Māori students who reported high stress related to university had significantly higher general stress levels than those Māori students who reported low amounts of college stress. Under the condition of high self-esteem levels however, global perceived stress levels were similar for both those that experienced a lot college-related stress and those that experienced little college-related stress.

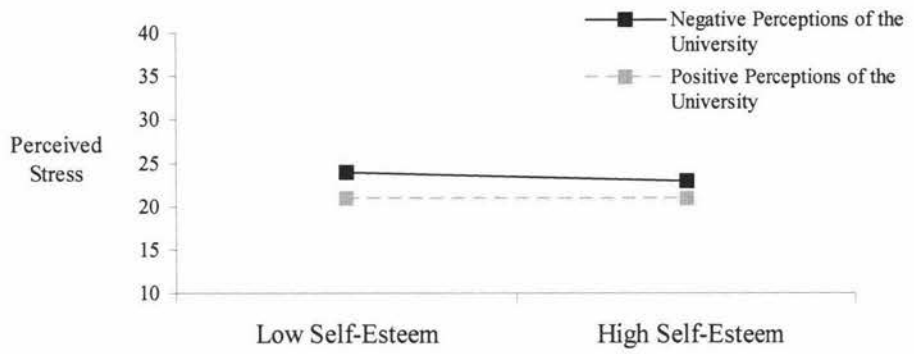

Figure 8. Schematic representation of the self-esteem x perceptions of the university environment interaction in the prediction of perceived stress

Figure 8 shows that for Māori students who perceive the university environment to be warm and welcoming, their level of self-esteem has no effect on their reported global stress levels. However, for those Māori students who perceive the university environment to be cold and uncaring, having a high level of self-esteem significantly reduces global perceived stress levels.

An additional hierarchical multiple regression was performed to investigate self-esteem as a moderator in the relationship between comfort in the university environment and psychological symptomology. Table 17 portrays the results of the hierarchical multiple regression investigating the moderating effects of general self-esteem on psychological symptoms and distress.

Table 17.
Hierarchical multiple regression of individual and contextual variables and the interaction of general self-esteem on psychological symptoms showing standardised beta coefficients, R, R^2, adjusted R^2, and change in R^2.

Predictor	Step 1: β	Step 2: β	Step 3: β
Gender	.050	.024	-.266***
Level of Study	**-.318****	.175	.424***
Mode of Study	.192	-.043	-.354
Cultural Congruity		-.065	**-.236****
College Stress		**.696*****	**.937*****
University Environment		**.321****	**.472*****
General Self-Esteem		**.529*****	**.507*****
General Self-Esteem x Cultural Congruity			.032
General Self-Esteem x College Stress			**.988*****
General Self-Esteem x University Environment			**.712*****
R	**.292***	**.782*****	**.882*****
R^2	.085	.612	.779
Adjusted R^2	.055	.580	.752
Change in R^2		**.527*****	**.167*****

As in the previous regression, gender, mode of study, and level of study were entered at step one of the regression to control for possible confounding effects. The university environment cluster variables (cultural congruity, college-environmental stress, and perceptions of the environment) and general self-esteem were entered into the predictive equation at step two. Additionally, vectors formed by calculating the cross product term of the variables deviation scores were added at step three.

By referring to Table 17, it can be seen that with the main effects of the university environment cluster and general self-esteem in the equation (step 2), $R^2 = .61$, $F(7, 87) = 19.57$, $p < .001$. Together the university comfort cluster of variables and general self-esteem levels explain 61% (58% adjusted) of the variance in psychological symptoms. After step three, with the addition of the interaction terms to the equation, $R^2 = .78$, $F(10, 84) = 29.56$, $p < .001$. The addition of the interaction terms to the equation resulted in a significant increment in R^2 (R^2 change = .17, F(3,

84) = 21.15, $p < .001$). Similar to the previous results, the model that considers self-esteem as a moderating variable provides a better fit for predicting psychological distress levels, explaining 78% (75% adjusted) of the variance. In this regression analysis, the interaction terms between self-esteem x college stress and self-esteem x perceptions of the university environment were again found to be significant. Figures 9 and 10 present schematic diagrams of each of the significant interaction terms.

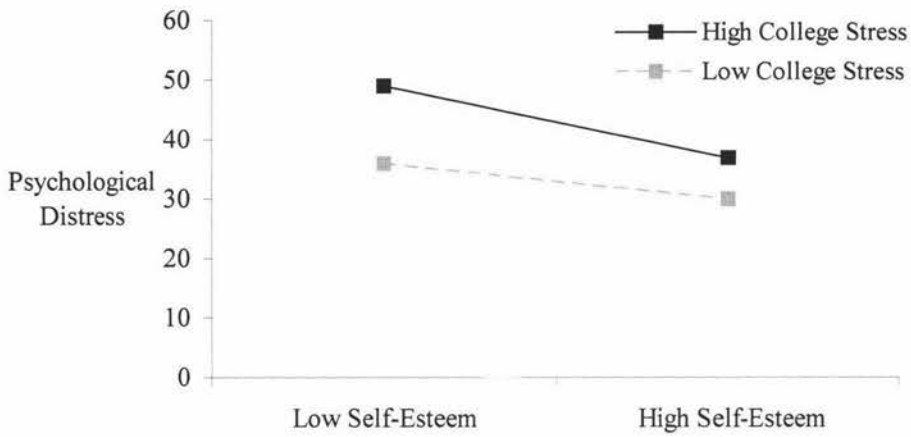

Figure 9. Schematic representation of the self-esteem x college stress interaction in the prediction of psychological distress

Figure 9 shows that having a high sense of self-esteem significantly lowers ratings of psychological distress for both Māori students who experience a lot of university-related stress and Māori students who experience little stress related to university.

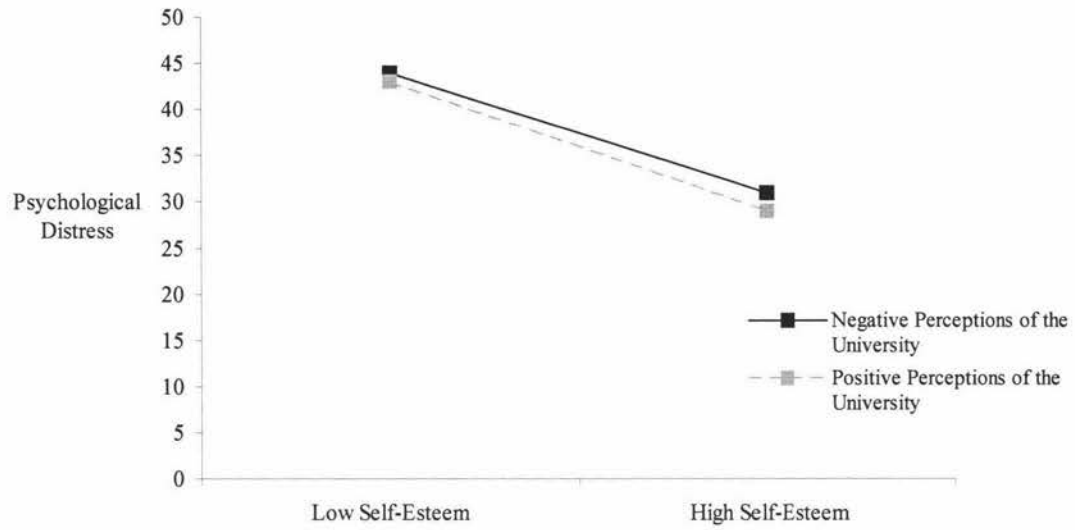

Figure 10. **Schematic representation of the self-esteem x perceptions of the university environment interaction in the prediction of psychological distress**

Again, high self-esteem was demonstrated to significantly reduce psychological distress scores whether Māori university students perceived the university environment as warm and welcoming, or cold and uncaring (refer Figure 10).

From these analyses, it is revealed that general self-efficacy acts as an effective buffer between perceptions of the university environment and psychological wellbeing.

The results presented in this section will be discussed in terms of the research objectives of this study, and the wider implications of the findings.

CHAPTER FOUR - DISCUSSION

This research has endeavored to provide a better understanding of aspects of Māori university students' experiences at university by examining a range of pertinent social, psychological, and contextual variables that other research has identified as being related to academic nonpersistence decisions and psychological wellbeing.

The discussion section will present

1. A summary of the findings of this research in the context of the research objectives, including interpretations of the meanings of these findings and a consideration of how these findings sit with previous research
2. A consideration of the implications of these findings
3. Limitations of this research and recommendations for future research directions.

This study differed from overseas research in the area of minority students' experiences at university in that it looked at the influence of social support, self-beliefs, and perceptions of the university environment on both academic nonpersistence decisions and psychological wellbeing.

4.1 Academic Nonpersistence

It was important to investigate aspects of Māori students' experiences that may impact on academic nonpersistence decisions as retention rates for Māori at university give cause for concern given the emphasis by the New Zealand Government, educationalists, and Māori leaders on the value of tertiary qualifications to strengthen Māori success in both economic and health spheres. Although there has been a large, positive growth in Māori accessing university study, quality outcomes (in terms of completing qualifications), continue to be elusive. Following on from research with minority university students in other countries, this study aimed to explore the influence of self-beliefs, social support, and comfort in the university environment on the academic nonpersistence decisions of Māori university students. It was hypothesised that having positive self-beliefs, higher levels of social support, and more comfort in the university environment would be

associated with decreased nonpersistence decisions.

An examination of inter-correlations between the variables found significant support for each of the measures of self-beliefs, social support, and comfort in the university environment, and academic nonpersistence decisions, supporting the above hypothesis. Analyses revealed that as a model, 71 per cent of the variability in academic nonpersistence decisions could be predicted by knowing scores on these non-cognitive and control variables.

Additionally, each cluster of variables displayed predicitive powers in regards to academic nonpersisitence decisions, and each cluster reached significance. The comfort in the university environment cluster had the most predicitive power, followed by the social support cluster, and then the self-beliefs cluster. These findings show similarities with research into the effects of these variables on the academic nonpersistence decisions of a range of other minority populations, and thus lend support for a model of investigation that includes individual, social, and contextual variables when examining this area. Individually, each of the variables had significant main effects on academic nonpersistence decisions, with two notable exceptions: The number of identified social supports and perceptions of the cultural congruity of the university environment did not have significant main effects. It may be that the satisfaction with social supports as opposed to the number of social supports is more crucial in the prediction of drop-out decisions, as has been found in other studies (eg. Gerdes & Mallinckrodt, 1994). With this sample of Māori university students, all were highly satisfied with their social support ($x = 1.33$, $sd = 0.51$, range: (1) *very satisfied* to (6) *very unsatisfied*), and the lack of variability in scores meant that the SSQ6-Satisfaction scale could not be used in data analyses.

These results impart important information for developing ways to reduce recidivism with Māori university students. Comfort in the university environment can be seen as a major factor impacting on Māori university students' decisions to stay at university until the end of their course, or to leave early. This finding fits well with reports of statistics on retention, which found that Māori who attend courses at Wananga have a much lower attrition rate than those at university (Ministry of Education, 2005). By looking at the aspects of the environment, it can be

hypothesised that the Kaupapa Māori or Māori-centred context provided by Wananga has direct implications for enhancing retention of Māori students. Accordingly, useful strategies for enhancing retention of Māori students at university might include establishing areas within the university that creates a warm and welcoming environment for Māori students, and that acknowledges and values Māori culture. Physical spaces on campus, such as marae or whānau rooms may be important in this regard, as well as providing opportunities to make connections with other students, and to enhance whakawhānaungatanga. Universities must carefully balance between linking Māori students, and isolating them as a group within the university population. Connections with the university itself are relevant here.

Social support also had a significant effect in this area, thus providing space and opportunity to make connections may have a double-effect of increasing positive perceptions of the environment and building a social support network within the university. Having an identified mentor within the faculty could be a useful way of enhancing connectivity with the university context and providing a source of support. Given the lack of support for the number of social supports effecting academic nonpersistence decisions, further research would be useful in expanding on this area by examining whether different levels of satisfaction with social supports have an impact on academic nonpersistence decisions.

Within the self-beliefs cluster, self-efficacy in relation to university-related tasks also had a significant impact on Māori students' academic nonpersistence decisions. This finding could provide some direction into programmes that may be useful in increasing self-efficacy for university tasks, which may in turn have a direct impact on attrition rates. Programmes which present information on strategies for managing university workload expectatations, frequent areas of stress encountered by students, and clarifying likely university demands could be effective in this regard. This study looked particularly at common demands of university study, such as being able to write an essay or participate in class discussions, thus targeting these specific areas may be most valuable. Adding to this, future research into what Māori students see as most stressful when studying at university could aid in increasing the focus of intervention programmes.

Tinto's model of student departure was a useful starting point in this study, and is the most utilised and researched model of student attrition (Cabrera et al., 1992). Although strong empirical support has been found for Tinto's model, it is important to acknowledge the unique aspects of a Māori student population in modern Aotearoa / New Zealand. Other researchers of minority student populations have commented on some of the limitations of Tinto's model with respect to 'nontraditional' students. Nontraditional students have been defined as those students over 24 years of age who live off-campus (Chartrand, 1992). In the present study, approximately 89 per cent of the participants were aged 31 or older. Chartrand (1992) noted that older students often have work, family, and community responsibilities outside of the educational envirionment. Additionally, the educational orientation of older students tends to be instrumental rather than expressive (Chickering & Havighurst, 1981). To address this, many researchers in the area incorporate a 'theory elaboration' approach (Braxton, Milem, & Sullivan, 2000). This entails the application of new concepts borrowed from other theoretical perspectives to explain the focal phenomena (Braxton, Milem & Sullivan, 2000). It is this approach that has been successfully used by Gloria and her colleagues when researching a range of minority student populations (Gloria, & Robinson Kurpius, 1996; Gloria et al., 1999; Gloria, & Robinson Kurpius, 2001; Gloria, Hird, & Navarro, 2001). By using Tinto's theory as an underlying broad theoretical approach, and focusing on aspects thought to be particularly salient for minority students (such as cultural congruity), an effective and relevant study can be completed.

4.2 Psychological Wellbeing

Although psychological wellbeing is a major indicator of successful academic adjustment, there has been almost no research examining how factors which have been found to be important in minority students' achieving quality outcomes at university may also impact on psychological wellbeing. This study hypothesised that perceptions of the university environment in terms of warmth, cultural congruity, and stressfulness would be linked to the incidence of psychological symptomology and

global perceived stress levels. An examination of the inter-correlations between these variables supported this hypothesis. Those Māori students who saw the university as warm, less stressful, and culturally congruous also reported less psychological symptomology and reported feeling more able to cope in general stressful situations. Regression analyses found additional support for the model, providing significant evidence that comfort in the university environment has a direct impact on the psychological wellbeing of Māori university students. This finding yields information on the importance of supporting a positive environment within the university. In order to work towards attaining the goal of "Māori living as Māori, and as citizens of the world" (Hui Taumata, 2005), it is imperative that the psychological wellbeing of Māori university students is nurtured.

The second aim of this study was to investigate whether social support acted as a buffer between perceptions of the university environment and psychological wellbeing. This model as a whole was supported by the research findings. In examining the number of available social supports as a buffer, it was found that having a high number of social supports significantly reduced reported psychological symptoms in those who perceived the university environment as stressful, and cold and unwelcoming.

The number of identified social supports was found to act as a buffer for those Māori students who saw the environment as stressful. Those who saw the university as less stressful reported similar levels of psychological symptoms whether they had a high or low number of social supports. In contrast, for those who saw the university as stressful, having a high number of social supports to call on reduced their levels of psychological distress. This finding provides support for the transactional model of stress: The individual's appraisal of the university environment has direct consequences for the individual, and the individual can then draw on coping resources to mitigate negative effects (Lazarus, 1999). In this study, those who had identified social supports to help them to cope with the stressful university environment reported less psychological distress that those who had less social supports.

Having access to a large number of social supports may be more essential for Māori

who attend university as Māori culture is traditionally a collective culture, organised around whānau, hapu, and iwi (Rochford, 2004). Indeed, Durie has identified whānau as one of the four cornerstones of Māori wellness, so perhaps it is unsurprising that having supportive whānau and friends would enhance the psychological wellbeing in Māori students coping with a stressful environment. This finding provides support for student services that encourage social connectedness amongst students. Making use of traditional processes such as powhiri and hui would likely prove useful here in two important ways: Having familiar cultural processes at university could impact on having more positive perceptions of the university environment, and therefore enhance Māori students' levels of comfort in the environment. Powhiri and hui also offer the opportunity for whakawhānaungatanga, providing an environment to Māori student's to make links with potential social supports. By enhancing levels of comfort in the university environment and presenting opportunities to build social support networks, it could be expected that psychological wellbeing in Māori university students would be positively affected.

The other measure of social support in this study looked at the effects of having identified mentors within the university faculty. This relationship proved to be complex. The hypothesis that those Māori students who had identified mentors and felt uncomfortable in the university environment would report less psychological distress and global stress levels that those who did not. That is, having a mentor would moderate the effects of comfort in the university environment on psychological wellbeing. It was found that having a mentor did act as a moderator in this relationship, but not in the way hypothesized.

Having mentors within the university staff did have a significant moderating effect on the relationship between perceptions of the university environment and levels of psychological symptomology. It appears that Māori students who saw the university environment as being in contrast to their culture were protected in terms of psychological distress if they had a high number of identified mentors, as hypothesised. However, for those Māori who saw the university environment as fitting with and supportive of their culture, having a high number of mentors resulted in *increased* psychological distress. A number of issues could have impacted on this

finding.

Firstly, the mentoring scale used focused specifically on identified mentors from within the university faculty. Research reviewing the use of mentor programmes for Māori university students indicates that senior or graduate students are most commonly used as successful mentors in these programmes (Nikora, Levy, Henry, & Whangaprita, 2002b). Senior student mentors may prove more effective as they are likely to have recently faced the struggles Māori students generally face and thus may provide valuable role - modelling for coping with the university environment (Nikora et al., 2002b). Indeed, faculty members who mentored Māori students identified difficulties in the mentoring relationship stemming from the power differential between the mentors and students (Nikora et al., 2002a). Academic mentors in Nikora et al.'s study also described feelings of uncertainty about their ability to fulfil a mentoring role due to their concerns about perceived cultural limitations (2002a). There is a clear imbalance between the number of Māori students attending university and the number of Māori staff members. This means that many Māori students are likely to be mentored by non-Māori faculty members. Evaluation of a Māori student support programme which utilised non-Māori staff as mentors recommended that the role and tasks of such mentors be clarified, with particular attention to establishing a shared responsibility by mentors and students for making and maintaining the mentoring relationship (Nikora et al., 2002a).

In addition to focusing only on mentors from the university faculty, the Mentoring Scale only gathered information about the number of mentors available. Given the complex relationship, it may be more useful to also gather information about Māori students' satisfaction with their mentoring, and how much they make use of their mentor.

The final hypothesis in this study was that self-beliefs would act as moderators or mediators in the relationship between comfort in the university environmental psychological wellbeing. Results indicated that only self-efficacy had a significant mediating effect. Seeing the university environment as academically and financially stressful led to reduced confidence in ability to successfully perform university-related tasks, which in turn had a negative impact on levels of psychological distress.

This study is a non-experimental design; therefore statements about definite causality cannot be made. However, a causal mediational model is consistent with the data presented. No mediating effect was found for self-beliefs on the relationship between cultural congruity or perceived warmth of the university environment on psychological wellbeing.

With regards to cultural congruity, the use of this scale with this sample of Māori students was affected by a number of issues. The original 12-item Cultural Congruity Scale did not yield an acceptable Cronbach's alpha. To address this, three items were removed to reach a more robust level of internal consistency. Prior to statistical analyses, the resulting modified-CCS was also transformed via the square root in order to reduce levels of skewness and kurtosis. Untransformed scores were skewed towards perceiving high levels of cultural congruity in the university environment. Given that this scale was developed for use with minority students in North America, the above issues of internal consistency and skewness may be a reflection of the unique position of Māori as the indigenous people of Aotearoa / New Zealand, and the rights and responsibilities that the Treaty of Waitangi upholds in regards to this position.

These findings point to the importance of identifying areas of stress for Māori university students in order to then devise effective interventions to enhance psychological wellbeing. One such study which specifically explored stresses and problems commonly identified by Māori university students highlighted a range of problems including such items as 'balancing the demands of work and study', and 'understanding what is required to do well on assignments' (Bennett, 2001). These types of perceived stressors as a group were found to have a significant impact on levels of general perceived stress, but not on levels of psychological distress (Bennett, 2001). Given that the use of different measures of stress or problems in theuniversity environment have resulted in similar results, future research that attempts to identify impediments to psychological wellbeing in Māori universitystudents in a more comprehensive manner would do well to build on both scales developed in Aotearoa / New Zealand with Māori , and scales which have proved useful with other minority student populations. This study used the College Environmental Stress Index (Munoz, 1987) to explore perceived financial and

academic sources of stress. This measure has proved valuable with a range of samples of minority university students, and revealed significant results with Māori university students in this research also.

In contrast to self-efficacy, self-esteem was found to act as a stress-moderator. Levels of comfort in the university environment did not affect levels of self-esteem, therefore self-esteem was not a mechanism through which comfort in the university environment impacted on psychological wellbeing. The perceived warmth and stressfulness of the university environment had a stronger negative impact on those Māori students who also reported low self-esteem. Higher levels of self-esteem acted as an effective stress-buffer for those who saw the university environment as being more stressful and less warm and welcoming. This finding concurs with the large body of research that self-esteem can act as a stress-buffer in a range of stress-well being relationships (eg. Greenberger et al., 1999; Harter, 1999).

4.3 SUMMARY

This research set out to gather empirical information from Māori university students about their experiences at university. In particular, I was interested in finding out more about how experiences at university may impact on drop-out decisions and psychological wellbeing. Building on past research in similar areas with minority students attending mainstream universities, three specific clusters of variables were selected which, as well as having strong support as having significant effects, also had some relevance of Māori as a culture. For example, social support is relevant for Māori people as Māori culture is a collective culture, and wellbeing is conceptualised in broad terms.

Investigation into the contribution of the three clusters of variables (social support, self-beliefs, and comfort in the university environment) found strong support for the importance of these in regards to the academic nonpersistence decisions of Māori university students. The cluster that was most predictive of drop-out decisions was comfort in the university environment, followed by social support, followed by self-

beliefs. The importance of the context in which education takes place has been demonstrated on many occasions. A recent report which aimed to present a synthesis of the empirical research into minority students' academic success at university emphasised the importance of assisting diverse students to adjust to existing university cultures (Prebble et al., 2004). The present study lends support to the recommendations raised from Prebble et al.'s (2004) synthesis. Using past research, both qualitative and quantitative as a base, targeted research can be carried out which could lend strong support to programs that may be most effective for addressing some of the challenges faced by Māori attending university. In this way, the disparities in achievement and wellbeing between Māori and mainstream New Zealanders can be successfully addressed.

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APPENDICES

Appendix 1: Questionnaire

Māori Tertiary Students' Experiences at University

SECTION A

1. Please circle the number that represents how confident you are that you could successfully complete the following tasks.

	Not at all Confident						**Extremely confident**
1.1 Research an essay.	1	2	3	4	5	6	7
1.2 Write an essay.	1	2	3	4	5	6	7
1.3 Do well in your exams.	1	2	3	4	5	6	7
1.4 Take good class notes.	1	2	3	4	5	6	7
1.5 Keep on top of your schoolwork.	1	2	3	4	5	6	7
1.6 Manage time effectively.	1	2	3	4	5	6	7
1.7 Participate in class discussions.	1	2	3	4	5	6	7
1.8 Ask a question in class.	1	2	3	4	5	6	7
1.9 Talk to your lecturers.	1	2	3	4	5	6	7
1.10 Talk to university staff.	1	2	3	4	5	6	7
1.11 Ask a lecturer a question.	1	2	3	4	5	6	7
1.12 Join a student organisation.	1	2	3	4	5	6	7

2. Below is a list of statements dealing with your general feelings about yourself. We would like you to indicate on the scale provided the extent to which you agree or disagree with these statements.

	Strongly agree	**Agree**	**Disagree**	**Strongly disagree**
2.1 On the whole I am satisfied with myself.	1	2	3	4
2.2 At times, I think I am no good at all.	1	2	3	4
2.3 I feel that I have a number of good qualities.	1	2	3	4
2.4 I am able to do things as well as most other people.	1	2	3	4
2.5 I feel I do not have much to be proud of.	1	2	3	4
2.6 I certainly feel useless at times.	1	2	3	4
2.7 I feel that I am a person of worth, at least on an equal plane with others.	1	2	3	4
2.8 I wish I could have more respect for . myself.	1	2	3	4
2.9 All in all, I am inclined to think I am a failure.	1	2	3	4
2.10 I take a positive attitude towards myself.	1	2	3	4

SECTION B

4. Now we would like to look at whether you have had a mentor during your time at University. Please circle the number that represents the number of people you know who fit the description in each question.

		No-one	One Person	Two/three people	Four or more
3.1	University staff have encouraged me.	1	2	3	4
3.2	University staff have taken me under their wing.	1	2	3	4
3.3	I have a mentor on campus.	1	2	3	4
3.4	I have someone in the staff who cares about my educational success.	1	2	3	4
3.5	I have someone in the staff who is a role model.	1	2	3	4

4. The following questions ask about <u>people who give you help or support</u>.
Each question has **TWO** parts:

Part one: List all the people you know, but not yourself, who you can count on for help or support in the way described in each question. Only write the persons initials. Do not write more than one person next to each of the numbers beneath the question, and do not list more than nine people per question. If you have no support for a question, please circle the words 'No one'.

Part two: Tick the circle to indicate how satisfied you are with the overall support you have for each question area. Do this for all questions, even where you have circled 'No one'.

Completed example:

e.g. (a) Who do you know who you can trust with information that could get you into trouble?

	No one	**4**
1	**K B**	**5**
2	**A B**	**6**
3	**A J**	**7**

e.g. (b) How satisfied are you with the support that you <u>currently</u> receive? (Please circle **<u>one</u>** number)

1. very satisfied
(2.) fairly satisfied
3. a little satisfied
4. a little dissatisfied
5. fairly dissatisfied
6. very dissatisfied

For each question, please enter the answers that come closest to your personal situation. Please do not skip any questions.

4.1a. Who can you really count on to take your mind off your worries when you feel under stress?

(Please write the initials of the people who give you help or support; if no-one, then circle "no-one")

No one	**5**
1	**6**
2	**7**
3	**8**
4	**9**

4.1b. How satisfied are you with the support that you currently receive?

(Please circle **one** number.)

1. very satisfied
2. fairly satisfied
3. a little satisfied
4. a little dissatisfied
5. fairly dissatisfied
6. very dissatisfied

4.2a. Who can you really count on to help you feel more relaxed when you are under pressure or tense?

(Please write the initials of the people who give you help or support; if no-one, then circle "no-one")

No one	**5**
1	**6**
2	**7**
3	**8**
4	**9**

4.2b. How satisfied are you with the support that you currently receive?

(Please circle **one** number.)

1. very satisfied
2. fairly satisfied
3. a little satisfied
4. a little dissatisfied
5. fairly dissatisfied
6. very dissatisfied

4.3a. Who accepts you totally, including your worst and best points?

(Please write the initials of the people who give you help or support; if no-one, then circle "no-one".)

No one	**5**
1	**6**
2	**7**
3	**8**
4	**9**

4.3b. How satisfied are you with the support that you currently receive?

(Please circle **one** number.)

1. very satisfied
2. fairly satisfied
3. a little satisfied
4. a little dissatisfied
5. fairly dissatisfied
6. very dissatisfied

4.4a. Who can you really count on to care about you, regardless of what is happening to you?

(Please write the initials of the people who give you help or support; if no-one, then circle "no-one".)

No one	**5**
1	**6**
2	**7**
3	**8**
4	**9**

4.4b. How satisfied are you with the support that you currently receive?

(Please circle **one** number.)

1. very satisfied
2. fairly satisfied
3. a little satisfied
4. a little dissatisfied
5. fairly dissatisfied
6. very dissatisfied

4.5a. Who can you really count on to help you feel better when you are feeling generally 'down in the dumps'?

(Please write the initials of the people who give you help or support; if no-one, then circle "no-one".)

No one	**5**
1	**6**
2	**7**
3	**8**
4	**9**

4.5b. How satisfied are you with the support that you currently receive?

(Please circle **one** number.)

1.	**very satisfied**
2.	**fairly satisfied**
3.	**a little satisfied**
4.	**a little dissatisfied**
5.	**fairly dissatisfied**
6.	**very dissatisfied**

4.6a. Who can you count on to help you feel better when you are very upset?

(Please write the initials of the people who give you help or support; if no-one, then circle "no-one".)

No one	**5**
1	**6**
2	**7**
3	**8**
4	**9**

4.6b. How satisfied are you with the support you currently receive?

(Please circle **one** number.)

1.	**very satisfied**
2.	**fairly satisfied**
3.	**a little satisfied**
4.	**a little dissatisfied**
5.	**fairly dissatisfied**
6.	**very dissatisfied**

I appreciate you putting a little light on this subject!

SECTION C

5. Now we would like to look at how you feel at university. For each of the following items, please circle **how often** you have experienced the feeling or situation at university.

		Not at all						**A great deal**
5.1	I feel that I have to change myself to fit in at university.	1	2	3	4	5	6	7
5.2	I try not to show the parts of me that are Māori based.	1	2	3	4	5	6	7
5.3	I often feel I have to change myself depending on the ethnicity of the person . I am with at university.	1	2	3	4	5	6	7
5.4	I feel that my ethnicity is incompatible with other students.	1	2	3	4	5	6	7
5.5	I can talk to my friends at university about my family and culture.	1	2	3	4	5	6	7
5.6	I feel that I am leaving my family values behind when i go to university.	1	2	3	4	5	6	7
5.7	I can talk to my family about my friends at university.	1	2	3	4	5	6	7
5.8	My Māori values are in conflict with what is expected at university.	1	2	3	4	5	6	7
5.9	I feel that my appearance and/or language make it hard to fit in with other students.	1	2	3	4	5	6	7
5.10	I feel accepted at university as a Māori.	1	2	3	4	5	6	7
5.11	As a Māori student, I feel as if i belong on this campus.	1	2	3	4	5	6	7
5.12	I can talk to my family about my struggles and concerns at university.	1	2	3	4	5	6	7

6. We would like to also look at how you feel about being at university. Please circle the extent to which these statements are **true** for you.

	Not at all						**Very true**
6.1 Class sizes are so large that I feel like a number.	1	2	3	4	5	6	7
6.2 The library staff is willing to help me find materials/books.	1	2	3	4	5	6	7
6.3 University staff has been warm and friendly.	1	2	3	4	5	6	7
6.4 I do not feel valued as a student on campus.	1	2	3	4	5	6	7
6.5 Staff have not been available to discuss my academic concerns.	1	2	3	4	5	6	7
6.6 Financial aid staff have been willing to help me with financial concerns.	1	2	3	4	5	6	7
6.7 The university encourages Māori groups on campus.	1	2	3	4	5	6	7
6.8 There are tutoring services available for me on campus.	1	2	3	4	5	6	7
6.9 The university seems to value Māori students.	1	2	3	4	5	6	7
6.10 Staff have been available for help outside of class.	1	2	3	4	5	6	7
6.11 The university seems like a cold, uncaring place to me.	1	2	3	4	5	6	7
6.12 Staff have been available to help me make course choices.	1	2	3	4	5	6	7
6.13 I feel as if no-one cares about me personally on this campus.	1	2	3	4	5	6	7
6.14 I feel comfortable in the university environment.	1	2	3	4	5	6	7

7. Stressful events are defined as situations that are upsetting to you. Below is a list of events that may occur to university students. For each event, think about how stressful it is for you, and circle the number which best represents this. If you have not experienced an event, think about how stressful it would be for you if it had occurred.

	Not Stressful				**Very Stressful**
7.1 Not having money for bills, social activities, or living expenses.	1	2	3	4	5
7.2 Contributing money to help support your immediate family.	1	2	3	4	5
7.3 Uncertainty of receiving financial aid, i.e. loans, scholarships, grants, student allowance.	1	2	3	4	5
7.4 Finding employment that will not jeopardise study, i.e. part-time, summer work.	1	2	3	4	5
7.5 Being obligated to pay your student loan.	1	2	3	4	5
7.6 Parents' willingness to provide personal income information for your student allowance applications.	1	2	3	4	5
7.7 Lack of parents' contribution for financial support.	1	2	3	4	5
7.8 Being asked to verbally participate in class.	1	2	3	4	5
7.9 Teachers treating you differently than other students.	1	2	3	4	5
7.10 Not meeting personal expectations for academic achievement.	1	2	3	4	5
7.11 Not meeting parental expectations for academic achievement.	1	2	3	4	5
7.12 Not meeting teachers' expectations for academic achievement.	1	2	3	4	5
7.13 Taking unmeaningful or irrelevant courses.	1	2	3	4	5
7.14 Approaching a teacher, staff member, or administrator to resolve an issue, conflict, get assistance etc.	1	2	3	4	5
7.15 Taking a test.	1	2	3	4	5
7.16 Writing an essay.	1	2	3	4	5
7.17 Going through the process of applying to university or graduate studies.	1	2	3	4	5

7.18 Uncertainty of being accepted into the university or graduate studies.	1	2	3	4	5

SECTION D

8. This section asks you to respond to a series of statements regarding your ability to cope under certain circumstances. Please use the scale provided to indicate how each of the statements applies to you personally.

	Not at all	**Barely true**	**Moderately true**	**Exactly true**
8.1 I always manage to solve difficult problems if I try hard enough.	1	2	3	4
8.2 If someone opposes me, I can find ways and means to get what I want.	1	2	3	4
8.3 It is easy for me to stick to my aims and to accomplish my goals.	1	2	3	4
8.4 I am confident that I could deal efficiently with unexpected events.	1	2	3	4
8.5 Thanks to my resourcefulness, I know how to handle unforeseen situations.	1	2	3	4
8.6 I can solve most problems if I invest the necessary effort.	1	2	3	4
8.7 I remain clam when facing difficulties because I can rely on my coping abilities.	1	2	3	4
8.8 When I am confronted with a problem I usually find several solutions.	1	2	3	4
8.9 If I am in a bind, I can usually think of something to do.	1	2	3	4
8.10 No matter what comes my way, I am usually able to handle it.	1	2	3	4

SECTION E

9. Listed below are a number of statements concerning your personal perceptions of stress experienced over the past month. For each of the items below, please indicate the extent to which you feel you have experienced these feelings over the past month on the scale ranging from NEVER (1) to VERY OFTEN (4).

		Never	Almost never	Fairly often	Very often
9.1	In the last month, how often have you been upset because of something that has happened unexpectedly?	1	2	3	4
9.2	In the last month, how often have you felt that you were unable to control the important things in your life?	1	2	3	4
9.3	In the last month, how often have you felt nervous and "stressed"?	1	2	3	4
9.4	In the last month, how often have you felt that things are going your way?	1	2	3	4
9.5	In the last month, how often have you felt confident in your ability to handle your personal problems?	1	2	3	4
9.6	In the last month, how often have you found that you could not cope with all the things that you had to do?	1	2	3	4
9.7	In the last month, how often have you been able to control irritations in your life?	1	2	3	4
9.8	In the last month, how often have you been angered because of the things that happened that were outside of your control?	1	2	3	4
9.9	In the last month, how often have you felt that difficulties were piling up so high that you could not overcome them?	1	2	3	4
9.10	In the last month, how often have you felt that you were on top of things?	1	2	3	4

SECTION F

10. How have you felt in the past seven days, including today? Circle the appropriate number to describe how distressing you have found these things over time.

	Not at all	A little	Quite a bit	Extremely
10.1 Difficulty in speaking when you are excited.	1	2	3	4
10.2 Trouble remembering things.	1	2	3	4
10.3 Worried about sloppiness or carelessness.	1	2	3	4
10.4 Blaming yourself for things.	1	2	3	4
10.5 Pains in the lower part of your back.	1	2	3	4
10.6 Feeling lonely.	1	2	3	4
10.7 Feeling blue.	1	2	3	4
10.8 Your feelings being hurt easily.	1	2	3	4
10.9 Feeling that others do not understand you or are unsympathetic.	1	2	3	4
10.10 Feeling that people are unfriendly or dislike you.	1	2	3	4
10.11 Having to do things very slowly in order to be sure you are doing them right.	1	2	3	4
10.12 Feeling inferior to others.	1	2	3	4
10.13 Soreness of the muscles.	1	2	3	4
10.14 Having to check and double-check what you do.	1	2	3	4
10.15 Hot or cold spells.	1	2	3	4
10.16 You mind going blank.	1	2	3	4
10.17 Numbness or tingling in parts of your body.	1	2	3	4
10.18 A lump in your throat.	1	2	3	4
10.19 Trouble concentrating.	1	2	3	4
10.20 Weakness in parts of your body.	1	2	3	4

10.21	Heavy feelings in your arms and legs.	1	2	3	4

SECTION G

11. In this section, please circle the number that represents how strongly you agree or disagree with each statement.

		Strongly Disagree	Disagree	Neither	Agree	Strongly agree
11.1	Since coming to this University, I have developed . close personal relationships with other students.	1	2	3	4	5
11.2	The student friendships I have developed at this university have been personally satisfying.	1	2	3	4	5
11.3	My interpersonal relationships with other students have had a positive influence on my personal growth, attitudes and values.	1	2	3	4	5
11.4	My interpersonal relationships with other students have had a positive influence on my intellectual growth and interest in ideas.	1	2	3	4	5
11.5	It has been difficult for me to . meet and make friends with other students.	1	2	3	4	5
11.6	Few of the students I know . . . would be willing to listen to . . me and help me if I had a personal problem.	1	2	3	4	5
11.7	Most students at this university here have values and attitudes different from my own.	1	2	3	4	5
11.8	My non-classroom interactions with staff have had a positive influence on my personal growth, values and attitudes.	1	2	3	4	5

11.9 My non-classroom interactions with staff have had a positive influence on my intellectual growth and interests in ideas.	1	2	3	4	5

	Strongly Disagree	Disagree	Neither	Agree	Strongly agree
11.10 My non-classroom interactions with staff have had a positive influence on my career goals and aspirations.	1	2	3	4	5
10.11 Since coming to this university, I have developed a close, personal relationship . with at least one staff member.	1	2	3	4	5
11.12 I am satisfied with the opportunities to meet and interact informally with staff members.	1	2	3	4	5
11.13 Few of the staff members I have had contact with are generally interested in students.	1	2	3	4	5
11.14 Few of the staff members I have had contact with are generally outstanding or superior teachers.	1	2	3	4	5
11.15 Few of the staff members I have had contact with are willing to spend time outside of class to discuss issues of interest and importance to students.	1	2	3	4	5
11.16 Most of the staff members I have had contact with are interested in helping students grow in more than just academic areas.	1	2	3	4	5
11.17 Most staff members I have had contact with are genuinely interested in teaching.	1	2	3	4	5

11.18	I am satisfied with the extent of my intellectual development since enrolling in this university.	1	2	3	4	5
11.19	My academic experience has had a positive influence on my intellectual growth and interest in ideas.	1	2	3	4	5
11.20	I am satisfied with my academic experience at this university.	1	2	3	4	5
11.21	Few of my courses this year have been intellectually stimulating.	1	2	3	4	5
11.22	My interest in ideas and intellectual matters has increased since coming to this university.	1	2	3	4	5
11.23	I am more likely to attend a cultural event (for example, a lecture or art show) now than I was before coming to this university.	1	2	3	4	5
11.24	I have performed academically as well as I anticipated I would.	1	2	3	4	5
11.25	It is important for me to graduate from university.	1	2	3	4	5
11.26	I am confident that I made the right decision in choosing to attend this university.	1	2	3	4	5
11.27	It is likely that I will register at this university again next year.	1	2	3	4	5
11.28	I have no idea at all what I want to major in.	1	2	3	4	5
11.29	Getting good grades is not important to me.	1	2	3	4	5

SECTION H

This final section asks a series of demographic questions. These are to help provide us with a better picture of the make-up of our sample group and will not be used to identify particular individuals.

12. Gender (please tick one)

☐ Male

☐ Female

13. Age _____

14. What are your iwi/tribe affiliations (if known)?

_____

_____

15. Are you studying:

☐ Full-time?

☐ Part-time?

16. What is your course of study? (E.g. BBS, BA, etc.)

_____

17. Are you:

☐ An undergraduate?

☐ A post-graduate?

18. What subject do you intent to major in? (E.g. Māori, Psychology, etc.)

_____

Thank you for your participation!

Appendix 2: Feedback Request form

Māori Tertiary Students' Experiences at University

Feedback Request Form

Thank you for your time in responding to this survey and for consenting to be a part of this research. The answers you provide will be kept completely confidential and will only be used in summarised form.

If you would like to receive a summary of the research and its findings, please provide your name and address below:

Name: _____

Address: _____

Please send this request form in the smaller of the two reply envelopes that have been provided, so that it can be kept separate from the information you have provided in the questionnaire.

Thank you.

Appendix 3: Information sheet

Māori Tertiary Students' Experiences at University

Who am I?

My name is Holly Coombes. My iwi is Ngati Maru and my hapu is Ngati Puu, from the Hauraki region. I am doing my Masters thesis in Psychology at Massey University in Wellington.

What am I Doing?

I am doing a study for my thesis that is looking at Māori tertiary students' experiences at university, including social support systems, self-beliefs, and comfort in the university environment, and how these aspects affect psychological wellbeing and drop-out decisions of Māori university students.

How am I doing the research and what is involved for you?

This study uses questionnaires to gather the information. The questionnaire is about 15 pages long, and includes questions about your social support network, how you feel in the university environment, and how you feel about continuing at university. I will also ask some general demographic questions. The questionnaire will take approximately 15 minutes to complete. The questionnaire is completely anonymous – no names or identifying features are asked for. All information gathered is kept confidential to the research to the research team. A stamped, self-addressed envelope is also provided for you to send back the questionnaire.

Why am I doing the research?

I hope that this study will help us better understand the experiences of Māori students at university in New Zealand. This information can in turn be used to ensure that the specific needs of Māori university students are met more effectively by universities, and to help encourage more Māori to gain higher qualifications.

How do you benefit?

This is a chance for you to take part in some research that will benefit Māori tertiary students. By educating the universities about what your needs are, universities are more likely to be able to put policies in place to meet those needs. The government has outlined a commitment to improving the number of Māori who graduate from tertiary study, and this research will help provide some insight into how this commitment can be achieved.

So, if you are a student at a university in New Zealand, you identify as Māori , and you want to take part in this study, please fill out the questionnaire attached. If you have any questions related to the study, please feel free to contact me. You can also get hold of more questionnaires (as many as you want!) by contacting me directly. Thanks for your participation.

Holly Coombes
School of Psychology, Massey University, Wellington
Phone: [redacted] **Email:** [redacted]