MOTIVATIONAL DRIVES AND MACHIAVELLIANISM: THEIR INTERACTION AND INFLUENCE ON CAREER CHOICE.

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ABSTRACT

The present study examined the relationships between the motivational drives of need for achievement, need for autonomy, need for affiliation and need for dominance, the demographic variables of age and sex and the personality trait of Machiavellianism. Further, the influence of these variables on the course of study of university students was examined. Previous research has produced mixed findings with regard to the relationship of motivational needs with Machiavellianism and their influence on career choice. The Mach IV scale and the Manifest Needs Questionnaire were administered to 494 undergraduate university students. Different student disciplines were compared on the motivational drive variables and Machiavellianism. Analysis partially supported the common stereotype that business students, and marketing students in particular are more Machiavellian than non business students. Results from the nursing and social work students supported the stereotype of 'caring professions' being higher in the need for affiliation. Nursing and science students had a higher need for achievement than other students and business students scored higher in the Leadership Motive Pattern than education or social work students. Machiavellianism was positively related to the need for power and the need for autonomy as well as McClelland's Leadership Motive Pattern. Machiavellianism was negatively correlated with need for affiliation, need for achievement and age. Males rated as being more Machiavellian, having a higher need for power, a higher need for autonomy, a higher Leadership Motive Pattern and a lower need for affiliation than females. Findings supported the proposal that high Machiavellians possess the same motivational drives that have been associated with effective leadership. A call is made for future research to pursue a longitudinal approach to understanding the changing nature of Machiavellianism over time. Additionally more research needs to be done on the low internal consistency ratings obtained in the affiliation sub-scale of the Steers and Braunstein (1976) Manifest Needs Questionnaire and to a lesser extent the autonomy sub-scale.

From this arises the question whether it is better to be loved rather than feared, or feared rather than loved. It might perhaps be answered that we should wish to be both: but since love and fear can hardly exist together, if we must choose between them, it is far safer to be feared than loved.

The Prince, *Chapter 8*
Niccolo Machiavelli

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1 INTRODUCTION

1.1 Why Machiavellianism?

The study of personality traits has long been an important focus for researchers in the psychological field. It is an area that intuitively forms a link between people and their behaviour in the environment. Introversion versus extroversion, internal locus of control versus external locus of control are both examples of traits that can range widely from person to person. People with differing levels of these traits are predicted to act differently in various situations. Furthermore they attribute different reasons for the way that they act. Within the field of applied psychology the link between personality type and leadership has been examined by numerous researchers. The evidence while not overwhelming does lend support to a link between personality characteristics and leadership style or ability (Winter, 1973).

One personality characteristic that has long held this researchers attention is Machiavellianism. This can be described as the ability and willingness to manipulate or influence others to obtain personal goals. If necessary high Machiavellians will engage in unethical behaviour to achieve these goals. At present there is a push (at least in teaching) for the democratic running of businesses through participative strategies, empowerment of employees, free access to information, and a wide array of approaches to 'take employees on board' and make them feel that they have a real say in the running of an organisation (Cascio, 1991). No person could be more opposed to these modern managerial views than the Machiavellian.

In a time when political correctness and a benevolent employer are seen as the desired, if not an essential part in the effective running of an organisation, the Machiavellian stands alone, a strong, daunting and potentially powerful ally in the

world of business. No characteristic stirs the imagination as much as a person who will stop at nothing to achieve their personal objectives. This could describe the modern day version of Caesar or another of the great leaders of history. Napoleon, Hitler, Churchill and Hannibal all enter our consciousness as great leaders who were unstoppable in their dedication to obtain goals. Though these people may not have been right in what they did, or attempted to do, they are undeniably categorised as great leaders in world history. They all may not have been purely Machiavellian in orientation, however they demonstrated characteristics that Machiavellians typically possess. All of these leaders had tremendous influential ability, they could manipulate through speech and they all had clear goals that they wanted to achieve. It is questionable just what lengths they would be willing to go to reach these goals. The shadow of the Machiavellian is present in these figures of greatness.

The Machiavellian construct has been in existence for over 25 years and was first described, though not in terms of personality, some 400 years ago in the writings of Niccolo Machiavelli. Undeniably it is a construct that evokes a mix of feelings, from intense dislike through to admiration. This researcher considers it unfortunate that the former is the usual. The high Machiavellian does have a place in society, and whether we like it or not they are very good at what they do, which is achieving results. If these goals are in line with organisational objectives and will benefit employees then the Machiavellian is indeed a worthy ally in the business environment.

Machiavellians operate at a level of detachment that most could never understand, they do not get emotionally involved and when emotions are running high, their cool head and not their hearts will be in control. In a crisis situation or a stressful business environment, this control would be a tremendous personal asset. In everyday life how often are we caught in situations where emotions are running

high? A minor traffic accident, an unexpected inflated quote, an irate customer, a co-worker/subordinate that has not done what you asked or even an overpriced item in a shop for example. Don't we all admire a person who coolly takes control, remains unflappable and calmly sets the situation right with a minimum of fuss? Beware, you may have just witnessed vintage Machiavellianism, and could be developing respect for this misunderstood and hastily judged personality construct.

The present study attempts to look at the Machiavellian construct and leadership style by comparing motivational drives and their relationship with Machiavellianism. Additionally if career choice is influenced by Machiavellian tendency, it would make sense that Machiavellian oriented people would be attracted to fields that make use of their 'talents'. One area that would be expected to be associated with Machiavellianism is the business environment, most notably the competitive marketing field and the managerial field where the need to influence other people is paramount. In these populations it would be expected that there would be a higher level of Machiavellianism present.

Finally demographic characteristics of Machiavellians will be examined in terms of age and sex to determine whether there is some relationship present. These research objectives will be explored in more detail and discussed in terms of previous research through the course of the introduction. Much of the present study will be an attempt to replicate previous research and examine it within a New Zealand context. New Zealand society may not so readily adopt the Machiavellian attitude. As a country it is more sheltered from the competitive international business market and may be viewed as more conservative or not as competitive and hence less Machiavellian. This view is only beginning to change, as New Zealand becomes competitive in the global economy.

An attitude still exists where reputations are derived through hard work, and where trust and deals are still established by a person's word and a handshake. These beliefs and values are inconsistent with the tenets proposed by the Machiavellian construct so it may be expected that there is little Machiavellian tendency throughout New Zealand society, including the university setting where the present research is focused.

In essence the present study is one of replication and extension of research into the Machiavellian construct. Research will be extended to investigate the link between Machiavellianism and motivational drives and replicated to establish whether findings from other countries apply to New Zealand. Additionally the relationship between Machiavellianism and career choice will be examined as will the unclear relationship between Machiavellianism and the demographic variables of sex and age. The encompassing objective of the present study is to increase the understanding of the Machiavellian construct thereby modifying the typically negative reaction to the concept.

1.2 Niccolo Machiavelli - a personal history

Niccolo Machiavelli (1469-1527) was born in Florence on May 3, 1469. Machiavelli entered government service as a clerk and rose to prominence when the Florentine Republic was proclaimed in 1498. He was secretary of the ten-man council that conducted the diplomatic negotiations and supervised the military operations of the republic and his duties included missions to the French king (1504, 1510-11), the Holy See (1506), and the German emperor (1507-8). In the course of his diplomatic missions within Italy he became acquainted with many of the Italian rulers and was able to study their political tactics, particularly those of the ecclesiastic soldier Cesare Borgia, who was at that time engaged in enlarging his holdings in central Italy. From 1503 to 1506 Machiavelli reorganised the military defence of the republic of Florence.

Although mercenary armies were common during this period, he preferred to rely on the conscription of native troops to ensure a permanent and patriotic defence of the commonwealth. In 1512, when the Medici, a Florentine family, regained power in Florence and the republic was dissolved, he was deprived of office and briefly imprisoned for alleged conspiracy against them. After his release he retired to his estate near Florence, where he wrote his most important works. Despite his attempts to gain favour with the Medici rulers, he was never restored to his prominent government position. When the republic was temporarily reinstated in 1527, he was suspected by many republicans of pro-Medici leanings. He died in Florence on June 21 of that year (Encarta, 1994).

In 1513 Niccolo Machiavelli completed a treatise for a potential benefactor which offered pragmatic how-to advice on power in governance (Gilbert, 1971). This treatise along with his other works on gaining and using power found a place in literature, political theory and history. Hunt & Chonko (1984) make the point that few dispute the impact of his two most famous works: *The Prince* (Machiavelli 1532; trans. 1640) and *Discourses on the First Ten Books of Titus Livius* (Machiavelli 1531; trans 1636). In *The Prince* (1532) Machiavelli describes the method by which a prince can acquire and maintain political power. This work, which has often been regarded as a defence of the despotism and tyranny of such rulers as Cesare Borgia, is based on Machiavelli's belief that a ruler is not bound by traditional ethical norms. In his view, a Prince should be concerned only with power and be bound only by rules that would lead to success in political actions. Machiavelli believed that these rules could be discovered by deduction from the political practices of the time, as well of those of earlier periods (Encarta, 1994).

Machiavelli's second most well known piece of work, *Discourses on the First Ten Books of Titus Livius* (1531), was based upon a commentary on the History of

Rome by the Roman historian Livy. From this Machiavelli's formulation of the historical principles inherent in Roman government can be found. In this study Machiavelli departs from medieval theocratic concepts of history, ascribing historical events to the demands of human nature and the effects of chance. Among his other works are *Dell'arte della guerra* (On the Art of War, 1521), which describes the advantages of conscripted over mercenary troops and the *Istorie Fiorentine* (History of Florence, 1525) which interprets the chronicles of the city, in terms of historical causality. Machiavelli was also the author of the biography *Vita di Castruccio Castracani* (Life of Castruccio Castracani, 1520), a number of poems, and several plays, of which the best known is *Mandragola* (The Mandrake, 1524), a biting satire on the corruption of contemporary Italian society. Many of his writings anticipated the growth in succeeding periods of strong nationalistic states (Christie & Geis, 1970).

Machiavelli did pay a high price for the nature of his works. Before Machiavelli's death he was denied appointment in a re-established republican Florentine government (Dietz, 1986). Now the name Machiavelli is synonymous with unscrupulous actions, shady dealings or at the very least, questionable ethical behaviour. Nelson and Gilbertson (1991) suggest that this may not have been fairly developed as it was the generations of writers and students, ages removed from the vicious political scene of the Italian Renaissance, which have cast the shadow over Machiavelli's name. In that situation of turbulence and uncertainty Machiavelli's actions may have been appropriate and effective. When reviewed with this in mind Machiavelli's thoughts and views may not be so immoral at all.

1.3 Machiavellianism Today

Although Machiavelli's works were focused towards the 16th century Italian administrator, parallels have been drawn between this turbulent uncertain period of time and the present day business environment. Many business analysts believe

that the ideas of Machiavelli are applicable to the present day business manager who operates in an uncertain environment involving politics of power. As early as 1969 this point was expressed by Calhoon (1969):

> "A definition of the twentieth century Machiavellian administrator is one who employs aggressive, manipulative, exploiting and devious moves in order to achieve personal and organisational objectives. These moves are undertaken according to perceived feasibility with secondary consideration (what is necessary under the circumstances) to the feelings, needs and/or 'rights' of others. Not that Machiavellianism is 'right' or even particularly 'bright' but it exists in today's leadership and needs to be recognised as such."

Some writers openly recommend the use of Machiavellian style tactics for the top executive who wishes to stay in power. McMurray (1973) recommends that "an executive politician must: use caution in taking counsel . . . avoid too close superior-subordinate relationships . . . not hesitate to be ruthless when expedient . . . limit what is to be communicated . . . learn never to place too much dependence on a subordinate unless it is clearly in the latter's personal advantage to be loyal . . . and give outward evidence of status, power and material success" (pp. 144-145). Jay (1969) recommended Machiavellian tactics for effective managing of industrial enterprises and some MBA courses specifically teach Machiavellian techniques (Business Week 1975).

Machiavelli himself did not advocate lying in his two famous works, *The Prince* (1513) and *Discourses on the First Ten Books of Titus Livius* (1513), rather he assumed it a necessity in an imperfect world. Truthfulness, and therefore one's ethics, could be sacrificed if necessary to achieve personal objectives. Gable and Topol (1991) make the important point that Machiavellian individuals should not be viewed as compulsive liars or consistently unethical. Rather they *may* be

willing to sacrifice their ethics to achieve specific goals, but will do so *only* when necessary. Machiavellian individuals may achieve their ends through ethical means (e.g. alliance formation) but this may not always be possible.

1.4 The development of the Machiavellian Construct

Richard Christie and Florence Geis (1970) pioneered laboratory observations of high Machiavellians, and they developed a theoretical framework for the conceptualisation of an opportunistic personality disposition and deceitful behaviour. They developed a scale after observing that the personal beliefs of many leaders who control the behaviour of others through manipulative means seemed to coincide with the statements of Machiavelli in his two main works *The Prince* and *Discourses*. These leaders operated with some level of detachment from their surroundings and confidentiality surrounded their work. Further a lack of concern with conventional morality, a lack of gross psychopathology and a lack of ideological commitment were characteristics of these leaders (Christie and Geis, 1970).

The final scale developed by Christie and Geis (1970) was derived from a pool of 47 normative statements taken from *The Prince* and *Discourses*. From these statements 20 were selected through factor analyses and formed an instrument of moderate reliability and validity. Essentially they claimed to have operationalized a personality characteristic which could be nominally divided into high and low ranges of Machiavellianism (Nelson and Gilbertson, 1991).

In their 1970 work Christie and Geis reported the results of 38 studies using the Machiavellianism scale. The general conclusions drawn from these studies are that Machiavellians, that is, high Machs, win more, are persuaded less, persuade others more, and otherwise differ significantly from low Machs in laboratory situations in which, "(a) subjects interact face to face with others, (b) latitude for

improvisation is present and the subject is free to initiate responses as she or he can or will, and (c) affective involvement with details irrelevant to winning distract low Machs" (Christie and Geis, 1970, p. 312). In short, high Machs tend to be 'cool' and focused upon task accomplishment, whereas low Machs tend to be 'soft touches' (Christie and Geis, 1970).

Shultz (1993) rephrased these concepts as part of his research, "in highly structured situations both high Machs and low Machs work within the system; lows are comfortable working within the rules of the system and perform well, whereas highs - having fewer opportunities to wheel and deal - display perfunctory performance and occasionally apathy. Conversely, in loosely structured situations the tactics of highs and lows differ greatly. Lows assume unstated limits, accept structure defined by others and are distracted from pre-defined goals during the interaction process, whereas highs test limits, initiate and control structure, and exploit the situation and others to acquire more of the scarce resources for which the parties are competing" (p. 382). This description of the high and low Machs indicates the importance of situational factors which should be considered when examining the construct of Machiavellianism. These factors play an important role in how people of differing Machiavellian persuasion will act.

Although debate continues regarding the ethical orientations of the Machiavellian (e.g., Nelson and Gilbertson, 1991; Singhapakdi & Vitell, 1990) the research indicates high Machs tend to be rational game players who, unlike low Machs, readily exploit situations to maximise personal gain when the situation is devoid of clearly defined rules and control mechanisms. Since Christie and Geis (1970) published their work there have been many articles that have examined the construct of Machiavellianism, (Nelson & Gilbertson, 1991). Between 1970 and 1984 alone there have been over 200 published research projects that have used

the Machiavellianism scale (Hunt & Chonko, 1984). The area of Machiavellianism is well researched and the large accumulation of data on the construct is testament to the fascination and interest that people have of this personality trait. A review of the literature revealed four areas of study that have been focused on by researchers. The first of these is the relationship between Machiavellianism and Manipulation.

1.5 Machiavellianism and Manipulation

Manipulative behaviour is implicitly intertwined with the construct of Machiavellianism. Christie and Geis (1970) define successful manipulation as "a process by which the manipulator gets more of some kind of reward than he would have got without manipulating, and someone else gets less, at least within the immediate context" (p.106). They reviewed four experiments in which manipulation was the identified independent variable. A consistent pattern was found in these studies, high Machs were able to win through manipulation as predicted, but only in certain kinds of situations. When high Machs are placed in situations where they are face to face with low Machs, and where there are opportunities for manipulation, high Machs will control the structure of the situation and win. In these situations low Machs will have a tendency to get emotionally involved with the personal feelings of others and, consequently lose.

Research conducted by Jones & Melcher (1982) and Jones & White (1985) supported the manipulative tendency of the high Machiavellian by researching their preference for mode of conflict resolution. It was found that Machiavellians preferred to use a confronting mode which allows them to directly use their manipulative skills. The Machiavellian rejected the methods of mutual supportiveness and co-operation because they allow little opportunity for practising the full range of manipulative skills. This finding supports the notion

that Machiavellians do not just manipulate people when the need arises, they actually seek situations that will be suited to their manipulative abilities.

Research by Cherulnik, Way, Ames & Hutto (1981) found that when naive subjects viewed a set of videotapes of high and low Machiavellian people, high Machs appeared to be clever rather than selfish. Further the high Machs were, "more likely to be judged to possess high Machiavellian characteristics, poise and competence, and subjects' impressions of them were more favourable overall" (p.391). This would indicate that Machiavellians are able to portray themselves in a favourable light even though people knew what they were. This would suggest that high Machiavellians possess deceptive and manipulative capability.

Vleeming (1979) reviewed and evaluated 11 research projects conducted since Christie and Geis's 1970 work. Supporting evidence was found for the postulation that subjects who score high on the Machiavellianism scale will both attempt to manipulate more and be successful in doing so. The subjects from the research projects studied by Vleeming (1979) consisted of several populations including students, university faculties, parents, Japanese children, and male employees. The experimental situations included theft, bluffing, ingratiation and cheating. This would indicate that Machiavellianism is a robust concept that is generalisible across a number of different populations.

1.6 Machiavellianism and Ethics

The second area that is of interest to researchers in Machiavellianism is the relationship with ethics. The general defining view of the Machiavellian is a person who is willing to sacrifice ethics and conventional morality to achieve personal goals. As Christie and Geis (1970) recognise, many of the items within the Machiavellian scale are measures of moral position, so by definition morality (or lack thereof) is an integral part of the Machiavellian construct. Many

experiments on Machiavellianism specifically measure the extent to which subjects will engage in unethical practices, such as lying and cheating. Christie and Geis (1970) after their review of research conclude:

> "Low Machs, though opposed to dishonesty in principle, can be persuaded to cheat or lie given a strong personal, and repeated inducement, especially in a face to face situation in which they have little time to reflect but must act, either accepting the others wishes or rejecting them; in these situations external 'rational' justifications had little effect on their decisions. In contrast, high Machs, although not opposed to dishonesty in principle, will cheat less if the 'rational' incentives are high or the costs (such as the probability of being caught) are low" (p. 298).

Unethical behaviour has been the focus of much research on Machiavellianism. Hegarty and Sims (1978) examined this in a business context. The subjects were 120 graduate business students who made a series of decisions on whether or not to pay kickbacks. Subjects were given rational incentives for unethical behaviour. Machiavellianism was found to be a significant covariate of unethical behaviour. A study by Geis and Moon (1981) explored the issue of whether high Machs can lie more convincingly than low Machs. Subjects were videotaped denying the knowledge of a theft. Half the subjects had been directly implicated in the theft and the other half made a truthful denial. As predicted, high Machs who were lying were believed more often than low Machs who were lying, as judged by impartial viewers examining the videotapes.

Hunt & Chonko (1984) note that people who score high on the Machiavellianism scale are more likely to win in situations where they can manipulate the behaviours of others. Also, high Machs show a disdain for conventional morality and are more likely to engage in unethical behaviour when their rational self-interest is involved. Martinez (1987) suggests that while it may be concluded that high Machs endorse a philosophy of deceit and opportunism, they may nevertheless be as moral as low Machs in other areas of socio-political belief.

These findings do not support the view that the Machiavellian is a totally immoral or unethical person. Rather the Machiavellian differs only in specific areas of morality.

1.7 Machiavellianism and Career Choice

Research indicates that Machiavellian people are drawn to occupations where manipulation can make a difference. Christie and Geis (1970) found this when they reported the results of 11 studies of medical schools. They found that "invariably, potential Psychiatrists made the highest Mach score; potential surgeons scored at or near the bottom end of the distribution" (p.184). They explained this finding by saying that manipulative skills would be much more important for success in Psychiatry than in Surgery. Further support that Machiavellianism may play a role in career choice was provided by Wertheim, Widom and Wortzel (1978) who found that several personality dimensions were related to the career choices of students. In particular, students who were majoring in business and law scored significantly higher on the Machiavellianism scale than did students majoring in social work.

The preference for Machiavellians to engage in business occupations has been supported by Skinner, Giokas & Hornstein (1976) who reported that business was the category chosen most frequently by students responding to the Kuder Occupational Interest Survey from a high Machiavellian perspective. Skinner (1981) also found that business students obtained significantly higher Mach scores than did a matched non-business group. Similarly, Siegel (1973) characterised MBA faculty and students as "more Machiavellian than the norms" (p.404). This line of inquiry was continued by McLean and Jones (1992), who found that in a sample of 206 undergraduate students in a Canadian University, business students and, in particular, marketing students were found to be more Machiavellian than their non-business counterparts.

The first objective of the present study is to replicate these findings in a New Zealand university setting. Based on the study by McLean & Jones (1992) it is proposed that similar findings will be established in that business students will be more Machiavellian than non-business students and that amongst the business students the marketing majors will be the most Machiavellian. The first hypothesis is as follows:

Hypothesis 1 'That business studies students will be more Machiavellian than their non-business counterparts. Furthermore of the business students the marketing students will be the most Machiavellian'

1.8 Machiavellianism and Personal Characteristics

One area that is very well researched is the relationship between Machiavellianism and personal characteristics. Due to the numerous personal characteristics that exist, only the most relevant will be reviewed in the present study. Christie and Geis (1970) found that Machiavellianism was unrelated to traditional demographic variables, though some variables did have significant relationships with Machiavellianism.

1.8.1 Machiavellianism and Age

Many studies show that age is negatively related to Machiavellianism, younger people are more Machiavellian than older people. The norm study of 1728 college students conducted by Christie and Geis (1970) found significantly higher scores on Machiavellianism than the scores on their nation-wide norm study on 1477 adults. The negative relationship between Machiavellianism and age is supported by Murray and Okanes (1980) who report a number of studies which have found this significant effect. They further emphasise the importance of this finding in terms of it acting as a possible confounding variable in the research of Machiavellianism. Research by Mudrack (1992) examined why this difference

exists and what specific components of the Machiavellian construct age affected. It was found through investigation of 115 adults employed within the same organisation that a significant negative correlation existed between age and Machiavellianism, particularly in the components of deceit and flattery. This was explained as follows, "While older people appear neither more nor less immoral or cynical than their younger peers, their experience appears to enable them to cope and to get what they want without having to resort to Machiavellian tactics such as deception, ingratiation, or flattery" (Mudrack, 1992, p. 1210).

To establish if there is a causal relationship between Machiavellianism and age longitudinal studies need to be implemented. As the majority of previous research consists of cross sectional studies, the relationship between Machiavellianism and age may be confounded by other variables. It may be the dynamics of the samples that created significant relationships with age. This is an area that needs to be examined further to gain more understanding of the relationship between Machiavellianism and age.

1.8.2 Machiavellianism and Gender

Education and sex are significant predictors of Machiavellianism (Christie & Geis, 1970). Women generally score lower on the Machiavellianism scale, and less educated adults generally score higher (p.317). Christie and Geis (1970) explain the negative correlation between education and Machiavellianism as a result of less educated adults being more willing to admit socially undesirable things about themselves on a questionnaire. When social desirability was controlled for, the correlation between Machiavellianism and education level changed from -.26 to + .02 (p.317). Research examining Machiavellianism and sex differences has been mixed, (Gable & Topol, 1987, 1988, 1989; Topol & Gable, 1988; Chonko,1982). These researchers have found that in executive positions women consistently rate higher in Machiavellianism than men, but the balance of previous research using

university subjects (Maroldo, Flachmeier, Johnston, Mayer, Peter, Reitan, & Russell, 1976; Wertheim, Widom & Wortzel, 1978) and teachers (Biggers, 1978) has indicated that males rate as more Machiavellian than females.

The second objective of the present research is to examine the relationship between Machiavellianism and age and sex. Based on previous research it is expected that there will be a negative correlation between Machiavellianism and age. With regard to gender and Machiavellianism, previous research that has used university students as subjects have found that males were more Machiavellian than females. Based on these findings it is expected that a similar pattern will emerge in the present study and this leads to the following hypothesis:

Hypothesis 2 'That Machiavellianism and age will be inversely related and males and females will differ significantly in level of Machiavellianism'.

1.8.3 Machiavellianism and Locus of Control

Another consistent finding is that high and low Machiavellians differ in level of locus of control (Comer, 1985). In a recent meta-analytic review of 20 studies by Mudrack (1989a) it was shown that there was overwhelming evidence to support the view that Machiavellianism is related to an external locus of control. "This view may mean that in a world governed by forces outside of the individual's sphere of influence, outcomes would not necessarily be seen as immediately contingent upon personal characteristics, abilities or efforts. The use of manipulation, deception, or ingratiation tactics may thus reflect an attempt on the part of the Machiavellian to assert some influence over a hostile environment that subverts the efficacy of more internally oriented approaches, such as hard work" (Mudrack, 1989b, p. 125).

1.8.4 Machiavellianism and Cognitive Complexity

Cognitive complexity has also been found to correlate significantly with Machiavellianism (Delia & O'Keefe, 1976). This negative correlation supports the view that those low in Machiavellianism are more concerned with interpersonal understanding of others and as a result consistent with the theory may be side-tracked on personal feelings and thoughts. This is where the high Machiavellian can take advantage of a situation in which passions and feelings are high, by remaining calm and detached and unswayed by emotions. Lamm & Myers (1976) also found evidence in their sample of 88 university students that people who are high in Machiavellianism are more "astute social observers" than their low Mach counterparts. The following table provides a summary of Machiavellian characteristics.

High Mach	**Low Mach**
Resistant to social influence	Vulnerable to others opinion
Hides personal convictions well	Wears conviction on sleeve
Changes positions in arguments readily	Clings to convictions
Resistant to confessing	Confesses fairly readily
Highly convincing when telling truth	Less convincing when telling truth
Suspicious of others' motives	Accepts others' motives at face value
Situationally analytical	Makes gross assumptions about content
Does not assume reciprocity	Assumes reciprocity
Withholds judgement of others' likely moves certain ways	Believes others 'ought' to act in
Able to change strategy with situation action	Becomes locked into single course of
Says things others want to hear	Tells it like it is
Sensitive to information about others	Sensitive to others' affect
Exploitive but not viciously so	May appear unreasonable in negotiations
Exploits more if others can't retaliate	Reluctant to exploit
Not susceptible to appeals for compliance, co-operation or attitude change	Reacts in socially desirable ways
Never obviously manipulative	Often obviously determined
Prefers fluid environment	Seeks stable environment
Preferred by peers as leader	
Preferred by peers as work partner	

Table 1: Nominal Machiavellian characteristic summary.(Nelson &Gilbertson,1991).

1.9 Machiavellianism and Success

It has been found that high Machs win over low Machs in certain situations. The key issue is whether the admitted success of high Machs to win by manipulating others in laboratory settings can be transferred to socio-economic success in the real world. The research results so far have been mixed. Early research by Christie and Geis, (1970) failed to display any relationship between Machiavellianism and success as defined by 'upward social mobility' (p.354). Research by Turnbull (1976) using 201 college student salespeople as subjects showed no relationship between Machiavellianism and two measures of sales success. Further, Touhey (1973) found no relationship between Machiavellianism and social mobility in a sample of 99 adult males. Heisler & Gemmill (1977) also found only limited evidence of a relationship between Machiavellianism and upward mobility. Gable & Topol (1991) found no evidence to suggest that Machiavellianism affects job performance in terms of sales per square foot, gross margin percentage and inventory turnover amongst 60 retail store managers.

Alternatively, some research reports have indicated a positive relationship between Machiavellianism and perceived job performance (Chonko, 1982). Milord & Perry (1977) found sales success and Machiavellianism was significantly related in a sample of car salesmen. Martinez (1981) found that Machiavellianism was the strongest predictor of performance in a competitive bargaining 'Parcheesi' type game. Research by Paulhus, Molin & Schuchts (1979) found that within the sports of football and tennis athletes' success was strongly related to their belief in Machiavellian tactics. Adding further support, research by Jones & White (1983) found that Machiavellianism, task orientation and their interaction were significant predictors of a group's effectiveness in a management simulation game. The study involved 115 graduate business students most of whom were men employed full time in technical-professional management fields. This was recently replicated by Jaffe, Nebenzahl & Gotesdyner (1989) who found similar results in that

Machiavellianism was significantly correlated with effectiveness in a management game. These conflicting findings have led researchers to examine why in some situations high Machiavellians rate as being more successful but not in others.

Gable & Dangello (1992) found that when job involvement is considered as a moderating variable between Machiavellianism and job performance, there is a significant positive relationship between job performance and Machiavellianism. Gable & Dangello (1992) conceded that the relationship between Machiavellianism and job performance that was initially researched and rejected by Gable and Topol (1991) does exist, though it is moderated by job involvement. This is an important point and the following section will explore the ramifications this research has on the study of Machiavellianism.

1.10 Machiavellian and the Importance of Moderating Variables

Moderating variables are an important component of Machiavellian research, Christie and Geis (1970) realised the importance of certain 'loose structure' conditions required for Machiavellians to out perform their low Mach counterparts. These were (1) face to face interactions with others, (2) latitude for improvisation and (3) arousal of irrelevant affect, (House, 1988). Gleason, Seaman & Hollander (1978) in their sample of 214 male university undergraduates found support for the theory that low structure is required for high Machiavellians to emerge as leaders. Gable & Dangello (1992) make the point that too often researchers forget the necessity and importance of these conditions and variables in studying the Machiavellian construct.

Okanes & Stinson (1974) found that when latitude for improvisation was high, students who rated high in Machiavellianism were chosen significantly more often as leaders of groups in a management simulation game. Conversely, when latitude for improvisation was low, after a considerable time period had elapsed,

high Machs emerged as leaders no more often than others. Further support was found for the moderating effect of a structured work environment on Machiavellianism and job performance in a study by Gable, Hollon & Dangello (1992). It was found that Machiavellians who perceived that their supervisors initiated a loose work environment structure outperformed their low Mach counterparts. When it was perceived that supervisors initiated a highly structured environment there were no differences in performance between high and low Machs.

Other variables have been found to affect the interaction of Machiavellianism and performance indicators. An example of this is Touhey's (1973) study which initially found no relationship between Machiavellianism and social mobility. However, for men with above average intelligence, Touhey (1973) found a significant positive relationship between Machiavellianism and social mobility. Conversely for men with below average intelligence he found a significant negative relationship. This indicates that intelligence was acting as a moderating variable on Machiavellianism and social mobility.

These findings prompted Turner & Martinez (1977) to re-examine the original Christie and Geis (1970) data. They found that well educated Machiavellians were more likely to have prestigious jobs and higher incomes while for Machiavellians with below average education, Machiavellianism was inversely related to occupational attainment and unrelated to income. Schultz (1993) makes the important point about Turnbull's (1976) study that the sales people had little latitude to improvise during the actual sales negotiation process in ways that affected their rewards outcome. It is not surprising that there was not a significant link between Machiavellianism and sales success. Similarly Sparks (1994) reanalysed the data from Hunt & Chonko's (1984) study, taking into account the moderating role of latitude for improvisation. While Hunt & Chonko

(1984) initially did not find any relationship between Machiavellianism and success when the data was re-analysed accounting for latitude of improvisation a significant relationship between sales success and Machiavellianism was found. Situational variables play an important role in defining Machiavellian behaviour. These and other personality and demographic variables must be considered when drawing conclusions about Machiavellian people. When these are accounted for, the research reviewed suggests that Machiavellianism may have a direct link with success indicators. Figure 1 shows how high and loose structured situations effect the tactics of people with a high or low Machiavellian persuasion.

PERSONALITY   TACTICS

High Mach

Cool (not distracted by
   irrelevant affect)

Orinted Towards:

Self-defined goals
Task success
Information Processing
Cognitive, explicit cues
and responses

SITUATION

Loosely structured

Exact role behaviour of
participants not pre-
defined

Exact means to achieve
goals not pre-defined
Requiring Improvisation

Limits Testing

Initiation and control of
   structure

Instrumental exploitation
   of resources

Implicit assumption of
unstated limits (e.g.
"reciprocity")

Accept structure provided
by others

Get carried away (from
predefined goals) in
interaction process

Low Mach

Open (susceptible to af-
fective involvement

Oriented Toward:

Interaction Process
Getting carried away
(distractibility)
Immediate, Implicit action
cues and responses

Highly structured

Role and reward structure
clear and pre-defined

Exact responsibilities and
means to achieve
goals predefined
Requiring little improv-
isation

Work within the given
system

Perfunctory performance
(occasionally apathy)

Work within the given
system

Serious effort to perform
well

Figure 1: Model of interaction between Machiavellianism and situation with predicted tactics.
(adapted from Shultz, 1993).

1.11 Motives (Needs).

Some people yearn for success, others concentrate on status, they want to be admired and respected. Other individuals seem primarily concerned with friendship or love; pleasant, satisfying relations with others are what they crave most. These can be thought of as a person's motives. The effect of human motivation on performance is an accepted concept in psychology (Cascio, 1991). Research is clear that motivation is a crucial element in the work success of individuals, managers, organisations, and entire countries (Chusmir & Azevedo, 1992). Needs or motives are precursors to motivation, that is they are what give people the desire to behave in a particular manner, Atkinson (1958). While they are not the only reasons for behaviour, they are major determinants in directing and energising human action (Winter, 1973). Over several decades McClelland, Atkinson, and their colleagues have studied the nature, sources, and effects of needs, including the need for achievement, need for affiliation, and need for power (e.g., Atkinson, 1958; McClelland 1961, 1975, 1985; Winter, 1973).

1.12 Need for achievement (n Ach): The quest for excellence

As the name suggests achievement motivation relates to the strength of individual's desire to excel - to succeed at difficult tasks and do them better than anyone else (Schneer & Chanin, 1987). Persons high in such motivation show several consistent tendencies (McClelland, 1961). First, they are task oriented in outlook, their major concern is getting things done and accomplishing concrete goals. Additional considerations, such as good relations with others, are of less concern to them. This is supported by the work of Parker and Chusmir (1991) who found in their sample of 756 full time managerial and non managerial service industry workers, need for achievement is positively related to success strivings for status/wealth, professional fulfilment and contribution to society. It was found to be negatively related to personal fulfilment and security. Margerison

(1984) also found in his study of British CEO's that they rated need for achievement very important in obtaining managerial success.

Individuals with a high need for achievement tend to prefer situations involving moderate levels of risk or difficulty. In contrast, persons with low achievement motivation tend to prefer situations involving either very low or very high levels of risk. The proposed reason why individuals with a high need for achievement prefer situations of moderate risk is that in these situations the chances of success are good, but are still sufficiently challenging to make the effort worthwhile. Persons low in achievement motivation prefer very low or very high levels of risk because in the former they are almost certain to succeed, while in the later they can attribute failure to external causes (e.g., the extreme difficulty of the task). People with high achievement motivation strongly desire feedback on their performance. This allows them to adjust their goals in terms of current conditions and allows them to know when, and to what degree, they have succeeded (Baron & Greenberg, 1990).

Given their strong desire to excel, it is reasonable to assume that individuals high in achievement motivation will attain greater success in their careers than those who do not have strong achievement motivation. To some extent this has been found to be true. Persons high in achievement motivation gain promotions more rapidly than persons low in such motivation, at least early in their careers (McClelland, 1975). However, persons high in achievement motivation do not always make superior managers. Sometimes they perform worse in this role than those who score lower in achievement motivation. This is proposed to be because of two factors. First, persons high in achievement motivation want to do everything themselves and they are reluctant to delegate. This causes them difficulty in organisations when their work load is high. Second, they desire immediate feedback on their work. Often, this is unavailable, and its absence can

interfere with their efficiency. This finding was supported by Cornelius & Lane (1984) who found in their sample of 31 managers from profit making organisations a high need for achievement was associated with success at lower levels of non-technical management jobs, in which promotion depends more on individual contributions than it does at the higher managerial levels. At higher levels promotion depends on demonstrated ability to manage others and in this situation high need for achievement was not related to success.

Whereas high need for achievement seems to be unrelated to managerial success in a bureaucracy, it is strongly related to success as an entrepreneur (McClelland & Boyatzis, 1982). Support for this was also reported in a 7-year longitudinal study of agricultural entrepreneurs by Singh (1978). In this study it was found that agricultural entrepreneurs with high need for achievement continue to increase their productivity more than their low need for achievement counterparts. The study also lent support to the theory that need for achievement is a stable motivator.

Research by Kae Won Sid and Lindgren (1981) proposed that in a sample of 339 university undergraduates, students majoring in business, especially in the field of marketing would have higher need for achievement than other students. The rationale for this hypothesis was based on McClelland (1961) and McClelland & Winter's (1971) research in which they found that individuals successfully engaged in selling and other entrepreneurial activities tend to score higher on need for achievement than those in other fields. This hypothesis was supported by Kae Won Sid & Lindgren's (1981) findings that male marketing students scored significantly higher on need for achievement than other students. The third objective of the present research is to attempt to replicate these findings in a New Zealand university setting. The following hypotheses are based on Kae Won Sid & Lindgren's (1981) study:

Hypothesis 3 'That business students will have a higher need for achievement than non business students and that amongst the business students marketing students will have the highest need for achievement.'

1.13 Need for power

Initially McClelland emphasised the behaviour and characteristics of individuals with a high need for achievement. Later, he focused his attention on the need for power and its correlates. The term 'need for power' refers to a persons desire to be in charge of events and people around them (Schneer & Chanin, 1987). McClelland (1970), divided 'need for power' into socialised power and personal power. Socialised power (i.e. influencing others for the sake of the social, group, or organisational goals) has been found to be a characteristic of effective managers. The personal or negative face of power has been related to behaviour that implies personal dominance or aggression e.g., fighting, sexual conquest, and excessive drinking (McClelland, 1970, 1975).

Research by Chusmir & Azevedo (1992) using chief executive officers from 50 of America's largest companies found that a high need for power present in the chief executive officer was significantly associated with growth in company profits. This suggests that the power motive of managers may have a direct influence on the company in which they are working. This idea is supported by Lewin & Stephens (1994) who found that the managing director's attitudes directly affected organisational outcomes. Parker & Chusmir (1991) found in their sample of 756 full time managerial and non-managerial service industry workers that need for power is positively related to status, wealth and professional fulfilment. However, the downside of need for power found in this study was a negative relationship between need for power and family relationships. Based on the definition of need for power which is a person's desire to be in charge of

events and people around them (Schneer & Chanin, 1987) the following hypothesis is formulated:

Hypothesis 4 'That business students will have a higher need for power than their non business counterparts and the management majors will have the highest need for power of all the student population'.

1.14 Need for affiliation

The desire to have close, friendly relationships with others is known as the need for affiliation. People whose main concern is the feelings of others and what impact their actions will have on the people around them characterise those with a high need for affiliation. The need for affiliation has received little research compared to need for achievement and need for power. However, the combination of these motives provides the majority of the research. One study that has examined the need for affiliation is by Kae Won Sid & Lindgren (1981). These researchers found, consistent with their hypothesis, that in their sample of 339 university students those in the 'helping professions' (areas which emphasise warmth and supportive relationships with others) rated higher in need for affiliation than other students. The present study attempts to replicate these findings in a New Zealand university setting. The following hypothesis is formulated:

Hypothesis 5 'That students in the 'helping professions' of nursing, education, and social work will score higher in need for affiliation than other university students'.

1.15 Leadership Motive Pattern (LMP)

The questions that have been asked in the past are "is there a kind of individual that is most successful in the managerial role?" If so "what characterises that

individual?" A possible answer to the first question was studied by McClelland and Boyatzis (1982) who proposed that a person high in power motivation but low in need for affiliation may indicate a successful manager. Such persons will focus on gaining influence over others while at the same time avoid the trap of being unduly concerned about being liked by them. In other words, they will seek power and influence, but will not shy away from the tough decisions (and actions) often required by this quest.

This motive pattern of a high need for power and a low need for affiliation was first described by McClelland in his book *Power: the inner experience* (1975) in which it was termed the empire building or Leadership Motive Pattern (LMP). Support for the Leadership Motive Pattern has been found in the McClelland & Boyatzsis (1982) study. In their investigation, 237 managers at the American Telephone and Telegraph Company were measured on their need for power, need for achievement and need for self control. On the basis of these results the managers were split into two groups, those who displayed the Leadership Motive Pattern and those who did not. The researchers then obtained job information regarding levels of promotion after 8 and 16 years of them joining the organisation. This longitudinal study found strong support for the role of the Leadership Motive Pattern in managerial success, at least for managers who held non-technical positions. For this group, persons who possessed the Leadership Motive Pattern were much more likely to be promoted to higher level jobs than those who did not. The correlation between the Leadership Motive Pattern and management progression was +0.33. Cascio (1991) suggests that this is very impressive, considering all of the other factors (such as ability) that also might account for upward progression in a bureaucracy over a 16 year period. It was theorised that these findings did not hold true for managers holding technical jobs because for them, promotion depended mainly on technical competence, not the ability to deal effectively with others.

A study by Cornelius & Lane (1984) involving 39 managers and directors from profit making second language instruction agencies found that the Leadership Motive Pattern was significantly linked with the 'importance' of the centre where the manager worked, but was not found (consistent with the previous study) to be linked with managerial success in technical or professional settings, again because these managers' success was not related to dealing effectively with others.

"Can personal motives make a leader great?" This question was examined in a study by Winter (1987). The inaugural addresses of the first 34 presidents of the United States were scored for the presence of three motives: achievement, affiliation and power. Large differences along these dimensions were found between the presidents. Winter (1987) estimated the level of each of these motives prevailing in American society at the time each president was elected. This information was derived from careful analysis of popular novels, children's books and even hymns. Winter (1987) then correlated the scores of each president on achievement, affiliation and power with an index of their popularity (the percent of the vote they received) and with ratings of their greatness provided by more than 500 historians. The results showed that the closer the match between a president's apparent motives and those of society, the greater his popularity. Second, the closer this match the lower the president's rating of greatness.

These findings suggest that there might be some truth in the popular notion that in order to be considered 'great' a leader must truly lead. They must change society in important ways, not merely reflect the current views (Baron & Greenberg, 1990). Whatever the case, the pattern of achievement, affiliation and power motivation shown by political candidates appears to play an important role in determining if they are elected and how successfully they perform once they are in office. Spangler & House (1991) took Winter's (1987) study a step further and

examined the link between presidential effectiveness and the Leadership Motive Profile. Their findings supported the premises of the Leadership Motive Pattern in that high need for power and low need for affiliation was associated with presidential greatness. They adopted the notion that in essence presidents are like CEO's of the country and drew parallels with managers operating within organisations. Overall, support for the Leadership Motive Pattern has generally been supported though like Machiavellianism, attention has to be paid to moderating variables.

1.16 Machiavellianism and Motives

The majority of the research examining the relationship between Machiavellianism and motives has been concerned with the need for achievement. The results from this research has been mixed. Christie and Geis (1970) report that in most informal discussions of Machiavellianism somebody asks about the relationship with achievement motivation. They find the question puzzling as they "know of no compelling theoretical reasons why a desire to achieve should be related to Machiavellianism" (p. 240). The fact that so many people have looked at this relationship would suggest that at least at an intuitive level, if not theoretically, many people see a relationship between the two traits (Johnson ,1980).

Weinstock (1964) in his study of Hungarian refugees found a positive link between Machiavellianism and need for achievement. Johnson (1980) conducted similar research in which 80 male students were administered a need for achievement scale and a Machiavellian scale. The results significantly demonstrated a positive link between Machiavellianism and the need to achieve. Conversely, in a study by Smith (1976), 77 subjects from the general college population were administered an achievement motivation scale and a Machiavellianism scale. A significant negative correlation (-0.36) was obtained. Okanes & Murray (1980) found a similar negative relationship between

achievement motivation and Machiavellianism in their sample of 51 male and 51 female managers. These inconsistent findings justify the statement of Christie and Geis (1970) that "the question of the relationship between Machiavellianism and achievement motivation remains an open one(p.185)." The next objective of the present research is to examine the link between Machiavellianism and need for achievement. The following hypothesis is formulated, though direction of the relationship is at present uncertain:

Hypothesis 6 'That Machiavellianism is significantly related to need for achievement'.

The relationship between Machiavellianism and the motives of affiliation and power are not so well researched as the relationship between Machiavellianism and need for achievement. Due to the basic characteristics high Machiavellians possess, one would expect a negative relationship between Machiavellianism and affiliation. Machiavellians by definition are not concerned with individuals and are willing to manipulate in order to attain their goals. As far as this researcher is aware the direct link between Machiavellianism and affiliation has never been researched. However, statements such as that of Christie & Geis (1970), "High Machiavellians as contrasted to low Machiavellians have a negative view of people in general (p.140)", indicate that a negative relationship exists. Vleeming's (1979) review article also included findings that, "They (high Machiavellians) have only little empathatic capacity and little respect for others, and besides they do not think much of equality, forgiving or honesty (p. 300)". Again this supports the notion that a negative link between Machiavellianism and affiliation would be expected.

Similarly, the relationship between Machiavellianism and power has had little research, though it is accepted that Machiavellianism is a power relevant

personality trait (Gram & Rogers, 1990). Niccolo Machiavelli developed the concept as a way to seize and retain power, so one would expect a strong positive relationship between need for power and Machiavellianism. The final objective of the present research is to examine the link between Machiavellianism and motives. It is theorised that Machiavellianism is a characteristic that would indicate a person has a motive pattern similar to the Leadership Motive Pattern, that is, a high need for power and a low need for affiliation. Following from this, the final hypothesis is formulated:

Hypothesis 7 'That need for power, need for affiliation, need for autonomy and need for achievement will be significantly correlated with Machiavellianism and will predict Machiavellianism orientation whilst controlling for age and sex'

If this was found to be the case then this would help remove the social stigma that is attached to the Machiavellian. If the Machiavellian trait was understood in terms of motivational drives then this understanding would support the notion that the Machiavellian is not inherently bad or immoral, rather they may simply be more focused or determined to achieve their goals. Everyone can recall a situation where they have been determined to achieve an objective and no person or object could stand in the way. This is probably the closest most of us would get to be Machiavellian. The Machiavellian may simply be more determined and willing to bend the rules (or even make their own) to reach the final outcome. When a Machiavellian has objectives in line with an organisation and the people within the organisation then it is easy to see how they could become a truly powerful business associate, a person who you could count on, one hundred percent, to give everything they could to obtain their goals. Christie and Geis (1970) may have been leading to a similar conclusion with their following remarks:

"Initially our image of the high Mach was a negative one, associated with shadowy and unsavoury manipulations. However, after watching subjects in laboratory experiments, we found ourselves having a perverse admiration for the high Machs ability to outdo others in experimental situations. Their greater willingness to admit socially undesirable traits compared to low Machs hinted at a possibly greater insight and honesty about themselves . . . Although we do not claim to have reached a stage of complete objectivity, we certainly do not have the same visceral reactions to the term 'Machiavellianism' that we had earlier". (P. 339).

Only when the construct of Machiavellianism can be examined objectively will the worth of the Machiavellian be understood, only once we understand what motivates the Machiavellian will we be able to reach the objectiveness that is necessary. The present study aims to be a starting point for the study of Machiavellianism and the relationship with motivational drives. With additional research and extension on this line of inquiry what motivates the Machiavellian to behave as they do, will be better understood. If this is done then the Machiavellian may no longer be viewed as an immoral, untrustworthy, unfortunate product of human nature and the true worth of the Machiavellian will be revealed.

2 OBJECTIVES AND HYPOTHESES

2.1 Objectives

The primary objective of the present study is to explore in more detail the relationship between Machiavellianism and the personal motives of achievement, power, affiliation and autonomy. Second, the present study aims to extend the research into the link between career path and Machiavellianism tendency. This particular objective will be attempted by partially replicating the study by McLean and Jones (1992). Third, the present study aims to examine the differing levels and patterns of personal motives of people choosing different career paths. Again partial replication of a previous study, Kae Won Sid & Lindgren (1981) will act as a guide for this. Finally, the impact of the demographic variables of age and sex will be examined to see if there is a link between these and Machiavellianism or personal drives. The following questions will be addressed through the course of the present research.

1) Is there a relationship between Machiavellianism and need for achievement, need for affiliation, need for power and need for autonomy or the Leadership Motive Pattern?

2) Do students from different academic disciplines and majors differ significantly in levels of Machiavellianism and the personal motives of achievement, affiliation, power and autonomy or the Leadership Motive Pattern?

3)   Does age or sex influence Machiavellian tendency or the motives of achievement, affiliation, power, autonomy or the Leadership Motive Pattern?

2.2 Hypotheses

Based on the objectives and research questions proposed, the following hypotheses are derived. These will be tested specifically by statistical analysis and through the course of the study other significant findings that are of interest will be examined further.

Hypothesis 1 'That business studies students will be more Machiavellian than their non business counterparts. Furthermore amongst the business students the marketing students will be the most Machiavellian'

Hypothesis 2 'That Machiavellianism and age will be inversely related and that males and females will differ significantly on Machiavellianism'.

Hypothesis 3 'That business students will have a higher need for achievement than non business students and that amongst the business students marketing students will have the highest need for achievement.'

Hypothesis 4 'That business students will have a higher need for power than their non business counterparts and the management majors will have the highest need for power of all the student population'.

Hypothesis 5 'That students in the 'helping professions' of nursing, education, and social work will score higher in need for affiliation than other university students'.

Hypothesis 6 'That Machiavellianism is significantly related to need for achievement'

Hypothesis 7 'That the Leadership Motive Pattern and need for autonomy will be significantly correlated with Machiavellianism and in combination with need for achievement will predict Machiavellianism orientation whilst controlling for age and sex'

3 METHOD

3.1 Subjects

A total of 494 (205 male, 289 female) undergraduate students completed the Christie and Geis (1970) Mach IV scale and the Steers and Braunstein (1976) Manifest Needs Questionnaire. Subject ranged in age from 18 to 55 (Mean 23.3, S.D. 6.2). Subjects were engaged in many different study disciplines. A demographic summary and descriptive statistics of the subjects are provided in Appendix 1. The subjects used in the present research were not a random sample in the sense that they are drawn from selected university disciplines and not all students from these disciplines completed the questionnaires

3.2 Measures

3.2.1 The Mach IV scale:

Niccolo Machiavelli recorded his views in a number of books, the most famous being 'The Prince' (1513), and 'Discourses on the First Ten Books of Titus Livius' (1513). Interpretation of these books by Christie and Geis (1970) have culminated in the term Machiavellianism. The Mach IV is a Likert type response scale that consists of 20 questions that were derived by Christie and Geis (1970) from an initial set of 75 statements from 'The Prince' and 'Discourses ...'. The Likert scales for each of the items comprise of a seven point response dimension running from 'strongly disagree' to 'strongly agree'. A second test has also been developed by Christie & Geis (1970), the Mach V. The Mach V involves forced

choices on a number of triadic statements. Zook (1985) determined that the Mach IV is the better of the two scales in terms of internal consistency and test-retest reliability and the Mach IV provides comparable validity to the Mach V. Based on these arguments and due to the ease of administration of the Mach IV it was selected to measure the construct of Machiavellianism in the present study. A copy of the Mach IV scale used in the present study is provided in Appendix 2.

Reliability of the Mach IV

Test-retest reliability refers to the stability of the test over time. Kline (1993) suggests 0.8 as being a minimum acceptable figure though there are others who would contest this and suggest that 0.7 is adequate (Landy, 1989). Some frequently used tests have reliabilities only in the 0.5 range (Landy, 1989). Examination of the research reveals two studies that report the test-retest reliability of the Mach IV scale. Zook (1985) found that the Mach IV had a six week test-retest coefficient of 0.76, and Kraut and Price (1976) recorded a test-retest reliability coefficient of 0.73. These two scores indicate good test-retest reliability of the Mach IV scale.

The second type of reliability examined was equivalent form reliability. Surprisingly even with the construction of a Mach IV and a Mach V along with a modified Mach V scale by Gutermann (1970) only once in the literature has an equivalent form reliability test been conducted. This was done by the original Mach IV and Mach V scale creators Christie and Geis (1970) and resulted in a coefficient equivalence of 0.67 which indicates that the two tests are measuring a

similar construct. It is interesting that more comparisons between the available Machiavellian scales have not been conducted to lend support to the equivalent form reliability of the scale. In reality there are not many instruments available to measure the narrow concept of Machiavellianism. It is not like other constructs such as dexterity or intelligence which have many scales which allow equivalence tests to be conducted.

The third and arguably most important form of reliability examined was internal consistency reliability which indicates the homogeneity of the questions within the test. Kline (1993) states that high internal consistency is a pre-requisite for high validity and the importance of high internal consistency is now generally acknowledged by researchers. The literature provides two accepted approaches to determine the internal consistency of the Mach IV scale, these two measures being split half reliabilities and alpha coefficients. Split half reliability scores are available in most of the literature reviewed. Oskenberg, (cited Vleeming, 1979) reports in his cross cultural study with the English version of the Mach IV split half reliabilities of 0.73 for men and 0.39 for women. Starr, (cited Vleeming, 1979), records for the same scale, 0.70 split half reliabilities for both sexes. These results are similar to the original split half reliability of 0.79 that Christie and Geis (1970) obtained for their own Mach IV scale.

More recent studies tend not to quote split half reliabilities, rather they favour the use of the Cronbach's alpha scores which range from 0.70 to 0.80. Gable and Topol are key researchers into the concept of Machiavellianism and have been

catalysts for the renewed interest in the area. Their correlations for the internal consistency of the Mach IV are consistently above 0.75, (Gable and Topol, 1984,1987,1989,1991; Gable, Hollon and D'Angello,1990). These results lie above Kline's (1993) suggested minimum score of 0.70 and therefore do suggest that the items within the test are homogenous.

Overall the literature supports the Mach IV on test-retest, equivalent form and internal consistency. The Mach IV does have homogenous content which refers to the internal consistency of the test and evidence for this is provided in both the split half comparison results and Cronbach's alpha findings. Considering the elusive nature of the Machiavellian concept the studies on the reliability of the Mach IV scale provide strong support for the internal consistency of the scale. The test-retest scores support the stability of the test over time, therefore meeting the dual nature of reliability, as stated by Kline (1993) "that reliability refers to both internal consistency and the consistency of a test over time (p. 234)".

Validity of the Mach IV

In terms of validity, the Mach IV is the only accepted test available that measures the domain of Machiavellianism. Through the construction of the original Mach I test the concept of Machiavellianism was defined, a reverse of the usual course of construct development. Once Machiavellianism was defined by Christie and Geis (1970), the Mach IV was developed. A series of items that were believed to be congruent with statements based on "*The Prince*" and "*The Discourses...*" were compiled. Factor analyses of these statements produced the most discerning 20

from the original 71. The original 71 statements were known as the Mach I scale. With this approach to developing the scale it is logical that the content of the questionnaire is reflective of the Machiavellian domain and that the items selected have a direct link to the attitudes of Machiavellians.

The Mach IV scale consists of three parts - morality, views and tactics and each of these is covered by some of the questions in the scale. At the time the scale was developed no experts on Machiavellianism existed. In fact it could be argued the only expert was Niccolo himself, and it was from him that statements were derived from which the questionnaire was developed. It can be assumed through the way the scale was constructed and each item subjected to rigorous examination that the Mach IV scale does possess a high degree of content validity. The items in the scale do measure comprehensively the concept of Machiavellianism.

Kline (1993) suggests for the construct of extroversion, that the establishment of predictive validity is impossible. Machiavellianism may fall within the same category, in the sense that demonstrating predictive validity is at best difficult. There is no one outcome of being Machiavellian. It may have some influence on variables such as morality and ethics, but there have been no definitive attempts to establish the predictive ability of the Mach IV scale. However, the concept of Machiavellianism and the results from the Mach IV scale have been used to predict success in competitive situations (Christie and Geis, 1970). In all of the

studies it was found that level of Machiavellianism was predictive of 'winning' which provides evidence to support the predictive ability of the Mach IV scale.

Kline (1993) suggests that thorough empirical examinations of the measure need to be conducted to see if it is consistent with the construct that it is supposed to measure. He further explains that construct validity is derived by establishing hypotheses based upon the nature of the variable, and then testing these. Construct validity by nature incorporates all of the other types of validities which is emphasised by Messick (1990) who adopts the view that construct validity is a unitary concept that encompasses all types of validity.

The concept of Machiavellianism was first developed some 25 years ago and since its conception much construct validation has been produced through experiments and studies examining hypotheses on the relation of the Machiavellian construct with other variables. These theoretical hypotheses have been studied and significant correlations have been established, most notably the relationship between Machiavellianism and external locus of control ($r = 0.43$, $p < 0.01$) by Gable, Hollon and Dangello (1990), job satisfaction ($r = -0.42$, $p < 0.01$) by Topol and Gable (1988), further supported ($r = 0.35$, $p < 0.01$) by Hollon (1983). It is also revealed that Machiavellianism is positively related to role ambiguity ($r = 0.34$, $p < 0.01$) and job related tension ($r = 0.279$, $p < 0.05$) (Hollon, 1983). Touhey (1971) found a positive correlation between aggression and Machiavellianism ($r = 0.41$, $p < 0.01$) and lack of self control and Machiavellianism ($r = 0.59$, $p < 0.01$).

Perhaps the most significant evidence for construct validation is the results from research by Lamdan and Lorr (1975) who recognised that conceptually Machiavellianism is related to abstract ideas like 'duplicity' and 'distrust in people'. Their findings supported this proposition when Machiavellianism was compared to four scales in the interpersonal style inventory and resulted in significant correlations between Machiavellianism and conscientiousness ($r = -0.68$, $p < 0.01$), trust ($r = -0.62$, $p < 0.01$), and defensiveness ($r = -0.37$, $p < 0.01$). Machiavellianism was also significantly negatively correlated with empathy ($r = -0.58$, $p < 0.01$), respect ($r = -0.43$, $p < 0.01$) and concreteness ($r = -0.54$, $p < 0.01$).

Ramanaiah, Byravan & Detwiler (1994) examined the construct validity of the Mach IV by dividing their subjects into Machiavellian and non-Machiavellian groups based on their scores on the Mach IV scale. These two groups were then administered the Revised NEO Personality Inventory Profile and results based on univariate and multivariate analyses of variance were examined. It was found that the Machiavellian and non-Machiavellian groups were significantly different in their personality profiles, supporting the construct validity of the Mach IV.

Ramanaiah, Byravan & Detwiler's (1994) study and the correlational findings support the construct validity of the Mach IV in that they confirm relationships that would be theoretically expected to exist. From both an empirical and intuitive viewpoint the call for the construct validity of the Mach IV scale has been answered. This is supported by Schultz (1993) who concluded "Well over

100 studies have discriminated perceptual and behavioural differences between high and low Machs, and today the predictive validity of the Mach scales seems to be universally accepted (p.485)".

3.2.2 The Manifest Needs Questionnaire (MNQ)

The Manifest Needs Questionnaire was developed by Steers and Braunstein (1976). It was designed to measure four needs or motives. The needs measured by the MNQ are achievement (n Ach), affiliation (n Aff), autonomy (n Aut) and dominance (n Dom). The reason for the development of this scale was to provide a short, reliable and valid scale to replace other much longer instruments (Steers & Braunstein, 1976). The MNQ consists of four scales, one to measure each need. Each scale is comprised of five items two of which are reverse scored. There is a seven point Likert response format ranging from 'always' through to 'never'. A copy of the MNQ used in the present study is provided in Appendix 2.

The development and validation of the MNQ involved three empirical studies using (1) a sample of 96 management students employed in a variety of jobs, (2) white collar employees from a car company and (3) 382 hospital employees. In the first study, the results obtained were for n Ach a mean score of 4.3 (S.D. 0.71), alpha coefficient of internal reliability of 0.66 and a test-retest correlation after a two week period of 0.72. The corresponding statistics for n Aff were 4.1, 0.56, 0.56, and 0.75; for n Aut: 3.7, 0.62, 0.61, and 0.77; and for n Dom: 4.2, 1.09, 0.83, and 0.86.

The test-retest reliabilities for the Manifest Needs Questionnaire for the four scales range from 0.72 for n Ach to 0.86 for the n Dom sub-scale. These scores satisfy the minimum suggested requirement of 0.7 (Kline, 1993). The results concerning the internal consistency of the Manifest Needs Questionnaire produced positive findings. Reported alpha coefficients for the need for achievement sub-scale of 0.66 are considered acceptable (Landy, 1989). The alpha reported for the need for affiliation scale was 0.56 which is low, but still above Landy's (1989) suggested minimum of 0.50 which many accepted scales have. The reported need for autonomy alpha coefficient of 0.61 is acceptable and the reported alpha of 0.83 for the need for dominance sub-scale is excellent. These findings by Steers and Braunstein (1976) indicate that the items within the sub-scales are homogenous and stable over time.

Findings from the second study showed weak correlations between the four scales. These ranged from -0.34 to +0.36 with a median of 0.17. The two strongest correlations were between n Ach and n Dom (0.36) and n Aff and n Aut (-0.34). The positive correlation between n Ach and n Dom indicates that those who have a desire to excel and do better than everybody else also like to be in control of others and the immediate environment around them. As expected the relationship between n Aff and n Aut was negative, again making theoretical sense. If people have a tendency to prefer to work alone (high n Aut) then it would be expected that they would have a low need for satisfying relationships with those around them (n Aff).

Construct validity is further supported by the correlations of the four motivational needs with organisational commitment. Need for achievement was found to correlate 0.25, n Aff 0.19, and n Aut -0.25, with organisational commitment. With regard to n Ach this would indicate that people who have a high level of this drive are willing to stay with an organisation. The positive n Aff correlations are explained by those who enjoy being around others wish to stay because they enjoy the people with whom they work and feel a reluctance to leave the organisation. Conversely, those who are high in n Aut feel little for the company and are quite willing to leave it. Therefore, it would indicate that their independence transfers from people to the organisation and they are not attached in any way to the company. The negative correlation indicates that they are quite willing to leave the organisation if the opportunity arises (Steers & Braunstein, 1970). The finding that n Ach had a positive correlation of 0.31 with job involvement is explained by those who have a strong desire to achieve, are more willing to immerse themselves in any work available and will do so at any opportunity to get ahead.

Construct validity is further supported by the finding that need related behavioural ratings were found to correlate with the sub-scales of the MNQ (Steers & Braunstein, 1976). The correlations were 0.58 with need for achievement, 0.46 with need for affiliation, 0.44 with need for autonomy and 0.49 with need for dominance (Steers & Braunstein, 1976). Correlations of the four sub-scales with Jackson's (1967) Personality Research Form were 0.61, 0.40, 0.42 and 0.62 respectively, again lending support to construct validity. A third supporting study

of the construct validity of the MNQ was provided by having experts rate a group of subjects on their motivational drives through observation. These subjects then completed the MNQ and their scores were compared to the experts ratings. This study yielded the following correlations with the MNQ sub-scales, 0.55 for need for achievement, 0.33 for need for affiliation, 0.54 for need for autonomy and 0.74 for need for dominance (Steers & Braunstein, 1976).

These findings suggest that the Manifest Needs Questionnaire is tapping into the constructs it was designed to measure, though it is noted that the sub-scales for need for affiliation and need for autonomy should be cautiously interpreted as they are considerably lower than the other two sub-scales of need for achievement and need for dominance which have displayed strong evidence of construct validity.

From these findings it is reasonable to conclude that the MNQ is a reliable scale though some more recent studies have noted a need to take care when using the scale and in particular the autonomy and affiliation sub-scales (Chusmir, 1988). The following table gives results obtained from previous studies that have used the Manifest Needs Questionnaire.

Study	Sample	Needs	M	SD	Internal consistency
Morris & Snyder (1979)	262 nonacademic university employees	n Ach	4.92	.84	.63
		n Aut	3.91	.93	.68
Chusmir & Hood (1986)	799 (358 men, 441 women) in 34 western organisations (22% nonmgrl; 50% pro- fessionals; 28% managers) Age 34.4	n Ach	5.39	.66	.57
		n Dom	4.41	.88	.74
		n Aff	4.01	.52	.13
		n Aut	3.87	.64	.38

Chusmir & Koberg (1986)	165 (96 men, 69 women) 100% managers age 41.4	n Ach 5.21 n Dom 4.44 n Aff 3.91 n Aut 3.99	.85 .97 .65 .87	.87 .91 .75 .81
Chusmir & Koberg (1988)	222 managerial and non-managerial workers. (107 men, 115 women) (12% nonmang; 60% prof; 28% managers) Age 37.3	n Ach 5.32 n Dom 4.19 n Aff 4.04	.71 .87 .52	.78 .81 .59
Chusmir & Koberg (1987)	298 (135 men, 163 women) managerial (25%) and non-managerial (75%) workers in 6 companies Age 35.8	n Ach 5.36 n Dom 4.32 n Aff 4.06	.67 .87 .56	.60 .72 .58
Koberg & Chusmir (1987)	239(101 men, 138 women) managers (30%) and non-managers or professionals (70%) in 7 companies Age 35.5	n Ach 5.40 n Dom 4.29	.71 .90	.67 .77
Steers & Braunstein (1976)	96 management students in either full or part time employment	n Ach 4.3 n Dom 4.2 n Aff 4.1 n Aut 3.7	.71 1.09 .56 .62	.66 .86 .56 .77
Steers & Braunstein (1976)	382 hospital employees Age 35	n Ach 4.1 n Dom 3.8 n Aff 4.1 n Aut 3.4	.81 1.18 .61 .89	

Table 2: Summary statistics from previous research using the Manifest Needs Questionnaire.

As can be seen from Table 2 most of the reported internal consistency ratings for the Manifest Need Questionnaire sub-scales are above the generally accepted minimum score of 0.50 (Landy, 1988). This indicates that the items in the MNQ

sub-scales are all measuring a similar construct and therefore lends support to the reliability of the scales. In conclusion it would appear that the MNQ is both a reliable and valid measure for the four motivational drives of achievement, autonomy, affiliation and dominance and was therefore deemed appropriate to use as a measure for the present research.

3.3 Procedure

The student subjects were approached during the beginning of their lecture period. They were introduced to the researcher and given a brief explanation of what the study entailed and what they would be expected to do if they agreed to participate. The subjects were then given an information sheet and a consent form with the Mach IV scale and the Manifest Needs Questionnaire attached. The order in which these two measures were presented was alternated to counteract response bias.

The information sheet consisted of a background to the study and instructions on how to complete the questionnaires. Instructions were also given orally to prevent confusion and clarify any questions that the subjects had concerning the study or any aspects of the research. Total confidentiality was assured to the subjects both in the information sheet and orally. A copy of the information sheet is in Appendix 4 and a copy of the consent form is in Appendix 5.

The consent form was signed when the subjects were satisfied that they understood what was involved in the study and what was expected of them if they

agreed to take part in the study. In some of the lectures the subjects completed the questionnaires in lecture time, in other lectures the subjects took the questionnaires and completed them before returning them during the next lecture period. For the subjects who completed the questionnaires during lecture time, they took an average of 12 minutes to complete.

Before returning the questionnaires the subjects were told that they could remove the information sheet for their own interest to review again at a later time. They were also told that if they had any concerns or questions that the researcher could be reached at the address at the top of the information sheet. When the questionnaires were received by the researcher the results from the questionnaires were transferred to a password protected database with access only available to the researcher and his supervisor. Any questionnaires in which the consent forms were not signed were removed and destroyed. The spreadsheet database was converted to an SPSS PC (Statistical Package for the Social Sciences) systems file and then statistically analysed.

3.4 Pilot Testing

Pilot testing was done with a group of 20 subjects who completed the Mach IV and the Manifest Needs Questionnaire scales. They were then asked to provide comments about the scales or any thoughts about the questions in general. It was found that some of the questions in the Mach IV caused discomfort, in particular question 20 - "people forget more easily the death of their parents than the loss of their property". The nature of the Machiavellian construct which the Mach IV

is trying to measure is an area which involves the personal feelings and attitudes that people have, and respondents rate their level of agreement to the various statements. More sensitive people would be expected to react more strongly to the statements but it is assumed that since it is the level of agreement which is being sought that these people would feel 'happy to disagree' with the statement if they desired.

Subjects' expressed discomfort may be due to the pressure to make people think about their personal attitudes caused by the wording of the statements. One would expect this discomfort resulted from incongruence between one's beliefs and the pressure to make socially desirable responses. A person who truly did not agree with the statements would be expected to indicate this on the scale, whereas a person that felt discomfort due to the implications of the question would experience a sense of cognitive dissonance. It is likely that those people who reacted negatively to the task probably dwelled on the statements for a longer period of time and felt uncomfortable about societal expectations.

Other subjects from the pilot study indicated that they found the questions 'thought provoking' and 'interesting'. All found the information sheet clear and easy to understand, as was the layout of the two questionnaires and the format for indicating responses. In the reviewed literature there is no mention of subjects' discomfort as a result of either questionnaire. It may simply not have been examined or not considered worthy of mention in reports. To adjust the Mach IV by removing the sensitive questions would involve tampering with the validity of

the scale. If this was done it would involve the total restructuring of the Mach IV scale and the validation of a new scale. The Mach IV has been used by numerous researchers over the past 25 years and it was considered that it is the nature of the questionnaire to provoke reactions, and this may help achieve the high validity which the Mach IV has consistently obtained. People do take the scale seriously and it does cause them to consider their own personal views. In balance, it was decided that the merits of using the Mach IV scale in its present form far out weighed the negative indications and it was decided to continue with the use of the Mach IV. As the questionnaire was thought provoking it was made clear to the subjects in writing and orally that if they had any questions or concerns regarding the questionnaire at the time of completion or afterwards then the researcher would be available to discuss it with them.

3.5 Data Analysis Procedures

All data analysis was done using the computer package SPSS PC (Statistics Package for Social Sciences). Subjects who had missing data relevant to the particular analysis were removed prior to the calculation being done. Summary statistics were conducted to provide descriptive information of the variables being studied. These can be found in Table 3.

Results from the Mach IV scale were totaled with some of the items being reversed. Following Christie and Geis (1970), a constant of 20 was added to all Mach IV scores, so that scores could range from 40 to 160, with a theoretical neutral point of 100. Scores from the Manifest Needs Questionnaire were divided

into the four motives that the items were intended to measure. From each of these sub groups an average score was established. Thus five scores were recorded, one for each motivational drive - need for achievement, need for autonomy, need for affiliation, need for dominance (power) and a Machiavellian rating. To determine the Leadership Motive Pattern score the technique followed by Cornelius and Lane (1984) was adopted. The LMP was calculated by taking the z score for need for power and subtracting it from the z score for need for achievement. A positive LMP thus means that the student is higher in need for power than need for affiliation and a negative result indicates a preference for an affiliative drive. Alpha coefficients were calculated on the four sub-scales of the Manifest Needs Questionnaire and the Mach IV using the SPSS 'reliability' command.

A correlation matrix will be examined to establish the relationship between the variables used in the research, in particular, the relationship between Machiavellianism and the four motivational needs. It will also be used to examine the relationship between Machiavellianism and sex and age as well as the relationship between the four motivational needs. The Leadership Motive Pattern will be examined in relation to the other variables within the study.

One-way ANOVA's will be used to assess the differences in Machiavellian tendency and motivational drive level between the disciplines to which the students belong. If significant differences are present then a post-hoc comparison will be made using the 'ranges least squares difference' calculation to establish

which disciplines were significantly different on the variables measured. As the second set of research questions had a previously formulated theory concerning which majors would differ from which, 'planned comparisons' analysis will be used.

The relationship between age and Machiavellianism will be examined using the correlation matrix which would establish Pearson's correlation coefficients and therefore determine whether there is some significant relationship present. This relationship will be examined further in later analyses using multiple regression which take the effects of age and sex into account. Independent t-tests will be used to establish whether there is a significant difference between males and females on Machiavellianism, motivational drives and the Leadership Motive Pattern. It was decided that t-tests were appropriate because the difference between two independent groups (males and females) is the focus of these research questions.

To determine the effect that the Leadership Motive Pattern and need for achievement have on Machiavellianism, multiple regression was chosen as the appropriate statistical analysis procedure. The reason for the use of an hierarchical entry method is to establish and control the influence age and sex on the relationships between Machiavellianism and the other variables. Hierarchical multiple regression will consist of three steps, the first will be the entry of age and sex into the multiple regression equation.

The second step will enter the need for autonomy and need for achievement so these motivational needs can be examined in terms of their relationship with Machiavellianism. In the final step the Leadership Motive Pattern will be entered so it can be determined what effect this has on Machiavellianism, after all of the other variables have been accounted for. The main reason why a hierarchical regression equation was chosen is because it allows establishment of the individual contributions that the motivational need variables have on the Machiavellian personality trait. All significance levels will be at the 0.05 level unless explicitly stated in the results section.

4 RESULTS

Statistical analyses of the data derived from the Mach IV scale and the Steers and

Braunsteins' (1976) Manifest Needs Questionnaire which was administered to

499 university students produced the following summary statistics:

Mach IV
Mean 76.030	Median 76.000	Mode 76.000	S.D. 8.675
Range 55.000	Minimum 52.000	Maximum 107.000	
Internalconsistency 0.71			

n Ach
Mean 4.857	Median 4.800	Mode 4.800	S.D. 0.739
Range 4.400	Minimum 2.600	Maximum 7.000	
Internal consistency 0.62			

n Aff
Mean 4.106	Median 4.200	Mode 4.000	S.D. 0.594
Range 3.800	Minimum 2.000	Maximum 5.800	
Internal consistency 0.17			

n Aut
Mean 3.976	Median 4.000	Mode 3.800	S.D. 0.691
Range 4.200	Minimum 2.000	Maximum 6.200	
Internal consistency 0.45			

n Dom
Mean 4.340	Median 4.400	Mode 4.200	S.D. 0.800
Range 4.800	Minimum 2.000	Maximum 6.800	
Internal consistency 0.69			

LMP
Mean -0.004	S.D. 1.409		
Range 8.965	Minimum -3.77	Maximum 5.20	

Table 3: Summary statistics derived from the Mach IV and the Manifest Needs
Questionnaire.

4.1 Interaction of variables

The variables obtained in the present study produced the following correlation matrix. Study of this table allows examination of the relationships that are present between the variables and indicates the strength and direction of these relationships.

	SEX	AGE	MACH	NACH	NAFF	NAUT	NDOM	LMP
SEX	1.000							
AGE	.314	1.0000						
MACH	-.1967**	-.1641**	1.0000					
NACH	-.0351	.0695	-.1041	1.0000				
NAFF	.1749**	-.0836	-.2175**	-.0560	1.0000			
NAUT	-.1146*	.0612	.2286**	.0868	-.4332**	1.0000		
NDOM	-.0800	.0000	.1551**	.4048**	.0029	.0410	1.0000	
*LMP	-.1806**	.0593	.2639**	.3259**	-.7072**	.3362**	.7050**	1.0000

N of cases: 489   2-tailed Signif: * - .01 ** - .001

* Leadership motive pattern (LMP) is calculated as z score for nDom (power) - z score for nAff

Table 4: Correlation matrix of variables used in the present research.

The correlation matrix indicates that there are significant positive relationships between Machiavellianism and need for autonomy (+0.23), and Machiavellianism with need for dominance (+0.16). The correlation matrix also indicates that there are significant negative relationships between Machiavellianism and age (-0.16) and Machiavellianism with need for affiliation (-0.22). Machiavellianism and need for achievement were negatively correlated (-0.10) but this relationship was found not to be statistically significant within this correlational computation. The strongest correlation with Machiavellianism was with the Leadership Motive Pattern (+0.26).

Need for achievement and need for dominance were found to be significantly positively correlated (+0.40). Need for affiliation and need for autonomy were found to be significantly negatively correlated (-0.43). The Leadership Motive Pattern was significantly positively correlated with the need for achievement (+0.33) and the need for autonomy (+0.34). There is a high correlation of LMP with need for affiliation and need for power because the LMP score is derived from these figures so interpretation of these correlations is non-relevant. The Leadership Motive Pattern and the demographic variable of sex are significantly correlated the nature of which is studied further in the following t - tests.

4.2 Differences between males and females

To determine whether differences exist between males and females on the motivational drives and Machiavellianism independent t-tests were applied. Once it is established if males and females do significantly differ then theories can be offered as to why these differences exist. The tables that resulted from the series of t-tests are reproduced below:

4.2.1 Differences between males and females on Machiavellianism

	Number of Cases	Mean	Standard Deviation	Standard Error
Males	205	78.1317	9.558	.668
Females	289	74.5398	7.665	.451

F Value	2-Tail Prob	t Value	Degrees of Freedom	2-Tail Prob
1.56	.0014	.63	492	.000

Table 5: T-test between males and females on Machiavellianism

The results from this t-test indicate that males and females differ significantly on level of Machiavellianism t = 4.63 (p < 0.001). Males have a significantly higher Machiavellian attitude than females in the present sample.

4.2.2 Differences between males and females on need for achievement

	Number of Cases	Mean	Standard Deviation	Standard Error
Males	205	4.8829	.807	.056
Females	291	4.8385	.688	.040

F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.38	.013	.64	393.82	.522

Table 6: T-test between males and females on need for achievement

This t-test indicates that there is no significant difference between males and females in their need for achievement. Both males and females possess a similar level of drive to obtain their goals.

4.2.3 Differences between males and females on need for affiliation

	Number of Cases	Mean	Standard Deviation	Standard Error
Males	203	3.9823	.615	.043
Females	291	4.1931	.564	.033

F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob
1.19	.177	-3.94	492	0.000

Table 7: T-test between males and females on need for affiliation.

This t-test indicates that females have a significantly higher need for affiliation than males t = -3.94 (P < 0.001). This suggests that females have a stronger drive to establish satisfying relationships with others compared to the males in this sample.

4.2.4 Differences between males and females on need for autonomy

	Number of Cases	Mean	Standard Deviation	Standard Error
Males	205	4.0771	.675	.047
Females	291	3.9052	.695	.041

F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.06	.656	2.75	494	.006

Table 8: T-test between males and females on need for autonomy

This t-test indicates that males have a significantly higher need for autonomy than females t = 2.75 (p< 0.01). This suggests that males prefer to work independently whereas females have a stronger drive to work with others.

4.2.5 Differences between males and females on need for dominance (power)

	Number of Cases	Mean	Standard Deviation	Standard Error
Males	205	4.4234	.816	.057
Females	291	4.2804	.785	.046

F Value	2-Tail Prob.	t Value	Degrees of Freedom	2-Tail Prob.
1.08	.540	1.97	494	.050

Table 9: T-test between males and females on need for dominance (power)

This t-test indicates that males have a significantly higher need for dominance than females t = 1.97 (p< 0.05). The level of significance is not as high as the previous t-tests though still indicates a 95% probability that the difference obtained was not a result of chance. This would suggest that males have a stronger need to control the events and people around them compared to females.

4.2.6 Differences between males and females on the Leadership Motive Pattern

	Number of Cases	Mean	Standard Deviation	Standard Error
Males	203	.3045	1.393	.098
Females	291	-.2198	1.382	.081

F Value	**2-Tail Prob.**	**t Value**	**Degrees of Freedom**	**2-Tail Prob.**
1.02	.897	4.13	492	.000

Table 10: T-test between males and females on the Leadership Motive Pattern

This t-test indicates that males have a significantly higher rating on the Leadership Motive Pattern than females t = 4.13 (p<0.001). This means that males tend more towards using a power oriented approach and females prefer an affiliative approach.

4.3 Analysis of variance

Analysis of variance (ANOVA) is a statistical technique that allows examination of a number of groups to establish if any of them differ significantly on a variable. In the case of the present study ANOVA was used to determine if differences existed between the students from the 8 different disciplines on the four

motivational needs, Machiavellianism and Leadership Motive Pattern. If significant differences are found to exist then further analyses are conducted to discriminate between the disciplines. ANOVA analyses produced the following tables which indicate whether there are significant differences present between the disciplines.

4.3.1 Difference between disciplines on Machiavellianism

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	7	2398.4774	342.6396	4.7981	.0000
Within Groups	486	34706.0671	71.4117		
Total	493	37104.5445			

Table 11: ANOVA table of Machiavellianism by discipline

This ANOVA table indicates that there are significant differences between the student disciplines on their level of Machiavellianism ($p<0.0001$). To determine exactly where these differences are requires further analyses which is outlined in the following section. From this analysis it is clear that at least one university discipline has a significantly higher level of Machiavellianism than at least one of the other disciplines.

4.3.2 Difference between disciplines on need for achievement

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	7	12.6417	1.8060	3.4208	.0014
Within Groups	488	257.6349	.5279		
Total	495	270.2767			

Table 12: ANOVA table of need for achievement by discipline

This ANOVA table indicates that there are significant differences between the disciplines on need for achievement (P<0.005). From this it can be determined that at least one of the university disciplines has a higher need for achievement than one of the others. Where these differences exist will be examined in the following section.

4.3.3 Differences between disciplines on need for affiliation.

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	7	9.7037	1.3862	4.1056	.0002
Within Groups	486	164.0955	.3376		
Total	493	173.7993			

Table 13: ANOVA table of need for affiliation by discipline

This ANOVA table indicates that there are significant differences between the disciplines in need for affiliation (P<0.0005). At least one of the disciplines has a higher level of affiliation.

4.3.4 Difference between disciplines on need for dominance (power).

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	7	8.6368	1.2338	1.9527	.0598
Within Groups	488	308.3487	.6319		
Total	495	316.9855			

Table 14: ANOVA table of need for dominance by discipline

This ANOVA table indicates that there are no significant differences between the disciplines on need for dominance. This table shows that there is no one discipline that possesses a significantly different level of the need for power than any other discipline. This means that all of the disciplines examined possess to a similar level the desire to be in control of their environment and people around them.

4.3.5 Differences between disciplines on need for autonomy.

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	7	4.8578	.6940	1.4631	.1782
Within Groups	488	231.4615	.4743		
Total	495	236.3193			

Table 15: ANOVA table of need for autonomy by discipline

This ANOVA table indicates that there are no significant differences between the disciplines on need for autonomy. This would indicate that no discipline differs significantly from any other in their need to work alone or to be independent.

4.3.6 Differences between disciplines on Leadership Motive Pattern.

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	7	36.9293	5.2756	2.7212	.0089
Within Groups	486	942.2168	1.9387		
Total	493	979.1461			

Table 16: ANOVA table of Leadership Motive Pattern by discipline.

The above ANOVA table indicates that there are significant differences between the disciplines on the Leadership Motive Pattern (P<0.01). This suggests that students in some disciplines are motivated by affiliative drives and others by power seeking drives.

To distinguish between these disciplines will require ranges analyses which will be outlined in the following section. In summary the above ANOVA tables indicate that significant differences exist between student disciplines on the variables of Machiavellianism, need for achievement, need for affiliation and the Leadership Motive Pattern. No significant differences were found between the disciplines on need for dominance and need for autonomy.

4.4 Ranges analysis

Since it was established that significant differences exist between the university disciplines on the variables of Machiavellianism, need for achievement, need for affiliation and the Leadership Motive Pattern the next step was to determine where these differences exist. To do this ranges analyses are conducted which allow comparisons to be made between each of the disciplines. Ranges analyses produce the following tables which represent a matrix, with disciplines on the horizontal and vertical axes. The asterix (*) indicate that there is a significant difference present between the discipline on the horizontal axis and the corresponding discipline on the vertical axis. Differences are at the 0.05 level. Mean scores for each of the disciplines on the variable being measured are in the left column.

4.4.1 Difference between disciplines on Machiavellianism

Mean	Group	B N	B S W	B E D	B A (SS)	B A (HUM)	B S C	B R P	B B S
69.2308	B.Nurs								
71.6316	BSW								
74.2687	BED	*							
74.9362	BA (SS)	*							
75.2500	BA (HUM)	*							
75.8649	BSC	*	*						
77.5319	BRP	*	*	*					
77.7926	BBS	*	*	*	*				

Figure 2: Ranges analysis of Machiavellianism by discipline

From this graph it can be seen that students from business studies rate the highest in Machiavellianism and are significantly more Machiavellian than those from the nursing, social work, education and social science disciplines ($p < 0.05$). Regional planning students were found to be significantly higher in Machiavellianism than nursing, social work and education students ($p < 0.05$). The two lowest rating Machiavellian groups were the nursing students and the social work students.

4.4.2 Differences between disciplines on need for achievement.

Mean	Group	B S W	B A (SS)	B E D	B R P	B A (HUM)	B B S	B S C	B N
4.5421	BSW								
4.6560	BA (SS)								
4.7522	BED								
4.7625	BRP								
4.8741	BA(HUM)								
4.9465	BBS	*	*						
5.1000	BSC	*	*	*	*				
5.2308	BNurs	*	*	*	*				

Figure 3: Ranges analysis of need for achievement by discipline.

This graph indicates that both the nursing students and the science students have a significantly higher need for achievement than social work, social science, education and regional planning students (p<0.05). Business studies students have a significantly higher need for achievement than social work and social science students (p<0.05).

4.4.3 Differences between disciplines on need for affiliation.

Mean	Group	B A (SS)	B A (HUM)S	B B P	B R	B N	B S W	B S C	B E D
3.7833	BA(SS)								
4.0148	BA(HUM)								
4.0664	BBS	*							
4.1833	BRP	*							
4.2000	BNurs	*							
4.2105	BSW	*							
4.2167	BSC	*							
4.3134	BED	*	*	*					

Figure 4: Ranges analysis of need for affiliation by discipline

From this graph it can be seen that the students from the social science discipline are significantly lower in need for Affiliation than students from the other disciplines except humanities (p<0.05). Education students are significantly higher in need for affiliation than social science, humanities and business studies students (p<0.05). Education students rated themselves as having the highest need for affiliation amongst all the disciplines.

4.4.4   Differences between disciplines on the Leadership Motive Pattern.

Mean	Group	B E D	B S W	B R P	B S C	B N	B B S	B A (SS)	B A (HUM)
-.4931	BED								
-.4219	BSW								
-.2465	BRP								
.1122	BSC	*							
.1488	BNurs								
.1524	BBS	*	*						
.2554	BA(SS)	*	*						
.2762	BA(HUM)	*	*						

Figure 5: Ranges analysis of the Leadership Motive Pattern by discipline

From the above graph it can be seen that the humanities, social science and business studies students rated themselves significantly higher in the Leadership Motive Pattern than education and social work students. The science students rated themselves significantly higher in the Leadership Motive Pattern than education students ($p<0.05$).   The students who most closely fitted the Leadership Motive Pattern were the humanities students and the students which least fitted the Leadership Motive Pattern were the education students.   This indicates that the humanities students tend to have a need for power whereas the education students have a need for affiliation.   Education students are more concerned with establishing and maintaining friendly relationships with those around them while the humanities students were more focused on controlling the environment and those around them.

4.5 Planned comparison analyses

Included in each of the university disciplines are many majoring subjects, for example, the science discipline contains botany, physics, chemistry and zoology as majors. The following analyses examined differences amongst these majors on motivational drives and Machiavellianism. Since it was theorised what differences should exist based on findings from earlier research, planned comparisons analyses rather than ranges analyses were used to examine these proposed relationships. In the earlier ranges analyses there were no theorised relationships so they were the appropriate statistical analysis to adopt (West, 1991). The following tables show the results of planned comparison analyses of students from different majors on Machiavellianism and motivational variables.

4.5.1 Comparison of marketing students on level of Machiavellianism

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	26	4225.6511	162.5250	2.3084	.0003
Within Groups	467	32878.8934	70.4045	.	
Total	493	37104.5445			

Pooled Variance Estimate

	Value	S. Error	T Value	D.F.	T Prob.
Contrast 1*	-147.2670	40.7829	-3.611	467.0	.000

Table 17: Planned comparison of marketing students on level of Machiavellianism

Results from this analysis indicate that there is a significant difference present between the marketing students and other majoring subjects on Machiavellianism. Marketing students are likely to score higher in Machiavellian tendency than

students from other majoring fields. Simply, consistent with the hypothesis, marketing students are more Machiavellian than other students.

4.5.2 Comparison of marketing students on need for achievement

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	26	17.7638	.6832	1.2690	.1712
Within Groups	469	252.5128	.5384		
Total	495	270.2767			

Pooled Variance Estimate

	Value	S. Error	T Value	D.F.	T Prob.
Contrast 1*	-5.5124	3.5666	-1.546	469.0	.123

Table 18: Planned comparison of marketing students on need for achievement

The results from this analysis indicate that there is no significant difference between marketing students and students from other majors in their need for achievement. Marketing students have no more nor less of a desire to achieve results than students from other majors.

4.5.3 Comparison of management students on need for dominance

Source	D.F.	Sum of Squares	Mean Squares	F Ratio	F Prob.
Between Groups	26	14.5291	.5588	.8665	.6575
Within Groups	469	302.4564	.6449		
Total	495	316.9855			

Pooled Variance Estimate

	Value	S. Error	T Value	D.F.	T Prob.
Contrast 1*	-6.3960	4.3670	-1.465	469.0	.144

Table 19: Planned comparison of management students on need for dominance

This planned comparison analysis revealed that management students had neither a higher nor lower need for dominance than any other subject major. This did not support the proposed hypothesis that management students will have a greater need for the control of their environment or those that they are in contact with.

In summary the results from planned comparisons with a one way analysis of variance supported the hypothesis that marketing students were typically more Machiavellian than students from other majors (p < 0.001). Planned comparison analysis revealed that marketing students did not significantly differ in need for achievement than students in other majors, and the management students did not differ significantly from other majors in the need for dominance.

4.6 Multiple regression

The following analyses were conducted to determine the influence of need for achievement, need for autonomy and the Leadership Motive Pattern on level of Machiavellianism. Age and sex were entered on the first step of the multiple regression to account for their possibly confounding influence on other variables. The following tables show the three steps taken in the hierarchical multiple

regression procedure. In the first step age and sex were entered, in the following step need for achievement and the need for autonomy were entered and in the final step the Leadership Motive Pattern was entered. From this analysis it is established to what extent motivational drives influence Machiavellianism. This answered the final hypothesis which proposed what these relationships would be.

4.6.1 Hierarchical multiple regression

Variable(s) Entered on Step Number
1.   Age
2.   Sex

Multiple R	.25235
R Square	.06368
Adjusted R Square	.05983
Standard Error	8.37352

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	2	2317.63089	1158.81545
Residual	486	34076.33639	70.11592

F =   16.52714   Signif F = .0000

------------------ *Variables in the Equation* ------------------

Variable	B	SE B	Beta	T	Sig. T
Age	-.219987	.061096	-.158122	-3.601	.0004
Sex	-3.360045	.769413	-.191775	-4.367	.0000
(Constant)	86.459648	1.886637		45.827	.0000

------------ *Variables not in the Equation* ------------

Variable	Beta In	Partial	Min. Toler	T	Sig. T
n Ach	-.100412	-.103447	.993776	-2.290	.0224
n Aut	.220083	.225464	.982666	5.097	.0000
LMP	.247764	.251292	.963171	5.718	.0000

Table 20: First step of hierarchical multiple regression examining influence of age and sex on Machiavellianism.

The results from the first step in the equation where age and sex were entered produced a multiple R score of 0.25 which indicates the correlation of age and sex with Machiavellianism. The adjusted R square score of 0.06 indicates that 6 percent of the variance in the Machiavellian score is explained by the combined age and sex scores. The analysis of variance produced an F value of 16.53 with a significance level 0.000. This indicates a statistically significant level of prediction. The t-values obtained indicate that age and sex make significant independent contributions to the prediction of Machiavellianism. This means that both age and sex are significant determinants of Machiavellian tendency and as they are entered in this first step they will not influence the following relationships of motivational drives and Machiavellianism.

Variable(s) Entered on Step Number

3.   n Ach
4.   n Aut

Multiple R	.35375
R Square	.12514
Adjusted R Square	.11791
Standard Error	8.11077

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	4	4554.25804	1138.56451
Residual	484	31839.70924	65.78452

F =   17.30748   Signif F = .0000

------------------ Variables in the Equation ------------------

Variable	B	SE B	Beta	T	Sig. T
Age	-.229048	.059433	-.164635	-3.854	.0001
Sex	-2.968509	.750697	-.169428	-3.954	.0001
n Ach	-1.388353	.501394	-.118464	-2.769	.0058
n Aut	2.861807	.536480	.229506	5.334	.0000
(Constant)	81.433622	3.600701		22.616	.0000

------------- Variables not in the Equation -------------

Variable	Beta In	Partial	Min. Toler	T	Sig. T
LMP	.262443	.247688	.779253	5.619	.0000

Table 21: Second step of hierarchical multiple regression examining influence of need for achievement and need for autonomy on Machiavellianism.

With the inclusion of need for achievement and need for autonomy into the regression equation the correlation between the combination of these variables and Machiavellianism rises to 0.35. Explained variance increases to 12% for the Machiavellian score. From the t-values it can be seen that need for autonomy and need for achievement both make significant independent contributions to predicting Machiavellian score whilst controlling for the possible confounding influence of age and sex. Need for autonomy has a positive relationship with Machiavellianism whereas need for achievement produced a negative relationship. That is, as the need for achievement increases Machiavellianism decreases and as need for autonomy increases so does Machiavellianism. Both of these motivational drives have a significant independent influence on Machiavellianism.

Variable(s) Entered on Step Number
  5.   LMP

Multiple R   .42286
R Square   .17881
Adjusted R Square .17031
Standard Error   7.86616

Analysis of Variance

	DF	Sum of Squares	Mean Square
Regression	5	6507.60080	1301.52016
Residual	483	29886.36648	61.87654

F =   21.03415   Signif F = .0000

------------------ *Variables in the Equation* ------------------

Variable	B	SE B	Beta	T	Sig. T
Age	-.238268	.057664	-.171262	-4.132	.0000
Sex	-2.336628	.736693	-.133364	-3.172	.0016
n Ach	-2.292295	.512197	-.195595	-4.475	.0000
n Aut	1.901599	.547649	.152501	3.472	.0006
LMP	1.604992	.285658	.262443	5.619	.0000
(Constant)	88.858214	3.733771		23.799	.0000

Table 22:   Third step of hierarchical multiple regression examining influence of the Leadership Motive Pattern on Machiavellianism.

The addition of the Leadership Motive Pattern increases the correlation of all the variables with Machiavellianism to 0.42. Variance of Machiavellianism explained by the combined variable scores of age, sex, need for achievement, need for autonomy and the Leadership Motive Pattern rises to 17%. The Leadership Motive Pattern makes a significant independent contribution to the prediction of Machiavellianism whilst accounting for age and sex, need for autonomy and need for achievement. The Leadership Motive Pattern is positively correlated to

Machiavellianism which would indicate that as the Leadership Motive Pattern increases so does level of Machiavellianism. This means that people who are driven more by a power seeking approach rather than an affiliative driven attitude will be more likely to have a higher Machiavellian orientation. This suggests that the Leadership Motive Pattern contributes significantly to the level of Machiavellianism amongst students in the present sample.

5 DISCUSSION

5.1 Generalisability issues

Generalisability issues are present in any research that draws inferences from samples and applies these to the general population. This process does not reduce the validity or the importance of that research. Instead it tempers the claims that can be made and it is acknowledged as an aspect to be considered when examining results and drawing conclusions. The sample used in the present research also produced a number of generalisation issues. It is a non random sample, further the deceptive nature of the Machiavellian person contributes to the difficulty in drawing generalisations from findings in the present research. Machiavellians may be reluctant to take part in the research due to their independent nature and their cynical view of people. Therefore within the present sample the lack of expected high Machiavellian people may be explained by these characteristics inherent within high Machiavellians.

The statistics derived from this study must therefore be examined and interpreted with this in mind, the sample is very specific in nature and implications for the statistics derived and how they are interpreted are present. The classes chosen to represent each discipline were selected randomly, however, the students within these classes were not. Subjects volunteered from each class and although in the majority of cases all students did complete the questionnaires in some classes some of the students declined to complete the questionnaires. A random sample was therefore not obtained, though it is assumed that the sample is closely

representative of the Massey university population. The assumption is also made that the sample is reasonably representative of other university's in New Zealand. Further, it is assumed that university students are reasonably representative of New Zealand's working population and in particular the professional population of New Zealand's work force. The researcher feels that this generalisation is acceptable and the findings from the present research can be tentatively applied to some of the New Zealand work force.

Now that assumptions of our sample have been stated it is apparent that some could be challenged and this is acknowledged. However, other researchers have drawn inferences from their university student sample and it is proposed that the present research can validly do the same. The present study has adopted a method consistent with previous research, in terms of the instruments used (Manifest Needs Questionnaire, Mach IV), their administration, and the use of university students as subjects. This is the rationale and validation argument used for drawing inferences from the findings in the present research.

5.2 Machiavellianism

Results derived from the Mach IV scale indicate that the mean score on Machiavellianism in the present sample was 76. This is considerably lower than the theoretical neutral point of 100 that Christie and Geis (1970) proposed. This finding implies that the present student sample was lower than the expected Machiavellian average which has been found previously. This finding may have implications when the effects of Machiavellianism on the other variables of age,

sex and motivational drives are examined. The low Machiavellian average may indicate that those who rated as high Machs are not, when they are compared to subjects from previous research. If this is the case, basing generalisations on these results for all high Mach people must be undertaken with caution. Analysis of internal consistency revealed an alpha reliability of 0.71 which indicates that the items in the Mach IV scale are homogenous. This correlation coefficient is very good and is consistent with previous research findings (Christie & Geis, 1970; Gable & Topol, 1987).

Due to the low scores obtained for Machiavellian tendency, instead of using a score of 100 to classify people as high or low Machiavellians, it was decided to use statistical analyses that did not require the subjects be divided into dichotomous groups. To split the subjects into two groups would serve little purpose or insight into the Machiavellian characteristic, as any findings would be questionable due to international norms established for high Machiavellians. The number of subjects that rated high enough to be considered high Machiavellians (i.e. above 100 on the Mach IV) would number so few that valid analyses would be impossible using a dichotomous grouping approach.

The average Machiavellian score of these subjects is low and this may indicate that they are not representative of the New Zealand population. This would infer a weakness in the validity of generalising the findings from the present research to the general population. Another possibility for these low scores may be that New Zealander's are not high in Machiavellianism which may be an indication of New

Zealand's culture and society placing a strong emphasis on fairness, trust and 'good' ethics. This means that the results obtained in the present study could accurately be representative of New Zealanders who do not possess as high levels of Machiavellianism. Future studies to obtain norms for New Zealand society are required to support the generalisation of claims from the research on university students.

Though it is difficult to determine whether the university population is reflective of New Zealand society it is noted that university students have been used in numerous research studies and results from these have been applied to the general population. Even though the mean score for Machiavellianism is lower than previous research from overseas studies, the range of 55 that exists between the highest and lowest Machiavellian score indicates that there is considerable variation present. Subjects that differ significantly on Machiavellianism can be compared on other variables. In this case, subjects can still be considered high or low Machiavellian relative to the rest of the sample without generalising to the rest of the New Zealand population.

5.2.1 Machiavellianism and age

The second hypothesis examined the relationship between Machiavellianism and age. The hypothesis that age will be inversely related to Machiavellianism was supported by the findings in the present research. Age was significantly negatively linked with Machiavellianism ($p<0.001$). As people get older they become less Machiavellian. Exactly why this occurs is still an area of debate and

future research potential. This finding has been replicated in numerous studies and is accepted to be consistent across many populations in a variety of situations, (Vleeming, 1979). Reasons why older people are less Machiavellian has had little research, though one study determined that it may have to do with the Machiavellian components of deceit and flattery (Mudrack, 1992). It is suggested by the majority of researchers into the Machiavellian field that age must be considered when conducting research on Machiavellianism due to its possible confounding nature (Zook, 1985). This was taken into account in the present research where age was entered before other variables in the multiple regression equation.

The significant finding in this study adds further support to the growing literature on the inverse relationship of age and Machiavellianism. The finding indicates that the relationship exists in the university setting, which adds support to the robustness of the finding. Further research into exactly why older people adopt less Machiavellian orientations may yield some fascinating findings. Possibilities include that as people age they become more sensitive to the feelings of others and may be reluctant to use Machiavellian principles. They may develop more of a social conscience and as experiences occur to them throughout the course of their life they may remember how it feels and avoid treating others as they may have been treated in the past through Machiavellian style tactics.

It could be that Machiavellian people learn to hide their personality characteristics as they become aware that people have a negative view of them, so they do not

become less Machiavellian, rather they are more reluctant to show aspects of this personality characteristic. It may simply be that people found adopting Machiavellian tactics, in the long run, just did not pay off and it was better to be open and honest about business issues. Whatever the reason, future research could yield some illuminating insights into the personality of the Machiavellian and the progression of the Machiavellian over their life span. How and why Machiavellian tendencies develop, mature and change are specific areas that could warrant future longitudinal research. Whether individuals change over time or whether it is because high Machiavellian people do not last within the samples that are traditionally researched (e.g. managers) would be interesting to establish.

5.2.2 Machiavellianism and gender

Sex was found to be significantly linked with Machiavellian tendency. Males were found to be significantly of higher Machiavellian persuasion than their female colleagues ($p<0.001$). This is consistent with research using university students as subjects (Christie and Geis, 1970). Exactly why males should be more Machiavellian than females in the university setting is an interesting question. It may be that males naturally feel they should be aggressive in their bid for power and may from an ethical standpoint be willing to be more flexible than females with their moral values. It could be that within the university setting males are more competitive than females and thus willing to do anything to achieve results. This may cause a higher level of Machiavellianism among the male students. In the present sample males do not feel such a strong need for affiliation as females

and therefore may feel comfortable embracing a Machiavellian approach to gaining power and influencing others.

The difference may even have roots within biology, males naturally having a more aggressive, competitive instinct which manifests in higher Machiavellian tendency. Females naturally possessing a more nurturing maternal instinct prefer to develop friendships and relationships based upon openness and trust. Alternatively, males may have been raised to be more Machiavellian and so they are products of their environment rather than genetic determination. It could even be a combination of the two, genetics lending to a predisposition to Machiavellianism if a conducive environment exists. This issue of nature/nurture has been debated in Psychology for many years and to apply it to personality characteristics will undoubtedly evoke strong reactions. It is stressed at this point that this is a possibility to help explain the differences between males and females, not just with respect to Machiavellianism but on the range of variables that are examined in the present research. It is undeniable that sex differences exist and these should be studied to determine in what specific way males and females differ. Further research into sex differences may help to establish whether there are any genetic or environmental factors that contribute to the personality trait of Machiavellianism.

Future research is advocated to help explain the finding that the Machiavellian orientation of female employees is significantly higher than males within the work environment (Gable and Topol, 1991). Is this because females feel they need to be more ruthless and are willing to do anything to get ahead? Perhaps it is

because they still feel they have to outperform their male counterparts to gain recognition and they are willing to adopt the aggressive Machiavellian approach. It may be that only females who are high in Machiavellianism are successful, which is the reason for their occurrence in these work place samples. It could be that once females leave university they see a need to adopt a more Machiavellian approach to be successful in the workplace or, conversely, males may feel the need to tone down their Machiavellian behaviour. Whether this phenomena is a result of females increasing or males decreasing their Machiavellian orientation is an area of potential research that could provide valuable insight into why these differences exist between the genders and why they appear to change over a person's career.

Many of the questions that are raised in the present research call for future research. Most of these questions require longitudinal type research to follow the development of the Machiavellian over time. The majority of research both in this area and other areas of psychology are typically cross sectional studies. It is appreciated that there are many difficulties associated with conducting longitudinal research, but it is this researchers opinion that it is vital in the understanding of the development of personality characteristics over time. Results may contribute to the understanding of why people will react differently to situations as they grow older. Their personal values and beliefs and hence their personality as a whole may slowly alter and modify until the person may not be anything like what they were 10 or possibly even 5 or 6 years previously.

Longitudinal research will undoubtedly have an important place in future research and help answer as yet unresearched questions.

The first two hypotheses partially replicated findings from other countries in New Zealand. These findings lead to the conclusion that the more we understand of the general Machiavellian relationship with the demographic variables of age and sex the more questions are raised on the more specific parts of the Machiavellian personality. The results obtained have generated possibilities for future potential research, according to the adage that - the more that we learn, the more that we realise we do not understand. This is particularly true about the concept of Machiavellianism with regards to the reasons for the relationships with age and sex.

5.2.3 Machiavellianism and business students

The first hypothesis was that students in the business studies field will be more Machiavellian than their non-business studies counterparts. Results from one-way analysis of variance support this hypothesis ($p<0.001$). This finding has been obtained in research conducted in other countries, McLean and Jones (1992) in Canada and Skinner (1981) in England. The reason for this finding may be that people who are high in Machiavellian orientation may actively seek to be involved within the business environment where they feel they can put their 'skills' to use. Conversely, it may be that undertaking a business studies course may induce the students to adopt a more Machiavellian attitude over time. That is, they are

actually taught to adopt a Machiavellian perspective as it is useful within the business environment.

This again is a potential area for future study, determining whether Machiavellian people are attracted to business studies or whether the business studies programme helps to make people more Machiavellian. It may be that all first year university students are found to have similar levels of Machiavellianism but as they move through their chosen course of study those that are enrolled within some programmes become more Machiavellian than others. If this were found to be the case then it would be interesting to determine why students became more Machiavellian through their course of study. Was it due to an intrinsic desire to become more Machiavellian or was it through the actual teaching and design or structure of the course? Students, through the progression of their course, may develop a realisation that Machiavellian tactics will allow them to seize power in the future and therefore they begin to adopt a Machiavellian philosophy during their university study. Again longitudinal research would be required to determine the accuracy of these suggestions.

It may be that those who choose courses that are associated with higher levels of Machiavellianism already possess higher levels of Machiavellianism before they start, that is, they are attracted to courses because they feel that they can work well within that environment. Again further research would be required to establish the causality of this finding, though undoubtedly the relationship

between Machiavellianism and business studies exists, and is replicated in a New Zealand university setting.

5.2.4 Machiavellianism and marketing students

The second part of the first hypothesis was that business students who were highest in Machiavellianism will be concentrated in the competitive field of marketing. Consistent with McLean and Jones (1992), it was found that marketing students were significantly more Machiavellian than those majoring in other business fields ($p < 0.05$). Again it would be interesting to determine whether choice of study is influenced by Machiavellianism or whether level of Machiavellianism was influenced by the teachings in the course of study. Instinctively it is appealing to think that various personality types are predisposed to different career choices. This notion is supported by previous research in which people from different professions were found to differ significantly in level of Machiavellianism (Christie & Geis, 1970; Skinner, Giokas & Hornstein, 1976).

Further support is offered by research which has indicated a natural movement of people to areas of work for which they have the appropriate skills and personality. Chusmir (1984) summarises a number of studies that support this proposition - "High n Ach has been related to entrepreneurs, doctors, lawyers, research scientists (McClelland, 1961), salesman (McClelland & Burnham, 1976), architects, chemical engineers (Ritchie & Thomson, 1980), graduate students (Harrell & Stahl, 1981) and management trainees (Andrews, 1976). Special education and residential teachers as well as nurses score high in n Aff (Lafferty,

1982). The same is true of bartenders, athletic coaches (Ritchie & Thomson, 1980) and customer service representatives (Schermerhorn, Hunt & Osborn, 1982). Those who score high in n Pow include: journalists, psychiatrists, psychologists, social workers (Winter, 1973), insurance managers, college teachers, mid-level personnel (Lafferty, 1982), teachers, clergy, business managers (Winter, 1973; McClelland, 1965), sales managers, executives in large firms (McClelland & Burnham, 1975) and university administrators (Ritchie & Thomson, 1980)".

It is intuitively appealing that people would be more likely to work in jobs that they are good at, and which they enjoy. The career people choose satisfies their needs and ambitions and one could assume that their personality suits their job. For example, a person who does not enjoy research or intense study would be unlikely to be a university researcher, just as a person who does not enjoy outdoor physical activity is hardly likely to be an outdoor education instructor. It is accepted that personality type and personal attributes will, in some way impact on career decisions and career path.

Marketing as a career has the stereotype, or even the reality, of intense competition and fierce rivalry. The question is whether Machiavellians are attracted to this, or whether this environment induces people to adopt a more Machiavellian approach in order to be successful in such a field. Research into this will undoubtedly lead to some interesting findings that may have an impact on teaching. Students may benefit by being taught Machiavellian principles as some

MBA programmes suggest (Business Week, 1975). Even if they are not taught to use the principles it may be advantageous at least to be aware of them and to be conscious that there are people who will adopt them. A Machiavellian can potentially be a devastating competitor and graduates should have the ability to see these people for what they are and learn to handle or avoid them. Fowler, (1985) has already written an extensive article on how to spot and how to deal with a high Machiavellian. The advice within this article, and the study of Machiavellian characteristics may prove invaluable to the new graduate who conceivably at some point in their career will have to deal with this type of person.

Motivational drive variables

Analysis of internal consistency revealed alpha scores of 0.62 for achievement, 0.17 for affiliation, 0.45 for autonomy and 0.69 for dominance. It is noted that the Manifest Needs Questionnaire sub-scales of need for achievement and need for dominance possess acceptable internal consistency. The alpha reliability for the need for autonomy is a little low when considering Landy's (1989) suggested minimum of 0.50. However it may still be useful in research though the results must be interpreted with caution. The very low alpha for the sub-scale of need for affiliation of 0.17 is consistent with previous research conducted by Dreher and Mai-Dalton (1983). They acknowledge that the internal consistency of instruments designed to measure complex personality traits seldom reach the level expected of other measures used in psychological research. They further suggest that results need to be examined with a degree of caution, which is acknowledged

by the present researcher. The need for affiliation scale may require some future work to increase the internal consistency of the items within it. When this has been done the Manifest Needs Questionnaire will be a useful measure of human motivational needs.

Correlational analysis revealed a significant positive relationship between need for achievement and need for power (+0.40). Further a significant negative relationship between need for affiliation and need for autonomy (-0.43) was obtained. These findings are consistent with the research conducted by Steers and Braunstein (1976). This finding, as described in the method section, supports the construct validity of the Manifest Needs Questionnaire. Students who have a high need for affiliation, that is, the desire to be in contact with other people around them and to maintain relationships with these people would be expected to have a low need for autonomy. The two are incongruent in nature and the negative relationship lends support to the construct validity of the Manifest Needs Questionnaire.

The positive relationship between the need for achievement and the need for power (+0.40) has also been found in previous research (Steers & Braunstein, 1976). The nature of this relationship is somewhat vague and theoretical reasons as to why the relationship exists are not present in the available literature. A plausible suggestion may be that people with a high need for power must strive and work towards this goal and as a consequence their increased effort in seeking to obtain the goal of power creates an increase in need to achieve. That is, people

with a high need for power have high ambition and drive to gain power. This high ambition or drive can be thought of as the need to achieve.

The Leadership Motive Pattern, which is a combination of the need for power and the need for affiliation, was found to be significantly positively correlated with the need to achieve and the need for autonomy. This would indicate that those who are higher in the LMP (those who are driven by power rather than affiliation) prefer to operate alone or independently of others. Those that are higher in LMP also have a higher need for achievement. As the Leadership Motive Pattern is directly related to the need for power the reasoning for relationships of the LMP with autonomy and achievement would be similar to the previous discussion on the need for power. The following sections examine the results of each of the motivational variables and the implications for the hypotheses tested in the present study.

5.3 Need for achievement

The average score of 4.86 for need for achievement was considerably higher than subjects from university settings in previous research (Steers and Braunstein, 1976). The results of the present study indicate New Zealand university students do have, on average, a higher need to achieve than students from other countries. However, students did not rate as highly in their need to achieve as those studied in managerial positions within the work force, (Koberg & Chusmir, 1987; Chusmir & Koberg, 1986, 1987, 1988). This may be because once people enter a work environment they really do have to become more achievement oriented to

be successful and students may feel they do not have to be as competitive to achieve within the university setting. Need for achievement may simply not be a strong motivator for university students and their innate drives may lie elsewhere, in the need for affiliation, for example.

5.3.1 Need for achievement and gender

There were no significant differences present between males and females on need for achievement in this sample. This would indicate that both males and females are driven to a similar extent in their need for recognition and to achieve goals. The common stereotype of the young ambitious male with a desire to achieve is not supported by the findings from the present research. Both males and females were lower in their need for achievement when compared to samples of working populations used in previous research (see Table 2).

This low need for achievement rating may indicate that students within the university setting do not feel the same degree of pressure to achieve as those in the work force. University study may not produce a high need for achievement or conversely people who do not have a high need for achievement are attracted to the university setting. A plausible third explanation may be that the student sample is reflecting the general New Zealand population. New Zealanders may not possess an innate desire to achieve. Alternatively, it may be found that subjects within work force samples have a higher need for achievement, which would indicate that people develop a stronger desire to achieve once they enter

the work force. Only further research will help to determine why this finding has occurred in the present sample.

5.3.2 Need for achievement and university discipline

The third hypothesis examined need for achievement and whether the present sample would replicate findings obtained in the McLean and Jones (1994) Canadian study. Support for the third hypothesis was partially obtained in that business students did have a significantly higher need for achievement than social work students and social science students ($p<0.05$). However the nursing and the science students were found to have the highest need for achievement scores. The reason for this finding is difficult to understand. It may be that science is generally considered one of the more difficult disciplines so that students are motivated to perform well just to pass. In the science sample veterinary students were part of the sample and the veterinary degree is the most competitively sought after in the university, which may account for the high need for achievement. Veterinary students, and therefore science students, have to be competitive in order to attain good grades and this competitiveness may manifest itself in a high need for achievement.

The nursing subjects were also found to be a competitive class of students. This may be due to the small class size helping to develop a competitive spirit as everybody knows each other and may try to better their colleagues. As with Machiavellianism, those who desire a high need for achievement may be attracted to these disciplines or, conversely, these disciplines may encourage a high need

for achievement. Whatever the case these interesting findings are significant and will warrant research in the future. An implication from these findings may be that university disciplines which have students with a high need to achieve may improve student performance by placing them in a competitive environment. For example, some courses may offer additional incentives above grades for students if they perform well. An example may be that those that score in the top 5% of the class for internal assessment do not have to sit the final exam, or possibly some other incentive such as bonus points for achieving pre-set criteria that are performance based.

Further research will be required to determine whether certain courses encourage a high need for achievement by generating a competitive environment or whether students know that the course of study will be more competitive and are drawn to it. Also the possibility of altering teaching style to accommodate students motivational drives may also be an avenue of research that could reveal some interesting results.

5.3.3 Need for achievement and Marketing students

The second part of the hypothesis which proposed that marketing students will possess the highest need for achievement was not supported by the findings. The results revealed that no business major possessed a significantly higher need for achievement than any other. The popular stereotype of the hard driving, competitive, achievement oriented marketing student is simply not supported by these findings. It may be that every student feels a need to achieve as it is no

longer an easy option to attend university. As paying clients it may be that students are all competing not simply for grades but to obtain what they feel they have paid for. As substantial fees are paid students may feel they are obliged to get their money's worth and try to their fullest ability, thus generating a similar level of need for achievement over all disciplines. Then again it could be possible that the stereotype of the high need for achievement among marketing students simply never existed, but was always just a stereotype with no factual basis.

The differences between subjects in the present research and research conducted overseas may be due to New Zealand marketing students feeling they do not have to be as achievement oriented as their overseas counterparts. Again this may be because of the work culture that exists in this country. A high need for achievement may not always be viewed as favourable and for marketing students, creativity and interpersonal skills may prove to be just as important. Once in the work force this low achievement orientation may change as it is accepted that university's offer a sheltered, protective environment in which to learn and develop one's knowledge. In the real 'dog eat dog' business environment need for achievement may become a person's key motivational drive. Thus using work setting subjects may provide more useful information than using an 'unnatural' university setting. This again is a call to establish norms for New Zealand as it is difficult to compare New Zealand subjects to those used in studies abroad. New Zealanders have a very different work ethic and culture from the English or the American (Pheysey, 1990). This has to be considered when examining the results from these subjects and drawing global conclusions from them.

5.4 Need for power

The need for power average of 4.34 is very high compared to previous research, (Steers & Braunstein, 1976; Chusmir & Koberg, 1987,1988). From this it would appear that this sample has a very strong desire to control the people and events around them. The need for power may have influenced students to seek more knowledge in their own discipline so that they may eventually obtain expert status within that field. This gaining of knowledge and higher education may satisfy the student in that they feel that with this they will hold more power than those who have not studied. Therefore, they may be adopting the stance that 'knowledge is power'. As students have little opportunity to exercise power it is difficult to see how this need could be satisfied within the university setting. Student life is fairly inflexible in that assignments and work is dictated by external sources so that little control of the environment is possible. Further, for people with a high need for power to exercise control over those around them is almost impossible as working within groups is rare within the class setting. University study, therefore, in the long term, is a power seeking behaviour. It is not rewarded immediately during study but after education is complete the benefits may be gained and it is these benefits that students may be working towards. Grades are therefore of secondary importance and are simply an indication of steps towards obtaining the final goal of gaining power.

5.4.1 Need for power and gender

Males were found to be significantly higher in their need for power than females (P<0.05). This was also reflected in the difference in Machiavellianism between

males and females as Machiavellianism is a power seeking personality type. The difference may result from nature or nurture issues as discussed for Machiavellianism. It may be instinctual that males feel they have to be in control of those around them or it may be social expectation for males to take control and be in charge. Females may prefer to befriend those around them rather than to be in control of them. The difference in need for affiliation also lends support to this notion as this result indicates that females would rather develop relationships with those around them when compared to males.

5.4.2 Need for power and business students

The fourth hypothesis suggested that since Machiavellianism was a power seeking characteristic and since business studies students were found to have higher levels of Machiavellianism then they would also have a higher need for power than other students. No evidence was forthcoming to support this hypothesis and it was found that no one discipline differed significantly from any other on the need for dominance. A possible explanation for this finding may be that, as students within this sample, they have little chance to gain power over others and therefore would be unlikely to have significantly different levels of need for power. At this stage in their career the need for power may have relatively little influence on them as there would be no chance or benefit in adopting such a motivational drive.

What would be interesting to establish is whether, once students entered the workforce, their need for power would change as it becomes a more tangible and achievable motivator. Gaining power over others and the environment around

them may become more important to people when this can be achieved and the benefits from adopting such an approach are highly visible. It may be that all students have a similar need for power because they feel they are entitled to have more power than people who have not engaged in years of study and research. This is more conceivable as the overall rating of students in need for power was high compared to other subjects (Steers & Braunstein, 1976; Schneer & Chanin, 1987). Whatever the reason, the study of employees in the work environment would provide interesting insights in terms of power seeking drives and whether the attitudes of students entering the work place, change.

5.4.3 Need for power and management students

In the present study no differences were found between university disciplines on the need for power. Additionally, no difference was found between management majors and other business majors on need for power. The reason for this may be, as outlined above, that at the present time exerting influence over others and the environment may not be possible as a university student. It could be that management students are adopting the tenets and ethical standpoints that are taught in the modern university setting, that of democratic leadership and the openness and trust of others - a team approach to management. However, as is often the case, the difference between teaching and reality may come as a shock to many people fresh from the idealised world of the university setting. To really establish if managers are different in their quest for power, work samples of company managers and employees will need to be examined.

Intuitively, the need for managers to have a desire to control those around them and their environment appears to be strong. This is a manager's job, to actively control and integrate the resources available to them and to attempt to control the environment within which they work, including the people within this environment. This notion is supported by the previously obtained high need for power rating of managers within work settings (Chusmir and Koberg, 1986). If this is found to be the case then the need for power may prove to be a useful aspect of personality that could be measured and used in the selection of potential managers who will be required to control those around them as an important part of their job.

5.5 Need for affiliation

The need for affiliation average of 4.1 is higher than ratings obtained from previous research, (Chusmir and Hood, 1986; Chusmir and Koberg, 1986,1988). This indicates that students in the present sample consider obtaining and maintaining good relationships with others an important motivator. It is regarded that students are a sociable crowd at an age where relationships with other people are very important. Therefore, it is of little surprise that the need for affiliation is important amongst the student population. Students are generally young adults at a stage in life where the forging of relationships and socialising is an important part of the campus experience. One needs only to look at orientation events and public bars in the evening to see evidence of the importance of social activity to students. What could prove useful research is to establish if this need for social contact diminishes over time as students learn to become independent individuals

through the course of their study. Once students leave university and enter the work force the need for affiliation may continue to decline. University may simply be for some students a final social event before the seriousness of life and full time work is taken on. Research into this could provide interesting insights into the changing affiliative needs of people over time.

5.5.1 Need for affiliation and gender

As suggested previously, females were found to be significantly higher in need for affiliation than males ($p<0.001$). This was discussed in terms of nature/nurture under sex differences in Machiavellianism. It is suggested that females may have a natural instinct to avoid conflict and establish relationships with others rather than try to control people. Males on the other hand are more concerned with the need for power and therefore controlling others even if that is to the detriment of forming social relationships.

Whether this behaviour continues into the work force would be an interesting research question. Males tend to be more Machiavellian than females within the university setting but in the work force it is often found that females are more Machiavellian, (Gable & Topol, 1983). As Machiavellianism is negatively related to the need for affiliation it is expected that as females enter the work force their need for affiliation levels will decrease as their Machiavellian orientation increases. Females may find that they have to adopt more power seeking behaviour to be successful within the work force and as a result the tendency to try and build relationships with others may, out of necessity, decrease.

5.5.2 Need for affiliation and university discipline

The fifth hypothesis predicted that students in 'helping professions' will have a higher need for affiliation than those in other disciplines based on Sid & Lindgren's (1981) research. This was partially supported in that those training to be teachers had, on average, a significantly higher need for affiliation than humanities, social science and business students ($p<0.05$). Nursing and social work students had a significantly higher need for affiliation than social science students ($p<0.05$). The reason for such limited findings may be that within a university setting the majority of students are young adults that enjoy the company and companionship of others as was discussed previously. To young adults friends and peers are still an important part of life, especially in the first few years of university. This could account for why significant differences were rare and not as extensive as was expected.

Identifying students who have been at university for longer, such as those in post graduate study may yield different findings as the need for affiliation may diminish in this group as a whole. Research into samples other than university students may also help establish the importance of the need for affiliation in relation to other motivational variables. As was suggested for students with a high need for achievement, different teaching strategies could be applied to classes with a high need for affiliation. More work in which co-operation with others is involved could prove more motivating for this type of class. Group projects where the class could work together may prove more beneficial than individual assignments which create competition between students.

It may be that in the real work setting people in the occupations of teaching, social work and nursing will have higher affiliative needs than those who adopt a business or scientific career. Intuitively it appears to make sense that people who wish to help others and be in contact with them would enjoy and seek this type of company. This is not to say that people within the business or scientific environment also do not enjoy the company of others, rather that those in the helping professions have adopted careers that involve human contact and in which it is vital to establish friendly, trusting relationships with people for their health and well-being.

Only further research into the need for affiliation will provide information to establish whether this is the case. Future research may also provide insight into why the expected findings were not supported by this university student sample. Again, norms would be required to establish whether the sample reflects a belief that exists throughout the general population. The high need for affiliation score may indicate that New Zealanders enjoy the company of others more than subjects from overseas research. New Zealanders may be very active in social gatherings and the university student sample may simply be reflecting society norms.

5.6 Need for autonomy

The present sample's need for autonomy average was higher than previous research samples, (Steers and Braunstein, 1976; Chusmir and Hood, 1986). This may suggest that university students have the need to work alone. This behaviour

may have been conditioned, as students are often required to engage in study and research where it is preferable to work alone without distraction. The high affiliation and high autonomy ratings at first appear somewhat incongruous though it may be that students do enjoy the company of others socially but when it is time to work or study they take it seriously and prefer to be alone. Situation may prove to be very important in establishing the underlying reasons for these results. Future research will be required to fully establish the impact of situational variables and whether this result is consistent across the New Zealand population.

5.6.1 Need for autonomy and gender

Males were found to have significantly higher need for autonomy than females ($p < 0.01$). This is supported by the findings for the need for affiliation, as females scored higher in affiliation than males and a negative relationship exists between affiliation and autonomy (-0.43). Thus one would expect males to score higher in the need for autonomy as they scored lower than females in the need for affiliation. From this finding it appears that males would prefer to work alone on tasks whereas females would rather work within a group. This may be because males have been taught throughout their life the value of independence or 'going it alone' and females may be more willing to cooperate with others to accomplish goals. More research would be required to establish whether this was the case.

5.6.2 Need for autonomy and university discipline

In the present sample it was found that there were no significant differences between the student disciplines on need for autonomy. All of the students had on

average a high autonomy preference which would indicate a desire to work alone. As the majority of university work is organised in this manner this would be consistent for this finding. However, the high need for affiliation of some disciplines may indicate that a more group oriented teaching approach may be of benefit for these in particular, though this could only be established through future research.

5.7 Leadership Motive Pattern

Little research has been conducted using the calculation for the Leadership Motive Pattern (z score n Dom - z score n Aff) used in the present research. One exception is Cornelius and Lanes' (1984) study which examined centre managers and curriculum directors from a profit making company and found that the centre managers scored higher in the Leadership Motive Pattern than subjects in the present research. The curriculum directors scored lower in the Leadership Motive Pattern than subjects in the present research. This would indicate that those who desire to manage or lead people do have a higher Leadership Motive Pattern than those who do not, consistent with the Leadership Motive Pattern theory.

5.7.1 Leadership Motive Pattern and gender

In the present research it was found that males were significantly higher in the Leadership Motive Pattern than females ($p<0.001$). As LMP is a product of affiliation and power this finding is of little surprise as males rated significantly higher in need for power and significantly lower in need for affiliation than

females. This is the present study's definition of the Leadership Motive Pattern, high need for power and low need for affiliation. A positive result indicates a preference for power and a negative result indicates a preference for affiliation. Males, on average, did obtain a positive score for LMP and females, on average, did obtain a negative score for LMP. As was discussed for Machiavellianism this may be due to either biological issues or societal expectations. Males may have an innate urge to lead or dominate those around them and females may have a natural tendency to befriend and help others. Conversely, society may expect males to act in a dominant fashion and expect females to behave in a friendly co-operative manner.

5.7.2 Leadership Motive Pattern and university disciplines

Results from an ANOVA indicated that significant differences exist between the student disciplines in the Leadership Motive Pattern ($p < 0.01$). When using ranges analyses it was found that social science, humanities and business students were significantly higher in LMP than education and social work students ($p < 0.05$). This would be an expected result as students in the business studies discipline fit the image of students preparing to work in the competitive business environment. Due to this competitiveness they may be expected to seek power over affiliation. The humanities and social science disciplines are interesting, in that one would not expect these degrees to have a high need for power and a low need for affiliation. However, results indicate these disciplines do have amongst the highest ratings for the Leadership Motive Pattern.

The positive result for the social science and humanities degrees indicate a tendency towards the need for power rather than the need for affiliation. It may be that these students would rather have control over those around them and the environment through the acquisition of knowledge through their studies. Or it may be that humanities and social science students do not believe that they need strong affiliative ties with people. They may perceive themselves as more independent, though it would be expected this would come through in the need for autonomy rating which was not supported. It could be that social science and humanities disciplines attract students who just simply would rather be in control of people rather than to befriend them or this attitude may develop through the teaching of their course.

The education and social work students indicated a negative result in the LMP which means that they tend towards affiliation rather than power. It was expected that teachers and social workers would be more affiliative as they deal with people on a day to day basis and must be empathetic to their clients'/pupils' needs. Teachers work closely with young people and so would be expected to enjoy close human contact on a day to day basis. They may even be seen by younger pupils as parental type figures and they may view themselves in this role and thus develop high affiliation with their pupils. Education students may have learned that pupils react better to caring assistance rather than open displays of power. This would account for both the low need for power and the high need for affiliation.

Social work students are applying themselves to a job that traditionally is associated with caring and empathy. They too may realise that with some of the people who they have to work with there cannot be an uneven balance of power between themselves and their clients. This again would account for a high need for affiliation and a low need for power. It is a caring profession that would either attract people with a high need for affiliation or through the course of the degree would help develop it within the students.

Nurses would also be expected to be in a similar role, however, the nursing students were found to be high in affiliation but were not low in their need for power. It may be, for their job, they realise that they may encounter people who they have to control, sometimes forcibly, often for the patient's own well-being. Nursing students may be taught that when people are ill or require medical attention they often will need to be directed and controlled as the patients may be unaware of what they are doing. The need for power and the willingness to exercise this power would be an important asset to the nurse. A nurse that cannot keep control would be unlikely to be suitable for this career. Future research would be required to determine whether the propositions suggested are accurate.

5.8 Machiavellianism and motivational drives

The final hypothesis examined the relationship Machiavellianism has with motivational drives. It was theorised that high Machiavellians will have the same motivational drive profile as the Leadership Motive Pattern, that is, a high need for power and a low need for affiliation. It was also thought that a high need for

achievement would also be important for the Machiavellian. As Machiavellianism is considered a personality characteristic it was hypothesised that motivational drives would provide insight into what makes Machiavellians behave as they do. This was a key research question examined in the present research.

5.8.1 Machiavellianism and need for achievement

Contrary to many previous findings, need for achievement was found to be significantly negatively associated with Machiavellianism (p<0.001). The high Machiavellian does not have a strong desire to achieve. This finding has been found previously by Okanes and Murray (1980) in a sample of managers and by Smith (1976) in a sample of college students. These researchers suggested that such a finding may be due to high Machiavellians possessing the necessary interpersonal skills to satisfy their achievement aspirations, whereas low Machs consistently fail to attain their achievement goals and the consequent frustration leads to progressively higher levels of achievement motivation. It may also be argued that those who are high in achievement motivation have no need or no use for the interpersonal skills of the high Mach, while those low in achievement motivation can only, or need only, to attain their goals through the indirect skills of Machiavellianism.

Smith (1976) suggests that the latter argument is more plausible, because success in interpersonal manipulation is a relatively low achievement goal. Attempts to relate high Machiavellianism to high occupational status and other indicators of high achievement motivation have not proved successful. Christie and Geis

(1970) stated that they can see no reason why there should be a relationship between Machiavellianism and need for achievement. This statement may be emphasising the point that they believe that the relationship between need for achievement and the power relevant trait of Machiavellianism are simply not comparable.

5.8.2 Machiavellianism and need for affiliation

As was expected correlational analysis and multiple regression revealed a significant negative link between Machiavellianism and need for affiliation (-0.22). This may be due to Machiavellians taking a cynical view of people and life. They see people for how they can best use them and not for establishing meaningful relationships. Machiavellians feel they do not need the contact with people and if someone can be manipulated in order to achieve a goal, then they will do it without hesitation or thought for the person involved.

Alternatively, it may be that people who are high in need for affiliation would never subject anybody to the treatment that the Machiavellian would. They would never manipulate or trick friends or even people they barely know. Their concern is more with obtaining and maintaining meaningful, satisfying relationships with people and the approach of the Machiavellian would simply not help fulfil this motive. People who are high in the need for affiliation may get caught up in personal dilemmas of others, and in business situations may get side-tracked and emotionally involved, (Christie & Geis, 1970). Here the

Machiavellian's cool detachment would come into play as they are able to step back and let their cool heads rule over heated passions and personal feelings.

As the Machiavellian has a low need for affiliation they would have little difficulty in making decisions that may be detrimental to others, if that is required to achieve their goals. It may be that people who are high in affiliation are the most susceptible to the Machiavellian's wile and charm. They want to believe and trust people, whereas the Machiavellian is almost ideally suited to manipulate this type of person. The Machiavellian sees no problem with using people to attain their objectives and if a person high in affiliation tries to develop a friendship with the Machiavellian then this may play into the Machiavellian's hands. The Machiavellian will exude charm and offer, on the surface, what appears to be a valuable friendship but unknown to the other person the Machiavellian will be quietly manipulating and coercing the person to help fulfil their own objectives.

This is not intended to make the Machiavellian appear to be a callous, scheming and immoral person. Rather what the person with a high need for affiliation sees as a potential friendship, the Machiavellian sees as an opportunity. If the Machiavellian can manipulate the person to achieve their personal goals without hurting them, then they will do so. The Machiavellian gets no delight in hurting or systematically ruining somebody, rather they would rather maintain amiable relationships so people may possibly be of use to them in the future.

5.8.3 Machiavellianism and need for autonomy

The Machiavellian works within an air of secrecy, hence a possible reason for the high need of autonomy that was found within the present sample. The correlation between Machiavellianism and the need for autonomy (+0.23) indicates that the Machiavellian, by nature, prefers to work alone focusing on the work at hand. Though the Machiavellian requires people that they can influence and manipulate, it would appear from this finding, that they would rather work by themselves. Christie & Geis (1970) note that high Machiavellians like to surround themselves and their work with confidentiality and this finding supports this proposed relationship. Machiavellians may only seek people to use to obtain their goals, if absolutely necessary. This would indicate that the Machiavellian does not simply use and manipulate people just because they happen to be in contact with them. The Machiavellian would rather shy away from people and work as independently as possible.   This contrasts sharply with the typical view of the predatory Machiavellian who is constantly searching for people to use and manipulate. Machiavellians operate best within an ambiguous, uncertain environment (Christie and Geis, 1970). They may obtain this environment by keeping themselves away from others and leaving people uncertain as to what they are doing.

Another possibility for the positive Machiavellianism and need for autonomy relationship may be that people who have a high need for autonomy do not really enjoy the company of others, so are not reluctant to engage in Machiavellian behaviour if the need arises. A person who is high in need for autonomy, typically is low in need for affiliation as indicated by the negative correlation. This means

that a person who values autonomy is not really concerned about the maintenance of meaningful relationships, so if they can use a Machiavellian approach for their benefit then they will, even it may cost potential friendships. A Machiavellian will attempt to work alone, though if the need arises then they will work with people to help manoeuvre themselves into a position where they will be of benefit to them at some future time.

5.8.4 Machiavellianism and need for dominance (power)

As was expected, Machiavellianism was positively related to the need for power (+0.16). As Machiavellianism was described by Christie and Geis (1970) as a means of seizing and retaining power, then it is of little surprise to see that such a relationship exists. One would expect that high Machiavellians, having adopted such a personality trait, would intend to use their characteristics and skills in obtaining power over those around them. Seeking to obtain power is the basis for the Machiavellian characteristic and really what the Machiavellian intends and is naturally inclined to do.

It may be that people who are high in the need for power are motivated to adopt Machiavellian characteristics in order to obtain such power. Their desire to achieve high levels of power may be so strong that they are willing to do anything, even if this involves adopting a series of beliefs following the tenets of Machiavellianism. As ever with interpretation of correlational data causality cannot be inferred. To determine if Machiavellianism causes a high need for power or whether a high need for power causes people to adopt a Machiavellian

approach is open to speculation. Intuitively, it would seem that people possess innate drives and these drives need to be satisfied. It seems that people probably already possess a high need for power and therefore adopt the Machiavellian attitude to gain this power.

People would not suddenly decide to become Machiavellian, it would probably progress as people find themselves doing more ethically questionable things to obtain personal goals. People may feel they have to be ruthless to succeed in the business world and if this involves standing on a few people's toes, then so be it. They may look towards managers like Tiny Rowlands, John Asprey and Frank Berni whose ideas, energy and ruthlessness launched major companies (Bartlett, 1988). People with a high need for power are seeking to satisfy this need and Machiavellianism may be one approach that they adopt to do this. As Machiavellianism is a power seeking personality type it seems obvious that such a positive link should exist between Machiavellianism and the need for power

5.8.5 Machiavellianism and the Leadership Motive Pattern

The results obtained partially support the hypothesis that Machiavellians fit the Leadership Motive Pattern, that is, a high need for power and a low need for affiliation. Though the Leadership Motive Pattern accounted for only 5% of Machiavellianism this is significant. There is a definite link between Machiavellianism and the motivational drives of power and affiliation that make up the LMP. These findings support the idea that Machiavellians do fit a well known motivational drive theory. This personality type that evokes intense

dislike is motivated by drives that have been suggested make an ideal leader (McClelland, 1975). The high Mach fits the Leadership Motive Pattern and it is this pattern that influences them towards acting as they do to achieve their ends. The approach that they adopt to meet these ends may be questionable, that is, a relative lack of concern about ethics and the consequences of actions on others. They are however driven to act like this by these underlying, some would say, admirable motivational drives.

From this it can be considered that the Machiavellian is not simply ruled by greed and a wanton disregard for people. They are motivated by the same drives that are present to some extent within us all. Their underlying motives therefore cannot be what makes a Machiavellian viewed as an immoral, unscrupulous person. Rather the negative feelings associated with Machiavellianism may be more from what the are willing to do and how they satisfy these needs. They may simply be more willing to adjust their ethical standpoint and influence or manipulate more than other people. With this in mind it can be seen how Machiavellians can be worthy adversaries. They are motivated by drives that are considered to be ideal for a leader/manager and they possess a determination to reach these goals. They do not let emotions rule their heads and can remain detached and focused when it is called for. These skills can prove vital in the competitive international business world that New Zealand is fighting to enter and become effective in.

It is acknowledged that the total amount of variance explained by motivational drives and the demographic characteristics of age and sex is small. There is still 83% of variance unaccounted for which must lie with other factors that impinge on Machiavellianism. It was not expected that there would be a perfect overlap of motivational drives and Machiavellianism. The results found, even though they are small are significant and indicate that basic motivational drives do significantly influence Machiavellian orientation. The unexplained variance does need to be examined further and could be expected chiefly to lie within other areas such as morality and ethics. This researcher feels that the results found are significant in helping to establish the fundamental question of "what drives a Machiavellian person?" The present research has revealed that innate drives play a small but significant role and this research helps to answer the above question.

The key issue which the present study is trying to address is that Machiavellianism, which has been frowned upon and is currently dismissed as an archaic personality type does have a legitimate place and can be an advantageous stance to adopt. Machiavellians are not inherently bad or evil people, they are motivated by the same drives that are present within idealised leaders, that is, they fit the Leadership Motive Pattern. Instead of rejecting Machiavellianism out of hand, it is this researchers opinion that it would be better to learn more about the personality type which until recently has only been researched by correlational studies with variables such as locus of control and sales performance. What makes a Machiavellian what they are and why they behave as they do may prove a

more fruitful line of research in gaining an understanding of this misunderstood and hastily judged type of person.

6 CONCLUSION

The understanding of Machiavellianism, like all personality variables is still far from complete. The present study examined Machiavellianism in relation to motivational drives and the impact of these drives and Machiavellianism on the career choice of students. Machiavellianism and the demographic variables of age and sex were also examined. Machievellianism was found to be significantly positively correlated with need for power, need for autonomy and the Leadership Motive Pattern. Machievellianism was found to be significantly negatively correlated with age, need for affiliation and need for achievement. Males were found to be significantly more Machiavellian, have a higher need for autonomy, have a higher need for power, have a lower need for affiliation and have a higher Leadership Motive Pattern than females. Older people were found to be significantly less Machiavellian than younger people.

Business students were found to be more Machiavellian than non-business students and amongst the business students the marketing students were significantly more Machiavellian. Nursing and science students had a significantly higher need for achievement than social work and social science students. Education students had a significantly higher need for affiliation than social science, humanities and business students. Nursing and social work students had a significantly higher need for affiliation than social science students. Social science, humanities and business students scored significantly higher in the Leadership Motive Pattern than education and social work students.

Evidence was found to support the link between motivational drives and Machiavellianism. Results also indicate that significant differences exist between the university disciplines on motivational drives and Machiavellianism. Support was also found to indicate that significant relationships exist between Machiavellianism and age and sex and this added to a growing amount of literature to support the robustness of the finding. The present study provided evidence to indicate that Machiavellians have the same motivations that are attributed to successful leaders. This suggests that Machiavelians' motives are not necessarily immoral or wrong, rather it is their approach to satisfying these motives that may cause such concern to people. High Machiavellians are not bad people, they possess the same drives that are thought to be required to be a successful leader or manager.

The call is for further research into why Machiavellians behave as they do with an emphasis on longitudinal research. The present research adopted a motivational or need perspective and established that Machiavellians have needs or motives that are desirable amongst people so the question has to be asked why is the personality of the Machiavelian so despised? Establishing Machiavellian and need motivational norms within New Zealand is also called for to aid in the generalisation of studies that have used samples such as university subjects.

The findings from the present research indicate students in university disciplines are motivated by differing needs depending on their course of study. This has implications for the teaching style of these courses. Some faculties such as

education in which the students have a high need for affiliation may benefit from more group activity and projects. Other disciplines such as business studies which has students with a high need for achievement may benefit from teaching in a style that encourages and fulfils this need. Additional research into these issues may prove beneficial to the students in the form of teaching that is offered.

With regard to the affiliation and to a lesser extent the autonomy sub-scales of the Manifest Needs Questionnaire there are concerns regarding the internal consistency. These scales need to be examined and modified if the MNQ is to remain a reliable and valid measure of personal motives. The Mach IV scale reported an adequate internal consistency.

The Machiavellian can be a powerful business ally or a formidable competitor. The present research has provided some indication of what drives high Machiavellians to act as they do. Further this study has found some motivational drives that appear to influence the choice of study and hence career path of students in a university setting. It was found that the Leadership Motive Pattern was significantly related to Machiavellianism and from this and the relationships between other motivational drives it is concluded that the Machiavellian is driven by the same needs as ordinary people and even the same needs as great leaders. Research into just how Machiavellians satisfy these needs may indicate where they stray from the accepted norms of society and have earned themselves a negative reputation. The present research revealed a small but significant number of variables which influence Machiavellianism. Future research would be required

to determine what other factors influence Machiavellianism and account for the, as yet unexplained, variance.

Hopefully the present study has achieved its key objectives of helping to enlighten this misunderstood personality construct and providing impetus for renewed research. Machiavellianism should not be seen as an archaic personality type, it exists and if more were understood about it then it may prove beneficial in recruitment of personnel in management and other business areas that require calmness and a cool headed approach in an uncertain environment. Hopefully as the early work of Christie and Geis (1970) states, people will not have the same 'visceral reaction' to Machiavellians and will respect them for the characteristics they can bring to any situation. Machiavellianism is still present and should be studied so that the personality type can be understood and used to its full potential, undoubtedly with devastating effect, and not simply ignored or dismissed as an irrelevant personality trait.

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APPENDIX 1 : Demographic Statistics

Age

Mean 23.300 Median 21.000 Mode 20.000 Std dev 6.178

Range 37.000 Minimum 18.000 Maximum 55.000

Sex

	Frequency	Percent
Male	207	41.6
Female	291	58.4
	-------	-------
Total	498	100.0

Degree

	Frequency	Valid Percent	Cum Percent
B.A (Social Science)	50	10.0	10.0
B.B.S.	217	43.6	53.6
B.A. (Hum.)	28	5.6	59.2
B.Nurs.	13	2.6	61.8
B.Sc.	37	7.4	69.3
B.Ed.	67	13.5	82.7
B.REP.	48	9.6	92.4
B.SW	38	7.6	100.0
	-------	-------	-------
Total	499	100.0	100.0

Major

	Frequency	Valid Percent	Cum Percent
Psychology	16	3.2	3.2
Sociology	18	3.6	6.8
Anthropology	10	2.0	8.8
Geography	6	1.2	10.0
Mathematics	4	.8	10.8
Nursing	13	2.6	13.5
Chemistry	3	.6	14.1
Computer Science	8	1.6	15.7
Plant Bio.	10	2.0	17.7
Zoology	12	2.4	20.1
Classical stud.	2	.4	20.5
English	4	.8	21.3
History	9	1.8	23.1
Religion	3	.6	23.7
Education	67	13.5	37.1
Regional planning	48	9.6	46.8
Social work	38	7.6	54.4
Accounting	40	8.0	62.4
Management	29	5.8	68.3
Marketing	38	7.6	75.9
Finance	32	6.4	82.3
Tourism	45	9.0	91.4
Economics	18	3.6	95.0
Language	6	1.2	96.2
Media studies	3	.6	96.8
Philosophy	1	.2	97.0
Other business	15	3.0	100.0
Total	499	100.0	

APPENDIX 2: Mach IV Questionnaire

Sex: M \ F (Please Circle)

Degree sought (eg BBS, BSc etc.): _____

Major(s): _____

Date of Birth : _____

Please rate your level of agreement with each of the following statements. Please circle the number which you feel most closely matches your opinion, from 1 strongly disagree with the statement, to 5 strongly agree with the statement. There are no right or wrong answers to the following statements.

```
     1           2           3           4           5
     |           |           |           |           |
  strongly              Neither               Strongly
  disagree             Agree nor                Agree
                        Disagree
```

1) Never tell anyone the real reason you did something unless it is useful to do so.
                       1   2   3   4   5

2) The best way to handle people is to tell them what they want to hear.
                       1   2   3   4   5

3) One should take action only when sure it is morally right.   1   2   3   4   5

4) Most people are basically good and kind.
                       1   2   3   4   5

5) It is safest to assume that all people have a vicious streak and it will come out when they are given a chance.   1   2   3   4   5

6) Honesty is the best policy in all cases.
                       1   2   3   4   5

7) There is no excuse for lying to someone else.
                       1   2   3   4   5

8) Generally speaking people won't work hard unless they are forced to.
                       1   2   3   4   5

9) All in all, it is better to be humble and honest than important and dishonest.

           1   **2**   **3**   **4**   **5**

10) When you ask someone to do something for you, it is best to give the real reasons for wanting it done rather than giving reasons that might influence them more.

           1   **2**   **3**   **4**   **5**

11) Most people who get ahead in the world lead clean, moral lives.   **1**   **2**   **3**   **4**   **5**

12) Anyone who completely trusts anyone is asking for trouble.   **1**   **2**   **3**   **4**   **5**

13) The biggest difference between most criminals and other people is that criminals are stupid enough to get caught.   **1**   **2**   **3**   **4**   **5**

14) Most people are brave.   **1**   **2**   **3**   **4**   **5**

15) It is wise to flatter important people.

           1   **2**   **3**   **4**   **5**

16) It is possible to be good in all respects.

           1   **2**   **3**   **4**   **5**

17) Barnum was wrong when he said that there's a sucker born every minute.

           1   **2**   **3**   **4**   **5**

18) It is hard to get ahead without cutting corners here and there.   **1**   **2**   **3**   **4**   **5**

19) People suffering from incurable diseases should have the choice of being put painlessly to death.

           1   **2**   **3**   **4**   **5**

20) Most people forget more easily the death of their parents than the loss of their property.

           1   **2**   **3**   **4**   **5**

APPENDIX 3: Manifest Needs Questionnaire

Please rate your level of agreement with each of the following statements. Please circle the number which you feel most closely matches your attitude to the statement, from 1 - Always to 7 - Never. `There are no right or wrong answers to the following statements.

```
    1        2        3        4        5        6        7
    |        |        |        |        |        |        |
ALWAYS    ALMOST   USUALLY   SOME-    SELDOM   ALMOST   NEVER
          ALWAYS             TIMES             NEVER
```

1)   I do my best when my work assignments are fairly
     difficult   1 2 3 4 5 6 7

2)   When I have a choice, I try to work in a group
     instead of by myself   1 2 3 4 5 6 7

3)   In my work assignments, I try to be my own   boss
                                 1 2 3 4 5 6 7

4)   I seek an active role in the leadership of a
     group   1 2 3 4 5 6 7

5)   I try hard to improve on my past performance at
     work   1 2 3 4 5 6 7

6)   I pay a good deal of attention to feelings of
     others at work   1 2 3 4 5 6 7

7)   I go my own way at work regardless of the
     opinions of others   1 2 3 4 5 6 7

8)   I avoid trying to influence those around me to
     see things my way   1 2 3 4 5 6 7

9)   I take moderate risks and stick my neck out to
     get ahead at work   1 2 3 4 5 6 7

10) I prefer to do my own work and let others do
     theirs   1 2 3 4 5 6 7

11) I disregard rules and regulations that hamper my
     personal freedom   1 2 3 4 5 6 7

12) I find myself organising and directing the
     activities of others   1 2 3 4 5 6 7

13) I try to avoid any added responsibilities on my
     job   1 2 3 4 5 6 7

14) I express my disagreements with others openly
                              1   2   3   4   5   6   7

15) I consider myself a "team player" at work
                          1   2   3   4   5   6   7

16) I strive to gain more control over the events
    around me at work   1   2   3   4   5   6   7

17) I try to perform better than my co-workers
                          1   2   3   4   5   6   7

18) I find myself talking to others about non work
    related matters   1   2   3   4   5   6   7

19) I try my best to work alone on a job
                          1   2   3   4   5   6   7

20) I strive to be "in command" when I am working in a
    group   1   2   3   4   5   6   7

Thankyou for completing these questionnaires, if you
have any comments please use the space below.

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APPENDIX 4: Information Sheet

DIFFERENCES IN PERSUASIVE AND INFLUENTIAL ABILITY OF STUDENTS & POTENTIAL EFFECTS ON LEADERSHIP STYLE

Information Sheet

Who is the researcher and where can he be contacted?

The researcher for this study is Keith Johnstone of the Psychology Department at Massey University. If you wish to contact Mr. Johnstone you may do so by either writing to him at the Psychology Department, or by calling the Psychology Department and leaving a message for him. The address and phone number for the Psychology Department are at the top right hand corner of this page

What is the study about?

The study aims to look at whether students from different faculties and departments differ from each other with regard to persuasiveness and ability to influence others. It will further be examined what effect persuasiveness has on motivational needs.

What will the participant have to do?

If you decide to participate in the study you will be asked to fill out two short questionnaires. These will be given to you next week to complete, the questionnaires are completely voluntary and if you do not wish to complete the questionnaire or answer any of the questions within the questionnaires you do not have to.

How much time will be involved?

The study will only take up a small amount of your time. The two questionnaires are estimated to take no more than 10 minutes in total.

How will the results of the research be used?

The results from the questionnaires will be used in a Thesis for the completion of a Masters of Science degree. This thesis will be available in its entireiety in the Massey University Library reference section early in 1996. It is intended that the

findings derived from the questionnaires will also be submitted for publication in professional journals.

Will people know my answers to the questionnaires?

No. The answers to the questionnaires are confidential to the researcher and his supervisor. Your names are not required though some demographic information such as Sex, course, and Major will be asked. This information will then be transferred to a pass-word protected database and this can only be accessed by the researcher and his supervisor. In addition the results published will be totals from all of the subjects (approx. 500) so there is no chance that you will be identified in the results.

What can you expect from the researchers ?

If you take part in the study you have the right to:

- Refuse to answer any particular question, and to withdraw from the study at any time.

- Ask any further questions about the study that occur to you during your participation.

- Provide information on the understanding that it is completely confidential to the researchers. All information is collected anonymously, and it will not be possible to identify you in any reports that are prepared from the study.

- Be provided with a summary of the findings from the study when it is concluded.

APPENDIX 5: Consent Form

DIFFERENCES IN PERSUASIVE AND INFLUENTIAL ABILITY OF STUDENTS & POTENTIAL EFFECTS ON LEADERSHIP STYLE

Consent Form

Filling out this form implies consent.

I have read the information sheet for this study and have had the details of the study explained to me. My questions about the study have been answered to my satisfaction, and I understand that I may ask further questions at any time.

I also understand that I have the right to withdraw from the study at any time, or decline to answer any particular questions in the study. I agree to provide information to the researchers on the understanding that is **completely** confidential.

I wish to participate in this study under the conditions set out on the Information Sheet.

Signed:_____

Name:_____

Date:_____