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Informal Relationships in the Workplace: Associations with Job Satisfaction, Organisational Commitment and Turnover Intentions

A thesis presented in partial fulfilment of the requirements for the degree of

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Abstract

The aim of this thesis was to develop and test a theoretical model of friendships in the workplace. Friendships within organisations may have a profound effect on an employee's experience of work, potentially either hindering or facilitating organisational functioning, yet friendships have seldom been studied in an organisational context. The association between friendships at work and organisational outcomes such as job satisfaction, organisational commitment and turnover intentions were investigated in three studies, assessing support for a theoretical model.

In the first study, employees of a large Auckland hospital¹ ($n = 124$) were surveyed using a written questionnaire. Results indicated that cohesiveness and opportunities for friendship were related to increased job satisfaction, leading to increased organisational commitment and decreased turnover intentions. The actual prevalence of friendships was primarily related to decreased turnover intentions. Overall there was good support for the proposed model. The need for further research to ascertain the generalisability of the findings was highlighted.

A second study was conducted using an Internet based questionnaire, accessed both from within New Zealand and worldwide. A diverse sample of employees responded ($n = 412$). The analysis (structural equation modelling) indicated further support for most aspects of the model, suggesting that the findings are generalisable and the model is robust.

The model of workplace relationships was cross-validated in a third study, confirming linkages between friendships at work and organisational outcomes. The model was then tested for inter-group invariance. The model was invariant across groups reporting differing needs for affiliation, autonomy and achievement, but non-invariant across groups occupying relatively less or more interdependent jobs. Results suggest that the interdependence of individuals' jobs affects the salience of work friendships more than respondents' subjective needs.

Overall, the research suggests that the presence of workplace friendships has a significant effect on several workplace variables, with the effect of friendships being more salient for individuals in interdependent work roles. The implications of the research findings are potentially far reaching. Not only do workplace friendships improve employees' experiences of work, but they also have the potential to affect the financial "bottom line" through factors such as enhanced organisational commitment, job satisfaction and reduced intentions to leave.

¹ Waitemata District Health Board, Auckland (NZ)

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Chapter 1: Introduction

“Without friends, no one would choose to live.”

-Aristotle-

The above quote suggests that, for many people, friendships are essential in creating a sense of well-being and happiness. Friends who share our interests, enjoy our company and value our ideas, enrich our lives; they provide comfort, support and help in times of need (Veniegas & Peplau, 1997).

Close friendships often evolve from existing formal relationships in work places, and for many people, these relationships are maintained within organisational settings. Yet, despite the frequency of these relationships, we know very little about how dual friendship/work relationships function, and how the blurring of relational boundaries might affect organisational functioning, the enjoyment of work, and perhaps even performance.

This research focus was developed partly as an outcome of conversations with friends and acquaintances who had experienced a great deal of tension in the workplace as a result of the breakdown of personal relationships. Others mentioned stress as a result of “being on the out,” being excluded by a dyad with whom they still had to work. On the other hand, people spoke of how absolutely fundamental their friendships at work were to their enjoyment of work, to their satisfaction with their job, and to their desire to remain in their present employment.

Workplace relationships can profoundly impact people's experience of work, both negatively and positively. This impression was reinforced by the response received to an article about my research into workplace friendships, which appeared in the New Zealand Herald (Middleton, 2002). The following are excerpts of emails from people who wrote to me.

This was from a woman who told her employers she was leaving her place of work because she felt limited and had no room to grow or develop in her job:

“... but truth be told I no longer wanted to work for a company where I couldn't make friends. To spend 8 hours a day (minimum) at a place where you do not have close relationships with any of the staff (regardless of whether you enjoy your actual job or not) is a very sad thing in my opinion. I am now looking for a role with a smaller more stable company where I can not only continue to enjoy the actual work I do but also hopefully enjoy the company of my workmates in a more trusting friendly environment” (T. D. Feb, 2002).

The following quote was from an employee who described difficulties associated with her recent change of job:

“The first year was a horrendous time. I hated – not so much the actual job, but the feeling of isolation from not having any friends in my new job. I actually longed to return to my previous job, just to be with my previous co-workers, whom I missed terribly. This was in spite of the fact that I was earning less money in the previous job” (D.C. Feb, 2002).

The woman who wrote the quote below chose to leave her job primarily because of the lack of informal relationships and friends in her former workplace:

“I have recently left a job where the staff were not encouraged to talk to each other while at work. They did not sit together at lunchtime and did not have tea breaks. The atmosphere was just terrible” (D.D. Feb, 2002).

A Human Resource manager wrote as well, commenting that:

“...those who develop a friendship with equal colleagues and interact with them socially out of work have tendency to remain loyal to the company” (B.O. Feb, 2002).

In addition to this anecdotal evidence, which indicates that individuals make employment decisions based on the quality of their relationships at work, research has also indicated that organisations too, prefer that their employees work well together. An American study by Lozada (1996) found that 90 percent of dismissals are the result of poor attitudes, inappropriate behaviour and difficulties with interpersonal relationships rather than deficient technical skills. The finding that people are so often dismissed for reasons other than being unable to do their jobs, highlights the importance of informal interpersonal relationships at work; being good at your job is not sufficient if you cannot work *with* people. Thus, the informal relationships employees have at work not only seem to have a significant effect on turnover; on whether employees choose to stay in their jobs and on their subjective enjoyment of their jobs, but also on whether organisations want them to remain or decide to end their employment.

Intuitively, it is likely that the informal relationships individuals have in the workplace will affect their experience of work. Correspondence with members of the public, in response to the article mentioned above, and with friends and colleagues seems to support this. However it is possible that the people who felt strongly enough about these issues to write in response to a newspaper article are not representative of the general working population. As there is currently little empirical research investigating the phenomenon of informal workplace relationships published in the literature, it is the aim of this thesis to address this gap. Thus, a focus of this project is to examine the

possible effects of informal workplace relationships, both on the well-being of employees, and on organisational outcomes such as job satisfaction, organisational commitment and intention to leave an organisation. To examine the phenomenon of friendships at work, a theoretical model is proposed and tested.

In the studies described in this thesis, informal interpersonal relationships other than romantic relationships are examined. Some previous research has looked at romantic relationships between work-mates (e.g., Anderson & Hunsaker, 1985; Quinn, 1977), but sufficient research exists to suggest that friendship and romantic relationships are distinct relational types, and should be investigated separately (Bridge & Baxter, 1992). Although there is an enormous literature on formal dyadic units (e.g., supervisor-subordinate, mentor/protégé), very little research has examined the role of friendships as they relate to organisational effectiveness (Dillard & Fritz, 1995). A contribution this thesis will make is addressing a lack in the literature of research directly focusing on friendships, both in a New Zealand context, and internationally.

Because there is evidence to suggest that different work roles attract and retain people with corresponding values and or needs (Schneider, 1987; Schneider, Goldstein, & Smith, 1995; Schneider & Reichers, 1983), it is not unreasonable to make some assumptions about role occupants. For example it is possible that employees with highly autonomous jobs, which require very little social interaction, will be less affected by friendships (or lack of friendships) in their workplace than those who work very closely with others in the course of their day. Similarly it is possible that people with different needs might be differently affected by social opportunities at work. This thesis will also examine whether these differences do, in fact, exist. To address this question, this thesis will examine whether or not the relationships between workplace friendships and organisational outcome variables (commitment, intention to leave, etc.) differ between employees from different types of jobs, and between people with different needs. Thus, a second focus of this project relates to the notion that the presence of satisfying relationships at work is likely to have more salience for some people than others.

Aristotle believed that without friends no one would choose to live. In New Zealand's increasingly secular society (of primarily nuclear families), there may be a growing reliance on the workplace to give a sense of belonging that people formerly drew from their church, community, or extended family. The day-to-day *living* of the populace is, more than ever, focused on *working life*. Perhaps, today, Aristotle would say instead...

"Without friends no one would choose to work."

Chapter 2: Literature Review

2.1 Where does this Project Sit Within Psychology?

The focus of this project, informal relationships in organisations, sits within the realm of both social and organisational psychology. Friendship formation and maintenance has long been studied within the field of Social Psychology (e.g., Adams, 1963; Baxter, 1990; Baxter, 1988; Bridge & Baxter, 1992; Buunk & Prins, 1998; Duck & Perlman, 1985; Duck & Wright, 1993; Fine, 1986; Wright, 1969, 1974, 1984). The study of social needs at work has been a feature of Organisational Psychology (or, historically, Management Studies) since Elton Mayo first associated the fulfilment of employees' social needs to productivity and efficiency in the workplace in the 1940s (Mayo, 1945).

2.1.1 Social Psychology: A History of Friendship Research

Since the time of the ancient Greek and Roman philosophers, and no doubt the Eastern philosophers prior to that, friends have been recognised as important sources of affection, pleasure, companionship and support. Predating the scientific method, the works of Aristotle and Plato were philosophical rather than empirical, but represent some of the earliest conceptualisations of friendship, as distinct from other relationships in people's lives. For example, according to Plato, true friendship is derived from basic human needs and desires, such as wanting to strive toward goodness, to love and be loved, and to seek self-understanding (Blieszner & Adams, 1992). Aristotle, on the other hand, described a multi-dimensional conceptualisation of friendship, outlining three functions, or characteristics of friendship; the quality of goodness (two people having mutual admiration for each others loyalty and justness), the quality of enjoyableness (a friendship that is valued for the pleasure taken in the others company), and the quality of utility (a friendship that is valued for the benefits the friendship

provides). Aristotle believed that perfect friendships would be characterised more by goodness, than by either utility or enjoyableness (Bukowski, Nappi, & Hoza, 1987).

Interestingly, there has been empirical research in Social Psychology that examines the validity of the multi-dimensional model first proposed by Aristotle. Murstein and Spitz (1974) conducted research with college women, testing Aristotle's theory. In Murstein and Spitz's study respondents were asked to rate seven target individuals² on an 80-item bipolar adjective checklist. The authors examined the factor structure resulting from these ratings and found that the three dominant factors related closely to the three components of friendship proposed by Aristotle, thereby supporting his model.

More recently Bukowski et al. (1987) also assessed the validity of Aristotle's model, addressing some of the limitations of Murstein and Spitz's study by researching both men and women. Bukowski et al. asked respondents to complete two bi-polar adjective rating scales, one for their best male friend and the other for their best female friend. It was expected that subjects' ratings of the items representing the constructs of goodness, utility and enjoyableness would reveal goodness to be the most central component of friendship (the items chosen were those that had the highest factor loadings in the Murstein and Spitz (1974) data). Like Murstein and Spitz, Bukowski et al. found that Aristotle's three friendship components could be measured reliably. In addition, Aristotle's notion that goodness is the most central component of friendship was supported, as goodness was more highly correlated with the other two scales, than they were with each other. This implies that a friendship characterised by goodness will also feature qualities of utility and enjoyableness, but friendships characterised by utility will not necessarily feature enjoyableness, and those that are characterised by enjoyableness will not necessarily feature utility. Thus both the Bukowski et al. (1987) and the Murstein and Spitz (1974) studies found support for Aristotle's conceptualisation of friendship, establishing that the three components could be measured reliably, and also supporting the validity of the model as a means of understanding friendships.

² Most admired friend, most useful friend, most enjoyable friend, best female friend, best male friend, the self and the ideal self.

Despite the very long history of observations and commentary on friendships in the writings of philosophers and social historians, friendship relationships have received relatively little attention from behavioural scientists compared to that given to romantic, family or neighbour relationships (Blieszner & Adams, 1992). Nonetheless, looking back over past literature, a growing interest in the study of friendship relationships is apparent. Blieszner and Adams outline six trends in friendship research, which have occurred over the past few decades. They are:

1. Expansion of the early (pre 1970's) focus on child peer interaction to the study of friendship across the lifespan.
2. Movement towards studying friendship as a distinct category of relationship.
3. Broadening of adult friendship research from a disciplinary (social psychology) to a multi-disciplinary (sociology, anthropology, management studies) focus.
4. Change from studying friendship as a collection of attributes of individuals to studying it as a relationship.
5. Greater recognition of the importance of studying the quality of relationships (i.e., intimacy and multiplexity) as well as the quantity of interaction (i.e., propinquity and proximity).
6. Expansion of the range of research methods used in friendship studies (e.g., critical incidents, quantitative research, statistical procedures, content analysis, discourse analysis).

It is possible to add one final trend to Blieszner and Adams' list:

7. The study of friendships within different contexts, and the impact of context on friendship.

The current thesis focuses on item six, in that it makes the most of the expansion of the range of research methods used in friendship studies; both qualitative and quantitative techniques will be used to collect data, and much of the data collection takes place online. Additionally, path analysis and structural equation modelling (SEM) (Byrne, 2001) will be used to analyse data, in order to establish if the data collected supports the

proposed models. This thesis also addresses item seven, placing the research within the workplace as a context, and investigating the impact aspects of the workplace may have on friendship relationships.

In sum, scholars of Social Psychology have long been concerned with defining friendship and examining the functions of this relationship, both for individuals and within society as a whole (Blieszner & Adams, 1992). Over the course of history, conceptions of friendship have moved from abstract philosophies about friendship, to the recognition of the vital role that friends play in providing the social support essential for coping with daily life. Recent conceptual and methodological advances in the field of social psychology have opened up new areas of enquiry. Path analysis and SEM, for example, allow researchers to draw inferences about possible antecedents and consequences of friendships.

2.1.2 Organisational Psychology: A History of Human Factors Research

The importance of social relationships in the workplace has been recognised by scholars for most of the last century. Elton Mayo (1945) brought workplace friendships to attention when he wrote the first management book focusing on the social needs of employees. Mayo advocated the role of emotional factors in determining employee behaviour, contending that the extent to which employees received social satisfaction in the workplace was the most powerful influence on productivity (Mayo, 1945). In addition, Mayo argued that the key determinant of job satisfaction was group interaction, and highlighted the importance of good leadership and satisfying personal relations in the workplace. Moving on in time, the work of Maslow (1954), developed a five-level hierarchy of human needs, ranging from basic physiological needs, to safety, 'belongingness' and love, esteem and self-actualisation. Maslow's theory contends that; as lower level needs (such as physiological and safety needs) are satisfied, higher level needs (such as esteem and self-actualisation needs) emerge as motivators. Because of its intuitive appeal, and because no measuring instruments existed which could test it, Maslow's theory was accepted for many years. However, more recent research has provided only partial support for Maslow's theory, and has not provided strong evidence that the theory predicts performance (e.g., Betz, 1982; Betz, 1984; Wahba & Bridwell,

1976). For example, nearly thirty years ago Wahba and Bridwell (1976) reviewed thirteen studies testing Maslow's theory and found only partial support for the concept of a need hierarchy and no support for Maslow's gratification/activation proposition³. More recently, a study by Betz (1982) compared female managers to female homemakers. It was found that neither group of women ranked their needs in accordance with Maslow's hierarchy.

In spite of the lack of direct empirical support, Maslow's theories can be applied broadly to Industrial-Organisational Psychology. For example, the opportunities to satisfy needs are still studied in organisational contexts, and needs have been related to organisational commitment (Steers, 1977; Steers & Braunstein, 1976), job satisfaction and tendency to leave (Zinovieva, ten Horn, & Roe, 1993). In a New Zealand based study, Shouksmith (1994) administered the Multidimensional Job Satisfaction Scale to a sample of 1121 health professionals to ascertain which organisational factors were associated with commitment. Opportunity for personal growth (or self-actualisation) was found to be related to all three forms of commitment. Thus, the needs themselves have been shown to influence performance in certain jobs, and although the simple hierarchy that Maslow envisioned may not adequately reflect the complexity of human motivation, his theory still has use.

Not long after Maslow published his Need Hierarchy theory, Herzberg, Mausner and Snyderman (1959) wrote *The Motivation to Work*, which describes how employee satisfaction stems from factors such as achievement, recognition for accomplishment, challenging work, increased responsibility and opportunities for growth and development. Herzberg's (1966) two-factor theory of job satisfaction was influential in the development of many subsequent measurement tools (Tovey & Adams, 1999). Herzberg et al. postulated that satisfaction and dissatisfaction are two separate phenomena. Intrinsic factors, i.e., factors intrinsic to the nature and experience of doing work, which they found to be job satisfiers, include; achievement, recognition, work itself and responsibility. They named these factors 'motivators.' Extrinsic factors,

³ The gratification/activation proposition holds that gratification of a given need submerges it, and "activates" the next higher need in the hierarchy.

which they found to be job 'dissatisfiers,' include; company policy, administration, supervision, salary, interpersonal relations and working conditions. They named these 'hygiene' factors. Herzberg maintained that hygiene factors counteract physical needs and can avoid discomfort, but cannot produce pleasure. On the other hand, the satisfiers of psychological needs (motivators) can produce pleasure, but their absence does not produce discomfort. Herzberg viewed the two dimensions of satisfaction and dissatisfaction as independent of each other. Consequently, it is possible to be simultaneously satisfied and dissatisfied with different aspects of the same job.

There has been criticism of the Herzberg edifice; Hackman and Lawler (1971) state that a number researchers have been unable to find support for some of the major tenets of the theory. For example, King (1970) evaluated five versions of the two-factor theory, finding two to be entirely invalid, another to be supported only by experimenter coding bias and two versions to have indeterminate validity. Hulin and Smith (1967) empirically tested the implications of the two-factor theory and found no support for the theory at all (finding instead that any variable in a job that makes it desirable, will make the job undesirable by its absence). In spite of historical criticisms, Herzberg's two-factor theory is often used to provide a framework within which to interpret job satisfaction research. For example, Knoop (1994) examined the relationship between the satisfaction and work values of Canadian teachers, finding support for Herzberg's theory. Adigun and Stephenson (1992) also found support for Herzberg's theory with a British, but not a Nigerian, sample of employees. Furnham Forde, and Ferrari (1999) used Herzberg's two-factors to provide a framework within which to examine personality and work performance. Maidani (1991) used Herzberg's classification scheme to compare employees working in the public with those working in the private sector. Maidani found further support for Herzberg's two factors with employees' motives for work emphasising intrinsic / motivator factors of employment, and the satisfaction of employees not being attributable to hygiene factors. Finally, Yamashita (1995) investigated the job satisfaction of nurses in a large, acute-care hospital in southern Japan and also found support for Herzberg's theory, with the dissatisfaction of nurses being related to extrinsic (hygiene) aspects of work such as having few opportunities for promotion or less favourable working conditions. In his review of

influential Management books, Bedeian (2001) states that it was *The Motivation to Work* which "... set the stage for the ensuing job redesign movement and quality-of-working life revolution" (p. 225). It is the progression of this working-life revolution that has set the scene for the current study.

Another early theorist whose work is relevant to the current study is McClelland (1961), who initiated Achievement-Motivation theory. Central to McClelland's theory are needs for achievement, power and affiliation. Medcof (1995, p. 194) cites the Personality Research Form Manual, compiled by Jackson (1989) which describes a person with a high need for achievement as follows: "Aspires to accomplish difficult tasks; maintains high standards and is willing to work toward distant goals; responds positively to competition; willing to put forth effort to attain excellence." The Personality Research Form Manual describes a person with a high need for power (dominance) as follows: "Attempts to control environment, and to influence or direct other people; expresses opinions forcefully; enjoys the role of leader and may assume it spontaneously." and describes a person with a high need for affiliation as follows: "Enjoys being with friends and people in general; accepts people readily; makes efforts to win friendships and maintain associations with people."

The research on needs, though historically focused on managerial and organisational success, does highlight the importance of the fulfilment of social needs at work. We live in a society in which people derive much of their identity from their occupation and where there is an increasing reliance on the workplace to fulfil social needs. Yet, despite the prevalence of friendships at work, and despite the historical acceptance of the influence of social factors in organisations, there has been surprisingly little empirical research or discussion in New Zealand, or overseas, focusing specifically on friendships in the workplace.

2.1.3 The Current Research

Several organisational researchers in the past decade have commented on the dearth of literature in the area of workplace friendships. For example, Nielsen, Jex and Adams (2000) state that the area of workplace friendship has remained relatively under-

examined, both empirically and theoretically. Similarly, Zorn (1995) states that workplace friendship is a phenomenon that is almost never studied; Winstead, Derlega, Montgomery and Pilkington (1995) comment that there is relatively little research on the relationship between friendship and job satisfaction; and Fritz (1997) states that within the organisational literature there remains a large gap regarding the comparative attributes of men's and women's peer relationships (although this has been studied extensively in non-work contexts). More recently, Raabe and Beehr (2003) also state that there is little research on co-worker (peer) influences at work, compared to the amount which has focused on leaders and supervisors.

One of the few studies which has directly examined workplace friendships was by Riordan and Griffeth (1995) (refer section 2.3.3 for a full description of this study). These authors also comment on the gaps in the literature, stating that, "...the interpersonal job dimensions of dealing with others and friendship opportunities have received only cursory, if any, examination in many of the existing job characteristic studies." They go on to comment that the "...lack of research evidence is surprising since improved interpersonal relationships may influence a variety of performance and attitudinal outcomes" (Riordan & Griffeth, 1995, p. 141).

In order to begin examining the impact of friendships at work, "Friendship Opportunity" as a dimension of perceived job characteristics was developed by Hackman and Lawler (1971) to examine the degree to which a job allowed employees to talk to one another and establish informal relationships at work. Although, historically, there has been a great deal of research on the effect of social support in the workplace (e.g., Chapman, 1993; Gant et al., 1993; LaRocco & Jones, 1978; Loscocco & Spitze, 1990; Vinokur, Schul, & Caplan, 1987; Williams, Ware, & Donald, 1981) relatively little work has attempted to specify what the attitudinal consequences are of perceived friendship opportunities within the job. Social support can be distinguished from friendship in that social support can be obtained from many sources in an employee's life; in addition relationships with individuals from whom one simply receives social support will likely lack the intimacy and sense of uniqueness associated with close friendships. Although most of the research on social support suggests that support in an individual's work

environment is related to the achievement of various organisationally desirable outcomes such as stress reduction, satisfaction, self-esteem and retention; friendship opportunities, as a variable has seldom been examined. The current study will go some way towards addressing this shortfall.

As well as addressing the lack in the literature, of research focusing on friendships in the workplace, another focus of this project is turnover. Turnover represents one of the most important issues for any organisation. The money and time invested in hiring and training an individual who leaves the organisation is lost forever. These costs are considerable, and increase further up the organisational hierarchy, i.e., replacing a senior manager represents a more significant cost than replacing a more junior member of staff (Richer, Blanchard, & Vallerand, 2002). Thus, in addition to workplace friendships, employee turnover also deserves the scientific attention it receives in the current study.

2.2 What is it to be a Friend?

Friendships are voluntary relationships that exist primarily for enjoyment and satisfaction, rather than for the fulfilment of a particular function or role (Sapadin, 1988). Adams (1994) states that; "...in contrast to other forms of intimate relationships in our society, friendship is uniquely voluntary" (p. 163). Blood and legal ties designate relatives, colleagues are designated by one's employer or organisation, neighbours are designated by proximity but friends, particularly adult friends, are selected. There is no formal ceremony to mark the beginning or the end of a friendship, as there is for other relationships (such as marriage), and even definitions of friendship are subjectively variable. This is a complicating factor in the study of friendship, as one person may consider their hairdresser with whom they occasionally socialise a friend; while another may use the term only for people with whom they are very intimate (Sapadin, 1988). Thus, it is important to first define friendships for the purposes of this study, and to distinguish friendship relationships from other relationships that may exist in an individual's life.

2.2.1 Friends Compared to Other Relationships

Friendship versus love relationships

Rubin (1970) conducted research to differentiate between romantic love and liking of friends; his results indicated that liking and loving are two distinct constructs, associated with different behaviours and emotions. More recent evidence that love relationships are distinct from friendships comes from a survey of German students (Lamm & Wiesmann, 1997). Respondents were asked to write down how they could tell if they *liked* someone, *loved* someone, or were *in love with* someone. The authors found that the most distinctive characteristic of “liking” was wanting to interact socially with the other; the most distinctive characteristic of “love” was trusting the other; and the most distinctive characteristic of being “in love” was arousal. Both liking and love were associated with a positive mood in the other’s presence. Bridge and Baxter (1992) also state that sufficient research exists to suggest that friendship and love relationships are distinct relational types. The current study will focus on friendships rather than love relationships.

Formal versus informal relationships

The workplace relationships which have received by far the most research attention are those of superior-subordinate (or supervisor-supervisee) (e.g., Allen, 1995; Gant et al., 1993; Largent, 1987; Murphy & Ensher, 1999; Sias & Jablin, 1995; Vecchio & Bullis, 2001; Wesolowski & Mossholder, 1997) and mentor-protégé (e.g., Beans, 1999; Ensher & Murphy, 1997; Higgins & Kram, 2001; Kram & Isabella, 1985; Kram, 1983). These relationships lack the voluntary aspect of friendships, as they are prescribed by the organisation; they are an example of *formal* relationships and are therefore not a direct focus of the current study. This is not to say, however that a true friendship cannot evolve from an existing formal organisational relationship (refer section 2.3.8 on blended relationships). This study focuses on informal organisational relationships; those not prescribed by the organisation.

Friendship versus acquaintanceship

Interpersonal relationship literature, both empirical and theoretical, suggests that people distinguish between friendship and acquaintance relationships, and that different rules govern people's interaction in the two relationships.

“Friendship groups are defined as groups with close interpersonal ties and positive, amiable, pre-existing relationships between members. Acquaintance groups are defined as groups with limited familiarity and contact among members. Members may know each other through casual encounters, however... a strong bond is lacking” (Jehn, 1997, p. 776).

Similarly “friendly relations”, which are characterised by social/personal interactions, lack the intimacy, sense of uniqueness, strength of affective bond, and felt obligations associated with personal friendship. (Bridge & Baxter, 1992).

In contrast to the acquaintance relationship; Wright (1984) states that close friendships;

“... involve shared interests and activities, various kinds of intimacy, including self-disclosure and the sharing of confidences, emotional support, small talk, shop talk and the exchange of tangible favours” (Wright, 1988, p. 370)

Kenny (1994) defined friendship as a “...mutual, voluntary relationship from which members expect intimacy, companionship, and responsiveness” (p.1024).

Thus friendship, by these definitions, is voluntary and reciprocal. It is a relationship which is seen as unique and special by the participants, and which enhances their lives (i.e., is rewarding). Further, a definition by Wright (1974) incorporates the context in which friendships occur. He defines friendship as a relationship involving voluntary interaction, in which “... the commitment of the individuals to one another usually takes precedence over their commitment to the contexts in which the interaction takes place”

(p.94). This is important when conceptualising workplace relationships (section 2.3) as it implies that the boundaries of genuine friendships supersede the role boundaries that may exist in a particular context. Wright's definition relates closely to the definition given in the section on workplace relationships (2.3.1) of the "special peer" in which formal workplace roles are ignored or downplayed.

2.2.2 The Nature of Friendship

The structure of friendship

Blieszner and Adams (1992) outline aspects of the structure of friend pairs (dyads), describing aspects of the structure of friendships. The structure of friendships include the *power hierarchy* (the probability that one member of the dyad will be able to "get their own way" if disagreement were to arise, it is a measure of the influence one individual has over another), the *status hierarchy* (the distance between members in terms of prestige or moral worth), *solidarity* (the degree of intimacy) and *homogeneity* (the similarity of participants in terms of factors such as gender, ethnicity, occupational status, age, etc) (Adams & Blieszner, 1994; Blieszner & Adams, 1992). It is likely that all of these aspects of friendships will be relevant in organisational contexts. Status and power particularly are very salient in many workplaces because work roles are usually prescribed by the organisation and clearly defined status hierarchies often exist.

Phases of friendship

Relationships are dynamic, and friendships, like other relationships, will change over time; have beginnings when partners become acquainted, middles (when other features increase/decrease) and sometimes endings. Movement from one phase to another might be deliberate or might occur by chance (Adams & Blieszner, 1994; Blieszner & Adams, 1992). Adams and Blieszner (1994) outline the three phases of friendship on the basis of how they evolve over time:

Formation involves movement from stranger to acquaintance to friend. It involves identification of, and attraction to, a potential friend and then getting to know that person. Social factors which have been found to influence attraction include: proximity,

adversity and prevailing mood, these circumstances facilitate the communication of sources of attraction such as similarity, familiarity and physical attractiveness (Carr, 2003). There are behavioural changes as partners move from acquaintanceship to friendship. For example, as friendships become closer they tend to involve more interactions over a broader range of activities. More intimate friendships become increasingly dependent on affection rather than on frequency of contact.

Maintenance is the most variable phase in terms of processes. Friends may evaluate the relationship and decide to retain it at its current level, make it more or less intense or change the types of activities they and their friend engage in. Some individuals might consciously employ friendship development strategies in this phase.

Dissolution is when a friendship ends. Some friendships may go on for decades, with the assumption of indefinite existence, some end abruptly as a result of a disagreement or death, others simply wither away through 'benign neglect' (Adams & Blieszner, 1994).

Thus, the types of interactions and the dynamics within friendships can change a great deal over time. Outside influences might impact on friendship processes, and the phase a given friendship is in might also influence the way a particular dyad might interact.

Processes in friendships

Friendship processes include both the covert cognitive and affective responses and overt behavioural events that occur when people interact (Adams & Blieszner, 1994; Blieszner & Adams, 1992). *Cognitive* processes reflect the internal thoughts of each partner (about herself, her partner, the friendship etc). These include interpretations of behaviour, assessments of the stability of the friendship, and evaluations of the attractiveness, value, character and similarity to oneself of the other person. *Affective* processes are the emotional reactions to friends; these may be positive (affection, trust, loyalty, commitment, joy) or negative (anger, hostility, jealousy). *Behavioural* processes are the action components of friendships and include communication/disclosure, displays of affection, resource exchange, co-operation and

the sharing of activities. On a more negative level they might include concealment, manipulation, conflict and competition.

The three processes interact with each other. Cognitive processes result in affective reactions that, in turn, influence future actions. Behaviours can affect thoughts and emotions and so on. People can express their thoughts, feelings and actions so that their friends are aware of them or they may keep them hidden (Adams & Blieszner, 1994). Thus it is possible that a change in any one of these processes will impact on the other two.

In relation to the current study, it is necessary to keep the structures, phases and processes of friendships in mind when interpreting findings. This is particularly important when investigating the way that friendships might influence people's experience of work, as the aspects of friendships described above may influence the way measured variables relate to one another. For example, a relationship between two individuals in a very interdependent work environment organisation may be more difficult to manage than one between peers who work together only occasionally, and will probably require different types of communication and behaviour processes.

2.2.3 Gender Differences in Friendship

While aspects of friendship relationships for men and women have been found to be similar in many respects (Wright, 1988) some gender-based differences have emerged. Most research has pointed to the following broad differences between men and women.

Women's friendships are described as 'communal' or 'face to face.' They tend to involve more self-disclosure, emotional supportiveness, extensiveness and complexity than those of men. In addition, women's friendships tend to stress reciprocity while men's stress commonality. Men's friendships are described as 'instrumental' or 'agentic' and 'side by side.' They tend to be organised around shared interests and activities and be action-oriented rather than person oriented (Markiewicz, Devine, & Kausilas, 2000; Winstead, 1986; Wright, 1988, 1991). Literature with a focus on interpersonal relationships indicates men achieve and define closeness through the

sharing of activities, while women define and achieve closeness through the sharing of feelings and emotions (Odden & Sias, 1997; Wood & Inman, 1993).

These trends have also been found in a New Zealand context. Aukett, Ritchie and Mill (1988) examined the same-sex and opposite-sex friendship patterns of 66 men and 152 women students at the University of Waikato (N.Z.). Resembling findings in America by Winstead (1995), Aukett et al. found that women in New Zealand also tend to have fewer, more intimate friends, which they place more importance on, than do men. In addition they also found that men tended to emphasise shared activities while women emphasised talking and emotional sharing. Both men and women were found to derive more emotional support and therapeutic value from their relationships with women. A possible implication of this, in a workplace context, is that friendships may have more salience in work environments that are predominantly female.

In sum, research on friendships outside the workplace indicates that friendships involving at least one female are more satisfying for most people. Generally both males and females report greater satisfaction and more instrumental and emotional rewards from female friends than from male friends (Aukett et al., 1988; Sapadin, 1988; Veniegas & Peplau, 1997), possibly as a result of women's greater comfort with intimacy and their emphasis on successful relationships as part of their self-concept (Markiewicz et al., 2000).

It is worth noting here however, that generalising literature on gender difference in friendships to specific individuals should be done with caution. While findings of gender differences in friendship are very robust, exceptions are certainly found. Findings that *on average* relationships with women are more satisfying does not mean that every friendship with a woman is found to be satisfying. In addition there are certainly more similarities across genders than there are differences between genders in terms of friendships. Virtually all close friendships involve shared interests and activities, intimacy, emotional support, small talk and the exchange of tangible favours, regardless of the gender of the participants (Wright, 1988). The often quoted finding that women self-disclose more than men in relationships is an example of the way

gender differences have been somewhat exaggerated. Wright (1988) states that the bulk of evidence indicates that most men, as well as most women, self-disclose with relative ease. It just so happens that, on average, women do so more easily than men.

2.2.4 Why Do People Engage in Friendships?

Two theories, which attempt to explain why people engage in friendships, are: (a) social exchange and (b) the intrinsic quality of friendship. Both are outlined below.

Social exchange

Social exchange theory proposes that whether we like somebody, or want to engage in a friendship with him or her, is determined by the cost-reward ratio. People will evaluate the cost to themselves (e.g., time, money, effort) to get a positive reward (e.g., satisfaction, pleasure, support) from a particular person. Consequently social interaction entails both rewards and costs (Rook, 1984). Social exchange may be thought of as a give-and-take relationship between people. According to this theory, "...we choose our social ties on the basis of their capacity to provide rewards relative to costs and as a function of the alternatives available" (Rook, 1984, p. 1098). Social exchange theory holds that people enter into relationships because of the rewards (benefits, fulfilled needs and other "profits") that such relations are expected to bring. Although the notion that relationships are cemented according to "economic" considerations is somewhat distasteful, it is generally true that people's behaviour in relationships is shaped by the expectation of rewards, even if the reward is no more than an expression of gratitude. When such an exchange occurs, positive feelings develop (Anderson & Hunsaker, 1985).

The investment model (Rusbult, 1980) also conceptualises relationships to involve costs and rewards; this model attempts to explain why people stay in relationships (i.e., an individual's commitment) by describing three processes (satisfaction, alternatives and investment). The investment model is usually applied to romantic relationships but it is possible to conceptualise the three processes as being relevant to friendships also. Impett, Beals and Peplau (2001) state that individuals are generally satisfied when relationships provide high rewards and low costs. Rewards are things obtained from the

relationship that an individual enjoys, such as social support; while costs are aspects of the relationship that are unpleasant, such as conflict or financial burdens. People will generally be more committed to a relationship that creates satisfaction (i.e., one that has low costs and high rewards) (Bui, Peplau, & Hill, 1996; Rusbult, 1980).

A second predictor of commitment in the investment model is the quality of alternatives. Alternatives refer to an individual's assessment of the rewards and costs that could be obtained *outside* the current relationship. Third, commitment is affected by investments of resources such as time, effort or money that an individual has contributed to the relationship and would lose if the relationship were to end. Thus, according to the investment model, individuals who are highly satisfied, have invested a great deal, and perceive few appealing alternatives will be highly committed to their relationships.

Most exchange theorists assume that relationships are more satisfying and stable when reciprocity is perceived and when the rewards for each partner are relatively equal (Buunk, Doosje, Liesbeth, Jans, & Hopstaken, 1993; Buunk & Prins, 1998). Equity theorists⁴ argue that being both over benefited or under benefited in a relationship may cause negative feelings (Buunk & Prins, 1998). For example, someone may feel indebted to a friend if they receive more rewards than they are willing or able to reciprocate, or when they receive a more favourable rate of outcomes than the friend. This is an aversive state because of feelings of obligation, guilt and shame (Buunk et al., 1993). On the other hand, feeling that the costs of a relationship outweigh the rewards is also accompanied by negative emotions such as a feeling of unfairness and resentment towards the other person. Thus, according to exchange theorists, the best friendships are those that are perceived to be reciprocal and of equal benefit to both individuals. In relation to the current study, social exchange may be more salient in an organisation than in other contexts; salient rewards and benefits such as positive reviews, promotion and “perks” might be obtainable from workplace relationships and may be a reason people seek to form alliances and friendships at work.

⁴ Equity theory is a special case of social exchange theory that defines a relationship as equitable when the ratio of profit to contribution is perceived to be the same by each partner (Vaughan & Hogg, 1998).

The intrinsic quality of friendship

While there is no doubt that friendships are formed and maintained because they are rewarding (people are often able to clearly state what they “get from” particular friends), friendships that develop beyond superficial levels often have an intrinsic “end in themselves” quality. Each person perceives the other as being unique and irreplaceable. These friendships involve individuals whose participation transcends the importance of any easily specified set of rewards (Clark & Mills, 1979; Wright, 1984).

Thus friendships can become self-sustaining, inasmuch as they may be maintained even when the identifiable rewards that may have led to their development are no longer available. People do not stay in close friendships simply because they find that person or that friendship rewarding. Exchange theories are restricted to observations of rewards people obtain from friendships, this means-end thinking precludes regarding friendship as an intrinsic relationship (Clark & Mills, 1979; Wright, 1984). So, although social exchange does indeed take place in friendships, it does not fully explain them.

Wright (1984) presents a perspective that attempts to reconcile the intrinsic quality of friendship with the seemingly essential presence of some form of rewardingness. He states that it is possible to look at friendship as a communal relationship. A communal relationship is one where members are genuinely concerned about the welfare of each other. People are motivated towards benefiting the other because of “equality of affect.” This is the idea that members in a dyad experience similar affect, if one feels good or bad, both do. Thus, it is in the best interests of both individuals to please the other (Clark & Mills, 1979; Wright, 1984).

Conceptualising friendships as communal contrasts with the conceptualisation of friendships solely as exchange relationships, in which members assume that a benefit is given with the expectation of receiving benefit in return. In fact, communal relationships tend to be *more* rewarding if exchange is *not* in evidence (Wright, 1984). Thus, although people often receive tangible rewards from their friends, the communal

aspect of these relationships is one thing that differentiates “friends” from other “useful” people in a person’s life. Many people probably make an effort, at least initially, to make friends at work because of the tangible benefits and perks that they may be able to obtain; but if genuine, communal friendships form in a workplace, the rewards may be even greater. It is probably the more communal relationships that will affect employees’ satisfaction with their jobs and commitment to their organisation.

2.3 Relationships in a Workplace Context

Because friendships have been found to commence and evolve in a similar manner across contexts, there is no reason to believe that literature on friendship in general cannot be applied to friendships at work. For example Fritz (1997) conducted a study comparing men’s and women’s peer relationships in organisations, surveying 666 organisational employees resident in a Midwestern (U.S.A.) metropolitan area. She found that women’s organisational relationships have the potential to be stronger and, among very close friends, are characterised by greater intimacy than those of men, which reflects findings in non-work contexts (e.g., Winstead, 1986). In addition men’s workplace relationships were found to be characterised by more mutual dependence and involved more activities than women’s; also reflecting findings from non-work contexts (e.g., Aukett et al., 1988; Wright, 1988). Fritz also found that women’s relationships are similar to men’s in terms of instrumentality, which supports a finding by Wright and Scanlon (1991) that women’s relationships are instrumental as well as expressive. She states that; “...the work setting is, for friendship purposes, similar to non-work contexts” (p.27) and that, “...general characteristics of men’s and women’s relationships outside the organizational context may transfer to the organizational setting” (p. 44). In addition, the reasons people make friends (e.g., social exchange, intrinsic rewards) and the characteristics that are looked for in a potential friend (e.g., proximity, similarity, working towards a common goal) are as salient in an organisation as in any other setting (Fine, 1986).

2.3.1 Types of Organisational Peer Relationships

This project will mainly focus on friendships in organisations, but to do this, friends must be distinguished from other organisational relationships. Kram and Isabella (1985) report three organisational peer types (information peer, collegial peer and special peer), differing in level of closeness. Research on these peer types has shown them to be both empirically discriminable and conceptually meaningful (Fritz, 1997). In the current study, the three peer types identified by Kram and Isabella (1985) were used to distinguish between categories of colleagues at work. The peer types were defined for the respondents, along with a fourth category termed “negative relationships” (refer appendix 3), and referred to in the questionnaires respondents completed. The four peer types, including negative relationships are defined as follows:

The information peer: This relationship is characterised by low levels of self-disclosure and trust, little emotional support and little personal feedback. It is the most common of workplace relationships. The functions are to provide information about the job, task, organisation etc. It is not a friendship relationship, and relates most closely to Jehn’s (1997) definition of acquaintance relationships (section 2.2.1).

The collegial peer: This relationship is characterised by moderate levels of trust and self-disclosure, more complex individual roles within the relationship and wider information boundaries. Information sharing occurs in addition to emotional support, feedback, and friendship.

The special peer: This is the most intimate of peer relationships; formal workplace roles are ignored or downplayed, in favour of high levels of self-disclosure and self-expression. It is characterised by intimacy (a measure of the strength of social ties), stability (a measure of how strongly established the relationship is) and continuity (whether the relationship is ongoing, without breaks). Special peer relationships take longer to develop than either collegial or information peer relationships and are relatively scarce in organisations, with many people having none, or only one, special peer at work. The special peer relationship relates most closely to the definitions of friendship given above (section 2.2.1).

The negative relationship: This is not a friendship relationship. Interaction between individuals with a negative relationship is characterised by disrespect, disagreement, dislike, conflict and/or animosity. Individuals may interact with each other on a fairly regular basis but would definitely not continue the relationship if they did not work together.

Most employees have the option of establishing relationships with their co-workers, but while some workplace relationships do develop into intimacy, many do not. “Friendly relations”⁵ often develop out of formal role relationships, and may be the preliminary stage in the development of more intense friendships (Fine, 1986). Fine states that this progression is especially characteristic within organisations, where individuals begin by interacting with each other because they have to, according to their organisational roles, and then, making a virtue of necessity, turn these exchanges into something more informal and pleasurable.

Kram and Isabella (1985) maintain that co-worker friendships are a valuable means of growth and support. They also argue that the characteristic of reciprocity sets them somewhat apart from other work relationships, such as mentoring or superior-subordinate relationships. This ties in with the definitions given previously (section 2.2.1), which describe friendship relationships as voluntary, reciprocal and equal; while the more formally defined organisational relationships (superior-subordinate, mentor-protégé, etc.) will likely lack these characteristics. Buunk et al. (1993) state that reciprocity is a particularly important issue in work relationships because the perception of receiving more help than one can return can result in negative feelings (such as guilt, indebtedness and inadequacy), as can the perception of giving more. When the relationship is between status-unequal friends (e.g., superior and subordinate), a degree of inequality might be considered normal, because providing help and support is expected from the superior. In consequence, feeling over-benefited will be common in relationships with superiors. This situation will be less acceptable in relationships with

⁵Friendly relations are characterised by social and personal interactions, but they lack the intimacy, sense of uniqueness, strength of affective bond and felt obligations associated with personal friendship (Bridge & Baxter, 1992).

colleagues, who will probably aim at reciprocity in order to avoid either individual feeling indebted (Buunk et al., 1993).

Ibarra (1993) discusses characteristics of relationships at work in terms of "tie strength." The strength of a tie is a function of the amount of time, the emotional intensity, intimacy and reciprocity in the relationship. A related concept is "multiplexity," which refers to the number of dimensions in the relationship, a multiplex relationship is one that involves the exchange of multiple resources; for example one where an individual might receive job related support, *and* a friendship, *and* practical career support. The more dimensions that link one individual to another, the stronger the relationship will be.

Thus an individual will have a stronger tie to a special peer than a collegial peer, and the link is likely to be multiplex. Although strong ties may be useful for providing assistance in stressful situations at work and provide emotional and tangible support to individuals, Ibarra (1993) states that weak ties can have significant instrumental benefits. The weaker ties tend to be the channel through which socially distant ideas and information reach an individual, as a weak tie is likely to come from a part of the organisation that is otherwise disconnected from the individual. Strong ties, on the other hand, bond similar people, and similar people tend to be interconnected. Thus information obtained through strong ties is more likely to be redundant (Ibarra, 1993).

In addition, different organisational peer types have been shown to vary in terms of the type of communication they engage in. Myers, Knox, Pawlowski and Ropog (1999) conducted a study in Southern U.S.A. in which 138 members of various organisations completed the Communication Openness Measure and the Communication Functions Questionnaire regarding either an information, collegial, or special peer. Results indicated that information peers are less open, and use less functional communication skills, than either collegial or special peers. Thus peers within organisations can differ in terms of their closeness, strength, multiplexity and communication.

Collegial and special peer relationships are the primary focus of this thesis, as these are the relationships that people tend to think of as “friends.” Because collegial and special peer relationships are more open and intimate than information peer relationships, and are associated with more tangible support, they are the relationships that are most likely to affect an employee’s experience of work.

Friendships compared to other organisational relationships

Peer relationships at work are considered to be one of the primary means by which organisational socialisation takes place (Louis, Posner, & Powell, 1983). Previous research has looked at *romantic* relationships between work-mates (e.g., Anderson & Hunsaker, 1985; Quinn, 1977; Schultz, 2003) but, as stated in section 2.2.1, sufficient research exists to suggest that friendship and romantic relationships are distinct relational types.

Another organisational relationship that has received research attention is the mentor-protégé relationship. While there is little doubt that mentor relationships are valuable to organisational members, peer relationships are both more common and more long lasting. Kram (1983) conducted an intensive biographical interview study of eighteen corporate relationships, investigating the phases of mentor-protégé relationships and, as well as examining the utility and benefits to managers, discusses the limitations of these relationships. She claims that the mentor relationship is limited in value and duration and, in addition, is not available to all individuals in the early stage of their careers. Peer relationships, on the other hand, offer a valuable alternative to the mentor relationships offered by organisational superiors. Peer relationships can provide career and psychosocial functions; they offer the opportunity for greater mutuality and sense of equality, and they are more available in numbers (Kram, 1983). Another difference between mentoring and peer relationships is that, in conventional, stereotypical mentoring relationships, there are significant differences in age and in hierarchical levels, while in peer relationships at least one of these characteristics is usually the same for both individuals. In addition, mentoring relationships involve a one-way helping dynamic while peer relationships are more likely to involve a two-way exchange (Kram & Isabella, 1985). Thus it seems that peer relationships have long been undervalued

and may be as (if not more) useful than traditional mentor relationships to individuals in organisations.

There is an increasing literature focusing on “peer mentoring” (e.g., Allen, McManus, & Russell, 1999; Allen, Russell, & Maetzke, 1997; Aston & Molassiotis, 2003; Colling, Grabo, Rowe, & Straneva, 1998; Ensher, Thomas, & Murphy, 2001; Jacelon, Zucker, Staccarini, & Henneman, 2003; McDougall & Beattie, 1997) which builds on the ideas proposed by Kram (1983) and Kram and Isabella (1985). Peer mentoring is based on the principle of mutual involvement for learning and development between two peers (McDougall & Beattie, 1997). Most authors writing about peer mentoring contend that these relationships provide a valuable source of learning for individuals in organisations. Although peer mentoring relationships are, perhaps, more likely to evolve into friendships than mentor-protégé relationships between superiors and subordinates, they are an aspect of the formal, rather than informal, structure of an organisation in that they are generally prescribed by the organisation (e.g., Allen et al., 1997; Aston & Molassiotis, 2003) rather than being selected by individuals themselves. Thus, although peer mentoring relationships may be reciprocal and equal, they will likely lack the essential voluntary aspect of true friendships (refer section 2.2.1).

2.3.2 The Informal Structure of Organisations

The friendships and negative relationships employees have at work will have an impact beyond each individual’s own sphere of experience at work. Taken together, the friendships, informal organisational relationships and unofficial power blocs in an organisation comprise the *informal structure* of that organisation. The type and quality of an individual’s relationships at work will certainly alter his or her experience of work, while the informal structure of an organisation is likely to impact the functioning of the organisation itself. Ringer and Robinson (1996) outline a layered systems model of organisational functioning, describing the organisation as having six different levels of functioning (the process level, formal structure, informal structure, interacting self, inner self and archetypal role). Friendships, informal organisational relationships and power blocs are an aspect of the informal structure. More precisely the informal structure involves:

- the unspoken unofficial power structure of the organisation;
- the networks of employees who subscribe to particular models or ideologies;
- subgroups that form unofficial power blocs;
- semi-structured “secret societies” within an organisation;
- relationships that unofficially carry influence in the organisation;
- covert alliances, subgroups based on gender, culture, age etc.;
- informal use of databases and software; and
- social groups and relationships (including friendships) (Ringer & Robinson, 1996).

The informal structure is the network of relationships *not* described in job descriptions or role statements. It is the “unofficial organisation” that is implied by the saying “it is not what you know but who you know” and by the grapevine as a conduit of information flow in an organisation. If individuals bypass formal channels of command or procedure, they will probably be utilising the informal structure. Ringer and Robinson (1996) state that the informal structure is a complex, usually hidden, web of relationships and subgroups of people that interacts with, but is different from, the formal structure. In the informal structure there may be strong relationships that span horizontal and vertical boundaries. For example, informal structures are seen in action when one person tries to influence another’s work related behaviours in a non-work setting. The informal structure is not inherently negative or positive, in some organisations it may allow an organisation to function when the formal structure is not adequate, while in others the informal structure may undermine the formal. If the informal structures are analysed it may be possible to identify patterns and areas of influence that can be incorporated into the formal structure. The presence of the informal structure of an organisation may be ignored, but is no doubt of great importance, both to an individual’s experience of work and to the functioning of the organisation itself. This further highlights the potential impact that workplace friendships may have in organisations.

2.3.3 The Impact of Friendships in the Workplace

The workplace context is quite unique, so generalising friendship literature from contexts other than work should be done with caution. Nonetheless, findings that friendships are initiated and develop in a similar manner across contexts (e.g., Fine, 1986; Fritz, 1997) provide some rationale for applying non-organisational literature on friendship to a work environment. It should be acknowledged, however that there are likely to be characteristics of organisations not present in other contexts (e.g., type of work, opportunity to interact, interdependent roles) that may influence the way relationships are formed and maintained, as well as influencing relationship characteristics such as intimacy and communication (Fritz, 1997).

The importance of studying friendships at work

Although there are some authors who hold that friendships at work are to be avoided (e.g., Eisenberg, 1994)⁶, the few empirical studies that exist, highlight the positive outcomes of these relationships (e.g., Richer et al., 2002; Riordan & Griffeth, 1995). Informal social relations may offer significant and rewarding benefits to individuals at work. Workplace friendships can provide increased communication (Kramer, 1996), support (Buunk et al., 1993), trust, respect, co-operation, growth, development, energy and security that, in turn, influence work related attitudes and behaviours (Foote, 1985; Krackhardt & Stern, 1988; Riordan & Griffeth, 1995). Thus, friendships developed within the workplace represent a key element in the informal structure of an organisation. Friendships are potentially powerful structural units that can either hinder or facilitate organisational effectiveness. Conversely, the formal structure of an organisation can contribute to the development of friendships in the work environment through the grouping of units and departments (inasmuch as close proximity between individuals leads to the opportunity for friendship) (Riordan & Griffeth, 1995). Thus workplace friendships are likely to both affect, and be affected by, the workplace.

⁶ Eisenberg (1994) states that, "Any number of serious problems, some equivalent to those in illegal sexual harassment, can arise in an organization when a relationship between co-workers takes on a greater intimacy than a normal working partnership. One problem has to do with morale among other employees who become aware of a relationship. A second concern is that fraternization affects employee productivity. Another problem associated with allowing personal relationships in an organization is the potential for legal liability. Many employers have recognized problems that can arise out of personal work-based relationships." (p.22)

Friendships related to turnover

Of the areas of organisational functioning that can be affected by workplace relationships, turnover is particularly important. As stated in the introductory chapter, an American study by Lozada (1996) found that 90 percent of dismissals are the result of poor attitudes, inappropriate behaviour and difficulties with interpersonal relationships rather than deficient technical skills. The finding that people are so often dismissed for reasons other than being unable to do their jobs highlights the importance of informal interpersonal relationships at work; being good at your job is not sufficient if you cannot work *with* people. Thus, the informal relationships employees have at work seem to have a significant effect on several aspects of turnover; on whether employees choose to stay in their jobs (Richer et al., 2002; Riordan & Griffeth, 1995), on their subjective enjoyment of their jobs (Nielsen et al., 2000; Richer et al., 2002), and on whether organisations want them to remain or decide to end their employment (Lozada, 1996).

Friendships related to performance

Jehn and Shah (1997) discuss the different processes occurring in a work group of friends as opposed to one of acquaintances, claiming that group processes needed for optimal performance may differ depending on the type of task being performed (off-task conversation may relieve boredom of a repetitive, manual task but distract from one requiring complex decision making). Thus the *type* of work an individual does may interact with the salience of friendships at work. Informal relationships may be more or less important depending on whether they facilitate or interfere with the work to be done. Ross (1997) states that workplace friendships significantly improve performance. There is, however, one condition: the friends must be strongly committed to the group's or the organisation's goals. Otherwise, managers may be better off keeping them apart.

Although some research has indicated that friendships among group members may have a negative effect on the group's performance, because the focus may be on social interaction rather than on the task (Bramel & Friend, 1987), other research assumes that improved interpersonal relationships (i.e., friendships) lead to improved task

performance through a reduction in “process loss”⁷. Jehn and Shah (1997) found that friendship groups performed significantly better than acquaintance groups on both decision-making and motor tasks, because of a greater degree of group commitment and co-operation. Jehn and Shah’s study involved an experiment in which 26 groups of three friends and 27 groups of three acquaintances were asked to follow specific instructions for building models of Tinkertoys®. The friends built an average of 9 models versus 2.45 for the acquaintances. The authors found that friendship groups communicate more and provide more positive encouragement than acquaintance groups. Friendship groups are more committed to the task at hand and co-operate more with others in their group, which leads to better performance. An individual in a group of friends has more incentive to perform better because poor performance reflects negatively on a group, and it is more difficult to disassociate oneself from a group of friends than from a group of acquaintances.

These findings support those by Campion, Medsker and Higgs (1993) who examined work-team characteristics and their relation to team effectiveness⁸ in a large financial organisation in Indiana (U.S.A.). Data were collected from 391 employees and 70 managers. Campion et al. found that potency (the belief that the group can be effective)⁹, workload sharing (which enhances effectiveness by decreasing social loafing) and communication/co-operation within teams were significantly related to effectiveness (in terms of productivity and manager judgements). Thus, work teams were more effective when team members had team spirit, helped each other and had positive social interactions, all of which are likely to be positively influenced by friendship.

Friendships related to organisational socialisation

On beginning work in a new organisation, a relatively quick adjustment or “settling in” period (termed organisational socialisation) is desirable from both an individual and an organisational perspective. For the individual, a quick adjustment period means a

⁷ Process loss is the extent to which group processes are hindered by misunderstandings, miscommunication and dislike, resulting in wasted energy.

⁸ Effectiveness criteria included productivity, employee satisfaction and manager judgments.

⁹ Potency is similar to the lay term “team spirit” (Campion et al., 1993) and high expectancy (Vroom, 1964).

reduction in anxiety resulting from a lack of situational identity. While for the organisation, a reduction in the anxiety of new employees will result in the individual being able to focus better on their job (Reichers, 1987). This socialisation period is when newcomers acquire information that turns them into productive employees (Comer, 1991).

Comer (1991) discusses the fact that, because managers often have little time to spend on new employees and have many other responsibilities, peers' contributions towards newcomer socialisation are of great importance, stating that, in the organisational socialisation process, "...the role of peers as primary socialization agents becomes critical" (p. 65). Similarly, Louis, Posner and Powell (1983) reported that peers are both more available and more helpful than superiors as socialisation agents. Results of Comer's study indicated that work interactions with peers facilitated newcomers' acquisition of information and subsequent socialisation into the organisation. Similarly, Reichers (1987) claims that new employees who form peer relationships move through the initial, *encounter* stage of the occupational role socialisation process at a faster rate than those organisational members not involved in peer relationships, further highlighting the importance of workplace friendships.

In addition, in a longitudinal study examining the impact of peer communication on employees moving from one location to another within organisations, Kramer (1996) found that organisational members who engage in peer relationships adapt to the organisation more quickly and efficiently than those not involved in peer relationships. Similarly, Morrison (1993) found that the frequency with which new staff accountants sought specific types of information during their first six months of employment was found to be related to how well they had mastered their job, defined their role, learned about their organisation's culture, and became socially integrated. Thus, friendships, as well as having a potentially beneficial effect on performance, have been shown to facilitate the organisational socialisation process.

Friendships related to job satisfaction

Job satisfaction may be defined as a pleasurable, positive emotional state resulting from the appraisal of one's job or job experiences (Levy, 2003). There are several hypothesised antecedents and consequences of job satisfaction. Aspects of an individual's job, including the stress and workload are accepted antecedents of satisfaction, along with individual characteristics, social factors and opportunities for growth in the job. Consequences of satisfaction include better performance, and a reduction in withdrawal and counterproductive behaviours (Levy, 2003).

The antecedents of job satisfaction that are of primary interest in the current study are the social factors; the relationships that employees have with their supervisors and co-workers seem to be significant determinates of whether these employees are satisfied with their jobs (Levy, 2003). There is a large body of research supporting the idea that job satisfaction is affected by employees' relationships with their supervisors (e.g., Amason & Allen, 1997; Anderson & Martin, 1995; Hayes, 1982; Neubert, 1999; Tao, Takagi, Ishida, & Masuda, 1998). Recent examples include studies showing, among other things, that job satisfaction is affected by supervisory support (Gaertner, 1999), by the level of trust of a subordinate for a supervisor (Cunningham & MacGregor, 2000) by similarly between supervisors and subordinates (Ensher & Murphy, 1997; Vecchio & Bullis, 2001; Wesolowski & Mossholder, 1997), by the extent to which supervisors and subordinates like and respect each other (Murphy & Ensher, 1999) and the way tasks are assigned by supervisors (Blau, 1999).

Although interesting, the impact of the supervisor/subordinate relationship on work related outcomes is not the primary focus of the current study; rather, the friends an employee has at work, and the impact these relationships have with satisfaction, commitment and turnover, are of interest (notwithstanding the possibility that a supervisor may also, on occasion, be a close friend). There is empirical evidence that suggests that co-worker relations are an antecedent of job satisfaction. The earliest of these studies was by Hackman and Lawler (1971) who originally developed the job characteristic termed "friendship opportunities." Hackman and Lawler surveyed a sample of 208 employees of an American telephone company who worked in 13

different jobs, and found significant positive relationships ($p < .05$) between friendship opportunities and job satisfaction (however the authors found that friendship opportunities did not relate significantly to motivation or performance). In a more recent study, Markiewicz et al. (2000) examined whether friendship quality would predict salary and job satisfaction, and if this would differ as a function of the sex of the employee or the friend. Markiewicz and her colleagues found that the quality of close friendships was, indeed, associated with both the career success and job satisfaction of employees.

Another study examining the impact of friendship on satisfaction (among other things) was by Riordan and Griffeth (1995), who hypothesised and tested a theoretical model of the relationship between perceived friendship opportunities in the workplace and work-related outcomes. Riordan and Griffeth's study was based on the survey responses of 174 employees in a small electric utility in the South-Eastern United States (refer appendix A for Riordan and Griffeth's model of workplace relationships). Using structural equation modelling, Riordan and Griffeth found that friendship opportunities were associated with increases in job satisfaction, job involvement and organisational commitment, and with a significant decrease in intention to turnover.

Riordan and Griffeth's findings are supported in a recent study by Nielsen et al. (2000) who conducted two studies to develop and provide evidence for the construct validity of the workplace friendship scale used in the current study. Nielsen et al. collected data from a total sample of 116 part-time graduate students who were employees of three American organisations. Support was provided for convergent, discriminant, and nomological validity of scale scores. In addition, Nielsen et al. reported a positive correlation between friendship opportunities, friendship prevalence and job satisfaction; furthermore they found that those experiencing friendship at work were less likely to want to leave their current jobs. These findings highlight the positive impact workplace friendships can have for employees within organisations, particularly in terms of their satisfaction with their jobs.

There is further support for Riordan and Griffeth's findings that friendships are associated with increased satisfaction. For example Winstead et al. (1995) examined existing friendships of both general and academic staff in two universities in Virginia (U.S.A.). Using multiple regression, Winstead et al. found that the quality of an individual's best friendship in the workplace was predictive of job satisfaction. Friendships at work were found to be something of a "double edged sword" however. Results indicated that, although staff who reported higher quality friendships were also significantly more satisfied with their jobs, maintenance difficulty¹⁰ was *inversely* related to satisfaction with work, indicating that, for many workers, the negative aspects of a close friendship have a significant negative impact on satisfaction with work. Interestingly, the effects of maintenance difficulty on satisfaction were only apparent for general staff (as opposed to faculty members). An explanation Winstead et al. give for this is that, for faculty, the intrinsic qualities of their job (teaching, research, supervising students) are more important to them than the non task-related aspects; while for general staff, whose work may be more routine or work roles more interdependent, the social, non-work aspects are more salient. In addition, for academic staff, social needs may be met in the course of their job; teaching, supervising and collaborative research all being very social activities. For general staff, on the other hand, rewarding social interactions may be more rare, and therefore more valued. In addition, faculty have significantly more autonomy at work, and more control over their personal space, usually having their own office. Consequently academic staff members are able to simply avoid negative interactions more easily than general staff, who may have to liaise frequently with others, or work in an open plan office. Either way therefore, it seems likely that the *type* of work an individual does will interact with the impact of friendships at work. In general, friendships will probably be more salient for jobs that are relatively more interdependent.

The most recent study examining the relationship between friendships at work and satisfaction is by Richer, Blanchard and Vallerand (2002) who used structural equation modelling to test their *Motivational Model of Work Turnover* (refer appendix B for a

¹⁰ Maintenance difficulty reflects tension and strain being experienced by the individuals in a friendship dyad, as a result of aspects of the friendship.

reproduction of this model). A relevant aspect of Richer et al.'s model is the path from "relatedness toward work colleagues" (a measure of relationship quality) to "work satisfaction." Although Richer et al. posit that "work motivation" mediates the relationship between "relatedness toward work colleagues" and satisfaction; their model too, provides support for their hypothesis that a positive relationship between friendships at work and job satisfaction would exist. Thus, in the current study, friendship opportunities are hypothesised to be antecedent to job satisfaction.

Building a model of organisational relationships

At this point, building the model of organisational relationships tested in the current study can commence. The degree to which friendship opportunities are antecedent to job satisfaction is a central focus of the current study, and is illustrated in Figure 1 with an arrow leading from friendship opportunities to job satisfaction¹¹. The "+" sign indicates that a positive relationship is hypothesised between these two variables.

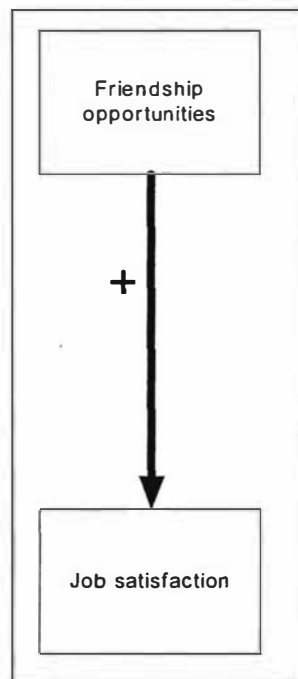


Figure 1: Showing the hypothesised relationship between friendship opportunities and job satisfaction

¹¹ The 'friendship prevalence' variable is not modelled at this stage but is included later (refer section 2.3.5)

Job satisfaction related to organisational commitment

Organisational commitment is distinguished from job satisfaction in that organisational commitment is a response to the whole organisation, while satisfaction is an affective response to specific aspects of the job (Williams & Hazer, 1986). Organisational commitment and job satisfaction are generally found to be positively correlated with one another (Cohen, 1993, 1996; Fisher, 2002; Hackett & Lapierre, 2001; Kaldenberg, Becker, & Zvonkovic, 1995; Meyer, Stanley, Herscovitch, & Topolnytsky, 2002; Porter, Steers, Mowday, & Boulian, 1974; Rentsch & Steel, 1992; Tett & Meyer, 1993). However, although the positive correlations between organisational commitment and job satisfaction are strong, Meyer and Allen (2002) state that the correlations "...are not of sufficient magnitude to suggest construct redundancy" (p.38). In other words, job satisfaction and organisational commitment are conceptually distinct.

The concept of organisational commitment has been defined in various ways in the past, depending on the background of the scholars (Yousef, 2003). Lee (1971) defines organisational commitment as identification with the organisation. Steers (1977) and Levy (2003) define it as identification with and involvement in an organisation. Sheldon (1971) states that organisational commitment is an attitude or an orientation towards the organisation which links or attaches the identity of the person to the organisation. The most frequently used definition of commitment, however, is that of Porter (1974) who defined it as a strong belief in and acceptance of the organisational goals and values, a willingness to exert effort on behalf of the organisation and a desire to remain in the organisation. Allen and Meyer (1990) identified three components of commitment. These were (1) Affective commitment which "concerns a person's emotional attachment to their organization" (p. 1); (2) Normative commitment or "a moral dimension based on a person's felt obligation and responsibility to their employing organization" (p. 1); and (3) Continuance commitment or "a person's perception of the costs and risks associated with leaving their present organization" (p. 4). Continuance commitment is the intent to remain with the organisation, usually through an evaluation of the perceived costs of leaving the organisation, also

conceptualised as “side bets” (Becker, 1960)¹². Continuance commitment is sometimes referred to as “sunk-costs” commitment because it is a function of what an employee has sunk into the organisation (Levy, 2003). Normative commitment, on the other hand reflects a perceived *obligation* to remain in the organisation. As Meyer and Allen (1991) put it, an individual with strong affective commitment stays with an organisation because he or she *wants* to do so, an individual with strong continuance commitment stays with an organisation because he or she *needs* to do so, while individuals with strong normative commitment stay with an organisation because they feel they *ought* to do so. The questionnaire used in the current study (the Organisational Commitment Questionnaire, refer appendix 6) taps into all three aspects of commitment.

Antecedents and consequences of organisational commitment. Mathieu and Zajac (1990) performed a large meta-analysis of the commitment literature and identified the antecedents, correlates and consequences of commitment. They identify personal characteristics of the employee as being antecedent to commitment; these include the attitudes beliefs and skills of individuals in the organisation. Other antecedents are job characteristics, group and leader relations, co-worker relations and organisational characteristics. A further antecedent of organisational commitment is the existence of organisational mechanisms such as reward systems, socialisation and newsletters; these mechanisms lead to affective commitment by communicating to employees that the organisation is both supportive of them and fair to them (Levy, 2003; Meyer & Allen, 1997). Consequences of organisational commitment include a reduction in withdrawal behaviours such as absenteeism (Levy, 2003; Mathieu & Zajac, 1990) and intention to leave. In addition Levy suggests that commitment will result in a reduction in counterproductive behaviours such as theft and sabotage. Another consequence of commitment is improved performance, although, because of the complexity of performance, the relationship between performance and commitment is not strong (Levy, 2003). The findings of Mathieu and Zajac’s (1990) meta-analysis of the

¹² The term side-bet was used by Becker (1960) to refer to the accumulation of investments valued by individuals that would be lost if they were to leave the organisation. Becker argued that organisational commitment is based on these investments. Working in an organisation increases an individual's investments, and the costs of leaving cause higher levels of organisational commitment.

antecedents, correlates and consequences of commitment are summarised in a diagram in appendix C.

Job satisfaction is hypothesised to be antecedent to commitment in the current study because attitude towards one's job is a more proximal evaluation than attitude towards one's organisation, i.e., an employee is unlikely to form strong organisational commitment if they are not satisfied with their job. It is worth noting here that the commitment-to-satisfaction relationship may operate somewhat differently in Western, individualist cultures than in more collectivist societies¹³. Research in Western contexts, however, has indicated that commitment to the company develops from job satisfaction and mediates the effects of satisfaction on turnover and intention to leave (e.g., Porter et al., 1974; Riordan & Griffeth, 1995; Williams & Hazer, 1986). This satisfaction-to-commitment model reflects Porter et al.'s (1974) claim that commitment takes longer to develop and is more stable than satisfaction, stating, "We would expect that a relatively greater amount of time would be required for an employee to determine his level of commitment to the organization than would be the case with his level of his job satisfaction" (Porter et al., 1974, pg. 608). This claim has received empirical support, for example, Williams and Hazer (1986) used structural equation modelling to re-analyse data from two previous studies (Bluedorn, 1982; Michaels & Spector, 1982). They specifically examined the causal relationship between satisfaction and commitment, hypothesising that job satisfaction is a causal antecedent of commitment. Their analysis supported the satisfaction-to-commitment relation (the model incorporating this relation having a significantly better fit than the model without), implying that satisfaction is antecedent to commitment in individuals. They state;

¹³ It is possible that the satisfaction-to-commitment relationship will be less apparent in more collectivist cultures (i.e., Japan and Hong Kong). Empirical research on the relationship between Individualism-Collectivism and commitment has been limited (Parkes, Bochner, & Schneider, 2001) and a review of commitment across national cultures failed to find a link between collectivism and commitment (Randall, 1993). However, Parkes et al. (2001) state that theory and logic suggest such a link should exist. One of the defining elements of collectivist cultures is a more familial relationship between employee and employer, with protection and long-term job security provided in return for loyalty, trust, and organisational commitment (Kao & Sek-Hong, 1993). Because this implicit contract is between individuals and organisations, collectivism at both these levels should contribute to employees' greater commitment and longer stay in an organisation, regardless of job satisfaction.

“...through a process of the evaluation of costs and benefits, individual needs and desires are satisfied, and the resulting affective state becomes associated with the organization, which has provided the job and its associated characteristics and environment. Commitment results from this association” (p.230).

In addition to findings suggesting that satisfaction is antecedent to commitment, Williams and Hazer (1986) found satisfaction to be an intervening variable between workplace variables (e.g., leadership consideration, “routinization” and equity), and organisational commitment; workplace variables *directly* influencing only satisfaction, and influencing commitment *indirectly* through their impact on satisfaction (and the subsequent effect of satisfaction on commitment). Thus, there are reasons to believe that the relationship between commitment and variables such as friendship opportunities and cohesion may not be direct, but rather, will be mediated by satisfaction.

Organisational commitment is the next variable to be added to the model (refer Figure 2). The one-way arrow from satisfaction to commitment reflects the literature, described above, which suggests that job satisfaction is a causal antecedent of commitment.

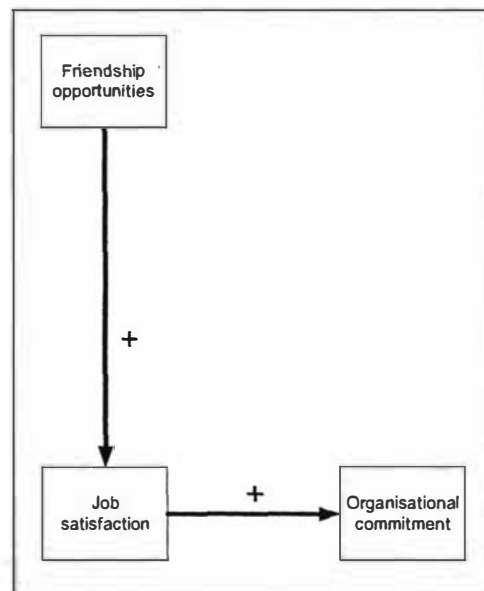


Figure 2: Showing the hypothesised relationship between job satisfaction and organisational commitment

Friendships related to organisational commitment

As stated above, Riordan and Griffeth (1995) found that friendship opportunities are associated with, among other things, increases in organisational commitment. Because Riordan and Griffeth (1995) used a cross-sectional design, one limitation of the study is that the direction of causality is unclear, it cannot be determined with certainty if friendship opportunities caused the organisational outcomes or vice versa, or if some other variable affected them both. The qualitative data collected in the current study will hopefully go some way towards addressing the issue of causality. Another limitation of the study by Riordan and Griffeth is that it only investigated opportunities for friendship rather than actual friendships. In the current study, the prevalence of friends is measured in addition to the opportunities for friendship in the workplace.

With respect to the relationship between friendship and commitment, in his early work in this area, Becker (1960) suggests that workplace associates helped produce commitment to an individual's job, mentioning the "...loss of connections in his present firm..." (p. 38) if the employee was to move. Related to this Cherniss (1991) found a link between occupational commitment and having a supportive organisational climate, he conducted a study using questionnaires and in-depth biographical interviews of twenty-five human service professionals (teachers, lawyers, nurses) in America over a twelve-year period. Cherniss found that those with high commitment had worked in especially supportive settings during the much of the first decade of their careers, while those with low commitment had worked in negative climates during the same period (occupational commitment is thought to be a correlate of organisational commitment) (Meyer et al., 2002).

In a study based in New Zealand, Shouksmith (1994) administered the Multidimensional Job Satisfaction Scale to a sample of 1121 health professionals to ascertain which organisational factors were associated with commitment. The existence of coworkers with positive attributes was found to strongly affect normative commitment ($p < .001$). This implies that the aspect of commitment concerning individuals' felt obligation and responsibility to their organisation will be significantly

affected by whether or not they view their coworkers in a positive light (i.e., have friendly relationships with them).

A recent Gallup study, which found that having a best friend at work is related to how engaged and committed an individual is to his or her job, further supports the findings that friendships and socially supportive environments at work are related to commitment (Ellingwood, 2001). In the Gallup study, a random sample of American workers over the age of 18 were given the Q12 workplace evaluations; “*Do I have a best friend at work?*” is one of the 12 questions in this survey. It was found that 51% of respondents who agreed with this statement were engaged in their jobs, compared to only 10% who disagreed. Ellingwood (2001) states that in the thousands of employee interviews and hundreds of focus groups conducted by Gallup, “friendship trumped such seemingly obvious employee motivators as pay and benefits.” In addition, having a best friend at work was strongly related to intention to leave. Seventy-five percent of respondents who had a best friend at work planned to be with the company for at least another year, as opposed to only 51% who did not have a best friend at work.

In one of the few early studies examining the relationship between organisational commitment and informal organisational relationships, Sheldon (1971) investigated the link between social involvement and the commitment of employees to their organisation. The sample in this study was entirely male scientists and engineers with PhD’s, who were understood to have high career commitment. It was assumed that these individuals would be more socialised into their profession than their less qualified colleagues, and “would be more likely to expect and to have professional prerogatives and less likely to desire organisational rewards” (p. 144). Because these individuals are less likely to seek organisational rewards, it is not unreasonable to expect relatively low organisational commitment and indeed, Sheldon found that those who were not socially involved with peers in the organisation were also not committed to the organisation, compared to those who were socially involved (i.e., had friends). This finding suggests that workplace relationships are one way that commitment to an organisation is shaped.

Other research investigating the link between commitment, and informal communication with co-workers was carried out by Anderson and Martin (1995) who surveyed 202 full time employees from the Midwestern United States. Respondents completed a questionnaire, which asked questions about their motives for communication at work, and measured their organisational commitment and job satisfaction. Results supported the hypothesis that when people communicate with their co-workers and superiors regularly for inclusion, affection, relaxation (non-task related communication) or duty (task related communication) they will have increased commitment to, and satisfaction with, their job. If they tended to communicate for control and escape (i.e., biding time, avoiding work), commitment and job satisfaction would be reduced. The finding that commitment is increased when employees “chat” at work provides evidence that some non-task oriented communication (for example, communicating for affection or inclusion) serves a valuable function for individuals in organisations. People spending 40 hours a week in a particular environment need to know that others around them care about them and like them. Work friends may provide understanding that eases frustration and job-related anxiety and stress (Anderson & Martin, 1995).

In sum, the research outlined above suggests a positive relationship between a friendly work environment and organisational commitment. The friendship/commitment relationship may be either direct or mediated by satisfaction, which is thought to be a possible precursor to commitment (as discussed above).

The relationship between friendship opportunities and organisational commitment is the next aspect of the model to be added. Figure 3 shows the hypothesised positive relationship between these two variables.

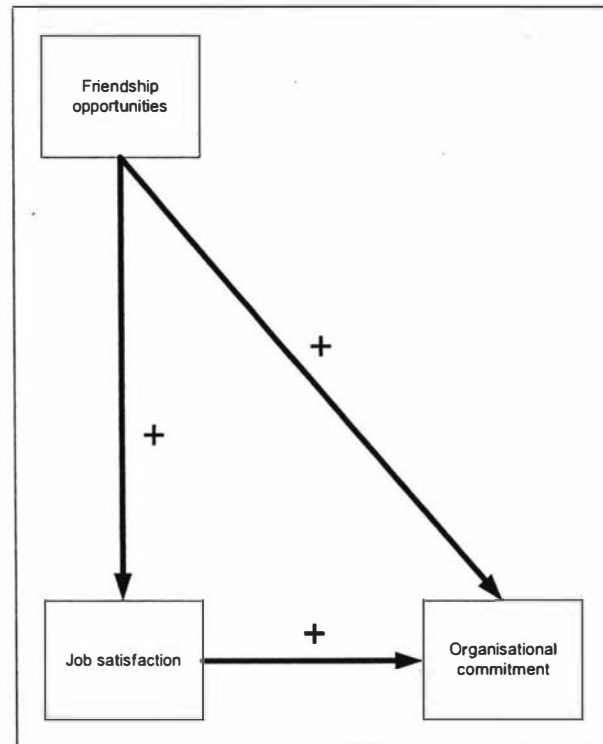


Figure 3: Showing the hypothesised relationship between friendship opportunities, job satisfaction and organisational commitment

Intention to leave

Over the last two decades the development of predictive models of voluntary turnover has been an aim of many researchers in this area. Job satisfaction, organisational commitment, and intention to leave are among the most commonly proposed antecedents to turnover (Tett & Meyer, 1993). Satisfaction and commitment are invariably reported to be negatively related to turnover and intention to leave (e.g., Blau & Boal, 1989; Cohen, 1993; Cohen & Hudecek, 1993; Hackett & Lapierre, 2001; Irvine & Evans, 1995; Irving & Meyer, 1994; Kaldenberg et al., 1995; Lee, Carswell, & Allen, 2000; Lu, Lin, Wu, Hsieh, & Chang, 2002; McEvoy & Cascio, 1987; Meyer et al., 2002; Mobley, 1977; Porter et al., 1974; Riordan & Griffeth, 1995; Steers, 1977; Tett & Meyer, 1993). The finding that turnover intention is the strongest predictor of turnover is similarly consistent (e.g., Irvine & Evans, 1995; Meyer et al., 2002; Mitchel, 1981; Mobley, 1977; Tett & Meyer, 1993).

The recent Motivational Model of Work Turnover, proposed by Richer et al. (2002) (refer appendix B for a reproduction of Richer et al.'s model) supports the negative relationship between satisfaction and turnover. Richer et al.'s model shows satisfaction

to be antecedent to turnover intention. Similarly, Irvine and Evans (1995) published a meta-analytic study investigating the causal relationship between job satisfaction, behavioural intentions and turnover behaviour in nurses. The model proposed by Irvine and Evans (1995) also shows satisfaction to be negatively related to turnover intentions (and, in turn, turnover) (refer appendix D for a reproduction of Irvine and Evans' model).

In addition to job satisfaction, organisational commitment has been shown to affect turnover. Much of the research in this area, while it does not dispute that commitment develops from satisfaction (as described above), indicates that both satisfaction and commitment contribute independently to the turnover process. This independent-effects model follows Porter et al.'s (1974) suggestion, based on their research, that job satisfaction and organisational commitment, though related, are distinct constructs. They state, "... although we would expect commitment and satisfaction to be related, each construct appears to contribute unique information about the individual's relationship to the organisation" (p. 608).

Further support for the notion that both satisfaction and commitment contribute to turnover comes from a study by Tett and Meyer (1993) who conducted a large study investigating job satisfaction, organisational commitment, turnover intentions, and turnover; applying path analysis to data comprised of aggregations involving a total of 178 independent samples from 155 studies. Tett and Meyer's meta-analysis of the attitude and turnover intentions literature concluded that the two attitudes of job satisfaction and organisational commitment are independent contributors to turnover intention, supporting the independent-effects perspective. The independent-effects perspective is also supported by Riordan and Griffeth (1995) who proposed a model of work related outcomes of friendship opportunities. As discussed above, Riordan and Griffeth hypothesised that friendship opportunities would have a significant direct effect on an individual's satisfaction with his or her job, which would, in turn, have a significant positive relationship with organisational commitment. Because prior research has suggested that both job satisfaction and organisational commitment reduce intention to turnover (Angle & Perry, 1981; Stumpf & Hartman, 1984; Tett & Meyer,

1993) their model (like the model for the current study; refer Figure 4) included direct negative relationships between (a) job satisfaction and intention to leave, and (b) organisational commitment and intention to leave (refer appendix A for a reproduction of Riordan and Griffeth's model).

The hypothesised relationships between commitment, satisfaction and turnover are shown in Figure 4 by arrows leading from satisfaction to intention to leave, and from commitment to intention to leave. The “-” signs indicate that the relationships between satisfaction/commitment and turnover are hypothesised to be negative.

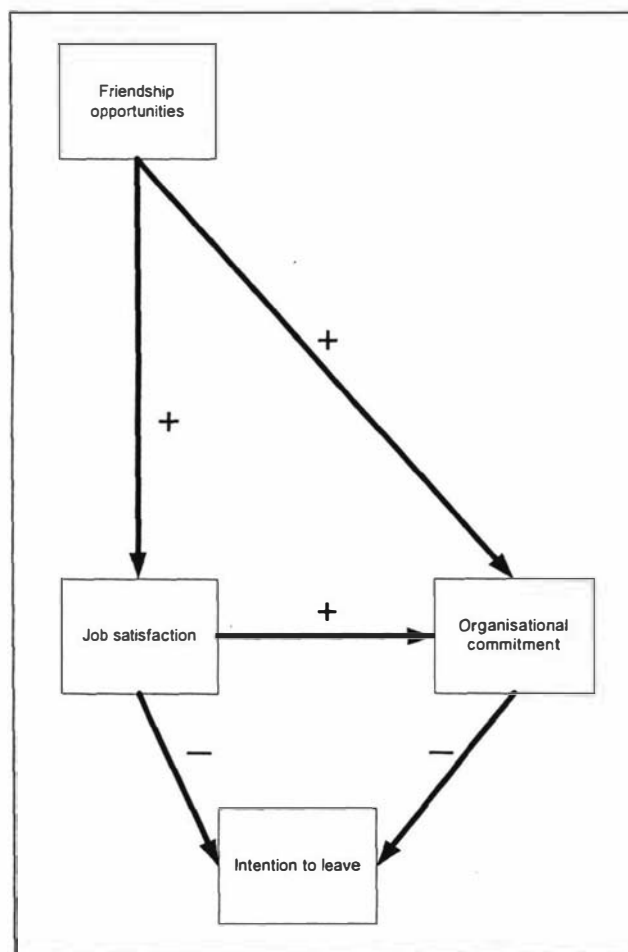


Figure 4: Showing the hypothesised relationship between job satisfaction, commitment and intention to leave

The current study investigates intention to leave (as opposed to actual turnover) but although it is not measured in the current study, a link between behavioural intentions and behaviour has been documented in the social psychological literature (Ajzen &

Fishbein, 1980), as has a link between turnover intentions and turnover (Irvine & Evans, 1995; Richer et al., 2002; Tett & Meyer, 1993). For example, Irvine and Evans (1995) published a meta-analytic study investigating the causal relationship between, among other things, behavioural intentions and turnover behaviour. Irvine and Evans found a positive relationship between behavioural intentions (intention to leave) and turnover¹⁴. Research has shown that most employees who intend to leave their jobs, and who feel they have the choice to do so, will most likely quit (Richer et al., 2002).

Conclusions

To summarise the review of literature focusing on organisational peer relationships outlined so far in this chapter, there are several conclusions that may be drawn:

- Peer relationships are more intimate, have a longer duration, and are characterised by higher levels of trust and self-disclosure than superior-subordinate or mentor-protégé relationships.
- Organisational outcomes such as job productivity, job satisfaction and commitment are linked closely with peer relationships.
- Organisational members who engage in peer relationships adapt to the organisation more quickly and efficiently than those not involved in peer relationships.
- Organisational members are likely to interact more with peers than with superiors. Because of this, the development of satisfying peer relationships is likely to be of great importance for employees, and may impact on turnover intentions.

It is worth noting that, other than Shouksmith (1994) none of the studies described above have been conducted in New Zealand; in fact little of the research discussed was

¹⁴ The mean correlation between turnover behaviour and behavioral intentions, corrected for attenuation was .34. The positive relationship indicates that as employees develop their intention to leave, they are inclined to follow through with turnover behaviour (Irvine & Evans, 1995).

conducted outside the United States. This highlights the importance of examining the generalisability of these findings, looking at the impact of friendships at work in environments and countries other than America. This is a major contribution the current study will make. The respondents to the Hospital Study (Chapter Three) being solely from NZ, and the Internet Study (Chapter Four) drawing on responses from the world over.

Friendships may be more important in some types of jobs. For example where the job involves long hours or high levels of stress, strong friendships may increase retention. Conversely negative relationships could increase intention to turnover, or at least produce stress at work which, in turn, can cause other problems (Riordan & Griffeth, 1995). Most of the literature focusing on organisational relationships suggests that friendships have a significant impact within organisations, both at the individual and organisational level of functioning. Similarly, the organisation is likely to impact on the friendship dyads within it. The impact of the organisation on friendships is addressed in the following section.

2.3.4 The Impact of the Organisation on Friendships

Although types of work differ widely among occupations, in general, workers are expected to remain together throughout their workday. Some workers, such as nurses, work in close proximity, whereas others, such as academics, can retreat to their offices. Others may work at separate desks but congregate regularly for breaks. Whatever the structure of the workplace, common areas are typically found where personal interaction can occur, for example, staff rooms, lifts, bathrooms, and foyers. People do not want to see the same strangers week after week; therefore co-workers will be incorporated into people's acquaintance networks (Fine, 1986).

Aspects of the workplace which facilitate friendships

Fine (1986) states that workplaces are significant in the development of friendships beyond the pragmatic reality that they force individuals together. The culture of work allows and, in some cases, requires friendly behaviour. Similarly, Sias (1998) found in a recent study that the organisation is not merely a "container" for relationships, but is

an integral part of the relationship itself, playing a key part in its developmental process. That is to say that, in addition to providing a context within which people become friends, the workplace itself not only creates opportunities for friendship but also impacts on the way friendships develop.

Literature on friendship formation from social psychology holds that people are more likely to become friends if they are in close proximity. Workplaces, and particularly work-groups require individuals to work together on a daily basis, so it is hardly surprising that friendships develop among work-mates. In addition, frequent exposure to another person is often enough to lead to more positive evaluations of that person, increasing the likelihood of friendship (Anderson & Hunsaker, 1985; Sias & Cahill, 1998; Zajonc, 2001).

Similarity also facilitates friendship formation. Individuals will be attracted to people they perceive to be similar to themselves, particularly with respect to attitudes, values and interests (Anderson & Hunsaker, 1985; Duck & Perlman, 1985). By definition organisational peers are similar with respect to status level. In addition they will perform similar work, in similar occupations, probably with a similar educational background (Sias & Cahill, 1998).

Working towards a common goal is a third aspect of the workplace that may facilitate friendships. People who share common goals (such as members of a work group) are more likely to achieve these goals if they co-operate with one another, this shared goal, along with co-operative behaviour also facilitates friendship. Moreover, people working toward the same goal see themselves as a "unit" – a view that can increase positive feelings about others working in the same team (Anderson & Hunsaker, 1985).

In addition to the three factors described above, an aspect of the workplace that may not exist in other contexts, which is likely to facilitate friendships is that when people are committed to working together there is a desire to like the other person if only because a pleasant work environment is more rewarding than an unpleasant one. This is a

situation which will further increase the likelihood of friendships forming (Anderson & Hunsaker, 1985).

Hierarchy

Another aspect of the workplace that may affect the formation of friendships is the organisational hierarchy. As well as *peer* relationships forming in organisations, friendships can and do form across hierarchical levels. These relationships come with their own complications but have been shown to offer a number of benefits such as improved communications and a less stressful work environment. In spite of this, companies have a long-standing position against friendship between managers and their subordinates, largely to avoid management related problems such as biased performance appraisals (Marelich, 1996).

Autonomy

The amount of autonomy in a job may also affect social connections at work. If individuals have autonomous roles (such as academics), informal relationships among peers are not *essential* for completing the work. Friendly relationships may still occur however because of shared values, norms and behaviours (Fine, 1986). People in autonomous occupations have a great deal of control over the content of their workplace relationships so they can, perhaps, be more selective about who they maintain relationships with. Fine (1986) claims that those in occupations with relatively less autonomy, however, have a proportionately greater need for solidarity with their peers. Thus it is possible that autonomy will be negatively related to friendships forming in the workplace.

Cohesion

Cohesion is one of the measured variables in the current study; the cohesiveness of their work group or team is another aspect of an employee's experience of their workplace. As previously stated (section 2.3.1), Kram and Isabella (1985) maintain that the characteristic of reciprocity sets co-worker friendships apart from other work relationships, such as mentoring or superior-subordinate relationships. Buunk et al. (1993) identify perceived reciprocity (mutual flow of support and help) as an important

characteristic of relationships with colleagues. Results from Buunk et al.'s study indicate that when co-workers do *not* reciprocate favours, individuals experience negative emotions such as irritation, depression, and confusion. If an individual perceives their working climate to be low in cohesion, they may believe that their peers will not reciprocate emotional and instrumental support, which will likely hinder the formation of friendships. Alternatively, if someone perceives that their efforts will be reciprocated (e.g., in a climate perceived as high in cohesion) they may be more likely to develop collegial and special peer relationships. Supporting this, Odden and Sias (1997) conducted a study using teachers, which examined the association between psychological climate and the types of communication relationships employees form with their peers. Odden and Sias found that climates perceived as high in cohesion were related to larger proportions of collegial and special peer relationships. Moreover, the cohesion dimension reflects a general liking of one's co-workers, as well as perceptions that an employee shares a great deal of "common ground" with his/her co-workers (Odden & Sias, 1997). Existing literature regarding friendship development identifies liking and perceived similarity as factors that enhance the formation of friendships. Therefore, it is not unreasonable to expect a positive relationship between perceived cohesion and friendship opportunities.

Thus, a cohesion variable can be added to the model. In the current study, opportunities for friendship are hypothesised to impact positively on the cohesiveness of the workgroup or team in that, if there is a generally friendlier environment, this will likely increase the cohesiveness of the group. Cohesiveness is likely to impact on the perceived opportunities for friendship, (a more highly cohesive team will probably result in more opportunities for friendship). The relationship between cohesion and friendship opportunities is shown in Figure 5 with a two-way arrow at the top of the diagram, the "+" indicating a positive correlation.

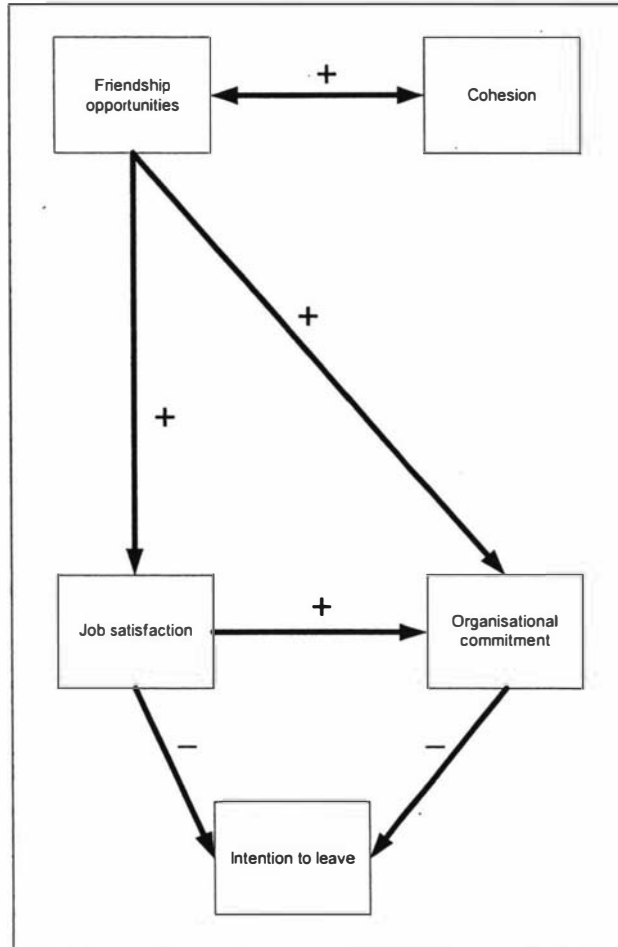


Figure 5: Showing the hypothesised relationship between friendship opportunities and cohesion

Cohesion related to intention to leave

Sheridan (1992) investigated employee retention; he compared the voluntary turnover rates of new employees of accounting firms with varying organisational cultures. Sheridan examined the effects of interpersonal relationships; measured by a “team orientation” dimension and a “respect for people” dimension (measures closely related to the cohesion of a workplace) on retention. Sheridan found that hazard rates¹⁵ were significantly lower for employees working in a culture emphasising interpersonal relationship values than they were in a culture emphasising work task values. Findings indicated that new employees voluntarily stayed fourteen months longer in the culture emphasising interpersonal relationship values (i.e., one which was highly cohesive) than

¹⁵ Hazard rates are an estimate of the probability of an employee leaving during a particular month of seniority given that they have survived to the beginning of the month.

in the culture emphasising work task values (the median survival time was 45 months compared to 31 months). Sheridan states;

“... the most parsimonious explanation of employee retention may simply be that an organisational culture emphasising interpersonal relationship values is uniformly more attractive to professionals than a culture emphasising work task values” (p. 1052).

The possibility that an organisational culture which emphasises work task values, as opposed to interpersonal relationship values, will not be conducive to friendship formation is also discussed by Odden and Sias (1997). They claim that because “special peer” relationships require trust and self-disclosure, as well as high levels of emotional support and personal feedback, these relationships are likely to require a great deal of time and energy to sustain; far more than is required for “information peer” relationships. Employees in high-pressure, task oriented work environments will probably devote more of their limited time to task completion than to developing their relationships. This will be likely to result in a smaller proportion of special peer relationships¹⁶. In addition, Eisenberg and Goodall (1997) note that one of the consequences of a high-pressure work environment is that individuals develop negative attitudes toward others, thus it also follows that a work environment that is task, as opposed to relationship, oriented will provide fewer opportunities for friendship, be less cohesive and, extrapolating from Sheridan’s (1992) findings, result in higher turnover.

Thus, Figure 6 shows an arrow added to the model, leading from cohesion to intention to leave, indicating that employees’ perceptions of the cohesiveness of their work environment will have negative correlations on their leaving intentions. The relationship between cohesion and intention to leave may be a direct relationship or one mediated by job satisfaction (i.e., having a cohesive work environment will have an impact on leaving intentions only if an individual is satisfied with their job).

¹⁶ It is worth noting that the opposite may also be true, as it is often in times of adversity (i.e., poor working conditions) that strong friendships will form (Carr, 2003; Odden & Sias, 1997), refer section 2.3.5 for more detail. However, a “task oriented” work environment should probably be differentiated from “poor conditions” at work, this differentiation goes some way towards explaining the seemingly contradictory findings.

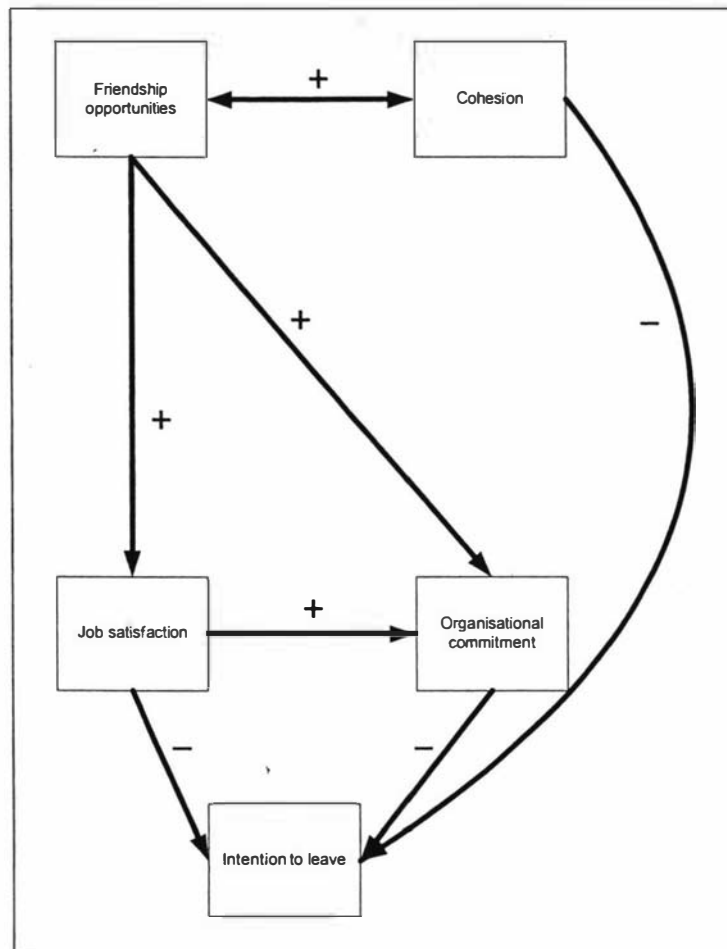


Figure 6: Showing the hypothesised relationship between cohesion and intention to leave

Cohesion, organisational commitment and job satisfaction

As discussed above, an organisational culture emphasising interpersonal relationship values will provide increased opportunities for friendship and, at a group level, cohesion. The “opportunities for friendship” variable has received only a small amount of research attention to date, but has been empirically related to cohesion (e.g., Odden & Sias, 1997), satisfaction (e.g., Riordan & Griffeth, 1995) and commitment (e.g., Kaldenberg et al., 1995). The current model hypothesises that increased opportunities for friendship will lead to improved job satisfaction and organisational commitment. Hence there are arrows leading from the friendship opportunities variable to both job satisfaction and organisational commitment. Likewise, the cohesion variable is also hypothesised to result in improved job satisfaction and organisational commitment. Allen and Meyer (1990) specifically linked organisational commitment to cohesion, the

results of their study indicated that cohesion is antecedent to commitment. These relationships are indicated in Figure 7.

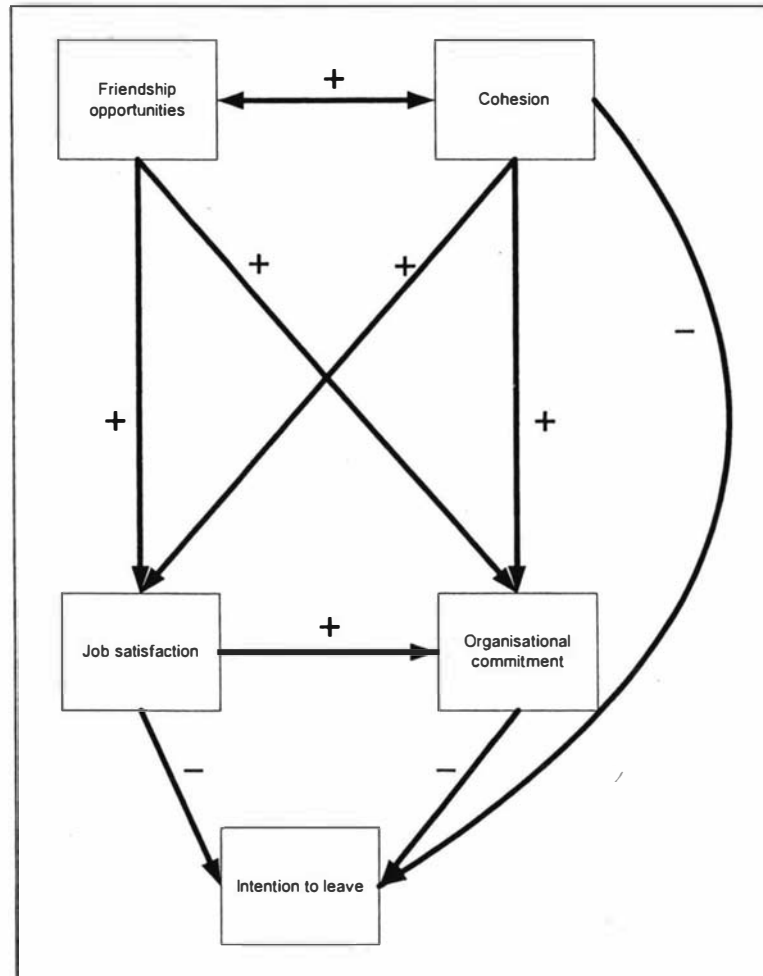


Figure 7: Showing the hypothesised relationship between cohesion and organisational commitment and job satisfaction

2.3.5 Friendship Prevalence

A key variable measured in the current study is the actual prevalence of workplace friendship. Friendship prevalence is hypothesised to be a consequence of both friendship opportunities and cohesion. Logically, if there are increased opportunities for friendship, the prevalence of friendships should also increase, or alternatively opportunities for friendship may be a necessary condition for actual friendships to form. In addition, as stated above, Odden and Sias (1997) found that climates perceived to be high in cohesion were related to more special peer relationships. The cohesion dimension reflects a general liking of one's co-workers, as well as perceptions that an employee shares a great deal of "common ground" with them; both factors likely to

contribute to the formation of friendships. Thus Figure 8 shows arrows leading to friendship prevalence from both friendship opportunities and cohesion, again the “+” indicates the positive nature of the hypothesised relationship.

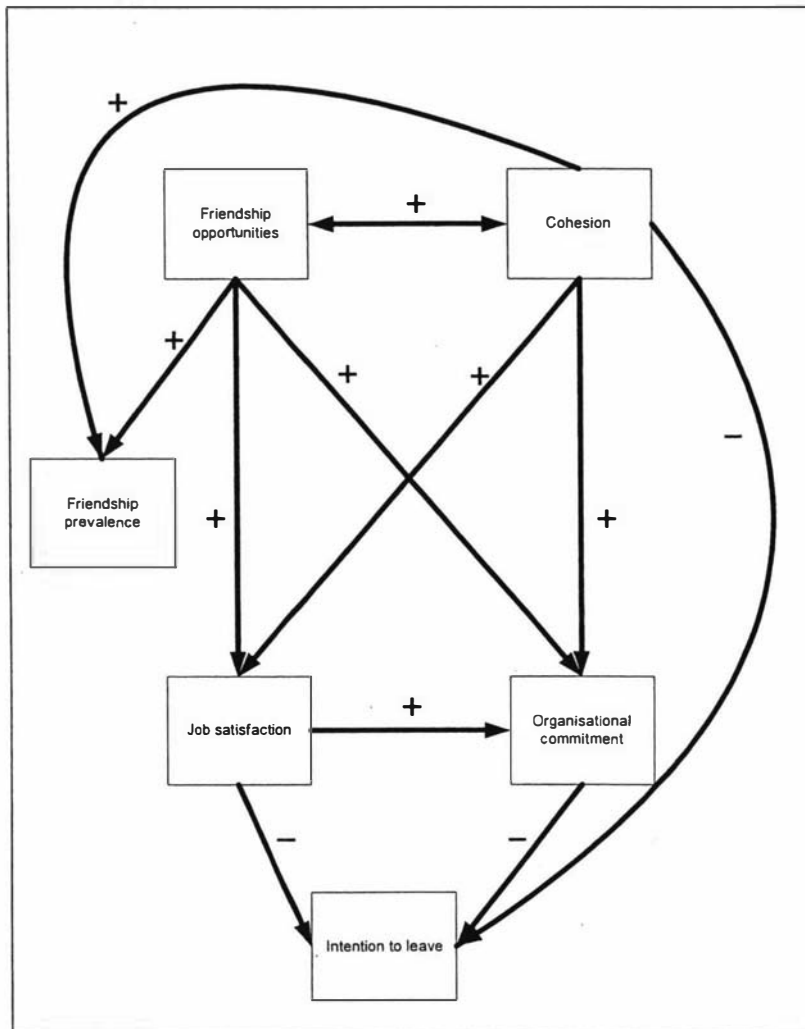


Figure 8: Showing friendship prevalence as the result of increased friendship opportunities and cohesion

From Figure 8, the friendship prevalence variable is *not* hypothesised to impact directly on job satisfaction or commitment. Initially this may seem counterintuitive, given the evidence that friendship opportunities and cohesion have positive correlations with these outcome measures. However, the actual prevalence of friendship may not be related to satisfaction and commitment (as opportunities for friendship are) because the effects of need fulfilment (i.e., fulfilling the need for rewarding relationships) by the organisation may be conditional. It is probably necessary that the employee see the organisation as, in some way, *responsible* for the friendship. That is to say, employees

may need to believe that their friendships are the consequence of the way the company is managed, and perhaps not easily achieved in another organisation (Meyer & Allen, 1991). In relation to the current study, this implies that having friendships at work and/or feeling that they work in a friendly environment will only improve commitment if the employee feels that the organisation is in some way responsible for the positive environment. A generally friendly environment is likely to be seen as something that the organisation has made available, while the actual friendships an individual has formed and maintained are probably more likely to be seen as something which the organisation is *not* directly responsible for.

Amason and Allen (1997) also discuss the concept of employees not crediting the organisation for their own relationships. Amason and Allen state that women, particularly, may see their identities as separate from their work identities, and their relationships not defined by organisational roles. While these women will find their friendships at work pleasurable, the friendships may be viewed as separate from their relationship with the organisation as a whole (Amason & Allen, 1997). Thus, these women will not 'credit' the organisation for any positive outcomes resulting from their friendships.

In addition, it is often in times of adversity (when morale and satisfaction may be low) that strong friendships will form (Carr, 2003). Similarly, Sias and Jablin (1995) found that, when a supervisor or group leader was perceived to treat group members unfairly, group members became more cohesive; they interacted more and their communication relationships became more intimate, suggesting that perceptions of low quality supervision and feelings of dissatisfaction may lead co-workers to maintain more close friendships as a form of alliance against the organisation. Sias and Jablin's finding was supported by Odden and Sias (1997), who found that perceptions of inconsiderate supervision were related an increase in special peer relationships. Thus, while Kram and Isabella (1985) suggest that special peers provide a sounding board, or social support, Sias and Jablin (1995) and Odden and Sias (1997) suggest that special peers may act as confidantes with whom to discuss bad experiences at work and unpleasant experiences with supervisors.

Informal relationships should still have an effect on intention to leave however, both because the presence of negative relationships is a reason people seek to leave their organisation, and because strong relationships make it harder for people to leave. Social involvement may be characterised as interactions and relationships with other members of the organisation. This involvement is intrinsically rewarding, so that the decision to depart from the organisation (and leave these significant others) is made more difficult. In addition Ellingwood (2001) states that another finding in the Gallup research (refer section 2.3.3) was that having a best friend at work was strongly related to intention to leave. Seventy-five percent of respondents in the Gallup research who had a best friend at work planned to be with the company for at least another year, as opposed to only 51% who did not have a best friend at work. Thus, Figure 9 illustrates the hypothesis that friendship prevalence will be antecedent to leaving intention, a “-” sign indicates the negative relationship between the two variables.

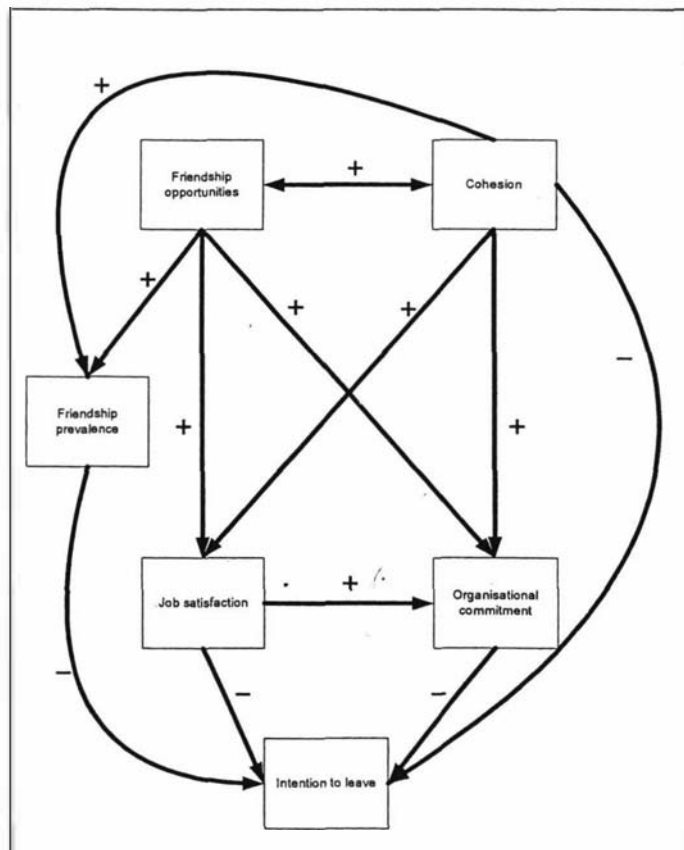


Figure 9: Showing the hypothesised relationship between friendship prevalence and intention to leave

2.3.6 Gender Differences in Organisational Relationships

As discussed at the beginning of section 2.3, Fritz (1997) conducted a large study looking at differences in men and women's organisational peer relationships. Findings of gender differences in friendships were largely consistent with studies conducted in a non-work setting. Fritz claimed that the work setting is, for friendship purposes, similar to non-work contexts. Sapadin (1988) too, conducted an investigation of friendship in the workplace; she investigated same-sex and cross-sex friendships of 156 professional men and women¹⁷ using a self-report questionnaire consisting of a rating scale and open-ended questions. Sapadin's results were also largely consistent with research from non-work contexts, finding for example, that women's same-sex friendships were rated higher for overall quality, intimacy, enjoyment and nurturance. Men, on the other hand, rated their cross-sex friendships higher in these areas. This research can be interpreted as suggesting that women's participation in professional roles has not resulted in noticeable changes to friendship patterns. Gender differences in friendship remain evident despite new career roles for women. As in the non-work context, findings regarding friendships in the workplace generally indicate that friendships with women are rated as more enjoyable, nurturing and of an overall higher quality (by both women and men) (Sapadin, 1988).

In contrast to this however, Markiewicz, Devine, and Kausilas (2000) state that some findings related to gender differences in friendships are *not* carried over into a workplace context. While research has shown that friendships involving women outside the work environment are consistently evaluated as more satisfying, Markiewicz et al. found this not to be the case in an organisational setting, instead they found that friendships involving women provided less rewards and were less satisfying.

Thus, it is possible that the work context may influence the nature of relationships between men and women. Factors that might account for this include women's relatively lower status in many professions, making them less desirable as friends, and sex-role stereotypes leading to unfavourable attributions about work-related competencies. In addition, the relative proportion of women in a given occupation may

¹⁷ Respondents were from New York, Los Angeles and Boston (U.S.A.).

mean their token status might make women less able to provide salient rewards, as they tend to have less power (Ibarra, 1993). One explanation for the conflicting findings is the notion that gender is socially constructed. Organisations may differ in the meanings ascribed to being 'male' or 'female' such that being female is linked to different expectations and behaviours in one organisation versus another, or in an organisation versus other aspects of society.

As in other contexts, women in organisations have been found to place more importance on their friendships than do men. Further, it is possible that the organisational commitment of women may be more affected by affiliation opportunities than that of men. Evidence that friendships have more salience for women can be seen in a study examining work attitudes of dentists which found that affiliation opportunities such as a highly cohesive work environment was related positively to commitment among female (but not male) dentists (Kaldenberg et al., 1995). The authors state "...affective commitment was related to proportion of friends in the workplace for female dentists" (p. 1371).

This may point to a gender difference in the commitment process, which relates to generalisations that males seek independence while women seek intimacy (Kaldenberg et al., 1995). Similarly, in an investigation using students in Miami, Ashton and Fuehrer (1993) found that males reported a significantly lower likelihood of seeking emotional support than instrumental support. Instrumental support is the basis of the information peer relationship, while the definition of a collegial peer or special peer includes both instrumental and emotional support (Kram & Isabella, 1985). Thus, men may be more likely to form larger proportions of the less intimate, information peer relationships, while women may develop larger proportions of collegial and special peer relationships. If men and women differ in their quests for intimacy, emotional support and independence it make sense that these differences would be apparent in how each gender grounds its commitment. A possible gender difference in the importance or salience of organisational relationships is a question that will be addressed in the current research (refer Chapter Four).

2.3.7 Negative Relationships

Friendships can degrade and turn sour. When this happens in a workplace the individuals concerned often have to continue to interact. Although no standard definition of such relationships yet exists, they can be characterised by conflict and disagreement, with communication ranging from “...passive to active dislike, animosity, disrespect, or destructive mutual interaction” (Dillard & Fritz, 1995, p. 12). Such relationships have been shown to affect both individuals (Rook, 1984) and organisations (Dillard & Fritz, 1995) adversely, causing stress and turnover. Although there is little research to date looking at the effects of negative relationships on productivity it seems likely that it would interfere with co-operation and communication in work groups, and direct attention and energy away from the task at hand.

The marked lack of attention to this topic in the current literature may be due to researchers’ focus on the identification of factors that *reduce* the stress and anxiety of employees. In addition, in organisational literature, there is a lot of attention given to how negative relationships might affect, or be dealt with, by *managers* (Bramson, 1981; Grove, 1993; Monroe, Borzi, & DiSalvo, 1992). Research attention given to managers’ relationships might explain the lack of focus on co-worker relationships. The current study will focus on co-worker’s negative relationships and how they might impact on individuals’ experience of work.

What are the causes of negative relationships?

The *personality characteristics* of individuals are certainly likely to contribute to negative relationships in the workplace. For example, ‘Type A’ behaviour patterns¹⁸ are related to more difficulty dealing with workplace conflict (Baron, 1989). Dillard and Fritz (1995) also claim that people who exhibit verbal aggressiveness or have a generalised negative outlook (i.e., negative affectivity) are more likely to be involved in negative relationships at work.

¹⁸ The core elements of the Type A behaviour pattern are extremes of aggressiveness, easily aroused “free floating” hostility, a sense of time urgency and competitively striving for achievement (Mathews, 1982).

The *organisation itself* may provide the opportunity for negative relationships to form, people are rarely in a position to choose who they work with. If an individual continually has to interact and work with a person with whom they do not get along, the potential for deepening hostility exists (Dillard & Fritz, 1995). The organisational environment may provide other elements conducive to the formation of negative relationships. People may have to compete for resources or individuals might have incompatible goals. Combined with other factors, such as personality or an unhealthy organisational climate, a previously benign relationship could escalate into a hostile one.

In addition, *workplace envy* is a factor that is likely to create negative emotion in the workplace. Envy is common in businesses and organisations. The way that limited resources (such as office space, company cars, promotions, secretarial support and so on) are distributed creates an environment where envy is not only possible but almost inevitable. Envy may be defined as an emotion occurring when a person begrudges another for having something that he or she does not have, or seeing another individual gain advantage and viewing it with displeasure (Bedeian, 1995). Envy implies hostility; it is generally viewed as a dangerous emotion, and not one that people will easily acknowledge, (even to themselves, often attributing and rationalising behaviour in other ways where they can).

One reason people may be unwilling to admit to envy is that it usually requires admitting the other person is in some way superior to them, difficult to do without damaging the ego. The discrepancy between the achievements of one colleague and the success of another can serve to highlight shortcomings in the first individual; this can have psychological consequences such as a drop in productivity and an decrease in job satisfaction. Envy can have unpleasant consequences, both for an individual's interactions with others, and for their own well-being. Because they are continually comparing themselves to others, envious will experience unfavourable comparisons more often than their less envious colleagues. In an effort to reduce this, these individual may sabotage other's work efforts (professional ambush), demean the achievements of their colleagues and positively distort their own efforts (Bedeian, 1995).

Bedeian (1995) suggests that one way to reduce workplace envy is to become a “strong team player” and to adhere to the informal, unofficial workplace “rules.” Perhaps forming and maintaining friendships in one’s work environment is a way to avoid becoming a target of hostile envy. Bedeian also recommends *not* revealing too much information about oneself to others in the workplace. However, because disclosing personal information is an important relationship-building technique, withholding personal information might interfere with useful workplace friendships! Being somewhat selective about the information employees give each other is probably wise however. Becoming close friends with a person with whom you work is a greater risk than that taken when embarking on friendships in other contexts.

Negative relationships will also differ from workplace friendships in that a friendship *can* exist in the workplace between two people from the same organisation who *never* interact professionally or formally (perhaps they met at the staff Christmas function, have developed a friendship, but do not work together). In a case like this role tension (which may exist for those who are attempting to maintain a dual relationship at work) will probably not exist. A negative relationship, on the other hand is very unlikely to occur at work between two people who are not *required* to work with each other. People will seldom be motivated to maintain a negative relationship voluntarily. Thus negative relationships will almost always be dual relationships (work-place and negative).

Negative relationships can be added to the model at this point (refer Figure 10). There are no measured antecedents to negative relationships but, as stated above, the presence of negative relationships is likely to be positively associated with intention to leave (i.e., if people experience negative relationships at work they are hypothesised to be more inclined to leave their job). These relationships are also likely to adversely effect an individuals’ experience of work so are hypothesised to be negatively related to job satisfaction and organisational commitment.

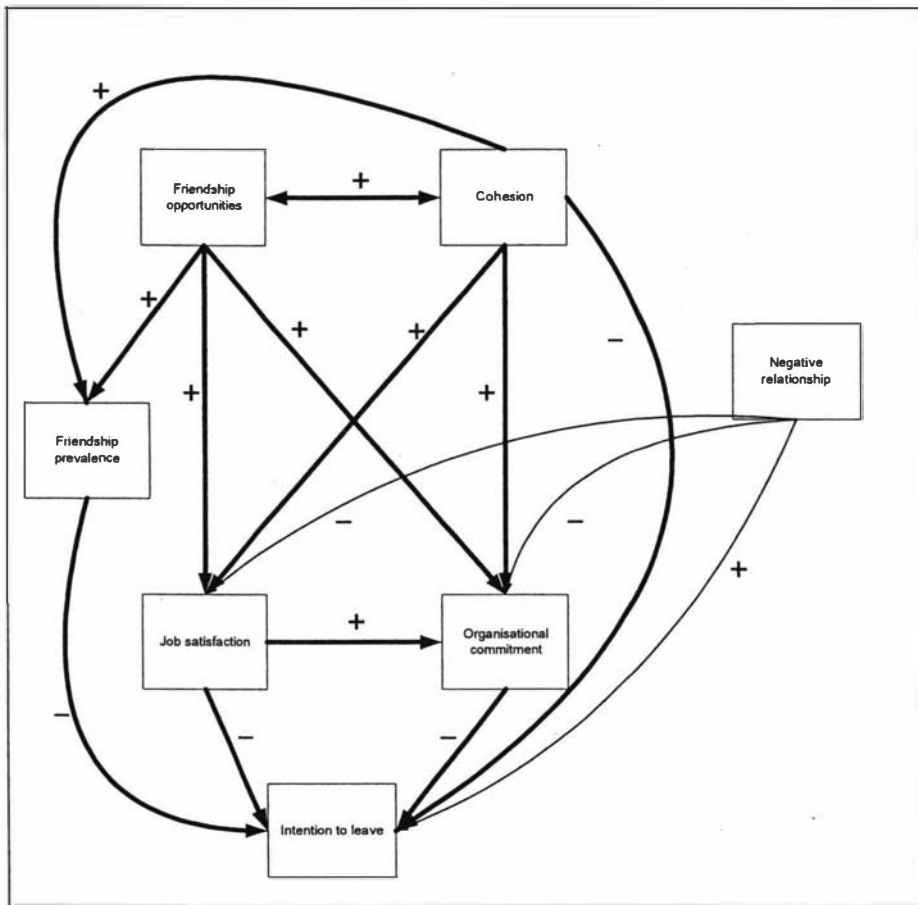


Figure 10: Showing negative relationships added to the model

2.3.8 Blended Relationships: Friends as Work Associates

It is well established that friendships within the workplace are in existence (along with the benefits and other effects of these relationships). Yet despite the frequency of close friends who are also work associates, we know very little about how this dual personal/role relationship functions. This thesis examines the positive and negative impact of these relationships in organisations. In the organisational literature these relationships are known as “blended.”

Bridge and Baxter (1992) conducted a study examining the extent to which employees experience dilemmas or contradictions posed by the friendship and work-association components of their relationships at work. In this context friendship is conceptualised as a role. Though this conceptualisation is somewhat unusual (given that friendships are not formally prescribed) friendship relationships do nonetheless entail felt obligations and responsibilities for the parties. Potentially incompatible demands associated with the role of “friend” and the role of “work associate” are outlined below. Related to this

apparent dual role conflict, a recent meta analysis of antecedents, correlates, and consequences of commitment to the organisation Meyer and Allen (2002) found that role conflict is strongly negatively correlated with commitment to the organisation.

Ways in which the expectations of close friendship may contradict with the role-based expectations of work-association

Instrumentality and affection: Friendship can enhance feelings of trust, believability and acceptance of feedback. On the other hand, utilitarian support may create feelings of indebtedness exploitation or suspicion of another's motives thereby undermining the friendship. Reciprocity has been shown to be an important aspect of friendship, as a lack of reciprocity is associated with negative affect (Buunk et al., 1993). A situation where one member of the dyad receives more benefits (as in a relationship with an organisational superior) will cause a lack of reciprocity and may cause tension for the dyad.

Impartiality and favouritism: Organisational practices usually aim to provide equitable treatment for everyone with no personal bias. However people usually expect their friends to display special treatment and favouritism, thereby indicating that they regard each other as unique and special.

Openness versus closedness: Friends are expected to be fully open and honest with one another, trusting and displaying trustworthiness. However confidentially practices may mean that close friends refrain from full disclosure. Disclosing other information for work role may violate a friend's expectation of confidentiality.

Judgement and acceptance: Friendship is built on an expectation of mutual affirmation and acceptance (work-mates may be ideal to provide empathy regarding work-related angst). However, work associates may find themselves in conflict because of competing interests associated with their work roles or because of a performance evaluation process.

Autonomy versus connection: The sheer proximity afforded by the workplace facilitates interpersonal attraction between persons. Hiring practices (normally similar people would be hired for similar jobs) mean that they are likely to perceive themselves as similar to their work-mates, which in turn facilitates friendship development and maintenance. However, daily contact with the other person may provide too little autonomy or separation, thereby jeopardising the friendship (Bridge & Baxter, 1992).

Thus, although close friendships at work are hypothesised to have predominantly positive consequences, the possibility that friendships at work will result in stress and conflict is also present. Dual role tension may be a possible moderator between friendship prevalence and intention to leave. This is because it is not unreasonable to assume that if an employee has experienced increased tension, stress and conflict as a result of trying to maintain their workplace friendship, the positive effects of these relationships on leaving intention may be reduced. Thus the final variable can be added to the model, dual role tension is hypothesised to moderate the relationship between friendship prevalence and intention to leave, this is indicated in Figure 11 by the arrow leading from dual role tension to the arrow linking friendship prevalence and intention to leave. Hereafter the completed model below will be referred to as 'Model 1.'

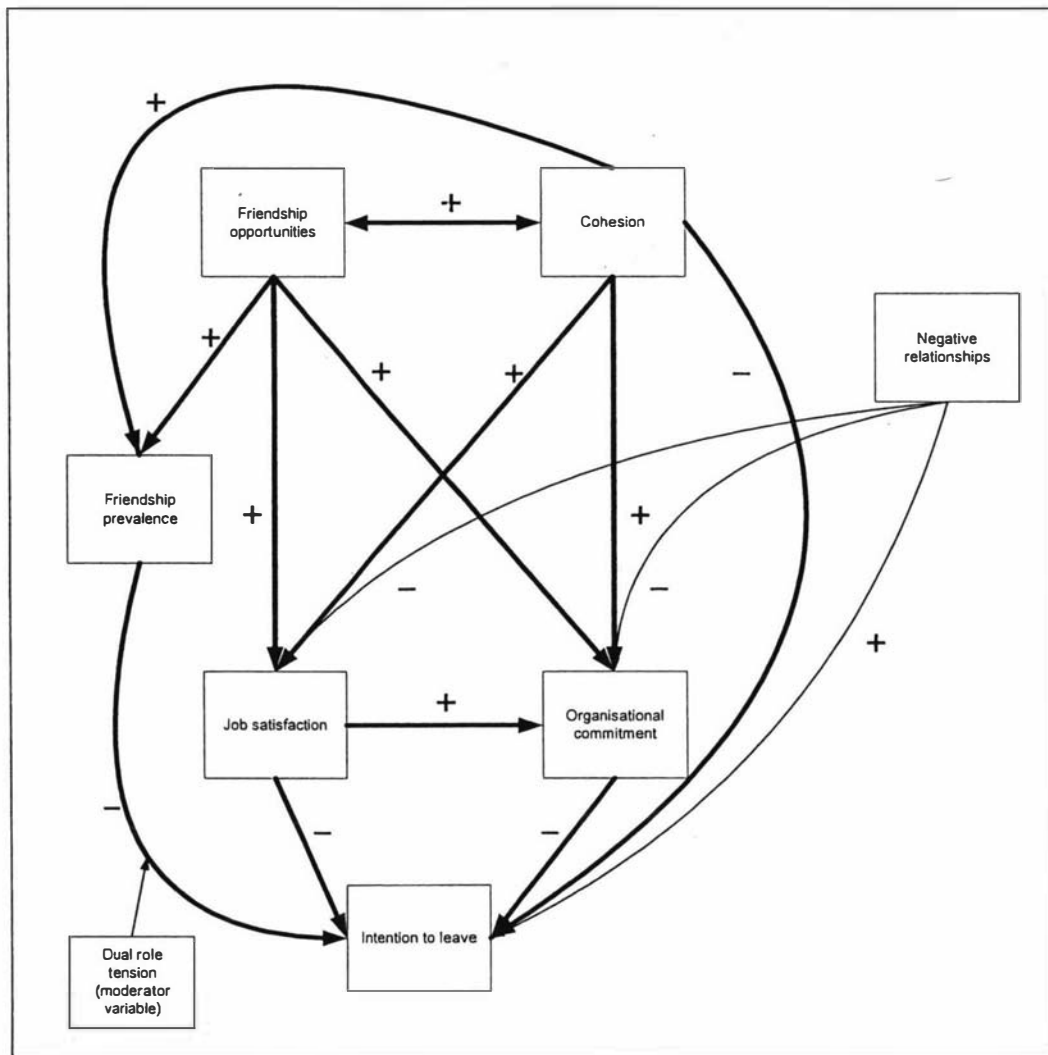


Figure 11: Showing the hypothesised moderating effect of dual role tension (Model 1)

Chapter 3: Testing the Model in a New Zealand Hospital

3.1 Introduction

The previous chapter derived a model of workplace relationships and organisational outcomes. The model contains a number of variables from friendship opportunities to intention to leave that are linked together, hypothetically, in several ways including correlations, direct relationships and mediated relationships. This chapter reports on a first attempt to test this model, as a whole, in a hospital setting within New Zealand.

3.1.1 A New Zealand Hospital as a Setting for Organisational Research

Previous organisational research in hospitals

Hospitals are accepted settings for organisational research worldwide. Studies conducted within hospitals, which have focused on topics related to the current study, include research into organisational commitment in Canada (Cohen, 1996, 1999) the United States (Meyer, Allen, & Smith, 1993) and New Zealand (Shouksmith, 1994), a Belgian study focusing on the relationship between person organisation fit and turnover (Vandenberghe, 1999), and an investigation of organisational culture and behavioural outcomes that was conducted in both Canadian and Tennessee hospitals (Gilbert & Sneed, 1992). There has been English research into nurses' job satisfaction (Tovey & Adams, 1999) and morale (Cochrane & Jowett, 1994) and research into nurse's job satisfaction in the United States (Blegen & Mueller, 1987); a study investigating the relationship between job satisfaction and turnover in Taiwan (Lu et al., 2002) and one investigating the relationship between job satisfaction and the work environment in the Middle East (Tumulty, Jernigan, & Kohut, 1995). Supervisory support and turnover has been studied in a New Zealand hospital (Kalliath & Beck, 2001) and there has been both an English study focusing on peer support (Aston & Molassiotis, 2003), and a Finnish

study focusing on peer evaluation (Vuorinen, Tarkka, & Meretoja, 2000). In addition, the work/life balance of hospital consultants was investigated in England (Dumelow, Littlejohns, & Griffiths, 2000). This is by no means an exhaustive list of organisational research set in hospitals but it is worth noting that, of the articles published, only the studies by Shouksmith (1994) and Kalliath & Beck (2001) were based in NZ hospitals. No research has specifically examined at the impact of friendships in this setting, although Froebe, Deetz and Knox (1983) did ask American nurses to rank the importance of factors important to their remaining employed in a hospital and found “relations with co-workers” to be ranked as the third most important with 97% of administrator and staff nurses rating relationships with co-workers as “very important” or “important.”

Wards and teams

Team dynamics, in wards and elsewhere, are of great interest. People in hospitals often work closely together in what can be a highly stressful, charged environment or, at other times (for example the night shift), one which might involve a lot of ‘down time’ with just one other person. Both of these environments are conducive to the formation of close relationships, first because people tend to ‘bond’ in times of adversity (Aronson & Cope, 1968; Carr, 2003; Sias & Jablin, 1995), and second because propinquity is an important antecedent to relationships forming (Adams & Blieszner, 1994). On the other hand, close proximity may be as likely to create strongly negative relationships (e.g., through forced exposure to an individual one might not choose to spend time with) as strong and enduring friendships.

New Zealand context

Of the research examining friendships in the workplace, none has been placed within a New Zealand context. The effects of interpersonal relationships, and the relationships themselves, may vary across cultural boundaries. Until there is New Zealand-based data and studies pertaining specifically to New Zealand organisations, it is impossible to know with any certainty whether findings from overseas are applicable here.

3.1.2 Research Questions

The model itself poses three general research questions, which address the key enquiry of this thesis. First, how do friendships at work relate to organisational outcomes (such as satisfaction, commitment and turnover)? Second, how does the perceived level of cohesion relate to friendships at work and organisational outcomes? And third, what are the effects of negative relationships in the workplace? This study aims to answer each of these questions empirically. The research questions and hypotheses are described below.

Research Question 1

Do the opportunities for, and prevalence of, friendships within a hospital have an impact (either mediated or direct) on job satisfaction, organisational commitment, and intention to leave? The discussion on the effects of relationships in the workplace (Chapter Two) is the focus of the first set of hypotheses.

Hypothesis 1a & 1b: That having more opportunities for friendship will have a positive relationship with job satisfaction and organisational commitment.

Hypothesis 1c: That having more opportunities for friendship within the workplace will have a negative relationship with intention to leave.

Hypothesis 1d & 1e: That the prevalence of friendships at work will not be related to job satisfaction or organisational commitment.

Hypothesis 1f: That the prevalence of friendships at work will have a negative relationship with intention to leave.

Research Question 2

Is the perceived level of cohesion related to opportunities for friendship, prevalence of friendship, job satisfaction, organisational commitment and intention to leave? The discussion on the relationship between cohesion and these variables (Chapter Two) is the focus of the second set of hypotheses.

Hypothesis 2a: That cohesion will be positively related to opportunities for, and prevalence of, friendship in the workplace.

Hypothesis 2b & 2c: That cohesion will have a positive relationship with job satisfaction and organisational commitment.

Hypothesis 2d: That cohesion will have a negative relationship with intention to leave.

Research Question 3

Do negative relationships in the workplace worsen organisational commitment, job satisfaction and intention to leave? The discussion on the relationship between negative relationships and these variables (Chapter Two) is the focus of the third set of hypotheses.

Hypothesis 3a: That the prevalence of negative relationships within the workplace will be negatively related to job satisfaction.

Hypothesis 3b: That the prevalence of negative relationships within the workplace will have a negative relationship with organisational commitment.

Hypothesis 3c: That the prevalence of negative relationships within the workplace will have a positive relationship with intention to leave.

3.1.3 Research Methodology

Experimental designs tend to have high internal validity; often generating definitive findings and establishing causality, i.e., researchers using the experimental method are often able to establish whether or not the independent variable really does affect the dependent variable. However, experimental research and laboratory studies in particular, may not have external validity. That is to say, it is questionable how generalisable findings might be outside the laboratory environment (Bryman, 1989).

Survey research, on the other hand, enables researchers to collect data relating to a number of different concepts from a large number of individuals. While obtaining a representative sample may be a problem (due to issues such as non-probability sampling and non-response bias), surveys do allow researchers to examine data with respect to a number of variables to discern patterns of association. However, because data from surveys are usually collected at a single juncture, researchers can seldom establish causality with certainty (Bryman, 1989).

Scholars studying friendship have acknowledged the need to employ, in conjunction with quantitative techniques, qualitative methods that permit detailed open-ended questioning about friend interactions and the effects and meanings people ascribe to them (Adams & Blieszner, 1994; Blieszner & Adams, 1992; Rubin, Perse, & Barbato, 1988). Both qualitative and quantitative methods are incorporated in the current study. These include pen and paper tools such as the Organisational Commitment Questionnaire, and a scale measuring the presence and importance of workplace relationships to respondents (Nielsen et al., 2000). In addition, a qualitative technique, (open-ended questions) will be utilised.

3.2 Method

3.2.1 Participants

Several large New Zealand organisations were approached to assess their interest in being involved in the first study. Waitemata District Health Board expressed interest and was selected.

The population sampled for the first study consisted of employees of the Waitemata District Health Board, which is spread over three sites in Auckland (New Zealand). All employees of the Waitakere Hospital site, except those working in mental health, were included in the population, as were all employees of the Community and Disability Service (a service which has employees at all sites)¹⁹. The employees in the sample potentially included all hospital staff; doctors, nurses, therapists, hospital aids and caregivers and clerical staff. Of these employees, every 5th person on payroll (listed alphabetically) received a questionnaire through the internal mail.

Of the 408 questionnaires sent out, 124 were returned (a 30% response rate). The demographics of the sample are shown in Table 1 (refer appendix 10 for the sheet used to gather demographic information and pie charts showing the results).

¹⁹ The total N of the sampled population was 2040.

Table 1: Demographics of Respondents of the Hospital Study

<i>Variable</i>		<i>Frequency (n)</i>	<i>Valid percent</i>
Sex	(1 missing)		
	Males	6	5
	Females	118	95
Age	(3 missing)		
	20-29 years	16	13.2
	30-39 years	16	13.2
	40-49 years	53	43.9
	50-59 years	24	19.8
	Over 60 years	12	9.9
Ethnicity	(4 missing)		
	NZ European or New Zealander	107	89.2
	Maori	6	5.0
	Pacific Island	4	3.3
	Chinese	1	0.8
	Canadian	1	0.8
	Filipino	1	0.8
Role	(1 missing)		
	Clerical	8	6.5
	Technical	4	3.3
	Clinical	97	78.9
	Management	11	8.9
	Other	3	2.4
Tenure	(0 missing)		
	> 1 year	14	11.6
	1-5 years	50	40.1
	5-10 years	17	14
	10-15 years	14	11.6
	15-20 years	17	13.4
	20+ years	10	8.1

Note: not all people answered all questions; the number of respondents declining to answer each question is indicated in Table 1.

Because they worked in a hospital, many of the respondents were from predominantly traditionally female occupations; nurses and clerical staff made up 84.7% of the sample. As a result, the sample was almost entirely female (95%). In addition, most were over the age of 40 (75.8%), the mean age was 44, most self-reported as being of "European descent" (89.2%). Almost half had been at Waitemata DHB for 5 years or longer.

3.2.2 Materials

Data were gathered using a self-administered questionnaire (refer appendices 1-10), which consisted of an information sheet, several instruments and survey questions. The instruments and survey questions are as follows.

Workplace Friendship Scale

Prior to investigating the possible effects of friendships in the workplace, it is first necessary to establish if, in fact, friendship relationships are *present* in the workplace. To do this, the Workplace Friendship Scale (Nielsen et al., 2000) was incorporated into the final questionnaire. The scale measures two aspects of workplace friendship: (a) the opportunity for friendship (e.g., *I have the opportunity to get to know my co-workers*), and (b) the prevalence of friendship (e.g., *I have formed strong friendships at work*). There are twelve items, rated on a 5-point likert scale from strongly disagree to strongly agree (refer appendix 2 for the items in the workplace friendship scale).

The items in the workplace friendship scale were derived by Nielsen et al. (2000) from previous workplace friendship measures (Riordan & Griffeth, 1995; Winstead et al., 1995; Wright, 1969, 1974) and a literature review of previous social psychological research. Nielsen et al. conducted item analysis to assess how each item related to the overall scale. The items in the scale are the 12 (of an original 35) that correlated most highly with the total sub-scale score.

Nielsen et al. (2000) assessed the internal consistency reliability of the scores of the two six-item sub-scales of the Workplace Friendship Scale (i.e., “prevalence of friendship” and “opportunities for friendship”). The internal consistency reliability estimates (Cronbach’s alpha) for the scores were .84 and .89 for the ‘opportunities for friendship’ and ‘prevalence of friendship’ sub-scales respectively. In addition, Nielsen et al.’s factor analysis supported a two-dimensional scale structure.

After determining the internal consistency reliability and dimensionality of the scale scores, Nielsen et al. (2000) conducted a second study to provide evidence of construct validity. Construct validity was assessed through convergent validity evidence, discriminant validity evidence, and the predictions that comprised the proposed nomological network (Cronbach & Meehl, 1955). Nielsen et al. (2000) believe adequate evidence was provided for the construct validity of the scale. Based on their results, it appears that the newly developed scale yields internally reliable scores, and effectively measures both friendship opportunities and friendship prevalence.

Relationships in the workplace questionnaire

As part of the questionnaire for the current study, respondents were also given the definitions of the three peer types identified by Kram and Isabella (1985) (i.e., special peer, collegial peer, and information peer) and asked to indicate how many peers of each type they had at work. Negative relationships were also defined, and respondents indicated how many negative relationships (if any) they had (refer appendix 3 for the definitions given to respondents).

Dual Role Tension Questionnaire

As discussed in section 2.3.8, Bridge and Baxter conducted a study examining the extent to which employees experience dilemmas or contradictions posed by the friendship and work-association components of their relationships at work. An adaptation of the Dual Role Tension Questionnaire, designed by Bridge and Baxter (1992), was included to measure the dual role tension experienced by individuals who have blended relationships, i.e., relationships which occur when people have a work-associate who is also a close friend (e.g., *Our relationship would be a lot easier if we were only friends or only work associates instead of being both*; refer appendix 4 for the items in the Dual Role Tension Questionnaire). The six-items used in the current study are those that were found to tap into overall dual role tension, Bridge and Baxter state that these items load together as a single factor and found the six-item index to have an alpha reliability of .85.

Workgroup Cohesion Scale

Cohesion was measured using a nine-item workgroup cohesion scale, rated on a 5-point Likert type scale from strongly disagree to strongly agree (e.g., *Members of my team are very willing to share information with other team members about our work*). Items measuring this variable were selected from a 54 item Work Group Characteristics Measure developed by Campion (1993). Only those items from the Work Group Characteristics Measure relating to cohesion were used in the current study. The items are those relating to (1) Social Support, (2) Workload Sharing and (3) Communication/Co-operation within the work group (refer appendix 5 for the items in the workgroup cohesion scale). Campion et al. provided evidence that a composite of

these items reliably predicted effectiveness criteria (productivity and manager judgements of effectiveness, ($p < .05$)). In addition the sub scales had adequate internal consistency reliability ($\alpha = .78, .84$ and $.81$ respectively).

Organisational Commitment Questionnaire

To assess the organisational commitment of respondents the Organisational Commitment Questionnaire was included in the survey (refer appendix 6 for the 15 items in the Organisational Commitment Questionnaire). This is the most commonly used measure of employee's organisational attachment to an organisation (Meyer & Allen, 1991). The Organisational Commitment Questionnaire is a 15-item scale, designed to assess acceptance of organisational values, desire to remain with the organisation and willingness to exert effort (e.g., *I am proud to tell others I am part of this organisation*). Items are rated on a 7-point Likert scale from strongly disagree to strongly agree. Although it was validated with a western population in mind, recent research using the Organisational Commitment Questionnaire has provided evidence for its generalisability and validity in the measurement of organisational commitment in non-western populations such as China (Siu, 2002), the United Arab Emirates (Yousef, 2003) and South Korea (Lee, Allen, & Meyer, 2001). In addition Mowday and colleagues have provided evidence for the test-re-test reliability, convergent and discriminant validity, internal consistency, and predictive validity of the Organisational Commitment Questionnaire (Mowday, Steers, & Porter, 1979).

For instance Mowday et al. found the overall measure of organisational commitment to be relatively stable over time ($r = .53, .63$ and $.75$ over 2-, 3- and 4-month periods), demonstrating good test-re-test reliability. Significant correlations were found between Organisational Commitment Questionnaire scores and "intention to remain with the organisation", illustrating convergent validity. In addition, the Organisational Commitment Questionnaire was found to correlate significantly with scores from the Organisational Attachment Questionnaire (convergent validities across six diverse samples ranged from $.63$ to $.74$) (Mowday et al., 1979). Meyer and Allen (1991) also examined convergent validity, finding that the Organisational Commitment Questionnaire correlated significantly with their measure of normative commitment ($r =$

.51). Evidence was reported for a consistent inverse commitment-turnover relationship with correlations, ranging from -.17 to -.43, demonstrating the predictive validity of the measure. Mowday and colleagues calculated internal consistency using coefficient α , item analysis and factor analysis, finding coefficient α to be consistently high, ranging from .82 to .93 with a median of .90. Item analysis²⁰ indicated that each item had a positive correlation with the total score for the Organisational Commitment Questionnaire, with the range being from .32 to .72. Mowday et al.'s (1979) original factor analysis (rotated to Kaiser varimax solution) resulted in a single factor solution and suggested the 15 items of the Organisational Commitment Questionnaire are relatively homogeneous with respect to the underlying attitude construct they measure.

Since Mowday et al.'s study, several researchers have supported the notion that the Organisational Commitment Questionnaire measures a single common underlying construct. For example Ferris and Aranya (1983) employed factor analysis (varimax rotation with Kaiser normalisation) to analyse data collected from 1,105 Canadian accountants. Ferris and Aranya found the 15-item scale yielded a single factor. Morrow and McElroy (1986) used data collected from 536 supervisors in a public agency in the mid western United States; they also found that items on the organisational commitment scale used in the current study loaded together as a single factor (varimax rotation).

There have been other researchers, however, who have found support for the notion that the Organisational Commitment Questionnaire is a multidimensional measure of organisational commitment. For example Barhayim and Berman (1992) examined the dimensions of organisational commitment using data collected from 1,299 industrial workers in Israel. Barhayim and Berman's results revealed organisational commitment to have two dimensions; they made a distinction is between 'loyalty to the organisation' and 'identification with and readiness to exert effort on its behalf.' Barhayim and Berman state that this is a distinction between passive and active organisational commitment. Angle and Perry (1981) studied a sample of 1244 bus-service employees and 96 transit managers in twenty-four organisations in the Western United States.

²⁰ Correlation between each item of the commitment scale and the total score, less the item

Utilising factor analysis, Angle and Perry also found a two-dimensional conceptualisation of organisational commitment, which they labelled 'value commitment' and 'commitment to stay.' In a more recent study using data collected from employees from the United Arab Emirates (two independent samples, one of 430 and another of 567 employees), Yousef (2003) also found that the Organisational Commitment Questionnaire to be a multidimensional concept.

For the purposes of the questionnaire used in the current study, organisational commitment was defined as "...the relative strength of an individual's identification with, and involvement with, a particular organisation" (Mowday et al., 1979, p.226). As discussed in Chapter Two, organisational commitment can be characterised by a strong belief in and acceptance of the organisation's goals and values, a willingness to exert effort on behalf of the organisation and a strong desire to maintain membership in the organisation. Exploratory factor analysis in the current study indicated that the items on the Organisational Commitment Questionnaire generally loaded together as one factor, the coefficient α for the items remaining after factor analysis for the current study was .87, indicating that, for this sample, the items used to measure organisational commitment can be used as a single factor.

Measure of job satisfaction

Job satisfaction is the degree to which a person reports satisfaction with intrinsic and extrinsic features of their job; it is also defined as a positive emotional state resulting from the appraisal of aspects of one's job (Levy, 2003). The job satisfaction scale used in the current study was one part of a larger battery of eight scales devised by Warr, Cook and Wall (1979). The whole battery included measures of work involvement, intrinsic job motivations, higher order need strength, perceived intrinsic job characteristics, job satisfaction, life satisfaction, happiness and self-rated anxiety. Only the 16-item scale relating to job satisfaction was used for this study. Respondents indicate how satisfied or dissatisfied they feel with each of 15 aspects of their job (e.g. *The recognition you get for good work*). Items are rated on a 7-point Likert type scale from very dissatisfied to very satisfied. Total job satisfaction is the sum of all the

separate items. There is also a 16th item, which is a measure of satisfaction with the job as a whole (refer appendix 7 for the 16 items in the Job Satisfaction Questionnaire).

Warr, Cook and Wall (1979) reported the test re-test reliability of their job satisfaction measure (respondents in the study were tested six months after their initial interview). The test-retest correlation coefficient was shown to be .63 for total job satisfaction, but only .27 for overall job satisfaction, the single item measure. For this reason total job satisfaction will be used in the current study. Warr, et al. (1979) also note that, although the scale can be factor analysed into several job satisfaction clusters, (for example 'extrinsic satisfaction' and 'intrinsic satisfaction' items were identified by Warr, et al.) they are closely and positively related to one another, suggesting that separate subscale scores will not always warrant calculation.

Although Warr et al. found, using cluster analysis, that items clustered together into intrinsic and extrinsic satisfaction subscales; exploratory factor analysis in the current study indicated that the items on the Job Satisfaction Scale generally loaded together as one factor, the coefficient α for the items remaining after factor analysis for the current study was .83, indicating that, for this sample, the items used are sufficiently homogeneous with respect to the construct they measure, to use as a single factor.

Measure of intention to leave

Quitting a job is often portrayed as a carefully considered multi-step decision culminating in an intention to quit (Fisher, 2002; Mobley, 1977; Sager, Griffeth, & Hom, 1998). Intention to leave has been described as the last in a sequence of withdrawal cognitions, along with thinking of quitting and intent to search for alternative employment (Mitchel, 1981; Mobley, 1977; Mobley, Horner, & Hollingsworth, 1978; Tett & Meyer, 1993). It is often measured with reference to a specific interval such as "within the next 6 months" or "within the next year." In this study intention to leave was measured with three items theorised to be important precursors to turnover; thinking of quitting, intention to search for alternative employment, and intention to quit (Chang, 1999; Mobley, 1977; Mobley et al., 1978) (e.g. *I will probably quit my job in the next year*). Some or all of these three items have

been used by researchers in some form for the past few decades (e.g., Chang, 1999; Lu et al., 2002; Rambur, Palumbo, McIntosh, & Mongeon, 2003; Sager et al., 1998). Answers to each item were recorded on a seven-point likert scale (refer appendix 8). In the current study the internal reliability of the three items was good, (coefficient $\alpha = .82$).

Open ended questions

Six open-ended critical incident questions were used to give respondents an opportunity to comment on the impact workplace friendships and negative relationships had on their experience of work, with the aim of providing the researcher with a source of qualitative data to provide further insight to quantitative findings. In these, respondents outlined how their informal interpersonal relationships either improved or negatively affected their work environment and, if appropriate, how the workplace might have affected their relationships (refer appendix 9 for the actual questions asked of respondents).

3.2.3 Procedure

Ethics approval was applied for and obtained from the Massey University Human Ethics Committee (MUHEC) and from Waitemata District Health Board. Every fifth person (listed alphabetically) on the payroll of the Waitakere Hospital site (except those working in mental health) and all employees of the Community and Disability Service were selected to receive an information sheet and questionnaire in the organisation's internal mail system (refer appendices 1-10). A full information sheet was delivered along with the questionnaire, so submission of the questionnaire was taken as informed consent. In order to maintain confidentiality there was no way to identify individual respondents. A stamped envelope, addressed to the researcher was included with each questionnaire for ease of return. In total, 419 questionnaires were sent out through the internal mail system of the Waitemata District Health Board. Of the 419 sent out, 11 were not delivered as the staff members had left the organisation. Thus the total number of questionnaires delivered to employees at Waitemata DHB was 408.

One month later, a follow up letter was sent to the original list of 419 employees (refer appendix 11). This letter thanked those who had returned their questionnaires and

reminded the others that they could still submit theirs if they wished to participate. Fourteen participants responded to the second call, bringing the final return rate up to the figure of 30% reported in section 3.2.1.

3.3 Analysis and Results

3.3.1 Imputing Missing Values

Respondents 16 and 101 failed to complete the cohesion scale so these two respondents were removed from all further analysis (leaving the number of respondents at 122). Prior to computing the scales, missing values (items which individuals failed to respond to) were imputed. First the responses to the five scales (cohesion, friendship, commitment, satisfaction and intention to leave) from all remaining respondents were placed into separate SPSS files. Following this, the inversely worded items from the various scales were reversed²¹. Finally, missing values for each scale were imputed using the 'missing value analysis' option in the analyse menu of SPSS, which fills in (imputes) missing values with estimated values using regression²².

3.3.2 Factor Analysis

There is the possibility of some overlap in the constructs measured by the questionnaire in the current study. If this were the case it would "force" a relationship between variables. Exploratory factor analysis was carried out to verify that the measures were both internally coherent and conceptually and empirically distinct from each other. Because overlap in constructs is only likely for conceptually similar variables, the three measures of relationship quality (workplace friendships, measure of work group cohesion and the dual role tension questionnaire) were factor analysed together, as were the three outcome variables (organisational commitment, job satisfaction and intention to leave).

²¹ Inversely worded items were; item 12 of the workplace friendship scale, item 4 of the dual role tension questionnaire, and items 3, 7, 9, 11, 12 and 15 of the organisational commitment questionnaire.

²² There were few missing values in these scales. Eighteen values in total were missing; three from the cohesion scale, two from the friendship scale, four from the commitment scale, nine from the satisfaction scale and none from the intention to leave scale.

Relationship-quality measures (friendship, cohesion and dual role tension measures)

The friendship, cohesion and dual role tension measures from the questionnaire were factor analysed together. As stated above, it is possible that the scales tap into similar constructs, so the analysis is carried out to ensure that the scales are internally coherent and also distinct from the other relationship-quality measures. The 27 items (i.e., a 12 item Friendships scale, a 6 item Dual Role Tension (Dual Role Tension) scale and a 9 item Cohesion scale) were factor analysed with a maximum likelihood extraction²³ and direct oblimin rotation²⁴. The solution was set for 4 factors to represent the four components (i.e., cohesion, dual role tension, friendship opportunities and friendship prevalence). This four-factor construct was suggested by the scree plot (refer Figure 12.1; appendix 12), which shows four clear factors.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy²⁵ had a value of .83 (higher than the criterion of .7). The resulting matrix accounted for 52.9% of the variance. Most of the items loaded on the hypothesised factor (refer Table 2). For example, all the 'dual role tension' items loaded on one factor, all the items measuring friendship prevalence loaded on one factor and all but one of the items measuring friendship opportunities loaded on one factor. All but two of the cohesion scale items loaded on one factor; items 2 and 3 of the workgroup cohesion scale "*My team increases my opportunities for positive social interaction*" and "*Members of my team help each other out at work when needed*" cross-loaded on the friendship prevalence factor. The two cross loading cohesion items measure social support, and presumably tap into much the same construct as the friendship scale does.

²³ Maximum likelihood factor analysis, originally introduced by Lawley (1940), was chosen because it is based on a firm mathematical foundation that allows hypothesis testing when normality is assumed (Chen, 2003). Statistical tests using maximum-likelihood estimation, assume that the data are multivariate normal (Reise, Waller, & Comrey, 2000). Because the data obtained from the likert-type scales in the current study are multivariate normal (in contrast to dichotomously scored items, for example) maximum likelihood factor analysis was appropriate. In addition, Cudeck and O'Dell (1994) state that the properties of the maximum likelihood estimator, especially with regard to estimated standard errors for rotated loadings, have been most completely developed, calling it a "good statistical method."

²⁴ Because the factors may be correlated with one another, direct oblimin was chosen as the rotation method. Direct oblimin is an oblique rotation and was selected over orthogonal rotation, as orthogonal rotation is based on the assumption that the factors are uncorrelated.

²⁵ The Kaiser-Meyer-Olkin measure of sampling adequacy tests whether the partial correlations among variables are small. The measure needs to be higher than the criterion of .7 to indicate sampling adequacy.

Items 1, 2 and 3 of the cohesion scale measure social support (Campion et al., 1993), a construct that is also likely to be measured by the friendship scale. The relationship between the cohesion and friendship constructs will be measured, and leaving these items in may force a relationship between the constructs. In order to make the eventual data analysis as conservative as possible, all three were removed. In addition, items 1 and 5 of the workplace friendship scale "*I have the opportunity to get to know my co-workers*" and "*I have the opportunity to develop close friendships at my workplace*" were cross loading between the two friendship factors (prevalence and opportunities) so were also removed. Item 4 of the Dual Role Tension scale had an absolute value less than .3 so was also dropped. The "dropped" items, those that did not load on their hypothesised factor, cross-loaded with other factors or had a factor loading with an absolute value less than .3 are shaded in grey for ease of identification.

Table 2: First Pattern Matrix of the Factor Analysis of the Friendship, Cohesion and Dual Role Tension Measures (items to be removed are shaded in grey)

<i>Scale item</i>	<i>Wording</i>	<i>Factor</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Dual role tension 2	Our relationship would be a lot easier if we were only friends or only work associates instead of being both	-.934				
Dual role tension 1	Overall, the friendship half and the work half of our relationship interfere with each other, creating problems for us	-.931				
Dual role tension 3	Our work relationship and our friendship are often in conflict with one another	-.872				
Dual role tension 6	My friend and I have lowered our expectations about what we expect as both friend and co-worker in order to maintain our relationship	-.736				
Dual role tension 5	It requires extra effort to maintain both the friendship side and the work side of our relationship	-.599				
Dual role tension 4	Problems rarely arise because our friendship and our work relationship are so much a part of each other					
Workplace Friendship Scale 3	In my organisation I have the opportunity to talk informally and visit with others		.932			
Workplace Friendship Scale 4	Communication among employees is encouraged by my organisation		.699			
Workplace Friendship Scale 2	I am able to work with my co-workers to collectively solve problems		.610			
Workplace Friendship Scale 6	Informal talk is tolerated by my organisation as long as the work is completed		.427			
Workplace Friendship Scale 1	I have the opportunity to get to know my co-workers		.386			.333
Workgroup cohesion 9	Members of my team cooperate to get the work done			.710		
Workgroup cohesion 7	Members of my team are very willing to share information with other team members about our work			.710		
Workgroup cohesion 5	No one on my team depends on other team members to do the work for them			.666		
Workgroup cohesion 6	Nearly all the members of my team contribute equally to the work			.646		
Workgroup cohesion 4	Everyone on my team does their fair share of the work			.640		
Workgroup cohesion 3	Members of my team help each other out at work when needed			.498		.364
Workgroup cohesion 8	Teams enhance the communication among people working on the same product			.421		
Workgroup cohesion 1	Being in my team gives me the opportunity to work as a team and provide support to other team members					.369
Workplace Friendship Scale 7	I have formed strong friendships at work					.811
Workplace Friendship Scale 9	I can confide in people at work					.682
Workplace Friendship Scale 8	I socialise with co-workers outside the workplace					.677
Workplace Friendship Scale 10	I feel I can trust many co-workers a great deal					.606
Workplace Friendship Scale 12	I do not feel that anyone I work with is a true friend					.585
Workplace Friendship Scale 11	Being able to see my co-workers is one reason I look forward to my job					.573
Workplace Friendship Scale 5	I have the opportunity to develop close friendships at my workplace			.456		.555
Workgroup cohesion 2	My team increases my opportunities for positive social interaction					.498

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization.
Rotation converged in 11 iterations. Loadings less than .3 are not shown.

With the 6 “dropped” items not included in the analysis, the solution accounted for 56.4% of the variance, and the items in each scale loaded together as single factors. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had a value of .79. One final item (item 8 of the workgroup cohesion scale) “*Teams enhance the communication among people working on the same product/toward the same goals*” was cross loading with the workplace friendship scale, so it was also removed.

Table 3 shows the final factor analysis, with the solution still set to four factors to represent the four components (friendship prevalence, friendship opportunities, dual role tension and workgroup cohesion). The solution accounted for 57.464% of the variance, and revealed four distinguishable factors representing the four scales. The scree plot for the final factor analysis is shown in Figure 12.2, appendix 12. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had a value of .80.

Table 3: Final Pattern Matrix of the Factor Analysis of the Friendship, Cohesion and Dual Role Tension Measures

<i>Scale Item</i>	<i>Wording</i>	<i>Factor</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Dual role tension 2	Our relationship would be a lot easier if we were only friends or only work associates instead of being both		-.936			
Dual role tension 1	Overall, the friendship half and the work half of our relationship interfere with each other, creating problems for us		-.929			
Dual role tension 3	Our work relationship and our friendship are often in conflict with one another		-.870			
Dual role tension 6	My friend and I have lowered our expectations about what we expect as both friend and co-worker in order to maintain our relationship		-.725			
Dual role tension 5	It requires extra effort to maintain both the friendship side and the work side of our relationship		-.592			
Workgroup cohesion 5	No one on my team depends on other team members to do the work for them			.724		
Workgroup cohesion 4	Everyone on my team does their fair share of the work			.679		
Workgroup cohesion 7	Members of my team are very willing to share information with other team members about our work			.661		
Workgroup cohesion 6	Nearly all the members of my team contribute equally to the work			.659		
Workgroup cohesion 9	Members of my team cooperate to get the work done			.592		
Workplace Friendship Scale 7	I have formed strong friendships at work				.760	
Workplace Friendship Scale 9	I can confide in people at work				.711	
Workplace Friendship Scale 8	I socialise with co-workers outside the workplace				.700	
Workplace Friendship Scale 10	I feel I can trust many co-workers a great deal				.684	
Workplace Friendship Scale 11	Being able to see my co-workers is one reason I look forward to my job				.636	
Workplace Friendship Scale 12	I do not feel that anyone I work with is a true friend				.579	
Workplace Friendship Scale 3	In my organisation I have the opportunity to talk informally and visit with others					-.885
Workplace Friendship Scale 4	Communication among employees is encouraged by my organisation					-.718
Workplace Friendship Scale 2	I am able to work with my co-workers to collectively solve problems					-.614
Workplace Friendship Scale 6	Informal talk is tolerated by my organisation as long as the work is completed					-.431

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization.
Rotation converged in 9 iterations. Loadings less than .3 are not shown.

Table 3 clearly shows that all of the remaining items loaded on the expected factor, indicating that the scales are both internally coherent, and distinct from each other. The Cronbach's alpha reliability estimates of the friendship opportunities, friendship prevalence, dual role tension and cohesion subscales are all acceptable, ($\alpha = .76, .86, .91$ and $.82$ respectively). The resulting scales were used in all subsequent analyses by obtaining a mean score on each scale for all respondents.

Outcome variables (organisational commitment, job satisfaction and leaving intention)

An exploratory factor analysis on the three outcome measures (organisational commitment, job satisfaction and leaving intention) was performed. As with the relationship-quality measures (above), it is possible that the three scales measuring organisational outcome variables would tap into similar constructs, so the analysis was carried out to ensure that the scales are internally coherent and also distinct from each other. The 33 items (i.e., a 15 item Organisational Commitment Questionnaire, a 15 item Job Satisfaction Scale and a 3 item Intention to Leave Scale) were factor analysed with a maximum likelihood extraction and direct oblimin rotation. Because the scree plot indicated three factors (refer Figure 12.3; appendix 12), the solution was set to three factors reflecting the three components (satisfaction, commitment and leaving intention).

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had a value of .89. The resulting matrix accounted for 42.59% of the variance. Most of the items loaded on the hypothesised factor, thus yielding a reasonably interpretable simple structure (refer Table 4). For example, all the Organisational Commitment items loaded on one factor, all the Intention to Leave items loaded on one factor and all but four Job Satisfaction items loaded on one factor.

Item 3 of the Job Satisfaction Scale measures satisfaction with relationships in the workplace (rate your satisfaction with “your fellow workers”). Leaving this item in may partially force a relationship between the ‘Job Satisfaction’ and ‘Friendships in the Workplace’ constructs. In order to make the eventual data analysis as conservative as possible, item three was removed.

Items (4, 9 and 11) from the Organisational Commitment Questionnaire measure the respondents’ intention to remain in their current jobs, and tap into the same construct measured by the Intention to Leave scale. Organisational Commitment may be one predictor of intention to leave; if intention to leave is measured within the organisational commitment scale it will artificially increase the link between them, i.e., will force a relationship as above. Thus, in order to measure Organisational Commitment and

Intention to Leave cleanly and separately, items 4, 9 and 11 of the Organisational Commitment Questionnaire were removed (refer Table 4).

An examination of the individual items revealed that items 2, 10 and 12 of the Job Satisfaction Scale cross-loaded onto the Organisational Commitment factor. In addition, item 3 of the Organisational Commitment Questionnaire and items 16, 1 and 14 had absolute values less than .3. These seven were dropped. Again, the “dropped” items (i.e., those that did not load on their hypothesised factor, cross-loaded with other factors or had a factor loading with an absolute value less than .3) are shaded in grey for ease of identification.

Table 4: First Pattern Matrix of the Factor Analysis of the Satisfaction, Commitment and Leaving Intention Measures (items to be removed are shaded in grey)

<i>Scale Item</i>	<i>Wording</i>	<i>Factor</i>	<i>1</i>	<i>2</i>	<i>3</i>
Organisational Commitment 1	I describe this organisation to my friends as a great organisation to work for		.869		
Organisational Commitment 6	I am proud to tell others that I am part of this organisation		.849		
Organisational Commitment 14	For me this is the best of all possible organisations for which to work		.791		
Organisational Commitment 10	I am extremely glad that I chose this organisation to work for over others I was considering at the time I joined		.735		
Organisational Commitment 5	I find that my values and the organisation's values are very similar		.684		
Organisational Commitment 8	This organisation really inspires the very best in me in the way of job performance		.553		.376
Organisational Commitment 2	I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful		.508		
Organisational Commitment 15	Deciding to work for this organisation was a definite mistake on my part		.502		
Job Satisfaction Scale 12	The way the company is managed		.487		.399
Organisational Commitment 9	It would take very little change in my present circumstances to cause me to leave this organisation		.450		
Job Satisfaction Scale 10	Industrial relations between management and workers		.439		.312
Organisational Commitment 11	There's not too much to be gained by sticking with this organisation indefinitely		.438		
Organisational Commitment 4	I would accept almost any sort of job assignment in order to remain at this organisation		.435		
Organisational Commitment 7	I could just as well be working for a different organisation as long as the type of work was similar		.421		
Organisational Commitment 12	Often, I find it difficult to agree with this organisation's policies on important matters relating to its employees		.337		
Organisational Commitment 13	I really care about the fate of this organisation		.321		
Job Satisfaction Scale 2	The freedom to choose your own method of working		.316		
Organisational Commitment 3	I feel very little loyalty to this organisation				
Intention to leave 3	I will probably look for a new job in the next year			.863	
Intention to leave 1	How likely is it that you will actively look for a new job in the next year			.848	
Intention to leave 2	I often think about quitting			.361	
Job Satisfaction Scale 9	Your opportunity to use your abilities				.802
Job Satisfaction Scale 4	The recognition you get for good work				.784
Job Satisfaction Scale 6	The amount of responsibility you are given				.683
Job Satisfaction Scale 5	Your immediate boss				.632
Job Satisfaction Scale 11	Your chances of promotion				.580
Job Satisfaction Scale 13	The attention paid to suggestions you make				.483
Job Satisfaction Scale 7	Your rate of pay				.469
Job Satisfaction Scale 3	Your fellow workers				.394
Job Satisfaction Scale 15	The amount of variety in your job				.378
Job Satisfaction Scale 16	Your job security				
Job Satisfaction Scale 1	The physical work conditions				
Job Satisfaction Scale 14	Your hours of work				

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 16 iterations. Loadings less than .3 are not shown.

A second factor analysis (with the above 11 items dropped) accounted for 51.533% of the variance, and revealed three distinguishable factors representing the three scales. The scree plot for the final factor analysis is shown in Figure 12.4, appendix 12. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had a value of .89.

Only item 13 of the job satisfaction scale and item 8 of the Organisational Commitment Questionnaire were cross loading with other factors. They were also dropped. Table 5 shows the final solution, which accounted for 50.983% of the variance, and revealed three distinguishable factors representing the three scales. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had a value of .87.

Table 5: Final Pattern Matrix of the Factor Analysis of the Satisfaction, Commitment and Leaving Intention Measures

<i>Scale Item</i>	<i>Wording</i>	<i>Factor</i>	<i>1</i>	<i>2</i>	<i>3</i>
Intention to leave 3	I will probably look for a new job in the next year		-.966		
Intention to leave 1	How likely is it that you will actively look for a new job in the next year		-.851		
Intention to leave 2	I often think about quitting		-.384		
Organisational Commitment 1	I describe this organisation to my friends as a great organisation to work for			.867	
Organisational Commitment 6	I am proud to tell others that I am part of this organisation			.855	
Organisational Commitment 14	For me this is the best of all possible organisations for which to work			.792	
Organisational Commitment 5	I find that my values and the organisation's values are very similar			.754	
Organisational Commitment 10	I am extremely glad that I chose this organisation to work for over others I was considering at the time I joined			.735	
Organisational Commitment 15	Deciding to work for this organisation was a definite mistake on my part			.550	
Organisational Commitment 2	I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful			.517	
Organisational Commitment 7	I could just as well be working for a different organisation as long as the type of work was similar			.358	
Organisational Commitment 13	I really care about the fate of this organisation			.331	
Organisational Commitment 12	Often, I find it difficult to agree with this organisation's policies on important matters relating to its employees			.309	
Job Satisfaction Scale 9	Your opportunity to use your abilities				.862
Job Satisfaction Scale 6	The amount of responsibility you are given				.738
Job Satisfaction Scale 4	The recognition you get for good work				.634
Job Satisfaction Scale 11	Your chances of promotion				.566
Job Satisfaction Scale 5	Your immediate boss				.454
Job Satisfaction Scale 7	Your rate of pay				.414
Job Satisfaction Scale 15	The amount of variety in your job				.377

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 8 iterations. Loadings less than .3 are not shown.

The Cronbach's alpha reliability estimates of the organisational commitment, job satisfaction and intention to leave subscales were acceptable, α 's = .87, .83 and .82 respectively, indicating the items used are sufficiently homogeneous with respect to the construct they measure. The finding that the Organisational Commitment Questionnaire items loaded together as one factor is consistent with Mowday et al. (1979) who also found that factor analysis of the Organisational Commitment Questionnaire items resulted in a single factor solution. With respect to the Job Satisfaction Scale, although Warr et al. (1979) found, using cluster analysis, that items clustered together into

intrinsic and extrinsic satisfaction subscales; factor analysis in the current study indicated that the items on the Job Satisfaction Scale generally loaded together as one factor. The resulting scales were used in all subsequent analyses.

The items that loaded together as factors (as indicated by the factor analyses) were combined into new scales. Following this, the new files, and scale scores (the mean for each scale) were calculated for each respondent. This was the data used to test the model using path analysis. To further test the validity of the measures and to illustrate the relationships between them, Table 6 shows the correlations between the scale scores of the remaining composite items in each measure, all hypothesised correlations are significant and in the expected direction.

Table 6: Correlations between Measured Variables: Hospital Study

	Organisational Commitment	Friendship prevalence	Friendship opportunities	Cohesion	Job Satisfaction
Friendship prevalence	.16				
Friendship opportunities	.36**	.37**			
Cohesion	.23*	.32**	.31**		
Job Satisfaction	.63**	.12	.36**	.37**	
Intention to leave	-.45**	-.23*	-.19*	-.22*	-.47**

** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

To further verify the factor structure of the whole questionnaire, a third factor analysis was performed for all the 54 items from the six scales in questionnaire (i.e., the 12 item Friendships scale, 9 item Cohesion scale, 15 item Organisational Commitment scale, 15 item Job Satisfaction scale and 3 item Intention to Leave scale). The resulting factor structure supported the findings described above. The items in each factor after the analysis of all the component scales together are almost identical to those remaining after the two separate factor analyses described above. See appendix 13 for a full description of the third factor analysis.

3.3.3 Path Analysis

The factor analysis described above (and in appendix 13), verified that the scales used in the questionnaire are not only internally coherent, but also measure conceptually and empirically distinct variables. Because of this, it is possible to statistically test the relationship between the variables. Due to the relatively small sample size (122) and the fact that the variables examined in this study are measured with scales shown to have adequate validity and reliability (refer section 3.2.2.); an “observed variable” model was tested. A structural equation model using observed (as opposed to latent) variables is termed path analysis (Pedhazur, 1982). In path analysis, the relationships between the observed variables are measured directly and the significance (or lack thereof) of the relations between the variables can be ascertained. Pedhazur states that path analysis was developed as a method for studying the direct and indirect effects of variables hypothesised as *causes* on variables hypothesised as *effects*. Path analysis is used to shed light on the plausibility of the causal models, which are based on knowledge and theoretical considerations.

Having decided on path analysis, the AMOS computer application (Arbuckle, 1999) was used to complete the analysis, testing the model presented in Chapter Two. Table 7 shows the statistical significance of the various regression paths tested (the AMOS output is provided in appendix 14).

Table 7: Showing Critical Ratio (C.R.) Values (parameter estimate divided by standard error) of the Regression Paths in Model 1

<i>Regression Path</i>	<i>C.R.</i>	<i>Estimate</i>	<i>S.E.</i>	<i>Stand Reg weight</i>	<i>p</i>
Friendship Opportunities Cohesion → Job Satisfaction	3.127	.854	.273	.271	.011
Cohesion → Job Satisfaction	3.321	.676	.204	.287	.013
Friendship Opportunities Cohesion → Friendship prevalence	3.499	.610	.174	.307	.046
Cohesion → Friendship prevalence	2.628	.342	.130	.230	.025
Cohesion → Org Commitment	-0.511	-.126	.247	-.039	.798
Job Satisfaction → Org Commitment	7.494	.800	.107	.586	.019
Friendship Opportunities → Org Commitment	2.149	.710	.330	.165	.056
Friendship prevalence → Intention to leave	-1.846	-.159	.086	-.154	.046
Job Satisfaction → Intention to leave	-2.809	-.194	.069	-.297	.004
Org Commitment → Intention to leave	-2.435	-.116	.048	-.242	.034
Cohesion → Intention to leave	-0.013	-.002	.132	-.001	.928

C. R. values $>\pm 1.96$ are statistically significant. Parameter estimates and standard errors are also shown, along with the standardised regression weights and the probability level (p) indicated in Figure 12.

The test statistics of interest in Table 7 are the critical ratio (C.R.) and the probability level. The critical ratio operates as a z-statistic in testing that the estimate is statistically different from zero. Based on a probability level of .05, the test statistic needs to be $>\pm 1.96$ to achieve statistical significance (Byrne, 2001). The probability level in the final column indicates the likelihood that the tested relationship would have occurred by chance. Thus, values less than .05 indicate a significant relationship. From Table 7, the paths from 'cohesion → organisational commitment' and 'cohesion → intention to leave' are shown to be non significant, both because the critical ratio for these relationships is less than ± 1.96 , and because the probability level is greater than .05.

Although the critical ratio for the relationship 'friendship prevalence → intention to leave' is also slightly smaller than ± 1.96 , the probability level ($p < .05$) suggests that the relationship between the two variables is significant. In addition, when Model 1 is respecified with the non-significant regression paths removed, the critical ratio for the 'friendship prevalence → intention to leave' path is more than ± 1.96 (refer Table 8; showing the results of the analysis for Model 1). Thus the 'friendship prevalence → intention to leave' path is reported as being significant and is included in the graphical representation of the path analysis (Figure 12).

Table 8: Showing Critical Ratio Values (parameter estimate divided by standard error) of the Regression Paths in Model 1 When Specified with Non-Significant Regression Paths Removed

<i>Regression Path</i>	<i>C.R.</i>	<i>Estimate</i>	<i>S.E.</i>	<i>Stand Reg weight</i>	<i>p</i>
Friendship → Job Satisfaction Opportunities	3.222	.934	.290	.287	.006
Cohesion → Job Satisfaction	3.199	.656	.205	.278	.028
Friendship → Friendship Opportunities prevalence	3.036	.556	.183	.274	.120
Cohesion → Friendship prevalence	2.723	.355	.131	.241	.029
Job Satisfaction → Org Commitment	8.914	.863	.097	.646	.032
Job Satisfaction → Intention to leave	-2.560	-.177	.069	-.271	.030
Org Commitment → Intention to leave	-2.656	-.134	.050	-.273	.026
Friendship prevalence → Intention to leave	-1.963	-.166	.085	-.159	.044

C.R values $>\pm 1.96$ are statistically significant. Parameter estimates and standard errors are also shown, along with the standardised regression weights and probability level (p).

Figure 12 shows the standardised regression weights and the level of significance of the relationships²⁶. Dashed lines indicate that the regression between two variables is not significant at the .05 level of significance.

²⁶ The potentially moderating effect of dual role tension cannot be tested in this analysis, as the number of respondents for whom this was relevant was too small. The 'negative relationship' variable was not included in this path analysis because 'peer type' data were dichotomous. The analysis of the negative relationship data is described in section 3.3.4.

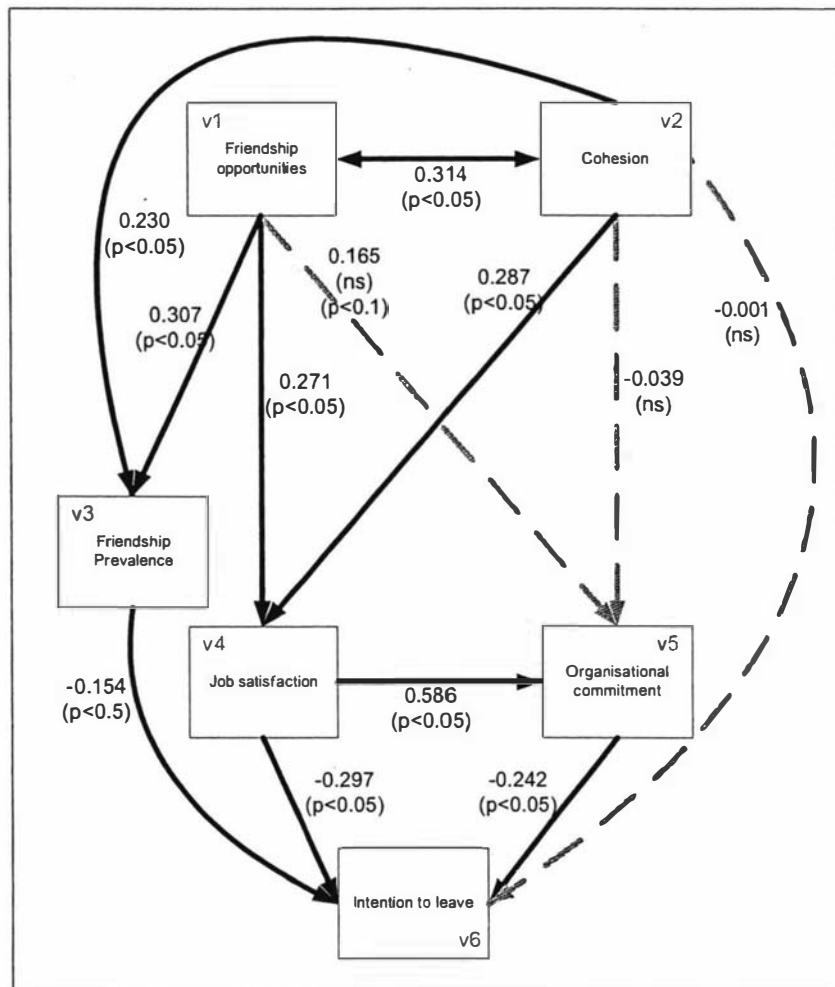


Figure 12: Path analysis of Model 1

Explanation of the relationships between variables in the proposed model

The diagrams that follow are sections of the model shown in Figure 12 and warrant some explanation. Several of the hypothesised relationships between variables have been shown not to be direct; instead they are mediated by other variables. Each is explained below.

The path analysis of the proposed model (refer Figure 12) indicates that there is no direct relationship from either friendship opportunities or cohesion to organisational commitment. Instead these relationships are mediated by job satisfaction. The absence of a direct path from friendship opportunities or cohesion, and organisational commitment is indicated by the non-significant regression weights (shown in the model as dashed lines) between these variables. The path leading from friendship

opportunities to job satisfaction to organisational commitment is significant, however, as is the one from cohesion to job satisfaction to organisational commitment.

Figure 13, below, shows the portion of Model 1 described in the previous paragraph. Cohesion and friendship opportunities are significantly positively correlated with each other. Both cohesion and friendship opportunities are shown to impact on job satisfaction, which in turn, impacts on organisational commitment.

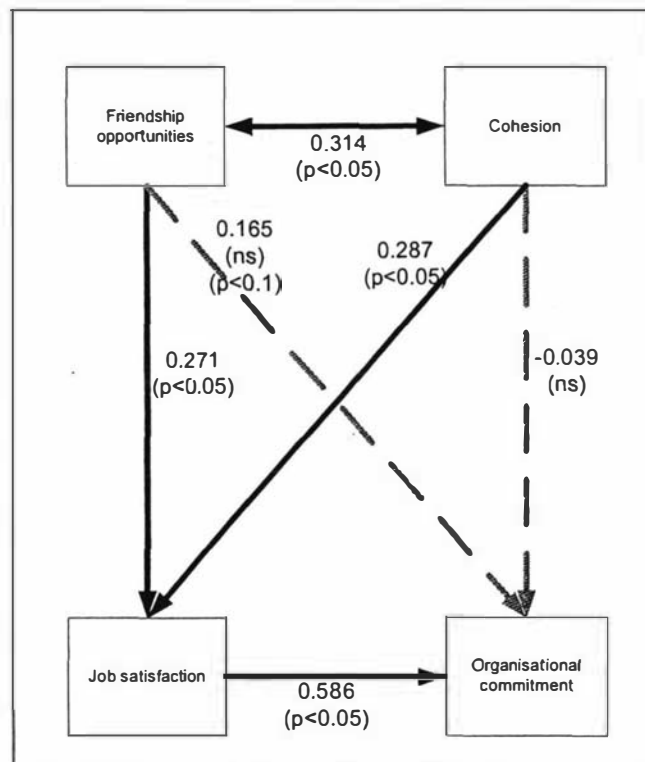


Figure 13: Path from friendship opportunities and cohesion to organisational commitment

In addition, the analysis of Model 1 indicates that satisfaction and commitment each contribute to intention to leave. The relationship between these three variables is shown in Figure 14. The analysis of Model 1 is consistent with the notion that job satisfaction will lead to organisational commitment, which will, in turn, impact on leaving intention. However, in this sample, job satisfaction is also shown to directly affect intention to leave (i.e., the satisfaction/intention to leave relationship is not mediated by organisational commitment).

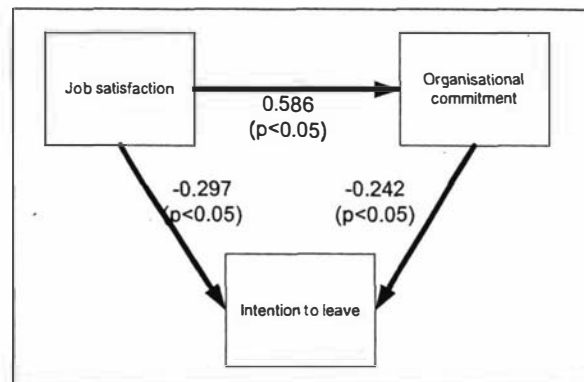


Figure 14: Path from job satisfaction and organisational commitment to intention to leave

Further, the analysis of Model 1 indicates that cohesion and friendship opportunities each contribute individually to friendship prevalence. These relationships are the focus of Figure 15, which shows significant regression weights from both cohesion and friendship opportunities to friendship prevalence. Thus it seems that perceptions of a cohesive work environment will be correlated with increased opportunities for friendship, and both, in turn, are related to more friendships at work (friendship prevalence).

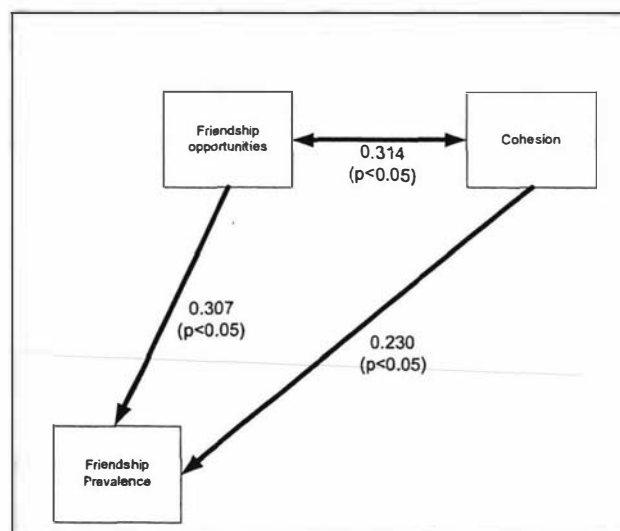


Figure 15: Path from friendship opportunities and cohesion to friendship prevalence

The analysis of Model 1 (Figure 12) suggests that the relationship between cohesion and intention to leave is mediated by both job satisfaction and friendship prevalence; this is supported both by the non-significant regression weight between cohesion and intention to leave (indicated by the dashed line between these two variables) and by the

significant weights from cohesion to satisfaction to intention to leave, and from cohesion to friendship prevalence to intention to leave, refer to Figure 16 for a focus on this path.

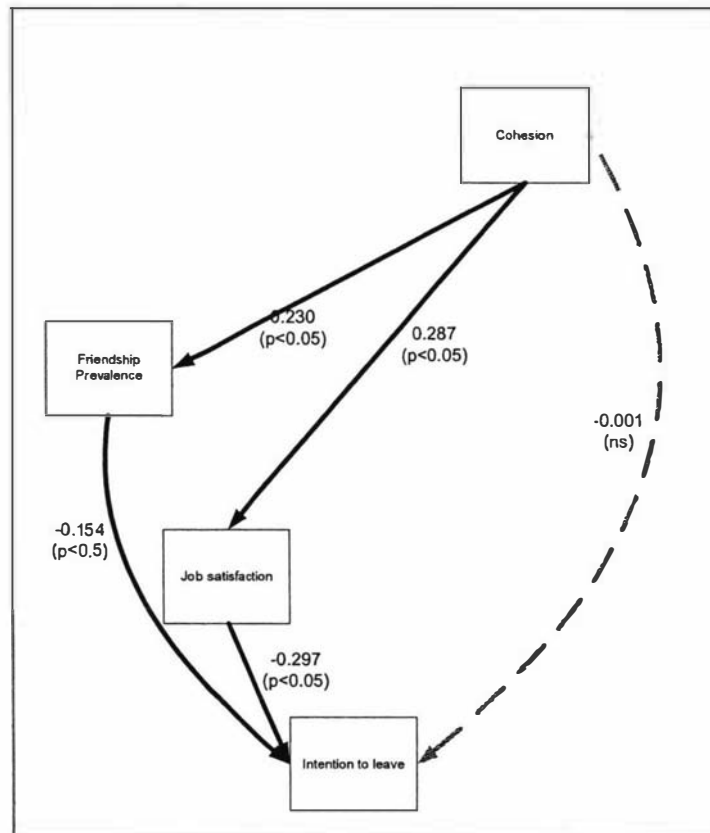


Figure 16: Path from cohesion to intention to leave

Figure 17 focuses on the relationship between friendship opportunities and intention to leave. As is the case for cohesion, the impact of friendship opportunities on intention to leave appears to be mediated by both friendship prevalence and job satisfaction, indicated by a non-significant regression weight between friendship opportunities and intention to leave²⁷. The significant relationship between friendship prevalence and intention to leave, shown in Figures 16 and 17, is worth noting here also. A negative friendship prevalence → intention to leave relationship is in line both with the existing literature and with the qualitative data from respondents in this study and will be discussed more fully in the discussion section of this chapter.

²⁷ When this relation was included (in a separate path analysis) the standardised regression weight between friendship opportunities and intention to leave was .088 (ns)

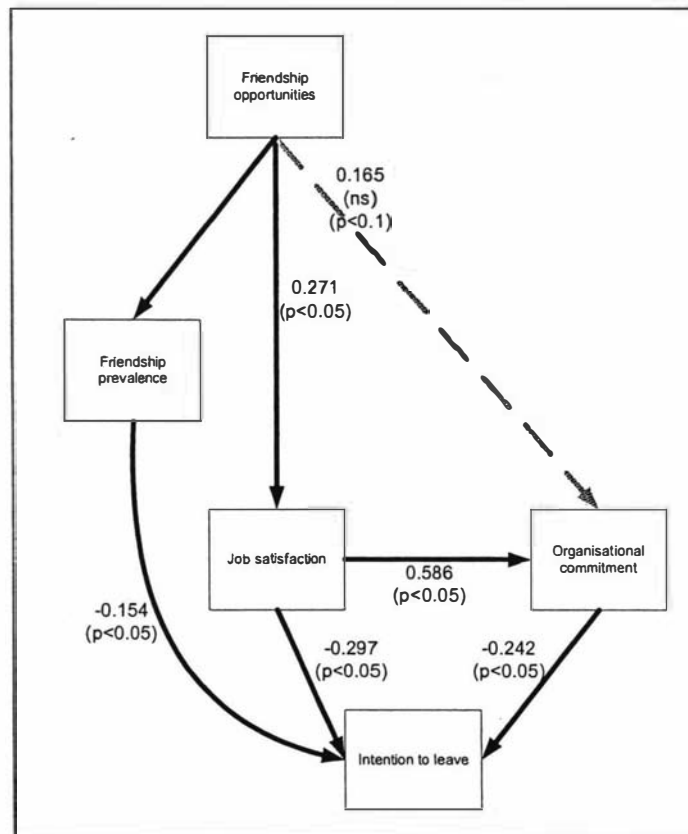


Figure 17: Path from friendship opportunities to intention to leave

Taking the findings of the first path analysis into consideration, Model 1 (refer to Figure 11, at the end of Chapter Two) may be redrawn without the non-significant regression weights; this is shown in Figure 18. All the relationships between variables proposed in the discussion of Model 1 do exist; however some are mediated by other variables rather than having direct relations. For example Model 1 suggested that friendship opportunities might impact on organisational commitment, the results of the path analysis of Model 1 suggests that, while opportunities for friendship will affect organisational commitment, the effect will be mediated by job satisfaction.

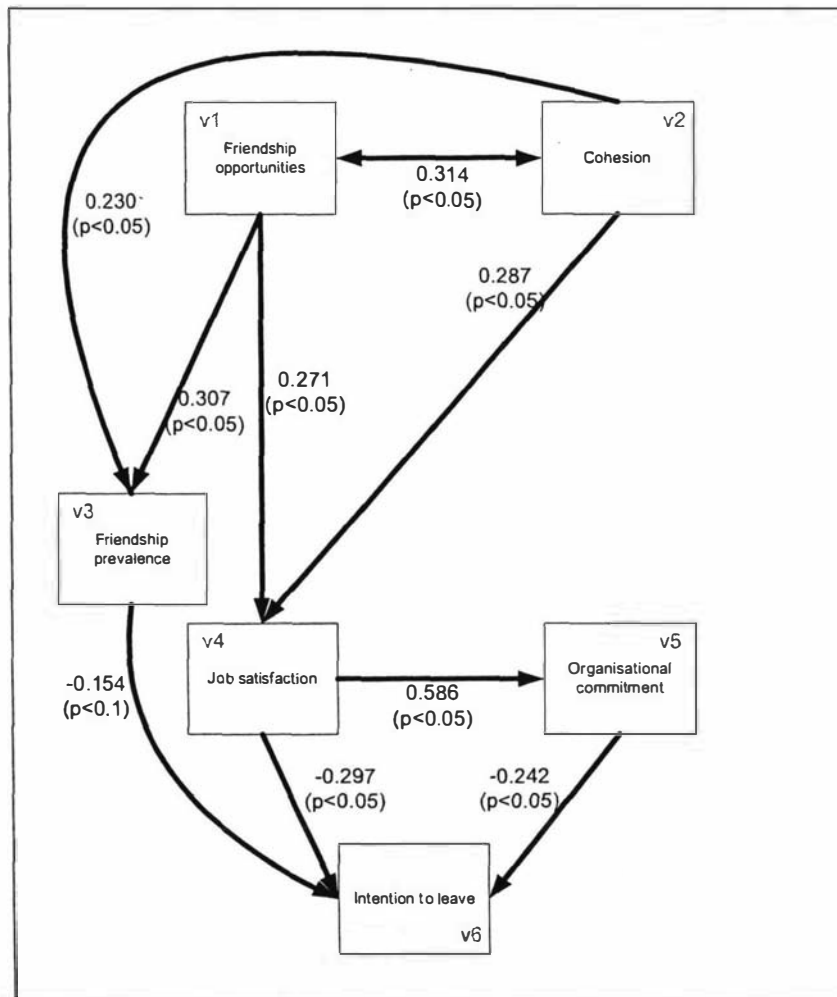


Figure 18: Model 1 redrawn showing only the significant regression weights (Hospital Study)

3.3.4 Peer Types

It is possible that the presence of even one special peer, or the existence of a single negative relationship at work will impact on an employee's experience of work. To investigate this, two-tailed, independent samples t-tests²⁸ were performed to see if there were significant differences in respondents' scores on the workplace friendship scale, the job satisfaction scale, the organisational commitment questionnaire and the cohesion scale, between those who reported having close friends (special peers) at work and those who did not, and between those who reported having negative relationships and those who did not. It was found that people who reported having at least one special peer had

²⁸ The reason that the presence negative relationships and special peers were not tested in the path analysis is that the data gathered, relevant to negative relationships and special peers, was dichotomous; respondents either did or did not have negative relationships or special peers in the workplace. Thus, the data did not lend itself to use in path analysis.

a significantly higher score on the 'prevalence of friendships at work' scale $t(122) = 4.05, p < .01$. Thus, individuals who had special peer relationships also tended to report having more friends at work. On the other hand, people who reported having at least one negative peer had a significantly lower score on the 'prevalence of friendships at work' scale, $t(122) = -2.13, p < .05$. This indicates that individuals who have negative relationships will also tend to report having fewer friends at work overall. In addition, people who reported having at least one negative peer had a significantly lower score on both cohesion sub-scales; social support / communication $t(120) = -3.476, p < .01$ and workload sharing, $t(120) = -4.653, p < .01$, indicating that individuals who have negative relationships will also tend to report being part of a less cohesive and supportive team, with reduced communication between team members and less workload sharing.

3.4 Discussion

Overall there is good support for the proposed model. While some of the hypothesised relationships are not direct, the results do support a mediated relations model. A review of the literature discussed in Chapter Two, presents previous support for the proposed relationships between variables. The model, and associated research questions and hypotheses, are discussed below in relation to both previous literature, and the analysis of the data collected for this study.

3.4.1 Research Question 1

Research Question 1 focused on the relationship between friendships and the outcome variables measured. It was hypothesised that opportunities for friendships and informal relationships would have a significant effect on how satisfied people are with their jobs, that having more opportunities for friendship would increase organisational commitment, and that both opportunities for friendship and the prevalence of friends at work would reduce turnover. Research Question 1 and the associated hypotheses were outlined previously in section 3.1.2.

The relationships between variables related to Research Question 1 are illustrated in Figure 18 with the ‘friendship opportunities’ variable drawn as being antecedent to both job satisfaction and organisational commitment, both of which, in turn, impact on intention to leave. The model also shows friendship prevalence as antecedent to intention to leave, but to have no direct relationship with job satisfaction or organisational commitment.

Hypothesis 1a: Having more opportunities for friendships within the workplace will have a positive relationship to job satisfaction

As discussed in Chapter Two, although there have been few published studies directly examining the relationship between friendship and satisfaction, those that have investigated the friendship → satisfaction link have found positive relationships between the two variables (e.g., Nielsen et al., 2000; Richer et al., 2002; Riordan & Griffeth, 1995; Winstead et al., 1995). Similarly, Markiewicz et al. (2000) found that the quality of close male friendships was associated with both career success and job satisfaction. The data from the current study support this previous literature. Figure 12 showed the significant regression weight from ‘friendship opportunities’ to ‘job satisfaction,’ which supports the hypothesis that friendship opportunities have a positive impact on job satisfaction. The positive relationship between these two variables is also supported by qualitative data from the current study²⁹, for example:

#103 Our friendly work environment has improved my job satisfaction.

#98 [Having friends at work] generally makes work more pleasant.

Hypothesis 1b: Opportunities for friendships within the workplace will have a positive relationship with organisational commitment

The ‘opportunities for friendship’ variable has been empirically related to commitment by previous researchers. For example, and as previously discussed in Chapter Two, Kaldenberg et al. (1995) found that affiliation opportunities were positively related to commitment among female dentists; and Sheldon (1971) found a link between social

²⁹ For a summary of responses to the open ended questions in this study see Appendix 15.

involvement with fellow employees and the commitment of employees to their organisation. The relationship between ‘friendship opportunities’ and ‘organisational commitment’ is also present in the data obtained in the current study, but is mediated by job satisfaction (refer Figure 12). The mediated relationship between ‘friendship opportunities’ and ‘organisational commitment’ supports hypothesis 1b, and is in line with findings by Williams and Hazer (1986), who used structural equation modelling to re-analyse data from two previous studies (Bluedorn, 1982; Michaels & Spector, 1982). Williams and Hazer specifically examined the causal relationship between satisfaction and commitment, hypothesising that job satisfaction is a causal antecedent of commitment. In addition they proposed that variables associated with the work environment (such as social opportunities) influence commitment only indirectly via satisfaction. Both of Williams and Hazer’s hypotheses were supported in the current study. As in the current study, Williams and Hazer (1986) found satisfaction to be an intervening variable between workplace variables³⁰ and organisational commitment; workplace variables *directly* influencing only satisfaction, and influencing commitment *indirectly* through their impact on satisfaction (and the subsequent effect of satisfaction on commitment).

Hypothesis 1c: Opportunities for friendships at work will be negatively related to intention to leave

The relationship between friendship opportunities and intention to leave is also present, but is mediated by both friendship prevalence and job satisfaction. Thus, it is unlikely that opportunities for friendship will directly affect respondents’ leaving intentions unless actual friendships are formed as a result of the friendly workplace. Similarly, opportunities for friendship will be unlikely to affect respondents’ leaving intentions unless having a friendly workplace is first associated with an increase in job satisfaction.

Thus, friendship opportunities were found to relate directly to job satisfaction, which in turn, has a direct relationship with organisational commitment. Both job satisfaction

³⁰ Examples of workplace variables include: friendship opportunities, leadership consideration, “routinization” and equity.

and commitment were directly related to intention to leave. The three linkages relate to hypothesis 1a, 1b and 1c, and directly support findings by Riordan and Griffeth (1995) who hypothesised and tested a model of the relationship between perceived friendship opportunities in the workplace and work-related outcomes. Riordan and Griffeth found that employees' perceptions of friendship opportunities in the workplace had direct effects on job satisfaction, but (as in the current study) only indirect effects on organisational commitment and intention to leave.

Hypothesis 1d and 1e: Prevalence of friendships at work will not impact directly on job satisfaction or organisational commitment

The "friendship prevalence" variable is *not* hypothesised to impact directly on job satisfaction or commitment. Initially this may seem counterintuitive, given the evidence that friendship opportunities and cohesion have positive correlations with these outcome measures. As previously stated, it is probable that prevalence of friends will be likely to stop people from leaving their jobs but, as the formation of friendships is not something that the organisation is responsible for, it may not affect satisfaction or commitment. That is to say, employees may need to believe their friendships are a consequence of the way the company is managed, and perhaps not easily achieved in another organisation in order for their friendships to affect organisational variables such as satisfaction and commitment (Meyer & Allen, 1991). It is probably necessary that the employee see the organisation as, in some way, *responsible* for the friendship in order for job satisfaction to result.

In addition, it is often in times of adversity (when morale and satisfaction may be low) that strong friendships will form. Qualitative data from the current study indicate that this is one of the functions that strong friendships had for respondents, and one of the ways that the organisation actually facilitated the friendships, for example:

#85 Poor work conditions mean we rely on each other more.

#90 We have been through a lot of changes in the workplace in the last 10 years, and we don't feel that management has listened to our voices, we have only had each other to turn to and that has probably strengthened friendships and contacts with each other. We

work with poor equipment and an ever-increasing workload and still we are dedicated to what we actually trained for. That's what we have in common. The friendships have probably been one of the most positive outcomes of a poor employer.

These comments indicate that the prevalence of friendships may not necessarily be strongly related to high organisational commitment or job satisfaction. Along these lines Sias and Jablin (1995) found that when a supervisor or group leader was perceived to treat group members unfairly, group members became more cohesive and their communication relationships more intimate. This suggests that perceptions of low quality supervision and feelings of dissatisfaction may lead co-workers to form more close friendships, i.e., a case of adversity-attraction (Carr, 2003).

Hypothesis 1f: The prevalence of friendships within the workplace will be negatively related to intention to turnover

The 'friendship prevalence' variable is hypothesised to impact directly on 'intention to leave,' because having friendships gives employees an added incentive to remain in their jobs. Some respondents specifically mentioned friends at work as a reason they worked where they did, for example:

#24 I personally went back to work for this organisation because she [a special peer] still works here.

Social involvement is intrinsically rewarding (i.e., having friends is pleasant and fun), so that the decision to depart from the organisation, and leave these significant others, is made more difficult. The data from the current study support this hypothesis, as there is a significant relationship between friendship prevalence and intention to leave (refer Figure 17). The negative relationship between friendships at work and intention to leave is in line with both the existing literature and the qualitative data from respondents in this study in which respondents wrote frequently of how friendships made their experience of work more pleasurable, for example:

#39 Friendships make it [work] a happier place with friendly environment and I enjoy catching up with them each day.

- #126 I feel the friendships at work make the shifts more enjoyable.
- #125 Friendships at work make the experience of working in that environment all the more positive. I look forward to coming to work because I enjoy the camaraderie of the workplace.
- #118 Makes work more pleasant, knowing there are people who are pleased to see you each day.

3.4.2 Research Question 2

Research Question 2 asked: Is the perceived level of cohesion related to opportunities for friendship, prevalence of friendship, job satisfaction, organisational commitment and intention to leave? It was hypothesised that cohesion would be positively related to opportunities for, and prevalence of, friendship in the workplace and would be associated with an increase in job satisfaction and commitment and a decrease in intention to leave. These hypotheses were presented previously in section 3.1.2 along with the relevant sub-hypotheses.

Hypothesis 2a: That cohesion will be positively related to opportunities for, and prevalence of, friendship in the workplace

The relationships between friendship and cohesion are illustrated in Figure 18 where the cohesion variable is connected to both friendship opportunities and friendship prevalence.

Hypothesis 2a was supported by the data analysis in the current study. A significant positive correlation was found between the cohesion and friendship opportunities variables. In addition, the regression weights to friendship prevalence, from both friendship opportunities and cohesion, are significant. This finding is in line with previous research in this area. As previously stated (section 2.3.4), Buunk et al. (1993) found that if an individual perceives their working climate to be low in cohesion it would be likely to hinder the formation of friendships. Odden and Sias (1997) found that climates perceived to be high in cohesion were related to more collegial and special

peer relationships. Existing literature regarding friendship development identifies liking and perceived similarity as conducive to the formation of friendships, so it is not unreasonable to expect a positive relationship between the perceived cohesiveness of a workgroup or team and friendship prevalence. In addition, in the answers to the qualitative questions, respondents often linked co-cooperativeness, communication and support (measures of cohesion) with friendships at work (*italics added*), for example:

#125 Friendships help us to *work cooperatively* with each other and *support* each other at times of stress.

#124 I feel open to suggestions and so is she [the friend]. There is an open pathway for *communication* between us and we feel comfortable working with each other and respect each other's decisions.

#97 By all of us working as a team *supporting* one another during our very stressful times. Having a laugh and keeping our sense of humour. Being able to count on one another.

Working towards a common goal, too was often mentioned as a way a cohesive environment facilitated friendships, for example:

#28 Constantly working with the same people, encountering the same frustrations and amusing incidents, and working together to solve problems creates a bond and insight into each others character, which is respected and enjoyed.

#68 Working together on difficult cases where you achieve a good result despite the circumstances is a real buzz, and can make you feel closer to the people you work with.

Hypothesis 2b: That cohesion will have a positive relationship with job satisfaction.

The relationship between cohesion and job satisfaction is illustrated in Figure 18 with an arrow leading from 'cohesion' to 'job satisfaction.' It was hypothesised that increased cohesion would lead to improvements in job satisfaction and this hypothesis was supported by the analysis of the model, with the regression weight for the relationship between cohesion and job satisfaction being significant. Thus, it seems that increased cohesion in the workplace improves satisfaction in this hospital setting.

Hypothesis 2c: That cohesion will have a positive relationship with organisational commitment.

The relationship between cohesion and organisational commitment is illustrated in Figure 18. The hypothesis was not fully supported by the analysis of the model, with the regression weight for the relationship between cohesion and organisational commitment being non-significant. The cohesion and organisational commitment variables were correlated at the simple bivariate level however, which suggests that the relationship between cohesion and organisational commitment is mediated by job satisfaction (just as the relationship between friendship opportunities and organisational commitment is mediated by job satisfaction). This is shown in Figure 12 and suggests that having a cohesive work environment will have an impact on organisational commitment only if an individual is satisfied with their job.

Hypothesis 2d: That cohesion will have a negative relationship with intention to leave.

Figure 16 illustrates the relationship between 'cohesion' and 'intention to leave' with an arrow indicating that employees' perceptions of the cohesiveness of their work environment may have a negative relationship with leaving intentions (i.e., as cohesion increases, intention to leave decreases). Justification for the hypothesised relationship between cohesion and intention to leave comes from the study by Sheridan (1992), which is described more fully in Chapter Two. Sheridan compared the voluntary turnover rates of new employees of accounting firms with varying organisational cultures, finding that the probability of an employee leaving was significantly lower for employees working in a culture emphasising interpersonal relationship values (a cohesion measure) than it was in a culture emphasising work task values.

In terms of the results of the current study it was found that, while the relationship between cohesion and intention to leave was not direct (illustrated by the non-significant regression weight between cohesion and intention to leave, refer Figure 16), there was a relationship, which was mediated by job satisfaction and friendship prevalence. This suggests that those in a work environment perceived to be highly

cohesive will be less likely to leave their jobs only if the high levels of cohesion increase satisfaction or improve friendships.

3.4.3 Research Question 3

Research Question 3 asked: "Do negative relationships in the workplace worsen organisational commitment, job satisfaction and intention to leave?" It was hypothesised that individuals who experienced negative relationships at work would report decreased organisational commitment and job satisfaction and increased intention to turnover (refer section 3.1.2.).

Although negative relationships were not themselves analysed during the path analysis it was found that people who reported having at least one negative peer had a significantly lower score on the 'prevalence of friendships at work' scale. In addition, people who reported having at least one negative peer have a significantly lower score on both cohesion sub-scales (social support / communication and workload sharing).

Hypothesis 3a and 3b: That the prevalence of negative relationships within the workplace will have a negative relationship with job satisfaction and organisational commitment.

Hypothesis 3a focuses on the relationship between negative relationships and job satisfaction, and 3b focuses on the relationship between negative relationships and organisational commitment. Although there were no significant differences in these measures between those who did and those who did not report having at least one negative relationship in terms of their satisfaction and commitment (when performing a t-test between the two groups), the findings outlined above suggest that individuals who report negative relationships at work will report being part of a comparatively less cohesive team. Cohesion was correlated significantly with job satisfaction, which mediates the relationship to organisational commitment, thus it seems likely that the presence of negative relationships will be related to satisfaction and commitment. Further support for hypotheses 3a (that negative relationships within the workplace affect job satisfaction) comes from the qualitative data gathered from respondents in this

study, which suggests that having a negative relationship affects employee's enjoyment of work, for example:

#85 [the negative relationship] has generally made the prospect of being at work less than palatable

#86 Negativity makes for an unpleasant working environment.

As stated above, it was found that individuals who have negative relationships tended to report being part of a less cohesive and supportive team. The question of whether this is because less cohesive teams tend to facilitate more negative relationships, or whether an existing negative relationship will destroy team cohesion is an interesting one. Several individuals touched on this in their qualitative answers, for example:

#66 If a friend in the team is not getting along with someone else in the team it can divide the team.

#68 Sometimes it is hard to believe that people can bring their personal, negative feelings about an individual into the workplace. This is not appropriate, especially when that person is doing a good job. These negative feelings amongst other people in the team disrupt the team as a whole.

#83 [negative relationships] interfere with true team work.

#87 This person demotivates other team members.

From these statements it seems the negative relationship is the antecedent to the poor team cohesion.

Hypothesis 3c: That the prevalence of negative relationships within the workplace will have a positive relationship with intention to leave.

With respect to the hypothesis that the prevalence of negative relationships within the workplace will increase intention to turnover, it was found that people who reported having at least one negative peer had a significantly lower score on the prevalence of

friendships at work, and because prevalence of friendships at work is significantly related to intention to leave it seems likely that negative relationships will be somewhat related to intention to leave. Although it is not possible to draw firm conclusions from this data, this hypothesis, too, is indirectly supported. Further support for hypothesis 3c comes from the qualitative data gathered from respondents in this study, for example:

#26 [A negative relationship] can be enough to make one leave.

#108 It [the negative relationship] has caused frustration, tips the balance to wanting to leave the job if already feeling stressed. Their negativity/resistance can affect the other team members.

#124 [because of the negative relationship] I don't feel like coming to work. I am on tenterhooks waiting for the next uncomfortable experience. I go home unhappy

3.4.4 Job Satisfaction and Commitment

Organisational commitment is generally characterised by factors relating to belief in the organisation's goals and values, willingness to exert effort for the organisation and a desire to remain in the organisation (Meyer & Allen, 1991; Meyer et al., 1993; Meyer et al., 2002; Porter et al., 1974; Steers, 1977). Organisational commitment is distinguished from job satisfaction in that it is an affective response to the whole organisation, while satisfaction is an affective response to specific aspects of the job (Williams & Hazer, 1986).

Although there were no specific research questions or hypotheses focusing on the relationship between job satisfaction and organisational commitment, the model hypothesised job satisfaction to be antecedent to organisational commitment. The data supported this relationship, as there was a significant regression weight for the path from satisfaction to commitment, the largest regression weight in the model. The finding that satisfaction appears to be antecedent to commitment is consistent with some previous literature, which has suggested that commitment takes longer to develop and is more stable than satisfaction, and that an employee is unlikely to form strong organisational commitment if they are not first satisfied with their job (Porter et al.,

1974). The finding also supports the satisfaction-to-commitment relation proposed by Williams and Hazer (1986) who used structural equation modelling to re-analyse data from two previous studies (Bluedorn, 1982; Michaels & Spector, 1982). Williams and Hazer specifically examined the causal relationship between satisfaction and commitment. Their analysis supported the satisfaction-to-commitment relation, implying that satisfaction is antecedent to commitment in employees

3.4.5 Satisfaction/Commitment and Turnover

The analysis of the data in the current study also supports the relationships hypothesised in the theoretical model, between job satisfaction, organisational commitment and turnover. That is, that satisfaction and commitment each contribute individually to intention to leave. This is in line with the independent-effects model. The independent-effects model follows Porter et al.'s (1974) findings that job satisfaction and organisational commitment, though related, are distinct constructs. Further evidence that both satisfaction and commitment contribute to intention to leave comes from a study by Tett and Meyer (1993) who used path analysis to analyse data from 155 different studies. Tett and Meyer concluded from their meta-analysis, that job satisfaction and organisational commitment are independent contributors to turnover intention. The independent-effects perspective is also supported by Riordan and Griffeth (1995) who hypothesised direct negative relationships between intention to leave and both job satisfaction and organisational commitment.

3.5 Limitations of the Study and Directions for Future Research

Homogeneity of sample

It is worth noting that the overwhelming majority (95%) of respondents were women. As a gender, women tend to both place more importance on their personal relationships and to be somewhat "better" at both initiating and maintaining them (Andrew & Montague, 1998; Aukett et al., 1988; Winstead, 1986). Coupled with the fact that nurses as a group have a higher than average need for affiliation, and nursing and related professions (midwifery, occupational therapy, social work etc.) are characterised, in part, by affiliation (social) opportunities (Medcof & Hausdorf, 1995), it

is not surprising that friendships have as much salience for the respondents in the current study.

Perhaps for women working in a hospital setting, the presence or absence of friendships is a particularly salient aspect of their workday, enough perhaps, to tip the balance between staying and leaving their organisation. It is possible that individuals from other professions would have responded differently to the questionnaire.

Problems with the dual role questionnaire

Respondents were asked to identify a “special peer” rather than just “think of a friend at work.” This made respondents unlikely to agree with negative statements about one’s best friend at work (i.e., say bad things about the relationship). As a result, almost all respondents who answered this questionnaire “strongly disagreed” with items outlining aspects of dual role tension. It also meant that only about half of the respondents (those who considered themselves to have a *best* friend at work) answered this questionnaire. Thus, the data were not useable. The Dual Role Tension Questionnaire seems not to work in the context of the set of questionnaires used here.

For the next study, respondents will be asked to think of a close friend (any friend) they have had at work and answer the questions. In this way there may be a higher response rate to the dual role tension questionnaire and a wider range of responses. If not, analysis of responses to the Dual Role Questionnaire it will be excluded from subsequent studies³¹.

Low rate of return / small sample size

There was a 30% return rate, which meant the sample size was relatively small ($n = 124$) possibly due to the length of the survey and the workload of the respondents. Workload was an often mentioned complaint in the qualitative answers given by respondents, in fact the most frequent answers given to question 5 (“Please briefly outline how your work environment has strained a workplace friendship”) were “heavy

³¹ Note: Respondents to the Internet Study (Chapter Four) mainly “strongly disagreed” with all the items in the Dual Role Tension Questionnaire. Again, data obtained from the Dual Role Tension Questionnaire were not useful and were excluded from subsequent analyses.

workload / unable to find time for breaks / unrealistic workload expectations of management.”

3.6 Conclusions and Implications

Overall there is good support for the proposed model. The results suggest that friendships at work have a significant impact on respondent's satisfaction with their jobs, commitment to their organisation and intention to leave. In addition, the cohesiveness of employees' workgroups is significantly related to both the opportunities for, and prevalence of, friends at work. While some of the hypothesised relationships are not direct, the results support a mediated relations model. For example, opportunities for friendship at work appear to be related indirectly to organisational commitment, through enhanced job satisfaction.

Another interesting aspect of the model is that the 'prevalence of friendships' variable is not significantly related to outcome measures other than intention to leave. As previously stated, it is probable that prevalence of friends will be likely to stop people from leaving their jobs but, as the formation of friendships is something that people feel that the organisation cannot be responsible for, it will not affect satisfaction or commitment (Meyer & Allen, 1991). Opportunities for friendship, on the other hand, are more likely to be viewed as something that an organisation has provided; so these perceived opportunities for friendships will be likely to be positively related to job satisfaction and organisational commitment.

It was found that individuals who report having at least one negative relationship, also tended to report being part of a less cohesive and supportive team. It could be that less cohesive teams tend to facilitate more negative relationships; on the other hand, it is possible that an existing negative relationship will damage team cohesion. Several individuals touched on this issue in their qualitative answers, stating that a negative relationship would: *“Demotivate other team members,” “interfere with team work,”* and/or *“weaken the sense of team.”* These statements imply that negative relationships are antecedent to poor team cohesion. To improve cohesion in a team it may therefore be useful to first identify, and attempt to deal with, any existing negative relationships.

The qualitative data gathered revealed that, in the main, the informal relationships and friendships are of importance to employees at Waitemata D.H.B. Respondents described time and again ways that these relationships helped them at work, both in doing their actual job (professional support / advice etc) and in making their work day more pleasant and enjoyable. These findings are supported by the quantitative data, which show significant relationships between having opportunities for friendship, job satisfaction and commitment to the organisation.

The most often mentioned benefits of having close friends at work were: "*Making work more enjoyable*" (the most common response, with 30% of respondents who answered this question mentioning this as a benefit), "*social support,*" "*learning from colleagues*" and "*receiving consideration or understanding.*" These benefits are also mentioned by Campion (1993) as being positive outcomes of cohesive workgroups/teams, leading to increased productivity.

Informal connections and friendships among employees are vital in building social capital (Inkson & Arthur, 2001). Even a small number of people who share common experiences can create larger networks within an organisation to more effectively solve work problems, and share knowledge. Acknowledging the value of these links, networks and information channels is therefore important.

The themes in the qualitative data also highlight the importance for management to acknowledge and nurture the relationship structures that exist. In response to the question about how the workplace might facilitate informal relationships for employees, respondents mentioned, "*working as a team*" and "*shared work experiences, which give common ground.*" In addition, some respondents mentioned "*open plan / shared offices*" as being conducive to friendship, allowing lots of contact with colleagues, while other respondents stressed the importance of "*being able to take tea breaks together, giving opportunities to catch up and debrief.*"

In sum, most of these findings suggest that, not only are friendship and informal relationships of importance to the employees of Waitemata D.H.B., but also that (for most respondents) this is an aspect of their work environment with which they are satisfied. Most respondents completing the open ended questions seemed to feel that their needs for social support were, at least partially, met in their jobs.

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Chapter 4: Internet Study

4.1 Introduction

In order to establish the robustness of any theoretical model it is important to test it across different settings. The data obtained in the Hospital Study (Chapter Three) supported the proposed model and associated hypotheses; however limitations, particularly the small and homogeneous sample, meant that it was not possible to evaluate the generalisability of the findings. In essence, the model was tested in a single human service organisation. In order to assess how robust the proposed model is across different contexts, and to deal with some of the limitations of the first study, a second study was conducted. For this, second, study the Internet was utilised; an on-line version of the questionnaire was created in which respondents could link, via email, to a secure site to submit their responses. This meant access to a broad diversity of respondents from a wider variety of organisations, improving the generalisability of the findings. In addition, the relative ease of data collection made it possible to collect data from a larger number of respondents.

Because it was not possible to make assumptions about the relative needs of participants in this wider, internet-based study, as it was in the hospital research setting, the Needs Assessment Questionnaire (Heckert et al., 2000) was included in the set of questions answered by respondents, and is included in the factor analysis described in section 4.3.1. In addition, the level of interdependence in respondents' jobs was assessed with two additional questions. The Needs Assessment Questionnaire and the interdependence questions were not used in the analysis of the data in the study described in this chapter, they are, however, relevant to the research questions addressed in Chapter Five, and will be discussed fully there.

4.1.1 Gender Differences in Friendships

There have been consistent findings in both the social psychology and organisational psychology literature of gender differences in friendships (refer Chapter Two; sections 2.2.3 and 2.3.6). In sum women's friendships tend to involve more self-disclosure, supportiveness, and complexity than friendships between men (Markiewicz et al., 2000; Winstead, 1986; Wright, 1988, 1991). Findings also generally indicate that friendships with women are rated as more enjoyable, nurturing and of an overall higher quality (by both women and men) (Sapadin, 1988). In addition, males have been found to be less likely than females to seek instrumental or emotional support (Ashton & Fuerhrer, 1993). Interpersonal relationship literature indicates men achieve and define closeness through the sharing of activities, while women define and achieve closeness through the sharing of feelings and emotions (Odden & Sias, 1997; Wood & Inman, 1993). Thus, it is likely that the presence or absence of friendships might impact men and women quite differently. Because of consistent findings that women tend to place more importance and value on their friends, and to devote more time and energy to maintaining their friendships (Andrew & Montague, 1998; Markiewicz et al., 2000; Winstead, 1986; Wright, 1988, 1991), it is not unreasonable to propose that the presence or absence of friendships will have more salience for women than men, and that there will be differences in the way men and women initiate and maintain relationships. Thus, in addition to the three research questions addressed in the Hospital Study, an additional research question, focusing on possible gender differences, is addressed in the current study.

Research Question 4

Are friendship variables differently correlated with other organisational variables for men and women? The discussion on gender difference in organisational relationships (Section 2.3.6) is focused in the hypotheses below.

Hypothesis 4a: Friendships at work will be more strongly related to organisational outcomes for women than for men.

Hypothesis 4b: Organisational antecedents to friendship (specifically sharing activities) will be differently correlated to workplace friendships for men and women.

4.2 Method

4.2.1 Participants

The demographic data indicated that the respondents were diverse, there was a wide range of ages and industries and, although there was not an equivalent number of men and women, of the 406 respondents who indicated their gender, 279 were female (67.7%) and 127 were male (30.9%). Respondents ranged in age from 19 years to 64 years, with a mean age of 35 and most respondents were from NZ (68%). The reason that the majority of the respondents were from NZ is because snowballing was used as the sampling technique. In the snowballing procedure, people who are initially selected for the sample, on the basis of convenience or purposive sampling, nominate acquaintances that they think might be willing to participate in the research. The nominees who agree to participate are then asked to nominate other potential participants (Whitley, 2002). The demographic data collected are presented below, in Table 9.

Table 9: Demographic Data for the Internet Study

<i>Variable</i>	<i>Frequency (n)</i>	<i>Valid percent</i>
Sex (6 missing)		
Males	127	31.3
Females	279	67.7
Age (mean 35.23, s.d. 11.07) (6 missing)		
>20 years	8	2.0
20-29 years	150	37.0
30-39 years	116	28.6
40-49 years	70	17.2
50-59 years	57	14.0
Over 60 years	5	1.2
Country of origin (5 missing)		
New Zealand	277	68.1
U.S.A.	52	12.8
United Kingdom	33	8.1
Australia	20	4.9
Canada	5	1.2
Other	20	4.9

Note: Values are presented in percentages excluding respondents who declined to answer

Industry

There was variety in the kinds of industries/sectors in which the respondents reported working. This information is summarised in Table 10. The largest reported sector was tertiary education (universities and polytechnics, $n = 92$), the reason that a large number of respondents were from the tertiary sector is that many of the people who were initially sent the email invitation to participate in the research were from universities, and they would have passed it on to friends and colleagues also likely to work in tertiary institutions. In addition, academics are perhaps more likely to be willing to participate in research, most having had to recruit respondents themselves at some stage. The second largest reported industry was health care (including psychology, psychiatry and physiotherapy, $n = 53$). Again many of the people in the initial mail-out were from the health sector. The IT industry also provided a large number of respondents ($n = 34$). It is possible that the large response from those in the IT sector reflects the mode of data collection. Linking to an Internet site and completing an online questionnaire would, perhaps, be something people who spend much of their day online would be relatively more willing to do. There were 78 individuals who either did not respond to this question, or who reported an industry that did not fit into any of the categories.

Table 10: Industry of Respondents

<i>Industry</i>	<i>Frequency (n)</i>	<i>Percent</i>	<i>Valid Percent</i>
Tertiary education	92	22.3	27.5
IT/Telecommunications	34	8.3	10.2
Health	53	12.9	15.9
Finance/Accounting	30	7.3	9.0
Government	21	5.1	6.3
Legal	15	3.6	4.5
HR/HR consultancy	14	3.4	4.2
Research	14	3.4	4.2
Manufacturing	11	2.7	3.3
Other education	11	2.7	3.3
Retail	9	2.2	2.7
Marketing	9	2.2	2.7
Publishing	8	1.9	2.4
Insurance	7	1.7	2.1
Real Estate	3	.7	.9
Military/Defense	3	.7	.9
	334	81.1	100.0
Other/Missing	78	18.9	
	412	100.0	

Job type

As there were no exclusion criteria (other than having a job) the variety in responses to the question asking what job type individuals has was almost as wide as the number of respondents. A complete list of answers is provided in appendix 17. Respondents were from almost every type of profession, from medical doctors, to secretaries, to academics, to police.

4.2.2 Materials

In addition to the tools used for the Hospital Study (described fully in Chapter Three), there were two additions to the questionnaire: The Needs Assessment Questionnaire (Heckert et al., 2000) (refer appendix 16 for the items in the Needs Assessment Questionnaire), and two questions assessing the interdependence of respondents' jobs. The factor analysis of the Needs Assessment Questionnaire is described in this chapter, along with the factor analyses of the other scales (refer section 4.3.1), but because it is not used in the analysis of the data in the current study, and is relevant to the research questions in the next study, the Needs Assessment Questionnaire is described along with the interdependence questions in Chapter Five (refer section 5.2.2).

4.2.3 Procedure

Initially, 68 individuals (friends and acquaintances) were sent an email inviting them to complete an online questionnaire, which included a link to the data collection site (www.studentresearcher.com). They were encouraged to pass it on to friends and colleagues. In addition, two email lists, Emonet (a list of academics and practitioners in the field of emotions in organisations) and IOnet (a list of Industrial Organisational psychologists in New Zealand) were sent the email. Once at least 400 people had submitted responses to the database through the Internet site, the data were downloaded and used (the final number of respondents used for this study was 412).

4.3 Analysis and Results

4.3.1 Factor Analysis

Prior to beginning the factor analysis and subsequent structural equation modelling (SEM) the data had to be “cleaned.” Initially the word answers given by respondents (e.g., “strongly disagree” to “strongly agree”) were converted to numbers (e.g., the 1 to 5 likert scale) and transferred into the statistical programme SPSS. Following this, the inversely worded items from the various scales were reversed³². The scales were then saved as separate files in SPSS and missing items were imputed, using the ‘missing value analysis’ feature of the programme³³. Finally the scales were recombined into a master document and, using the data from the newly formed master document ($n = 412$), each of the scales was factor analysed.

Exploratory factor analysis (EFA) was utilised in order that the psychometric properties of the set of scales used in the current study could be ascertained. Although the scales used were previously validated (Campion et al., 1993; Mobley, 1977; Mowday et al., 1979; Nielsen et al., 2000; Warr et al., 1979), the samples used by the original authors are likely to be somewhat different from the group of individuals who responded in the current study. Thus, it is necessary to validate and, if necessary, adapt these original scales for use with this new sample. After the EFA, confirmatory factor analysis (CFA) was carried out in order to confirm the factor structure of the measurement models used. Froman (2001) states that CFA is best accomplished on a data set independent of the initial EFA, and suggests dividing the data pool into two, with responses from half the subjects being used for the EFA, and the other half for the CFA. The data were divided into two groups prior to the factor analysis, using the ‘select random cases’ feature of SPSS and resulted in two new data sets: Random Group 1 ($n = 215$) and Random Group 2 ($n = 197$).

³² Inversely worded items were; item 12 of the workplace friendship scale, item 4 of the dual role tension questionnaire, items 3, 7, 9, 11, 12 and 15 of the organisational commitment questionnaire, items 8, 14 and 18 of the needs assessment questionnaire and the second interdependence question.

³³ The percentage of missing values from each scale are as follows: Cohesion Scale (4.4%), Interdependence questions (1.4%), Intention to Leave questions (1.2%), Needs Scale (1.3%), Organisational Commitment Questionnaire (1.3%), Job Satisfaction Scale (1.4%), Workplace Friendship Scale (0.7%).

The general procedure used in the analysis for each scale was to perform EFA, using Random Group 1, in SPSS to ascertain the number of factors and the loadings of the items to the various factors for each scale. Items that were cross loading or had very small factor loadings were removed. Following this exploratory factor analysis, the factors within the scales were confirmed in AMOS, using Random Group 2, by creating measurement models of the scales.

Assessment of model fit was based on multiple criteria, reflecting statistical, theoretical and practical considerations (Byrne, 2001). Pedhazur (1982) points out that there have been numerous articles, both criticising existing indices and proposing new ones. Although there is little agreement about the value of various fit indices, Pedhazur states that there does seem to be unanimity that no single fit index should be relied upon; and that just as model formulation should be theory driven, so must theory and substantive considerations play a part in model evaluation; "...the test statistics and fit indices are very beneficial, but they are no replacement for sound judgement and substantive expertise" (Pedhazur, 1982, p.832). The indices used in the current study were (a) the χ^2 likelihood ratio statistic, (b) the Comparative Fit Index (CFI: Bentler, 1990), the Parsimonious Comparative Fit Index (PCFI: Mulaik et al., 1989), and (c) the Root Mean Square Error of Approximation (RMSEA: Browne & Cudeck, 1993).

The CFI is a revised version of the Bentler-Bonnet (Bentler & Bonett, 1980) normed fit index that adjusts for degrees of freedom. It ranges from zero to 1.00 and provides a measure of complete covariation in the data; a value $>.90$ indicates a good fit to the data (Byrne, 1994, 2001). The PCFI is calibrated from the CFI; it weighs the parsimony of the model against its use of the data in achieving goodness of fit. Mulaik et al. caution that PCFI values are often lower than what is generally considered acceptable on the basis of normed indices of fit; goodness of fit indices in the .90s accompanied by PCFI indices in the 50s are not unexpected. Byrne (2001) maintains that the RMSEA is one of the most informative indices in Structural Equation Modelling, stating; "the RMSEA takes into account the error of approximation and asks the question, 'How well would the model, with unknown but optimally chosen parameter values, fit the population

covariance matrix if it were available?” (p. 84). The RMSEA is sensitive to the complexity of the model; values less than .05 indicate excellent fit, and values less than .08 represent an adequate fit.

Where the fit indices did not indicate a good fit to the model, the modification indices³⁴ and expected change statistics related to the covariances for each model were inspected for evidence of misspecification associated with the pairings of items. Large modification indices represent misspecified error covariances, indicating systematic, rather than random measurement error in item responses. Systematic error can derive from characteristics specific to the items or the respondents. Alternatively, a high degree of overlap in item content can trigger correlated errors. Correlated errors occur when two items, although worded differently, ask the same question (Byrne, 2001). Thus, if there was evidence that the model was misspecified, the “problem” items (i.e., those which had overlapping content with other items) were first examined to ascertain if there was a substantive justification for removal and, if there was, the items were removed in a post hoc analysis and the model respecified without the items. Finally the measurement models were run again using the whole data set and overall fit indices were ascertained.

Workplace Friendship Scale

EFA in SPSS: The workplace friendship scale was factor analysed in SPSS with the solution set to two factors to reflect the workplace friendship opportunities and the workplace friendship prevalence subscales. The initial pattern matrix is shown in Table 11.

³⁴ Modification indices are a measure of model misspecification; a large MI would argue for the presence of factor cross-loadings.

Table 11: Initial Pattern Matrix for the Workplace Friendship Scale (items to be removed are shaded in grey)

<i>Scale Item</i>	<i>Wording</i>	<i>Factor</i>	<i>Friendship Prevalence</i>	<i>Friendship Opportunity</i>
Workplace Friendship Scale 7	I have formed strong friendships at work		.856	
Workplace Friendship Scale 8	I socialise with co-workers outside the workplace		.807	
Workplace Friendship Scale 12	I do not feel that anyone I work with is a true friend		.708	
Workplace Friendship Scale 11	Being able to see my co-workers is one reason I look forward to my job		.611	
Workplace Friendship Scale 9	I can confide in people at work		.442	.320
Workplace Friendship Scale 1	I have the opportunity to get to know my co-workers			.789
Workplace Friendship Scale 2	I am able to work with my co-workers to collectively solve problems			.772
Workplace Friendship Scale 4	Communication among employees is encouraged by my organisation			.541
Workplace Friendship Scale 3	In my organisation I have the opportunity to talk informally and visit with others			.525
Workplace Friendship Scale 5	I have the opportunity to develop close friendships at my workplace			.514
Workplace Friendship Scale 10	I feel I can trust many co-workers a great deal		.311	.355
Workplace Friendship Scale 6	Informal talk is tolerated by my organisation as long as the work is completed			

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 8 iterations. Loadings less than .3 are not shown.

Items that were cross-loading (item 9 and 10) were removed, along with item 6 which had a small factor loading (less than .3). The “dropped” items, those that did not load on their hypothesised factor, cross-loaded with other factors or had an absolute value less than .3 are shaded in grey for ease of identification. The final pattern matrix for the workplace friendship scale is shown below in Table 12.

Table 12: Final Pattern Matrix for the Workplace Friendship Scale

<i>Scale Item</i>	<i>Wording</i>	<i>Factor</i>	<i>Friendship Prevalence</i>	<i>Friendship Opportunity</i>
Workplace Friendship Scale 7	I have formed strong friendships at work		.877	
Workplace Friendship Scale 8	I socialise with co-workers outside the workplace		.787	
Workplace Friendship Scale 12	I do not feel that anyone I work with is a true friend		.698	
Workplace Friendship Scale 11	Being able to see my co-workers is one reason I look forward to my job		.591	
Workplace Friendship Scale 1	I have the opportunity to get to know my co-workers			.846
Workplace Friendship Scale 2	I am able to work with my co-workers to collectively solve problems			.763
Workplace Friendship Scale 5	I have the opportunity to develop close friendships at my workplace			.520
Workplace Friendship Scale 4	Communication among employees is encouraged by my organisation			.476
Workplace Friendship Scale 3	In my organisation I have the opportunity to talk informally and visit with others			.469

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 5 iterations. Loadings less than .3 are not shown.

CFA in AMOS: When the two-factor structure, with the nine remaining items was modelled in AMOS, with friendship opportunities specified as antecedent to friendship prevalence (as friendship opportunities are likely to be a necessary condition for friendships to form), the output indicated a poor fit of the model to the data, (CFI = .870, PCFI = .628, RMSEA = .138; see appendix 18a for complete table of fit indices). On inspection of the modification indices and expected change statistics related to the covariances for this model, there was evidence of misspecification associated with the pairings of item 3 with item 4, as this was the largest modification index value and, as such, represents measurement error covariance. As stated above, measurement error covariance can derive from a high degree of overlap in item content, which occurs when two items, although worded differently, ask the same question (Byrne, 2001).

On inspection of the scale items³⁵, it is clear that they tap into the same notion, i.e., that the organisation allows / encourages talk between workmates. Based on this logical rationale, the model was respecified with item 3 excluded³⁶. In addition, item 5 (a friendship opportunities factor) was cross-loading on to the friendship prevalence variable so it too was removed.

Post Hoc Analysis: On removal of items 3 and 5, the fit indices were improved. The AMOS output for the 7-item friendship model is shown in appendix 18b, the CFI = .960, the PCFI = .594 and RMSEA = .088, indicating an adequate fit of the model to the data. When the friendship measurement model was confirmed with the full data set there was an excellent fit of the model to the data, with the CFI = .974, the PCFI = .603 and RMSEA = .070 (refer appendix 18c for the complete table of fit indices). The AMOS diagram for the friendship scale is shown in Figure 19.

³⁵ Item 3: In my organisation I have the opportunity to talk informally and visit with other

Item 4: Communication among employees is encouraged by my organisation

³⁶ Item 3 was chosen because, in addition to having measurement error covariance with item 4, there was also evidence of misspecification associated with the pairings of item 3 with items 2, 11 and 7

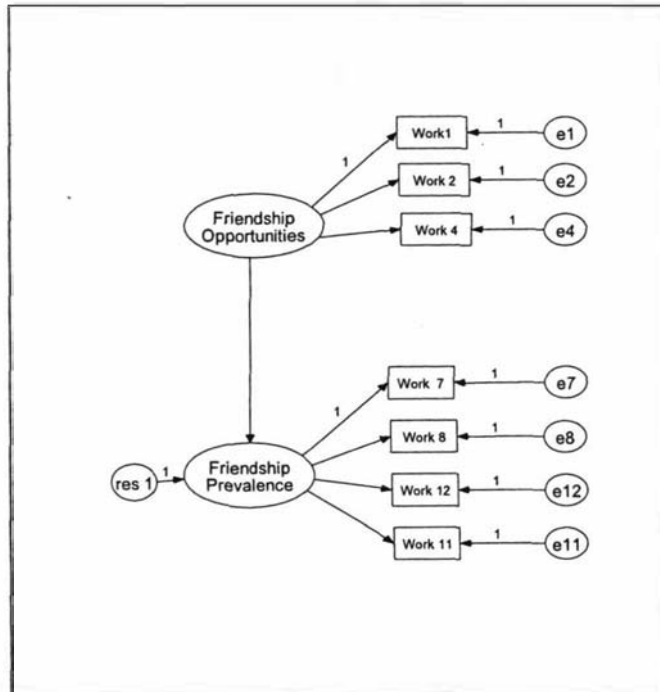


Figure 19: AMOS diagram for friendship scale

The items in the two factors are:

Factor 1: friendship opportunities

4. Communication among employees is encouraged by my organisation
1. I have the opportunity to get to know my co-workers
2. I am able to work with my co-workers to collectively solve problems

Factor 2: friendship prevalence

7. I have formed strong friendships at work
8. I socialise with co-workers outside the workplace
12. I do not feel that anyone I work with is a true friend (R)
11. Being able to see my co-workers is one reason I look forward to my job

Satisfaction Scale

EFA in SPSS: The Job Satisfaction Scale was factor analysed in SPSS using half the data pool, as discussed above. Table 13 below, shows the initial pattern matrix for the job satisfaction scale.

Table 13: Initial Pattern Matrix for the Job Satisfaction Scale (items to be removed are shaded in grey)

<i>Scale item</i>	<i>Wording</i>	<i>Factor</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
Job Satisfaction Scale 8	Your opportunity to use your abilities		.804			
Job Satisfaction Scale 6	The amount of responsibility you are given		.683			
Job Satisfaction Scale 14	The amount of variety in your job		.682			
Job Satisfaction Scale 10	Your chances of promotion		.497			
Job Satisfaction Scale 11	The way the company is managed			.616		-.322
Job Satisfaction Scale 15	Your job security			.480		
Job Satisfaction Scale 5	Your immediate boss				.640	
Job Satisfaction Scale 3	Your fellow workers				.619	
Job Satisfaction Scale 4	The recognition you get for good work		.369		.434	
Job Satisfaction Scale 1	The physical work conditions				.367	
Job Satisfaction Scale 12	The attention paid to suggestions you make			.354	.360	
Job Satisfaction Scale 2	The freedom to choose your own method of working				.313	
Job Satisfaction Scale 13	Your hours of work				.300	
Job Satisfaction Scale 7	Your rate of pay					-.529
Job Satisfaction Scale 9	Industrial relations between management and workers					-.469

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 23 iterations. Loadings less than .3 are not shown.

Items that cross-loaded or had values less than .3 were removed; item 15 was also removed because it loaded only with item 11, which was to be removed. The dropped items are shaded in grey for ease of identification. In the resulting pattern matrix item 9 cross-loaded across two factors and item 7 loaded by itself as a factor, so they were also removed. The final pattern matrix for the satisfaction scale is shown below in Table 14.

Table 14: Final Pattern Matrix for the Job Satisfaction Scale

<i>Scale item</i>	<i>Wording</i>	<i>Factor</i>	<i>Intrinsic</i>	<i>Extrinsic</i>
Job Satisfaction Scale 8	Your opportunity to use your abilities		.907	
Job Satisfaction Scale 14	The amount of variety in your job		.706	
Job Satisfaction Scale 6	The amount of responsibility you are given		.654	
Job Satisfaction Scale 10	Your chances of promotion		.599	
Job Satisfaction Scale 1	The physical work conditions			.532
Job Satisfaction Scale 3	Your fellow workers			.474
Job Satisfaction Scale 5	Your immediate boss			.474
Job Satisfaction Scale 2	The freedom to choose your own method of working			.458
Job Satisfaction Scale 13	Your hours of work			.322

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 5 iterations. Loadings less than .3 are not shown.

The resulting two factors make sense conceptually. The first factor (items 8, 14, 6 and 10) relates to respondents' satisfaction with aspects of the actual job they perform, such as variety and personal fulfilment. Items in the second factor, on the other hand (items 1, 3, 5, 2 and 13), relate to aspects of work *other* than respondents' actual job, i.e., interpersonal interactions, hours worked, and the physical work environment. The items

in the two factors relate closely to the 'intrinsic' and 'extrinsic' job satisfaction subscales defined by Warr et al. (1979) when they initially presented the scale.

CFA in AMOS: It was hypothesised that extrinsic satisfaction would be antecedent to intrinsic satisfaction. The hypothesised relationship between the two satisfaction factors is derived from Herzberg's (1966) two-factor satisfaction theory and Maslow's (1954) need hierarchy theory³⁷. An employee's work environment / conditions may be related to Herzberg's 'hygiene' or physical factors, and until these, more basic, aspects of work are met, the psychological or 'motivating' factors (intrinsic to the work itself) may have little salience. The model is also in line with Maslow's (1954) need hierarchy theory. According to Maslow, physical needs (such as working conditions) must be met before higher order needs (such as a fulfilling work role) will have salience. The resulting output did not indicate a particularly good fit of the model to the data (CFI = .910, PCFI = .657, RMSEA = .099). See appendix 18d for the complete table of fit indices. Item 2 (*the freedom to choose your own method of working*) was regressing on the intrinsic job satisfaction factor. Conceptually, of the items in the extrinsic factor, item 2 is the only one concerned with the actual job performed, thus it made substantive sense to remove this item from the extrinsic factor and, on doing so, the fit was improved (CFI = .940, PCFI = .638, RMSEA = .085, refer appendix 18e for the complete table of fit indices). When the friendship measurement model was confirmed with the full data set there was an excellent fit of the model to the data, with the CFI = .965, the PCFI = .655 and RMSEA = .061 (refer appendix 18f). The AMOS diagram for the satisfaction scale is shown in Figure 20.

³⁷ Refer section 2.1.2 for a description of Maslow's and Herzberg's theories.

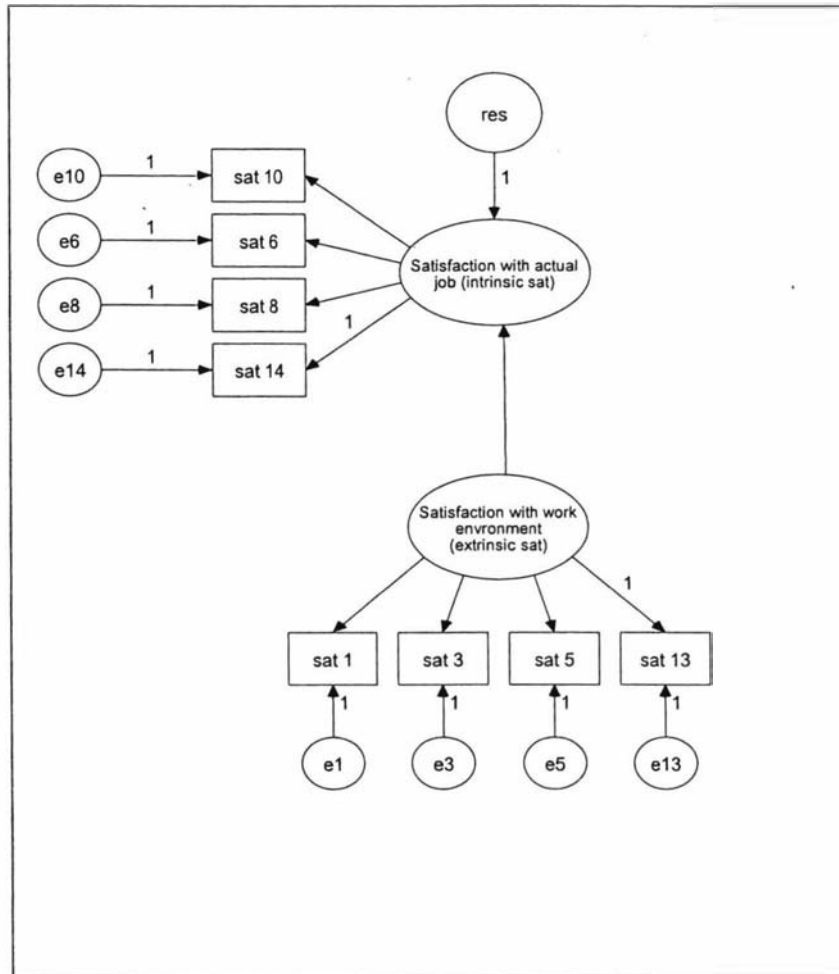


Figure 20: AMOS diagram for the job satisfaction scale

The items in the satisfaction subscales are as follows:

Factor 1: Satisfaction with aspects of actual job performed (intrinsic).

- 8. Your opportunity to use your abilities.
- 14. The amount of variety in your job.
- 6. The amount of responsibility you are given.
- 10. Your chances of promotion

Factor 2: Satisfaction with interpersonal interactions and workplace (extrinsic).

- 1. The physical work conditions
- 3. Your fellow workers.
- 5. Your immediate boss.
- 13. Your hours of work.

Organisational Commitment Questionnaire

EFA in SPSS: Factor analysing the Organisational Commitment Questionnaire in SPSS indicated one factor, shown clearly in the scree plot below (refer Figure 21). Confirmatory factor analysis was performed in AMOS to assess the fit of the one-factor Organisational Commitment model.

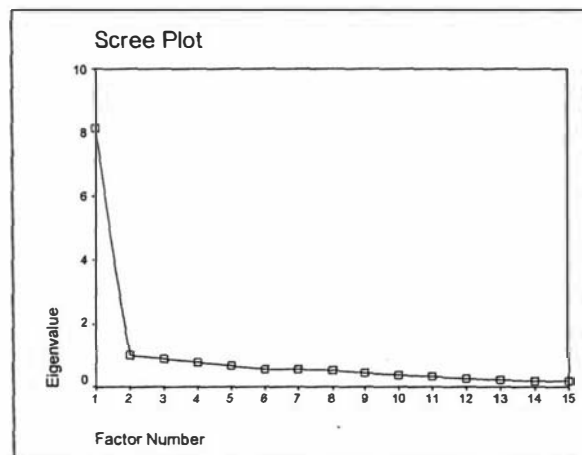


Figure 21: Scree plot for Organisational Commitment Questionnaire

CFA in AMOS: The AMOS output for the Organisational Commitment Questionnaire, including all 15 items, resulted in an adequate fit, indicated by a CFI of .908, a PCFI of .778 and a RMSEA of .086 (refer appendix 18g for the complete table of fit indices). On inspection of the modification indices and expected change statistics related to the covariances for this model, there was, however, evidence of misspecification, indicated by correlated error between items 15 and 10, items 13 and 2 and items 14 and 11. These were the largest three modification index values and as such, represent misspecified error covariances. As stated above, measurement error covariances represent systematic measurement error in item responses, often as a result of a high degree of overlap in item content. This seems to be the case for the Organisational Commitment Questionnaire as, on inspection of the item pairings, the three pairs of questions do indeed tap into similar concepts.

Items 13 and 2 are as follows:

13. *I really care about the fate of this organisation*

2. *I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful*

Both relate to the degree to which respondents are motivated by, or concerned with, the future success of their organisation.

Items 14 and 11 are as follows:

14. *For me this is the best of all possible organisations for which to work*

11. *There's not too much to be gained by sticking with this organisation indefinitely.*
(R)

Both relate to respondents wanting to stay with their current organisation.

Items 15 and 10 are as follows:

15. *Deciding to work for this organisation was a definite mistake on my part.* (R)

10. *I am extremely glad that I chose this organisation to work for over others I was considering at the time I joined.*

Both relate to respondents' satisfaction with their decision to accept their current position.

Post Hoc analysis: Because of the high degree of overlap in item content in the pairs of questions described above, the model for the Organisational Commitment Questionnaire was respecified with items 2, 10 and 11 deleted. The resulting fit indices were greatly improved, suggesting a good fit of the data to the model, indicated by a CFI of .953, a PCFI of .780 and a RMSEA of .066 (refer appendix 18h for the complete table of fit indices). When the organisational commitment measurement model was confirmed with the full data set there was an excellent fit of the model to the data, with the CFI = .966, the PCFI = .791 and RMSEA = .061 (refer appendix 18i). Figure 22 shows the AMOS diagram of the Organisational Commitment Questionnaire.

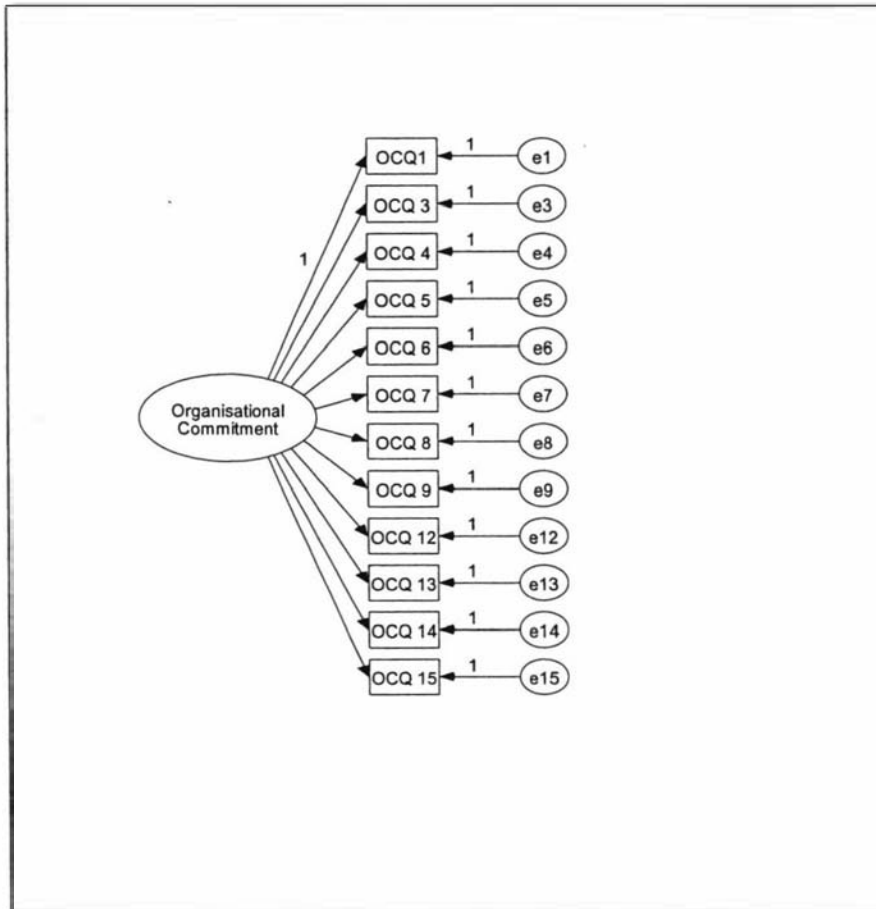


Figure 22: AMOS diagram for the Organisational Commitment Questionnaire

Cohesion Scale

EFA in SPSS: When the cohesion scale was factor analysed in SPSS with the first random sample, there were 2 clear factors (this is supported by the scree plot, Figure 23).

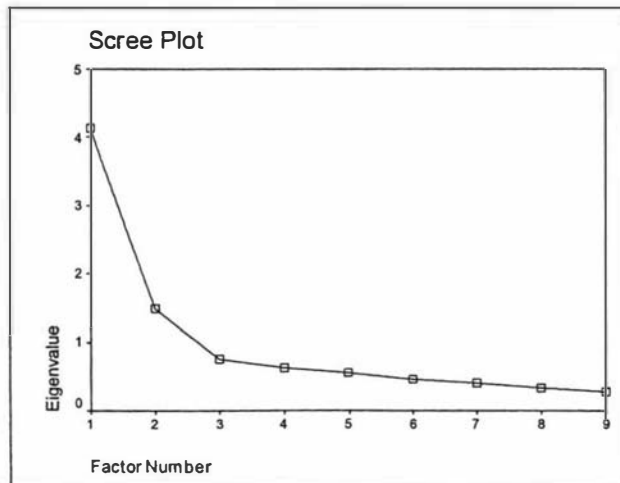


Figure 23: Scree plot for the cohesion scale

The social support items (1, 2, 3) and communication / cooperation items (7, 8, 9) loaded together as one factor. Workload sharing items (4, 5, 6) loaded as a separate factor, this is illustrated below in Table 15.

Table 15: Pattern Matrix for the Cohesion Scale

<i>Scale Item</i>	<i>Wording</i>	<i>Factor</i>	<i>Communication / Social Support</i>	<i>Workload Sharing</i>
Item 9 (Communication)	Members of my team cooperate to get the work done		.782	
Item 1 (Social Support)	Being in my team gives me the opportunity to work as a team and provide support to other team members		.751	
Item 3 (Social Support)	Members of my team help each other out at work when needed		.728	
Item 8 (Communication)	Teams enhance the communication among people working on the same product		.654	
Item 7 (Communication)	Members of my team are very willing to share information with other team members about our work		.606	
Item 2 (Social Support)	My team increases my opportunities for positive social interaction		.587	
Item 4 (Workload sharing)	Everyone on my team does their fair share of the work			-.816
Item 5 (Workload sharing)	No one on my team depends on other team members to do the work for them			-.796
Item 6 (Workload sharing)	Nearly all the members of my team contribute equally to the work			-.653

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 5 iterations. Loadings less than .3 are not shown.

CFA in AMOS: When the two factor structure, with all nine items was specified in AMOS with the second random sample, the output indicated only a moderate fit of the model to the data, (CFI = .910, PCFI = .657, RMSEA = .106; see appendix 18j for complete table of fit indices). On inspection of the modification indices and expected change statistics related to the covariances for this model, there was evidence of misspecification associated with the pairings of item 2³⁸ with items 1³⁹ and 9⁴⁰. On inspection of the items it is apparent they all deal with teams improving cooperation and interaction.

³⁸ Item 2 of the cohesion scale is "My team increases my opportunities for positive social interaction."

³⁹ Item 1 of the cohesion scale is "Being in my team gives me the opportunity to work as a team and provide support to other team members."

⁴⁰ Item 9 of the cohesion scale is "Members of my team cooperate to get the work done."

Post Hoc Analysis: On removal of item 2, which had overlapping content with two other items (1 and 9) in the social support and cooperation factor, the fit indices were greatly improved. The AMOS output for the 8-item cohesion model is shown in appendix 18k, the CFI = .977, PCFI = .663, and RMSEA = .059, indicating an excellent fit of the model to the data. When the cohesion model was confirmed with the full data set there was a good fit of the model to the data, with the CFI = .969, the PCFI = .658 and RMSEA = .072 (refer appendix 18l). The two-factor structure of the cohesion scale is shown in the AMOS diagram in Figure 24.

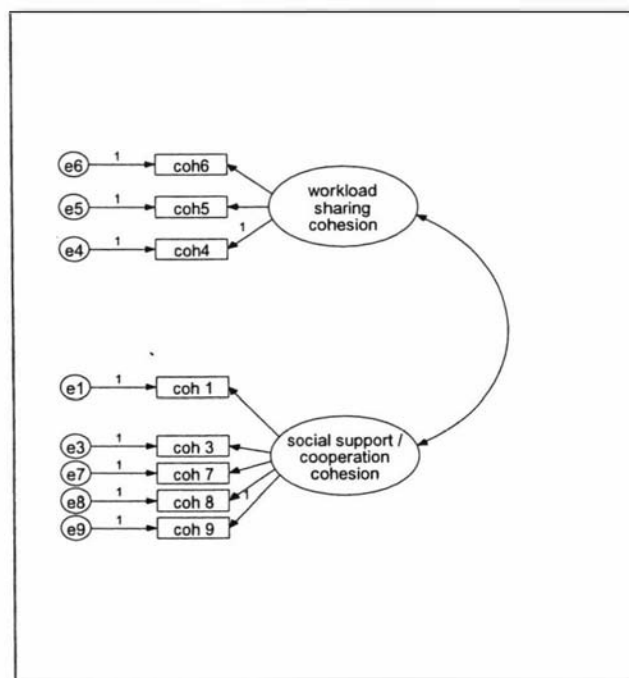


Figure 24: AMOS diagram for cohesion scale

The items in each sub-scale are as follows:

Factor 1: Social support and cooperation items

1. Being in my team gives me the opportunity to work as a team and provide support to other team members.
3. Members of my team help each other out at work when needed.
9. Members of my team cooperate to get the work done.
8. Teams enhance the communication among people working on the same product.
7. Members of my team are very willing to share information with other team members about our work.

Factor 2: Workload sharing items

4. Everyone on my team does their fair share of the work.
5. No one on my team depends on other team members to do the work for them.
6. Nearly all the members of my team contribute equally to the work.

Intention to Leave

The analysis of the intention to leave variable proved to be somewhat problematic, as because there were only 3 items the scale could not be factor analysed. This latent variable will initially be specified in the subsequent causal models with the original three items. The items in the scale are:

1. How likely is it that you will actively look for a new job in the next year?
2. I often think about quitting.
3. I will probably quit my job in the next year.

Needs Assessment Questionnaire

EFA in SPSS: The Needs Assessment Questionnaire was factor analysed in spss; the initial pattern matrix is shown below in Table 16. Items that cross-loaded or loaded on the wrong factor were removed (these items are shaded in grey).

Table 16: Initial Pattern Matrix for the Needs Assessment Questionnaire (items to be removed are shaded in grey)

<i>Scale Item</i>	<i>Wording</i>	<i>Factor</i>	<i>Dom</i>	<i>Aff</i>	<i>Ach</i>	<i>Aut</i>
Needs Scale 12 dominance	I seek an active role in the leadership of a group		.734			
Needs Scale 20 dominance	I strive to be "in command" when I am working in a group		.658			
Needs Scale 16 dominance	I find myself organising and directing the activities of others		.545			
Needs Scale 2 affiliation	I spend a lot of time talking to other people		.342			
Needs Scale 18 affiliation	I try my best to work alone on a work assignment (R)			.843		
Needs Scale 19 autonomy	In my work projects, I try to be my own boss			-.501		.360
Needs Scale 14 affiliation	I prefer to do my own work and let others do theirs (R)			.490		
Needs Scale 10 affiliation	When I have a choice, I try to work in a group			.401		
Needs Scale 6 affiliation	I am a "people" person			.348		
Needs Scale 15 autonomy	I like to work at my own pace on job tasks			-.321		
Needs Scale 1 achievement	I try to perform my best at work				.704	
Needs Scale 9 achievement	It is important to me to do the best job possible				.702	
Needs Scale 5 achievement	I am a hard worker				.608	
Needs Scale 13 achievement	I push myself to be "all that I can be"				.579	
Needs Scale 17 achievement	I try very hard to improve on my past performance at work				.435	
Needs Scale 11 autonomy	I would like to be my own boss					.582
Needs Scale 4 dominance	I would enjoy being in charge of a project					.571
Needs Scale 3 autonomy	I would like a career where I have very little supervision					.514
Needs Scale 7 autonomy	I would like a job where I can plan my work schedule myself					.420
Needs Scale 8 dominance	I would rather receive orders than give them (R)					.405

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization.
Rotation converged in 23 iterations. Loadings less than .3 are not shown.

The resulting pattern matrix indicated that item 6 had a small factor loading and was also removed. The final pattern matrix is below in Table 17.

Table 17: Final Pattern Matrix for the Needs Assessment Questionnaire

<i>Scale item</i>	<i>Wording</i>	<i>Factor</i>	<i>Aff</i>	<i>Dom</i>	<i>Ach</i>	<i>Aut</i>
Needs Scale 18 affiliation	I try my best to work alone on a work assignment (R)		-.913			
Needs Scale 14 affiliation	I prefer to do my own work and let others do theirs (R)		-.465			
Needs Scale 10 affiliation	When I have a choice, I try to work in a group instead of by myself		-.412			
Needs Scale 12 dominance	I seek an active role in the leadership of a group			.712		
Needs Scale 20 dominance	I strive to be "in command" when I am working in a group			.666		
Needs Scale 16 dominance	I find myself organising and directing the activities of others			.545		
Needs Scale 9 achievement	It is important to me to do the best job possible				.691	
Needs Scale 1 achievement	I try to perform my best at work				.679	
Needs Scale 5 achievement	I am a hard worker				.639	
Needs Scale 13 achievement	I push myself to be "all that I can be"				.574	
Needs Scale 17 achievement	I try very hard to improve on my past performance at work				.435	
Needs Scale 3 autonomy	I would like a career where I have very little supervision					.614
Needs Scale 11 autonomy	I would like to be my own boss					.547
Needs Scale 7 autonomy	I would like a job where I can plan my work schedule myself					.425

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization.
Rotation converged in 11 iterations. Loadings less than .3 are not shown.

CFA in AMOS: The four-factor model was specified in AMOS. The AMOS analysis supported four-factor structure with PCFI = .671, CFI = .860 and RMSEA = .071 (refer appendix 18m for the complete table of fit indices). Although the CFI is a little lower than the criterion for good fit (.9) the other two indices indicate good fit. When the Needs model was confirmed with the full data set there was an adequate fit of the model to the data, with the CFI = .87, the PCFI = .68 and RMSEA = .07 (refer appendix 18n). The measurement model of the Needs Assessment Questionnaire is shown in Figure 25.

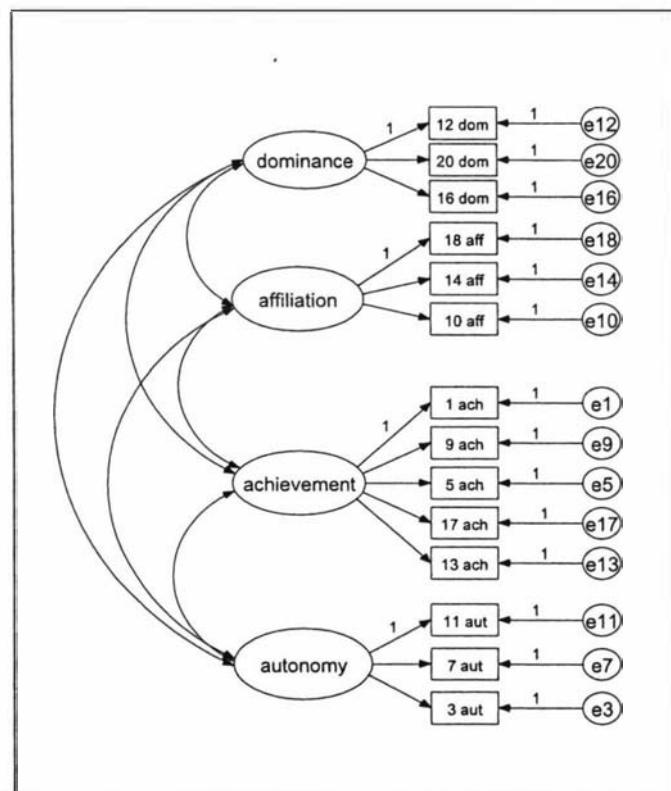


Figure 25: AMOS diagram for the Needs Assessment Questionnaire

The items in each needs factor are as follows:

Factor 1: Affiliation

18. I try my best to work alone on a work assignment. (R)
14. I prefer to do my own work and let others do theirs. (R)
10. When I have a choice, I try to work in a group instead of by myself

Factor 2: Dominance

12. I seek an active role in the leadership of a group

20. I strive to be “in command” when I am working in a group
 16. I find myself organising and directing the activities of others

Factor 3: Achievement

9. It is important to me to do the best job possible
 1. I try to perform my best at work
 5. I am a hard worker
 13. I push myself to be “all that I can be”
 17. I try very hard to improve on my past performance at work

Factor 4: Autonomy

3. I would like a career where I have very little supervision
 11. I would like to be my own boss
 7. I would like a job where I can plan my work schedule myself

Summary of findings: Measurement models

The fit indices for each measurement model are presented in Table 18. The fit indices for the Needs Assessment Questionnaire are not shown in Table 18, as it is not part of the causal model under test.

Table 18: Fit Indices for the Measurement Models: Internet Study

<i>Scale</i>	<i>Number of factors</i>	χ^2	<i>df</i>	<i>CFI</i>	<i>PCFI</i>	<i>RMSEA</i>
Workplace friendship scale	2	39.40	13	.97	.60	.07
Job satisfaction scale	2	48.42	19	.97	.66	.06
Cohesion Scale	2	59.79	19	.97	.66	.07
Organisational Commitment Questionnaire	1	136.76	54	.96	.79	.06

To further test the validity of the measures and to illustrate the relationships between them, Table 19 shows the correlations between the composite scores of the items in each measure, all correlations are significant and in the expected direction.

Table 19: Correlations between Measured Variables: Internet Study

	Friendship opportunities prevalence	Friendship prevalence	Satisfaction with interpersonal relations and workplace	Satisfaction with actual job performed	OCQ	Social support and cooperation (cohesion)	Workload sharing (cohesion)
Friendship prevalence	.464**						
Satisfaction with relationships and workplace (extrinsic)	.417**	.293**					
Satisfaction with actual job performed (intrinsic)	.334**	.161**	.515**				
Organisational Commitment	.376**	.301**	.636**	.596**			
Social support and cooperation (cohesion)	.500**	.302**	.505**	.374**	.394**		
Workload sharing (cohesion)	.153**	.097*	.404**	.222**	.301**	.497**	
Intention to leave	-.217**	-.101*	-.393**	-.467*	-.545**	-.184**	-.148**

** Correlation is significant at the .01 level (2-tailed)

* Correlation is significant at the .05 level (2-tailed)

The kurtosis values of all the items used on all the scales described above were acceptable and ranged between .05 and 2.67. Table 20 below shows the alpha of each of the subscales used.

Table 20: Alpha Levels of the Sub-Scales

<i>Scale / Sub-Scale</i>	<i>α</i>
Friendship opportunities	.82
Friendship prevalence	.71
Job satisfaction (interpersonal / workplace)	.73
Job satisfaction (actual job)	.80
Cohesion (social support/cooperation)	.83
Cohesion (workload sharing)	.81
Organisational Commitment Questionnaire	.91
Intention to leave scale	.87

4.3.2 Building the Causal Model

Once each measurement model showed good fit, the various latent variables (friendship opportunities and prevalence, the two job satisfaction factors, organisational commitment, the two cohesion factors and intention to leave), their associated observed endogenous items and the hypothesised relationships between them (derived both from previous literature, and from the Hospital Study) were modelled and tested using SEM. The AMOS graphic output for this complete model is very complex so, in the interest of

clarity, it is redrawn below in Figure 26, without the endogenous variables (scale items). Figure 26 shows only the latent variables (indicated by ovals) and all the tested correlations (double headed arrows) and regression weights (single headed arrows). The dashed lines indicate non-significant regression weights.

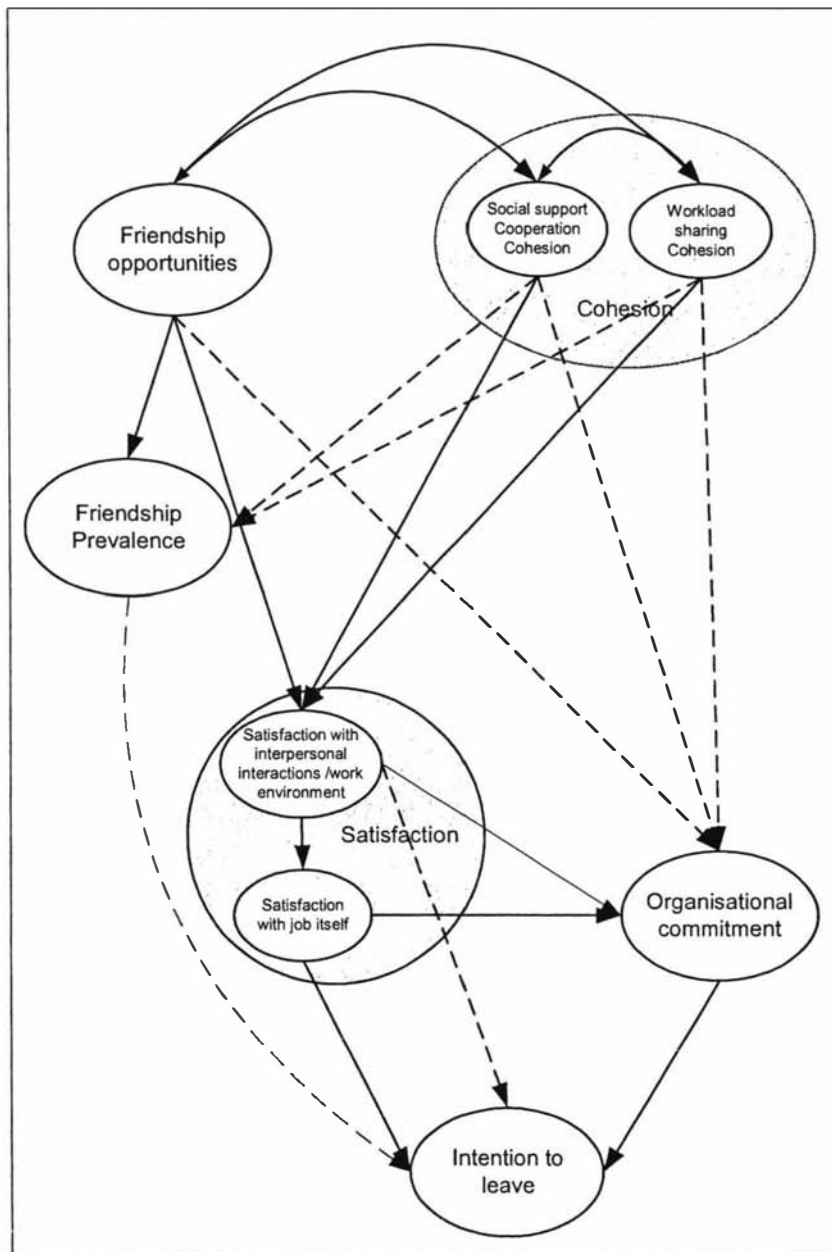


Figure 26: The causal model tested for the Internet Study (latent variables only)

As in the Hospital Study, the regression paths from friendship opportunities and both cohesion variables to organisational commitment were non-significant. Again job satisfaction appears to mediate these relationships (which significantly correlated at the

bivariate level). That is to say, although the friendship opportunities and cohesion variables were significantly correlated with organisational commitment ($p < 0.01$), the relationships between these variables appear to be mediated by job satisfaction. This implies that if an individual has a cohesive work environment or perceives their workplace to provide friendship opportunities, they will likely be more satisfied with their job and, if an increase in satisfaction results from the presence of cohesion or friendship opportunities, organisational commitment will also increase.

The path from 'satisfaction with interpersonal interactions / work environment' to 'intention to leave' was also non-significant, suggesting that the relationship between these two variables is mediated by the second satisfaction factor (satisfaction with the job itself). That is, satisfaction with extrinsic aspects of the job will be significantly related to intrinsic job satisfaction, which will, in turn, directly impact on an individual's leaving intention. This implies that if an individual reports satisfaction with interpersonal interactions / work environment, this may only impact their leaving intentions if they are also satisfied with aspects of the job itself.

In addition, the paths from 'cohesion' to 'friendship prevalence' and from 'friendship prevalence' to 'intention to leave' (significant in the Hospital Study) were found not to be significant in the current study (although, again, they were significantly correlated at the bivariate level). The change in the model when the seven non-significant paths described above (and shown with dashed lines in Figure 26) was not significant ($\Delta\chi^2_{(7)} = 11.6$). Non-significant parameters can be considered unimportant to the model, and Byrne (2001) states that, in the interest of scientific parsimony, they should be deleted.

4.3.3 Statistical Significance of the Model

Significance of regression weights

The final causal model, named Model 2, showing only the latent variables and the significant regression weights, is presented in Figure 27. In the interest of parsimony the model was respecified without the non-significant paths, and the indices of fit provided are those resulting from the model having been respecified with the non-

significant parameters deleted. The standardised regression weights or correlation coefficients are shown alongside each path (refer appendix 19 for the AMOS output of these values). All the paths shown are significant at the .05 level.

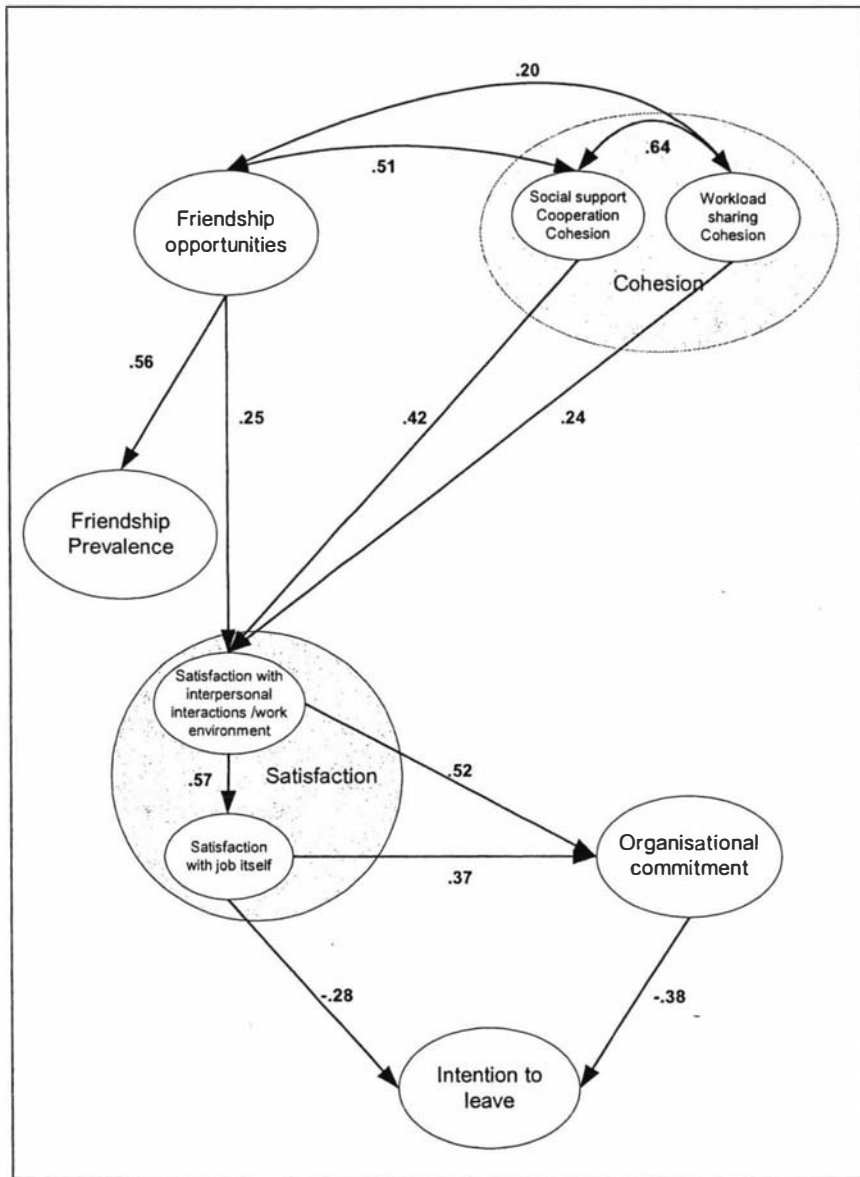


Figure 27: Model 2, SEM results of Internet Study

One way to ascertain significance of a regression path or correlation is by looking at the critical ratio (C.R.)⁴¹; because all the critical ratio values for the regression weights and correlations shown are greater than ± 1.96 , it is possible to conclude that all the paths

⁴¹ Based on a level of .05, the test statistic needs to be $\geq \pm 1.96$ before we can be sure the relationship between two variables is statistically significant (Byrne, 2001).

shown are significant at the .05 level. The standardised regression weights and critical ratios for each regression path and correlation are presented in Table 21, below.

Table 21: Showing Critical Ratio Values (parameter estimate divided by standard error) of the Regression Paths in Model 2 When Specified with Non-Significant Regression Paths Removed

<i>Regression Path / Correlation</i>		<i>C.R.</i>	<i>Estimate</i>	<i>S.E.</i>	<i>Stan Reg weight</i>	
Friendship Opportunities	→	Friendship Prevalence	9.48	0.97	.10	.56
Friendship Opportunities	→	Satisfaction with relationships / work environment (extrinsic)	3.79	0.59	.16	.25
Cohesion (social support)	→	Satisfaction with relationships / work environment (extrinsic)	4.69	.74	.16	.42
Cohesion (workload sharing)	→	Satisfaction with relationships / work environment (extrinsic)	3.34	.33	.10	.24
Satisfaction with relationships / work environment (extrinsic)	→	Satisfaction with job itself (intrinsic)	8.10	.50	.06	.57
Satisfaction with relationships / work environment (extrinsic)	→	Organisational Commitment	7.89	.59	.08	.52
Satisfaction with job itself (intrinsic)	→	Organisational Commitment	6.28	.47	.08	.37
Satisfaction with job itself (intrinsic)	→	Intention to leave	-4.08	-.53	.13	-.28
Organisational Commitment	→	Intention to leave	-5.74	-.56	.10	-.38
Cohesion (social support)	↔	Cohesion (workload sharing)	9.28	.45	.05	.64
Cohesion (social support)	↔	Friendship Opportunities	7.44	.22	.03	.51
Cohesion (workload sharing)	↔	Friendship Opportunities	3.24	.12	.03	.20

C.R. values $> \pm 1.96$ are statistically significant. Parameter estimates and standard errors are also shown, along with the standardised regression weights and correlations.

Statistical significance of the model as a whole

The hypothesised model can be tested statistically to ascertain whether or not it is consistent with the data. If there is an adequate goodness of fit it is possible to argue for the existence of the proposed relations between variables. Consistency of the model with the data does not constitute proof of a theory (or theoretical model); instead it lends support to it (Pedhazur, 1982). Table 22 shows Chi Square, degrees of freedom and the relevant goodness of fit statistics for Model 2. Although these indices of fit have been described previously, they are outlined briefly again below, along with an interpretation regarding whether the model fits the data. The complete table of fit indices is given in appendix 20.

Table 22: Fit Indices for the Causal Model: Internet Study

<i>Index of fit</i>	χ^2	<i>df</i>	<i>CFI</i>	<i>PCFI</i>	<i>RMSEA</i>	<i>Low 90</i>	<i>High 90</i>	<i>Hoelter .01</i>
<i>Value</i>	1301	617	.90	.83	.055	.051	.059	210

The comparative indices of fit (CFI and PCFI) are based on a comparison of the hypothesised model against a “baseline model or null model” (Byrne, 2001). The CFI is a revised version of the normed fit index (NFI) (which, Byrne states, has a tendency to underestimate fit in small samples). Unlike the NFI, the CFI takes sample size into account. Values for CFI range from zero to 1.00 with values close to 1.00 being indicative of good fit; a cut-off value of .90 is advised for a model to be considered well fitting (Byrne, 2001). As shown in Table 22 the value of the CFI is .90, indicating the hypothesised model represents a good fit to the data.

The PCFI (parsimony-adjusted comparative fit index) addresses the issue of parsimony in structural equation modelling. The PCFI takes into account the complexity (number of parameters) in the hypothesised model, as well as the goodness of fit, in the assessment of the model fit. Typically parsimony-based indexes have lower values than are considered acceptable for other normed indices of fit, as such, the value of .83 is high, and indicates the model is both well fitting and parsimonious.

The root square mean error of approximation (RMSEA) is sensitive to the complexity of the model and values less than .05 indicate excellent fit, while values less than .08 represent a good fit. Confidence intervals are used to assess the precision of RMSEA estimates; AMOS reports a 90% confidence interval around the RMSEA value (Low 90 and High 90). Confidence intervals yield information about the precision of the estimate. Looking at Table 22 we see that the RMSEA for the model is .056, which indicates a good fit. The confidence interval for the model is narrow (ranging from .051 to .059) which indicates that the estimate is precise.

The last goodness of fit statistic appearing in the AMOS output is Hoelter’s critical N (labelled HOELTER). Hoelter’s critical N focuses on the adequacy of the sample size rather than on model fit. Its purpose is to estimate the sample size that would be sufficient to yield an adequate model fit for a χ^2 test. Hoelter (1983; cited in Byrne,

2001) proposed that a value of 200 is indicative of a model that adequately represents the sample data. As shown in Table 22 the .01 critical N value for the hypothesised model was 210, which allows us to conclude that the size of the sample ($n = 412$) was satisfactory.

Taken together, the goodness of fit statistics reported in this section, indicate that the proposed model is a good fit to the data.

4.3.4 Other Research Questions

Gender comparisons

Research Question 4 asked: “Are friendship variables differently correlated with other organisational variables, for men and women?” Once each scale was adequately factor analysed and showed good fit, Pearson’s correlations were calculated between the various subscales, first for the whole sample, and then for males and female separately. When the correlations between variables were calculated for the whole sample *all* subscales were significantly correlated with *all* other sub-scales in the expected direction. When the correlations between variables were calculated for male and female respondents separately, however, some interesting variations emerge. Table 23 shows only those correlations where the measured variables were differentially correlated for men and women⁴².

Table 23: Correlations between Subscales, Showing those where Measured Variables are Differentially Correlated for Men and Women

<i>Correlation</i>	<i>Whole Sample</i>	<i>Women</i>	<i>Men</i>
	Pearson correlation	Pearson correlation	Pearson correlation
Friendship prevalence with Intention to leave	-.101 ($p < .05$)	-.141 ($p < .05$)	-.008 (ns)
Friendship opportunities with Intention to leave	-.217 ($p < .01$)	-.247 ($p < .01$)	-.138 (ns)
Cohesion (social support/cooperation) with Intention to leave	-.184 ($p < .01$)	-.182 ($p < .01$)	-.172 (ns)
Friendship prevalence with Satisfaction with actual job	.161 ($p < .01$)	.072 (ns)	.341 ($p < .01$)
Cohesion (workload sharing) with Friendship opportunities	.153 ($p < .01$)	.116 (ns)	.213 ($p < .01$)
Cohesion (workload sharing) with Friendship prevalence	.097 ($p < .05$)	.064 (ns)	.179 ($p < .01$)

⁴² All the correlations between measured variables other than the ones shown in table 23 were significant to at least $\alpha = .05$, most were significant to $\alpha = .01$.

On testing for the significance of the difference between these correlations⁴³, only the correlation between friendship prevalence and job satisfaction was significantly different for men and women, $z = 2.57$, $p < 0.01$ (shaded in grey in table 23). It was hypothesised that friendships at work would be more strongly related to some organisational outcomes for women than men, and that organisational antecedents to friendship would be differently correlated to workplace friendships for men and women. On comparing the correlation matrices for the two groups, the following differences were apparent:

1. For women, intention to leave is significantly negatively correlated with cohesion (social support and cooperation) ($p < .01$), friendship opportunities ($p < .01$) and friendship prevalence ($p < .05$); but for men intention to leave is not significantly correlated with cohesion or either friendship variable.
2. For men, the workload sharing aspect of cohesion is significantly correlated to friendship opportunities ($p < .05$) and friendship prevalence ($p < .05$); but for women the workload sharing aspect of cohesion is not significantly correlated with either friendship variable.
3. Job satisfaction is significantly correlated with friendship prevalence ($p < .01$) for men but not for women.

Hypothesis 4a (that friendships at work would be more strongly related to organisational outcomes for women than for men) is only partially supported by the data, with cohesion and friendships at work being correlated with intention to leave for women but not men. Friendship prevalence, on the other hand, was significantly correlated with job satisfaction for men but not women, a finding which does not support hypothesis 4a. In addition, it is this correlation between friendship prevalence and job satisfaction that is significantly different for men and women (i.e., not only was there no significant correlation between these two variables for women, but also the correlation was significantly stronger for men). Hypothesis 4b (that organisational antecedents to friendship may be differently correlated to workplace friendships for men and women)

⁴³ The significance of the difference between the correlations was tested using the Fisher r -to- z transformation $z_r = (1/2)[\log_e(1+r) - \log_e(1-r)]$. This is automatically calculated, along with p on a statistics website administered by Vassar University (<http://faculty.vassar.edu/lowry/rdiff.html>).

is partially supported by the data with the workload sharing aspect of cohesion significantly correlated to friendship opportunities and friendship prevalence only for men, though again the *difference* in the size of the correlation between genders is not significant.

Negative relationships

As in the Hospital Study, Research Question 3 asked, “Do negative relationships in the workplace worsen organisational commitment, job satisfaction and intention to turnover?” It was hypothesised that individuals who experienced negative relationships at work would report decreased organisational commitment and job satisfaction and increased intention to turnover.

To address this research question, an independent samples t-test was performed, comparing those who reported having at least one negative peer with those who reported having no negative relationships at work⁴⁴; results are summarised in Table 24.

Table 24: Independent Samples T-test, Comparing Respondents With and Without Negative Relationships at Work

<i>Variable</i>	<i>t-test statistic</i>	<i>df</i>	<i>Significance (2-tailed)</i>	<i>Significant difference?</i>
Friendship opportunities	-1.778	409	.076	No
Friendship prevalence	-1.245	409	.214	No
Satisfaction with workplace	-7.444	409	.000	Yes
Satisfaction with actual job	-2.823	409	.005	Yes
Organisational Commitment	-5.653	409	.000	Yes
Cohesion (social support)	-3.302	409	.001	Yes
Cohesion (workload sharing)	-3.989	409	.000	Yes
Intention to leave	2.888	409	.004	Yes

The results support the hypothesis and indicate that those with at least one negative relationship at work are significantly less satisfied, report less organisational commitment, are part of less cohesive workgroups and are significantly more likely to be planning to leave their job. There was no significant difference between the two groups in terms of either friendship opportunities or friendship prevalence.

⁴⁴ The reason that negative relationships were not tested in the structural equation model is that the data gathered, relevant to negative relationships, was dichotomous; respondents either did or did not have negative relationships in the workplace. Thus, the data did not lend itself to use in a structural equation model.

4.4 Discussion

4.4.1 Résumé of Findings

An aim of both the Hospital Study and the Internet Study was to investigate the relationship between workplace friendships, and organisational and personal outcome variables. The overall pattern in the relationships between the variables measured suggests that friendships at work do have a significant influence on a range of organisational and personal factors. While the Hospital Study took place in one organisation, with the participants being almost entirely female, the respondents in the Internet Study were from a large number of (predominantly Western) countries and were more evenly spread in terms of gender. Although there were very few respondents from non-Western / non English-speaking countries, the theoretical model was developed with a Western population in mind, and has proven itself to be applicable in this context.

Most of the linkages between variables in the Internet Study relate very closely to the findings in the Hospital Study, demonstrating good support for the theoretical model, and indicating that the proposed model is robust. There were some differences between the findings from the two studies however. The main differences are: (a) The cohesion and job satisfaction variables each have two distinct component factors in the Internet Study, while data from the Hospital Study support a single factor structure for each of these two variables; (b) the significant regression weight leading from 'friendship prevalence' to 'intention to leave'; found in the Hospital Study, is not present in the Internet Study. Overall, however, the models supported by the data in the two studies are very similar.

With respect to (a) above, the analysis of the data in the current study supported a two-factor model of job satisfaction, one factor relating to individuals' satisfaction with aspects of their interpersonal interactions and work environment (e.g., their fellow workers, their boss, the physical work place) and one factor relating to satisfaction with aspects the actual jobs respondents performed (e.g., the amount of responsibility and the

variety in an individual's work). While the two cohesion factors appear to be related to the other variables in the same way as each other, the satisfaction variables do not. The factor relating to 'satisfaction with interpersonal aspects of the job and the workplace' (extrinsic satisfaction) appears to mediate the relationship between friendship/cohesion factors and the factor relating to 'satisfaction with aspects of the actual job' (intrinsic satisfaction). The mediated relationship implies that having a generally friendlier work environment (increased opportunities for friendship) will impact directly on employees' satisfaction with their workplace and the people they work with, but has no direct impact on their satisfaction with the actual job they do. This makes intuitive sense as satisfaction with things like the variety in one's job and the opportunity to use your abilities is unlikely to be affected by the number or quality of friends at work. Both aspects of satisfaction are significantly related to organisational commitment. The second satisfaction factor 'satisfaction with aspects of the actual job' is directly related to 'intention to leave,' and mediates the relationship between 'satisfaction with interpersonal aspects of the job and the workplace' and 'intention to leave.' Taken together, however, both cohesion and satisfaction do relate to the other measured variables in a similar manner in this study and in the previous, Hospital Study, i.e., the friendship opportunities variable is significantly related to cohesion, and both cohesion and friendship opportunities are significantly related to satisfaction. Satisfaction, in turn, mediates the relationship between friendship and organisational commitment, and cohesion and organisational commitment (as in the Hospital Study).

With respect to (b) above, friendship prevalence was not found to relate to intention to leave in the same way in the Hospital Study and in the current study. In the Hospital Study there was a significant relationship between friendship prevalence and intention to leave, which was not found in the current study. A possible explanation for the difference between the findings of the two studies is the very different samples. Respondents in the first study were almost entirely women, all of whom worked in health care; a group who are likely to place value on their interpersonal relationships (Andrew & Montague, 1998; Aukett et al., 1988; Winstead, 1986). Respondents in the second study were more diverse, both professionally and ethnically, and over 30% were male. The finding that having friends at work was directly related to intention to leave

in the Hospital Study but not this study can be related to the finding in the current study that, for women, intention to leave is significantly negatively correlated with friendship opportunities and friendship prevalence; but for men intention to leave is not significantly correlated with either friendship variable. Thus, the difference between the two studies may simply be a gender difference, with women more likely to make a leaving decision based on the presence or absence of friendships in the workplace. It is worth noting however, that the regression weight found in the Hospital Study, between friendship prevalence and intention to leave, though significant, was relatively small (-.154) and perhaps should be viewed with some caution.

The difference between friendship prevalence and friendship opportunities

The analysis of the data in the current study suggests that ‘friendship prevalence’ and ‘friendship opportunities’ are not related to the outcome variables in the same way as each other. The AMOS analysis suggests that the friendship opportunities variable, but not friendship prevalence, has a direct, positive impact on satisfaction, and a mediated relationship with organisational commitment and intention to leave. Given that the two friendship constructs are very closely related this, at first, appears somewhat puzzling. Unlike friendship opportunities, friendship prevalence does not regress significantly onto any of the outcome variables measured (although it is significantly, if weakly, correlated with job satisfaction, commitment and intention to leave at the simple bivariate level, refer section 4.3.1.) Thus, it initially seems that the prevalence of friends in the workplace does not really affect peoples’ experience of work, a finding that directly contrasts with both previous literature (Nielsen et al., 2000), and the qualitative data and comments made by the respondents. In response to the question asking how friendships benefited them in the workplace (a question to which over 80% of those who answered the qualitative section responded) almost every respondent described the positive impact of such relationships, for example:

- #2 I feel that real friendship is what benefits me most. Sometimes also small talk is important, but someone who you can trust and say anything to, i.e. a real friend is not so easy to find. However once you have one, it really makes your life at work much easier.

-
- #12 When working with close friends, you know you can trust each other and rely on each other if needed. Will be there for each other. Makes you look forward to your day at work when you know there is someone there that you can enjoy the time with.
- #19 Having a friend at work can sometimes help you to get things done at work faster... It makes the workplace environment more relaxed and enjoyable, easier to go about things.
- #48 [My friend] made me feel welcome, has given me support and help when I'm unsure
- #60 [My friend] allowed me to develop contacts within the profession to enhance career
- #130 [My friend] makes working more enjoyable
- #132 Laughter shared, teamwork accomplished, sense of satisfaction achieved. Problems halved, better ideas generated.
- #213 Friendships make me a happier person, therefore I am more productive in the workplace.
- #367 [My friend] has definitely made my work a much more enjoyable place and made me think of leaving less - I also have people to bounce ideas off, vent to, and discuss work problems with which is really important. I also have contacts in different departments, which is often really useful for work I am doing.

A possible explanation for the finding that friendship prevalence is not related to satisfaction in the quantitative data, is that there may be individual differences in the ways these two variables (i.e., friendship prevalence and satisfaction) relate to each other. While a positive relationship between friendship prevalence and satisfaction may exist for some, it is likely that, for others, a positive relationship between *dissatisfaction* and friendship prevalence might exist, i.e. that those who report being dissatisfied with their jobs make more friends. The friendship prevalence / dissatisfaction relationship is related to findings by Sias and Jablin (1995) and Odden and Sias (1997), described in section 2.3.5, which suggested that feelings of dissatisfaction may lead co-workers to

form and maintain close friendships as a form of alliance against the organisation. Similarly, Aronson and Cope (1968) found that a colleague's hostility towards a common enemy (in this case an unpleasant employing organisation) increased others liking of them, and willingness to work hard for them, i.e., "my enemy's enemy is my friend." In addition, in their responses to the qualitative questions in the survey, many respondents mentioned strong friendships forming and helping them, in times of adversity. For example:

- #7 In times where there was a lot of stress at work, it is always nice to know you are not alone with that.
- #15 The friendship between myself and my colleague helped to act as a buffer in what I perceived to be a negative team environment.
- #16 Reaffirming values (shared discontent).
- #56 [Friends provide] support and validation of feelings about negative aspects of working.
- #70 It always helps to have a friend at work. It makes you connect with the environment, especially making it easier when the times are tough.
- #80 [My friend and I] were each others sounding boards, sources of information and gave each other copious amounts of advice and support - especially when we made mistakes or had to deal with frustrating people. We made life easier for each other and made each other laugh during the hard times. She ALWAYS understood exactly what I was going through.
- #164 They give you support when you are dealing with difficult things.
- #282 They kept me smiling through the tough times. Working for NCL opened my eyes, 70 - 90 hours a week, seven days a week is tough on anyone.
- #328 A good friendship at work is valuable as it can support one in a negative work environment.

If both the processes described above (i.e., friendship prevalence → satisfaction and dissatisfaction → friendship prevalence) are operating simultaneously, any positive relationship that might exist between the satisfaction and friendship prevalence variables will be likely to be masked. The friendship opportunities variable, on the other hand, is unlikely to have these two processes operating. That is to say, dissatisfaction is unlikely to be associated with the perception of a generally friendlier workplace (friendship opportunities), in the way that dissatisfaction may be related to making and maintaining close friendships (friendship prevalence).

In addition, the degree to which employees 'give credit' to the organisation for positive outcomes related to friendship opportunities and/or friendship prevalence may differ. As discussed earlier (section 2.3.5), although organisations can provide opportunities for friendships, it is the employees themselves who make friends. Thus, actually *having* friends at work is not something easily attributed to the organisation, or associated with organisational outcomes, in the way that a generally friendlier workplace will be. Thus the model shows 'friendship opportunities,' but not 'friendship prevalence,' impacting on the organisational outcome variables.

4.4.2 Links to Existing Research

Findings related to the role of friendships at work, from the current study, are largely consistent with previous literature. For example, in the early 1970's, as part of the job redesign movement, Hackman and Lawler (1971) found significant positive relationships between friendship opportunities and job satisfaction, reflecting findings in the current study. More recent research, too, has found that friendship opportunities, and the quality of close friendships at work, are associated with job satisfaction (Markiewicz et al., 2000; Riordan & Griffeth, 1995). Positive correlations between group cohesion and friendship, found in the current study also reflect previous literature, in which these two variables have been found to be related (e.g., Nielsen et al., 2000; Odden & Sias, 1997). Nielsen et al. (2000) not only reported positive correlations between friendship opportunities, friendship prevalence and job satisfaction, but also found that those experiencing friendship at work were less likely to want to leave their current jobs. Support for Nielsen et al.'s finding in the current study is mixed, as the

relationship between friendship prevalence and intention to leave was evident in study one, but not in study two.

Analysis of the data from these studies suggests that satisfaction is antecedent to commitment. The finding that commitment, in part, develops from satisfaction is consistent with previous literature, which has suggested that commitment takes longer to develop, and is more stable than satisfaction; and that an employee is unlikely to form strong organisational commitment if they are not satisfied with their job (e.g., Porter et al., 1974; Williams & Hazer, 1986). The two satisfaction factors in the current study relate closely to the “extrinsic” and “intrinsic” job satisfaction sub-scales defined by Warr et al. (1979) when they initially presented the scale. Current findings also support the satisfaction-to-commitment relation proposed by Williams and Hazer (1986), who used structural equation modelling to re-analyse data from two previous studies (Bluedorn, 1982; Michaels & Spector, 1982). Williams and Hazer specifically examined the causal relationship between satisfaction and commitment. Their analysis supported a satisfaction-to-commitment relation, implying that satisfaction is antecedent to commitment.

Much of the research focusing on satisfaction and commitment indicates that both satisfaction and commitment contribute independently to the turnover process (refer section 2.3.3). This independent-effects model relates to Porter et al.’s (1974) findings that job satisfaction and organisational commitment, though related, are distinct constructs. Again, results from the current study are consistent with these previous findings, as satisfaction and commitment each contributed independently towards intention to leave. Further evidence that both satisfaction and commitment contribute to intention to leave derives from a study in Tett and Meyer (1993). Tett and Meyer used path analysis to re-analyse data from 155 different studies. Their meta-analysis concluded that job satisfaction and organisational commitment are indeed, independent contributors to turnover intention, supporting the independent-effects perspective. Riordan and Griffeth (1995) also provide evidence supporting the independent-effects perspective.

Gender comparisons

The first finding was that intention to leave is significantly negatively correlated with cohesion and both friendship variables for women but not men. This finding suggests that women will be directly affected by the presence or absence of close friends at work; women may make a leaving decision based, at least in part, by the social opportunities their work offers.

A second finding was that the 'workload sharing' aspect of cohesion is significantly correlated with 'friendship opportunities' and 'friendship prevalence' for men but not significantly correlated with either friendship variable for women. The significant relationship between cohesion and the friendship variables for men, may relate to previous studies, indicating men achieve and define closeness through sharing activities (Odden & Sias, 1997; Wood & Inman, 1993), and is in line with other literature in this area, which also indicates that men's friendships tend to be organised around shared activities and be action-oriented rather than person-oriented (e.g., Markiewicz et al., 2000; Winstead, 1986; Wright, 1988, 1991) (refer section 2.2.3). It is possible that, for men to form friendships at work, they must 'share work' (i.e., perform side by side on a task). Thus, it may be possible to interpret the finding that cohesion is significantly related to friendships at work, as suggesting that men are more likely to make friends if they are in a job involving shared activities with their colleagues than if they are in a job that does not offer opportunities to share work.

A statistically significant difference found between the genders was in the correlation between job satisfaction and friendship prevalence. This correlation is significantly stronger for men than women. Job satisfaction is *not* significantly correlated with friendship prevalence for women, but is for men. This relates to findings of the Hospital Study (Chapter Three) where there was also a finding that friendship prevalence and satisfaction were not significantly correlated for a predominantly female sample. A possible explanation for this finding is that when women are *dissatisfied* with their jobs they will form strong friendships and lean on their colleagues for social, emotional and instrumental support (Carr, 2003). Further support for the suggestion that women make friends at work when they are dissatisfied, comes from an American study with a

sample of teachers, by Odden and Sias (1997). Odden and Sias found that for women, special peer relationships were associated with increased tenure and low 'supervisor consideration.' In other words, the longer a woman was employed in an organisation, and the more inconsiderate she perceived her boss to be, the more likely she was to have special peer relationships. If women's friendships strengthen in situations where they are dissatisfied with their jobs, or unhappy with their boss, a significant positive relationship between satisfaction and friendship prevalence will not be found, even if having more friends at work improves job satisfaction in other situations, i.e., the two processes will cancel each other out.

Women define and achieve closeness through the sharing of feelings and emotions (Odden & Sias, 1997; Wood & Inman, 1993). Having an inconsiderate supervisor or being very unhappy at work may lead women to share their frustrations, emotions, and feelings with their co-workers, enhancing the formation of close friendships. In other words, women may use their friends at work as an outlet for venting work-related frustrations and emotional expression, while men may use special peers more for discussion of other (possibly less negative and/or emotional) topics (Odden & Sias, 1997). Thus, in times of adversity, when conditions are bad, women may be more likely to make and keep friends than men. Related to this, Ashton and Fuerhrer (1993) found that males are, indeed, less likely than females to seek emotional support. Men are perhaps less likely to demonstrate a negative relationship between friendships and job satisfaction, because they are less likely than women to seek emotional and social support from their colleagues when times are bad. Thus, a positive relationship between friendships at work and job satisfaction will be more apparent for men.

Negative relationships

On comparing respondents who reported having at least one negative relationship with those who did not, the two groups differed significantly on all organisational outcome variables. This differs from the findings in the Hospital Study where the only significant differences between those who did and those who did not report having negative relationships were in terms of friendship prevalence and cohesion (people with a negative relationship reported having lower scores on the prevalence of friends scale,

and lower scores on the cohesion scale; refer section 3.3.4). It is possible that negative relationships make more of a difference to the experience of work for the respondents in the current study, but it is probably more likely that the small sample size in the Hospital Study meant that between group differences were not statistically significant.

Data in the current study indicate that those with at least one negative relationship at work are significantly less satisfied, report less organisational commitment, are part of less cohesive workgroups and are significantly more likely to be planning to leave their jobs. These findings are in line with the qualitative data gathered from respondents in this study also. Over 80% of respondents answered the question asking how negative relationships affected them, and most reported negative relationships adversely impacting their experience of work and/or making them more likely to leave. For example:

- #5 [the negative relationship] made me want to leave, unhappy and unsure of my performance
- #7 When I felt observed and being watched with a negative attitude it felt like being paralysed. I think if people do not think you will do a good job, it is less likely that you actually do.
- #12 [The negative relationship] creates tension, I look forward to the end of the day so I don't have to be around them, puts me in a bad mood.
- #15 I think the negative relationship I had, particularly with one worker, lead to my organisational commitment being undermined, but also my general feelings of [dis]empowerment and of trust.
- #32 When a work relationship has gone bad, it makes it very uncomfortable for all concerned, and does affect the enjoyment at work.
- #62 Personal conflict with a work colleague divided the office and caused a lot of stress and friction in the work place. The meant that work was not a pleasant place to be at that time.

-
- #120 [The negative relationship meant] I had to leave a job because he was the boss.
- #139 [The negative relationship] generally raised levels of stress. The tension can never be contained to just being between the two individuals as other members of the team are always involved (willingly or not). This can be a cascade effect where the negative relationship with one individual can impact even well established relationships with others (either in a positive or a negative way!). It can also impact your enthusiasm for the project.
- #149 It brings your motivation levels down. You have to try harder to be positive when negative people are around you.
- #168 Not wanting to go to work because of her constant demoralising, accusatory behaviour.
- #222 Dread going into work.
- #241 Negative relationships particularly with management in conjunction with a lack of enjoyment in my role encouraged me to apply for positions elsewhere in the organisation.

The qualitative responses, combined with the t-test results described above, suggest that the impact of negative relationships on employees' experience of work may be even more substantial than that of friendships, and is something that warrants further investigation.

4.5 Limitations of the Study and Directions for Future Research

It is possible that the specific demands within a persons' work role and/or the needs of respondents may influence the relationships between the measured variables. Individual and job differences were not assessed in the analysis of the data in the current study. In order to address the question of whether differing work roles or needs of respondents will affect the salience of workplace friendships, the sample needs to be divided and the proposed model tested for group invariance. Invariance testing is achieved by dividing

the sample into respondents reporting having (for example) jobs high in autonomy versus those reporting having jobs high in interdependence. This is the aim of the next chapter.

4.6 Conclusions and Implications

The prevailing zeitgeist today is, arguably, that organisations must be socially responsive, not only providing a job and income for their employees, but also a reasonable quality of work life. As mentioned in the introduction (Chapter One), in New Zealand's increasingly secular society of primarily nuclear families, there may be an increasing reliance on the workplace to give a sense of belonging that people formerly drew from their church, community, or extended family. This study sits within the quality of work life movement, focusing both on the fulfilment of social needs in the workplace and on related organisational outcomes. Overall, the theoretical model was supported by the data collected from both the Hospital and the Internet studies. The diverse samples give generalisability to the findings, and support to the notion that workplace relationships have direct, measurable effects on both organisational and personal outcomes – both in New Zealand and overseas. On the basis of these findings, it is not unreasonable to conclude that opportunities for friendships at work will have a positive effect on employees' experience of work. Research by Barsade (2002) suggests that a ripple effect, or emotional contagion of positive emotions, will, in the long run, improve cooperation, decrease conflict and increase perceived task performance. Thus, it is likely that the positive effects of workplace relationships will be quite far reaching – not only improving employees' experience of work, but also having an effect on the financial "bottom line" through factors such as enhanced organisational commitment, job satisfaction and reduced intentions to leave.

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Chapter 5: Cross-Validating the Causal Model and Testing for Invariance Between Sub-groups Differing in Need Strength and Interdependence of Job

5.1 Introduction

The previous two chapters outlined results which, overall, supported the notion that increased friendship opportunities at work impact positively on organisational outcomes such as job satisfaction and organisational commitment, and reduce employees' intention to leave an organisation. The findings described in the preceding chapters are also in line with previous literature (e.g., Nielsen et al., 2000; Richer et al., 2002; Riordan & Griffeth, 1995). This study builds on the previous two, by cross-validating the causal model and testing for invariance between sub-groups of respondents differing in need strength and interdependence of job. Two additional aims of the current study were to outline psychometric properties of the Needs Assessment Questionnaire (Heckert et al., 2000) and evaluate the validity of two new interdependence questions (refer section 5.2.2).

Although the previous two studies, and much of the literature focusing on workplace friendships, suggests that significant linkages exist between workplace friendships and organisational outcomes, the question remains: Are there individual or situational differences in the way the measured variables relate to one another? It was on the basis of four variables (one situational difference and three individual differences) that the sample in the current study was divided and tested for group invariance of the model of workplace friendships described in the previous chapter. The four variables are: a) interdependence of work role (a situational difference), b) need for affiliation, c) need for autonomy and d) need for achievement (individual differences). The impact of needs and job type on the linkages between workplace friendships and organisational outcomes are enquiries that have yet to receive empirical attention. Highlighting when

and for whom friendships at work are most salient should lead to insights regarding applying research, such as the current study, to the work environment.

5.1.1 Needs for Affiliation, Autonomy and Achievement

Personal characteristics, such as work ethic, locus of control and central life interest in work have been found to relate to organisational commitment (Meyer & Allen, 1991). Similarly, higher order needs are individual difference variables that, while they have seldom been studied in this context, might logically relate to the impact of workplace friendships.

The hypotheses associated with Research Question 1 (Chapter Three) are that friendships will have significant effects on people's experience of work (i.e., satisfaction, commitment, leaving intentions). It is very possible that the needs of respondents may influence the relationships between the measured variables. Although in the Hospital Study (Chapter Three), the needs of the respondents were not assessed directly, the profession and demographics of the sample meant that it was not unreasonable to expect that the sample (predominantly female health care professionals) would have high affiliation needs; both because of their gender and their profession. Women have been found to be generally more relationship focused than men (Andrew & Montague, 1998; Markiewicz et al., 2000; Winstead, 1986; Wright, 1988, 1991) and nurses, as a group, have been found to have a higher than average need for affiliation (Medcof & Hausdorf, 1995).

Professions and work roles that fulfil particular needs will frequently be filled with individuals with those needs. Medcof and Hausdorf (1995) state that a fundamental assumption made by researchers in this area is that people gravitate to, and tend to remain in, jobs which fulfil their needs. Although not all people will be able to move to, and remain in jobs which satisfy their needs, it is assumed that, as a general rule, a significant level of matching of people and jobs does occur (Medcof & Hausdorf, 1995). This is related to the attraction/selection/attrition (ASA)⁴⁵ model proposed by Schneider

⁴⁵ The attraction/selection/attrition (ASA) model is also sometimes termed the selection/attraction/attrition (SAA) model.

(1987; Schneider et al., 1995; Schneider & Reichers, 1983). Schneider's model suggests that organisational homogeneity increases over time through three stages.

Schneider has reasoned that individuals are attracted to jobs and organisations that fit their personalities and from which they can obtain outcomes they desire, particularly need satisfaction. Individuals will therefore be engaged in a process of self-selection when they decide whether or not to approach a particular organisation for a job. Organisations, on the other hand, will invest considerable resources in order to attract and select people whose attitudes, values and performance will be consistent with the organisation's expectations. In other words, the organisation actively chooses the applicants that are perceived to be the most similar to the employees already in the organisation. However, because both organisations and individuals tend to present themselves in their most favourable light in order to attract as many candidates/job offers as possible, this attraction-selection process does not guarantee that no "mismatches" will be selected and hired.

The mismatched individuals will be the first to leave the organisation; provided they have alternate job opportunities they perceive to be more consistent with their needs and values. Thus, the attrition process will further increase both homogeneity among organisation members and person/organisation fit. The result of these three stages (selection, attraction and attrition) is that the personal values and preferences of the people within an organisation grow more similar over time.

Indeed, almost all respondents in the Hospital Study felt that informal workplace relationships were of importance, which is what one would expect of a sample with high needs for affiliation. The Internet based study, however, analyses data from individuals with a much wider variety of work roles, so it is not possible to make any assumptions about the needs of respondents. For this reason, their needs are assessed directly.

Needs for affiliation, autonomy and achievement⁴⁶ are examined in the current study, and are defined by Heckert et al (2000) as follows:

- The *need for affiliation* is the desire to interact socially and to be accepted by others.
- The *need for autonomy* is the desire for self, rather than other, direction.
- The *need for achievement* is the desire to excel and involves attempting to improve on past performance.

Needs theory holds that people have different levels of needs for affiliation, dominance, autonomy and achievement (Heckert et al., 2000), and will be motivated to fulfil these needs. Needs have been studied with a view to assessing their importance as possible determinants of person-occupation fit, and it has been shown empirically that the extent to which these needs are met predicts job satisfaction and competence in a number of occupations (Medcof & Hausdorf, 1995). Higher order needs have also been found to correlate with organisational commitment (Steers, 1977; Steers & Braunstein, 1976), and opportunities to satisfy needs have been shown to predict job satisfaction and tendency to leave (Zinovieva et al., 1993) as well as organisational commitment (Shouksmith, 1994). These results suggest the possibility that, in a given work environment, individual differences in needs may affect whether or not individuals report being satisfied with their jobs or committed to their organisation.

It is probably most useful to consider the interactions between personal dispositions and the environment when examining the effects on organisational outcomes. Individuals whose work experiences are compatible with their personal dispositions (i.e., provide fulfilment of needs) should have a more positive experience of work than those whose work experiences are less compatible with their needs (Meyer & Allen, 1991). That is to say, that the *same* work environment might engender differing levels of satisfaction or commitment in employees, depending on their differing needs. Research in Germany into the influence of achievement and affiliation variables on work motivation and job satisfaction suggests that needs for affiliation and achievement, and the degree to which

⁴⁶ Also measured by the NAQ, but not used in the current study, as it is not directly relevant to friendship issues, is the *need for dominance*, sometimes called the need for power; it is the desire to influence and direct others.

these needs are met have a significant influence on employees' experience of work (Pifczyk & Kleinbeck, 2000).

A particular type of work experience (in this instance, having friends at work) will probably influence commitment and/or satisfaction primarily among employees for whom it is relevant (for example, those reporting high needs for affiliation). Thus, it is likely that people who report high needs for affiliation will be relatively more affected by a lack of friends at work, while for those reporting relatively high needs for autonomy, workplace friendships will have less salience. In terms of the model being tested, it is possible that some of the linkages between variables, or the fit of the model as a whole, will differ depending on individual differences in the population under investigation.

Affiliation

A person with a high need for affiliation enjoys being with friends and people in general; accepts people readily and makes efforts to win friendships and maintain associations with people (Medcof & Hausdorf, 1995). Fulfilling one's need for affiliation can be seen as obtaining 'social capital.' Social capital, is about the benefits to individuals of initiating and maintaining relationships (Johnson, 2001). Informal connections among employees are vital in building social capital. Even a small number of people who share common experiences can create larger networks within an organisation to solve work problems more effectively, share resources and knowledge, and master new technology. These 'communities of practice' can be crucial for new employees who are looking for well-informed colleagues or mentors within the company to help them succeed in their work roles (Johnson, 2001).

In addition, social capital is important for the management of knowledge-based organisations. It helps to create the climate of mutual trust, respect, and obligation that allows people to readily share documents, contribute knowledge, and understand the value of co-workers' contributions. Thus, having informal relationships and friendships in the workplace will be strongly related to employees' social capital.

According to the conceptualisation on which the present study is based, the degree to which jobs provide interpersonal activities should relate to job satisfaction and organisational commitment more when workers have high desires for the satisfaction of social needs and, further, may relate to work motivation or performance when working hard on the job can lead to the satisfaction of these needs. This is likely to be particularly true for jobs that are designed so that relating meaningfully to others is an integral part of doing the job well (Hackman & Lawler, 1971).

Autonomy

The need for autonomy is the desire to be self-directed. Individuals with a need for autonomy would be likely to prefer to work alone rather than in work teams. For individuals with high needs for autonomy, acquiring social capital may be seen as less important than being in a work role which allows them to work independently of others. For people with high needs for autonomy, working in jobs where working closely with others is important or essential in doing the job well, might actually decrease satisfaction, as it would mean that needs for autonomy could not be met.

Achievement

A person with a high need for achievement wants to accomplish difficult tasks, maintains high standards and is willing to work toward distant goals. They respond positively to competition and are willing to expend effort to attain excellence (Medcof & Hausdorf, 1995). Thus, individuals with high needs for achievement will be most satisfied with jobs which fulfil this need and the presence or absence of very close friends and informal networks may be less important than for individuals with a high need for affiliation (unless they have high need for both affiliation and achievement).

The need for achievement may be related to 'career capital' (Inkson & Arthur, 2001). Career capital can be thought of as the skills, experience and relationships individuals acquire over time, which will increase an individual's employability. Inkson and Arthur propose that careers are personal property, and that people are motivated to acquire career capital, not just for the good of their employer but by their own self-interest. The more career capital an individual acquires, the more he or she is likely to achieve.

It is worth noting here that it is incorrect to think of the acquisition of career capital as unrelated to individual's need for affiliation, because social capital (the building of useful relationships) is certainly an aspect of career capital. This aspect of career capital is termed 'knowing whom' by Inkson and Arthur (2001), and it includes the attachments, relationships, reputation and felt obligations that people gather as they pursue their careers (Inkson & Arthur, 2001).

If individuals are focused on gaining career capital they will be constantly learning and acquiring new skills, contacts and knowledge, which will help them in their current and future work roles. Table 25 summarises the points made above, focusing on individual differences in needs and the presence or absence of both friendship opportunities and opportunities to acquire career capital.

Table 25: Hypothesised Relationship between Occupation, Affiliation Opportunities and Opportunities to Acquire Career Capital.

	Individuals with needs for affiliation	Individuals with needs for autonomy	Individuals with needs for achievement
Absence of friendship opportunities and informal relationships at work	Low Job Satisfaction / Increased turnover	May improve satisfaction and reduce turnover	May or may not affect satisfaction, commitment and turnover... individual differences
Presence of friendship opportunities and informal relationships at work	Increased satisfaction, organisational commitment and reduced turnover	May decrease satisfaction and commitment, and increase turnover	May or may not affect satisfaction, commitment and turnover... individual differences
Absence of opportunities to acquire career capital at work	May or may not affect satisfaction, commitment and turnover... individual differences	May or may not affect satisfaction, commitment and turnover... individual differences	Decreased satisfaction and commitment, and increased turnover
Presence of opportunities to acquire career capital at work	May or may not affect satisfaction, commitment and turnover... individual differences	May or may not affect satisfaction, commitment and turnover... individual differences	Increased satisfaction, organisational commitment and reduced turnover

5.1.2 Interdependence of Work Role

Just as the needs of respondents may influence the relationships between the measured variables, so too might the type of job. In some roles, employees may actually *require* higher levels of social support in order to function effectively because their jobs may be

designed so that relating to others is an essential part of doing the job well. For example, a clinical psychologist may want to debrief after counselling a very violent social misfit, or may require advice, mentoring and supervision from her more experienced colleagues. In contrast, an accountant who has to handle a particularly challenging tax return would be unlikely to rely on social support of this nature, and could refer to a text to gain information. As another example, in the computer programming profession, asking for assistance and support from colleagues is sometimes seen as an inability to effectively perform your job, while individual problem solving is highly valued (Kamante, 2002).

In the case of the accountant or the programmer, informal relationships and social support might be an added bonus to their jobs, nice but not essential. While for the psychologist they may be crucial to perform her job satisfactorily. This relates to the theory of Herzberg et al. (1959) and Herzberg (1966) (described in section 2.1.2), which postulated that factors intrinsic to the nature and experience of doing work, such as the work itself and responsibility, were job satisfiers or 'motivators' while extrinsic factors, including supervision, interpersonal relations and working conditions were job 'dissatisfiers' or 'hygiene' factors. It is possible that, for people in certain roles, interpersonal relationships *are* intrinsic to the experience of doing work and therefore these relationships cease to be hygiene factors (as Herzberg et al. propose) and are, instead, motivators. Thus it may be actual job characteristics, as opposed to individual differences, which make social support networks and informal relationship structures motivators rather than hygiene factors in some industries or organisations.

For the purposes of this study, the level of interdependence in an individual's job is conceptualised to be on a continuum from interdependent to autonomous. It is likely that, for individuals who report requiring regular communication and interaction with colleagues in order to fulfil their duties, informal relationships will generally have more salience or importance, than for those who report being able to do their work on their own (i.e., who have relatively more autonomous jobs).

The notion that relationships in the workplace will have more salience for people in particular work roles is supported by the findings of Winstead et al. (1995) who studied both general and academic staff in a University context in Virginia (U.S.A). Winstead et al. found that the effects of relationship factors (in this case maintenance difficulty) on job satisfaction were only apparent for general staff (as opposed to faculty members). An explanation Winstead et al. give for this is that, for faculty, the intrinsic qualities of their job (teaching, research, supervising students) are more important to them than the non task-related aspects; while for general staff, whose work may be more routine or work roles more interdependent, the social, non-work aspects are more salient. An alternative explanation is that, for academic staff, social needs may be met in the course of their job; teaching, supervising and collaborative research all being very social activities. For general staff, on the other hand, rewarding social interactions may be more rare, and therefore more valued. In addition, faculty have significantly more autonomy at work, and more control over their personal space, usually having their own office. Consequently academic staff members are able to simply avoid negative interactions more easily than general staff, who may have to liaise frequently with others, or work in an open plan office. Either way therefore, it seems likely that the *type* of work an individual does will interact with the impact of friendships at work, with relationships being generally more salient for jobs which are relatively more interdependent.

Research Question 5

Research Question 5 asks: Is the proposed model invariant across individuals from sub groups of the surveyed population? The purposes of this chapter are to: (a) cross-validate the previously supported model across independent samples from within the full sample, and (b) test for the invariance of the specified model across those who report working in relatively less or more interdependent jobs, and those who report relatively greater and lesser needs for affiliation, autonomy and achievement. The hypotheses, related to Research Question 5 are as follows:

Hypothesis 5.1: That the previously supported model will be invariant across two groups of randomly assigned respondents, thereby validating the model.

Hypothesis 5.2: That the model will be noninvariant across groups of individuals who report having:

- (a) relatively high versus low needs for affiliation,
- (b) relatively high versus low needs for autonomy,
- (c) relatively high versus low needs for achievement,
- (d) relatively less or more interdependent jobs.

5.2 Method

5.2.1 Participants

Data from four hundred and forty-five individuals were used in the analysis for this study. This total comprised the 412 respondents reported in the previous chapter and an additional 33 respondents who subsequently responded to the survey. A demographic summary is presented in Table 26. Respondents ranged from 19 to 64 years in age, with a mean age of 35 years (s.d. = 11.07). There was variety in the industries/sectors respondents reported working in; the largest reported sector was tertiary education (92 respondents) followed by health care (including psychology, psychiatry and physiotherapy, 53 respondents). People responded to the survey both from within New Zealand and internationally, respondents were primarily from Western countries but the international mix gives the findings wider generalisability than previous studies, using only American respondents (e.g., Nielsen et al., 2000; Richer et al., 2002; Riordan & Griffeth, 1995; Winstead et al., 1995).

Table 26: Breakdown of Demographic Data for Respondents to Cross-validation / Invariance study

<i>Variable</i>	<i>Frequency (n)</i>	<i>Valid percent</i>
Sex (5 missing)		
Males	137	31.2
Females	303	68.8
Age (9 missing)		
>20 years	10	2.3
20-29 years	168	38.5
30-39 years	121	27.8
40-49 years	75	17
50-59 years	57	13.3
Over 60 years	5	1.1
Country of origin (5 missing)		
New Zealand	294	66.7
U.S.A.	65	14.8
United Kingdom	36	8
Australia	22	4.8
Canada	5	1.1
Other	18	4.1

Note: Values are presented in percentages excluding respondents who declined to answer.

5.2.2 Materials

As described in the previous chapter, data were gathered using a self-administered, Internet based questionnaire, which was designed to measure the interdependence of respondent's jobs, respondent's needs, workplace friendship opportunities, workplace friendship prevalence, cohesion, job satisfaction, organisational commitment and intention to leave. Most of the instruments and survey questions relevant to the current study are fully described in Chapter Three and include the Workplace Friendship Scale (Nielsen et al., 2000), the Workgroup Cohesion Scale (Campion et al., 1993), the Organisational Commitment Questionnaire (Mowday et al., 1979), the Job Satisfaction Scale (Warr et al., 1979), and a measure of intention to leave (Mobley, 1977). In addition the Needs Assessment Questionnaire (Heckert et al., 2000) and two interdependence of work role questions were also used, these are described below.

Needs Assessment Questionnaire

The Needs Assessment Questionnaire was designed to measure four needs; the needs for achievement (*nAch*), affiliation (*nAff*), autonomy (*nAut*), and dominance (*nDom*) (refer appendix 16 for the items in the NAQ).

The Needs Assessment Questionnaire was developed by Heckert et al. (2000) to measure achievement, affiliation, autonomy, and dominance. Although the Manifest Needs Questionnaire (Steers & Braunstein, 1976) exists, Heckert et al. found that prior studies reported problematic internal consistency of the Manifest Needs Questionnaire scores, with several researchers (e.g., Dreher & Mai-Dalton, 1983; Geiger & Cooper, 1995; Mayes & Ganster, 1983) obtaining internal consistency values that strongly question the reliability of the Manifest Needs Questionnaire.

To create the Needs Assessment Questionnaire, a 60-item instrument, consisting of the 20 Manifest Needs Questionnaire items and 40 new items, was administered to 476 undergraduates. Based on the factor analysis results, Heckert et al. created the 20-item Needs Assessment Questionnaire. Internal consistency estimates were higher for the Needs Assessment Questionnaire scores than for the Manifest Needs Questionnaire scores. Heckert et al. (2000) calculated item-total correlations and coefficient alpha for both the original scales and the new scales. The average item-total correlations were higher for the new scales than for the original scales (.76 vs. .59 for the *nAch* scales, .72 vs. .53 for the *nAff* scales, .64 vs. .58 for the *nAut* scales, and .74 vs. .68 for the *nDom* scales). With all four scales, the scores derived from the new scales outperformed the scores derived from the original scales with regard to internal consistency, ranging from .65 to .81.

Evidence of the test-retest reliability of the NAQ was provided by a second study using 78 undergraduate students. The scales showed relatively stable scores, with test-retest reliability estimates of .64, .73, .63, and .66, respectively, for the *nAch*, *nAff*, *nAut*, and *nDom* scales.

Taken together, the results from Heckert et al.'s studies provide support that the NAQ is a reliable and valid alternative to the Manifest Needs Questionnaire, with both student and worker samples, for measuring the needs for achievement, affiliation, and dominance. The support for the *nAut* scale was more limited and, as a result, the

authors are somewhat cautious in their recommendation for its use for measuring the need for autonomy.

Factor analysis of the Needs Assessment Questionnaire (refer section 4.3.1) revealed that, for both the affiliation and autonomy subscales, three of the five items in the original scale loaded together as factors, all five of the achievement items loaded together. Scores for the questions were combined to give each respondent a composite score for the affiliation need, autonomy need and achievement need. The items used are presented in Table 27.

Table 27: Needs Assessment Questionnaire Items Used in the Current Study

<i>Affiliation</i>	<i>Autonomy</i>	<i>Achievement</i>
I try my best to work alone on a work assignment. (R)	I would like to be my own boss.	I try to perform my best at work
I prefer to do my own work and let others do theirs. (R)	I would like a job where I can plan my work schedule myself.	It is important to me to do the best job possible
When I have a choice, I try to work in a group instead of by myself.	I would like a career where I have very little supervision.	I am a hard worker
		I push myself to be "all that I can be"
		I try very hard to improve on my past performance at work

Interdependence/autonomy questions

The following two questions were used to assess the level of interdependence in respondents' jobs. Items were rated on a 7-point likert type scale ranging from 1 (strongly disagree) to 7 (strongly agree).

1. In order to fulfil my duties at work, regular communication and/or interaction with my colleagues is important.
2. The type of work I do can be done satisfactorily on my own, without regular interaction and/or communication with my colleagues.

To assess the validity of the interdependence/autonomy questions, their correlation with the measures of cohesion and friendship prevalence was assessed. Those in more autonomous jobs will probably not be part of a highly cohesive workgroup and may report less need for friendship at work, or perhaps have fewer opportunities to make friends. Thus, a negative correlation between the "autonomy of work role" score and a)

the social support factor of the cohesion scale, b) the friendship prevalence scale and c) the need for affiliation subscale would be expected if the “autonomy of work role” score was valid. In addition, according to the attraction/selection/attrition theory (Schneider et al., 1995), discussed in section 5.5.1, people with relatively low needs for affiliation and/or high needs for autonomy are more likely to be in autonomous work roles. Thus, respondents indicating that their job was autonomous (by scoring low on Q1 and high on Q2) should also score high on the autonomy sub-scale of the Needs Assessment Questionnaire and low on the affiliation sub-scale of the Needs Assessment Questionnaire (validity and reliability of the Needs Assessment Questionnaire is presented above).

A measure of respondents’ autonomy of work role was calculated by reverse scoring question 1 and taking the mean of the two scores (similarly, a measure of the level on interdependence of the respondents’ jobs may be calculated by reverse scoring the second question and taking the mean). To check the psychometric properties of the items, their correlation with existing scales was assessed. As expected the ‘autonomy of work role’ score was negatively correlated with the social support factor of the cohesion scale ($r = -.16, p < .001$), the friendship prevalence scale ($r = -.10, p < .05$) and the need for affiliation subscale ($r = -.23, p < .001$), providing evidence of divergent validity for the two new interdependence/autonomy questions. The ‘autonomy of work role’ score was significantly positively correlated with the ‘need for autonomy’ subscale (Heckert et al., 2000) ($r = .17, p < .001$), providing evidence of convergent validity.

5.2.3 Procedure

The Internet data collection site remained active following the download of the data used in the previous chapter and an additional 33 individuals responded to the questionnaire. The data were downloaded and used to again create the measurement models of the scales and to test the theoretical model.

5.3 Analysis and Results

Analyses were based on the AMOS (Arbuckle, 1999) program, and were conducted in five stages. First, measurement models of the scales used to measure the latent variables, derived from the previous chapter, were confirmed with the larger data set. Second, the data were assessed for goodness of fit to the proposed model. Third, the data were randomly split into two (using SPSS), to form calibration ($n = 230$) and validation ($n = 215$) samples. Fourth, the calibration sample was assessed for goodness of fit to the proposed model. Fifth, the model was cross-validated by testing for the invariance of all parameters across the second independent sample.

The cross-validation procedure is outlined by Byrne (2001) and involves first performing an omnibus test, determining the goodness of fit for the two groups in combination, and with no equality constraints imposed. Having constrained all parameters to be equal across groups it is possible to compare the constrained model with the initial multi group model, in which no equality constraints were imposed, to determine if the causal structure is invariant. The change in chi-square value ($\Delta\chi^2$) provides the basis for comparison with the initial multi group model⁴⁷. Respondents were divided into groups using median splits, and the validated model was then used to test for invariance between individuals who reported having relatively less ($n = 201$) and more ($n = 244$) interdependent work roles, those who indicated high ($n = 238$) versus low ($n = 207$) needs for affiliation, those who reported high ($n = 268$) versus low ($n = 177$) needs for autonomy and those who reported high ($n = 236$) versus low ($n = 209$) needs for achievement.

Assessment of model fit was based on multiple criteria, reflecting statistical and practical considerations (Byrne, 2001); these were (a) the chi-square (χ^2) likelihood ratio statistic, (b) the Comparative Fit Index (CFI: Bentler, 1990), the Parsimonious Normed Fit Index (PCFI: Mulaik et al., 1989), and (c) the Root Mean Square Error of

⁴⁷ If the change in Chi Square is significant the fit of the two data sets to the model can be judged to be significantly different.

Approximation (RMSEA: Browne & Cudeck, 1993). These indices are described fully in the previous chapter (refer section 4.3.1).

5.3.1 Measurement Models of the Scales

The computer programme AMOS (Arbuckle, 1999) was used to create measurement models of the scales using the data gathered from all 445 respondents. The measurement models of the scales used in the current study remained unchanged from the previous study. The fit indices for each measurement model show good fit of the data to the models, fit indices are presented in Table 28. The reliability alpha coefficients for each subscale were acceptable, ranging from .70 to .91. Both the cohesion scale and the satisfaction scale were again found to have two factors⁴⁸.

Table 28: Fit Indices for the Measurement Models (n = 445)

<i>Scale</i>	<i>Number of factors</i>	χ^2	<i>df</i>	<i>PCFI</i>	<i>CFI</i>	<i>RMSEA</i>
Workplace friendship scale	2	40.59	13	.60	.98	.069
Job satisfaction scale	2	74.10	26	.69	.96	.065
Cohesion Scale	2	61.10	19	.66	.97	.071
Organisational Commitment Questionnaire	1	153.70	54	.79	.96	.064
Needs Assessment Questionnaire	4	216.37	71	.68	.87	.071

5.3.2 Model of Workplace Relationships

The result of the SEM analysis is shown in Figure 28; there are eight latent variables, three hypothesised correlations and nine hypothesised regression paths, indicated by arrows. All correlations and regression paths shown are significant ($p < .05$). In spite of the slightly different data set, regression weights between variables were relatively unchanged from the previous chapter. Table 29 shows Chi Square, degrees of freedom and the relevant goodness of fit statistics for the model under test, again they are largely unchanged from the previous chapter and indicate the model is a good fit to the data. The complete table of fit indices is given in appendix 21.

⁴⁸ The two factors in the satisfaction scale were, (1) satisfaction with relationships and workplace (extrinsic satisfaction), and (2) satisfaction with aspects of actual job performed; variety/fulfilment (intrinsic satisfaction). The two satisfaction factors relate closely to the 'extrinsic satisfaction' and 'intrinsic satisfaction' clusters of items, identified by Warr et al. (1979). The two cohesion factors were, (1) social support and cooperation and (2) workload sharing. The workload sharing factor is identical to that described by Campion et al (1993), while the remaining items loaded together as a single factor, combining Campion's 'social support' and 'communication/co-operation' factors.

Table 29: Fit Indices for the Causal Model: Based on the Full Sample (n = 445).

<i>Index of fit</i>	χ^2	<i>df</i>	<i>CFI</i>	<i>PCFI</i>	<i>RMSEA</i>	<i>Low 90</i>	<i>High 90</i>	<i>Hoelter .01</i>
Value	1438.24	617	.90	.84	.055	.051	.058	217

The data supported the notion that friendship opportunities (leading to increased friendship prevalence) would be positively correlated with the cohesiveness of a workgroup, that friendship opportunities and cohesion would be antecedent to job satisfaction, that friendship opportunities and cohesion would impact positively on organisational commitment (mediated by satisfaction), and that satisfaction and commitment would both be antecedent to intention to leave. For a more detailed description of the theoretical model see the previous chapter.

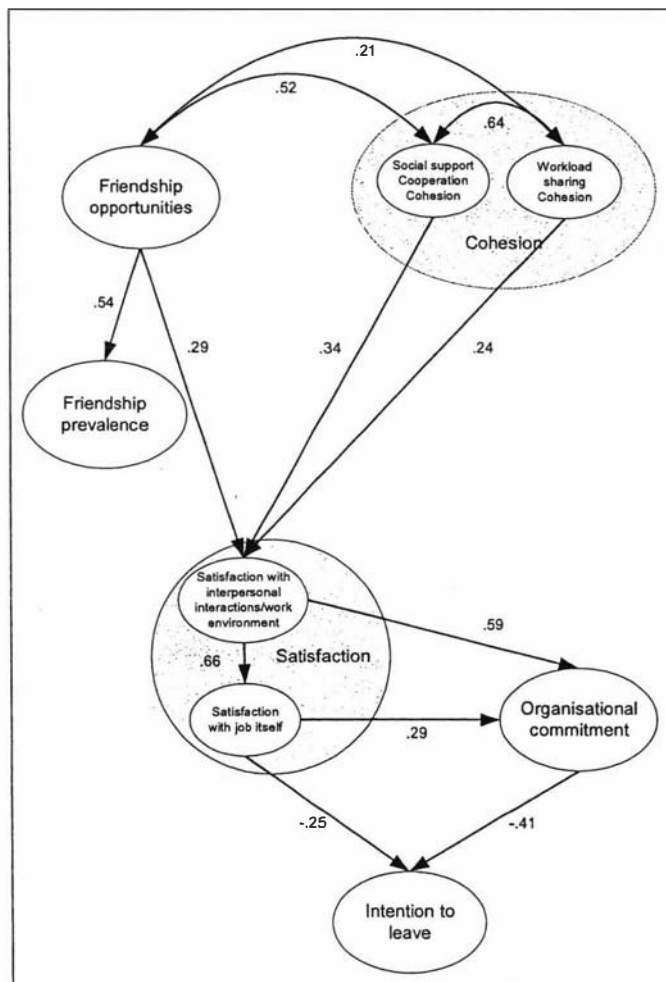


Figure 28: Results of SEM analysis of the theoretical model. Values represent standardised estimates and correlations based on the full sample (n = 445). All paths shown are significant (p < .05)

5.3.3 Comparing Groups

Calibration compared to validation sample

For the purpose of cross-validation, the hypothesised model was tested for its replication across two independent (random) samples, i.e., the calibration and validation groups (Byrne, 2001). The calibration sample showed adequate fit to the model (CFI = .89, RMSEA = .05). From an omnibus test, which determines the goodness of fit for the two groups in combination, and with no equality constraints imposed, the fit is adequate (CFI = .88, RMSEA = .04, $\chi^2_{(1234)} = 2214.8$) see Table 30. Next, to test for invariance across groups, equality constraints were specified by labelling all parameters in the model equal across the two groups. From Table 30 the change in chi-square with 44 degrees of freedom is 48.5 ($\Delta\chi^2_{(44)} = 48.5$). Since this test statistic is not statistically significant, the model is shown to be invariant across the two groups.

Table 30: Chi-Square Statistics for Tests of Invariance across Sub-groups of the Sample

<i>Causal friendship model</i>	<i>Omnibus test / baseline model (no equality constraints imposed)</i>		<i>Comparative model (Factor loadings, variances and covariances constrained equal)</i>		$\Delta\chi^2$	Δdf	<i>Statistical significance</i>
	χ^2	df	χ^2	df			
Random sample (calibration versus validation sample)	2214.8	1234	2263.3	1278	48.5	44	ns
High versus low Affiliation needs	2238.3	1234	2282.8	1278	44.5	44	ns
High versus low Autonomy needs	2279.5	1234	2328.2	1278	48.7	44	ns
High versus low Achievement needs	2359.0	1234	2413.1	1278	54.1	44	ns
High versus low interdependence of job	2291.7	1234	2387.2	1278	95.5	44	$p < .001$

Needs for affiliation, autonomy and achievement

The invariance-testing strategy described above was then used to test for the invariance of the causal structure for respondents reporting relatively high versus low needs for affiliation autonomy and achievement. Table 30 shows that the differences in chi-square values ($\Delta\chi^2$) between the second tests and the omnibus tests were not statistically significant ($\Delta\chi^2_{(44)} = 44.5$, $\Delta\chi^2_{(44)} = 48.7$ and $\Delta\chi^2_{(44)} = 54.1$ for the affiliation, autonomy and achievement group comparisons respectively). Thus, the high autonomy-need

group does not differ significantly from the low autonomy-need group in terms of the relationships between variables in the model. Similarly the high affiliation-need and high achievement-need groups do not differ significantly from the low affiliation-need and low achievement-need groups (i.e., the groups are invariant). Thus, needs seem not to influence the way the measured variables in the tested model relate to each other.

Interdependence of work role

The same invariance testing strategy was then used to test for the invariance of structural paths across groups of respondents who reported having comparatively less or more interdependent jobs. From the omnibus test, the goodness of fit of the model for the two groups in combination, and with no equality constraints imposed, is adequate (CFI = .88, RMSEA = .044, $\chi^2_{(1234)} = 22291.7$).

Next, having constrained all parameters to be equal across groups it is possible to compare the results with the initial multi group model to determine if the hypothesised causal structure is invariant across the two groups. From Table 30, the change in chi-square with 44 degrees of freedom is 95.5 ($\Delta\chi^2_{(44)} = 95.5$), which is statistically significant ($p < .001$); this indicates that the fit of the data to the model is noninvariant (i.e., different) across the two groups (i.e., those reporting having (a) relatively less and (b) relatively more interdependent jobs).

Given this finding of noninvariance, the next task is to locate the nonequivalent parameters in the model. This process involves a series of logically ordered tests for invariance, first testing for the equivalence of the factor structure and then for the equivalence of the structural model. By doing this, it is possible to determine which parameters in the model are different between those in relatively less and more interdependent jobs. Table 31 shows the results bearing on this series of tests for invariance. Each model tested is compared to the baseline model. A significant change in Chi-square between the model tested and the baseline model indicates that the two are noninvariant (i.e., significantly different).

Table 31: Goodness of Fit Statistics for Tests of Invariance Across Those in Relatively Less and More Interdependent Jobs

<i>Model number</i>	<i>Model description</i>	χ^2	<i>df</i>	$\Delta\chi^2$	Δdf	<i>Statistical significance</i>
1	Combined baseline models, high versus low interdependence of job (Model 1)	2291.7	1234	—	—	—
2	Factor loadings, variables, regression paths and covariances constrained equal	2387.2	1278	95.5	44	p < .001
3	Only factor loadings constrained equal	2358.6	1263	66.9	29	p < .001
4	All factor loadings constrained equal other than item 4 (workplace friendship), item 8 (cohesion) and item 6 (OCQ) which were freely estimated.	2326.9	1260	35.2	26	ns
5	As 4 but with variables constrained equal also	2330.2	1263	38.5	29	ns
6	As 5 but with all regression paths and covariances constrained equal also	2355.4	1275	63.7	41	p < .05
7	As 5 but with only the path between friendship opportunities and friendship prevalence constrained equal also	2332.2	1264	40.5	30	ns
8	As 7 but with path between friendship opportunities and extrinsic satisfaction constrained equal also	2333.4	1265	41.7	31	ns
9	As 8 but with path between cohesion (social support) and extrinsic satisfaction constrained equal also	2333.7	1266	42	32	ns
10	As 9 but with path between cohesion (workload sharing) and extrinsic satisfaction constrained equal also	2336.1	1267	44.4	33	ns
11	As 10 but with covariance between friendship opportunities and cohesion (social support) constrained equal also	2344.4	1268	52.7	34	p < .05
12	As 10 but with covariance between cohesion (workload sharing) and cohesion (social support) constrained equal also	2339.3	1268	47.6	34	ns
13	As 12 but with covariance between friendship opportunities and cohesion (workload sharing) constrained equal also	2339.8	1269	48.7	35	ns
14	As 13 but with path between extrinsic satisfaction and intrinsic satisfaction constrained equal also	2340.2	1270	1270	36	ns
15	As 14 but with path between extrinsic satisfaction and organisational commitment constrained equal also	2344.5	1271	52.8	37	ns
16	As 15 but with path between intrinsic satisfaction and organisational commitment constrained equal also	2345.6	1272	53.9	38	ns
17	As 16 but with path between intrinsic satisfaction and intention to leave constrained equal also	2345.8	1273	54.1	39	ns
18	As 17 but with path between organisational commitment and intention to leave constrained equal also	2346.0	1274	54.3	40	ns

Note. $\Delta\chi^2$, difference in χ^2 values; Δdf , difference in degrees of freedom. All models are compared with Model 1.

As shown previously in Table 30, there was a significant difference between the baseline model and the fully constrained model for the high versus the low interdependence groups; this information is also displayed in the first two lines of Table 31. Once the noninvariance of a model has been established the next step is to test for the equivalence of the factor-loading pattern across the two groups. The third line in Table 31 shows the result of this test. The significantly different Chi-square indicates that not all factor loadings are invariant across groups. A noninvariant factor-loading pattern necessitates the use of partial measurement invariance in testing for the equality of regression paths and covariances (which are the parameters of interest in this case).

To ascertain which aspects of the factor-loading pattern vary across the two groups, each measurement model was tested for invariance⁴⁹. Table 32 shows the result of these analyses. The statistical significance of the change in Chi-square for the cohesion, friendship and organisational commitment measurement models indicates that those who report being in jobs which are relatively less or more independent, differ significantly in terms of the way these three measures fit.

Next, every factor within the cohesion, friendship and the organisational commitment measurement models was systematically tested for invariance in order to identify the noninvariant parameters. The results bearing on these series of analyses indicated that only one item from each scale was noninvariant. The noninvariant items were item 8 of the cohesion scale, item 4 of the workplace friendship scale and item 6 of the organisational commitment questionnaire. The complete series of tests is not displayed here but the relevant results are shown in Table 32. The significance of the change in Chi-square when all factor loadings are constrained equal, along with the non-significance of the change in chi-square when each of these three items was freely estimated, indicates that they were the sole source of invariance in each of the measurement models.

⁴⁹ The measurement model for Intention to Leave was not tested here as it has only three items and therefore 0 df.

Table 32: Goodness of Fit Statistics for Tests of Measurement Model Invariance Across Those in Relatively Less and More Interdependent Jobs

<i>Model description</i>	χ^2	<i>df</i>	$\Delta\chi^2$	Δdf	<i>Statistical significance</i>
Cohesion Scale					
Cohesion measurement model (unconstrained)	171.7	52			
Cohesion measurement model (fully constrained)	202.8	62	31.1	10	p < .001
All items except item 8 constrained equal (item 8 freely estimated)	184.7	61	13	9	ns
Friendship Scale					
Friendship measurement model (unconstrained)	65.4	26			
Friendship measurement model (fully constrained)	81.6	32	16.2	6	p < .05
All items except item 4 constrained equal (item 4 freely estimated)	76.1	31	10.7	5	ns
Organisational Commitment Questionnaire					
OCQ measurement model (unconstrained)	239.3	108			
OCQ measurement model (fully constrained)	263.6	119	24.3	11	p < .05
All items except item 6 constrained equal (item 6 freely estimated)	253.5	118	14.2	10	ns
Job Satisfaction Scale					
Satisfaction measurement model (unconstrained)	100.4	52			
Satisfaction measurement model (fully constrained)	113.6	60	13.2	8	ns

Note. $\Delta\chi^2$, difference in χ^2 values; Δdf , difference in degrees of freedom. Each constrained model is compared with the unconstrained model for the same measurement model.

When the full model is tested for invariance, allowing only the three scale items identified as being noninvariant to be freely estimated, there is no longer significant difference in the factor structure (as shown in line 4 of Table 31). The invariance of the regression paths and covariances (the parameters of interest) across high and low interdependence groups can now be tested.

The testing of invariance hypotheses involves increasingly restrictive models (Byrne, 2001). In Table 31, the model tested in line five is more restrictive than the one above it because, in addition to the partial equality constraint being imposed on the factor variances, equality constraints are also maintained for the variables (i.e., friendship opportunities, job satisfaction, etc.). The non-significant change in Chi-square indicates that the model remains invariant across the two groups (i.e., any difference that exists is not due to difference in the variables constrained as being equal). Model six (line six of Table 31) shows the change in Chi-square when, in addition to the constraints described

above (i.e., factor variances and variables), the regression paths and covariances are also constrained equal.

Because the difference in the Chi-square value between Model six and Model one is statistically significant ($\Delta\chi^2_{(23)} = 40.0$), the hypothesis of invariance can now be rejected. The next step is to ascertain which regression paths or covariances are contributing towards this inequality. To do this, it is necessary to test for the invariance of each parameter individually, while continuing to hold constrained all parameters found to be cumulatively invariant across the two groups.

The change in Chi-square for model seven, which has only the path from friendship opportunities to friendship prevalence constrained equal is non-significant ($\Delta\chi^2_{(12)} = 17.7$). This means this path is invariant across the two groups. Thus, the parameter from friendship opportunities to friendship prevalence is held invariant whilst the next path (from friendship opportunities to extrinsic satisfaction) is tested for invariance (model eight, Table 31), again the non-significant change in Chi-square indicates that this path is invariant across groups. Based on this general procedure of cumulatively maintaining equality constraints only for invariant elements, the next two parameters were tested and were also found to be invariant.

On testing for the invariance of the covariance between friendship opportunities and cohesion (social support), the change in chi-square ($\Delta\chi^2_{(16)} = 28.8$) was significant (Model 11, Table 31). Thus, this parameter is noninvariant (different) across the two groups. The equality constraint for the covariance between friendship opportunities and cohesion (social support) was therefore released for all subsequent models, none of which resulted in a significant change in Chi-square (refer lines 12-18, Table 31).

To sum up, the testing of invariance hypotheses shown in Table 31 indicated that there was one main difference in the structural relations among the variables measured in the current study. Other than a single item in each of three measurement models (friendship, cohesion and organisational commitment), the factor-structure related to the measurement models is equivalent across the two groups. There are, however,

significant group differences with respect to the covariance between friendship opportunities and the social support aspect of cohesion.

Table 33 shows the correlation between the cohesion (social support) and friendship opportunity variables for high and low interdependence groups, along with the critical ratio values. Although both correlations are statistically significant, the analyses described above indicate that they are significantly different. It seems that the relationship between cohesion (social support) and friendship opportunities is significantly stronger for the Low Interdependence group. This implies that, for those in relatively less interdependent (more autonomous), jobs the social support aspect of cohesion and opportunities for friendship are correlated significantly more strongly, than for those in more interdependent jobs.

Table 33: Showing Correlation Coefficients and Critical Ratio Values (parameter estimate divided by standard error) of the Correlation Between the Cohesion (Social Support) and Friendship Opportunity Variables for High and Low Interdependence Groups

			<i>C.R.</i>	<i>Estimate</i>	<i>S.E.</i>	<i>Correlation</i>
High Interdependence Group						
Cohesion (social support)	↔	Friendship Opportunities	4.24	.13	.03	.37
Low Interdependence Group						
Cohesion (social support)	↔	Friendship Opportunities	6.22	.29	.05	.63

C.R. values $>\pm 1.96$ are statistically significant. Parameter estimates and standard errors are also shown, along with the correlation coefficient.

Finally the indices of fit were compared for the low and high interdependence groups. The non-equivalence of the causal structure suggests that the model may be better fitting for one group compared to another. Table 34 shows the goodness of fit indices when the model is tested separately for the high interdependence group compared to the low interdependence group. For the high interdependence group the CFI (.90) and the RMSEA (.058) both meet the criteria for a well fitting model, while for the low interdependence group the CFI (.85), does not meet the criteria for good fit (i.e., $>.9$), the RMSEA too, is higher than for the high interdependence group (RMSEA = .067), suggesting that the data fit the model less well. These results indicate that the causal model, showing the impact of workplace friends on organisational outcomes, is better fitting for those in highly interdependent work roles.

Table 34: Goodness of Fit Statistics for the High and Low Interdependence Groups

<i>Scale</i>	χ^2	<i>df</i>	<i>CFI</i>	<i>PCFI</i>	<i>RMSEA</i>
<i>High Interdependence</i>	1331.79	690	.90	.82	.058
<i>Low Interdependence</i>	1331.22	690	.85	.79	.067

5.4 Discussion

There is support for hypothesis 5.1; the structure was invariant across two groups of randomly assigned respondents, thereby cross-validating the model (hypothesis 5.1). Hypotheses 5.2a, 5.2b and 5.2c were not supported however. Findings indicate *invariance* in the causal model when the samples compared were divided on the basis of needs for affiliation (hypothesis 5.2a), autonomy (hypothesis 5.2b) or achievement (hypothesis 5.2c). These are somewhat unexpected findings, given that it seems reasonable to expect that data gathered from individuals with high needs for affiliation, and autonomy, particularly, would differentially fit a causal model of friendships compared to those reporting relatively lower needs. The non-invariance of the model when comparing individuals with relatively high or low needs for achievement is not as surprising, as the need for achievement is likely to be less directly linked to friendships at work (refer Table 25, section 5.1.1).

A possible explanation for the unexpected findings may be that individuals expressing higher order needs are having them fulfilled outside the workplace. This relates to the concept of 'compensation' from the work-family balance literature (Campbell-Clark, 2001; Lambert, 1990; Sumer & Knight, 2001). For example, if employees expressing high needs for affiliation have their needs met at home, they may be less likely seek to fulfil them at work; thus the absence of friends at work will be unlikely to be any less or more salient for these individuals, than for colleagues who have low needs for affiliation.

The model was noninvariant (different) across the two groups reporting having relatively less or more interdependent jobs (hypothesis 5.2d). Specifically, one item in each of the measurement models for friendship opportunities, cohesion and organisational commitment differed, along with the correlation between friendship

opportunities and the social support aspect of cohesion. The finding that the correlation between friendship opportunities and the social support aspect of cohesion is stronger for those who report being in relatively *less* interdependent jobs seems somewhat counterintuitive. A possible explanation is that those in very interdependent jobs will have opportunities for friendship, regardless of the perceived cohesion in their workplace (so a significant correlation will not be found) while those in very autonomous jobs will only experience increased opportunities for friendship if they also perceive themselves to be socially supported by their colleagues.

When the findings of group invariance between those with high and low needs are considered alongside the finding that the model was *noninvariant* when the sample was divided on the basis of the level of interdependence of individual's work roles an interesting pattern emerges. It seems that the degree of interdependence in an individual's job influences the relationships between the measured variables, while the subjective needs of employees for autonomy, affiliation and achievement will not. Findings that the model (featuring friendships as antecedent to organisational outcomes such as commitment and job satisfaction) is better fitting for those in interdependent jobs is consistent with the hypothesis that those in interdependent jobs will be more affected by friendship opportunities than those in autonomous jobs, and also with prior research by Winstead et al. (1995). Thus, it seems that the actual job someone does, and whether or not it is necessary to work with others in order to perform one's job, will affect the salience of informal interpersonal relationships at work, while whether or not individuals self-report having needs for autonomy and affiliation, will not.

5.5 Conclusion

This study cross-validated a model of friendships in the workplace, and results suggest that the proposed model is robust, evidenced by the invariance of the model on four out of five tests for invariance. In addition, the findings demonstrate that there is a difference between those occupying relatively less or more interdependent jobs in terms of how the variables in the model relate to each other.

It was found that the correlation between social support and friendship opportunities is significantly stronger for those in less interdependent jobs. A likely explanation for this finding is that, for those who report being in highly interdependent work roles, friendship opportunities will exist regardless of the reported group cohesion. For those in very autonomous work roles, on the other hand, friendship opportunities will probably be more dependent on the perceived social support in the work environment.

In addition, findings suggest that the relationship between opportunities for friendships in the workplace and job satisfaction, organisational commitment and intention to leave are not the same for all employees. While it makes logical sense that having more friends at work will make one's work day more pleasant, it seems that, in terms of organisational outcomes, friendships have less impact on those in relatively more autonomous jobs (evidenced by the relatively poor fit of the model for this group). This finding supports that of Fine (1986), who claims that those in occupations with relatively more autonomy will have less need for solidarity with their peers. Second, it seems that the reported *needs* of employees for affiliation, autonomy or achievement do not really affect the relationships between measured variables; regardless of respondents' reported needs, the impact of friends in the workplace remained considerable.

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Morrison, R. (2004). *Friendships at work, job type and needs: The impact on organisational outcomes*. Paper presented at the PhD Forum of the Fourth Annual International Conference of Emotion in the Workplace, London.

Chapter 6: Synthesis and Implications

6.1 Summary of Major Findings

The central question of this thesis is whether or not friendships at work (a social factor) are linked to the job satisfaction, organisational commitment and turnover intentions of employees (i.e., organisational issues). This focus on informal relationships in organisations places the thesis within the realms of both social and organisational psychology.

A model of workplace relationships and organisational outcomes, derived from previous research and theory, was outlined in Chapter Two. The theoretical model hypothesised links between relationship factors (workgroup cohesion, friendship opportunities, friendship prevalence) and organisational outcomes (organisational commitment, job satisfaction and intention to leave).

6.1.1 Hospital Study

The first attempt to test the theoretical model, in a hospital setting within New Zealand, was described in Chapter Three (Hospital Study). Three research questions, derived from the hypothesised model, were posed. Research Question 1 asked: *Do the opportunities for, and prevalence of, friendships within a hospital have an impact (either mediated or direct) on job satisfaction, organisational commitment, and intention to leave?* It was hypothesised that opportunities for friendships would have a significant effect on how satisfied people are with their jobs, that having more opportunities for friendship would increase organisational commitment, and that both opportunities for friendship and the prevalence of friends at work would reduce turnover.

As expected, friendship opportunities did have a positive impact on job satisfaction. Friendship opportunities also predicted organisational commitment but the link was mediated by job satisfaction. As expected, a relationship between friendship opportunities and intention to leave was also found; this linkage too was mediated by friendship prevalence and job satisfaction. The friendship prevalence variable was not hypothesised to impact directly on job satisfaction or commitment, but was hypothesised to relate directly to intention to leave. The data from the Hospital Study supported this hypothesis, as there was a significant relationship between friendship prevalence and intention to leave.

Research Question 2 asked: *Is the perceived level of cohesion related to opportunities for friendship, prevalence of friendship, job satisfaction, organisational commitment and intention to leave?* It was hypothesised that cohesion would be positively related to opportunities for, and prevalence of, friendship in the workplace, and would be associated with an increase in job satisfaction and commitment and a decrease in intention to leave. Cohesion was found to relate directly to friendship prevalence and friendship opportunities, and to relate to the organisational outcome variables in the same way that friendship opportunities did, i.e., directly with job satisfaction and indirectly with commitment and intention to leave.

Research Question 3 asked: *Do negative relationships in the workplace worsen organisational commitment, job satisfaction and intention to leave?* It was hypothesised that individuals who experienced negative relationships at work would report decreased organisational commitment and job satisfaction and increased intention to turnover. It was found that people who reported having at least one negative peer had a significantly lower score on the prevalence of friendships at work scale. In addition, people who reported having at least one negative peer had a significantly lower score on both cohesion sub-scales (social support / communication and workload sharing). Thus, although there were no significant differences in satisfaction or commitment between those who did, and those who did not, report having at least one negative relationship, the data from this study suggested that individuals who report negative relationships at work will report being part of a comparatively less cohesive team.

The analysis of the data in the Hospital Study indicated that there was good support for the proposed model. The results suggested that friendships at work have a significant impact on respondents' satisfaction with their jobs, commitment to their organisation and intention to leave. In addition, the cohesiveness of employees' workgroups was significantly related to both opportunities for, and prevalence of, friends at work.

6.1.2 Internet Study

In order to assess how robust the proposed model was across different contexts, and to deal with some of the limitations of the first study, a larger Internet-based study was conducted and was described in Chapter Four. In addition to assessing the generalisability of the findings from the Hospital Study, a fourth research question, focusing on gender differences, was posed. Research Question 4 asked: *Are friendship variables differently correlated with other organisational variables for men and women?*

The larger data set made it possible to test a full structural equation model (SEM); the AMOS computer programme was used to carry out the SEM analysis. Taken together, the goodness of fit statistics reported in the Internet Study indicated that the proposed model was a good fit to the data. Most of the linkages between variables in the Internet Study related very closely to the findings in the Hospital Study, demonstrating good support for the theoretical model, and indicating that the proposed model was robust.

In this study, the effect of negative relationships was found to be far greater than in the initial study. The results supported the hypothesis and indicated that those with at least one negative relationship at work were significantly less satisfied, reported less organisational commitment, were part of less cohesive workgroups and were significantly more likely to be planning to leave their job.

With respect to the research question focusing on gender differences, the findings indicated that the presence of friends and opportunities for friendships at work are more strongly related to the leaving intentions of women than of men, suggesting that women

will be more directly affected by the presence or absence of close friends at work than men; it seems women may make a leaving decision based, at least in part, by the social opportunities their work offers. A second finding was that the workload sharing aspect of cohesion was significantly correlated with friendship opportunities and friendship prevalence for men but not for women, suggesting that women will form friendships at work whether or not they share work, but men are more likely to make friends if they are in a job involving shared activities with their colleagues. A third difference found between the genders was that job satisfaction was *not* significantly correlated with friendship prevalence for women, but was for men. This may relate to a tendency for women to make friends at work when they are *dissatisfied* in their jobs or, alternatively, may relate to Herzberg's (1966) two-factor theory of satisfaction (discussed further below).

Another finding, which came through in both the Hospital Study and Internet Study, was the difference in the way 'friendship prevalence' (the actual number of friends an employee has in the workplace) and 'friendship opportunities' (a generally friendlier work environment) relate to the other measured variables. While friendship opportunities related significantly to outcome variables such as job satisfaction and organisational commitment, friendship prevalence was not found to relate to satisfaction or commitment in either study, and was only weakly (though significantly) related to intention to leave in the Hospital Study.

6.1.3 Invariance Testing Study

The third study, described in Chapter Five, built on the previous two, by cross-validating the causal model and testing for invariance between sub-groups of respondents differing in need strength and interdependence of job. It was on the basis of four variables that the sample was divided and tested for group invariance of the model of workplace friendships. The four variables were: a) interdependence of work role, b) need for affiliation, c) need for autonomy and d) need for achievement.

It was found that the degree of interdependence in an individual's job influenced the relationships between the measured variables, while the subjective needs of employees

for autonomy, affiliation and achievement did not. Thus, it seems that the actual job someone does, and whether or not it is necessary to work with others in order to perform one's job, will affect the salience of informal interpersonal relationships at work, while whether or not individuals self-report having needs for autonomy and affiliation, will not.

6.2 Synthesis

On reflection of the findings described above and in the body of this thesis, it is possible to offer three main conceptual points.

1. The 'friendship prevalence' and 'friendship opportunities' variables seem to operate differently from each other; with friendship opportunities being linked more strongly to organisational outcomes than friendship prevalence. Friendship prevalence should therefore be conceptually distinguished from friendship opportunities by researchers, practitioners and within organisations.
2. The interdependence / autonomy of an employee's work role affects how applicable the theoretical model is, while the needs of employees do not; situations, therefore, appear to affect the salience of relationships at work, while individual differences in needs do not.
3. There are gender differences in the way friendships at work are related to job satisfaction, with friendships being significantly more strongly related to the job satisfaction of men.

6.2.1 Friendship Opportunities versus Friendship Prevalence

The first conceptual point focuses on the finding that a generally friendlier workplace (friendship opportunities) is something which employees seem to both value and to give credit to their employing organisation for. Friendship opportunities are a situational variable which, when provided by an organisation, are associated with increased job satisfaction, organisational commitment and reduced intention to leave. Friendship prevalence, on the other hand, was not found to be significantly related to job satisfaction, organisational commitment or intention to leave.

Several possible explanations for the difference between ‘friendship opportunities’ and ‘friendship prevalence’ were discussed in the body of the thesis, but the two most plausible explanations are: While friendship opportunities (a generally friendlier workplace) will result in increased commitment and satisfaction, friendship prevalence (the friends an individual has made) will not, because (i) friendships are initiated and maintained regardless of whether or not people are generally satisfied with their jobs or committed to the organisation, and (ii) individuals do not generally attribute to the organisation positive outcomes gained from the actual friends that they have made.

Related to the first point, an explanation for the finding that friendship prevalence seems unrelated to job satisfaction or organisational commitment is that there may be individual or situational differences in the ways friendship prevalence and satisfaction relate to each other. While a positive relationship between friendship prevalence and satisfaction may exist for some, it is likely that, for others, a positive relationship between *dissatisfaction* and friendship prevalence might exist, i.e., that those who report being dissatisfied with their jobs make more friends. The dissatisfaction → friendship prevalence relationship is related to findings by Sias and Jablin (1995) described in section 2.3.5, which suggested that feelings of dissatisfaction may lead co-workers to form and maintain close friendships as a form of alliance against the organisation. It is possible that *more* friendships may be made when people feel dissatisfied in ‘solidarity against the organisation,’ because they need the increased social support friends can provide when they are experiencing unhappiness or stress. Thus, a situation where friendships form when employees are dissatisfied may be as likely as one where satisfaction increases as a result of having more friends at work. Friendships therefore, may form regardless of the satisfaction of employees.

The second explanation for the difference between friendship prevalence and friendship opportunities, is that organisational members may be unlikely to ‘give credit’ to their employing organisation for the friends they have made at work. Some people will make friends more easily or will maintain their relationships more effectively than others, and this individual difference will likely exist regardless of the situation the individuals are

in. In addition, if an employee does not identify strongly with their organisational role, they may see their friendships at work as separate from their relationship with the organisation (Amason & Allen, 1997) and, as a result, friendships will be unlikely to have organisational outcomes. Friendship *opportunities*, on the other hand can be attributed to the organisation, as a generally friendly work environment is something employees can easily see their employing organisation as having provided, and it is therefore likely to improve commitment. The extent to which organisational members identified with their employing organisation, or attributed positive outcomes of friendship to their organisation were not specifically investigated in the current studies, so the possible effect of these variables can only be speculative at this stage.

It is possible that, while ‘friendship opportunities’ is an environmental / situational variable (those in a friendly *workplace* will score higher on the friendship opportunities scale), ‘friendship prevalence’ might be a personal / dispositional variable (friendly *people* will have more friends, and will score higher on the friendship prevalence scale). The two variables are of course closely related, both because friendship opportunities may be a necessary condition for friendships to form and because, related to Schneider’s (1987) attraction/selection/attrition model (refer section 5.1.1), given the opportunity, individuals with high needs for affiliation (a personal variable) are likely to select, and remain in, friendly workplaces (a situational variable).

6.2.2 Interdependence of Work Role versus Individual Differences in Needs

The situational / dispositional differentiation also comes through in the second major conceptual point, which derives from the finding that the interdependence of an employee’s *work role* affects the linkages between relationship factors and organisational outcomes, while the *needs* of employees will not. Again the situation, in this case the type of work role, impacts on the salience of friendships at work, with the model fitting better for those in an interdependent work role. On the other hand, the personal variables, in this case individual differences in needs for affiliation, autonomy and achievement, did not seem to have a significant effect on the way friendship variables related to organisational outcome variables.

6.2.3 Gender Differences

Do any human characteristics have an effect on the impact of friendships in the workplace? One construct that did seem to make a difference was the gender of employees. The third conceptual point focuses on gender differences outcomes of organisational friendships, suggesting that men and women differ in the ways they approach friendships at work.

The finding, discussed above, that ‘friendship prevalence’ and ‘friendship opportunities’ operate differently for people in organisations, can be related to the finding that job satisfaction was *not* significantly correlated with friendship prevalence for women, but was for men. It is possible that women, particularly, will form strong friendships and lean on their colleagues for social, emotional and instrumental support when they are dissatisfied with aspects of their work environment. If women’s friendships strengthen in situations where they are unhappy or dissatisfied with their jobs, a significant positive relationship between satisfaction and friendship prevalence will not be found, even if having more friends at work does improve job satisfaction, i.e., the two processes (friendships being associated with an increase in satisfaction, and friendships also being associated with an increase in dissatisfaction) will cancel each other out. In times of adversity, when conditions are bad, women may be more likely to make and keep friends than men. Men are perhaps less likely to demonstrate a negative relationship between friendships and job satisfaction, because they are less likely than women to seek emotional and social support from their colleagues when times are bad (Ashton & Fuerhrer, 1993). Thus, a positive relationship between friendships at work and job satisfaction will be more apparent for men.

The current study is not the first to find friendships at work significantly correlated with organisational outcome variables for men but not women. In a study set in a university and two engineering firms in the United States, Amason and Allen (1997) found that, regardless of the quality of their relationships with colleagues, women’s perceptions of organisational support⁵⁰ did not change. On the other hand, males reporting positive co-worker relationships also indicated higher perceived organisational support. It seems

⁵⁰ Perceived organisational support is closely related to organisational commitment (Allen, 1992).

that males were more likely than females to feel that their organisation cared about them when they had more and better friends at work (Amason & Allen, 1997). In other words, males ‘credited’ the organisation for their friendships in a way that females did not. Females probably got as much pleasure from their workplace friendships, but were less likely to attribute these positive outcomes to the organisation. Again, the degree to which respondents in the current study attributed positive outcomes of interpersonal relationships to the organisation was not directly measured, but is a direction for future research, both in the context gender differences and individual differences.

Identifying why the friendship prevalence → job satisfaction relationship is significant for men but not women⁵¹ can only be speculative here, as this was not a primary focus of the current study. Perhaps, as discussed above, women will make more friends than men when they experience dissatisfaction. Alternatively, previous research on relationships suggests that men derive satisfaction and identity from being part of a team (Amason & Allen, 1997; Markiewicz et al., 2000; Winstead, 1986). So perhaps when men have friends at work, compared to when they do not, they will work better and more successfully within the team, achieve more goals and thereby derive satisfaction from their job. Then again, it might be, as Amason and Allen (1997) propose, that women do not identify as strongly with their organisational role as men do, they may see their friendships at work as more separated from their relationship with the organisation, thus friendships will not have organisational outcomes for women. Finally, it is possible that women simply *expect* to have friendships at work. Thus, in the absence of friends, women will be dissatisfied, but the presence of friendships will not have positive outcomes any more than other expected outcomes of working will (for example, their wages). In other words, women may perceive friendship as a necessary aspect of work, whereas men may see their organisational friendships as an added bonus. This final point relates to Herzberg’s (1966) well-known two-factor theory of satisfaction (refer section 2.1.2).

⁵¹ Note: The gender of the person whom respondents were friends *with* was not assessed, either in the current study, or in Amason and Allen (1997). The friendship dyads discussed will likely include both same sex and cross sex relationships.

Herzberg (1966) postulated that factors intrinsic to the nature and experience of doing work were job satisfiers or 'motivators' while extrinsic factors, including interpersonal relationships, were job 'dissatisfiers' or 'hygiene' factors. In Chapter Five (section 5.1.2), the possibility was discussed that, for people in certain roles, interpersonal relationships *are* intrinsic to the experience of doing work, and therefore interpersonal relationships cease to be hygiene factors (as Herzberg et al. propose) and are, instead, motivators. There was support in the current study for the idea that the degree of interdependence in a work role may cause informal relationships to be more salient.

In terms of the gender findings, it seems that the gender of employees may be related to whether or not interpersonal relationships are motivators or hygiene factors. It was found that, for men, there was a significant positive correlation between satisfaction and friendship prevalence, implying that friendships at work operate as a 'satisfier' or 'motivator' for men, improving job satisfaction. For women, on the other hand, not only was there no significant relationship between satisfaction and friendship prevalence, but there was a significant negative correlation between intention to leave and all the relationship measures (cohesion, friendship opportunities, friendship prevalence). This implies that, for women, friendship acts as a 'dissatisfier' or a 'hygiene' factor, inasmuch as women will be more likely to be intending to leave their job if they report having few or no friends at work, and will be more likely to be intending to stay if they report having more friends at work. It is possible that having, or not having, friends at work may be enough to influence female employees' leaving decisions. In other words, friendships in the workplace are motivators for men; they will improve satisfaction if they are present; while for women, the absence of friends at work will cause dissatisfaction; acting as a hygiene factor as Herzberg proposed.

Although there has been historical criticism of Herzberg's two-factor theory (Hackman & Lawler, 1971; Hulin & Smith, 1967; King, 1970) it is often used to provide a framework within which to interpret job satisfaction research (e.g., Adigun & Stephenson, 1992; Furnham et al., 1999; Knoop, 1994; Maidani, 1991; Yamashita, 1995) (refer section 2.1.2 for a discussion of the criticism and a description of more recent studies utilising the Herzberg's two-factor theory).

6.3 Future Directions

Three directions for future research are (i) investigating the effects of friendships at work on performance, (ii) examining the impact of negative relationships in the workplace and (iii) investigating the effect of factors such as organisational identification and/or attribution on the relationship between friendship prevalence and organisational outcomes. The first two enquiries have been discussed within the body of the thesis so are outlined only briefly below. The third direction for future research arose from attempts to explain some of the findings in the current studies; these hypotheses have not been discussed previously and so are described in more detail here.

6.3.1 Performance

It would be interesting to examine the possible links between friendship opportunities, friendship prevalence and performance. Performance was not examined in the current study, and findings from previous research have been somewhat mixed. Friendships in the workplace have been associated both positively (Campion et al., 1993; Jehn & Shah, 1997; Ross, 1997) and negatively (Bramel & Friend, 1987; Eisenberg, 1994) with job performance (refer section 2.3.3). Thus, It would be worthwhile to examine whether (or in what circumstances) friendship prevalence or opportunities have an effect on job performance.

6.3.2 Negative Relationships

Negative relationships are defined and discussed in section 2.3.7. Although some data on negative relationships were gathered in the current study, the impact of these relationships was not really within the scope of this thesis. Preliminary findings do suggest, however, that the effect of 'enemies' on individual's experiences of work can be profound. Examining how negative relationships form, looking at the effect of negative relationships in the workplace and determining how they might be managed are certainly areas that warrant further research.

6.3.3 Organisational Identity and Attributions of Responsibility

The links from 'friendship prevalence' to 'job satisfaction' and 'organisational commitment' are aspects of the theoretical model that warrant further research. Much of the qualitative data with a focus on these variables indicates that people believe friendships improve their experience of work a great deal. Indeed, it makes intuitive sense that, if friendships make us happier in our workday, this positive affective response will cause us to be more satisfied with our job and, consequently, more committed to the organisation. Yet a friendship prevalence → satisfaction link was not convincing in the studies described in this thesis. Two possible variables, which may affect any relationship friendship prevalence might have with satisfaction and commitment, are (i) the degree to which employees *identify* with their organisation, and (ii) the degree to which employees will *attribute* positive outcomes of their friendships to the organisation.

Defining organisational identity

The social identity perspective of organisational identity defines it as the perception of sharing experiences of a focal group and sharing characteristics of the group's members (Ashforth & Mael, 1989; Mael & Tetrick, 1992). In recent years interest in the topic of organisational identity has increased dramatically; there have been special issues devoted to the topic (Albert, Ashforth, & Dutton, 2000; van Knippenberg & Hogg, 2001), and the number of articles whose titles and/or abstracts make reference to the term 'organisational identity' has risen exponentially since 1988 (Haslam, Postmes, & Ellemers, 2003). In the workplace, employees might define themselves in terms of team, departmental, organisational or professional identities (Haslam et al., 2003; van Knippenberg & van Schie, 2000). In addition, other types of social identity can also become salient in organisations (e.g., based on gender, class, and ethnicity). Irrespective of the specific components defining these forms of organisational identity, each will define the individual in terms of a social identity that is shared with other members of an in-group but not with members of an out-group (Haslam et al., 2003).

It is hypothesised that organisational members who identify strongly with the organisation (i.e., see themselves as part of the 'organisational in-group') may see their

friendships at work as being connected to their relationship with the organisation, thus friendships will be more likely to have organisational outcomes for those with a strong organisational identity. If an employee views their identity as wholly separate from their work identity, on the other hand, they are unlikely to define their relationships within the organisational context (Amason & Allen, 1997) and may not, therefore, give credit to the organisation for the positive outcomes of their friendship.

Defining attribution

There are different types of attribution, and attribution theory can be applied to (i) understanding the *causality* for an event, (ii) assessing *responsibility* for a particular outcome, or (iii) assess the *personal qualities* of those involved in an event (Lord & Smith, 1983). Relevant to the current enquiry, is the second type of attribution; *assessing responsibility for an outcome*. In this case, the focus is the presence of friendships at work, and whether or not employees will attribute positive outcomes of these friendships to the organisation. Although attributions concerning responsibility assessments are usually examined in the context of administering blame or sanctions (e.g., Hamilton, 1980; Hamilton & Sanders, 1992; Sanders, Hamilton, & Yuasa, 1998), attributions have also been examined in the context of giving credit or reward for positive outcomes or behaviours (e.g., Allen & Rush, 1998; Allen, Russell, & Rush, 1994; Crant & Bateman, 1993; Johnson, Erez, Kiker, & Motowidlo, 2002).

Generally the attributions for responsibility are studied in the context of an individual (e.g. the behaviour of a leader, manager or employee) rather than an employing organisation. However, it may be possible to examine the degree to which employees attribute positive phenomena, such as friendships, back to the organisation (i.e., *'the organisation has made it possible or me to have these friends'*); versus attributing the presence of friends to their own effort (i.e., *'I am a friendly person and I have put a lot of energy into developing and maintaining my friendships; I would have made these friends regardless of the organisational practices'*). It is hypothesised that if an employee attributes positive outcomes of their workplace friendships to the organisation, there will be an increase in organisational outcomes such as job satisfaction or organisational commitment. If, however, the individual does not 'give

credit' to the organisation for their workplace friendships, the friendships are unlikely to result in an increase in job satisfaction or commitment.

Adding attribution and identification to the theoretical model

Attribution and identification can be added to the existing theoretical model as potential mediators. Figure 29 shows a hypothesised relationship between friendship prevalence and job satisfaction. Figure 29 shows that friendship prevalence will be associated with increased job satisfaction, but only if an employee either identifies strongly with their organisation or attributes the positive outcomes of friendships at work to their organisation. The relationships between job satisfaction and commitment, with intention to leave remain unchanged from the original model as these linkages were well supported by the current studies and are also in line with previous research (e.g., Porter et al., 1974; Riordan & Griffeth, 1995; Tett & Meyer, 1993).

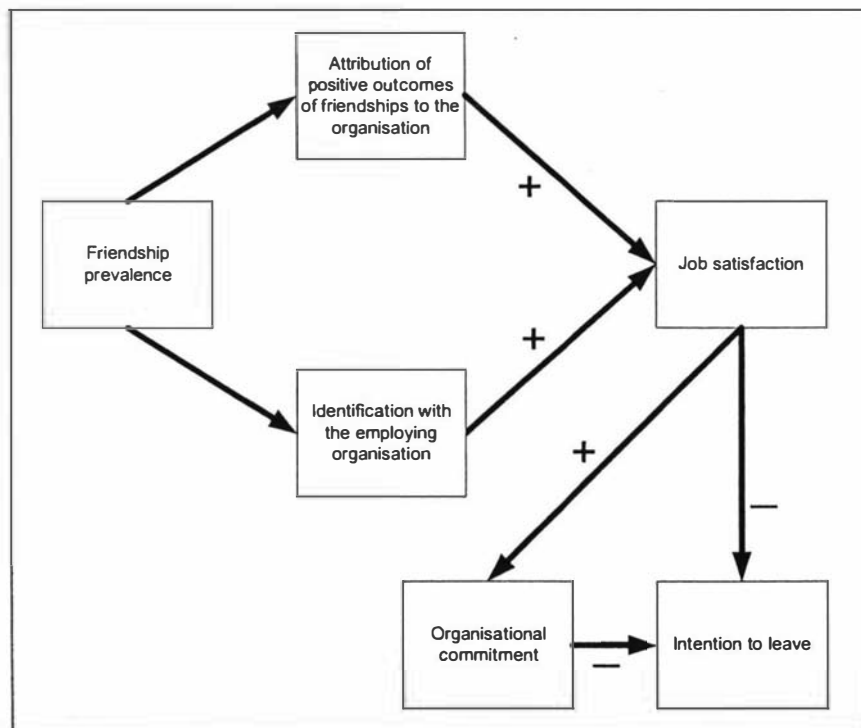


Figure 29: The hypothesised mediating effect of identification and attribution, on the relationship between friendship prevalence and job satisfaction.

An alternative relationship between the variables is shown in Figure 30. Here, whether or not an employee attributes positive outcomes of their friendships to the organisation is modelled as being a consequence of the degree to which they identify with their

employer. According to this model, friendship prevalence will result in satisfaction if (and only if) the employee attributes positive outcomes of their friendships to the organisation, but the level of attribution is hypothesised to be dependent upon whether or not the individual identifies strongly with their organisation.

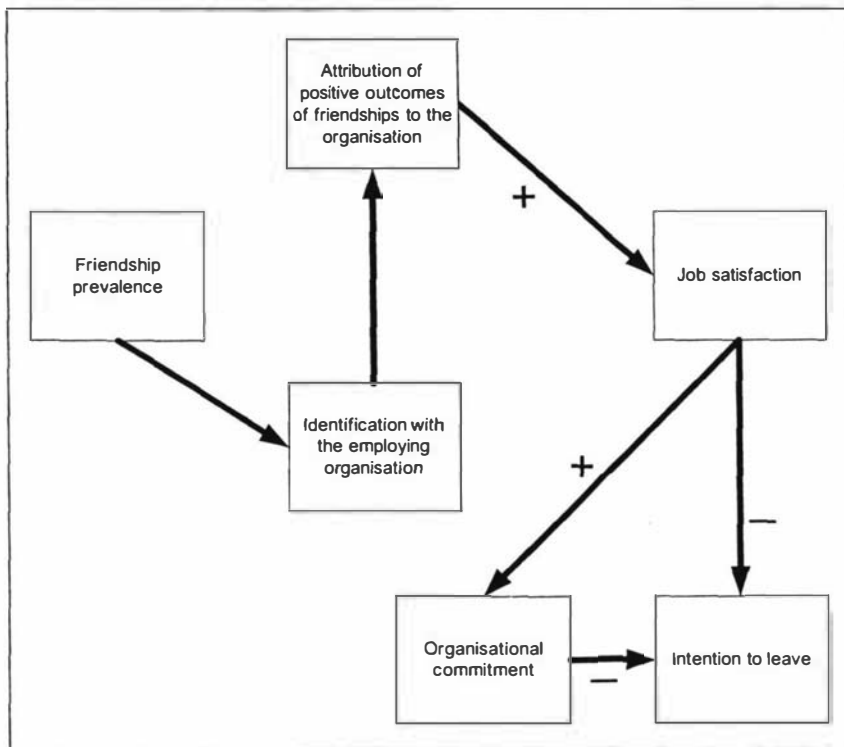


Figure 30: Alternative hypothesised mediating effect of identification and attribution, on the relationship between friendship prevalence and job satisfaction.

The link between ‘identification with their organisation’ and ‘attributions of positive outcomes of friendship’ can, perhaps, be related to Pettigrew (1979) who described the “ultimate attribution error.” The ultimate attribution error is the tendency to *internally* attribute bad out-group and good in-group behaviour, and *externally* attribute good out-group and bad in-group behaviour (Pettigrew, 1979). A person who identifies strongly with their employing organisation (i.e., has strong organisational identity) will be likely to consider other organisational members, and the organisation itself, as aspects of their own in-group (Haslam et al., 2003). Although Pettigrew focused on behaviour, and did not specifically discuss attributions for friendships, it is possible to take the theory a step further and, following Pettigrew’s logic, hypothesise that any positive outcomes of belonging to the in-group will be attributed to internal causes (in this case, positive

outcomes of friendships at work being attributed to a “good” organisation). On the other hand, an individual who does not identify strongly with the organisation (i.e., does not consider themselves to be part of the organisational in-group) will be less likely attribute positive outcomes of their friendships to the organisation. Instead, positive outcomes will be attributed to phenomena external to the organisation (most likely they will give themselves the credit for the positive outcomes of the friendships they have formed and maintained).

It is also possible that organisational identification acts as a moderator between friendship prevalence and job satisfaction; perhaps, as individuals identify more strongly with their organisation, the friendship prevalence → job satisfaction relation becomes stronger. It would be interesting, in the future, to empirically test these hypotheses, perhaps measuring ‘organisational identification’ and ‘attribution for friendships’ along with relationship factors and organisational outcomes.

6.4 Implications

It is worth reflecting on how findings described in this thesis might be used by employing organisations, employees and/or organisational psychologists. First, can the findings be used to enhance the quality of work life? Second, are there some situations where the findings might have more relevance? Third, are there any possible negative applications?

6.4.1 Enhancing the Quality of Work Life

Because findings in the current study implied that the situation, work environment and/or type of job affects the salience of friendships at work more than personal variables or individual differences, it may be that organisational psychologists aiming to engender organisational change in the area of interpersonal relationships should be turning their focus to situational / organisational variables rather than personal / individual ones. Organisational psychologists should not entirely disregard the traditional psychological focus on the individual, but perhaps they would be wise to maintain an awareness that, to increase the likelihood of positive outcomes both for organisations and individuals, they should look at situational variables such as friendly

work environments, rather than focusing specifically on trying to increase the number of friends employees have. Making friends is something that employees will do for themselves if *they* want to, and may have little to do with characteristics of their occupation, organisation or job.

Similarly, if organisational psychologists attempt to ascertain in which circumstances friendships in the workplace are most salient, they might do well to look *not* at individual differences in employees (such as needs), but rather at differences in the type of job people do. In other words, organisational psychologists should perhaps focus their attention on whether the role is interdependent (where relating meaningfully to others in an integral part of doing the job well), versus autonomous (where jobs can be done satisfactorily on one's own), when planning interventions related to workplace relationships, either for management or to improve individuals' work environments.

The importance of situational factors is good news for management as, although there are limits to what an organisation can do in terms of planning interventions aimed at improving informal relationships at work, one thing that organisations *can* do is alter the work environment and associated 'office policy' or 'house rules;' specifically by increasing opportunities for friendships to form. The following items are the behavioural facets underlying the 'friendship opportunities' construct:

- Communication among employees is encouraged by my organisation.
- In my organisation I have the opportunity to talk informally and visit with others.
- I have the opportunity to get to know my co-workers.
- I am able to work with my co-workers to collectively solve problems.

Thus, any intervention aimed at increasing opportunities for friendships in the workplace could logically include changes that would increase the likelihood of employees agreeing with the above statements.

6.4.2 Situations Where the Findings Might have More Relevance

Given that it is important (in terms of satisfaction and organisational commitment) for organisations to provide friendship opportunities, will some organisations be likely to benefit more than others from organisational change that focuses on interpersonal relationships? The results of the third study indicate that those organisations with many organisational members working in highly interdependent work roles will benefit most. In addition, the third study implied that there is less need to focus on the individual differences or the needs of employees, as individual differences in needs did not seem to affect the linkages between friendship factors and organisational outcomes. For example, selecting employees based on their subjective needs may not be as productive as analysing the job characteristics, i.e., focusing on the situation or work environment.

Another aspect of the work environment, that may affect how the findings reported in this thesis might be applied, is the gender composition of the workplace. One implication of the findings, suggesting that there are gender differences in the organisational outcomes of friendships, is that it may be useful to conceptualise relationship factors differently in predominantly male workplaces than in predominantly female ones. In male dominated work environments friendship prevalence is likely to be associated with increased job satisfaction. Therefore, an increased number of friendships will probably have positive organisational outcomes. In addition, because there were findings that sharing work with colleagues will be associated with an increase in friendships for men, jobs involving group tasks and teamwork are likely to increase friendships (and therefore satisfaction) in these male dominated work environments.

For women, on the other hand, friendship prevalence is associated, not with an increase in satisfaction, but with a decrease in turnover. Where staff retention is an aim, organisations that are predominantly female could encourage the formation of friendships among the staff. In the context of Herzberg's two-factor theory, friendships seem to operate as 'hygiene' factors for women. Herzberg maintained that hygiene factors cannot produce pleasure but, by their absence, will create dissatisfaction and consequently turnover. By this logic, although there is a link between satisfaction and

friendship for men but not women, it is perhaps *more* essential to ensure that female employees have satisfying interpersonal relationships at work as, without them, they will be comparatively dissatisfied and may leave their jobs.

Another aspect of an employees work environment, which was found to affect respondent's experience of work, was the presence of negative relationships. Findings in the Internet Study (Chapter Four), that employees with at least one negative relationship (compared to those not reporting any negative relationships) reported significantly lower satisfaction and commitment and significantly increased intention to leave, imply that the impact of negative relationships on employees' experience of work may be even more substantial than that of friendships. Targeting interventions, aimed at improving workplace relationships, towards workgroups or dyads where negative interactions such as concealment, manipulation, conflict, disrespect, disagreement and/or animosity are frequent may be a way to improve morale and commitment. In addition, in their qualitative responses, respondents often mentioned the presence of a negative relationship as a reason they chose to leave their jobs; so attempting to reduce negative interactions between employees, perhaps by creating a more friendly and supportive work environment, may also be an effective way to reduce turnover.

6.4.3 Possible Negative Implications

In Industrial Organisational Psychology it is not always clear who the client is; is it the individual or the organisation? Who is served by research and subsequent interventions or application of theory? As ethical researchers we must ask ourselves if there are any negative or dangerous implications to our findings; this is pursuant to aspects of Principle IV⁵² of the *Code of Ethics* (2002). Can our research be misused? Can it be applied by organisations so that the outcome is detrimental to the individual? Although it is difficult to imagine a situation where application of the findings described in this

⁵² 4.1. *Welfare of society.* Psychological knowledge will be increased, and psychology will be practised, in such ways as to promote the welfare of society.

4.3. *Benefit to society.* Psychologists strive to ensure that psychological knowledge, when used in the development of social structures and policies, will be used for beneficial purposes.

4.4. *Accountability, standards and ethical practice.* Psychologists strive to ensure the appropriate and relevant use of psychological knowledge, practices and structures, and to avoid their misuse ("Code of Ethics for Psychologists Working in Aotearoa/New Zealand," 2002).

thesis could be misused, there is a link between a probable antecedent and a consequence of female friendships at work, which could perhaps go some way towards explaining why some women stay in aversive work environments.

In light of the evidence that friendship prevalence may increase when employees are dissatisfied or unhappy in their jobs (Carr, 2003; Sias & Jablin, 1995), it is possible that, although friendships at work can provide emotional support and enjoyment for employees, a high proportion of close relationships in the workplace may actually be symptomatic of problems within the organisation. When this possibility is considered alongside a finding that women are less likely to be planning to leave their jobs if they have friendships at work, it brings up an interesting ethical dilemma. Given the probability that women will form close friendships in poor work environments, coupled with findings that they will be inclined to stay in their jobs if they have friends at work, it is possible to imagine a situation where this link can be abused. If an organisation provides opportunities for friendships to form, in an otherwise unsupportive or unpleasant work environment (two factors likely to increase the actual prevalence of friends) perhaps female employees will continue to work there, even though it is, perhaps, in their best interests to leave. Where is the incentive for management to improve conditions if the women will stay anyway, so long as they have friends?

Although perhaps not directly applicable to the sample of respondents in the current study, it is possible to speculate about the processes described above operating in sweatshops and sewing factories. Given that at least some of them must have a choice, why do women put up with such terrible working conditions? In addition to sheer economic necessity, perhaps it is also partly the camaraderie and social support the women receive from their fellow employees; the close friendships they form may indeed be enough to reduce turnover. Recent works of fiction, based on real-life experiences of women in sewing factories, such as *Brick Lane* (Ali, 2003) and *Four Fires* (Courtenay, 2001) have documented the lives of these women. *Brick Lane*, for example, gives a poignant account of the experiences of a woman in India, working in exploitative conditions which would be illegal in most countries, but who regards her time in the sewing factory as one of the happiest in her life, primarily because of her

relationship with her “sisters” in the factory. A negative implication might therefore be, that an organisation can provide poor work conditions and, up to a point, bad quality supervision to a predominantly female staff and, so long as they make friends, they will remain in the organisation and turnover will be reduced.

6.5 Conclusion

This study sits within the quality of work life movement, focusing both on the fulfilment of social needs in the workplace and on related organisational outcomes. Overall, findings indicate that improving the quality of work life by creating the opportunity for the fulfilment of social needs will have a profound effect, both on individuals and within organisations. It seems women, particularly, perceive their friendships at work to be an essential aspect of their work life. Individuals working in highly interdependent jobs are also likely to be affected by the presence of a friendly work environment. This may be solely due to aspects of the job, or may be because (related to Schneider’s (1987) attraction/selection/attrition model), individuals who are more relationship focused may select more interdependent work roles, and those who do not have a relationship focus will be likely to be the first to leave a very interdependent job. Finally, although specific ‘workplace interventions’ are unlikely to increase the number of friends people actually make, management should perhaps not be overly concerned, as the provision of a generally friendly *workplace* may be what improves organisational commitment and job satisfaction.

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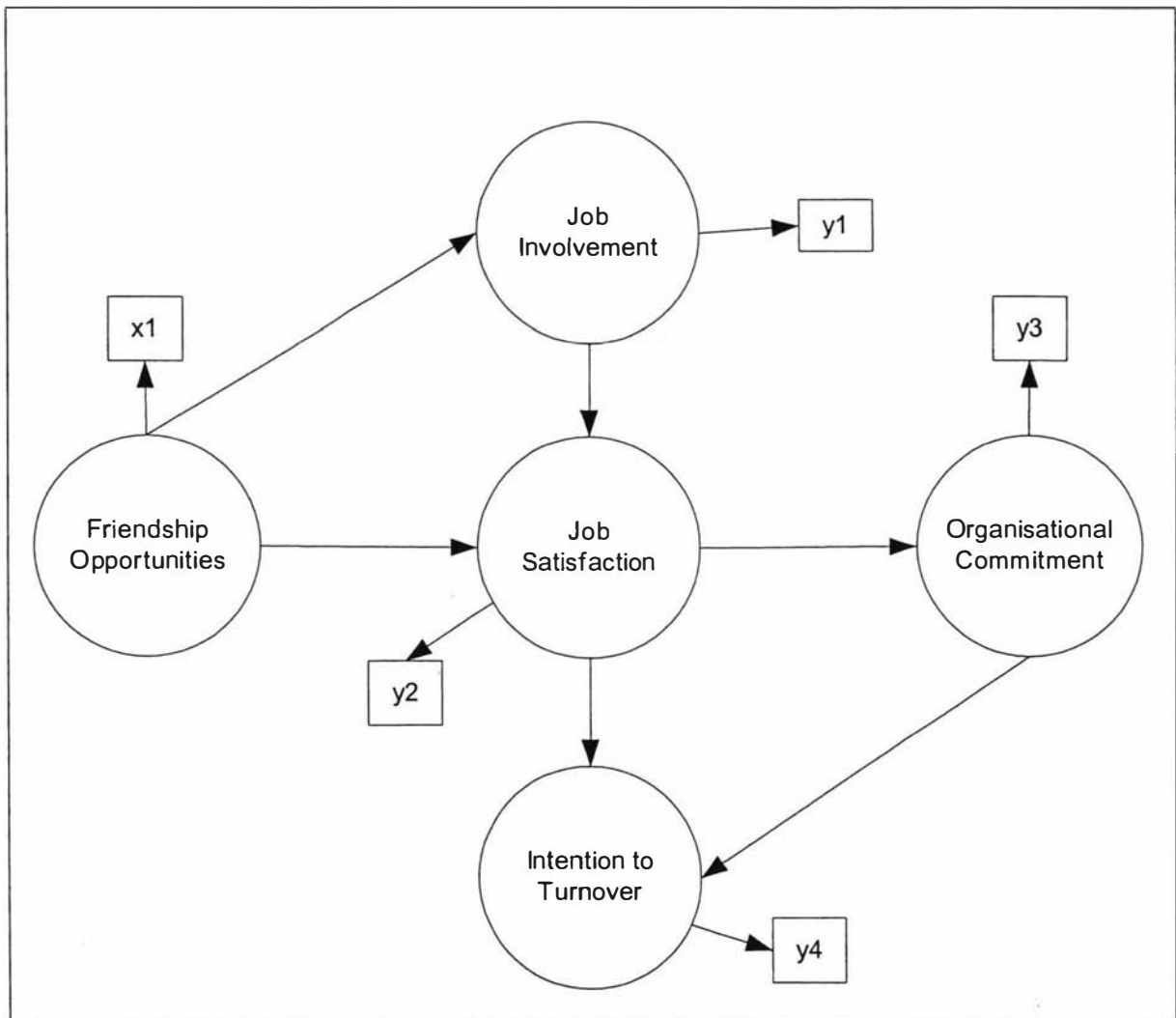
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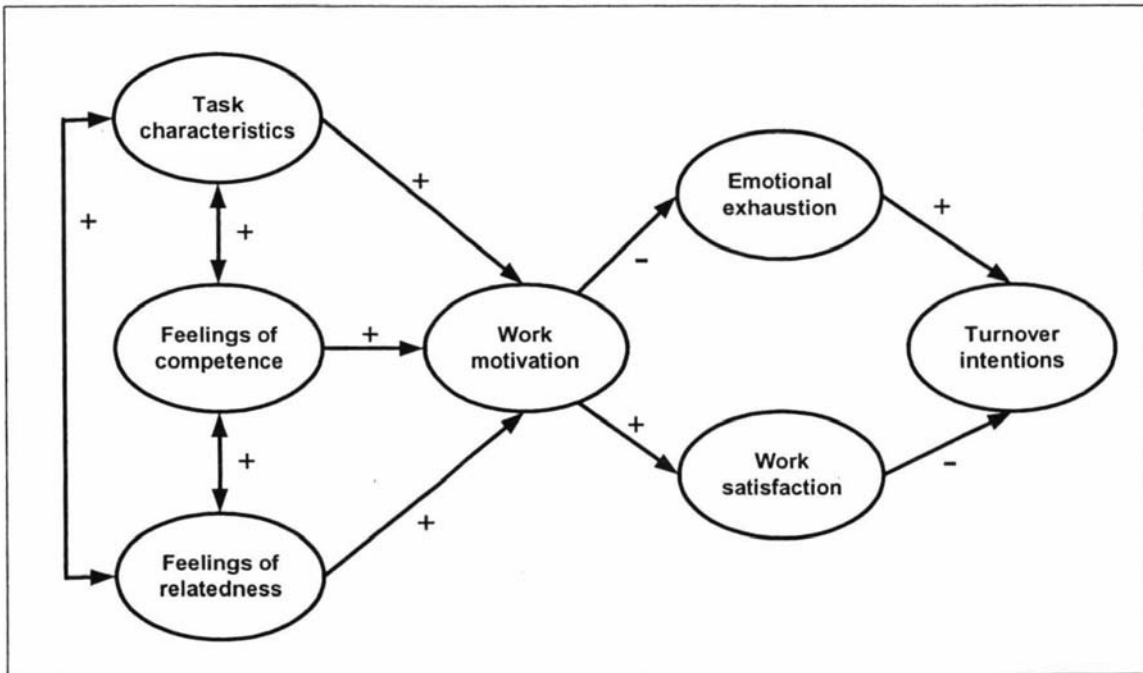
Appendices

Appendices for the Literature Review (Chapter 2)

Appendix A: Riordan and Griffeth's (1995) Latent Variable Representation of Friendship Opportunity Model

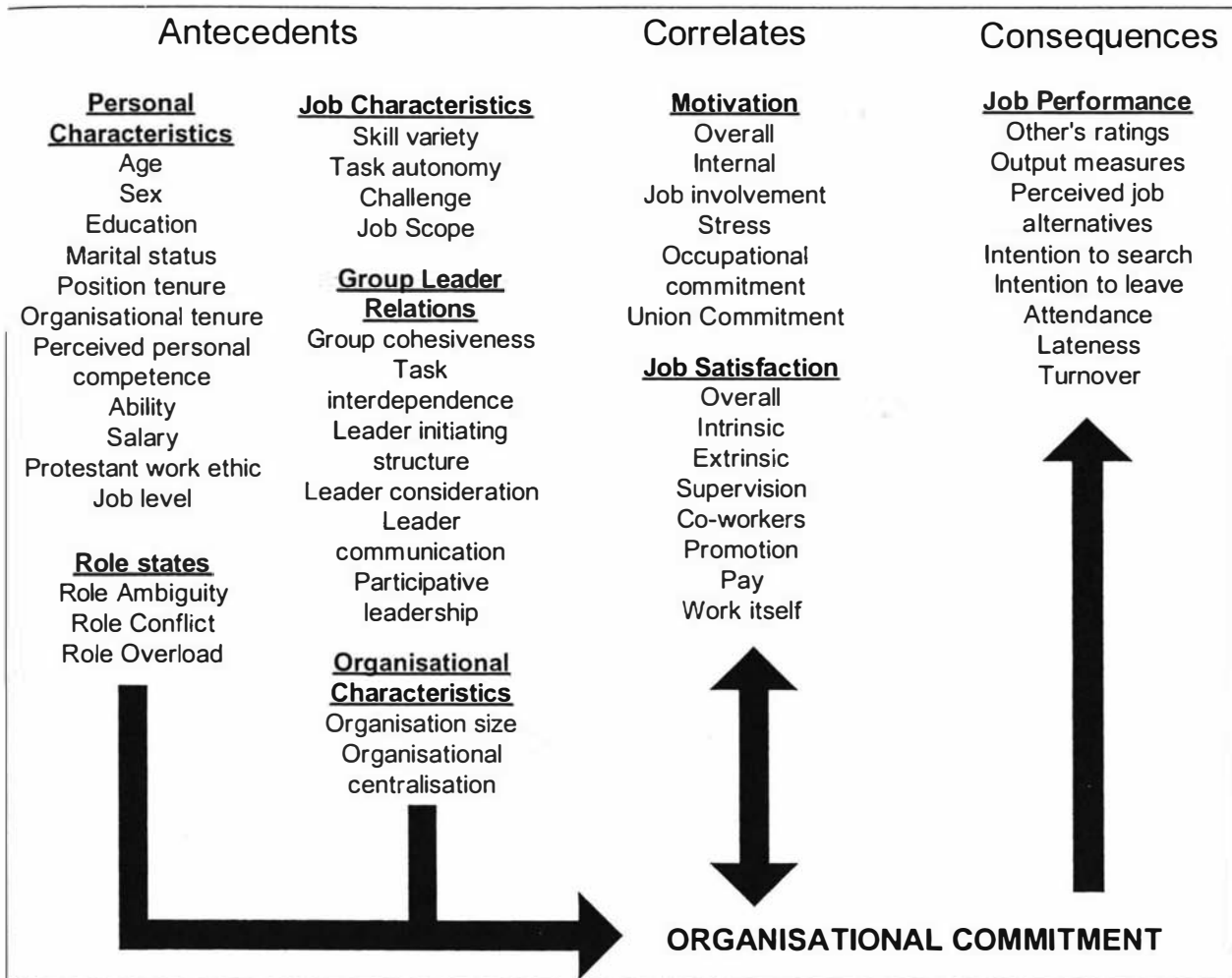


Appendix B: Richer, Blanchard and Vallerand's (2002) Model of Work Turnover



Appendix C: Antecedents, correlates and consequences to organisational commitment.

From Mathieu and Zajac (1990)



Appendix D: Irvine and Evans' (1995) Model of Nurse Turnover Behaviour.



Appendices for the Hospital Study (Chapter 3)

Appendix 1: Information Sheet

[Massey University letterhead]

An Investigation of Informal Relationships in Organisations
Information Sheet

Invitation You are invited to take part in a study investigating informal interpersonal relationships in organisations.

The research is a joint undertaking by Rachel Morrison, Massey University and Waitemata DHB.

You have the right to not participate if you do not wish to.

Introducing the researcher My name is Rachel Morrison, and I am interested in the effects of *informal relationships* on outcomes such as Organisational Commitment and Job Satisfaction. I am completing this research as part of my doctoral degree.

All contact details are given below.

Why we are doing this research The study of relationships in the workplace is important because informal social relations may offer significant and rewarding benefits to *individuals*. Friendships can provide increased communication, trust, respect, co-operation, support and security that, in turn, can influence work related attitudes and behaviours. On the other hand, there may be negative consequences of close friendships.

The information obtained will be used to better understand the impact informal relationships on individuals and organisations.

Your input You can participate in the research by completing this set of questionnaires and surveys. The questionnaires will take **15-25 minutes** to complete (depending on the amount of detail you choose to include in the open ended questions at the end.)

Protecting your privacy NO material that could personally identify you will be used in any of my reports, ensuring that the information you provide is confidential and completely anonymous.

No respondents will be identifiable by the organisation.

Data will be archived and destroyed after a period of 5 years.

Your rights You have the right to:

- Decline to participate,
 - Refuse to answer any particular questions
 - Ask any questions about the study
 - Be given access to a summary of the findings of the study when it is concluded
 - Withdraw from the study at any time **up until you have returned your anonymous set of questionnaires and surveys.**
-

Contact details Please feel free to contact my supervisor or me if you have any concerns or questions about this study.

Who	Massey University	Phone	email
Rachel Morrison (Researcher)	School of Psychology	021 1142800	rachel.morrison.3@uni.massey.ac.nz
Stuart Carr (Supervisor)	School of Psychology	09 443 9700 extn 9073	S.C.Carr@massey.ac.nz

Approval This project has been reviewed and approved by the Massey University Regional Human Ethics Committee, Albany Campus, Protocol MUAHEC 02/005. If you have any concerns about the conduct of this research, please contact Associate-Professor Kerry Chamberlain, Chair, Massey University Regional Human Ethics Committee, Albany, ph 09 443 9799, email K.Chamberlain@massey.ac.nz

Appendix 2: The Workplace Friendship Scale

Listed below are a series of statements that represent opinions people might have about friendships in their organisation. Indicate the extent to which you agree with the statements about the organisation where you are now working (by circling the numbers), using the scale at the top of the Table.

Items measuring the Friendship Dimension	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
I have the opportunity to get to know my co-workers	1	2	3	4	5
I am able to work with my co-workers to collectively solve problems	1	2	3	4	5
In my organisation I have the opportunity to talk informally and visit with others	1	2	3	4	5
Communication among employees is encouraged by my organisation	1	2	3	4	5
I have the opportunity to develop close friendships at my workplace	1	2	3	4	5
Informal talk is tolerated by my organisation as long as the work is completed	1	2	3	4	5
Items measuring the Friendship Dimension	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
I have formed strong friendships at work	1	2	3	4	5
I socialise with co-workers outside the workplace	1	2	3	4	5
I can confide in people at work	1	2	3	4	5
I feel I can trust many co-workers a great deal	1	2	3	4	5
Being able to see my co-workers is one reason I look forward to my job	1	2	3	4	5
I do not feel that anyone I work with is a true friend (R)	1	2	3	4	5

Appendix 3: Relationships in the workplace

1. Please read the definition of a **SPECIAL PEER**:

You consider this person a best friend. You would be friends with this person even if you didn't work together. You consider this person much more than merely a co-worker and feel you know each other very well.

Are there any people who you work with who you would consider to be a special peer?
(please circle)

Yes No

If yes, how many? _____

2. Please read the definition of a **COLLEGIAL PEER**:

This person is a work buddy. You might not share every detail of your life with this person, but this person is more than merely an acquaintance. You may consider this person a friend or a colleague and interact with this person fairly regularly on an equal basis.

Are there any people who you work with who you would consider to be a collegial peer?
(please circle)

Yes No

If yes, how many? (approximately) _____

3. Please read the definition of an **INFORMATION PEER**:

You do not know this person very well or feel very close to this person. You consider this person an acquaintance more than a friend. You do interact with this person on a fairly regular basis but you would probably not continue the relationship if you did not work here.

Are there any people who you work with who you would consider to be an information peer?
(please circle)

Yes No

If yes, how many? (approximately) _____

4. Please read the definition of a **NEGATIVE RELATIONSHIP**:

This person is not one of your friends. You do interact with this person on a fairly regular basis but you would definitely not continue the relationship if you did not work here. Your interaction with this person is characterised by disrespect, disagreement, dislike, conflict and/or animosity. You would rather not have to interact with this person.

Are there any people who you work with who you would consider to have a negative relationship with?
(please circle)

Yes No

If yes, how many? _____

Appendix 4: Dual Role Tension

1. Do you have a close friend (*Special Peer*) at (*Please circle*) **YES** **NO**
work that is also someone who you *work with*?

If **YES** please complete the following questionnaire with reference to the close friend.

2. Have you have *previously* had a close (*Please circle*) **YES** **NO**
friendship with a work-mate?

If **YES** please complete the following questionnaire with reference to the close friend. If **NO** you do not need to complete this section.

Listed below are a series of statements that represent possible feelings people might have about a friendship at work. Indicate the extent to which you agree with the statements (by circling the numbers), using the scale at the top of the Table, and referring to the friend you mention in question 1. or 2. (top of this page).

	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
Overall, the friendship half and the work half of our relationship interfere with each other, creating problems for us.	1	2	3	4	5
Our relationship would be a lot easier if we were only friends or only work associates instead of being both.	1	2	3	4	5
Our work relationship and our friendship are often in conflict with one another.	1	2	3	4	5
Problems rarely arise because our friendship and our work relationship are so much a part of each other. (R)	1	2	3	4	5
It requires extra effort to maintain both the friendship side and the work side of our relationship.	1	2	3	4	5
My friend and I have lowered our expectations about what we expect as both friend and co-worker in order to maintain our relationship.	1	2	3	4	5

Appendix 5: Measure of Workgroup Cohesion

Do you work as part of a work group or team? *(Please circle)* **YES** **NO**

If **YES** please complete the following questionnaire,
if **NO** you do not need to complete this section.

Listed below are a series of statements that represent possible feelings people might have about their work group or team. Indicate the extent to which you agree with the statements with reference to your own work group or team (by circling the numbers), using the scale at the top of the page.

	<i>Strongly disagree</i>	<i>Disagree</i>	<i>Neither agree nor disagree</i>	<i>Agree</i>	<i>Strongly agree</i>
<i>Social Support</i>					
Being in my team gives me the opportunity to work as a team and provide support to other team members.	1	2	3	4	5
My team increases my opportunities for positive social interaction.	1	2	3	4	5
Members of my team help each other out at work when needed.	1	2	3	4	5
<i>Workload sharing</i>					
Everyone on my team does their fair share of the work.	1	2	3	4	5
No one on my team depends on other team members to do the work for them.	1	2	3	4	5
Nearly all the members of my team contribute equally to the work.	1	2	3	4	5
<i>Communication / Cooperation Within the Work Group</i>					
Members of my team are very willing to share information with other team members about our work.	1	2	3	4	5
Teams enhance the communication among people working on the same product.	1	2	3	4	5
Members of my team cooperate to get the work done.	1	2	3	4	5

Appendix 6: The Organisational Commitment Questionnaire

1	2	3	4	5	6	7
STRONGLY DISAGREE	DISAGREE	SLIGHTLY DISAGREE	NEITHER	SLIGHTLY AGREE	AGREE	STRONGLY AGREE

Listed below are a series of statements that represent possible feelings people might have about the organisation for which they work. Indicate the extent to which you agree with the statements about the organisation where you are now working (by circling the numbers), using the scale at the top of the page.

I describe this organisation to my friends as a great organisation to work for.	1	2	3	4	5	6	7
I am willing to put in a great deal of effort beyond that normally expected in order to help this organisation be successful.	1	2	3	4	5	6	7
I feel very little loyalty to this organisation. (R)	1	2	3	4	5	6	7
I would accept almost any sort of job assignment in order to remain at this organisation.	1	2	3	4	5	6	7
I find that my values and the organisation's values are very similar.	1	2	3	4	5	6	7
I am proud to tell others that I am part of this organisation.	1	2	3	4	5	6	7
I could just as well be working for a different organisation as long as the type of work was similar. (R)	1	2	3	4	5	6	7
This organisation really inspires the very best in me in the way of job performance.	1	2	3	4	5	6	7
It would take very little change in my present circumstances to cause me to leave this organisation. (R)	1	2	3	4	5	6	7
I am extremely glad that I chose this organisation to work for over others I was considering at the time I joined.	1	2	3	4	5	6	7

[The Organisational Commitment Questionnaire] (continued)

There's not too much to be gained by sticking with this organisation indefinitely. (R)	1	2	3	4	5	6	7
Often, I find it difficult to agree with this organisation's policies on important matters relating to its employees. (R)	1	2	3	4	5	6	7
I really care about the fate of this organisation.	1	2	3	4	5	6	7
For me this is the best of all possible organisations for which to work.	1	2	3	4	5	6	7
Deciding to work for this organisation was a definite mistake on my part. (R)	1	2	3	4	5	6	7

Appendix 7: Job Satisfaction Questionnaire

This questionnaire deals with your satisfaction with various aspects of your present job. Please indicate how satisfied or dissatisfied you feel with each of these aspects using the key below. Simply circle the number beside each job aspect that matches your answer.

	1	2	3	4	5	6	7
Very Dissatisfied	Dissatisfied	Slightly Dissatisfied	Not Sure	Slightly Satisfied	Satisfied	Very Satisfied	
1. The physical work conditions.	1	2	3	4	5	6	7
2. The freedom to choose your own method of working.	1	2	3	4	5	6	7
3. Your fellow workers.	1	2	3	4	5	6	7
4. The recognition you get for good work.	1	2	3	4	5	6	7
5. Your immediate boss.	1	2	3	4	5	6	7
6. The amount of responsibility you are given.	1	2	3	4	5	6	7
7. Your rate of pay.	1	2	3	4	5	6	7
8. Your opportunity to use your abilities.	1	2	3	4	5	6	7
9. Industrial relations between management and workers	1	2	3	4	5	6	7
10. Your chances of promotion.	1	2	3	4	5	6	7
11. The way the company is managed.	1	2	3	4	5	6	7
12. The attention paid to suggestions you make.	1	2	3	4	5	6	7
13. Your hours of work.	1	2	3	4	5	6	7
14. The amount of variety in your job.	1	2	3	4	5	6	7
15. Your job security.	1	2	3	4	5	6	7
16. Now, taking everything into consideration, how do you feel about your job as a whole?	1	2	3	4	5	6	7

Appendix 8: Measure of Intention to Leave

Listed below are a series of statements that describe your intentions in the near future. Please show your intentions for your present job using the scales below.

Remember, all responses are confidential.

1. How likely is it that you will actively look for a new job in the next year?

(Please circle the number of your response)

1	2	3	4	5	6	7
NOT AT ALL LIKELY	SLIGHTLY LIKELY	SOMEWHAT LIKELY	NEITHER	QUITE LIKELY	HIGHLY LIKELY	EXTREMELY LIKELY

2. I often think about quitting.

(Please circle the number of your response)

1	2	3	4	5	6	7
STRONGLY DISAGREE	DISAGREE STRONGLY	SLIGHTLY DISAGREE	NEITHER	SLIGHTLY AGREE	AGREE	AGREE

3. I will probably quit my job in the next year.

(Please circle the number of your response)

1	2	3	4	5	6	7
STRONGLY DISAGREE	DISAGREE STRONGLY	SLIGHTLY DISAGREE	NEITHER	SLIGHTLY AGREE	AGREE	AGREE

Appendix 9: The impact of informal relationships at work**(Open ended Questions)**

Use the definitions for friendships and negative relationships (on the second page of this questionnaire) to help you answer these questions. If you feel that the definitions I have provided do not adequately define the friendships and negative relationships you have experienced, please feel free to change or comment on the definitions I have provided.

1. Please briefly outline ways in which a friendship with one or more people with whom you work(ed) have benefited you in the workplace.
2. Please briefly outline ways in which a friendship with one or more people with whom you work(ed) have made your work more difficult.
3. Please briefly outline how a negative relationship with someone with whom you work(ed) has made your work more difficult.
4. Please briefly outline how your work environment has facilitated or in some way enriched a friendship.
5. Please briefly outline how your work environment has strained a workplace friendship.
6. Please briefly outline how your work environment has exacerbated (made worse) a negative relationship you have had at work.

Appendix 10: Demographic Information

Appendix 10a: Demographic Information Sheet

The following questions are about you. As with all the information requested in this questionnaire, your response is confidential to Rachel Morrison. Only summary information will be made available. Therefore, no information will be fed back to Waitemata DHB which can identify any individual.

1. Age _____ Years

2. Gender Male Female

3. What Ethnic group do you identify with? (e.g., N.Z. Maori, European, Indian etc)

Please state _____

4. How long have you worked in this organisation? _____ Years _____ Months

5. Which best describes your role?
(Please circle)

Clerical

Technical

Clinical

Management

Other (Please state) _____

8. Do you work a team / work group / unit? Yes No

9. If yes, How many people are in your team / workgroup / unit?

2-4 5-9 10-14 15-20 More than 20

10. What is the name of your team / (Please state) _____
workgroup / unit?

Thank you for your help.

Please check back through your answers to make sure that you have not missed any out. As mentioned before, the responses to these questionnaires are confidential and will be collated before use. No information that will in any way identify individuals will be made available to Waitemata DHB.

Rachel Morrison

Appendix 10b: Pie Charts showing Demographics of sample for the Hospital Study

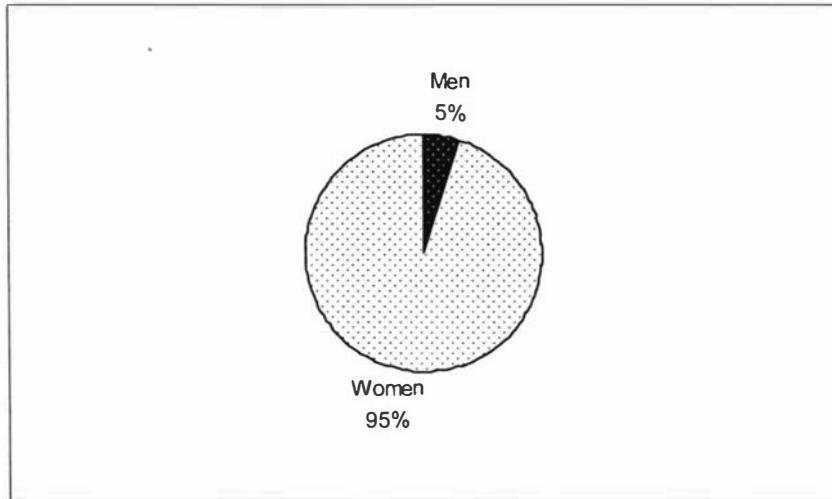


Figure 10b.1: Gender of sample for the Hospital Study

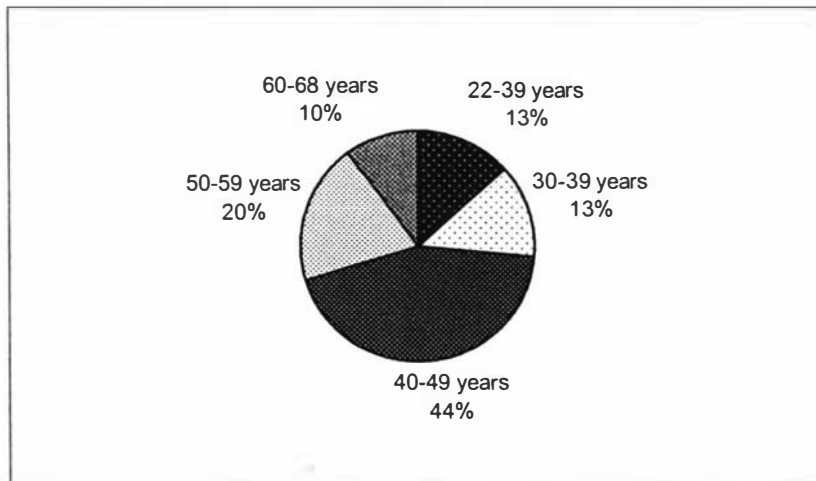


Figure 10b.2: Age of sample for the Hospital Study

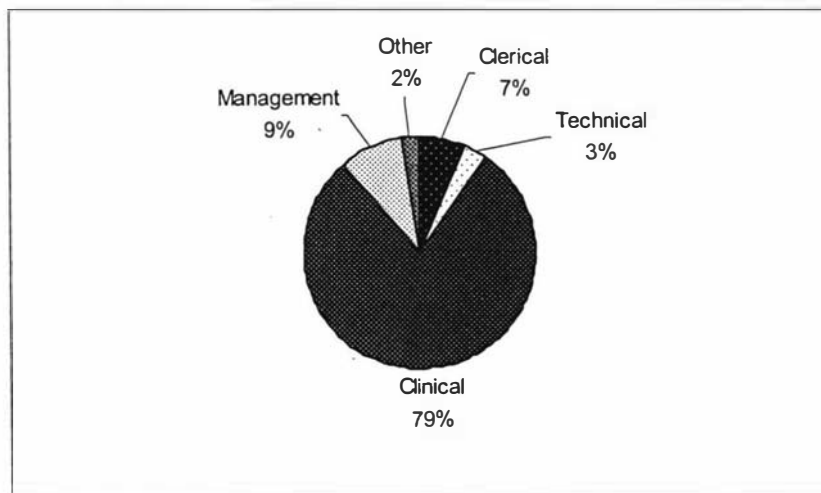


Figure 10b.3: Work role of respondents to the Hospital Study

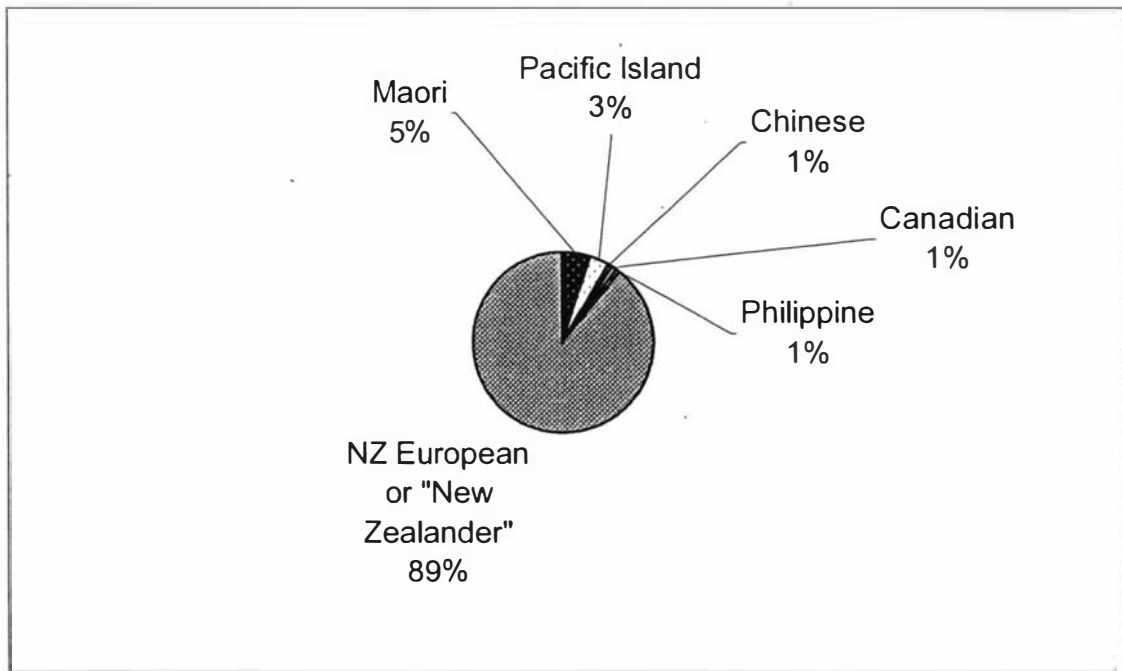


Figure 10b.4: Ethnicity of sample for the Hospital Study

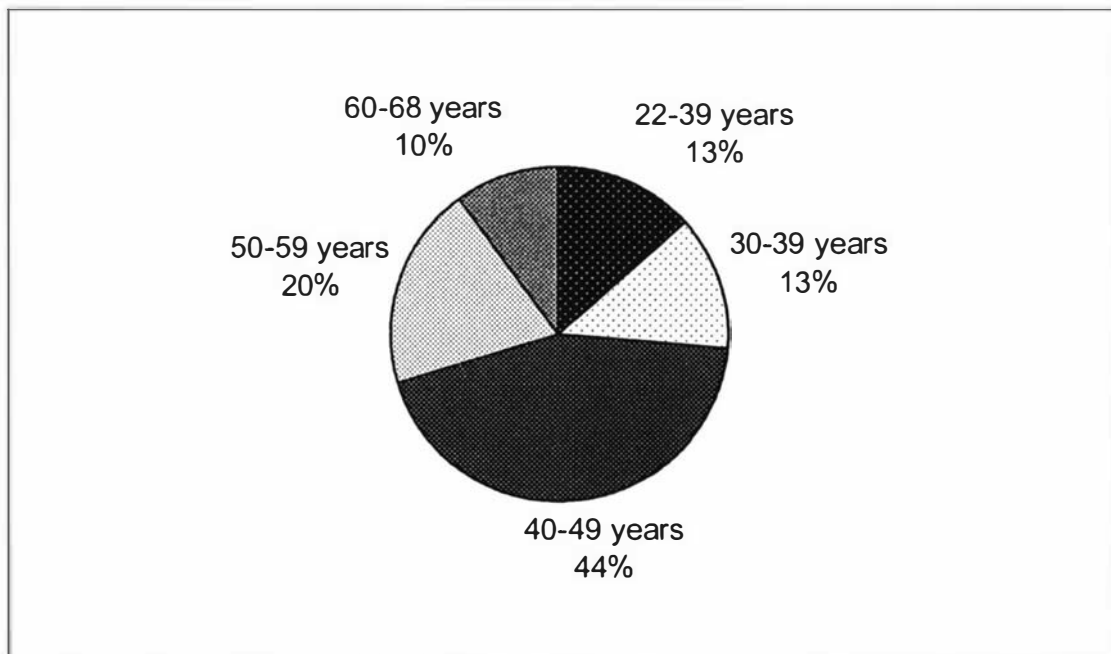


Figure 10b.5: Tenure of sample for the Hospital Study

Appendix 11: Reminder letter

Dear Waitemata DHB employee,

The recent questionnaire Recently you were randomly selected from employees of Waitemata DHB to receive a questionnaire on workplace relationships and were invited to take part in a study investigating informal interpersonal relationships in organisations.

Thank-you I would like to take this opportunity to thank those of you who have already returned the questionnaire; this type of research would not be possible without your assistance.

A plea For those of you who have not yet returned the questionnaire but do wish to participate, it is not too late, I am still receiving documents and every response is of value.

The information obtained will be used to better understand the impact informal relationships have on individuals and organisations.

What if I have mislaid my questionnaire? If you no longer have the questionnaire but wish to participate, please contact Shelley Hughes and she will put a new one in the internal mail for you.
*Shelley Hughes, Management Secretary Community and Disability Services, Health West Building, Waitakere Hospital, Waitemata DHB.
(or phone 8376632).*

Contact me If you have any questions or concerns please don't hesitate to contact me at rachel.morrison@xtra.co.nz or 021 1142800.

To return the questionnaire Either put the completed questionnaire in the return envelope provided or, if you prefer, you can mail it directly to me at the address below:

Rachel Morrison (PhD candidate)
School of Psychology
Massey University (Albany Campus)
Private Bag 102 904
North Shore MSC
Auckland

Thanks again for your time.

Rachel Morrison

Appendix 12: Scree Plots of factor analyses for the Hospital Study

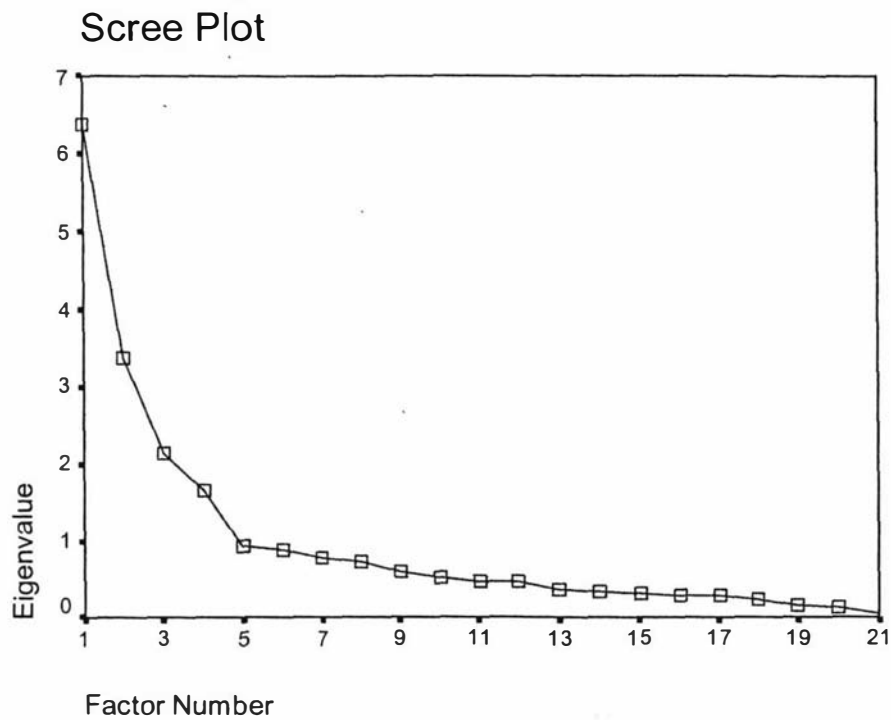


Figure 12.1: Initial scree plot of the factor analysis of the friendship, cohesion and dual role tension measures

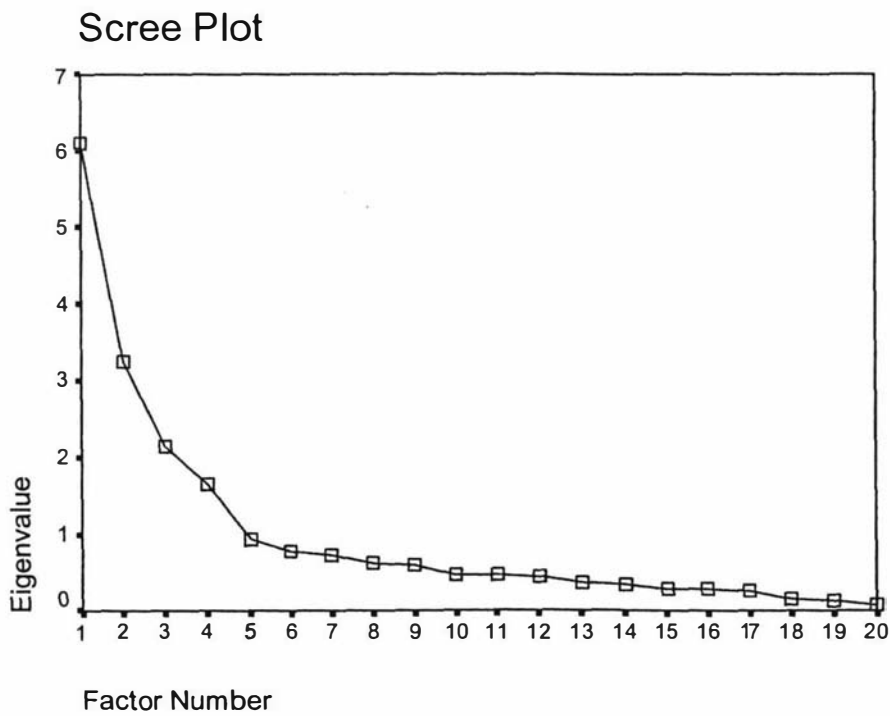


Figure 12.2: Final scree plot of the factor analysis of the friendship, cohesion and dual role tension measures

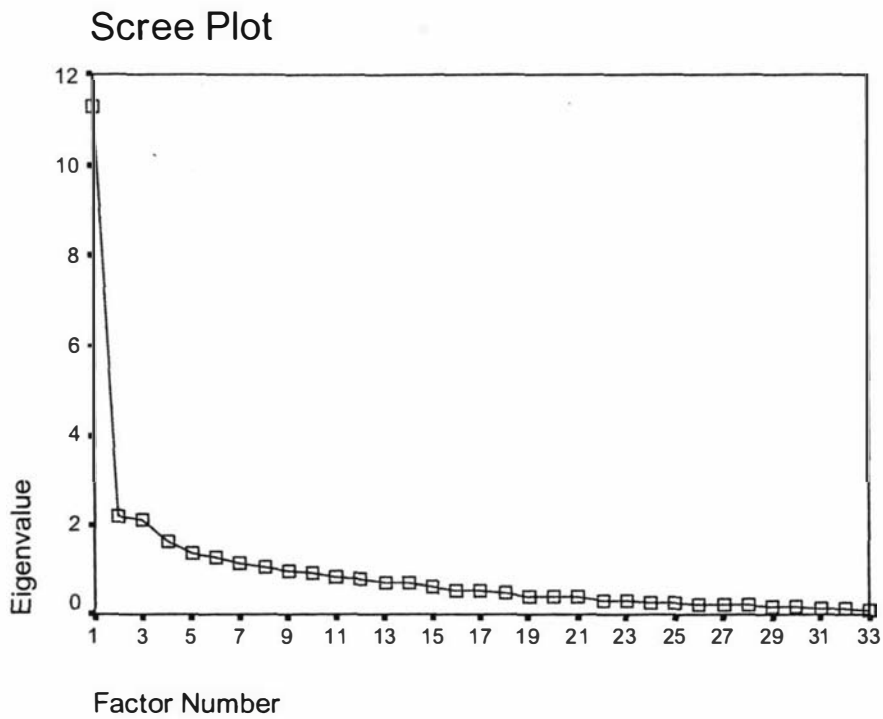


Figure 12.3: Initial scree plot of the factor analysis of the satisfaction, commitment and leaving intention measures

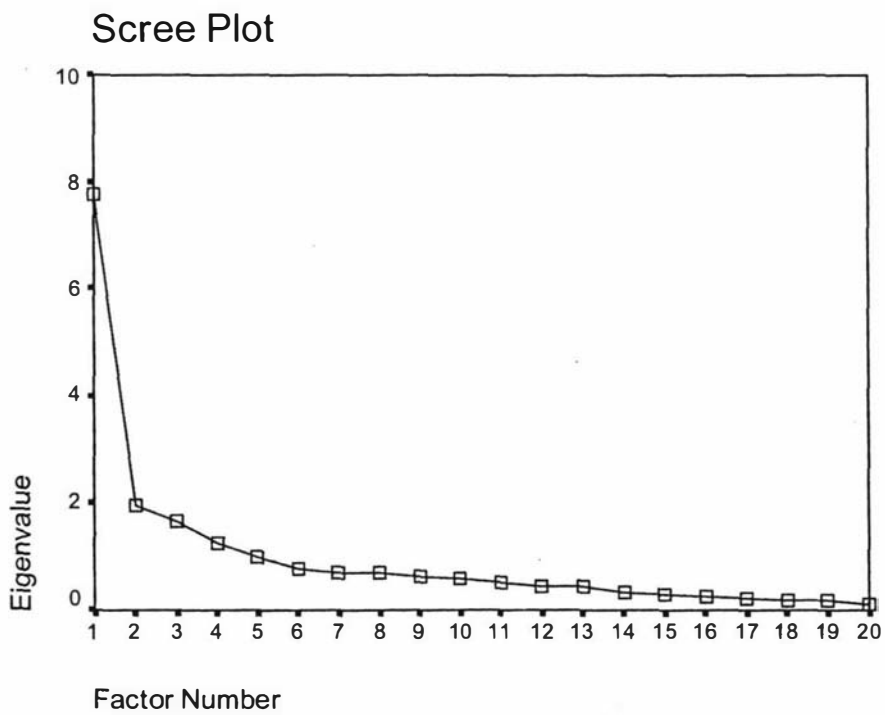


Figure 12.4: Final scree plot of factor analysis of the satisfaction, commitment and leaving intention measures

Appendix 13: Factor analysis of all the measures together

To further confirm that the scales used in the questionnaire were conceptually distinct, the six variables used in the path analysis were factor analysed together. As stated in Chapter Three, it is possible that the scales would tap into similar constructs, so the analysis is carried out to ensure that the scales are internally coherent and also distinct from the other measures. The 54 items (i.e., a 12 item Friendships scale, a 9 item Cohesion scale, a 15 item Organisational Commitment scale, a 15 item Job Satisfaction scale and a 3 item Intention to Leave scale) were factor analysed with a maximum likelihood extraction and direct oblimin rotation. The solution was set to six factors to represent the six components (i.e., friendship opportunities, friendship prevalence, cohesion, organisational commitment, job satisfaction and intention to leave). See Figure 13.1 at the end of this section for the scree plot of this analysis.

The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had a value of .81. The resulting matrix accounted for 49.0% of the variance. Most of the items loaded on their hypothesised factors (refer Table 13.1).

Table 13.1: First Pattern Matrix of the factor analysis of the all the measures.

	Factor					
	1	2	3	4	5	6
Organisational Commitment 6	.852					
Organisational Commitment 1	.775					
Organisational Commitment 14	.766					
Organisational Commitment 10	.730					
Organisational Commitment 5	.694					
Organisational Commitment 8	.587					
Organisational Commitment 2	.556					
Job Satisfaction Scale 12	.485					.453
Organisational Commitment 4	.477					
Organisational Commitment 15	.463					
Job Satisfaction Scale 2	.385				.300	
Organisational Commitment 11	.355		-.342			
Organisational Commitment 9	.339					
Organisational Commitment 13	.323					
Job Satisfaction Scale 7	.322					
Job Satisfaction Scale 15	.308					
Organisational Commitment 12						
Workplace Friendship Scale 9		.778				
Workplace Friendship Scale 7		.734				
Workplace Friendship Scale 8		.701				

Workplace Friendship Scale 5	.656		.475	
Workplace Friendship Scale 10	.623			
Workplace Friendship Scale 11	.560			
Workplace Friendship Scale 12	.501			
Workgroup cohesion 2	.395	.315		
Intention to leave 3		.965		
Intention to leave 1		.949		
Intention to leave 2		.509		
Job Satisfaction Scale 9		-.356		.340
Job Satisfaction Scale 6				
Organisational Commitment 7				
Job Satisfaction Scale 14				
Organisational Commitment 3				
Workgroup cohesion 9			.780	
Workgroup cohesion 7			.696	
Workgroup cohesion 6			.634	
Workgroup cohesion 4			.593	
Workgroup cohesion 5			.582	
Workgroup cohesion 8			.551	-.403
Workgroup cohesion 3			.548	
Workgroup cohesion 1			.473	-.319
Job Satisfaction Scale 3	.335	.454		
Workplace Friendship Scale 3			.731	
Workplace Friendship Scale 2			.694	
Workplace Friendship Scale 4			.647	
Workplace Friendship Scale 6			.474	
Workplace Friendship Scale 1	.436	.464		
Job Satisfaction Scale 16			.335	
Job Satisfaction Scale 1				
Job Satisfaction Scale 5				.584
Job Satisfaction Scale 10	.356			.492
Job Satisfaction Scale 11				.473
Job Satisfaction Scale 13				.452
Job Satisfaction Scale 4				.406

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 17 iterations. Loadings less than .3 are not shown

All items which had absolute values less than .3, or which were cross loading across more than one factor, were removed. These are shaded in grey in Table 13.1, above.

A second factor analysis, with the items shaded in grey not included, was performed to see how well the remaining items loaded on each factor. It accounted for 54.9% of the variance, and revealed six distinguishable factors representing the six scales. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had a value of .82. The pattern matrix for the second analysis is shown in Table 13.2. See Figure 13.2 at the end of this section for the scree plot of this analysis.

Table 13.2: Second Pattern Matrix of the factor analysis of the all the measures.

	Factor					
	1	2	3	4	5	6
Organisational Commitment 6	.867					
Organisational Commitment 1	.838					
Organisational Commitment 14	.760					
Organisational Commitment 10	.726					
Organisational Commitment 5	.694					
Organisational Commitment 15	.517					
Organisational Commitment 8	.515					.428
Organisational Commitment 2	.483					
Organisational Commitment 4	.394		.308			
Organisational Commitment 9	.384					
Organisational Commitment 13	.316					
Intention to leave 3		.953				
Intention to leave 1		.884				
Intention to leave 2		.451				
Workplace Friendship Scale 7			.802			
Workplace Friendship Scale 8			.741			
Workplace Friendship Scale 9			.688			
Workplace Friendship Scale 10			.577	.350		
Workplace Friendship Scale 11			.563			
Workplace Friendship Scale 12			.539			
Workgroup cohesion 7				.732		
Workgroup cohesion 5				.669		
Workgroup cohesion 4				.666		
Workgroup cohesion 9				.653		
Workgroup cohesion 6				.633		
Workplace Friendship Scale 3					-.747	
Workplace Friendship Scale 4					-.698	
Workplace Friendship Scale 2					-.659	
Workplace Friendship Scale 6					-.446	
Job Satisfaction Scale 16					-.323	
Job Satisfaction Scale 5						.666
Job Satisfaction Scale 11						.601
Job Satisfaction Scale 4						.550
Job Satisfaction Scale 9						.507
Job Satisfaction Scale 13						.417

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 9 iterations. Loadings less than .3 are not shown.

Three final items were cross loading with other scales so were also removed; these are shaded in grey in Table 13.2 above.

A final factor analysis, with the solution still set to six factors to represent the six components accounted for 55.8% of the variance, and revealed six distinguishable factors representing the six scales (refer Table 13.3). Each of the items loaded on the expected factor. The scree plot for the final factor analysis is shown at the end of this

section as Figure 13.3. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy had a value of .826.

Table 13.3: Second Pattern Matrix of the factor analysis of the all the measures.

	Factor					
	1	2	3	4	5	6
Organisational Commitment 6	.889					
Organisational Commitment 1	.841					
Organisational Commitment 14	.777					
Organisational Commitment 10	.741					
Organisational Commitment 5	.715					
Organisational Commitment 15	.538					
Organisational Conunitment 2	.520					
Organisational Commitment 9	.382					
Organisational Conunitment 13	.341					
Intention to leave 3		.955				
Intention to leave 1		.874				
Intention to leave 2		.438				
Workplace Friendship Scale 7			.844			
Workplace Friendship Scale 8			.721			
Workplace Friendship Scale 9			.623			
Workplace Friendship Scale 12			.580			
Workplace Friendship Scale 11			.519			
Workgroup cohesion 7				.710		
Workgroup cohesion 4				.676		
Workgroup cohesion 9				.674		
Workgroup cohesion 5				.666		
Workgroup cohesion 6				.654		
Workplace Friendship Scale 3					-.787	
Workplace Friendship Scale 4					-.721	
Workplace Friendship Scale 2					-.652	
Workplace Friendship Scale 6					-.432	
Job Satisfaction Scale 5						.683
Job Satisfaction Scale 4						.604
Job Satisfaction Scale 11						.587
Job Satisfaction Scale 9						.558
Job Satisfaction Scale 13						.413

Extraction Method: Maximum Likelihood. Rotation Method: Oblimin with Kaiser Normalization. Rotation converged in 7 iterations. Loadings less than .3 are not shown.

The items remaining in Table 13.3 are almost identical to those remaining after the two separate factor analyses described in Chapter Three. The main difference between this factor analysis and the one described in Chapter Three are the job satisfaction items. While the items remaining after the analysis above are 4, 5, 9, 11 and 13; the remaining items in the analysis described in Chapter Three are 4, 5, 6, 7, 9, 11 and 15. Other than this discrepancy the two analyses yielded remarkably similar results.

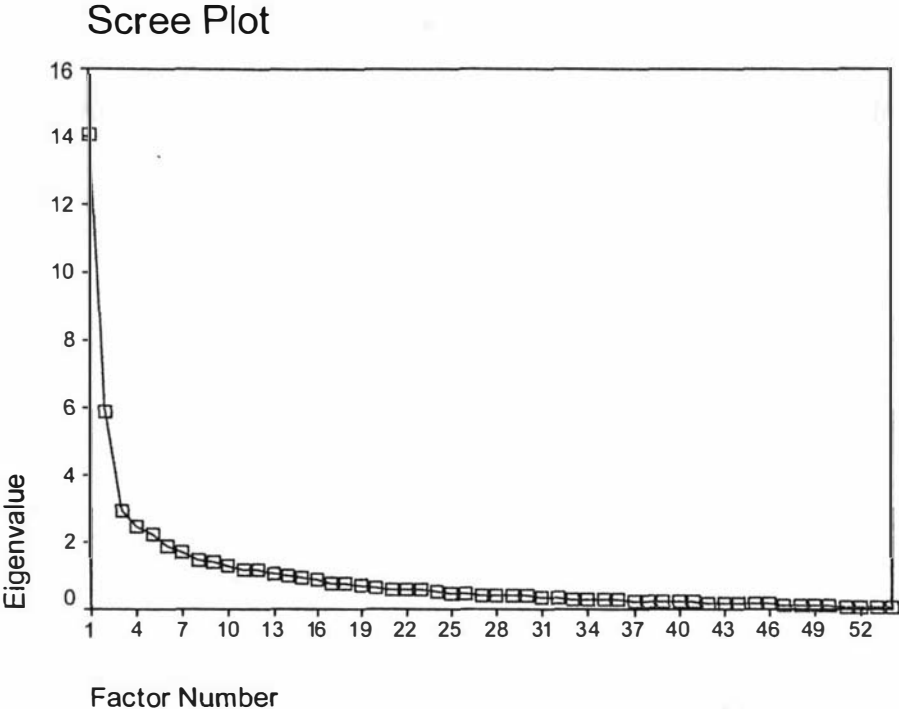


Figure 13.1: First scree plot of the factor analysis of all six measures in the questionnaire

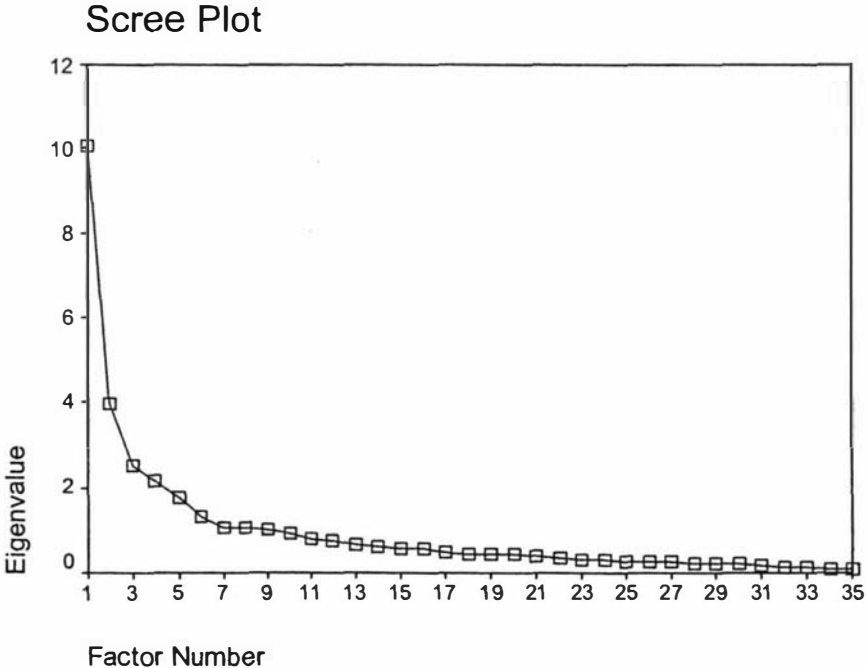


Figure 13.2: Second scree plot of the factor analysis of all six measures in the questionnaire

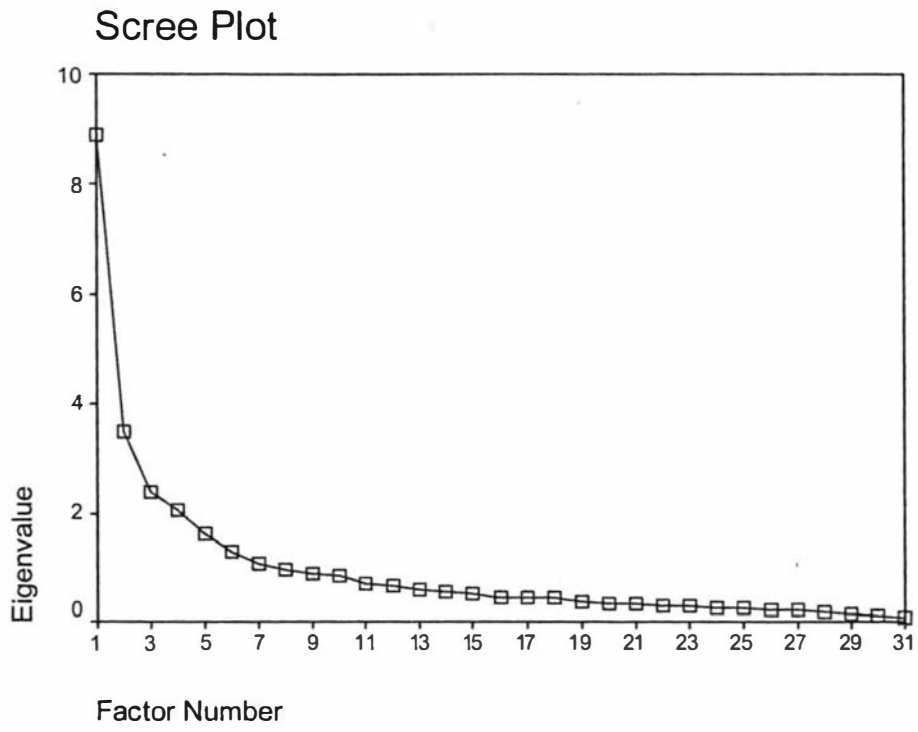


Figure 13.3: Final scree plot of the factor analysis of all six measures

Appendix 14: AMOS output: the Hospital Study

Appendix 14.1 Standardised Regression Weights

Standardized Regression Weights:	Estimate
-----	-----
JS_SUM <----- F_O_SUM	0.271
JS_SUM <----- COH_SUM	0.287
F_P_SUM <----- F_O_SUM	0.307
F_P_SUM <----- COH_SUM	0.230
OCQ_SUM <----- COH_SUM	-0.039
OCQ_SUM <----- JS_SUM	0.586
OCQ_SUM <----- F_O_SUM	0.165
ITL_SUM <----- F_P_SUM	-0.154
ITL_SUM <----- JS_SUM	-0.297
ITL_SUM <----- OCQ_SUM	-0.242
ITL_SUM <----- COH_SUM	-0.001

Appendix 14.2 95.0% Standardised (Beta) Weights and confidence intervals (bias corrected percentile method)

Standardized (Beta) Weights:	Lower Bound	Upper Bound	p
-----	-----	-----	-----
JS_SUM <----- F_O_SUM	0.098	0.444	0.011
JS_SUM <----- COH_SUM	0.029	0.484	0.013
F_P_SUM <----- F_O_SUM	0.078	0.454	0.046
F_P_SUM <----- COH_SUM	0.030	0.459	0.025
OCQ_SUM <----- COH_SUM	-0.211	0.167	0.798
OCQ_SUM <----- JS_SUM	0.439	0.708	0.019
OCQ_SUM <----- F_O_SUM	-0.029	0.320	0.056
ITL_SUM <----- F_P_SUM	-0.322	-0.009	0.046
ITL_SUM <----- JS_SUM	-0.505	-0.107	0.004
ITL_SUM <----- OCQ_SUM	-0.408	-0.061	0.034
ITL_SUM <----- COH_SUM	-0.198	0.135	0.928

Appendix 14.3

Regression weights and critical ratio values, (shading indicates a non-significant regression)

Maximum Likelihood Estimates

Regression Weights:	Estimate	S.E.	C.R.
JS_SUM <----- F_O_SUM	0.846	0.270	3.136
JS_SUM <----- COH_SUM	0.678	0.203	3.335
F_P_SUM <----- F_O_SUM	0.602	0.172	3.497
F_P_SUM <----- COH_SUM	0.343	0.130	2.645
OCQ_SUM <----- COH_SUM	-0.114	0.247	-0.464
OCQ_SUM <----- JS_SUM	0.787	0.105	7.463
OCQ_SUM <----- F_O_SUM	0.709	0.326	2.179
ITL_SUM <----- F_P_SUM	-0.158	0.084	-1.886
ITL_SUM <----- JS_SUM	-0.190	0.067	-2.828
ITL_SUM <----- OCQ_SUM	-0.118	0.047	-2.485
ITL_SUM <----- COH_SUM	-0.005	0.133	-0.035

Appendix 14.4

Indices of fit for Model 1

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Rachel's model	15	6.663	6	0.353	1.110
Saturated model	21	0.000	0		
Independence model	6	67.824	15	0.000	4.522
Zero model	0	363.000	21	0.000	17.286

Model	RMR	GFI	AGFI	PGFI
Rachel's model	1.415	0.982	0.936	0.280
Saturated model	0.000	1.000		
Independence model	20.590	0.813	0.738	0.581
Zero model	30.298	0.000	0.000	0.000

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Rachel's model	0.902	0.754	0.989	0.969	0.987
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Rachel's model	0.400	0.361	0.395
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Rachel's model	0.663	0.000	11.312
Saturated model	0.000	0.000	0.000
Independence model	52.824	30.946	82.245

Model	FMIN	F0	LO 90	HI 90
Rachel's model	0.055	0.005	0.000	0.093
Saturated model	0.000	0.000	0.000	0.000
Independence model	0.561	0.437	0.256	0.680

Model	RMSEA	LO 90	HI 90	PCLOSE
Rachel's model	0.030	0.000	0.125	0.536
Independence model	0.171	0.131	0.213	0.000

Model	AIC	BCC	BIC	CAIC
Rachel's model	36.663	38.505	105.599	93.723
Saturated model	42.000	44.579	138.511	121.884
Independence model	79.824	80.561	107.399	102.648
Zero model	363.000	363.000	363.000	363.000

Model	ECVI	LO 90	HI 90	MECVI
Rachel's model	0.303	0.298	0.391	0.318
Saturated model	0.347	0.347	0.347	0.368
Independence model	0.660	0.479	0.903	0.666
Zero model	3.000	2.520	3.542	3.000

Model	HOELTER .05	HOELTER .01
Rachel's model	229	306
Independence model	45	55
Zero model	11	13

Appendix 15: Summary of answers to qualitative questions: the Hospital Study

1. Please briefly outline ways in which a friendship with one or more people with whom you work(ed) have benefited you in the workplace.

Answer	Number of respondents answering in this way
Makes work more pleasant / fun / look forward to/enjoy coming to work.	24
Compassion / consideration / confiding / listening	21
Social support	21
Learning from more experienced colleagues / advice / mentoring	20
Improves communication / information exchange between colleagues / honesty / trust	20
Professional / practical help and support / workload sharing	20
Bounce ideas off / shared problem solving / sounding boards	13
Sharing celebrations / laughs	8
Being able to rely on / count on colleagues	7
Leads to friendships / social activities out of work time.	7
Enhanced feeling of acceptance / feel part of team / improves teamwork	6
Helped when things are negative/busy at work / made bad situation bearable	6
Improves mood / makes me feel better	5
Reduces stress	5
Improves confidence in ability	5
Improved job satisfaction	4
Enhances standard of work / professional development	2
Career advancement	1
Choose NOT to have particular bonds / friends at work.	1

2. Please briefly outline ways in which a friendship with one or more people with whom you work(ed) have made your work more difficult.

Difficult to criticise friends / wont complain when they are friends, more likely to put up with a bad situation.	6
Distraction from work related tasks	3
Conflict of interest / don't want to do or say what should be done, in case I upset my friend	3
Friends expecting special treatment, favours	3
Having to take a peace-maker role between friend and management / between two peers	2
Difficult to be objective / biased performance reviews	2
Truthful friends at work can seem like criticism / difficult to receive criticism from friends	2
Friendship breaking down and becoming verbally violent / difficult to trust	2
Difficult to have a close friendship with someone you manage when addressing performance issues / peer reviews	2
Always keep work and personal relationships separate so NO conflict arises	2
Having to "tip toe" around friend/workmate in a bad mood	1
Confidentiality issues	1
Gossip between workmates concerning me	1
Friend not getting along with others in team	1
Negativity / dissatisfaction / negative opinions of a friend can influence me	1
Being "tarred with the same brush" as a dissatisfied / trouble making friend by the boss	1
Having to phrase instructions / teaching so as not to sound condescending to a friend / not to offend	1

Can create unfairness	1
People at work knowing aspects of my personal life	1
Jealousy between friends	1
Friend decided to keep work and personal life entirely separate, creates tension, friendship ended	1
Causing others to feel left out	1
When one friend is promoted in the place of another	1
Getting intimately / romantically involved	1

3. Please briefly outline how a negative relationship with someone with whom you work(ed) has made your work more difficult.

Feeling anger / discomfort / stress / unhappiness	20
More difficult to communicate ideas and needs / communication breakdown / withholding information	17
Reluctance to talk with / interact with the person / avoiding the person	9
Demotivates other team members / interferes with team work / weakens sense of team	8
Disrupts work / breaks concentration / get less work done	7
Creates an unpleasant work environment / not wanting to come to work	5
Changing bookings / schedules to avoid the person, interferes with getting my work done.	5
Reduces job satisfaction	3
The person influencing other team members, making relationships with them difficult also.	3
Find it difficult to be positive / effective in other aspects of my job if I am already frustrated by this person	3
Lack of trust in people and work environment	3
Gossip / back-biting is destructive	2
Decreases my confidence	2
Feel I cannot speak up against the person who acts in a way that is detrimental to our client's well-being	1
Being embarrassed by the person's behaviour	1
The person receives special treatment and favours, the rest of us do her work	1
The person setting me up as not performing	1
Lack of confidence in my initiative, over-supervises me	1
Waste of time dealing with that person's actions	1

4. Please briefly outline how your work environment has facilitated or in some way enriched a friendship.

Met / made friends as a result of us working together / proximity / team work	25
Shared work experiences give an extra bond / common ground	14
Work environment allows us to talk and socialise / friendly environment	8
Offering / receiving social / professional support to workmates has facilitated friendship	8
Open plan / shared office allows lots of contact with others	6
We are able to take tea breaks together, gives opportunity to catch up / debrief	5
Allowed me to meet a variety of people / people from different backgrounds	4
Working as a team / team work encourages communication	4
Professional respect for my colleagues	3
Similar ideas / goals leads to appreciation of other's achievements	2
Spending time together on "away days" team building	2
Our work supports families, shared family experiences creates a bond	2
Night shift provides a quiet place to talk, get to know colleagues	1

Through being open and being able to discuss things with team members, builds relationships	1
Learning tolerance of other ways of life	1
We don't see much of each other in my team so when we do we make the most of this precious time	1
Management doesn't listen so we turn to each other	1
Our manager encourages teamwork / innovation	1
Poor work conditions mean we rely on each other more	1
The supervisor scheme partnered me with a great supervisor who has become a good friend / support	1

5. Please briefly outline how your work environment has strained a workplace friendship.

Heavy workload / unable to find time for breaks / unrealistic expectations of management	3
When the case load is heavy and a peer doesn't help share others workload / others not pulling their weight	2
If one person is promoted or received duties another wants / jealousy	2
Separate offices split up teams / friendship not maintained when I stopped sharing office space with them	2
Having to discipline them at work has strained the friendship	1
New structures / policies making teamwork impossible	1
Lack of support by senior management	1
Peer appraisal system, a peer wrote about me negatively, ruined the friendship	1
When a colleague has failed to provide a needed service	1
During busy / stressful times colleagues unfriendly and snap	1
When working closely together, you must be seen to be treating all team members equally some team members think you are showing favouritism and get annoyed	1
Open plan environment, noisy and can't get away from each other	1
Having different goals or objectives has sometimes strained a friendship	1
Not giving a friend a promotion she thought she deserved ended the friendship.	1
When friends are dissatisfied with work, results in strain	1

6. Please briefly outline how your work environment has exacerbated (made worse) a negative relationship you have had at work.

Have to work in a close confined space with people I have a negative relationship with / having to work closely / regularly with the person	8
Heavy workload / fatigue	3
Being busy and short staffed adds to pressure, leaves no time to deal properly with conflicts	2
Workplace politics	2
The team grouping together to discuss negative aspects of a team member exacerbates the situation / gossip	2
Lack of communication	2
Inability of management to effectively deal with a negative issue – making one side do all the mediation	2
Senior staff unwilling to support nurses during personal unhappy times	1
Unclear roles and communication from management mean relationships are ambiguous	1
Slow organisational change, slow to act on recommendations	1
Relationship not being handled well by management	1
Being told to take an issue (being accused of something I didn't do) no further by management has meant that person still believes I am wrong	1
Lack of academic colleagues to talk to	1

Having to correct an individual without them taking it personally	1
Disagreements about care delivery	1
Inappropriate person promoted to senior role	1
Poor morning tea / lunch facilities	1

Appendices for the Internet Study (Chapter 4)

Appendix 16: Needs Assessment Questionnaire

This scale contains 20 statements that may describe you and the types of things you may like to do. Indicate the extent to which you agree with each statement using the scale at the top of the Table.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I try to perform my best at work. (<i>nAch</i>)	1	2	3	4	5
I spend a lot of time talking to other people. (<i>nAff</i>)	1	2	3	4	5
I would like a career where I have very little supervision. (<i>nAut</i>)	1	2	3	4	5
I would enjoy being in charge of a project. (<i>nDom</i>)	1	2	3	4	5
I am a hard worker. (<i>nAch</i>)	1	2	3	4	5
I am a “people” person. (<i>nAff</i>)	1	2	3	4	5
I would like a job where I can plan my work schedule myself. (<i>nAut</i>)	1	2	3	4	5
I would rather receive orders than give them. (R) (<i>nDom</i>)	1	2	3	4	5
It is important to me to do the best job possible. (<i>nAch</i>)	1	2	3	4	5
When I have a choice, I try to work in a group instead of by myself. (<i>nAff</i>)	1	2	3	4	5
I would like to be my own boss. (<i>nAut</i>)	1	2	3	4	5
I seek an active role in the leadership of a group. (<i>nDom</i>)	1	2	3	4	5
I push myself to be “all that I can be.” (<i>nAch</i>)	1	2	3	4	5
I prefer to do my own work and let others do theirs. (R) (<i>nAff</i>)	1	2	3	4	5
I like to work at my own pace on job tasks. (<i>nAut</i>)	1	2	3	4	5
I find myself organizing and directing the activities of others. (<i>nDom</i>)	1	2	3	4	5
I try very hard to improve on my past performance at work. (<i>nAch</i>)	1	2	3	4	5
I try my best to work alone on a work assignment. (R) (<i>nAff</i>)	1	2	3	4	5
In my work projects, I try to be my own boss. (<i>nAut</i>)	1	2	3	4	5
I strive to be “in command” when I am working in a group. (<i>nDom</i>)	1	2	3	4	5

Appendix 17: Respondents' occupations (Internet Study)

Respondents 1-120

1	Project Manger	41		81	Project Advisor
2	Business Analysis	42	Project coordinator on a study	82	Probation officer
3	Marketing Co-ordinator / Administrator	43	Senior Accountant (Qualified)	83	Teacher
4	Physiotherapist/acupuncturist	44	Sales Rep	84	Account executive
5	Manager	45	Toolmaker	85	HR Adviser/Office Manager
6	Office-all-round employee, to finance my 2. studies at university	46	Change Manager	86	Registered nurse/ staff nurse
7	Senior lecturer	47	Lifeguard	87	Administration
8	Professor	48	Sandwich Artist	88	North Island Customer Services Manager
9	Research assistant	49	Account Manager	89	Brand Manager
10	Senior Consultant	50	Statistician	90	Research fellow
11	Customer Service Consultant	51	Account Manager	91	Office Manager
12	Teacher/researcher	52	Editor & Copywriter	92	Telephone interviewer
13	Senior development officer	53	Supervisor, Medical Staff Services	93	Server
14	Assessment Coordinator	54	Design engineer	94	Office Manager
15	Lecturer	55	Programme co-ordinator	95	Sponsorship manager
16	Teller	56		96	Education Officer
17	Human Resources Consultant	57	Systems admin	97	Physiotherapist
18	Research fellow	58	Management	98	Statistician
19	Teacher	59	Physiotherapist	99	Account Manager
20	Psychologist	60	Lending Supervisor	100	Consultant
21	Senior Lecturer	61	Case Manager	101	Analyst/consultant
22	Lecturer	62	Consultant	102	Consultant
23	Commanding officer	63	Consultant	103	Digital Media Specialist
24	Health worker	64	Advertising coordinator	104	Communications manager
25	Lecturer	65	Interim Manager	105	Medical writer
26	Psychologist	66	Senior Clinical Psychologist	106	Publicist
27	Education Facilitator	67	Consultant	107	Nurse
28	Project manager	68	PA/Secretary	108	Clerical receptionist
29	Software analyst	69	Personal Assistant	109	Sales Consultant
30	Partner	70	Senior Systems Consultant	110	Nurse
31	E-Commerce Project Manager	71	Small Business Manager	111	Counsellor
32	Research Associate, Search Team	72	Case Manager	112	Service Delivery Manager
33	Head of development	73	Graduate student	113	Principal of a K-8 school
34	Consultant	74	Retailer Sales Manager	114	Shipping
35	Marketing Executive	75	Registered nurse	115	User Support Manager
36	Telemarketer	76	Interviewer	116	Software Development Consultant
37	Consultant	77	Marketing Co-ordinator	117	Clerical Support/Customer Service
38	Senior Tutor	78	GM Finance	118	Sales associate
39	Investigator	79	Marketing & Communications Adviser	119	Senior lecturer
40	HR Advisor	80	Project Manager	120	Senior lecturer

Appendix 17 (continued)

Respondents 121-240

121	Accounts/Debt controller	161	Intern Architect	201	Sales Secretary
122	Research ergonomics	162	Doctor	202	Partner
123	Interviewer	163	Psychologist	203	Account Manager
124	Senior lecturer, curriculum leader, programme leader	164	Staff scientist	204	Lab technician
125	Pharmacist	165	Veterinarian	205	Manager
126	Reception / Customer Services	166	General Manager	206	Manager
127	Educator	167	Nurse educator	207	Sales/pre-sales
128	Lecturer	168	Human Resources Director	208	Customer Relations Manager
129	Evaluations Manager	169	Managing Director	209	sales assistant
130	Operations Manager	170	Detachment Commander	210	
131	E learning manager	171	Psychologist	211	Account Manager
132	Advisor	172	Massage therapist	212	Administration Assistant
133	Coordinator	173	Appraisals Administrator	213	SEO
134	Consultant	174	Publicity & Promotions	214	Chiropractor
135	N/A	175	Scientist	215	Sales administrator
136	Planner	176	Manager	216	Account manager
137	IT Manager	177	HR Manager	217	Adjunct professor
138	Researcher	178	Employment Consultant	218	e Learning Advisor
139	Intermediate/Senior foreign exchange consultant	179	Technical Officer	219	ACCOUNTS ADMINISTRATION
140	Customer Retention Manager	180	Technician	220	Front desk
141	Marketing Manager	181	Commercial Traffic Co-ordinator	221	Administrator
142	Staff member (salesperson, secretarial work too)	182	Asst. Manager	222	Swimming Lesson Instructor/ Lifeguard
143	Surgeon	183	Registered Nurse	223	Support Officer
144	Credit scoring analyst	184	Scientist	224	PA
145	Claims officer	185	Teacher/Media Specialist	225	Regional On Premise Manager
146	Claims officer	186	Teacher/Media Specialist	226	Advertising Co-ordinator
147	Claims officer	187	Communications coordinator	227	Psychologist (that gives it away!)
148	Claims officer	188		228	Personal Assistant
149	Statistician	189	Analyst	229	Communications Manager
150	Statistician	190	Designer	230	Social Worker
151	Marketing Executive	191	New Business & Marketing Manager	231	Director
152	Project Engineer	192	Subeditor	232	Legal Secretary
153	it manager	193	Ride Operator/Team Lead	233	Knowledge Manager
154	Account Manager	194	Supervisor	234	Registered Nurse
155	Statistician	195	Product Development Engineer	235	
156	Graphic Designer	196	Data Entry Operator	236	Training Manager
157	Senior graphic designer/art director	197	Copyeditor/book designer	237	Officer
158	Resident doctor	198	Executive assistant	238	Community Librarian (manager)
159	IT Manager	199	Account Manager	239	Registrar/Director of Admissions
160	Web developer	200	Corporate Sales Manager	240	Planner

Appendix 17 (continued)
Respondents 141-360

241	PhD student / tutor	281	Supervisor	321	Researcher
242	Corporate Human Resources Advisor	282	Librarian	322	Data Services Manager
243	Parks Policy & Planning Manager	283	Clinical psychologist	323	Project manager
244	Lecturer	284	Croupier/Dealer	324	Senior researcher
245	Project Manager	285		325	Research fellow
246	Project Coordinator	286		326	Research Scientist
247		287	Regional Manager	327	Research technician
248	Manager	288	Clinical Nurse Specialist	328	Research Co-ordinator
249	Parks Policy & Planning Advisor	289	Typist	329	Assistant research fellow/PhD student
250	Sales Representative	290	Centre Manager	330	PhD student / technician
251	Trade Research Executive	291	Health Educator	331	
252	Assistant Manager	292	Guest Services Representative	332	Project manager
253	Corporate account support	293	Supervisor	333	Marketing Product Specialist
254	Field Service Rep	294	Senior software engineer	334	Senior lecturer
255	Account Executive	295	Test Analyst	335	Teacher
256	Lease Administrator/Assistant to Special Projects Manager	296	Software Consultant	336	Doctor
257	Asst. Professor	297	Senior Engineer	337	Case manager
258	Administrator	298	Account manager	338	Nurse Manager
259	Change Director	299		339	Lecturer
260	Supervisory Epidemiologist	300	Research assistant	340	Business Development manager
261	Researcher	301	Senior Account Director	341	Secretary
262	Director	302	Web Developer	342	Managing small national service
263	Associate Dean	303	Accounting clerk	343	General Manager Operations
264	Instructor	304	Lecturer	344	Research nurse
265	Psychologist	305	Accounting technician	345	Teacher
266	Clerk	306	Research Assistant/Marker	346	Accountant
267	Senior Lecturer	307	Senior Accountant	347	Senior lecturer
268	Pacific co-ordinator	308	Sales Representative	348	Hon. Ass. Research Fellow
269	Underwriting Manager	309	Network Engineer	349	Student Services Manager
270	Supervisor	310	Marketing Assistant	350	Senior Lecturer
271	Data cleansing	311	PhD student (doing research)	351	Office Manager
272	Administrative	312	Project Manager	352	Webmaster
273	Account Manager	313	Chief Engineer Officer	353	Research/Administration
274	Waitress	314	Administrator	354	Research fellow
275	Head of Technical Training Project Office	315	Operations Manager, secretary Animal Ethics Committee	355	Research assistant
276	Assistant office manager	316	Post-doctoral fellow	356	PA / Administrator
277	Undergraduate Assistant	317	Duty Manager/ Waitperson	357	WP operator
278	Operational/Managerial	318		358	Solicitor
279	Stockroom manager/Human resources	319	Research administrator	359	Legal Secretary
280	Human Resources	320	Office Tea Girl	360	Teacher

Appendix 17 (continued)**Respondents 361-412**

361	Group Business Manager	381	Marketing Co-ordinator	401	Cook
362	Service co-ordinator (six services under one umbrella)	382	Senior Product Manager	402	Police inspector
363	Solicitor	383	Secretary	403	Lecturer
364	Solicitor	384	Research manager/officer	404	Member Services Administrator
365	Solicitor	385	Senior Lecturer	405	Director
366	Administrative Assistant	386	Stockbroker	406	Personal Assistant
367	Solicitor	387	Reception	407	
368	Social worker	388	Commercial manager	408	HR Rep/Office Manager
369	Departmental Administrator	389	Internet developer	409	Sr. Network Engineer
370	Admin	390	Director Global Supply Chain	410	Scientist
371	Psychologist	391	Clinical Cytogenetics Technologist	411	Insurance/Billing
372	Consultant / senior lecturer	392	Secretary	412	Ph.D. student
373	Reception (Relief)	393	Dietician		
374	Senior Lecturer, Paediatrics	394	Operations manager		
375	Research Nurse	395	Lawyer		
376	Research technician	396	Teacher		
377	Quality Assurance Officer	397	Core faculty & director of fieldwork		
378	Clinical Director	398	Manager		
379	Senior research fellow	399	Staff physiotherapist		
380	WP Operator	400	Graduate Student		

Appendix 18: Indices of fit for the Internet Study

Appendix 18a: Fit indices for workplace friendship scale with items 6, 9 and 10 removed (Random 2)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	19	123.063	26	0.000	4.733
Saturated model	45	0.000	0		
Independence model	9	782.071	36	0.000	21.724

Model	RMR	GFI	AGFI	PGFI
Default model	0.078	0.878	0.788	0.507
Saturated model	0.000	1.000		
Independence model	0.362	0.401	0.251	0.321

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.843	0.782	0.872	0.820	0.870
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.722	0.609	0.628
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	97.063	66.246	135.419
Saturated model	0.000	0.000	0.000
Independence model	746.071	658.806	840.751

Model	FMIN	F0	LO 90	HI 90
Default model	0.628	0.495	0.338	0.691
Saturated model	0.000	0.000	0.000	0.000
Independence model	3.990	3.806	3.361	4.290

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.138	0.114	0.163	0.000
Independence model	0.325	0.306	0.345	0.000

Model	AIC	BCC	BIC	CAIC
Default model	161.063	163.106	265.191	242.444
Saturated model	90.000	94.839	336.619	282.744
Independence model	800.071	801.039	849.395	838.620

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.822	0.665	1.017	0.832
Saturated model	0.459	0.459	0.459	0.484
Independence model	4.082	3.637	4.565	4.087

Model	HOELTER .05	HOELTER .01
Default model	62	73
Independence model	13	15

Appendix 18b: Fit indices for workplace friendship scale with items 3, 5, 6, 9 and 10 removed (Random 2)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	15	32.768	13	0.002	2.521
Saturated model	28	0.000	0		
Independence model	7	518.016	21	0.000	24.667

Model	RMR	GFI	AGFI	PGFI
Default model	0.055	0.955	0.902	0.443
Saturated model	0.000	1.000		
Independence model	0.371	0.469	0.292	0.352

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.937	0.898	0.961	0.936	0.960
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.619	0.580	0.594
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	19.768	6.602	40.603
Saturated model	0.000	0.000	0.000
Independence model	497.016	426.572	574.878

Model	FMIN	F0	LO 90	HI 90
Default model	0.167	0.101	0.034	0.207
Saturated model	0.000	0.000	0.000	0.000
Independence model	2.643	2.536	2.176	2.933

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.088	0.051	0.126	0.047
Independence model	0.347	0.322	0.374	0.000

Model	AIC	BCC	BIC	CAIC
Default model	62.768	64.045	141.205	127.016
Saturated model	56.000	58.383	202.415	175.930
Independence model	532.016	532.611	568.619	561.998

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.320	0.253	0.427	0.327
Saturated model	0.286	0.286	0.286	0.298
Independence model	2.714	2.355	3.112	2.717

Model	HOELTER	HOELTER
	.05	.01
Default model	134	166
Independence model	13	15

Appendix 18c: Fit indices for workplace friendship scale with items 3, 5, 6, 9 and 10 removed (Whole Sample)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	15	39.397	13	0.000	3.031
Saturated model	28	0.000	0		
Independence model	7	1037.062	21	0.000	49.384

Model	RMR	GFI	AGFI	PGFI
Default model	0.046	0.975	0.946	0.453
Saturated model	0.000	1.000		
Independence model	0.367	0.489	0.319	0.367

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.962	0.939	0.974	0.958	0.974
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.619	0.596	0.603
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	26.397	11.209	49.202
Saturated model	0.000	0.000	0.000
Independence model	1016.062	914.317	1125.198

Model	FMIN	F0	LO 90	HI 90
Default model	0.096	0.064	0.027	0.120
Saturated model	0.000	0.000	0.000	0.000
Independence model	2.523	2.472	2.225	2.738

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.070	0.046	0.096	0.083
Independence model	0.343	0.325	0.361	0.000

Model	AIC	BCC	BIC	CAIC
Default model	69.397	69.992	158.901	144.712
Saturated model	56.000	57.112	223.074	196.589
Independence model	1051.062	1051.340	1092.830	1086.209

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.169	0.132	0.224	0.170
Saturated model	0.136	0.136	0.136	0.139
Independence model	2.557	2.310	2.823	2.558

Model	HOELTER .05	HOELTER .01
Default model	234	289
Independence model	13	16

Appendix 18d: Fit Indices for the Job Satisfaction scale with 4, 7, 9, 11, 12 and 15 removed (Random 2)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	19	76.101	26	0.000	2.927
Saturated model	45	0.000	0		
Independence model	9	592.739	36	0.000	16.465

Model	RMR	GFI	AGFI	PGFI
Default model	0.173	0.919	0.859	0.531
Saturated model	0.000	1.000		
Independence model	0.948	0.469	0.337	0.375

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.872	0.822	0.912	0.875	0.910
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.722	0.629	0.657
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	50.101	27.694	80.142
Saturated model	0.000	0.000	0.000
Independence model	556.739	481.548	639.360

Model	FMIN	F0	LO 90	HI 90
Default model	0.388	0.256	0.141	0.409
Saturated model	0.000	0.000	0.000	0.000
Independence model	3.024	2.841	2.457	3.262

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.099	0.074	0.125	0.001
Independence model	0.281	0.261	0.301	0.000

Model	AIC	BCC	BIC	CAIC
Default model	114.101	116.144	218.229	195.482
Saturated model	90.000	94.839	336.619	282.744
Independence model	610.739	611.706	660.062	649.287

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.582	0.468	0.735	0.593
Saturated model	0.459	0.459	0.459	0.484
Independence model	3.116	2.732	3.538	3.121

Model	HOELTER .05	HOELTER .01
Default model	101	118
Independence model	17	20

Appendix 18e: Fit Indices for the Job Satisfaction scale with 2, 4, 7, 9, 11, 12 and 15 removed (Random 2)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	17	45.830	19	0.001	2.412
Saturated model	36	0.000	0		
Independence model	8	474.490	28	0.000	16.946

Model	RMR	GFI	AGFI	PGFI
Default model	0.156	0.947	0.900	0.500
Saturated model	0.000	1.000		
Independence model	0.932	0.523	0.386	0.407

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.903	0.858	0.941	0.911	0.940
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.679	0.613	0.638
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	26.830	10.729	50.621
Saturated model	0.000	0.000	0.000
Independence model	446.490	379.570	520.843

Model	FMIN	F0	LO 90	HI 90
Default model	0.234	0.137	0.055	0.258
Saturated model	0.000	0.000	0.000	0.000
Independence model	2.421	2.278	1.937	2.657

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.085	0.054	0.117	0.035
Independence model	0.285	0.263	0.308	0.000

Model	AIC	BCC	BIC	CAIC
Default model	79.830	81.466	170.995	152.644
Saturated model	72.000	75.465	265.055	226.195
Independence model	490.490	491.260	533.391	524.756

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.407	0.325	0.529	0.416
Saturated model	0.367	0.367	0.367	0.385
Independence model	2.503	2.161	2.882	2.506

Model	HOELTER .05	HOELTER .01
Default model	129	155
Independence model	18	20

Appendix 18f: Fit Indices for the Job Satisfaction scale with 2, 4, 7, 9, 11, 12 and 15 removed (Whole sample)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	17	48.419	19	0.000	2.548
Saturated model	36	0.000	0		
Independence model	8	871.126	28	0.000	31.112

Model	RMR	GFI	AGFI	PGFI
Default model	0.110	0.971	0.945	0.513
Saturated model	0.000	1.000		
Independence model	0.827	0.558	0.431	0.434

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.944	0.918	0.965	0.949	0.965
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.679	0.641	0.655
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	29.419	12.618	53.893
Saturated model	0.000	0.000	0.000
Independence model	843.126	750.475	943.179

Model	FMIN	F0	LO 90	HI 90
Default model	0.118	0.072	0.031	0.131
Saturated model	0.000	0.000	0.000	0.000
Independence model	2.120	2.051	1.826	2.295

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.061	0.040	0.083	0.175
Independence model	0.271	0.255	0.286	0.000

Model	AIC	BCC	BIC	CAIC
Default model	82.419	83.180	186.127	167.776
Saturated model	72.000	73.612	291.617	252.757
Independence model	887.126	887.485	935.930	927.294

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.201	0.160	0.260	0.202
Saturated model	0.175	0.175	0.175	0.179
Independence model	2.158	1.933	2.402	2.159

Model	HOELTER .05	HOELTER .01
Default model	256	308
Independence model	20	23

Appendix 18g: Fit indices for Organisational Commitment Questionnaire with all 15 items (Random 1)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	30	231.688	90	0.000	2.574
Saturated model	120	0.000	0		
Independence model	15	1643.163	105	0.000	15.649

Model	RMR	GFI	AGFI	PGFI
Default model	0.136	0.872	0.829	0.654
Saturated model	0.000	1.000		
Independence model	1.112	0.260	0.154	0.227

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.859	0.835	0.909	0.893	0.908
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.857	0.736	0.778
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	141.688	100.526	190.529
Saturated model	0.000	0.000	0.000
Independence model	1538.163	1410.609	1673.107

Model	FMIN	F0	LO 90	HI 90
Default model	1.083	0.662	0.470	0.890
Saturated model	0.000	0.000	0.000	0.000
Independence model	7.678	7.188	6.592	7.818

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.086	0.072	0.099	0.000
Independence model	0.262	0.251	0.273	0.000

Model	AIC	BCC	BIC	CAIC
Default model	291.688	296.536	474.049	422.807
Saturated model	240.000	259.394	969.443	764.477
Independence model	1673.163	1675.587	1764.343	1738.722

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.363	1.171	1.591	1.386
Saturated model	1.121	1.121	1.121	1.212
Independence model	7.819	7.222	8.449	7.830

Model	HOELTER .05	HOELTER .01
Default model	105	115
Independence model	17	19

Appendix 18h: Fit indices for Organisational Commitment Questionnaire with items 2, 10 and 11 deleted (Random 1)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	24	104.654	54	0.000	1.938
Saturated model	78	0.000	0		
Independence model	12	1140.653	66	0.000	17.283

Model	RMR	GFI	AGFI	PGFI
Default model	0.117	0.918	0.881	0.635
Saturated model	0.000	1.000		
Independence model	1.069	0.318	0.194	0.269

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.908	0.888	0.953	0.942	0.953
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.818	0.743	0.780
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	50.654	25.488	83.617
Saturated model	0.000	0.000	0.000
Independence model	1074.653	968.832	1187.884

Model	FMIN	F0	LO 90	HI 90
Default model	0.489	0.237	0.119	0.391
Saturated model	0.000	0.000	0.000	0.000
Independence model	5.330	5.022	4.527	5.551

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.066	0.047	0.085	0.080
Independence model	0.276	0.262	0.290	0.000

Model	AIC	BCC	BIC	CAIC
Default model	152.654	155.758	293.187	257.549
Saturated model	156.000	166.090	612.732	496.910
Independence model	1164.653	1166.206	1234.920	1217.101

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.713	0.596	0.867	0.728
Saturated model	0.729	0.729	0.729	0.776
Independence model	5.442	4.948	5.971	5.450

Model	HOELTER .05	HOELTER .01
Default model	148	166
Independence model	17	18

Appendix 18i: Fit indices for Organisational Commitment Questionnaire with items 2, 10 and 11 deleted (Whole sample)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	24	136.757	54	0.000	2.533
Saturated model	78	0.000	0		
Independence model	12	2531.772	66	0.000	38.360

Model	RMR	GFI	AGFI	PGFI
Default model	0.101	0.946	0.922	0.655
Saturated model	0.000	1.000		
Independence model	1.308	0.279	0.148	0.236

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.946	0.934	0.967	0.959	0.966
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.818	0.774	0.791
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	82.757	52.066	121.132
Saturated model	0.000	0.000	0.000
Independence model	2465.772	2304.938	2633.940

Model	FMIN	F0	LO 90	HI 90
Default model	0.333	0.201	0.127	0.295
Saturated model	0.000	0.000	0.000	0.000
Independence model	6.160	5.999	5.608	6.409

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.061	0.048	0.074	0.073
Independence model	0.301	0.291	0.312	0.000

Model	AIC	BCC	BIC	CAIC
Default model	184.757	186.325	340.899	305.262
Saturated model	156.000	161.095	663.463	547.640
Independence model	2555.772	2556.555	2633.843	2616.024

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.450	0.375	0.543	0.453
Saturated model	0.380	0.380	0.380	0.392
Independence model	6.218	5.827	6.628	6.220

Model	HOELTER .05	HOELTER .01
Default model	217	244
Independence model	14	16

Appendix 18j: Fit indices for the cohesion scale with all 9 items (Random 1)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	19	88.327	26	0.000	3.397
Saturated model	45	0.000	0		
Independence model	9	726.643	36	0.000	20.185

Model	RMR	GFI	AGFI	PGFI
Default model	0.057	0.910	0.844	0.526
Saturated model	0.000	1.000		
Independence model	0.288	0.449	0.312	0.359

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.878	0.832	0.911	0.875	0.910
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.722	0.634	0.657
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	62.327	37.489	94.764
Saturated model	0.000	0.000	0.000
Independence model	690.643	606.738	781.965

Model	FMIN	F0	LO 90	HI 90
Default model	0.413	0.291	0.175	0.443
Saturated model	0.000	0.000	0.000	0.000
Independence model	3.396	3.227	2.835	3.654

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.106	0.082	0.131	0.000
Independence model	0.299	0.281	0.319	0.000

Model	AIC	BCC	BIC	CAIC
Default model	126.327	128.190	232.116	209.369
Saturated model	90.000	94.412	340.554	286.679
Independence model	744.643	745.525	794.753	783.978

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.590	0.474	0.742	0.599
Saturated model	0.421	0.421	0.421	0.441
Independence model	3.480	3.088	3.906	3.484

Model	HOELTER .05	HOELTER .01
Default model	95	111
Independence model	16	18

Appendix 18k: Fit indices for cohesion scale with item 2 removed (Random 1)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	17	33.171	19	0.023	1.746
Saturated model	36	0.000	0		
Independence model	8	633.633	28	0.000	22.630

Model	RMR	GFI	AGFI	PGFI
Default model	0.037	0.959	0.923	0.506
Saturated model	0.000	1.000		
Independence model	0.304	0.456	0.301	0.355

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.948	0.923	0.977	0.966	0.977
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.679	0.643	0.663
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	14.171	1.947	34.229
Saturated model	0.000	0.000	0.000
Independence model	605.633	527.414	691.271

Model	FMIN	FO	LO 90	HI 90
Default model	0.155	0.066	0.009	0.160
Saturated model	0.000	0.000	0.000	0.000
Independence model	2.961	2.830	2.465	3.230

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.059	0.022	0.092	0.299
Independence model	0.318	0.297	0.340	0.000

Model	AIC	BCC	BIC	CAIC
Default model	67.171	68.663	159.822	141.472
Saturated model	72.000	75.161	268.203	229.343
Independence model	649.633	650.335	693.233	684.598

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.314	0.257	0.408	0.321
Saturated model	0.336	0.336	0.336	0.351
Independence model	3.036	2.670	3.436	3.039

Model	HOELTER .05	HOELTER .01
Default model	195	234
Independence model	14	17

Appendix 18l: Fit indices for cohesion scale with item 2 removed (Whole Sample)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	17	59.799	19	0.000	3.147
Saturated model	36	0.000	0		
Independence model	8	1347.401	28	0.000	48.121

Model	RMR	GFI	AGFI	PGFI
Default model	0.042	0.962	0.929	0.508
Saturated model	0.000	1.000		
Independence model	0.333	0.432	0.270	0.336

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.956	0.935	0.969	0.954	0.969
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.679	0.648	0.658
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	40.799	21.171	68.041
Saturated model	0.000	0.000	0.000
Independence model	1319.401	1202.925	1443.258

Model	FMIN	F0	LO 90	HI 90
Default model	0.145	0.099	0.052	0.166
Saturated model	0.000	0.000	0.000	0.000
Independence model	3.278	3.210	2.927	3.512

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.072	0.052	0.093	0.036
Independence model	0.339	0.323	0.354	0.000

Model	AIC	BCC	BIC	CAIC
Default model	93.799	94.560	197.507	179.157
Saturated model	72.000	73.612	291.617	252.757
Independence model	1363.401	1363.759	1412.205	1403.569

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.228	0.180	0.295	0.230
Saturated model	0.175	0.175	0.175	0.179
Independence model	3.317	3.034	3.619	3.318

Model	HOELTER .05	HOELTER .01
Default model	208	249
Independence model	13	15

Appendix 18m: Fit indices for the Needs Assessment Questionnaire (Random 2)

Summary of models

Model	NP	PAR	CMIN	DF	P	CMIN/DF
Default model	34		141.690	71	0.000	1.996
Saturated model	105		0.000	0		
Independence model	14		595.800	91	0.000	6.547

Model	RMR	GFI	AGFI	PGFI
Default model	0.047	0.911	0.869	0.616
Saturated model	0.000	1.000		
Independence model	0.135	0.659	0.606	0.571

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.762	0.695	0.865	0.821	0.860
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.780	0.595	0.671
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	70.690	40.618	108.547
Saturated model	0.000	0.000	0.000
Independence model	504.800	431.332	585.756

Model	FMIN	F0	LO 90	HI 90
Default model	0.723	0.361	0.207	0.554
Saturated model	0.000	0.000	0.000	0.000
Independence model	3.040	2.576	2.201	2.989

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.071	0.054	0.088	0.023
Independence model	0.168	0.156	0.181	0.000

Model	AIC	BCC	BIC	CAIC
Default model	209.690	215.326	411.047	355.319
Saturated model	210.000	227.403	831.837	659.736
Independence model	623.800	626.121	706.712	683.765

Model	ECVI	LO 90	HI 90	MECVI
Default model	1.070	0.916	1.263	1.099
Saturated model	1.071	1.071	1.071	1.160
Independence model	3.183	2.808	3.596	3.194

Model	HOELTER .05	HOELTER .01
Default model	127	141
Independence model	38	42

Appendix 18n: Fit indices for the Needs Assessment Questionnaire (Whole sample)

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	34	216.367	71	0.000	3.047
Saturated model	105	0.000	0		
Independence model	14	1203.535	91	0.000	13.226

Model	RMR	GFI	AGFI	PGFI
Default model	0.043	0.931	0.898	0.630
Saturated model	0.000	1.000		
Independence model	0.134	0.647	0.593	0.561

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.820	0.770	0.872	0.833	0.869
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.780	0.640	0.678
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
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Model	145.367	104.884	193.479
Default model	145.367	104.884	193.479
Saturated model	0.000	0.000	0.000
Independence model	1112.535	1004.256	1228.232

Model	FMIN	F0	LO 90	HI 90
Default model	0.526	0.354	0.255	0.471
Saturated model	0.000	0.000	0.000	0.000
Independence model	2.928	2.707	2.443	2.988

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.071	0.060	0.081	0.001
Independence model	0.172	0.164	0.181	0.000

Model	AIC	BCC	BIC	CAIC
Default model	284.367	286.943	510.810	455.082
Saturated model	210.000	217.955	909.308	737.207
Independence model	1231.535	1232.596	1324.776	1301.830

Model	ECVI	LO 90	HI 90	MECVI
Default model	0.692	0.593	0.809	0.698
Saturated model	0.511	0.511	0.511	0.530
Independence model	2.996	2.733	3.278	2.999

Model	HOELTER .05	HOELTER .01
Default model	175	194
Independence model	40	43

Appendix 19: Regression weights for causal model: Internet Study

Maximum Likelihood Estimates

Regression Weights:	Estimate	S.E.	C.R.
Extrinsic JS <- cohesion_workload sh	0.331	0.099	3.336
Extrinsic JS <- cohesion_social supp	0.735	0.157	4.688
Extrinsic JS <----- WFO	0.589	0.155	3.793
Intrinsic JS <----- Extrinsic JS	0.503	0.062	8.102
OCQ <----- Extrinsic JS	0.588	0.075	7.892
OCQ <----- Intrinsic JS	0.472	0.075	6.283
WFP <----- WFO	0.969	0.102	9.477
ITL <----- OCQ	-0.555	0.097	-5.740
ITL <----- Intrinsic JS	-0.530	0.130	-4.079

Standardized Regression Weights:	Estimate
Extrinsic JS <- cohesion_workload sh	0.240
Extrinsic JS <- cohesion_social supp	0.417
Extrinsic JS <----- WFO	0.252
Intrinsic JS <----- Extrinsic JS	0.572
OCQ <----- Extrinsic JS	0.520
OCQ <----- Intrinsic JS	0.367
WFP <----- WFO	0.559
ITL <----- OCQ	-0.376
ITL <----- Intrinsic JS	-0.279

Covariances:	Estimate	S.E.	C.R.
cohesion_social <> cohesion_workload share	0.452	0.049	9.283
WFO <-----> cohesion_social support	0.215	0.029	7.435
WFO <-----> cohesion_workload share	0.106	0.033	3.238

Correlations:	Estimate
cohesion_social <> cohesion_workload share	0.636
WFO <-----> cohesion_social support	0.513
WFO <-----> cohesion_workload share	0.197

Appendix 20: Fit indices for causal model: Internet Study

Summary of models

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	84	1301.387	582	0.000	2.236
Saturated model	666	0.000	0		
Independence model	36	8014.614	630	0.000	12.722

Model	RMR	GFI	AGFI	PGFI
Default model	0.138	0.847	0.825	0.740
Saturated model	0.000	1.000		
Independence model	0.770	0.235	0.192	0.223

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.838	0.824	0.903	0.895	0.903
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.924	0.774	0.834
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	719.387	618.641	827.844
Saturated model	0.000	0.000	0.000
Independence model	7384.614	7099.187	7676.494

Model	FMIN	F0	LO 90	HI 90
Default model	3.166	1.750	1.505	2.014
Saturated model	0.000	0.000	0.000	0.000
Independence model	19.500	17.967	17.273	18.678

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.055	0.051	0.059	0.023
Independence model	0.169	0.166	0.172	0.000

Model	AIC	BCC	BIC	CAIC
Default model	1469.387	1486.007	2108.169	1891.153
Saturated model	1332.000	1463.775	6396.625	4676.002
Independence model	8086.614	8093.737	8360.378	8267.371

Model	ECVI	LO 90	HI 90	MECVI
Default model	3.575	3.330	3.839	3.616
Saturated model	3.241	3.241	3.241	3.561
Independence model	19.675	18.981	20.386	19.693

Model	HOELTER .05	HOELTER .01
Default model	202	210
Independence model	36	37

Model	AIC	BCC	BIC	CAIC
Default model	1610.236	1626.335	2273.210	2048.671
Saturated model	1406.000	1537.596	6825.422	4989.946
Independence model	9059.868	9066.794	9345.101	9248.497

Model	ECVI	LO 90	HI 90	MECVI
Default model	3.627	3.386	3.884	3.663
Saturated model	3.167	3.167	3.167	3.463
Independence model	20.405	19.723	21.102	20.421

Model	HOELTER .05	HOELTER .01
Default model	209	217
Independence model	36	38

Appendices for the Invariance Testing Study (Chapter 5)

Appendix 21: Fit indices for the causal model: Full data set (n=445)

Summary of models

Model	NP	DF	CMIN	P	CMIN/DF
Default model	86	617	1438.236	0.000	2.331
Saturated model	703	0	0.000		
Independence model	37	666	8985.868	0.000	13.492

Model	RMR	GFI	AGFI	PGFI
Default model	0.131	0.848	0.826	0.744
Saturated model	0.000	1.000		
Independence model	0.790	0.224	0.181	0.212

Model	DELTA1 NFI	RHO1 RFI	DELTA2 IFI	RHO2 TLI	CFI
Default model	0.840	0.827	0.902	0.893	0.901
Saturated model	1.000		1.000		1.000
Independence model	0.000	0.000	0.000	0.000	0.000

Model	PRATIO	PNFI	PCFI
Default model	0.926	0.778	0.835
Saturated model	0.000	0.000	0.000
Independence model	1.000	0.000	0.000

Model	NCP	LO 90	HI 90
Default model	821.236	714.474	935.687
Saturated model	0.000	0.000	0.000
Independence model	8319.868	8017.088	8629.091

Model	FMIN	F0	LO 90	HI 90
Default model	3.239	1.850	1.609	2.107
Saturated model	0.000	0.000	0.000	0.000
Independence model	20.238	18.738	18.057	19.435

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	0.055	0.051	0.058	0.017
Independence model	0.168	0.165	0.171	0.000