

The Importance of Social Network Relationships During The Socialisation Process of New Employees

By

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ABSTRACT

Organisation socialisation is the process by which an individual acquires the attitudes, behaviour, and knowledge she or he needs to participate as an organisation member (Van Maanen & Schein, 1979). During socialisation, organisations seek to mould new employees to fit its needs and employees attempt to define acceptable work roles for themselves within the organisation (Fisher, 1986). Several scholars believe that an important way in which socialisation occurs is through social interactions between newcomers and ‘insiders’ or more experienced members of their organisation (Feldman, 1981; Louis, 1990; Reichers, 1987). Relationships might be important, but little is known about the types of relationship patterns that are most conducive to effective socialisation (Morrison, 2002). This research will view the socialisation process from the perspective of social network structure and examine the effect of the relationships on socialisation outcomes.

KEYWORDS: Socialisation outcomes; social network analysis; newcomer learning and assimilation

Declaration

I hereby declare that this thesis is my own unaided work except where due recognition has been given. It is submitted for the degree of Masters in Business Economics (Human Resources Management) in the University of Witwatersrand, Johannesburg. It has not been submitted before any other degree in any other university.

Divya Rebecca Paul

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DEDICATIONS

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ABBREVIATIONS

Abbreviations used in study	
β	Standardised regression
<i>Affco</i>	Affective coworker commitment
<i>Afforg</i>	Affective organisational commitment
<i>B</i>	Unstandardised regression
<i>CI</i>	Confidence intervals
<i>CI</i>	Confidence interval
<i>Conco</i>	Continuance coworker commitment
<i>Conorg</i>	Continuance organisational commitment
<i>DC</i>	Degree centrality
<i>EC</i>	Egonet composition
<i>ED</i>	Egonet density
<i>FCC</i>	(Freeman's) closeness centrality
<i>Gpindiv</i>	Group vs. individual
<i>INGO</i>	International non-governmental organisation
<i>MC</i>	Multiple centrality
<i>NGO</i>	Non-governmental organisation.
<i>Normco</i>	Normative coworker commitment
<i>Normorg</i>	Normative organisational commitment
<i>OCB</i>	Organisation citizenship behaviour
<i>Org</i>	Organisation
<i>OS</i>	Organisational socialisation
<i>OS</i>	Organisation socialisation
<i>PB</i>	Proximal Betweenness
<i>Perf</i>	Performance proficiency (task mastery)
<i>PG</i>	Person-group
<i>PO</i>	Person-organisation
<i>POS</i>	Perceived organisation support
<i>RBC</i>	Reach based centrality
<i>RJP</i>	Realistic job preview
<i>Role con/am</i>	Role conflict / ambiguity
<i>Role con/am</i>	Role conflict/ambiguity
<i>SH</i>	Structural holes
<i>SNA</i>	Social network analysis
<i>TCE</i>	Transaction cost economics

CHAPTER 1. INTRODUCTION

Skills shortage, whether it is ‘high-skills’, ‘intermediate-skills’ and ‘low-skills’ especially for managerial and professional positions, is one of the major constraints to the growth and development of business in South Africa (Lewis, 2002; Daniels, 2007). A recent report confirms that forty-one percent of privately held businesses in South Africa attribute the non-availability of skilled workforce as the biggest constraint to business growth, a phenomenon observed and reported for three consecutive years (SAinfo, 2009). While a shortage of orders due to reduced demands both in South Africa and globally, places added constraint on businesses growth in the recent economic down turn, South African businesses report, that lack of skills in the workplace, places a greater burden on long-term potential growth of businesses. Organisations then need to take into account shortage of skilled labour, to concentrate on retaining skilled labour, and passing the skills to subsequent generations.

An aspect of retaining skilled labour in the work place involves managing the diversity of ethnic groups in the South African workplace. Thomas and Bendixen (2000) note that the plethora of ethnic groups necessitates an understanding and managing of the different values that people bring to the organisation by virtue of their socialisation, interaction with other societal institutions as well as previous life and work experiences. Managing or valuing this diversity encompasses a range of activities aimed at creating awareness that, members of other cultures or subgroups, due to their upbringing, may espouse different values and assumptions which can affect the way they co-operate, compete, communicate, plan, organise and are motivated (Langer, 1989). The goal then of valuing and managing diversity is to capitalise on the strengths of each individual or subgroup to ensure that the whole is greater than the sum of the parts (Tung, 1995).

This research will investigate an aspect of this issue, namely newcomers in organisations, specifically in context of social networks as described in the research question.

Research question: *How does a newcomer's relationship with others in workplace social networks affect organisational outcomes in South Africa?*

The prevalence of such a rich diversity of culture and race in an organisation necessitates that organisations take a closer look at how individuals interact with one another, form connections and social networks, and exchange information, from the point of entry.

De Graaf and Flap (1988) state that social networks are important not just for finding jobs, but also for most other things people want in life such as physical safety, good health, companionship, social esteem, etc. A person's social networks and the resources that they can mobilise through their direct and indirect contacts (Bourdieu, 1980; Flap, 1988; Lin, 1982) may help meet these needs (De Graaf & Flap, 1988). The number of people who want to help an individual, the resources that he/she can mobilise in this indirect way, and the extent, to which others are prepared to give support, give a clear picture of an individual's social resources (De Graaf & Flap, 1988).

According to the Neo-Weberian ideas, life-chances depend on the distribution of resources (Ultee, 1984). People want to better their life conditions, and those who have established a good network of resources may succeed in achieving this goal. Weber (1921) distinguished three types of resources that people require, which he identifies as economic, symbolic, and political. Uneven distribution of these three types of resources create a similar effect to the unequal distribution of social resources, from which one can gather that persons with more social resources will acquire better living conditions, including a better job, than persons with less social resources (De Graaf, & Flap, 1988). Accordingly, individuals need to acquire and maintain their relationships with other significant people to ensure access to resources and information for future success.

Translating this scenario to the organisational set up, people in the organisation maintain ties with others, the aggregate of which creates the informal social network. Particular attention is given to newcomers who upon entering the organisation are subjected to socialisation processes. Bauer, Morrison and Callister (1998) maintain that this process of socialisation is important, because of

its potentially strong and lasting impact on employees' behaviours and attitudes, and also because it is one of the primary ways by which organisational culture is maintained. Socialisation processes therefore create the process through which an individual acquires the attitudes, behaviour and knowledge he or she needs to participate as an organisational member (Van Maanen & Schein, 1979). Socialisation literature and research therefore focuses on formal organisation tactics used to socialise newcomers. However, some researchers posit that in addition to formal socialisation tactics, social interactions between newcomers and "insiders" or more experienced members of their new organisation (Feldman, 1981; Louis, 1990; Reichers, 1987) aid in newcomer learning and integration (e.g. Brass, 1995; Burt, 1992a; Ibarra, 1995). Morrison (2002) believes that such relationships between new employees and the "insiders" allow newcomers to realise the various socialisation outcomes such as role clarity, organisational knowledge, and task mastery.

Accordingly, this research seeks to understand the types of relationship patterns that are most conducive to effective socialisation by drawing from the theories of socialisation and social network analysis. It is possible to understand organisation phenomena and outcomes by considering not merely the presence of social relationships, but also the overall pattern of relationships among people (Brass, 1995). Patterns of relationships among people in a network reveal their positions in the informal network that may hinder or aid in availability and access to information and key resources. This research will consider the relationship of *tenure* (that is used to define newcomers in this research) with the positions in the social network on certain organisational outcomes. Therefore, the aim of this research will be to identify the different structures of relationships newcomers form with "insiders" and with other newcomers for effective socialisation outcomes.

1.1 SIGNIFICANCE OF THE STUDY

The significance of the study is to highlight the importance and nature of newcomers' relationships – in the form of social networks - for effective socialisation outcomes.

This research aims to add to the larger body of literature with specific findings from South African organisations in identifying key elements of both organisational outcomes and social networks that are relevant to the workplaces and newcomers. This research hopes to generate future research interest in South Africa, as it offers a unique environment because of its varied and rich cultural and racial diversity.

Socialisation process in South African organisations may be seen as an important issue because of the diversity of race and skills present in the employment sector (Thomas & Bendixen, 2000; Horwitz, Bowmaker-Falconer, & Peter, 1996). Such a study will allow one to understand the socialisation process within the South African context and it may help to improve the integration such that it will be beneficial to the employees as well as for the organisation concerned.

At the same time, this study hopes to assist South African organisations understand their unique organisational environment which greatly influences the newcomer's adjustment. This may encourage organisations to adapt or change accordingly, their process of social integration and improve their work culture/ethics.

The following section discusses the chapter outline for this research.

1.2 CHAPTER OUTLINE

In order to examine the issues and relationships between newcomers and specific organisational outcomes, the following chapters will be presented in the thesis:

Chapter two introduces the concept of organisational socialisation process of newcomers as several authors have noted and emphasised the importance of the initial period of employment in an organisation in shaping employees' subsequent attitudes and behaviours (e.g. Buchanan, 1974; Hall, 1976; Wanous, 1980). Accordingly, this chapter aims to highlight key issues on socialisation of newcomers focusing on influence and outcomes of the process.

Chapter three analyses and reviews the concept of social networks and the analysis thereof in order to better understand the relationships that individuals

form and maintain in an organisation, because research and theory suggest that network relationships may be very important for newcomer learning and integration (e.g. Brass, 1995; Burt, 1992a; Ibarra, 1995). Research also highlights the relationships between actors and examines the availability of resources and the exchange of resources between these actors (Scott, 1991; Wasserman & Faust, 1994; Wellman & Berkowitz, 1988).

Accordingly, this chapter defines social network analysis and explores in depth to understand the nature of the relationships formed on an informal level outside of the organisational formal structure. This chapter will also review social networks with a focus on the socialisation process of newcomers

Chapter four integrates literature from both socialisation and social network research to identify the types of relationships newcomers form with “insiders” and other newcomers for effective socialisation outcomes in order to develop a model for this research. Propositions based on the literature are presented in this chapter.

Chapter five discusses the method for the empirical study, describing population samples, instruments and data collection mechanisms, statistical methods and empirical limitations.

Chapter six presents the results of the empirical study, a survey of three organisations which report newcomer’s organisational outcomes through their positions in the organisational networks.

Chapter seven presents the discussion, recommendations for both managers and researchers and the conclusions arising from the empirical study findings.

1.3 BROAD LIMITATIONS OF THIS RESEARCH

This section mentions some of the broad limitations identified at the onset of the study. One of the limitations of this study would be the lack of generalisation of the results, as this study involves following a case study approach to each organisation. While there is a variety of organisation types across industries, results will not be applicable to all of them.

Another major limitation arises from getting respondents to give accurate responses to the questions about their connections to others in the workplace. This could be because of under-and/or over-representing ties, connections to people in

significant positions overriding self-perceived notions about his/her job performance, others in the workplace who may distort network findings.

Network research that combines quantitative and qualitative research techniques would ensure robust results but due to time constraints, this study undertakes a quantitative approach leaving gaps in the results, which may be difficult to explain.

In addition to the above mentioned limitations, chapter six discusses limitations arising from data analyses while chapter seven deals with the limitations which inhibited complete interpretation of the findings.

The proceeding chapter discusses organisational socialisation process with reference to newcomers.

CHAPTER 2. ORGANISATIONAL SOCIALISATION

2.1 INTRODUCTION

Research shows that entry into a new organisation is a period of stress, anxiety, and time where newcomers encounter reality shock (Louis, 1980). Kammeyer-Mueller and Wanberg (2003), add that early entry is one of the most critical phases of organisational life during which time newcomers learn what their new organisation is like and decide whether they 'fit in'. Some researchers propose that newcomers' initial attitudes influence subsequent attitudes and behaviour (Mowday, Porter, & Steers, 1982; Wanous, 1992). Onus then lies with the organisation to have in place effective orientation programmes that will facilitate a newcomer's initial entry and subsequent adjustment to the organisation. Newcomer adjustment, includes among others, knowledge, confidence, and motivation for performing a work role, and commitment to the organisation and its goals (Ashford & Taylor, 1990; Hulin, 1991; Nicholson, 1984). Although organisations employ several tactics in various combinations to manage this process newcomers actions such as proactive information seeking behaviour and other personal factors such as self-efficacy influence this adjustment.

Accordingly, this chapter delves into the process of newcomer socialisation to understand what newcomers learn, how they adjust and become contributing members of the organisation.

2.2 DEFINING ORGANISATIONAL SOCIALISATION

Theorists define organisational socialisation (OS) as the process whereby newcomers learn the behaviours and attitudes necessary for assuming roles in an organisation, thereby adapting from the role of an outsider to an integrated and effective insider (Fisher, 1986; Van Maanen, 1976; Van Maanen & Schein, 1979). Further, they state that socialisation is a process which takes place whenever an

employee crosses an organisational boundary, whether this is external (i.e. between organisations) or internal (e.g. functional, hierarchical) (Van Maanen & Schein, 1979).

Regardless of whether organisations consciously plan and manage or whether it occurs informally, Morrison (1993c) believes that socialisation provides newcomers with considerable information about appropriate roles and behaviours to learn and adjust. Information can include changes in or the development of new skills, knowledge, abilities, attitudes, values, and relationships, and the development of appropriate sense-making frameworks (Chao et al., 1994a; Chatman, 1991; De Vos et al., 2003; Louis, 1980b; Thomas & Anderson, 1998). This process facilitates newcomers to adapt to early entry experiences, and reduce uncertainty and anxiety associated with the reality shock of joining a new organisation (Bauer, Morrison, & Callister, 1998; Cable & Parsons, 2001; Jones, 1986; Van Maanen & Schein, 1979).

While most organisations plan for formal socialisation processes, Katz, (1985) believes that in the absence of formal programmes, newcomers will be socialised by the informal social networks. Chapter three explores informal social networks in detail.

Feldman (1976b) describes successful socialisation as the transformation from outsider to participating and effective insider.

Socialisation researchers posit that socialisation tactics may influence certain antecedents such as job satisfaction, organisational commitment, and met expectations (e.g., Ashforth & Saks, 1996; Bauer et al., 1998; Cable & Judge, 1996; Saks & Ashforth, 1997b) to indicate successful adjustment or transformation. One of the ways, this occurs is by influencing newcomers' adjustment to their new jobs and environments through learning, task mastery, role clarity, and workgroup integration) (Cooper-Thomas & Anderson, 2002; Kammeyer-Mueller & Wanberg, 2003); and by influencing perceptions of person-organisation (PO) fit and values congruence (e.g., Cable & Parsons, 2001; Cooper-Thomas, van Vianen, & Anderson, 2004).

For organisations, successful adjustment is important because they expend time and money to orient newly hired employees, i.e. newcomers (Louis, Posner

& Powell, 1983). The authors explain that direct costs associated with the socialisation programs can be substantial and the indirect costs are not as easy to define but only accrue especially when newcomers prove less competent resulting in extended period of orientation. A domino effect prevails when competent co-workers are called to assist struggling newcomers with their roles and jobs, which affects their performance and time on the jobs, contributing further to indirect costs. Organisational leaders would therefore need to design and improve orientation and socialisation programs to ensure newcomers adjust quickly in a more cost effective way.

Literature does not limit the definition of newcomers to those who enter a workplace for the first time but as Glaser and Strauss (1971) stress, regardless of an individual's previous socialisation experiences, each major passage or role change involves socialisation into the new role and setting. Considering the variety and number of roles that the typical adult holds between high school and retirement, organisational socialisation is seen as a pervasive process throughout adult life (Brim, 1968; Glaser & Strauss, 1971).

The following section emphasises the importance of socialisation of newcomers.

2.3 IMPORTANCE OF SOCIALISATION

As stated earlier, organisations use socialisation tactics to facilitate newcomers to adapt to early entry experiences, which reduce uncertainty and anxiety associated with the reality shock of joining a new organisation, and to acquire desired or necessary attitudes, behaviours, and knowledge.

Research has shown that socialisation is a beneficial process for both employees and organisations for a number of reasons. Newcomers entering organisations may have high expectations concerning their job and overall experience of their new workplace. Organisations desiring to negate high levels of unmet expectations, which in turn can negatively affect their attitudes and behaviours, including higher levels of turnover would benefit from socialising newcomers (Wanous & Colella, 1989; Wanous, 1992. As recruitment and selection together form substantial direct costs for organisations (Bauer et al.,

1998), OS can mitigate meeting and/or adjusting newcomers' expectations to achieve positive socialisation outcomes (Anderson & Ostroff, 1997).

Newcomers need to know their performance criteria because they are hired to contribute to individual, team and organisational performance criteria therefore OS is essential in enabling newcomers to get up to speed and to contribute (Van Maanen and Schein, 1979).

As an organisation is an interplay between the formal organisational structure and the informal network of relationships crossing boundaries (physical and hierarchical) interposed with values, norms, unwritten rules and regulations and politics, newcomers need to learn to function within this complex environment by learning the finer nuances (Bauer et al., 1998; Brass, 1985; Feldman, 1976a; Louis, 1980b, 1990).

Extensive research done on the study of enduring effects of organisational socialisation shows that it has a rapid influence with lasting effects. Accordingly, some authors suggest that newcomers are able to adjust quickly in the first several months (Chan & Schmitt, 2000; Chen & Klimoski, 2003; Major et al., 1995; Thomas & Anderson, 1998). This is possible as early adjustment outcomes can lead to lasting influence and quantifiable outcomes (Bauer & Green, 1994; Ostroff & Kozlowski, 1992).

Organisations and employees experience frequent workplace interventions and changes, such as merger and acquisitions and differing projects (Steers et al., 2004). In each of the cases mentioned, workers cross functions, hierarchical levels, and inclusionary boundaries to work on projects and teams, which require additional socialisation (Van Maanen & Schein, 1979). This, coupled with the increased rate of employee turnover to achieve personal career goals, rather than accept organisationally directed career paths (Hall, 2004), is making OS an increasingly common phenomenon for employers and employees.

As we have seen new employment, is a challenge for the newcomer facing new situations and is in need of acquiring additional knowledge and skills to adjust and cope. This period is also a challenge for the organisation as there is a tendency towards increased mobility among employees especially when they enter organisations with high expectations and the organisation is unable to meet

them. At the same time, organisations need to capitalise on the competence of newcomers and therefore need increased knowledge of newcomers' learning processes and a necessary awareness of newcomers' differences with regard to personal characteristics and competence.

2.4 OS THEORY PERSPECTIVES

This section reviews four theoretical perspectives on OS which are as follows: (1) Van Maanen and Schein's (1979) model on socialisation tactics; (2) uncertainty reduction theory; (3) social cognitive theory; and (4) cognitive and sense making theory. These perspectives offer insight how organisational socialisation occurs following the organisational route or the motions followed by the newcomer.

2.4.1 VAN MAANEN AND SCHEIN (1979)

Van Maanen and Schein's (1979) typology of socialisation tactics describing "A set of interrelated theoretical propositions about structure and outcome of organisational socialisation processes" outlines certain linkages between specific socialisation tactics and the resulting behavioural responses. According to the authors, organisations can use six bipolar tactics identified as collective vs. individual, formal vs. informal, sequential vs. random, fixed vs. variable, serial vs. disjunctive, investiture vs. divestiture, in any combination to formally structure socialisation processes so that newcomers will adopt and adjust to the organisation. Section 2.5.2A.i 2.5.2A.idiscusses these six bipolar tactics in detail.

Building on Van Maanen and Schein (1979) typology of socialisation tactics, Jones (1986) suggested that six tactics chiefly collective, formal, sequential, fixed, serial, and investitures tactics collate together forming what he terms institutionalised socialisation. According to Jones (1986), these tactics are ideal in providing information that reduces the uncertainty and anxiety inherent in early work experiences. These tactics also encourage newcomers to accept preset roles thereby reproducing the status quo to ensure custodial role orientation. On the other end of the continuum, which Jones terms individualised socialisation,

are individual, informal, random, variable, disjunctive, and divestiture tactics. These tactics encourage newcomers to challenge the status quo and develop their own approaches to their roles giving rise to innovative role orientation. These tactics are beneficial in roles and organisations where creativity is encouraged such as design firms.

2.4.2 UNCERTAINTY AVOIDANCE THEORY

Followers of this theory recognise that newcomers experience high levels of uncertainty during the process of organisational entry. They add that newcomers, like any organisational members are motivated to reduce uncertainty such that the work environment becomes more predictable, understandable, and controllable. Newcomers achieve this by availing themselves of the information provided via various communication channels, such as social interactions with superiors and peers. Morrison (1993a) further states that as uncertainty decreases, newcomers become more adept at performing their tasks, leading to job satisfaction and may be more inclined to remain in their organisation. Socialisation programs can influence newcomers' adjustment in this regard by reducing their high levels of uncertainty and anxiety due to the plethora of information made available.

Mignerny, Rubin and Gorden (1995), found that socialisation tactics influence the availability and acquisition of information and feedback that newcomers require to reduce their high levels of uncertainty while Baker (1995) found that role certainty is an important latent factor of socialisation tactics. Saks (1996) found that both the amount and helpfulness of entry training were related to lower anxiety, and anxiety mediated the relations between entry training and work outcomes.

2.4.3 SOCIAL COGNITIVE THEORY

Bandura (1986, 1997) put forward social cognitive theory (SCT), which explains human behaviour and psychosocial functioning is explained in terms of mutual bidirectional interaction and influence between three sets of factors constituting personal, which includes cognitive, biological and affective events, behavioural and environmental events. The idea is that individuals control

behaviour through cognitive processes, the environment, and external social stimulus events. Wood and Bandura (1989a) identify three aspects of SCT, which they deemed as relevant for organisational functioning: vicarious learning and mastery modelling, goal systems, and self-regulatory mechanisms of which self-efficacy beliefs are the most important.

Ostroff and Kozlowski (1992) found that newcomers acquired information from role models (supervisors and co-workers), and through observation and experimentation achieved a sense of mastery of their task and role which was consistent with social cognitive theory.

2.4.4 COGNITIVE AND SENSE MAKING THEORY

Louis' (1980b) cognitive approach to socialisation has been the backbone to understanding newcomer information seeking and acquisition process, through which newcomers attempt to make sense of the surprises they encounter during socialisation. Sense making is a thinking process in which newcomers interpret and ascribe meanings to surprises through interactions with insiders, attribution processes, and the variation of cognitive scripts (Louis, 1980; Reichers, 1987).

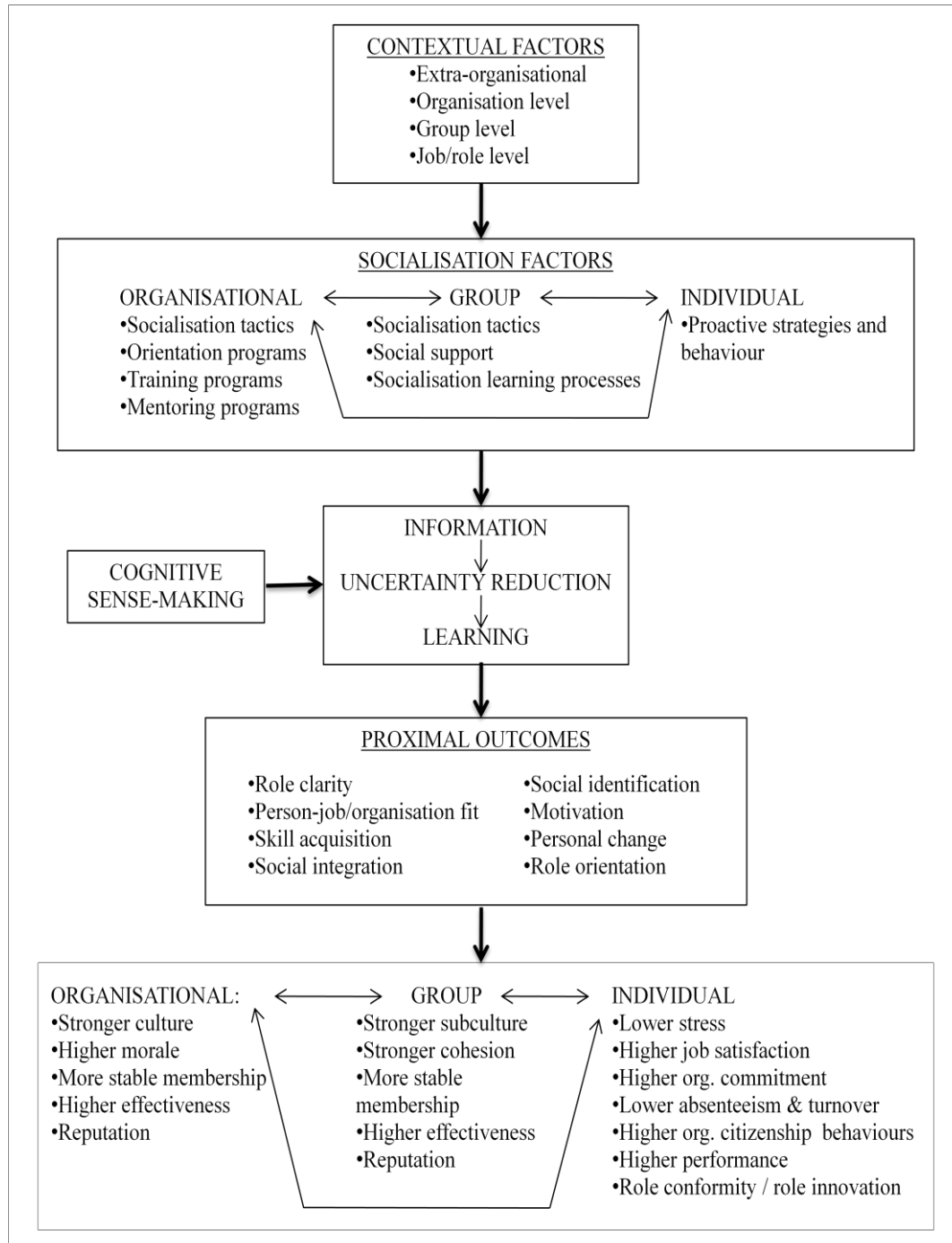
According to Katz (1980), newcomers strive to construct situational definitions of organisational reality and role identities through social interactions. Falcione and Wilson (1988), and Weick (1995) describe this as a process of developing an "interpretive schema" or "cognitive map" of one's organisational surroundings. Baker (1995) found that interactions with insiders are an important latent factor of socialisation tactics but there is no documented evidence to show the cognitive sense-making process of such interactions transforming into organisational definitions and meanings.

2.5 MULTILEVEL PROCESS MODEL OF OS

Saks and Ashforth (1997a) built the multilevel process model of OS to show a coherent theory that integrates the major concepts and processes of socialisation, seen in Figure 2-1. They suggest that socialisation is a multidimensional process influenced by several macro and micro level factors that one has to take into account when discussing this process. Accordingly, this chapter uses Saks and

Ashforth's (1997a) multilevel OS model as a platform to explain the process of OS. Figure 2-1 is the multilevel OS model.

Figure 2-1: Saks and Ashforth (1997a) – Multi-level OS model



As Figure 2-1 shows, there are several theories that describe newcomer's adjustment to the organisation. Some theories emphasise the influence of

newcomers' personal characteristics, including pre-entry knowledge regarding the job (Louis, 1980b; Nicholson, 1984; Wanous, 1992) or newcomers' willingness or ability to engage in proactive adaptation (Jones, 1983; Miller & Jablin, 1991).

Formal organisation socialisation tactics (Van Maanen & Schein, 1979; Wanous, 1992), interpersonal communications between newcomers and established members of the organisation, like supervisors and coworkers also help in the process of adjustment (Moreland & Levine, 2001; Reichers, 1987).

Figure 2-1 identifies several contextual features, which may influence socialisation factors such as extra organisational (e.g. national culture, laws and regulations), organisational (e.g. strategy and structure), group (e.g. size and demographic diversity), and job/role (e.g. job design and physical isolation).

Saks and Ashforth (1997a) explain that at the organisational level socialisation tactics, orientation programs, training programs, and mentoring programs affect newcomer's adjustment into the organisation and job. Group socialisation is the next level where newcomers are orientated together and factors include group-level socialisation tactics, social support (expressive and instrumental), and the social learning processes such as observation, instruction, reinforcement, and negotiation discussed by Bandura, (1986).

Lastly, onus also lies on the individual to take initiative to cover areas, which are still confusing or to develop further, where the orientation programs left off. Accordingly, individual socialisation factors take on various forms such as information seeking, relationship building, and self-management. The three levels each show bidirectional arrows within the socialisation factors box symbolising the mutual effect that the three levels of organisational, group and individual have on each other. This would depend on the situation newcomers find themselves in where the three levels interact with mutual benefit and with varying degrees.

Socialisation factors, along with cognitive sense-making processes shown in Figure 2-1, enables the acquisition of information, which may lead to a reduction in newcomers' uncertainty and learning in various content domains of socialisation, loosely classified as organisational culture, informal structures, and networks, and role/job information. Further learning about these domains may result in proximal outcomes. In turn, proximal outcomes may influence a wide

variety of outcomes termed distal outcomes. Using Figure 2-1, chapter two discusses main themes on organisational socialisation of newcomers.

2.5.1 CONTEXTUAL FACTORS

Saks and Ashforth (1997a) explain that extra-organisational, organisational, work group and job/role may influence socialisation factors. At the extra-organisational level, factors such as national culture, societal shifts in job and career preferences, emerging organisational forms and practices, changes in laws and regulations, the professionalisation of occupations, development of government-sponsored and school-centred training programs, and industry and occupational norms influence socialisation. The authors recommend further research to identify the contextual factors and socialisation processes that are most important. Chapter three considers culture and diversity that influence relationship patterns and individual orientation towards the organisation.

Ashforth and Saks (1997a) confer that various extra-organisational factors influence socialisation process of newcomers. They cite national culture, laws, and regulations as possible influences on organisational socialisation process. Looking specifically at South Africa, Affirmative Action policies, encompassed in the Employment Equity Framework, have led the way to a more equitable representation of blacks, women, and people with disabilities in the workplace, in response to past gender and race discrimination (Horwitz, Bowmaker-Falconer, & Searll, 1996; Thomas & Bendixen, 2000). South Africa also boasts of 11 separate language-speaking groups in addition to English and Afrikaans, which contribute to its diverse language base. Organisations need to capitalise on this diversity, for the benefit of the organisation, performance, individuals, and workgroups. Chapter three explores culture and diversity in detail. Diversity in terms of culture, race, and demography may influence training and management programs to ensure that individuals assimilate and adjust to the organisation.

At the organisational level job design, technical systems, reward systems, communication systems, and leadership styles are some organisational attributes that create a local context that shapes the nature and experience of work (Saks & Ashforth, 1997a). The authors also suggest that structure, strategy and size of

organisation impact socialisation processes at the organisational level. It is also possible that the industry in which the organisation operates also influences socialisation tactics.

Ashforth, Saks, and Lee, (1998) explain that organisational structure and size influence socialisation practices used to accommodate newcomers. First, they distinguish organisational structure using Burns and Stalker's (1994) model to classify mechanistic and organic structures. Mechanistic structures advocate a fine mesh of inner workings to facilitate smooth and predictable performance (Ashforth, 1993; Morgan, 1997). In such organisations, Ashforth, Saks, and Lee, (1998) predict the jobs are relatively specialised, behaviour that is formalised, central decision-making, communication follows the chain of command and fixed tasks and roles. It is likely that individuals may be more formal and rely less on friendship ties with each other.

Burns and Stalker (1994) describe organic structures with dynamic workplaces designed to be fluid, easy to adapt, with relatively low job specialisation. Decision-making and communication are decentralised to where information and expertise exist (Galbraith, Lawler & Associates, 1993). Newcomers in such organisations would rely on others around them for clues and information and would therefore need to proactively seek information from others. Co-workers would seek newcomers who have expertise in a particular, which may give power to newcomers for the information that they hold.

Depending on the structure of organisation, socialisation tactics would vary to ensure newcomers fit with the organisational values and culture.

As organisations increasingly operate in a multinational and multicultural context, diversity in the composition of organisational groups affects outcomes such as turnover (Milliken & Martin, 1996). In addition, the authors describe the trend towards using teams to co-ordinate and manage work in organisations leading individuals to encounter people who may have different training, skills, functional backgrounds, and values. At the group level, size of work groups, demographic backgrounds, past experiences of newcomers and insiders, and culture of group impact socialisation influences on newcomer adjustment.

2.5.2 SOCIALISATION FACTORS

A. Organisational

Organisations have various socialisation tactics through which newcomers adjust to their new environment and job, as discussed in the proceeding section.

A.i. *Socialisation tactics*

Section 2.4.1 briefly touched upon Van Maanen and Schein (1979) six bipolar tactics organisations use to structure the socialisation experiences of newcomers. They classify these bipolar tactics as collective vs. individual, formal vs. informal, sequential vs. random, fixed vs. variable, serial vs. disjunctive, investiture vs. divestiture.

Griffeth and Hom, (2001) suggest formal, sequential, fixed, serial, and investiture tactics form the basis for *collective* tactics, which enhance newcomer loyalty and reduce turnover as newcomers experience common learning experience such as with a group. Newcomers may begin to establish ties with each other through this type of socialisation tactic, which may serve as a support further in their career. Conversely, *individual* tactics include informal, random, variable, and disjunctive and divestiture, which exposes newcomers to individualised learning experience. Individualised learning practices encourage newcomers to be creative and learn through trial and error on their own, sometimes isolating them from other individuals during this process. However, research suggests that newcomers' value social learning and opportunities for interaction (Feldman, 1976b; Ostroff & Kozlowski, 1992) therefore organisations need to employ a combination of both collective and individualised tactics.

Some authors posit that collective tactics provide a common message about the organisation, roles, and appropriate response which is expected to reduce newcomers' uncertainty concerning roles and lead to a greater sense of shared values (Baker & Feldman, 1991; Cable & Parsons, 2001; Feldman, 1994).

Formal tactics segregate newcomers into clearly defined socialisation activities such as training classes while they learn their roles. Such tactics provide a consistent message and signal the importance of adapting to the new

environment encouraging the formation of shared values as well as reducing uncertainty (Cable & Parsons, 2001; Feldman, 1994). On the other hand, *informal* tactics involve on-the-job training during without any clearly defined socialisation activities, using the trial and error method. This method offers immense scope for the newcomer to be creative. With informal tactics, newcomers would come to rely on their supervisors and co-workers for job related information.

Sequential tactics provide specific information to newcomers about the sequence of learning activities and experiences, while the opposite takes place in a *random* process. Feldman and Brett (1983) state that in response to newcomers' desire to establish routines and a sense of personal control, sequential tactics are appropriate as they have the intention to reduce anxiety and stress associated with adjusting to a new environment by stating the order of specific events.

Fixed tactics provide information to newcomers about the timing associated with completing each socialisation stage or step, whereas this timing is unknown in a more *variable* process. Similar to sequential tactics, fixed tactics may reduce uncertainty and anxiety. They may help newcomers develop a sense of control over their new environment by indicating the timing of progression through specific stages of socialisation.

Serial tactics provide experienced organisational members as mentors, whereas *disjunctive* tactics do not provide mentors. Relationships with experienced insiders aid in making sense of the environment and provide resources to turn to for assistance (Louis, 1980). Bandura, (1991) explains that serial tactics take advantage of social learning processes to aid newcomers in attaining a sense of competence and task mastery.

Investiture tactics provide newcomers positive social support from experienced organisational members, whereas *divestiture* tactics provide negative social feedback until newcomers adapt. Feldman (1976b) states that an important aspect of newcomer adjustment is gaining a sense of competence and confidence. Accordingly, investiture tactics, which encourage newcomers by providing positive social feedback may be better suited to aiding them develop this sense of competence.

Building on Van Maanen and Schein's (1979) typology of socialisation tactics, Jones (1986) collated these six bipolar dimensions to form institutionalised-versus-individualised dimensions.

Jones (1986) explains that institutionalised socialisation is characterised by common learning experiences (a collective socialisation tactic) where the socialisation process is formal, occurring outside a newcomer's work setting. This dimension offers explicit guidelines about the sequence (sequence) and timing (fixed) of progression in the organisation while role models (serial) and social support from organisation members confirms the newcomer's identity (constituting investiture).

Conversely, individualised socialisation characterised by unique initiatory (individual) and learning experience that involves on-the-job training (informal), with little or no information about the sequence or timing of career progression as well as random and variable socialisation tactics. Jones (1986) also adds divestiture organisation tactics to make up individualised socialisation dimension.

These are essentially tactics that organisations use in various combinations to effectively and efficiently orientate newcomers.

A.ii. Orientation programs

Organisations employ collective socialisation programs when they recruit a large number of people at the same time. The content of these programs clearly define the organisationally defined role, assigned to the new recruits. Van Maanen and Schein (1979) posit that such programs build a collective sense of identity, solidarity, and loyalty within the cohort group being socialised. Becker (1964) expands by stating that such programs create a group consciousness where "individual changes in perspective are built upon an understanding of the problems faced by all group members". Saks and Ashforth (1997a) explain that the content of induction training is general in nature pertaining to health and safety, terms and conditions of employment, organisational history and structure, specific training provisions, and human resource management policies and procedures. During orientation programs, newcomers may meet relevant people in the organisation, which would be essential for establishing contacts. At the same time, newcomers who go through these formal orientation programs would

encounter similar type of people with reference to age, gender, and tenure, which may serve as a binding factor in building friendship. These friendship ties may create a sense of belonging to the organisation.

A.iii. Training programs

Non-management personnel may design training programs for newcomers to acquire technically oriented skills (Grobler, Warnich, Carrell, Elbert & Hatfield, 2002). The authors identify three types of training programs: employee education, general training, and specific training. Through employee education, individuals acquire basic skills and through general training individuals, gain skills that can be used at most work places such as learning to type. In some organisations, specified training programmes are designed to help individuals gain information and skills that are industry and organisation specific.

A.iv. Mentoring programs

In addition or in place of formal organisation tactics, organisations may organise formal mentoring programs for newcomers where insiders take the role of mentors. This type of tactic is informal and individualised providing the newcomer on-the-job training because mentors provide relevant and valid job-related information making them an ideal referent for the newcomer. In the absence of formal mentoring programs, newcomers may proactively form relationships with other insiders who act as informal mentors (Chao, Walz & Gardner, 1992). Section C.i covers proactive information seeking strategies and behaviour in detail.

Research shows that mentoring has positive effects on newcomer adjustment, regardless whether mentoring occurs through a formal or informal process (Chatman, 1991; Dreher & Asch, 1990; Kram, 1985). However, when Chao et al., (1992) compared the salient outcomes of protégé's in informal and formal mentor relationships they found that individuals in informal relationships received more career-related support from their mentors and higher salaries than those in formal mentor relationships. This may be because mentors may be able to advice and guide them. Mentors who are influential or in a senior position in the organisation, would have access to resources, information and to other influential

people, which may benefit newcomers. Newcomers in contact with such people may enjoy benefits not accorded to others. They may have direct contact with other influential people in the organisation, through which they may have direct access to new and valuable information and resources.

Regarding formal mentoring programs, Van Maanen and Schein (1979) caution organisations when choosing mentors for newcomers. They explain that carelessly assigning an indifferent, disgruntled, or abrasive mentor to an eager and talented newcomer may cause the newcomer distress resulting in turnover. The authors advise organisations to take newcomer socialisation practices seriously to ensure optimal benefit for the newcomers.

B. Group

In addition to formal socialisation practices, newcomers turn to members of the work group to get help in interpreting the events they experience, to learn the many nuances of the organisation, and to learn about the informal networks. The group can filter out information that contradicts dominant values, so that newcomers may readily accept values. The work group can also exert some control over the amount of information new recruits get, and can advise recruits about the credibility of different sources of information. Katz (1964) writes that internalisation of subgroup norms can also come about through identification with group members who share a common fate; recruits may identify with incumbent group members and model their actions and aspirations in terms of group norms.

B.i. Socialisation tactics

One of the purposes of socialisation is to encourage newcomers to become and remain participating members and to find their place in the new environment. Newcomers may have very limited ties and relationships with others in the organisation upon entry. Serial tactics therefore provide relationships with experienced insiders, which can increase the number of links both in and out of the organisation. These links influence newcomer embeddedness in the organisation and the community. Experienced role models help newcomers make sense of their environment, as newcomers rely on social learning (Louis, 1980b; Ostroff & Kozlowski, 1992). This may lead to a greater sense of community,

internalisation of organisational values, more developed social networks, and better fit (Cable & Parsons, 2001; Chatman, 1991).

Kammeyer-Mueller and Wanberg (2003) found that workgroup integration increased commitment among newcomers who had valued relationships with others. Leaving the organisation would represent a sacrifice to break away from that relationship.

B.ii. Social support

Investiture tactics provide positive social support building their sense of competence and confidence to perform their jobs (Feldman, 1976b; Feldman & Brett, 1983). This sense of support would represent a sacrifice to start over again in a new job in a new organisation. Research also suggests that positive interactions with insiders are a major determinant of newcomer adjustment and fit (Jones, 1983; Major, Kozlowski, Chao, & Gardner, 1995). Chatman (1991) believes that investiture tactics have been associated with a greater sense of community, internalisation of organisational values, and more developed social networks.

B.iii. Embedding newcomers through socialisation

Van Maanen and Schein, (1979) express their view that newcomers to most hierarchical levels and functional areas in organisations remain in the periphery for some time after entry, for several reasons. One reason is that insiders may not deem newcomers trustworthy. This then leads insiders to test, either informally or formally, newcomers' abilities, motives, and values before being granted inclusionary rights. The authors mention that these inclusionary rights permit newcomers:

- To share organisational secrets;
- Understand specific organisational jargon; and
- Understand the finer nuances of the organisation as well as the work groups.

As trust increases, newcomers experience more opportunities to display their skills, granting them a way to become central or valuable to the group as a

whole. Van Maanen and Schein, (1979) explain that by crossing the inclusionary boundaries, newcomers become an insider with all the rights and privileges that go with such a position. In essence, they have successfully embedded into the organisational networks.

The concept of embeddedness therefore focuses on newcomers' integration process into a web of relationships in the organisations. While Van Maanen and Schein (1979) focused on the development of trust to embed newcomers, Mitchell, Holtom, Lee, Sablinski, and Erez, (2001) suggested that different types of links, investments, and affective and cognitive appraisals create a net or web of restraining forces that tie employees to their organisation making them less likely to exit voluntarily.

Mitchell et al. (2001), describe three components of the construct of embeddedness. One is the extent to which individuals have links or connections to other people and/or activities. They suggest that the greater the numbers of these links, which newcomers develop over time as insiders trust them more, severing or rearranging these connections through turnover decisions is less likely. This is a component of continuance commitment suggesting that perceived costs of leaving are greater because of the ties and connections to others in the workplace therefore newcomers may hesitate to leave. The second component, is the extent to which individuals perceive a fit with their organisation and environment. The better the fit, the more likely the individual will feel tied to the organisation and the less likely the individual is to quit. The third component is the sacrifice of material and/or psychological benefits that would be lost by quitting. The greater the sacrifices associated with leaving, the less likely individuals are to give up those benefits by quitting. O'Reilly, Caldwell, and Barnett (1989) posit that field theory emphasises that social forces are often some of the most powerful forces influencing behaviour, and there is evidence that social context is important in turnover decisions which was touched under the concept of embeddedness.

Aside from the social forces, individual factors also play a role in newcomer socialisation process, of note proactive strategies and behaviour displayed by newcomers.

C. Individual

As the multi-level OS model indicates, individuals engage with the organisation to seek information. This process is known as proactive seeking behaviour, discussed below.

C.i. *Proactive strategies and behaviour*

Some researchers propose that in addition to the organisation tactics employed by the organisation, newcomers proactively seek information (Ashforth & Taylor, 1990; Louis, 1990; Miller & Jablin, 1991), a view that is analogous to Louis' (1980b) concept of sense making. Newcomers proactively seek information to reduce uncertainty, which enables them to understand/ make sense, predict, and control their environments (Berger, 1979; Berlyne, 1960; Lanzetta, 1971). Organisational tactics do not give all the necessary information, and to compensate for the lack of information, newcomers need to seek information to master their jobs and learn about the organisation so that they may integrate into the organisations (Dirsmith & Covalski, 1985; Graen, Orris, & Johnson, 1973; Jablin, 1984).

Ashford and Black (1996) examined four proactive behaviours an employee might engage in as a part of his or her attempts to fit into a new job. They classify these behaviours as sense making (including information and feedback seeking), relationship building, positive framing, and negotiation of job changes. The authors posit that newcomers' desire for control and assimilation with their work environment, leads them to resort to these types of behaviour. In addition to these four, Griffin, Colella and Goparaju (2000) report informal mentor relationships, behavioural self-management, and observation/modelling as part of proactive information seeking behaviour.

Sense making – According to Ashford and Black (1996), sense making includes both information seeking and feedback seeking. When newcomers proactively seek job and organisational information, Saks and Ashforth (1997a) posit that this reduces uncertainty and allows newcomers to make sense of their new situations. New employees can acquire information directly from other newcomers, co-workers, supervisors, mentors, or written materials or by

observing others in the workplace. Some researchers explain that newcomers seek feedback, relating to behaviour or performance, as a form of proactive information seeking initiative (Feldman, 1976a; Katz, 1980; Louis, 1980b; Miller & Jablin, 1991). Feedback seeking involves inquiry or monitoring, depending on the learning context, allowing newcomers to make adjustments where needed (Ashford, 1986; Ashford & Cummings, 1983, 1985; Ashford & Tsui, 1991; Fedor, Rensvold, & Adams, 1992).

Relationship building – Newcomers may proactively initiate social interaction with co-workers, supervisors and other newcomers in the work environment, which Nelson and Quick (1991) maintain is necessary to avoid feelings of loneliness and social isolation. Ashford and Black (1996) found that building relationships with one's supervisor influenced job performance and general relationship building led to higher job satisfaction for individuals. Fisher (1985) added that social support from co-workers positively influenced job satisfaction and organisational commitment. Relationship building influences newcomer's access and involvement in the informal networks of the organisation. This aspect is covered in chapter three on social networks.

Positive framing - Ashford and Black (1996) define positive framing as cognitive self-management mechanism newcomers employ "to alter their understanding of a situation by explicitly controlling the cognitive frame they place on the situation" (p. 202). This positive reinterpretation of events may be form of problem-focused coping effort to reduce and manage stress (Ashford & Taylor, 1990), found to influence newcomer performance and job satisfaction (Ashford & Black, 1996).

Job change negotiation – This is one of the ways newcomers gain control and overcome uncertainty during socialisation (Ashford & Black 1996); Dawis & Lofquist, 1978; Nicholson, 1984). Through this type of behaviour, newcomers attempt to change their job duties or the manner by which they carry out their jobs so that they perform tasks, which they know well, or take on tasks that provide developmental opportunities.

Informal mentor relationships – In the absence of formal mentor programs, newcomers may form relationships with other insiders who act as informal

mentors (Chao, Walz, & Gardner, 1992). Research shows that those in informal relationships received more career-related support from their mentors and higher salaries than those in formal mentor relationships (Chao et al. (1992). In addition, newcomers in informal relationships reported favourable outcomes than those who did not have mentors.

Behavioural self-management - Ashford and Black (1996) self-observation, goal setting, self-reward and punishment, and rehearsal as possible behavioural self-management techniques newcomers used to help reduce early anxiety.

Observation/Modelling – Social learning theory posits that one of the primary ways in which people learn, is through the observation and modelling behaviour of appropriate others (Bandura, 1971). Ostroff and Kozlowski (1992) found that observation was the most common way that newcomers reported learning on the job.

Newcomers use these proactive strategies in various combinations to understand their role, task, organisation values, and culture. The following section discusses these learning domains in detail.

D. Information

Research has identified that newcomers need several types of information in order to fit into the organisation. Firstly, newcomers need to learn how to perform their new jobs which means they need to acquire job-related skills and knowledge (Reichers, 1987; Van Maanen, 1976; Van Maanen & Schein, 1979). Some skills are generic and transferable from one job and organisation to another job and organisation and if the newcomer has prior job experience these generic skills can be transferable. However, much of the information is job and organisation specific, which newcomers attain on the job (Comer, 1991; Dirsmith & Covaleski, 1985). This type of information can be loosely termed as technical/job-related information.

Secondly, newcomers seek information about role demands, which defines their roles in organisation, and expectation, which seeks to understand what others expect of them (Feldman, 1976a, 1981; Katz, 1980, 1985; Louis, 1980b; Reichers, 1987; Schein 1968). This type of information is termed as referent information.

An essential part of the socialisation process includes an understanding organisational goals, values and culture (Schein, 1968). This learning process includes unwritten, informal, tacit goals and values espoused by members who are in powerful or controlling positions (Fisher, 1986). Feldman (1981) highlights the role of learning group norms and values in the new employee's process of coming to understand unspoken rules, norms, and informal networks. Newcomers therefore actively seek out normative information, or information about expected behaviours and attitudes (Comer, 1991; Louis, 1990).

Chao et al., (1994b) conducted an empirical study on socialisation content categories and classified them as performance proficiency, people, politics, organisational goals, values, and history.

Performance Proficiency – Learning to perform the required work task is a critical part of socialisation (Fisher, 1986).

People – An essential part of the socialisation process involves establishing successful and satisfying work relationships with organisational members (Dubinsky et al., 1986; Feldman, 1976b, 1981; Fisher, 1986; Louis, 1980b; Reichers, 1987; Schein, 1968; Van Maanen, 1975). Fisher (1986) believes that finding the right person or persons from whom to learn about the organisation, work group, and job plays a pivotal role in newcomer adjustment. Work and non-work related individual characteristics such as personality traits, group dynamics, and similar non-work interests serve to establish relationships and affect individuals' social skills and behaviours.

Politics – Socialisation in organisational politics concerns gaining information regarding formal and informal work relationships and power structures within the organisation. A more efficient way of effective learning and adjustment to a new job or organisation are possible by a heightened awareness of which people are more knowledgeable or powerful than others (Louis, 1980b; Pfeffer, 1981).

Language – This describes the individual's knowledge of the profession's technical language as well as knowledge of the acronyms, slang, and jargon that are unique to the organisation (Chao et al., 1994). Knowledge of this domain will ensure that newcomers adjust to the organisation and their co-workers.

Organisational goals and values – Socialisation includes an understanding of the rules or principles in maintaining the integrity of the organisation (Schein, 1968). The learning of organisational goals and values also extends to unwritten, informal, tacit goals and values espoused by members who are in powerful or controlling positions (Fisher, 1986). Feldman (1981) highlights the role of learning group norms and values in the new employee's process of coming to understand unspoken rules, norms and informal networks.

History – Ritti and Funkhouse (1987) describe how an organisation's traditions, customs, myths and rituals are used to transmit cultural knowledge and thereby perpetuate (i.e., socialise) a particular type of organisational member. Schein (1968) suggests that knowledge of this history, as well as knowledge about the personal backgrounds of particular organisational members, can help the individual learn what types of behaviours are appropriate or inappropriate in specific interactions and circumstances.

Katz (1980), suggests that different concerns become salient at different times pointing that initially newcomers are most concerned about fitting in socially and later becoming more preoccupied with how well they are performing. Katz (1980) expounds further by saying that as newcomers' concerns change, the types of information that they need are likely to change and with this, the frequency with which the types of information is sought.

Research has confirmed that the content of information acquired by newcomers positively predicts the outcomes of job satisfaction, organisational commitment, and intention to quit (Chao, Kozlowski et al., 1994; Ostroff & Kozlowski, 1992), adjustment and psychological stress (Ostroff & Kozlowski, 1992), as well as career effectiveness (Chao, O'Leary-Kelly, Wolf, Klein, & Gardner, 1994b).

E. Cognitive sense making and learning

Some researchers have identified two types of information sources available to newcomers, which they classify as interpersonal and non-interpersonal. Interpersonal sources include supervisors, co-workers, and mentors while non-interpersonal sources include official organisational literature, vicarious

observation, and experimenting with new behaviours (Feldman, 1976a; Louis, Posner & Powell, 1983; Miller & Jablin, 1991).

Research shows that newcomers turn to interpersonal and non-interpersonal sources of information depending on the content of learning relevant to the organisational context domains of task demands, role attributes, work group norms and organisational climate and culture (Feldman, 1981; Fisher, 1986).

Some researchers believe that newcomers rely on familiarity and accessibility to select information sources (Beach, Mitchell, Deaton & Prothero, 1978; Carp & Wheeler, 1972; Gerstberger & Allen, 1968; Menzel & Katz, 1955; O'Reilly, 1982). They therefore consider experienced peers and direct supervisors as the most important sources of direct information because of their familiarity with newcomer's job role and accessibility (Dalton & Thompson, 1986; Evan, 1963; Falcione & Wilson, 1988; Louis, Posner & Powell, 1983).

Ostroff and Kozlowski (1992) posit that newcomers generally rely on supervisors as interpersonal sources for all domains, co-workers as sources for the group domain, experimentation as a source for the task domain, and observation of others for role and organisational domains.

Regarding the role domain, supervisors define appropriate role behaviours; therefore, newcomers learn the boundaries of authority, responsibilities, expectations, and the appropriate behaviours for that position from them (Graen, 1976; Schein, 1988; Morrison, 1993b).

Co-workers communicate subtle values, norms, or expectations that supervisors or mentors may not understand (Schein, 1988). Mentors are believed to facilitate adjustment by providing support, advice and 'inside' information, and by coaching and protecting employees (Kram, 1985).

Louis (1980b) explains that newcomers also turn to people outside the organisation in an attempt to make sense of the new environment, as they may not yet have established relationships with insiders, however as this study does not consider extra-organisational referents, this will not be discussed here.

Ashford and Cummings (1983) mention that newcomers may ask supervisors or monitor their reaction to seek performance feedback but the authors caution newcomers to first evaluate the costs associated with asking and

monitoring before embarking on a particular path. When newcomers directly seek information from supervisors, they may appear insecure or incompetent or annoy the information target (Ashford & Cummings, 1983; Miller & Jablin, 1991) but when newcomers rely on monitoring supervisor's reaction, they may misinterpret information cues.

Ostroff and Kozlowski (1992) suggest that newcomers may experiment to gain information about the task-related aspects of the job. Newcomers may also monitor to obtain task-relevant information but Comer (1991) argues that monitoring is efficient only when someone else is performing a similar task and that task is observable. Although experimentation may provide task-related information, this type of behaviour may not yield accurate or valid information regarding group and organisational issues. Observation of others may provide information about group interaction, and organisational practices and policies (Miller & Jablin, 1991).

The effectiveness of the transition process from gathering information to mastering the relevant job components should affect the outcomes of socialisation. Ineffective socialisation may increase turnover, lower performance, dissatisfaction, negative work attitudes, and stress (Feldman, 1981, 1989; Louis, et al., 1983; Nelson, 1987; Van Maanen & Schein, 1979).

2.5.3 INDIVIDUAL DIFFERENCES

Research shows that certain individual differences appear to directly influence newcomer adjustment to the organisation and job. Specifically, biographical and past experiences, self-efficacy, and growth need strength, demographic variables, and motivational orientation. Although this research does not focus on these variables, they are relevant to socialisation and social networks.

A. Biography and past experiences

Jones (1983) explains that the strategies newcomers adopt to deal with uncertainty or ambiguity and the way they make sense of a situation depend on the way they have learned, historically, to deal with new situations. Schutz and Luckman (1947) add that the way in which individuals have learned to respond to

a new situation determines how they will attempt to master the new situation. Through experiences and learning, individuals would have built up a repertoire of responses to threat or ambiguity. In the context of socialisation, Rousseau (1978) posits that even though the content of socialisation may differ from context to context, the individuals rather than the situational differences determine the way individuals perceive and respond to the context. Adkins (1995) found that previous experience inhibited adjustment speculating that prior experience in a similar setting induced newcomers to be “less attentive to formal instructions and organisational cues”. Ashforth and Saks (1995) reported that previous work experience among recent business school graduates positively related to role development. Ashforth and Saks (1995) attribute prior experience as an antecedent that may have provided the skills and confidence to perform and innovate. It is possible that prior work experience will generate complacency in individuals especially when experience is extensive. However, graduates may find that prior experience gives them the right balance to learn in the new organisation, with confidence. Graduates may also have a greater need for growth and development and may look for chances to develop.

One of the ways newcomers seek for development is through the establishment of relationships with co-workers and supervisors, seeking feedback, negotiating on their job, and by getting involved in the informal networks of the organisation. Access to the informal network would place them in a position to receive information relevant for their job and growth. Depending on their position in the network, such as centrality in an information network, newcomers may receive new and pertinent information which could be wielded for their personal development. Chapter three explores the concept of social networks and their relevance for newcomers and organisations.

B. Self efficacy and growth need strength

Some authors suggest that self-esteem or growth that need strength may moderate a newcomer’s adjustment to the organisation and newcomer’s reaction to role or task requirements (Buchanan, 1974; Katz, 1978). Bandura’s (1977, 1978) social learning theory offers an explanation for understanding the influence

of individuals' past learning experiences on self-efficacy. Social learning theory suggests that the way in which individuals have learned to interpret and define a situation leads to self-efficacy. In essence, the strength of self-efficacy expectations may be a direct relation to individuals' perceptions of success in dealing with past situations, and their expectations about their success in the future (Jones, 1983). This leads to the perception that feelings of personal mastery and growth need strength influence self-efficacy.

C. Demographic variables

Jackson, Stone, and Alvarez (1993) postulated that a newcomer's demographic dissimilarity to team members would impede social integration. Salient dissimilarity, such as being a minority in a work group, induces others to perceive the minority in terms of the social identity implied by the dissimilarity; that is, to categorise the minority person as an out-group member and to impute stereotypic attributes (Ashforth & Humphrey, 1995). Jackson et al., (1993) assert that because individuals prefer to interact with in-group members, dissimilar newcomers may be denied instrumental and expressive social support, especially if their social identity has low status. Saks and Ashforth (1997a) suggest that the extent to which one is perceived (by others and oneself) to be different, impairs effective socialisation. An aspect of this individual variable is homophily which posits that people who are similar in race, gender, tenure, etc., are more likely to initiate and maintain contact with each other. This would hinder relationships that one could engage in because diversity in one's network of relationships would add variety and richness that may enhance certain organisation outcomes. This concept is explored in chapter three.

D. Motivational orientation

Another individual factor, which influences the effectiveness of socialisation practices and process, is motivational orientation. Saks and Ashforth (1997a) considered the work of Nicholson's (1984; Nicholson & West, 1988) work role transitions theory to predict newcomer's feedback seeking behaviour. According to this theory, newcomers' desire for feedback positively predicts

reactive change in oneself to suit the situation, whereas a desire for control positively predicts altering the role to suit oneself. Feedback seeking would be the reactive action process whereby the newcomer changes in response cues and information they receive from co-workers and supervisors. Whereas, job involvement, whereby newcomers request for changes in job role, tasks and the manner in which they perform their job, would be a proactive behaviour through which they alter the role to suit self. Ashforth and Saks (1995) suggest that situation-specific and life-stage factors rather than stable, generalised, and salient desires may influence newcomers' motives. For example, role ambiguity and the co-occurrence of other destabilising transitions, such as a geographical relocation may induce a desire for feedback.

2.5.4 PROXIMAL OUTCOMES

Research shows that socialisation tactics, newcomer proactive information seeking behaviour, organisational, job, and individual factors lead to certain organisational outcomes. As figure 2.1 indicates, there are several organisational outcomes relevant for both organisations and newcomers; however, this section will only discuss those that are relevant to this study.

A. Role clarity

Role clarity is in essence the absence of role ambiguity or role conflict. It is a reflection of being in possession of sufficient information regarding the responsibilities and objectives of one's job in the broader organisation and having knowledge of behaviours considered appropriate for achieving these goals (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, (1964). Miller and Jablin (1991) point out that a newcomer in ambiguous situations with unclear role expectations may find it difficult to assess where to direct their efforts, resulting in confusion and dissatisfaction. Poor organisational coordination and lack of coherent purpose for jobs might promote this sense of confusion in the newcomer. To achieve role clarity, newcomer needs to be clear or certain about expectations of members of his/her role set as well as the scope and responsibilities of his/her new job (Rizzo

et al., 1970). Newcomers may need to rely on co-workers and supervisor regularly to ensure role clarity.

B. Person-job/organisation fit

Theory and research findings suggest that newcomers enter organisations with specific and often positive expectations about how they will fit with their new job and organisation (Ostroff & Kozlowski, 1992; Wanous, 1992). Cooper-Thomas, Van Vianen, and Anderson, (2004) refer to this concept of fit as the match between an individuals' own values and the values of their organisation. Cooper-Thomas, et al., (2004) posit that newcomers' experiences during the first months after organisational entry are crucial for consolidating their initial person – organisation (PO) fit or for further improvement of initial weaker fit. They believe that an organisation's socialisation tactics help to establish newcomers' perceived and actual fit with the organisation. Section 2.5.2 discussed several socialisation tactics endorsed by theorists and used by organisations may be of relevance for PO fit (Cable & Parsons, 2001). In particular, tactics that focus more on the social aspects of socialisation such as serial tactics, where experienced organisational members act as role models for newcomers, investiture tactics, where newcomers receive positive social support from experienced organisational insiders and the support from mentors may enhance PO fit (Kram, 1983; Van Maanen & Schein, 1979).

Cooper-Thomas, et al., (2004) identified three mechanisms, which they posit may influence changes in initial fit perceptions during the period of socialisation. Firstly, through organisations' use of serial and investiture tactics or mentorship programs, newcomers may encounter different values of others in their work environment, which after self-reflection may change their values to adapt to those of others. This idea fits in with the concept of newcomers adapting their values to those of insiders in order to fit into the organisation and workgroup. Secondly, newcomers' initial perception of organisational values may change over time because of their experiences in the organisation and thirdly, Chatman and Jehn, (1994) suggest that the organisation's values may change over

time, in response to external or internal events, which would cause changes in an individual's PO fit.

Studies show that newcomers' initial expectations about their future job rarely reflect their actual experiences later in the job (Robinson & Rousseau, 1994; Wanous, Poland, Premack, & Davis, 1992). To counter this effect, Cooper-Thomas, et al., (2004) sought to establish the processes that engage a newcomer to bring about a change in fit either through adaptation of values or through adaptation of job perceptions. They found that newcomers do not to change their personal values toward the organisation's values in the first four months after organisational entry. Cable and Judge (1996, 1997) believe that the onus then may lie with the interviewers during recruitment/selection procedures to assess a candidate's future fit with the organisation. Cable and Judge (1996) suggest that to better assess the fit, interviewers may need to ask applicants for their values and compare with those of the organisations. However, Cooper-Thomas, et al., (2004) point out that if individuals' own values are relatively flexible in that they can adapt to those of others, assessment of applicants' values may not have much predictive power for future functioning in the job.

Cooper-Thomas, et al., (2004) suggest using Schneider's (1987a, 1987b, 2001; Schneider, Goldstein, & Smith, 1995) attraction-selection-attrition (ASA) theory as a possible explanatory framework for PO fit. This framework suggests that people do not randomly assign themselves to organisations, but that they select themselves into and out of organisations, providing the mechanism by which organisations and people mutually adapt. Researchers have identified and confirmed several steps of this process (Bretz, Ash, & Dreher, 1989; Cable & Judge, 1994, 1997; Edwards & Cooper, 1994; van Vianen, 2000; Schneider et al., 1995; Schneider, Kristof, Goldstein, & Smith, 1997). First, people find organisations differentially attractive based on their judgment of the congruence between the characteristics of the organisation and their own characteristics (Cable & Judge, 1997; & Schneider et al., 1995). Second, organisations identify and hire those people who have the attributes the organisation's desire in the selection procedure and finally, once people have become citizens of the organisation and they do not fit their work environment, they will tend to leave.

Ostroff and Rothausen (1997) argue that fit changes with increased tenure, such that individuals' goals and values are closer to those of their organisation. However, some researchers argue that such changes are likely to occur during organisational socialisation, a period of significant change for organisational newcomers (Cable & Parsons, 2001; Cooper-Thomas & Anderson, 2002b; Louis, 1990; Schneider, Smith, Taylor, & Fleenor, 1998).

Research in to the construct of fit suggests that it may affect some organisational outcomes, such as who gets into the organisation and how well a person does (Kristof, 1996; Williams & O'Reilly, 1998). There is evidence that person-culture fit, assessed as either PO or person-group (PG) fit, is associated with positive work attitudes and performance (e.g., Atkins & Caldwell, 2004; Judge & Cable, 1997; Kristof, 1996; Meglino, Ravlin, & Adkins, 1989; O'Reilly, Chatman, & Caldwell, 1991). This implies that it may be advantageous for both the person and the firm to choose people based on the values that define the organisation's culture (O'Reilly & Chatman, 1996). However, there is also a business and social rationale for increasing diversity rather than fit within organisations. Powell (1998) explains that greater diversity should provide more perspectives to enhance problem solving and creative thinking, increase the flexibility to adapt to changing environments, and allow an organisation to attract and retain skilled members of a workforce that is becoming increasingly diverse. However, in practice, there is strong empirical evidence suggesting that increased diversity or demographic heterogeneity in groups and organisations may be associated with increased conflict, lower levels of social integration and performance, and higher levels of turnover (Milliken & Martins, 1996; Riordan, 2001; Williams & O'Reilly, 1998).

Elfenbein and O'Reilly (2007) explain that on the surface, these rationales point in conflicting directions: select for culture fit to enhance the organisation's core values and promote commitment and select for diversity to ensure a variety of perspectives and to enhance creativity. Taken together, they show that these two separate streams of research illustrate the difficulty of understanding what it means to "fit in" in an organisational setting and the complexity of understanding how diversity is defined. The literature on fit has referred largely to congruence in

terms of cognitive traits, such as values, whereas the literature on diversity has referred largely to congruence in terms of externally visible traits, such as demographic categories.

Socialisation is fundamental to PO fit because the primary goals of socialisation are to ensure the continuity of central values and to provide new employees with a framework for responding to their work environment and for coordinating with other employees (Jones, 1986; Van Maanen & Schein, 1979). Kristof, (1996) assert that the extent to which socialisation processes result in PO fit, employees are more likely to be committed to the organisation and are less likely to quit, which ensures that firms receive greater returns on investments in recruitment, selection, and training.

Cable and Parsons (2001) found that employees experienced greater PO fit when firms used highly institutionalised socialisation tactics, that is, a systematic, planned set of activities designed by the organisation to reduce ambiguity for employees. Theoretically, by offering structured early work experiences that reduce ambiguity, organisations encourage employees to passively accept established roles, thereby reinforcing the status quo (Ashforth & Saks, 1996; Bauer et al., 1998; Jones, 1986). Low-institutionalised socialisation tactics, however, reflect an absence of structure that creates ambiguity and encourages employees to examine and challenge the status quo and to develop their own approaches to their roles and situations (Bauer et al., 1998; Jones, 1986).

C. Social integration and identification

Kammeyer-Mueller and Wanberg (2003) explain that work group integration relates to perceived approval from coworkers and inclusion in their activities, which can be a source of social support and assistance. Some authors posit that newcomers may use social acceptance as an indication that they fit into their new work roles, meaning they have established a situational identity (Moreland & Levine, 2001; Reichers, 1987). Theorists such as Reichers (1987) posit that integration into a social group involves the establishment of a situational identity and that those who successfully establish an identity through social interactions more strongly identify with the organisation as a whole. Wanberg and

Kammeyer-Muller (2000) found that newcomers who had the opportunity to interact socially on the job related negative intention to turnover, whereas social support from coworkers has been related to organisational commitment (Fisher, 1985). Morrison's (1993a) work on newcomers in an accounting firm, showed the correlation between information seeking, feedback seeking, and social integration.

D. Role orientation

Role theory literature links newcomer socialisation to three outcomes: role orientation, role ambiguity, and role conflict (Graen, 1976).

Role orientation refers to a newcomer's response to what he or she perceives to be expected behaviour (King & Sethi, 1998). There are two extreme cases of role orientation: custodial and innovative. Role innovation occurs when a newcomer feels impatient or uneasy about the knowledge base of a particular organisational role that is transmitted and, hence, unwilling to limit themselves to the use of such knowledge in the performance of the role, (Van Maanen & Schein, 1979). On the other hand, custodial role orientation requires newcomer to assume a custodial or caretaker stance toward the knowledge, strategies, and missions associated with the role (Schein, 1971b). Organisations may choose to design their socialisation strategies to encourage either role orientation.

While role orientation reflects different perspectives on organisation's take on an individual's role validated through organisational socialisation practices, newcomers may experience role ambiguity and conflict through the socialisation process. Kahn, Wolfe, Quinn, Snoek, and Rosenthal, (1964) describe role ambiguity as a condition resulting from uncertain information about role behaviour. Uncertainty can arise from complex organisational structures or poor communication between the newcomer and other organisational members. Proper feedback and formal orientation procedures enhance a clear definition of roles. Similarly, mixed feedback or contradictory feedback may result in role conflict.

Both role conflict and role ambiguity are likely to have a negative impact on newcomers' performance and organisational tenure (King & Sethi, 1998). Igbaria and Siegel, (1992) found that both variables may be positively related with an intention to quit and negatively related to job satisfaction. Therefore, appropriate

socialisation strategies not only ease a newcomer's transition into an organisation, they can also have a positive long-term impact on that newcomer's performance.

Some organisations use institutionalised socialisation tactics (Jones, 1986) to reduce ambiguity for new employees. Institutionalised socialisation tactics provide newcomers with a common set of learning experiences and off-the-job training. These tactics offers newcomers explicit information about the sequence and timing of activities they will go through in their new environment such as sharing information about the organisation's career ladders and job rotation plans for the first few years on the job. Newcomers can also rely on supervisors to provide information regarding the role domain, because they define appropriate role behaviours; therefore, newcomers learn the boundaries of authority, responsibilities, expectations, and the appropriate behaviours for that position from them (Graen, 1976; Schein, 1988).

2.5.5 DISTAL OUTCOMES

Van Maanen and Schein (1979) explain that the stability and productivity of any organisation depends in large measure upon the way newcomers adjust to various positions and eventually come to carry out the tasks. The authors add that OS is a process, which ensures that the handing down of positions takes place from one generation to another. Moreover, when this transition takes place smoothly with minimum disruption, it shows the continuous implementation of the organisation's mission and may predict a stable performance by the organisation. The authors assume that the survival of the organisation is assured, at least in the short run, if the organisational environment remains reasonably stable. In essence, socialisation processes carried out within an organisation may represent the glue, which holds together the various interlocking parts of the organisation.

Anakwe and Greenhaus (1999) note that there are several indicators of successful functioning with the work group in an organisation. Some of the indicators include getting along with co-workers and superiors, development of trust between newcomer and co-workers, and making a satisfactory adjustment to group culture (Feldman, 1981; Fisher, 1986).

A. Individual

In addition to proximal outcomes, research identifies certain distal outcomes such as commitment, organisation citizenship behaviour, role orientation, performance, and stress. Although newcomer stress is not a focus of this study, it is relevant in light of socialisation and newcomer entry into a new organisation and job.

A.i. Commitment

Organisations seeking to increase employee retention and performance may direct their focus on the concept of employee commitment. Research indicates that commitment may be a better predictor of turnover than job satisfaction (Koch and Steers, 1976; Porter et al., 1974). Moreover, findings by Mowday, Porter, and Dubin (1974) suggest that highly committed employees may perform better than less committed ones. Others suggest that commitment may represent a useful indicator of the effectiveness of an organisation (Schein, 1970; Steers, 1975)

Porter et al., (1974) define organisational commitment as the relative strength of an individual's identification with and involvement in a particular organisation characterised by three factors:

- A strong belief in and acceptance of the organisation's goals and values;
- A willingness to exert considerable effort on behalf of the organisation; and
- A strong desire to maintain membership in the organisation.

Steers (1975), in his research on the antecedents and outcomes of organisational outcomes hypothesised that commitment would lead to several specific behavioural outcomes. He posited that highly committed employees would have a strong desire and intent to remain with the organisation, a factor implied in the definition of commitment. Steers, found strong support for the proposition that commitment increases an employee's desire and intent to remain with an organisation with an inverse relation to employee turnover.

Buchanan's (1974) definition of commitment focuses on the process of accepting organisational goals and values and integrating them into a system of

personal goals and values. In essence, individuals develop ‘organisational identification’, which some authors believe is synonymous with organisational commitment (Hall & Schneider, 1972; Hall, Schneider, & Nygren, 1970; Kidron, 1978; Lee, 1971).

According to the definitions, commitment extends beyond passive loyalty to an organisation. There is a behavioural aspect, which requires individuals to contribute something towards the betterment of the organisation and an emphasis on attachment and identification with the goals and values of the organisation. There are however other antecedents to commitments.

Research has identified three classes of variables that seem to emerge as antecedents of commitment of which personality-need variables and value orientations belong to the first category (Brown, 1969; Dubin et al., 1975; Hall et al., 1970; Kidron, 1978; Patchen, 1970; Steers, 1977). PO fit could be another determinant of commitment because some individuals may identify with an organisation and remain with them depending upon the particular goals and climate of the employing organisation (Hall et al., 1970).

According to some researchers, the second category of antecedents includes job characteristics and work experiences such as job challenge, feedback, and opportunity for social interaction, task identity, group attitudes, and organisational dependability (Buchanan, 1974; Hall & Schneider, 1972; Lee, 1971; Porter & Steer, 1973; Steers, 1977).

In the third category of antecedents of commitment, some researchers suggest that personal-demographic variables, particularly age and tenure play a part (Hall et al., (1970); Lee (1971). Hall et al., (1970) explain that the positive relationships of these variables with commitment may be reflection of the growth processes and personal change involved in the development of identification.

Meyer and Allen (1991) conceptualise commitment as affective, normative and continuance.

Affective commitment describes an affective orientation towards an organisation (Meyer & Allen, 1991). There is also an emotional attachment to the organisation such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organisation (Allen & Meyer, 1990b).

Mowday et al., (1979) defined affective organisational commitment as “the relative strength of an individual’s identification with and involvement in a particular organisation”.

Researchers have investigated the link between certain demographic variables such as age, tenure, gender, and education to affective commitment (Angle & Perry, 1981; Glisson & Durick, 1988; Morris & Sherman, 1981; Morrow & McElroy, 1987; Mottaz, 1988; Pierce & Dunham, 1987; Steers, 1977). However, Allen and Meyer (1991) argue that for the most part the relations are neither strong nor consistent.

Personal characteristics such as need for achievement, affiliation and autonomy (Morris & Snyder, 1979; Steer, 1977; Steers & Braunstein, 1976; Steers & Spencer, 1977), and locus of control (Luthans, Baack & Taylor, 1987) correlate moderately with affective commitment. Organisational structure appears to have little influence on this commitment work experiences appear to have contrasting results.

Continuance commitment maintains the view that commitment is the continuation of an action such as remaining with the organisation from recognising the costs associated with leaving. Becker (1960) explains that commitment occurs through the accumulation of “side bets” which individuals may lose if they discontinue specific activities or actions. Individuals who leave a particular organisation may lose pension, seniority, and rewards when they discontinue employment.

Normative commitment develops when individuals feel an obligation to remain with the organisation (Wiener, 1982). Marsh and Mannari (1977) explain that employees believe in a lifetime commitment regardless of how much status enhancement or satisfaction they receive from the organisation. This may be because individuals may have internalised normative pressures exerted on them prior to entry into the organisation such as cultural values that advocate lifetime loyalty to the organisation (Allen & Meyer, 1991). Socialisation experiences such as observation of role models and the use of rewards (e.g. paying college tuition) and punishments may also lead to an obligation to remain with the organisation (Allen & Meyer, 1991).

According to Jones (1986), newcomers who experience institutionalised tactics may be more committed than those given individualised treatment because the former involves more structured and information-laden experiences, which may present newcomers with few “problems in searching for situational consistency”. Jones (1986) explains further that newcomers’ anxiety, confusion, and concern about their roles would thus be lower. Jones found that commitment was strongest with the investiture-divestiture and serial-disjunctive dimensions and he found significant correlations between commitment and all but two of the six dimensions (collective-individual and formal-informal).

In addition to organisation commitment, research shows that commitment is can be multidimensional. Becker (1992) explains that an “individual’s attitudinal commitment to a workplace cannot be adequately explained by commitment to the organisation alone because the coalitional nature of organisations leads employee commitment to be multidimensional”. This leads to the concept of foci of commitment.

Reichers (1985) considered foci of commitment whereby an individual is attached to particular entities such as, co-workers and groups in addition to the organisation. Reichers (1985) used organisation theory to identify various individuals and groups that are relevant to an organisation. Becker, (1992) explained that this allowed Reichers (1985) to support her argument using research on reference groups and role theory indicate that many organisation members are aware of and committed to multiple sets of goals and values. Gouldner (1957, 1958) defines reference groups as those groups with whom individuals identify and to whom they refer in making judgments about their own effectiveness.

According to Reichers (1985), foci of relevance to employees include co-workers, superiors, subordinates, customers, and other groups and individuals in the organisation. She identifies top managers, supervisors, and co-workers as generally important foci for employees. Becker, (1992) used this argument and the findings of research on organisational commitment that top management, supervisors, work groups, and organisation as relevant foci of commitment for individuals. Reichers (1985) suggests that top managers or administrators of

organisations are aware of the multiple goal orientations among members of their organisation. However, there are additional bodies of literature that suggest that many organisation members (not only top managers) are aware of and committed to multiple sets of goals and values.

A.ii. Organisation citizenship behaviours

Katz (1964) identified three categories of employee behaviour that is essential for organisational effectiveness. In the first one, organisations must first encourage individuals to enter and remain with them. Secondly, these individuals must carry out specific role requirements efficiently and effectively and thirdly, they must be innovative and spontaneous going beyond their role requirements (Konovsky & Pugh, 1994). It is this last category where employees are willing to exceed their formal job requirements (Barnard, 1938; Katz, 1964; Katz & Kahn, 1978), that Smith, Organ and Near (1983) refer to as organisational citizenship behaviour (OCB).

In essence, successful socialisation of newcomers should have the desired effect of newcomers performing in a manner that is acceptable for all stakeholders. Co-workers would want newcomers to take responsibility for their work, while supervisors and human resources personnel's main concern is recounting the costs of recruiting and selecting new staff, as well as avoiding the resource costs of managing poor performance (Thomas & Anderson, 2006). The authors suggest that for the newcomer, acceptable performance is essential for continued employment, which may have the desired effect of increasing their overall wellbeing and reducing stress. Acceptable performance may ensure that co-workers and clients value and accept newcomer, which may lead to the establishment of social relations and networks (Chen & Klimoski, 2003).

Although, there are conflicting perceptions regarding the conceptual boundary between OCB (extra-role behaviour), and in-role behaviour, Podsakoff, MacKenzie, and Ahearne, (1997) explain that extra-role performance concerns those helping behaviours that facilitate organisational productivity. Johnson (2001) posits that newcomers may help once they have the ability and those who recognise that extra-role performance may be included in supervisor performance evaluations, are more likely to engage in this type of behaviour. Moreover, given

that, extra-role performance can affect co-workers productivity and, in aggregate, organisational productivity, both proximal and senior colleagues will be concerned that the newcomer achieves this outcome.

A.iii. Higher performance

The task domain reflects features such as understanding task duties, assignments, priorities, how to use equipments, how to handle routing problems, etc. The effective learning of the tasks of the new job, gaining self-confidence and attaining a favourable level of job performance describes task mastery (Feldman, 1981). It is a form of self-appraisal to judge one's ability to fulfil job responsibilities successfully, with ease, and skill. Judge, Thoresen, Bono, and Patton, (2001) explain that newcomers who master their tasks may find their jobs more pleasant and may feel less desirous to withdraw, consistent with a self-reinforcing non-recursive model of successful performance and work attitudes. Bandura (1999) adds that those who have greater confidence that they will succeed in a task should also be more likely to exert effort toward the task.

Research by Feldman (1976a) showed that co-workers could be gatekeepers to performance-relevant information; therefore, he recommended developing relationships with, and becoming accepted by, co-workers as an important area of learning for role performance.

A.iv. Role conformity/role innovation

Jones (1986) described role orientation as a continuum in which conformity to established roles and procedures appear at one end defined as custodial orientation and innovation in defining and enacting roles at the other end, defined as role innovation. The tactics used by organisations in whatever combinations promote role conformity or role innovation.

Jones (1986) suggests that socialisation tactics that are collective and formal ensure that newcomers go through a common set of experiences enhancing their orientation by segregating them from day-to-day organisational activities during training. This exposes newcomers to a narrow range of situations and acceptable responses, designed to inhibit innovation.

Allen and Meyer (1990a) posit that serial tactics may also promote a custodial role orientation in newcomers in a similar way to collective and formal methods. This phenomenon occurs by exposing newcomers to someone who has done, or is currently doing their new job to provide clearer guidelines for doing the job reducing the need for the newcomers to be creative and challenge the status quo. This tactic further reduces the need for role innovation.

When exposed to sequential and fixed tactics newcomers receive information about the sequence and timing of their progress in the organisation, which makes them less like to “rock the boat” (Jones, 1986).

Finally, Jones (1986) believed that divestiture encourages innovative role orientations because, unlike investiture, it causes newcomers to question assumptions about their behaviour and challenges them to justify or modify it.

A.v. Changes over time

Research suggests that there are two distinct post-entry periods following newcomer’s organisational entry. During the first few months after entry, newcomers focus on mastering their jobs, developing relationships with co-workers, and learning about the organisation as a whole. Once these tasks are accomplished, newcomers then begin to settle into their new roles (Feldman, 1976a; Porter et al., 1975; Schein, 1978; Van Maanen, 1976).

Katz’s (1980) research on time and work provides further insight into temporal changes during socialisation, which suggested that different concerns become salient at different times. According to Katz (1980), newcomers, in the beginning, are most likely concerned about fitting in socially. Later they become more preoccupied with how well they are performing. As newcomers’ concerns change, the types of information that they need are likely to change as well the frequency with which they seek the types of information relative to one another.

Ashforth and Saks, (1996) explain that when newcomers begin to develop a more secure sense of who they are and how they fit in, other desires may emerge. The authors suggest that these desires are likely to vary widely across newcomers with some newcomers seeking challenge and growth while others may seek comfort and stability. Some focus on developing task expertise and others may want to develop friendship or political alliances. Ashforth and Saks (1996)

recommend that organisation discontinue institutionalised socialisation practices because newcomers may over time, be more receptive to a variety of other stimuli in the workplace.

A.vi. Stress

When entering organisations, newcomers may experience positive stressors such as challenges, potential rewards, and opportunities and at the same time certain negative stressors such loneliness and social isolation as they attempt to establish an identity within the new organisation (Katz, 1978; Van Maanen & Schein, 1979). Newcomers also experience stress performance anxiety, which as Schein (1971b) asserts, interferes with newcomers' efforts toward mastering their task. Stress therefore, is multilevel, affecting behaviour, psychological and physiological aspects of an individual and may lead to outcomes such as absenteeism, turnover, and lower performance (Jamal, 1984; Macy & Mirvis, 1976).

Some authors posit that newcomers develop expectations prior to entering the organisation when they learn about the job and the organisation, a phase, which they term anticipatory socialisation stage (Merton, 1957; Porter, Lawler & Hackman, 1975; Schein, 1968; Van Maanen, 1976; Katzell, 1968; Wanous, 1977). To manage this process, organisations provide realistic job preview (RJP) so that newcomers adjust their perspective about what is achievable in the new job in order to have a realistic assessment of the job (Frese, 1982), which leads to reduced anxiety (Gomersall & Meyers, 1966) and increased job survival (Premack & Wanous, 1985; Wanous, 1973). Bandura (1982) asserts that RJP's may provide a preview of task and role demands enabling newcomers to design preliminary coping strategies, which may enable them to respond to the demands with a greater sense of efficacy.

Louis (1980b) proposes that the next phase is the encounter stage of socialisation, which encompasses the first six to nine months on the job. During this stage, theorists posit that newcomers encounter task demands where they learn new skills, and procedures, in addition to mastering the use of new equipment, where applicable for their new job (Feldman, 1976a; Schein, 1971b). Organisations communicate role expectations to newcomers, which may result in

role conflict and ambiguity, a stressor classified as role demand (Frese, 1982). Newcomers also face the stress of encountering new people in the organisation and establishing relationships with them, which are interpersonal demands. These areas of stressors identified, affect both professional and managerial employees, (Beehr & Newman, 1978; Quick & Quick, 1984).

Task demands include work overload (Cooper & Marshall, 1977), time pressure (Lakein, 1973), job scope (Ivancevich & Matteson, 1980), rewards (Lawler, 1971), and career progress (Lazarus, 1981). Newcomers' perceived constraints from lack of job-related information, equipment, supplies, and services from others, when inaccessible or inefficient, affecting their task performance may lead to frustration, and, in turn, to distress (Peters, O'Connor & Rudolf, 1980). Newcomers, who take on multiple roles depending on their position, may face role conflict and role ambiguity leading to stress (Kahn, Wolfe, Quinn, Snoek & Rosenthal, 1964; House & Rizzo, 1972; Van Sell, Brief & Schuler, 1981; Kemery, Bedeian, Mossholder & Touliatos, 1985). Role demands also extend to work/home conflict, which is a recent research development (Hall & Hall, 1980; Bhagat, 1983).

As mentioned earlier, interpersonal relationships are also sources of stress where politics (Cooper & Marshall, 1977), supervisory style (Quick, Shannon & Quick, 1983), responsibility for others (French, Caplan, & Harrison, 1982), and group pressure (Feldman, 1984) place interpersonal demands on newcomers.

While literature on stress presents different coping mechanisms adopted by newcomers to mitigate stress, organisations may help mitigate stress by encouraging newcomers to develop social support. Feldman and Brett (1983) found that newcomers perceive from others within the organisation to be a beneficial coping strategy. Fisher's (1985), study on nursing school graduates, reveal that social support reduced the level of unmet expectations stress experienced by newcomers while Katz (1985) argues that supervisors and peers are key socialising agents and should be selected carefully because of their contribution to newcomer role formation. In essence, social support appears to have a positive influence on newcomer adjustment.

A.vii. Lower absenteeism & Turnover

Turnover intention is a conscious and deliberate step to leave the organisation (Tett & Meyer, 1993). The authors describe turnover intention as the last in a sequence of withdrawal cognitions with the intention to quit and search for alternative employment. Turnover, on the other hand, is the voluntary or involuntary termination of an individual's employment with a given company.

Organisations that consider voluntary turnover as undesirable have focused on ways to reduce it by identifying and manipulating its causes (Porter & Steers, 1973; Hand, Griffeth, & Mobley, 1977; Price, 1977; Bluedorn, 1978; Mobley et al., 1979a; Muchinsky & Tuttle, 1979). However, research on turnover distinguishes between voluntary and involuntary turnover in order to identify its positive and negative effects and at the same time differentiates turnover between newcomers from that of insiders (Mobley et al., 1979a; Mobley & Meglino, 1979; Muchinsky & Tuttle, 1979). By making these distinctions, organisations are able to identify the causes for both newcomers and insiders, consider whether that is favourable or not and accordingly design methods to prevent or manage the process.

Research on voluntary turnover among newcomers is divided into unrealistic expectations and unmet expectations. Some authors advocate that voluntary turnover is the result of unrealistic expectations that individuals bring as they enter into a new organisation (Bray, Campbell & Grant, 1974; Wanous, 1977; Mobley et al., 1979b). Another stream of research follows that newcomers experience unmet expectations when there is a difference between their expectations and their early job experiences leading to turnover (Ross & Zander, 1957; Katzell, 1968; Dunnette, Arvey, & Banas, 1973).

There are different ways in which newcomers inflate their expectation of job and the organisation. One way this occurs is through organisational recruiting practices during recruitment process (Ward & Athos, 1972). Newcomers' cognitive processes also inflate their unrealistic expectations of the job and the organisation (Vroom & Deci, 1971). To counter this effect, organisations developed a strategy to promote more realistic pre-entry job expectations among recruits, called the realistic job preview (RJP). Organisations that use RJP's

ensure that recruits develop realistic expectations based on factual job and organisational information made available through books, films and handouts (Wanous, 1976). Wanous (1977) reiterates that realistic expectations of job and organisation negate turnover thereby endorsing this method.

However, Wanous (1979) later concluded that evidence of the hypothesised effect of realism on turnover is weak. Ilgen and Dugoni (1977) posit that so far there is no empirical support for a comprehensive explanation for the realism effect and suggest that generalising the effects of RJP is challenging because of a lack methodological inadequacies and inconsistencies between studies.

In contrast, some authors classify unmet expectations as the difference between initial expectations and actual experiences on the job (Ross & Zander 1957; Katzell, 1968); Dunnette, Arvey, & Banas, 1973). They refer to unmet expectations as under-met expectations concluding that newcomers experience less of something desirable than was anticipated. Individuals experiencing unmet expectations or ‘broken promise’ may then voluntarily leave the organisation. Organisations can counter this by managing newcomers’ experiences during the initial period of the job, rather than the pre-entry period. Kotter (1973) describes it as “managing the joining-up process”, whereby the newcomer and supervisor clarify and exchange expectations by developing a psychological contract. The aim of this process is to match individuals and their expectations to specific jobs. The processes identified assist organisations and newcomers manage expectations; nevertheless, Louis (1980b) believes that newcomers will experience unmet expectations, which is an inevitable part of entering an unfamiliar organisational setting.

Louis (1980b) explains that both approaches to turnover are based on an assumption of rationality whereby newcomers are seen as rational beings that enter unfamiliar organisational settings with preconceived conscious expectations about their new jobs and organisations, which, if met, lead to satisfaction and, if unmet, lead to voluntary turnover. However, reviewers of these approaches caution that there is a need for a more complex and process-oriented treatment of the issue. This is because there is still no clarity whether rational pre-entry expectations are the key feature in newcomers’ experiences and explaining further

that other element in the entry experience requires identification with an additional task of clarifying how turnover is interpreted (Mobley et al., 1979a; Mowday, 1979; Muchinsky & Tuttle, 1979).

2.6 CONCLUSION

As literature discussed, newcomer socialisation is an essential aspect of their entry into the organisation. Organisations use several tactics and in conjunction with newcomer's proactive seeking strategy, both organisations and newcomers benefit through various outcome, which are for the most part positive. Additionally, newcomers rely on supervisors and co-workers to manage the entry and adjustment process. The ties and connections that form between newcomers and insiders of the organisation develop into social networks. The following chapter explores the concept of social networks in organisation with specific reference to newcomers.

CHAPTER 3. SOCIAL NETWORK ANALYSIS

3.1 INTRODUCTION

Foster and Galowski, (1999) observed that one of the major challenges faced by many executives today is ensuring the effective and efficient sharing of knowledge, information and resources throughout their organisations. This is of particular interest in knowledge-intensive sectors, where people use personal relationships with others in the organisation to find information and to do their jobs despite the explosion of information accessible through the internet and databases (Cross, Nohria, & Parker, 2002).

While communication and information exchange does occur through the formal reporting lines of the traditional organisation chart, it is the informal networks, which exists alongside the hierarchical structure that plays a bigger role in communication and information exchange process. Garnering information from such networks often generates new ideas, allows a person to access seemingly impossible resources, influence people and decisions, and ensure completion of work on schedule (Cross & Prusak, 2002). Such networks are also important for newcomers, in light of viewing newcomer socialisation as a period of knowledge acquisition.

As discussed in chapter two on ‘Socialisation’, newcomers proactively seek information from co-workers who provide information and cues, which enables newcomers to cope with surprises, interpret events, and learn the appropriate attitudes, opinions, and norms (Louis, 1980a, 1990). This enables them to become effective members of the new organisation. Some authors reflect that newcomers rate peers, senior co-workers and supervisors as both the most available and helpful sources of information, more useful even than formal induction procedures designed by the organisation (Louis et al., 1983; Nelson & Quick 1991). In essence, insiders can act as information gatekeepers, helping or hindering newcomers in the accomplishment at jobs competently (Thomas & Anderson, 1998).

Accordingly, this chapter focuses on the social networks relationships in the informal networks of the organisations going in detail over concepts, methods of analysis, principles, application, and outcomes.

3.2 SOCIAL NETWORK ANALYSIS

Researchers define social network analysis using a variety of terms some of which are discussed below.

According to some authors, social network analysis is an approach and a set of techniques used to study the patterns of relationships between actors and to examine the availability of resources and the exchange of resources between these actors (Scott, 1991; Wasserman & Faust, 1994; Wellman & Berkowitz, 1998). Nelson (1989) points that social network analysts define networks as sets of ties, linking several individuals and the regular patterns of information exchange become social networks. Actors represent nodes in the network and information exchange relationships work as connectors between the nodes. Nelson (1989) further states that ties or contacts, linking several individuals, may be formal or informal, frequent or infrequent, affect-laden, or purely utilitarian. Resources exchanged can be of many types broadly defined as (1) *tangibles* to include goods, services, or money; or (2) *intangibles* such as information, social support or influence (Haythornwaithe, 1996).

In addition to the definitions mentioned above, Tichy, Tushman, and Fombrun, (1979) define social networks as “a specific set of linkages among a defined group of persons, with the additional property that the characteristics of these linkages as a whole may be used to interpret social behaviour of the persons involved”. This approach views organisation as a system of objects (e.g. people, groups, and organisations) joined by a variety of relationships where some pairs of actors have direct connections with each other and others have multiple relationships with actors in the network. From this, we can see that network analysis is one method that captures the intersection of both static and dynamic aspects of organisations by focusing on the linkages between social objects over time. This allows some authors to view organisations as social groupings with

relatively stable patterns of interaction over time (Katz & Kahn, 1966; Weick, 1969).

The following section describes characterises of social network analysis by expanding and substantiating the definition stated in this section.

3.2.1 SOCIAL NETWORK ANALYSIS CHARACTERISTICS

As already established, social network analysis focuses on patterns of relationships, thereby distinguishing it from other analyses and techniques.

Typically, researchers gather data from questionnaires they distribute or through face-to-face interviews with respondents. In order to understand an actor's referents, researchers can ask questions such as "Who are your friends at work?" "Who do you work with?" "Who do you go for advice?" It is not always possible for researchers to conduct interviews and in such cases, examination of organisational charts, family trees, archival records, or publication reveals ties and relationships. Some of the relationships and ties studied include supervisor-supervisee, father-daughter (Howell, 1988; Lin & Bian, 1991), co-membership such as on boards of directors (Mizruchi, 1992), and presence or participation in particular events (LeRoy Ladurie, 1975, 1978; Scherzer, 1992). In addition to asking who is involved in the relationship, researchers may also ask about frequency of contact or the quantity of information exchanged in the relationship.

Several factors describe the social structure of an environment, such as how actors or sets of actors are able to control or facilitate the flow of resources. Another factor is the position in the network concerning the flow of information and resources and their connectivity with others in the network. Haythornwaithe (1996) likens the concept of social structure to that of an organisational structure, where those in authority, exercise authority over subordinates. We can clearly see the formal chains of command, as well as informal information exchange structures in an organisation.

By following the social network analysis, Haythornwaithe (1996) believes, based on the observed relationships between actors, that it is possible to derive social structure empirically. The non-network approach, classifies actors by similarity of titles, occupations, roles, age, or membership in organisations, such

as managers, physicians, teachers, students, seniors, parents of school-aged children, patrons of a library, or members of environmental groups. Researchers then define and assign similar individuals together, using non-network classification, under a common label, which then identifies a group (Bates & Peacock, 1989). This then allows researchers to examine interactions between groups, for instance, between managers and workers, thereby developing a picture of social structures.

However, Wellman (1988) remarked that social analysts refer to networks rather than groups when examining and researching relationships between actors. According to Monge (1987), analysts examine relationships between actors in a network specifying that, “Groups emerge by being densely connected regions of the network”. Bates and Peacock (1989), believe that only then does the label “group” become a meaningful construct enabling analysts to predict behaviour of others classified in the same group. Haythornwaithe, (1996) states that membership in a particular class, ethnic group, gender, etc, does not make the category of the group a useful construct but rather the patterns of relationship to others within that group.

Following from this it is possible for actors to belong in any number of networks based on different types of relationships, without restricting them to just one. For example, coworkers may form a network based on the exchange of information relating to getting their job done and at the same time, they may form different networks based on friendship networks.

The proceeding section expands some of the technical concepts used by social network analysts. These describe the positions of actors within networks and types of networks.

3.3 PRINCIPLES OF SOCIAL NETWORK ANALYSIS

The terminology practiced in network analysis process is specific and common throughout the literature on the subject. The following section creates the foundation for the literature to follow by describing the terms and concepts used.

3.3.1 RELATIONSHIP AND TIES

An essential part of any network is the ties that bind actors, i.e., persons, organisations, and concepts, building connections, and creating relationships. Such relations between actors allow network analysts to characterise the world in terms of durable relational structures (Wasserman & Pattison, 1996). Ties between actors can be directed (such as giving advice to someone) or undirected (maybe sitting next to someone) and they can be dichotomous (whether two people are friends or not) or valued (such as strength of friendship) (Haythornwaithe, 1996). She further states that a set of ties of a given type (such as friendship ties) constitutes a binary social relation, and each relation defines a different network (e.g., the friendship network is distinct from the advice network, even though they show empirical correlation).

Following this, Borgatti and Foster (2003) believe that actors have different kinds of ties with the assumption that each tie has a different function. They explain that centrality in the ‘who has conflicts with whom’ network has different implications for the actor than centrality in the ‘who trusts whom’ network.

Using social network analysis researchers are able to identify the ties that exist between pairs as well as the relationships that form and maintain those ties. Accordingly, Haythornwaithe, (1996) writes that pairs of actors who maintain a particular relationship, such as, when pairs who work together come together, or if they meet together after work to socialise, describes the specific relationship. She further considers aggregate connections between pairs of actors, linking them by the types of relationships they maintain with each other.

Whatever the tie or relationship that exists between actors, researchers describe and analyse them for their purpose, direction, strength, and structural position in relation to others in the network for understanding actors’ roles and positions.

A. Direction

Information passed on from one person to another, flows in a certain direction. When a manager gives out work related information to the subordinate

in terms of the work he has to do, it is termed as *asymmetrical*, because work instructions flow only in one direction.

Relationships can also be undirected. This is particularly so, where the flow of direction is neither measured nor considered relevant. An undirected relationship when measured in both directions may reveal that even though both actors may communicate with one another, they may not report at the same level. Friendship ties between two actors are considered to be directed and symmetrical, when frequency of communication is not reciprocated.

B. Tie strength

Tie strength refers to the intensity of the relationship between actors in consideration with the flow of information between them. When actors meet and exchange information frequently, relationships are stronger than when they meet infrequently. Granovetter (1973), distinguished between strong and weak ties whereby he defines tie strength as a function of three factors: (1) frequency of contact, (2) reciprocity, such as favours and obligations, and (3) friendship. Strength of a tie may also depend on the number and types of relationships that a pair maintains, and on the strength of each individual relationship.

Haythornwaithe, (1996) observes that some analysts only consider the presence or absence of a link to establish a relationship without considering the strength of the connection. She further writes that the strength of a connection can also be included in the present/absent dichotomy by deciding that a relationship does not provide a sufficient link unless present in a certain quantity or frequency.

Measures of tie strength vary according to what is being studied, such as when comparing social support versus instrumental support (Wegener, 1991), location of study, e.g. North America versus other countries (Lin & Bian, 1991; Wegener, 1991) or the subject of study, e.g. women versus men (Bridges & Villemez, 1986; Lin & Bian, 1991). Other examples include combinations of frequency of contact, duration of association, intimacy of the tie, provision of reciprocal services, and kinship (Marsden & Campbell, 1984).

Festinger, Schacter and Black (1950) posit that strong ties are conducive to the exchange of information. This is because individuals who have ties that are

more intimate may be motivated to provide more information to others. This is of benefit to newcomers as explained in chapter two on socialisation of newcomers. Strong ties especially with a small number of people in the information/advice network ensure that information is of better quality and less redundant ensuring that newcomers will receive the right information for their job and role.

However, Granovetter (1973) demonstrated that there is strength in weak ties as well. He argued, “Those to whom we are weakly tied are more likely to move in circles different from our own and will thus have access to information different from that which we receive.” His work has confirmed the importance of weak ties for the transmission of new, and innovative information (Granovetter, 1982). In relation to newcomers, weak ties provide information that is varied and different relating to the wider organisation, culture and other aspects, which may help them in settling down and understanding their role within the whole context.

It is not just the strength or weakness of a tie that contributes to the role of each of these types of ties in information exchange. Each type of tie indicates the nature of an individual’s connectedness within one or more networks, which in turn affects exposure to specific kinds of information. The more relationships actors maintain, the more reciprocal the relationships, the more long-lasting and the more personal the relationships, the stronger the tie.

C. Multiple relations

Generally, social network data sets, describe only one kind of relation between actors unlike conventional actor-by-trait data sets where many variables describe each actor. It is possible to test multiple ties connecting actors to each other in a network. For example, researchers considering the network ties among faculty members in an academic department might be interested in academic staff who serve on the same committees, interact as friends outside of the workplace, have one or more areas of expertise in common, and co-author papers.

As we see, actors have multiple relations with others in the network(s), which are multi-faceted. Positions in one set of relations may re-enforce or contradict positions in another (such as actors sharing friendship ties with one set of people but not belonging to committees). Actors may be tied together closely in

one relational network, but be quite distant from one another in a different relational network. The locations of actors in multi-relational networks and the structure of networks composed of multiple relations are some of the most interesting (and still relatively unexplored) areas of social network analysis.

Actors in a network take on various positions in a network creating sub-groups, cliques, isolated positions, among a few. These then define information and resource flow between actors and the following section discusses such concepts.

3.3.2 NETWORK PROPERTIES

Table 3-1 summarises essential social network concepts used by analysts and researchers in defining, understanding, and explaining their work (Tichy, Tushman & Fombrun, 1979).

Table 3-1: Tichy, Tushman and Fombrun (1979) – Network properties

Property	Explanation
<i>Transactional content</i>	What is exchanged by the social objects (e.g. information or effect) 1. Expression of affect 2. Influence attempt 3. Exchange of information 4. Exchange of goods or services
<i>Nature of the links</i>	The strength and qualitative nature of the relation between two social objects
<i>Intensity</i>	The strength of the relation between individuals as indicated by the degree to which individual's honour obligations or fore go personal costs to carry out obligation (Mitchell, 1969) or by the number of contacts in a unit of time.
<i>Reciprocity</i>	The degree to which a relation is commonly perceived and agreed on by all parties to the relation (i.e. the degree of symmetry)
<i>Clarity of expectations</i>	The degree to which every pair of individuals has clearly defined expectations about each other's behaviour in the relation
<i>Multiplexity</i>	Individuals have multiple roles, such as worker, husband, community member, and group member. This defines the degree to which a pair has multiple roles. Greater the role one person has to another, the stronger the linkage.

Property	Explanation
Structural characteristics	Describe the overall pattern of relationships between the system's actors.
<i>External network</i>	Focal unit linked to external domains.
<i>Internal network</i>	Looks at how a given set of actors, who make up the network are linked
<i>Clusters</i>	Are areas of the network where actors are more closely linked to each other than they are to the rest of the network (Boissevain, 1974).
<i>Coalition</i>	Temporary alliance of actors who come together for a limited purpose (Thibaut & Kelley, 1959)
<i>Clique</i>	More permanent informal associations and exist for a broader range of purposes e.g. task, social and career (Burns & Stalker, 1961; Tushman, 1979; Tichy, 1973)
<i>Size</i>	The number of individuals participating in the network
<i>Density (connectedness)</i>	The number of actual links in the network as a ration of the number of possible links
<i>Clustering</i>	The number of dense regions in the network
<i>Openness</i>	The number of actual external links of a social unit as a ratio of the number of possible external links
<i>Stability</i>	The degree to which a network pattern changes over time
<i>Reachability</i>	The average number of links between any two individuals in the network
<i>Centrality</i>	The degree to which relations are guided by the formal hierarchy/ Extent to which individual is connected to others in a network
<i>Star</i>	The individual with the highest number of nominations/connections
<i>Liaison</i>	An individual who is not a member of a cluster but links two or more clusters
<i>Bridge</i>	An individual who is a member of multiple clusters in the network (linking pin)
<i>Gatekeeper</i>	A star who also links the social unit with external domains
<i>Isolate</i>	An individual who has uncoupled from the network
<i>Cohesion</i>	Grouping actors according to strong common relationships with each other
<i>Structural equivalence</i>	Grouping actors according to similarity in relations with others
<i>Prominence</i>	Indicating who is "in charge"
<i>Range</i>	Indicating the extent of an actor's network
<i>Brokerage</i>	Indicating bridging connections to other networks (Burt, 1992b; Nohria, 1992)

Using the principles mentioned in Table 3-1 network, analysts can explore relational properties of networks, to observe, how cohesive the group is or what subgroups interconnected actors exist and positional properties, such as who occupies what positions in a network (Alba, 1982; Monge & Eisenberg, 1987).

The following sections describe the network positions of actors in networks as well as feature diagrams using some of the principles and properties from the previous sections, which act as a visual aid in better defining the positions of the actors.

3.3.3 NETWORK POSITIONS

When researchers map out networks, they often display the results in diagrams making it easier to visualise and explain the importance of the position relativity of the actor(s) in any department of work in the organisation. This section describes and explains network positions of actors with the aid of diagrams where possible.

A. Centrality

Bavelas (1948) and Shaw (1954) suggested that when a person is strategically located on the communication paths linking pairs of others, that person is centrally able to influence the group by withholding or distorting information in transmission. Shimbel (1953) stressed the responsibility of persons occupying such positions for the maintenance of communications while Cohn and Marriott (1958) emphasised their potential as coordinators of group processes essentially emphasising the potential for control and power.

As we can see, an aspect of centrality is power, which is inherently relational as suggested by Hanneman and Riddle (2005). They posit that an actor does not have power in the abstract but rather because they can dominate others. They further add that as power is a consequence of patterns of relations, the amount of power in social structures can vary depending whether a system has low density where much power cannot be exerted or high density where there is great potential for the influence of power.

Hanneman and Riddle (2005) describe how network analysts consider actors embedded in networks with imposed constraints as well as opportunities to

determine their bargaining and influence position. The structure therefore of social interactions enhances or constrains access to valued resources (Brass, 1984; Ibarra, 1993). Resources exchanged through informal networks include work-related resources, such as task advice and strategic information, but information networks also transmit social identity (norms) and social support (Podolny & Baron, 1997). At the individual level, network centrality captures the extent to which an individual has access to resources such as task-specific knowledge and confidential information about work-related issues. The combination of fewer constraints, with greater opportunities due to more numerous connections to others creates a more favourable structural position, which ensures better bargains in exchanges, greater influence, and a greater point of focus for deference and attention from those in less favored positions.

Figure 3-1, Figure 3-2, and Figure 3-3 below display ‘star’, ‘line’ and ‘circle’ networks showing that centrality and power differs according to the position an actor holds within the network.

Figure 3-1 shows a ‘star’ network in which actor ‘A’ is connected to several people. This is a highly favoured position in a network, which describes a relationship such as a resource exchange or resource sharing because ‘A’ has more opportunities and alternatives as actor ‘A’ is closer to more actors than any other giving greater power for bargaining and exchange. If actor ‘D’ decides not to provide actor ‘A’ with a particular resource, this actor can approach other actors to part with their particular resource.

Figure 3-1: Hanneman and Riddle (2005) – ‘Star’ network

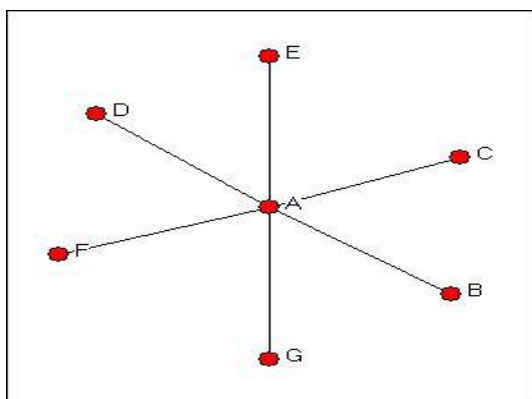
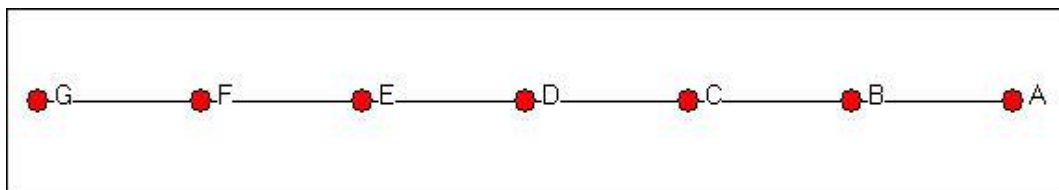


Figure 3-1 also shows that actor 'A' is the connecting point to all the other actors therefore they will have to approach actor 'A' to deal/exchange that resource with anyone else in that network. Actors with a star network have access to more choices and making them more autonomous and therefore less dependent on any one specific actor

Figure 3-2 shows the 'line' network where the actors at the end of the line (A and G) are at a structural disadvantage, but all others appear to be equal.

Figure 3-2: Hanneman and Riddle (2005) – 'Line' network



In Figure 3-3 which features the 'circle' network, each actor has exactly the same number of alternative trading partners (or degree) so all the positions are in equal positions of advantage or disadvantage.

Figure 3-3: Hanneman and Riddle (2005) – 'Circle' network

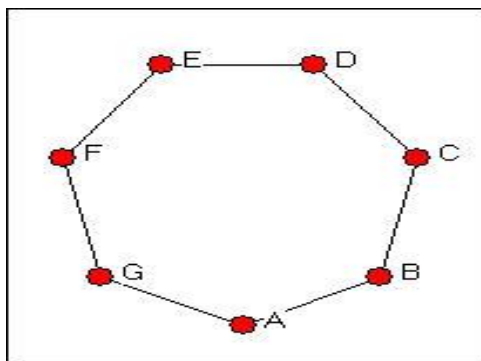


Figure 3-1, Figure 3-2, and Figure 3-3, each considers three concepts of centrality that of degree, betweenness, and closeness. They describe the locations of individuals in terms of how close they are to the 'centre' of the action in a network even though the definitions of what it means to be at the centre differs for each concept. The proceeding section briefly describes each concept in connection to the three figures.

A.i. Degree Centrality

As discussed in relation to the ‘star’ network, actors who have more ties to other actors may be in a more advantageous position because they may have alternative ways to satisfy needs, and hence are less dependent on other individuals (Hanneman & Riddle, 2005). The authors believe that such actors are often third parties and deal makers in exchanges among others, and are able to benefit from this brokerage.

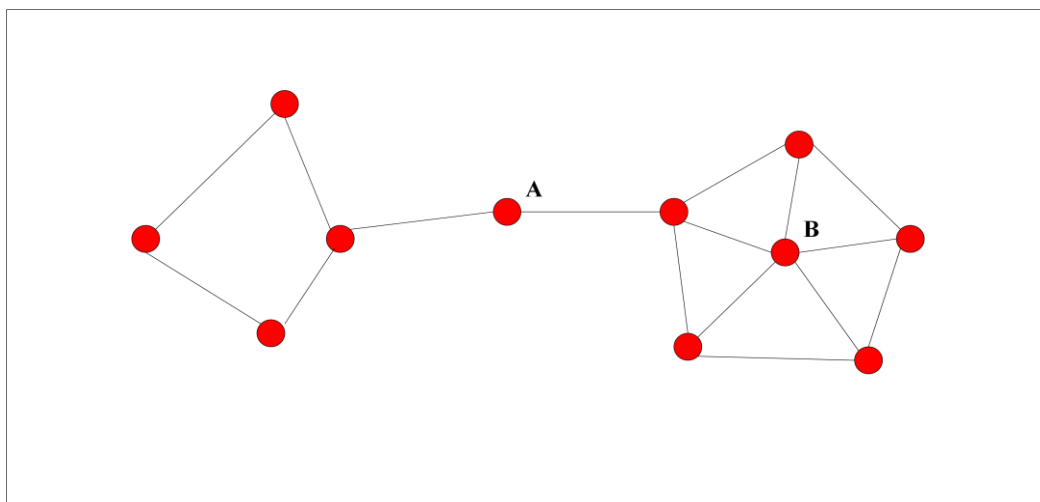
Hanneman and Riddle, (2005) criticise this concept as they state it only takes into account the immediate ties that an actor has, or the ties of the actor's neighbours, rather than indirect ties to all others.

A.ii. Betweenness Centrality

Hanneman and Riddle (2005) state that with binary data, betweenness centrality views an actor as being in a favored position, which indicates the extent to which a node lies on the shortest path between every other pair of nodes. They summarise, that when actors in the network depend on one actor to connect with several others, the greater the power of that actor.

Figure 3-4 shows the interaction of betweenness centrality and degree centrality in a network where actor ‘A’ is high in betweenness centrality while actor ‘B’ is high in degree centrality.

Figure 3-4: Ehrlich and Carboni (2005) – Betweenness and Degree Centrality



A.iii. Closeness Centrality

Closeness centrality approach emphasises the distance of an actor to all others in the network by focusing on the distance from each actor to all others.

B. Structural holes

Ehrlich and Carboni (2005) write that a structural hole occurs whenever a person (a) has a relationship with someone who is connected to a separate cluster of people and (b) has no other direct or indirect connection with the people in that cluster. Point 'A' in Figure 3-5 is connected to three distinct groups through one person from each group.

Burt (2004) adds that a separate cluster of people occur when activities are focused inside their own group creating holes in the information flow between groups, which is essentially a structural hole. For any individual in an organisation especially a newcomer, job performance in knowledge intensive work environments requires obtaining the right information to solve novel and challenging problems. Closed networks promote consistent norms, trust, and cooperation that enhance sharing knowledge and information which are ideal for newcomer to obtain job related information (Coleman, 1988; Granovetter, 1985; Reagans & McEvily, 2003). As a result, researchers believe that opinion and behaviour are more homogeneous within the closed networks than between networks.

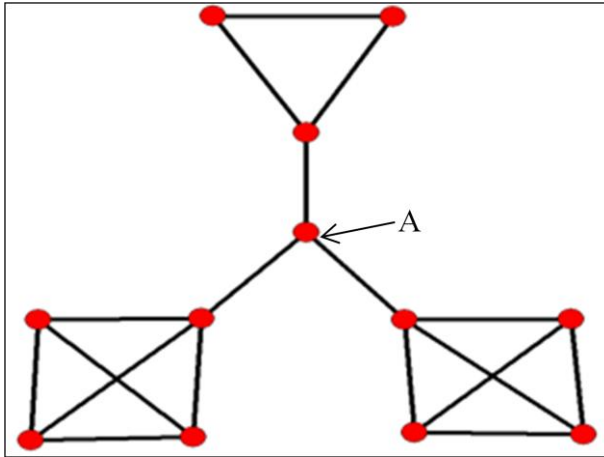
Therefore, people whose networks bridge the structural holes between groups have earlier access to a broader diversity of information giving them an advantage in getting promoted, developing innovative products, and gaining power and influence by acting as a broker between otherwise unconnected groups (Ehrlich & Carboni, 2005).

Although, Burt (1992a) calls this, the social capital of brokerage, Mills (1848) opined that being in contact with persons who are dissimilar in modes of thought and action unlike those with which they are familiar with increased the chance of progress (see Burt, 2004). Reagans and McEvily (2003) demonstrate that having broad networks increases one's perspective and enhances the ability for people to convey complex ideas to diverse audiences. Their research further

reiterates that network position might provide an ability to help absorb knowledge acquired elsewhere because then actors have greater access information.

Figure 3-5 is a diagrammatic representation of structural holes.

Figure 3-5: Ehrlich and Carboni (2005) – Structural holes



For the most part, literature highlights the advantages of brokerage. This section will not discuss the less explored negative aspects such as organised crime (Williams, 1998; Morselli, 2003), fraud (Tillman & Indergaard, 1999) or corporate misgovernance (Mitchell, 2003) are not discussed here. This material is covered in detail under ‘Dark side of networks’, placed in Appendix A.

In order to become a successful broker, Burt (2004) identifies four levels of brokerage through which the person could create value. The steps begin by involving parties on either side of the structural hole to become aware of the other parties interests and challenges with the best practices transferred across to create value while drawing analogies between the two groups. Lastly, the broker synthesises the knowledge and information to create value for both groups because of their unique position of being familiar with activities in two groups making them more likely to see new beliefs or behaviours that combine elements from both groups. These four steps identified by Burt (2004), show that brokers can be crucial to learning and creativity if channelled positively. It further reiterates that those actors whose networks span structural holes have early access to diverse, often contradictory, information, and interpretations, which gives them a competitive advantage.

In a knowledge intensive work environment, brokers spanning departments, functional boundaries, as well as physical barriers increase opportunities to access and transfer critical information when it is needed thereby improving performance (DeSanctis & Monge, 1999; Hansen, 2000; Szulanski, 1996; Tsai, 2001).

Essentially, we see that structural holes are invaluable to the organisation if managed well, as they can channel information flow between groups, teams, and departments, when there are no apparent connections between them.

While structural holes are important for the network as a whole, newcomers are perhaps concerned about social inclusion in the organisation through embeddedness.

C. Embeddedness

The previous section showed that structural holes, which lie between and not within dense regions of relationships creating open networks, are associated with higher economic returns (Burt, 1992a). There are several advantages to open networks with structural holes but when it is necessary for effective cooperation and workplace social inclusion, Granovetter (1985) emphasised embeddedness in dense networks, which are essentially closed networks.

Workplace social inclusion is a concept where employees have informal social ties with coworkers and feel as if they belong when others socially include them in their workplace (Randel & Ranft, 2007). The authors further believe that this concept taps into the perceptual component of communal social capital, which as Oh, Kilduff and Brass, (1999) explain, develops through the formation of relationships amongst individuals whose activities are organised around the same focus. Embedded networks of mutually interacting individuals, often within entities such as families, work units, and communities form the basis for such relationships.

Some authors posit that when employees experience workplace social inclusion, they accomplish their work more effectively, as evidenced by a positive relationship between workplace social inclusion and individual performance (Pearce & Randel, 2004; Prusak & Cohen, 2001). While communal social capital is associated with structural network position or resources from within-organisation connections representing resources available because of ties it does

not convey an individual's perceptions of personal value in the social capital network. Communal social capital does not provide a sense of belonging to the social network, as workplace social inclusion does. Research indicates high workplace social inclusion leading to strong feelings of belongingness and by contrast, an individual who is not socially included at work might hesitate or experience anxiety about calling on social ties to gain resources at work. Hansen (1999) explains that some researchers have emphasised maintaining social ties with coworkers to facilitate the effective exchange of information across subunit or organisational boundaries (Hansen, 1999) which at the same time enhances their feelings of belongingness.

Newcomers entering unfamiliar organisational setups and workgroups might benefit from such networks, when their co-workers will help them adapt to the organisation. Such networks of close relationships within bounded entities such as organisations or work units also provide resources and specific information for accomplishing work tasks, which is beneficial for newcomers in achieving better performance and role clarity.

D. Range

Range refers to the array of sources to which an actor has access. The more ties individuals maintain, the more access they have to social resources, and the more access they have to places where they can use it (Burt, 1992a). An actor's range depends on the size of his or her own network, the number of bridging ties maintained from one network to another and the size of the networks of those with whom the actor interacts.

Actors connected to several networks in the organisation have greater access to varied information. For example, an information specialist can avail the various networks to maximise his or her own range or may recommend to clients how to maximise their range in order to increase the likelihood of receiving different kinds of information.

E. Structural Equivalence

Structural equivalence identifies actors in a network with similar roles, for example, two teachers for the same class, or if they occupy a similar role relative

to similar others, for example, two teachers with different sets of students. In essence, structurally equivalent actors are those who have “identical ties to and from all other actors in the network” (Wasserman & Faust, 1994). The authors believe this concept can be useful for the study of information as it identifies actors who occupy unidentified information roles that shape the information environment in which they have similar roles

F. Multiplexity

Burt (1983) mentions that multiplexity is directly related to social contagion processes as it refers to the extent to which different types of network relationships overlap i.e. there is more than one type of relation between the first person and the second. He adds that individuals with a high degree of participation across different types of networks might be affected more by contagion processes than those individuals involved in only one type of network and the breadth of an actor’s linkages might serve to provide an individual with a variety of information sources, as well as repetition of certain effects.

The degree of multiplexity has been related to such issues as the increased intimacy of relationship (Minor, 1983), greater temporal stability of relationships (Minor, 1983; Rogers & Kincaid, 1981), reduction of uncertainty (Albrecht & Ropp, 1984), heightened performance (Roberts & O’Reilly, 1979) and a better diffusion of information within networks (Minor, 1983).

So far, we have looked at centrality, multiplexity, structural equivalence, range, structural holes and embeddedness, but there are other positions within the network, which see individuals as special nodes, even though they are not all equally important in social networks. For example, key nodes exist to link a focal unit to other areas within the organisation known as *liaisons*, as well as to areas outside the organisation otherwise referred to as *gatekeepers*. Some individuals can also be uncoupled from the rest of the network, identified as *isolates* (Schwartz & Jacobson, 1977; Tushman, 1977).

The following section considers individuals as special nodes in order to understand the network as a whole.

G. Individuals as nodes

As mentioned earlier, not every person is in a central position. Actors take on other positions within a network each with a different role to play. Accordingly, this section discusses other network positions using Figure 3-6 as an example of a typical social network to explain some concepts.

Figure 3-6: Cross, Nohria and Parker (2002) – Flow of information

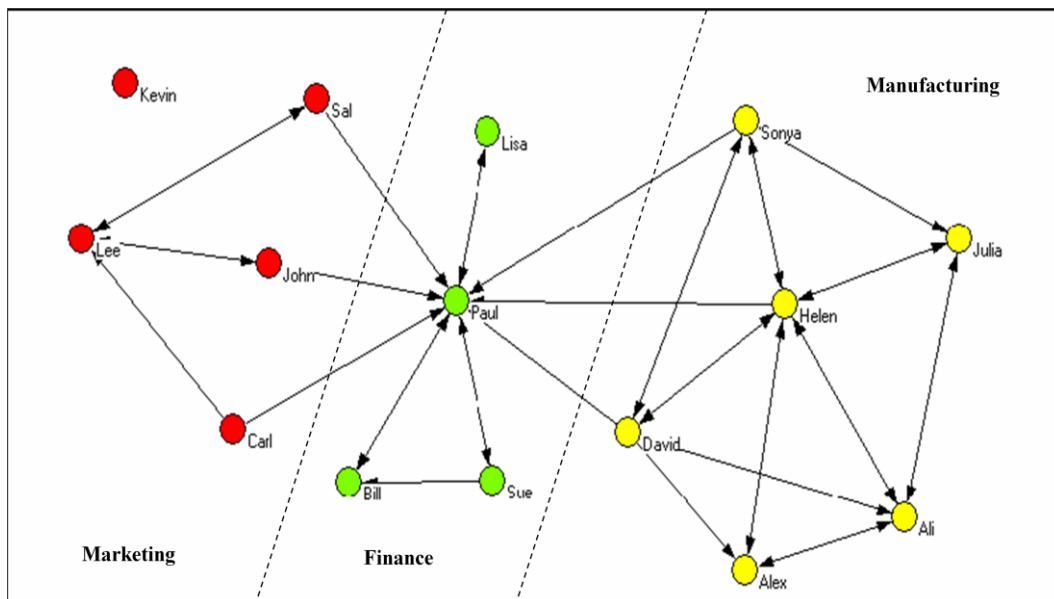


Figure 3-6 highlights essential concepts such as, centrality, stars, and isolates and subgroups in a social network. The dotted lines demarcate the boundaries of the departments. The following material is based on Cross, Nohria and Parker's (2002) diagrammatic representation of structural positions and the flow of information.

G.i. Central people

Figure 3-6 shows individual's position in the network such as the central people who are prominent people within a group. The arrows point to the direction in which information flows and this shows that the entire finance team, three people from marketing and another three people from manufacturing connect with Paul for information. Cross, Nohria and Parker (2002) point that while Paul does not seem to reach out to people outside of finance this diagram is

insufficient to draw concluding remarks whether Paul has a positive or negative influence as a result of that.

Under section A on centrality, we see that actors in central positions have greater power because they have several ties allowing them to control communication and information flows. Cross, Nohria and Parker (2002) state that actors in such positions may be bottlenecks slowing the flow of information and holding up decisions especially since all three departments appear to depend on him. At the same time, they add that people such as Paul often play a very positive role in a network by providing not only valuable information but also cohesion, rendering the group less effective if they left the company.

G.ii. Star

Similar to the position of the ‘central people’ as discussed above, the ‘star’ also has several connections with other actors. However, in this case we see that this position is limited to just one department rather than connecting several departments. We see that within the manufacturing department, Helen is the star as she has connections to every person in the department. It is unclear from this diagram alone whether Helen is a star because of her position within the organisational hierarchy or for any other reason.

G.iii. Peripheral people

As stated earlier not every actor is central in a network as we see in the case with Lisa from finance. Diagrams can be misleading in that they do not give the complete picture especially the value of the isolates. We see that no one goes to Carl for information and Kevin is completely out of the loop. Cross, Nohria and Parker (2002) reiterate that diagrams are not completely reliable to determine the value of actors. They add that peripheral people or isolate often turn out to be underutilised resources, and integrating them can be critical to a network’s effectiveness and efficiency. At the same time, some people are isolated for specific reasons such as when they lack social and/or job related skills. By identifying peripheral people, network analysis may enable appropriate developmental action to be taken.

Cross and Prusak (2002) add that often peripheral people play a vital role in the network serving as experts as they possess specific kinds of information or technical knowledge which they pass on to other members of the group whenever it is needed. Sometimes they prefer to remain in the periphery especially if they prefer to work alone rather than work closely with a group of people. They would rather invest the time spent networking on staying ahead in their field of expertise (Cross & Prusak, 2002).

G.iv. Lines and arrows

As mentioned, each line indicates an information link between two people while the arrows represent the direction of the relationship. Looking specifically at Helen, she has two-way relationships with each member of the manufacturing group but limited contact with finance and no direct contact with marketing.

G.v. Subgroups

These are groups within a group rising along the lines of location, function, hierarchy, tenure, age, or gender. In this case, the three departments are split by function with very little information being shared between them. We see that the connections within marketing and finance are sparse, while actors within manufacturing subgroup knit tightly. Cross, Nohria and Parker (2002) observe that the manufacturing group may have developed internal communication practices that other groups could use to their benefit to bring about greater cohesion within their department. The down side of the tight cohesion within the manufacturing department may hinder overall integration between departments.

Figure 3-6 does not capture all the nodal positions, such as boundary spanners and information brokers. These positions exist in the network therefore the following two sections focus on these two nodal positions.

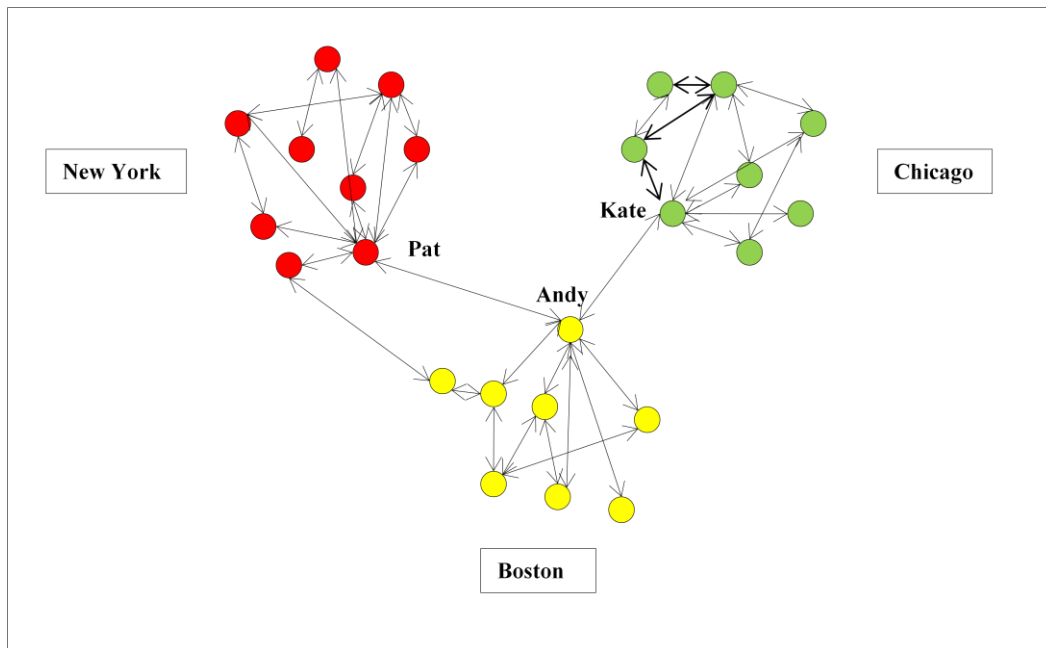
G.vi. Boundary Spanners

Similar to the principle of centrality, a boundary spanner forms the link between different informal networks as well as organisations, departments and teams especially where people need to share different kinds of expertise. Cross and Prusak (2002) believe that they are a “rare breed...primarily because most

people don't have the breath of intellectual expertise, the wealth of social contacts, and the personality traits necessary to be accepted by vastly different groups".

Figure 3-7 shows the structural position of the boundary spanner, Andy, who serves as the main connector of information between the Boston network and the Chicago and New York networks.

Figure 3-7: Cross and Prusak (2002) – Spotting boundary spanners



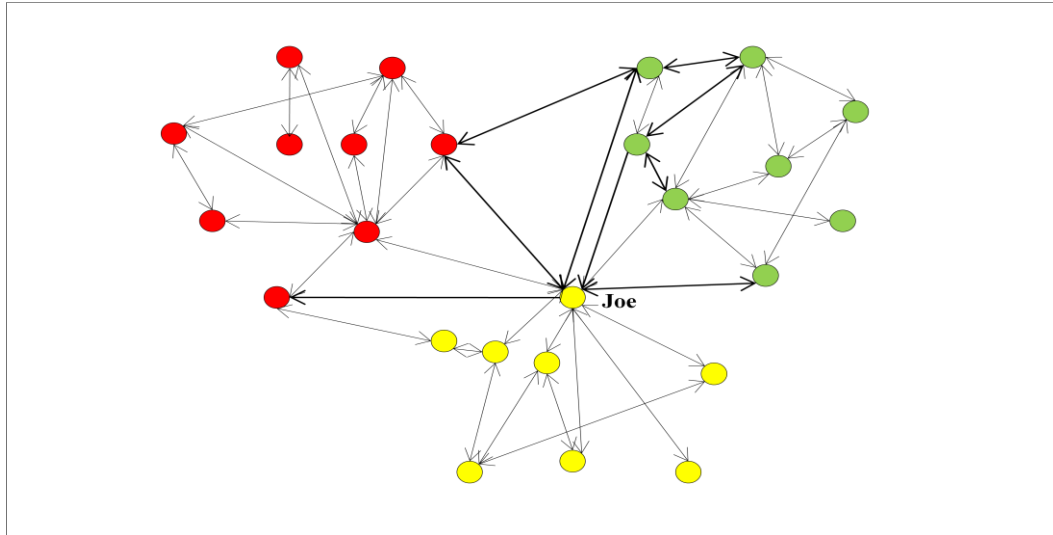
As Figure 3-7 shows, Andy is the boundary spanner as he nurtures the connections with people outside his informal network. Through his relationships with central connectors in two other informal networks, Andy serves as an efficient conductor of information. Cross and Prusak (2002) further explain that boundary spanners can be the sole source of knowledge for the entire team which would be hard hit if they were promoted or left the team.

G.vii. Information Brokers/Brokerage

Information brokers connect the various sub-networks in the organisations as their presence and role ensures that the network as a whole exists. They play an important but similar role to that of the boundary spanner but limited to within the social network. Information brokers wield the power of a central connector

without necessarily possessing the number of direct links that central connectors possess but rather they have a wealth of indirect connections as can be seen from Figure 3-8.

Figure 3-8: Cross and Prusak (2002) – Identifying information brokers



As we can see in Figure 3-8, Joe is the information broker holding the three sub-networks together. He does not have many direct contacts with people around him but he has several indirect connections. If Joe were to leave, this whole network would splinter into three smaller networks.

This section on the network positions has explained in detail nodal positions of actors in the network and the consequences as well as benefits of holding those positions. In order for social network analysts to map out these networks, they first need to collect the data and the following section describes the methods available for data collection.

3.4 NETWORK ANALYSIS METHODS

For the most part, network analysis relies heavily on sociometric data that ascertains the relationship between units. The degree (often the presence or absence of a relation) to which each unit is related to all other units is mapped (Tichy, Tushman, & Fombrun, 1979). A graph or socio-gram displays the network of relationships (Kadushin, 1970). Table 3-2 summarises the various data

collection methods presented by Tichy, Tushman, & Fombrun, (1979) and this can be used exclusively or in combination to gain the maximum benefit.

Table 3-2: Tichy, Tushman, and Fombrun, (1979) – Data collection methods

Strengths and weaknesses of data collection methods			
		Strengths	Weaknesses
Positional analysis (Formal communication/influence)	• Uses formal organisational data to describe supporting or communication lines	• Easy to access	• Least accurate as it fails to tap the actual ongoing processes of the organisation • Must be used with other methods
Reputational/Attributional	• Goes behind the scenes of overt behaviour by using judgments to map out the leaders and decision makers of a community • Uses interviews to investigate the influence or communication networks (Hunter, 1953)	• Simplicity of design and data collection • Deal with multiple networks • Limits sample size	• Taps only perceived networks • Status bias often built in. • Specification of where to cut off “snowball” often arbitrary • No way to choose “right” issues • Questions reliability with data
Decisional analysis	• Highlights “the process of decision making as the nucleus of the phenomenon of power, and it is this process that is the object of research” (Dahl, 1963). • This process has been used during actual decision making processes (Pettigrew, 1973; Banfield, 1961)	• Reconstructs networks • Deals with multiple networks • Issue specific	• Ignores direct, subtle influence • Difficulty in defining key issues • Potentially difficult to generalise • Choice of issues important • Problems with managing “snowball” sample • Complexity in time and energy • Neglect of non-decision
Interactional analysis	• The flow of interactions (or influences) and their feedback is the central focus. Power is taken to be a constraint guiding these flows (Clark, 1968).	• Benefits of all the above approaches • Easy to gather • Reliability of data	• Definition of boundaries i.e. assumption of a closed system (or at least of a bounded system) • Need for high return rate (total universe needed). • Costly to manage and administer • Requires high commitment on part of respondent • Requires high trust

Using Table 3-2 as the base, the next section explores approaches to conducting research for social network analysis.

3.4.1 APPROACHES TO SOCIAL NETWORK ANALYSIS

Given a set of actors in a network, there are several methods for measuring relations among them. On one end of the spectrum is the ‘full network’ method yielding maximum information about actors and their connections with each other but it is an expensive process, difficult to execute, and sometimes difficult to generalise. At the other end of the spectrum, researchers can utilise methods similar to those used in conventional surveys. These approaches yield considerably less information about network structure, but are generally more cost effective, and often allow easier generalisation from the observations in the sample to some larger population. There is no one right method for all research questions and problems and the onus is on the researcher to choose the best one keeping in perspective the research question and sample.

A. Full network methods

Haythornwaithe (1996) explains that this method requires collecting information about each actor’s ties with all other actors, essentially taking a census of ties in a population of actors, rather than a sample. By collecting information about ties between all pairs or dyads, full network data give a complete picture of relations in the population.

A great advantage of this method is that it allows for very powerful descriptions and analyses of social structures. However, conducting this method can be very expensive. Collecting data from every member of a population, and having every member rank or rate every other member can be a very challenging task in any but the smallest groups. The task becomes more manageable by asking respondents to identify a limited number of specific individuals with whom they have ties.. This task is practically impossible to accomplish for a large group such as all the people in the city but easier in an organisation set up.

While it is physically impossible to conduct a full network approach on a large group, actors whether they are persons, organisations, or groups tend to have

limited numbers of strong ties to other actors because of limited resources, energy, time, and cognitive capacity making it difficult to maintain large numbers of strong ties. This therefore makes the task of conducting a full network method a little easier.

B. Snowball methods

In this method, researchers begin by asking a focal actor or set of actors to name some or all of their ties to other actors. Then they track them and ask them to name some or all of their ties. The process continues until there are no new actors, or until the researcher decides to stop.

This method is ideal for identifying “special” populations such as small sub-sets of people within a large network of actors. Haythornwaithe (1996) mentions that business contact networks, community elites, deviant sub-cultures, avid stamp collectors, kinship networks, and many other structures can be effectively located and described by snowball methods. To locate the boundaries of the snowball samples researchers look at the limitations presented by the numbers of strong ties that most actors have, and the reciprocated ties.

Haythornwaithe (1996) mentions two major potential limitations and weaknesses of snowball methods. Firstly, the method cuts off actors not connected to the network, i.e. isolates, giving an incomplete picture of the network. Secondly, this method does not guarantee finding all the connected individuals in the population. Sometimes it is possible to miss whole sub-sets of actors if the researcher begins with the wrong actor or at the wrong place. She clarifies this by explaining that there is generally a starting point in communities and organisations such as a leader from whom it is possible to generate leads.

C. Ego-centric networks (with alter connections)

Hanneman and Riddle (2005) mention two types of egocentric network approaches. The first considers egocentric networks with alter connections while the second considers only the ego. They explain that, as it is not always possible to track down the full networks beginning with focal nodes researchers begin with a selection of focal nodes (egos), and identify the nodes to which they are

connected. Next, nodes identified in the first stage identify their connections with each other.

This method is effective for collecting a form of relational data from very large populations, which combined with attribute-based approaches give information about the network as a whole, though not as much as snowball or census approaches.

Morrison's (2002) research on newcomers and the relationships with insiders during organisational socialisation used this method to develop and understand the role of relationships and organisational outcomes such as commitment.

D. Ego-centric networks (ego only)

Hanneman and Riddle (2005) extend the concept of egocentric networks to include ego only methods to focus on the individual, rather than on the network as a whole. Collecting information on the connections among the actors connected to each focal ego shows the "local" networks or "neighbourhoods" of individuals. Such information is useful for understanding how networks affect individuals, but they give an incomplete picture of the network as a whole.

This section focused on the research methods to find out the patterns of relationships existent between actors. These patterns of relationships reveal distinctive network types actors engage in for various reasons such as seeking information, advice, friendship, and resources. Accordingly, the following section discussed two specific networks that of friendship and information, which are the focus of this research.

3.5 TYPES OF NETWORKS

In order for newcomers' socialisation process to be complete Morrison (2002) suggests a process of assimilation of tasks, such as, learning that acquires and integrates through assimilation a wide range of new information (Bauer, Morrison, & Callister, 1998; Saks and Ashforth, 1997b). Chapter two discussed material on socialisation which emphasised the importance of newcomers' acquiring (1) information about organisational issues and attributes (such as

norms, policies, reporting relationships, terminology, goals, history and politics), (2) information about how to perform specific work tasks, and (3) information about role expectations and responsibilities (Chao, O’Leary-Kelly, Wolf & Klein, 1994b; Morrison, 1993c; Ostroff & Kozlowski, 1992). Morrison (1993c) and Ostroff and Kozlowski (1992), termed these three types of information as organisational, job, and role information, respectively, and they have been shown to relate to critical indicators of newcomer learning such as organisational commitment, role clarity, task mastery, job satisfaction. Morrison (2002) explained that organisational information facilitates organisational knowledge (knowing about one’s larger organisation context); job information facilitates task mastery (knowing how to perform one’s job); and role information facilitates role clarity (knowing the responsibilities and constraints associated with one’s position). She then proposed that the network structure developed by a newcomer in the socialisation process would have implications for the success of these three types of learning.

Actors in an organisation set up organise networks with other actors for various purposes. Friendship and advice networks are two types of networks in particular that have been the topic of much research. The following sections will explain them in detail

3.5.1 FRIENDSHIP NETWORK

When one considers employees linked together based on social liking, or friendship, it helps to assess an informal, emergent structure. Brass (1984) attributes success in an organisation to being part of or being well integrated into such social networks. He further maintains that friendships can be the source of information, access to people and be the basis of forming coalitions and alliances. Actors highly interconnected in a friendship network may also provide a person especially a newcomer with control or access to other resources, such as access to people for possible coalition formation.

Investment in these social relationships is a time-intensive process (Granovetter, 1973), and employees have a finite amount of time (Pearce & Randal, 2004). However, these social relationships build the social capital of actors creating a sense of belonging enhancing workplace social inclusion.

Some authors have seen the need to investigate the extra-network sociological bases for friendship ties otherwise termed *foci*, discussed in the next section.

A. Foci

Fischer et al., (1977) and Verbrugge (1977) investigated the extra-network sociological bases for friendship ties to help explain patterns in social networks. Feld (1981) believes that aspects of the extra-network social structure produce patterns in a social network, which in turn explain the loosely connected social circles in organisations. He goes on to suggest that individuals construct their social relations based on certain aspects prevalent in their social environment, forming the basis for focus theory approach. Feld terms these certain aspects as foci, described as social, psychological, legal, or physical entity around which joint activities are organised (e.g., workplaces, voluntary organisation, hangouts, families, persons, social positions, etc.). He explains that individuals whose activities are organised around the same focus will form interpersonal ties through frequency of interaction, leading to the selective formation of ties, which develops, into a cluster. According to this theory, social context is the focus of interpersonal ties rather than similarities of individual characteristics.

Individuals who share a focus are more likely to share joint activities but not all individuals who share a focus will interact very often. When individuals interact with one another, such as in a family situation, all the individuals within that family context will interact with each other, but in a city, for example, only a small proportion of individuals tie together. Feld (1981) summarises that a focus may involve very little constraint, but where there is no constraint at all there is no focus.

Feld (1981) explains that the structure of a network is dependent upon the constraint and size of the underlying foci. Highly constraining foci will create close-knit clusters of various sizes depending upon the size of the foci.

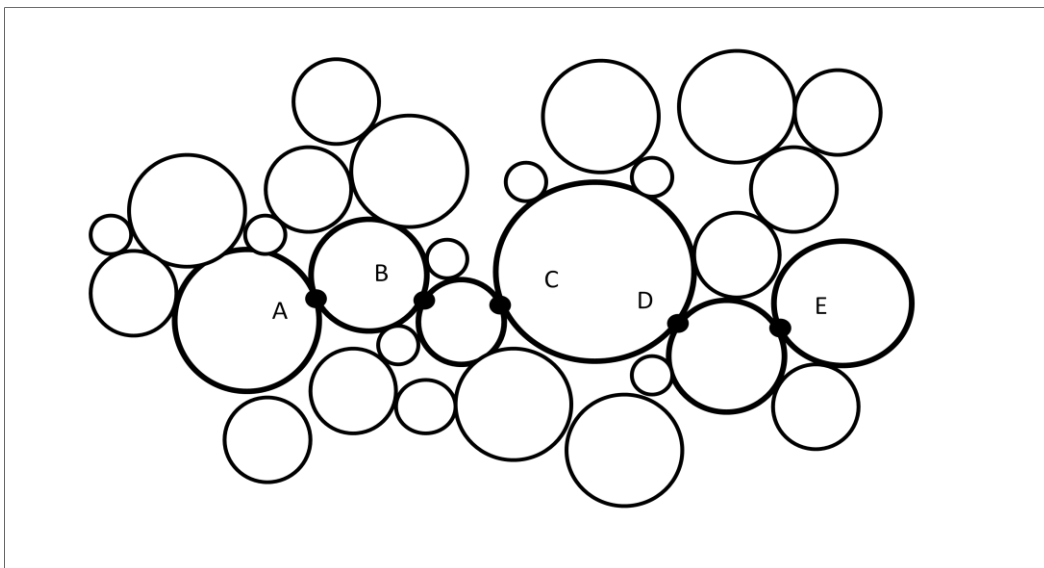
Feld (1981) believes that the formation of social networks and the relations to foci are interdependent, where two individuals who already have ties with each other will find and develop new foci, around which to organise their joint activities. Using the structural approach to underline the focus theory, Feld

suggests that the more severe the restrictions on time, effort, and emotion the more individuals will experience pressures to combine their interactions with various members of their network. They then find and develop new foci around which to bring more of them together, provided the foci involve similar types of activities and social interactions. Where there are reasonably compatible foci underlying ties among many individuals, such loose-knit sets of people will tend to develop new foci, which organise activities among themselves. He states that the greater the ties within a set of individuals, the more likely it is that a common focus is developed and consequently, previously untied pairs with the set will become tied.

While individuals may have multiple foci, those in clusters with a single focus enjoy greater interactions with each other, but individuals in clusters with different foci, experience more random connections between clusters. Yet, these very individuals with different foci can serve as links between individuals in other foci.

Feld (1981) uses a variation of Ptolemy's circle-upon-circle model of planetary motion to describe the pattern of foci between individuals as seen in Figure 3-9.

Figure 3-9: Feld (1981) - A schematic representation of social circles



Each circle in Figure 3-9 contains all of the individuals associated with a particular focus while each individual is distinguished by alphabetical letters, alternates between participation in multiple orbits, and so each individual is the intersection of orbits. This allows the researcher to trace the social path from one individual 'A' to the last individual 'E'.

According to Feld (1981), such organisation of ties has implications for individuals on transitivity, local bridges, as well as density of the ties. These concepts relate to the foci of individuals, hence, this section deals with *foci* and not the section titled 'network positions'.

A.i. Transitivity

Research has identified the tendency for two individuals, tied to a third may also be tied to each other, which is termed *transitivity* (Feld, 1981). Drawing from focus theory discussed under section on *foci*, two individuals tied to a third person may share a focus with the third and if they share the same focus with the third person, then they are likely to share that same focus with each other, creating a link between each other.

The phenomenon of transitivity occurs when an individual's (ego's) *alters* are not connected with each other, the individual creates or finds a new focus around which to organise joint activities with *alters*. Feld (1981) explains that when individuals engage in such creative network manipulation, it involves a high proportion of their time, effort, and emotion than when they relate to compatible foci. This essentially increases the social capital of individuals in a network because they are creating more ties with others in the network. At the same time, their intent is to ensure that the distance separating them to alter is a shorter geodesic distance giving them direct access to resources and information with less dependence on others.

A.ii. Local Bridges

Granovetter (1973) states that in a network, local bridges are ties that connect two individuals, who do not share ties to other individuals. However, while perfect transitivity exists in a network, local bridges will be unlikely, as

transitivity requires that every two individuals tied to each other must also be tied to all of the same others.

Two people who share ties in a cluster with a particular focus are likely to share ties to others associated with that focus. In a large focus, there is a greater chance that all individuals connected to that particular focus will share ties so there is less bridging. At the same time two individuals, sharing ties who also share ties to several other foci will have more connections with others, which also means there will be less bridging.

In situations where perfect transitivity does not exist, individuals maintain local bridging ties with other individuals. Feld (1981) asserts individuals maintain bridging ties with others when it involves little time, effort and emotion (so the individuals will feel little pressure toward combining their activities with others) and if the underlying focus, is incompatible with other foci. This defines local bridges as weak ties. This is in keeping with Granovetter's (1973) definition of weak ties, that strength or weakness is based on emotional content, interaction, and functions of a tie.

Such weak ties or local bridges are ideal for individuals to acquire a wealth of information due to their wide spread contacts. Information from such contacts may not have quality or credibility but provide a range to keep the individual abreast of current trends. Newcomers benefit from such contacts to acquire information regarding the organisation, culture and understand their role in the organisation.

A.iii. Density of personal networks

Feld (1981) defines the density of personal networks as the extent to which the associates of a particular individual tie with one another. He adds that when there is perfect transitivity, an individual's personal network is completely dense, because all the individual's associates have connections to one another. On the other hand, if every tie to an associate is a local bridge, then the individual's alters do not have connections with each other, leading to a situation of zero density. When an individual belongs to a low-density cluster, the individual provides a link between others who are otherwise disconnected and so is an intersection of

otherwise disconnected social circles. This is also a position of structural holes where by, the ego connects the otherwise disconnected circles.

Informal networks are not just limited to friendships networks but also include information networks. This is because the nature of the interactions varies for individuals depending on their need and their roles vary in different networks. Accordingly, the following section discusses the information/advice network.

3.5.2 ADVICE AND INFORMATION NETWORKS

As we saw in chapter two on socialisation, newcomers are proactive agents seeking information to reduce anxiety, stress, and understand their job and role as well organisational information on culture and their place within the organisation. Regardless of the socialisation tactics used by the organisation, the insiders of the organisation will also induct newcomers.

Since information is an important resource in knowledge intensive environment and service organisations, making and maintaining contact with the right people becomes a crucial point, especially, for newcomers when they enter a new job or organisation. Information pertaining to their job will be available from the advice/information network and it is the prerogative of the newcomer to ascertain who and where to go to obtain quality information.

Advice/information networks as such, are comprised of relations through which actors share resources like information, assistance, and guidance related to the completion of their work. This is termed task information, which is instrumental in facilitating individual job performance (Morrison, 2002).

Actors maintain different levels of relationships with other actors in the advice network, which when mapped out reveal the type of information exchanged, between whom, and to what extent. Further, this process indicates to analysts, the likely exposure of individuals to particular kinds of information, and the likelihood of their considering that data to be authoritative. Directional arrows reveal patterns of forwarding and receipt which in turn describes how information moves around an environment, with actors in position to facilitate or control the information flow.

A new job poses multiple challenges for the individual in terms of tasks to master, roles to perform, and relationships to explore (Nelson and Quick, 1991).

As the newcomer encounters these demands, he/she attempts to make sense of the barrage of stimuli in the organisational environment (Louis, 1980b). While this process poses many positive demands and potential rewards, the socialisation experience may also be a time of loneliness, social isolation, and performance anxieties (Katz, 1978; Nelson, 1987; Van Maanen and Schein, 1979). So to help negate the feelings of loneliness, social isolation and performance anxieties, organisations use formal programs to facilitate their adjustment and become a productive insider (Feldman, 1981, Katz, 1978, 1985; Nelson, 1987; Van Maanen and Schein, 1979). At the same time, newcomers use proactive information seeking strategies to seek social support and aid from others (Feldman & Brett, 1983).

Accordingly, social network analysis offers a rich variety of concepts and techniques to describe and explain information access especially for newcomers. Once these networks map out this information, it is possible for the researcher to assist them in connecting to the ‘right’ people.

This section described two different networks, which co-exist and often mutually interact. Actors occupy different positions within each network and maintain ties with other actors, which serve entirely different purposes. Research shows that certain attributes such as gender, race, and tenure, influence ties between actors in both friendship and information networks (Kanter, 1977; Pfeffer, 1981b; Krackhardt & Kilduff, 1989). Essentially, researchers can identify how differences (diversity) or similarity (homophily) affects the structure of each type of network and the relations between the actors.

Accordingly, in the next section diversity and homophily are discussed in relation to the social network.

3.6 HOMOPHILY AND DIVERSITY

3.6.1 HOMOPHILY

McPherson, Smith-Lovin and Cook (2001) state that “similarity breeds connection”, which results in homogenous networks between people with regard to many socio-demographic, behavioural and intrapersonal characteristics. Homophily is the principle where contact between similar people, with respect to

age, education, race, occupation other variables such as friends, associates, occurs at a higher rate than among dissimilar people (Blau, Blum, & Schwartz 1982; Galton 1883; Marsden 1987, 1988; McPherson, Smith-Lovin, & Cook 2001; Schiller 1932; Verbrugge 1977). Sociologists believe that this tendency explains inequality across labour market outcomes (Lin, Ensel, & Vaughn, 1981), and class inequality (Blau 1994). Rotolo and McPherson (2001) use the principle of homophily to explain socio-demographic composition of occupations while McPherson (1983) explains voluntary associations.

Homophily implies that distance in terms of social characteristics translates into network distance, the number of relationships through which a piece of information must travel to connect two individuals (McPherson, Smith-Lovin, Cook, 2001). Some authors assert that communication is likely to occur in homophilous relationships supporting the idea that the role of similarity between people increases the likelihood of communication (Zenger & Lawrence, 1989; Ibarra, 1992 & 1995; McPherson, et al 2001). Homophily in a person's network can limit the information they receive, the attitudes they form, and the interactions they experience. While it is possible that individuals maintain ties between non-similar individuals, McPherson, Smith-Lovin and Cook (2001) believe that such ties dissolve at a higher rate, which sets the stage for the formation of niches (localised positions) within social space.

Principles of homophily exists in marriage relationships (Kalmijn, 1998), schoolmate friendship ties (Shrum et al 1988) and work relations (Lincoln & Miller 1979, Ibarra 1995). Schneider et al., (1997) mention that this principle exists in limited networks such as the discussion about a particular topic, as well as in simple concepts such as "knowing about" someone else as mentioned by (Lawrence, 2000).

The concept of homophily is strong on race and ethnicity displayed in a wide array of relationships. Ibarra (1995) found that racial/ethnic minorities in such a skewed workplace have much more heterogeneous advice and support networks than in majority of their counterparts. South et al (1982, 1983) and McPherson and Smith-Lovin (1986, 1987) maintain that the gender composition of the establishment, group, and occupational level creates powerful gender

differences in homophily of networks, with the minority sex having much more heterophilous networks than the majority category members. Ibarra (1992, 1997) and Brass (1985) contend that men tend to have more sex homophilous networks than do women, especially in establishments where they are a strong majority.

3.6.2 DIVERSITY

The term demographic diversity refers to the degree to which a unit (e.g., a work group or organisation) is heterogeneous with respect to demographic attributes. Lawrence, (1997) classifies three different attributes, of which demographic attributes are those immutable characteristics such as age, gender, and ethnicity. The second attribute describes individuals' relationships with organisations, such as organisational tenure or functional area and the third set of attributes, identifies individuals' positions within society, such as marital status and educational level.

Proponents of diversity hold, differences among group members give rise to varied ideas, perspectives, knowledge, and skills that can improve their ability to solve problems and accomplish their work (Polzer, Milton, & Swann, 2002). Some researchers counter this by saying, members of different social categories tend to view each other through the biased lens of category stereotypes, and that these biases decrease the effectiveness of group interaction (Williams & O'Reilly, 1998). Contrasting viewpoints suggest that diversity is a double-edged sword, improving group performance on some tasks but, all too often, disrupting group processes (Guzzo & Dickson, 1996; Milliken & Martins, 1996; Pelled, Eisenhardt, & Xin, 1999).

Diversity has become a central element of the modern organisational landscape. In South Africa (SA), there are 11 tribes, each speaking a different language. At the same time, South Africa also attracts people from other African countries and the workplace is a kaleidoscope of cultures. In short, because of diversity, a new industry has materialised, called Diversity Training, to help organisations address the challenges that diversity creates (**Ferguson, 1994**). As firms move toward flatter organisational structures featuring groups and teams, and the global economy moves labour across national boundaries (Byrne, 1993), effective interaction among diverse workers becomes more critical to smooth

organisational functioning (Jackson & Ruderman, 1995). When these groups of people are required to work together, Thomas (1996b) expects that problems might arise in the organisational environment. Managing diversity then is a management prerogative requirement that could have far - reaching affects on the organisation.

3.6.3 CULTURE AND DIVERSITY

Morris, Davis, and Allen, (1994) explain that culture as defined by some authors (e.g., Douglas & Dubois, 1977; Hofstede, 1980a; Tse et al., 1988) refers to a learned, socially transmitted set of behavioural standards, which is held, expressed, and shared by individuals through their personal values, norms, activities, attitudes, cognitive processes, interpretation of symbols, feelings, ideas, reactions and morals. Davies and Weiner (1985) express the belief that culture exists at multiple levels, ranging from broad societal or national levels to individualised corporate or organisational levels. Regardless of the level, Douglas and Dubois (1977) observe, culture provides individuals with a basic framework for social interaction, acting as a unifying element for individual members of a society. Specifically, within an organisational context, culture servers as unifying theme that provides meaning, direction, and mobilisation (Kilmann, 1989)

One aspect of culture is the individualism-collectivism dimension, which exists at both the societal and organisational levels. Hofstede (1984) researched extensively on this aspect. According to him, an individualist and the collectivist cultures vary on a number of principal characteristics, some of which includes the relationship of the individual to the collective's interests and goals, the structure of the family, and the amount of individual discretion for behaviour. Other characteristics include the amount of emotional dependence on the group, the extent that we base one's self-identity in the social group, the location of decision-making, and the amount of emphasis placed on belonging to the social group. His research shows that countries such as the United States, Australia, Great Britain, and Canada demonstrate high scores on his individualism-collectivism index, while Venezuela, China, Pakistan, Thailand, and Mexico score low. A research example Hofstede (1984) mentions is a study conducted by Bontempo, Lobel, and Triandis (1990), in which findings suggest that collectivists (Brazilians) were

more likely than individualists (Americans) to perform and enjoy performing a behaviour that was costly to themselves (e.g., forgo personal benefit to visit a sick friend).

Moving from the broader societal context, Wagner and Moch (1986) explain that individualism-collectivism is implicit in organisational science with both functional and dysfunctional aspects within an organisational setting. Morris, Davis, and Allen, (1994) describe the individualism dimension in an organisation as referring to self-orientation, with an emphasis on self-sufficiency and control, the pursuit of individual goals that may or may not be consistent with in-group goals, and a culture where people derive pride from their own accomplishments. They hypothesise that individualistic cultures may foster development of an individual's self-concept and self-confidence leading to a greater sense of personal responsibility for performance outcomes, while interpersonal competition may generate a steady stream of ideas for innovative change.

Collectivism, on the other hand, involves the subordination of personal interests to the goals of the larger work group, an emphasis on sharing, cooperation, and group harmony, a concern with group welfare, and hostility toward out-group members (Morris, Davis, & Allen, 1994). These authors believe that collectivism offers the advantage of more harmonious relationships among individuals, greater synergies by combining individuals' diverse skills as well as networks of social support. They state that the disadvantage of collectivism is the loss of one's self to the group or organisational persona, and a greater level of emotional dependence on the organisation

A. Relative cultural distance

Although people in an organisation set up contact and communicate with similar people, work groups can be heterogeneous about race, culture, gender, and ethnicity, age, and socio-economic background. This cultural difference has an influence on work group processes and outcomes. This idea is an extension of the work on relational demography, which suggests that demographic variation should be analysed at the individual level (Tsui & O'Reilly, 1989). These studies reveal how the relative similarity or dissimilarity of specific demographic

attributes of group members relates to individuals' attitudes and behaviour. O'Reilly, Caldwell, and Barnett (1989) found that differences in age have been shown to relate positively to turnover while Tsui, Egan, and O'Reilly (1992) show that relational difference in sex and race have been shown to relate negatively to psychological commitment and intent to stay and positively to frequency of absence.

Theorists offer two explanations for the effects of relative differences on outcomes. One path uses the similarity-attraction paradigm (Byrne, 1971) to examine and explain this phenomenon. According to this paradigm, similarity between people produces positive affect through validation of the perceiver's perspective. Research supports this paradigm where similarity for attitude and status leads to interpersonal attraction. Outcomes include demographic similarity leading to increased frequency of communication and friendship ties (Lincoln & Miller, 1979), frequency of technical communication (Zenger & Lawrence, 1989), and social integration (O'Reilly et al., 1989).

Social identity theory (Tajfel, 1974; Tajfel & Turner, 1986) which assumes that people derive their social identities from their membership in various groups or social categories is the second explanation. People achieve or maintain a positive self-image because of a favourable comparison between their social category and other groups using demographic attributes to infer behavioural and attitudinal characteristics of group members.

Looking at the network perspective, followers of culture believe that individuals acquire their cultural tastes through social interaction with other people who hold those tastes (Bourdieu, 1979/1984; Carley, 1986a, 1986b, 1991; DiMaggio & Useem, 1978; Erickson, 1996; Fine & Kleinman, 1979; Mark, 1998a). Empirical research supports that network ties may influence individuals' cultural tastes and practices (Erickson 1996; Kandel 1978). For example, Jones (1963) describes the process through which the different styles of blues music spread through the South as black agricultural labourers interacted with each other and other blacks as they travelled in search of work.

As South Africa is the base for this research, the plethora of ethnic groups in the African workplace necessitates an understanding of the different values and

culture that people bring to the organisation by virtue of their socialisation, interaction with other societal institutions and previous life and work experiences (Hatch, 1997; Hofstede, 1997). Educational programs, socialisation programs, as well as encouraging newcomers to build ties with insiders in the organisation, are processes directed at newcomers who bring a particular societal orientation, such as collectivism, to the work place, to manage these orientations and help newcomers adapt to the culture of the organisation.

3.7 SOCIAL NETWORKS AND OUTCOMES

Some researchers believe newcomers acquire the appropriate behaviours to participate competently in an organisation through various network types and effects. One the ways newcomers newcomer acquire information is through mentor relationships (Jones, 1983; Porter, Crampon & Smith, 1976). Some others stress social information available from other places within an organisation also has an impact on the perception of the realities of the workplace (Thomas & Griffin, 1983). Essentially, communication is the key element in an employee's assimilation process (Elsea, 1979) whether this occurs through formal socialisation tactics and processes organised by the organisation, ties to others or through the proactive seeking behaviour newcomers display. Whatever the approach, organisations ultimately want the newcomers to become a productive member of the organisation and display outcomes conducive to their working relationship. Some of these outcomes discussed below, look at areas such as commitment, performance, aspects of role, embeddedness, and social integration. The following section will highlight certain outcomes already researched in relation to an actor's position in the network structure

3.7.1 NETWORK POSITION AND OUTCOMES

As mentioned earlier, structural properties of social networks may generate certain outcomes some of which can be advantageous for both the organisation as well as the individual concerned while others are disadvantageous.

Using Granovetter's (1985) theory of embeddedness of actors in social networks, some researchers focused on the concept of centrality to investigate

how this structural property in a network leads to certain outcomes. Centrality, which is the extent to which a given individual is connected to others in a network, is the structural property most often associated with instrumental outcomes, including power (Brass, 1984), influence in decision-making (Friedkin, 1993) and innovation (Ibarra, 1993). In essence, structure of social interactions enhances or constrains access to valued resources (Brass, 1984; Ibarra, 1993). Therefore, individuals holding a central position especially in an information network may then wield power to influence the group by withholding or distorting information especially in a high-density network. This is because a central person has connections to several actors allowing for fewer constraints and greater opportunities thereby ensuring that they enjoy better bargains in exchanges and greater influence.

Sparrowe and Liden (1997), indicate that one of the advantages of network position within social networks is assimilation while Burt (1992a) mentioned promotions. A disadvantage which Krackhardt and Porter, (1986) mention is turnover. Some networks have negative exchange relations, described as interference, threat, sabotage, and rejection (Sahlins, 1972) and affective responses such as annoyance, emotional upset and anger (Pagel, Erdly & Becker, 1987). Centrality in a negative/hindrane networks reflects the extent to which the workers describe a focal individual as a person who makes it difficult for them to complete their work by withholding valuable information, resources, and opportunities.

3.7.2 PERFORMANCE

Organisations expend time and money orientating newcomers and expect a rate of return for the time and money invested in socialising newcomers (Louis, Posner & Powell, 1983). Of particular importance is performance, which adds to the bottom line of the organisation. During socialisation, insiders also assist in socialising newcomers so the time away from the main role cuts further into the overall performance of the organisation. Therefore, newcomers who are to begin their tasks and perform are highly valued.

Centrality in the advice network reflects an individual's involvement in exchanging assistance with coworkers and engaging in mutual problem solving. Baldwin et al, (1997) stated that an individual who is central in the advice network over time accumulates knowledge about task-oriented problems and workable solutions, enabling them to solve problems and become a valued resource for future exchanges with coworkers. In turn, others become more dependent on the central individual for advice thereby gaining resources for future exchanges (Cook & Emerson, 1978). These authors support the idea that individuals in peripheral positions of the advice network should find it much more difficult to develop expertise about task-related problems and solutions making them less likely to develop the competencies and expertise necessary for high levels of performance. However, periphery individuals often have the necessary expertise for the task but as they have few connections with others they do not have the bargaining power or influence that central actors do. In a service organisation set up where information is vital for the delivery of services, making connections with relevant others is a necessary part of the job. However, in organisations where individuals are expected to deliver on their work, such connections are not of great importance.

3.7.3 SOCIAL SUPPORT

A new job poses multiple challenges for the individual in terms of tasks to master, roles to perform, and relationships to explore (Nelson & Quick, 1991). In order to adjust, Feldman and Brett, (1983) suggest that newcomers seek out social support and aid from others. House (1981) identified four forms of social support which newcomers seek which as classified as emotional, appraisal, informational, and instrumental support, all of which are expressed in several ways. Payne and Jones, (1987) believe that these forms of social support may directly reduce the stressors which the individual faces such as performance anxieties and reduce the effects of symptoms which the individual may experience such as loneliness and isolation. The social support a newcomer receives also creates a buffering effect by moderating the relationship between stressors and health-related outcomes. A

possible explanation for this comes from Bowlby's (1973, 1982) theory of attachment behaviour.

Using three facts from observational research on several species of mammals, birds and human infants, Bowlby (1982) drew parallel conclusions concerning social support stating that the primary function of attachment theory is defence against predators. Firstly, he observes, predators more likely to attack newcomers (isolators) than the attached members, because a group provides security and shields one another under attack. Secondly, those who are most vulnerable because of age, size, or condition (e.g. young recruits), more readily exhibit attachment behaviour, and those who are stronger are in a better position to help the weak party. Lastly, in stressful or alarm situations, such as when a predator is suspected, attachment behaviour is exhibited in high intensity. These observations indicate that in order to survive in the tough world, individuals, especially newcomers, need to build their social support especially in the work environment. Bowlby (1982) adds that the variety of supportive attachments the individual forms makes the self-reliant person appear independent. As it is essential, almost instinctive behaviour displayed by mammals, birds and human infants form attachments, it is also possible to apply the same principle to individuals in the work environment. Interfering with the ability to form healthy attachments engender the individual to become vulnerable to various environmental risks due to their isolation. Hence, attachment theory is the underlying theoretical basis for explaining the process whereby an individual uses available social supports to avert distress.

Quick, Nelson and Quick (1987, 1990) have extended Bowlby's (1973, 1982) original theory in examining the behaviour of corporate executives. At a psychological level, they contend, these executives form attachments, which provide them with essential social support functions in time of stress. Separate studies by Beehr and Drexler (1986) found social support to have a direct effect upon job satisfaction and job search intent, as opposed to having a moderating effect between role stress and these two outcomes.

In addition to effects on satisfaction, Fisher's (1985) longitudinal study amongst nurses on the effects of social support from peers and supervisor saw an

increase in job satisfaction and commitment, with a decrease in turnover, and stress from unmet expectations. In a subsequent study of nurses conducted by Kaufmann and Beehr's (1986) the results showed stressors to be more strongly related to strains when subjects reported high social support, which conflicted with Fisher's (1985) results. While these results differ for both the studies, Kaufmann and Beehr (1986) suggest the possibility that nurses experiencing high levels of stress seek out more social support than those experiencing less stress.

Research conducted by Fisher (1985), Kaufmann, and Beehr (1986) on nurses focused on social support regardless of the source of support. In the workplace, a newcomer encounters coworkers, peers, supervisors, and friends who each provide different types of support. Accordingly, Seers, McGee, Serey and Graen (1983) examined the effects of social support from four sources that included branch managers, unit managers, co-workers, and friends on job satisfaction. Their results showed a direct effect of unit manager (immediate supervisor) support on satisfaction with supervision while co-worker support relates to satisfaction with work and satisfaction with supervision. A study conducted by Ganster, Fusilier, and Mayes (1986) on support from the supervisor, co-workers, family, and friends, showed that supervisory support was strongly related to workplace strain, while support from co-workers was moderately related to workplace strain. These different patterns of relationships indicate that researchers need to separate and specify sources of support to conduct research.

In a study conducted by Nelson and Quick (1991), newcomers reported increased psychological distress symptoms when they did not receive offsite training sessions and business trips were not available. Additionally, newcomers reported increased job satisfaction levels when mentors and senior co-workers were not available as sources of support. The authors further found that daily interactions with peers negatively related to intention to leave the organisation, while mentoring positively related to intention to leave.

Nelson and Quick's (1991) findings indicate that availability of support does not have a great affect on newcomer's behaviour or behavioural intentions (i.e. performance and intention to leave) but it does have a little effect on newcomers' internal states (i.e. distress and satisfaction). Their report indicated

that available friends, senior workers, and mentors generated lower levels of job satisfaction for newcomers. The authors suggest that newcomers senior colleagues may represent an organisational ideal, which they have yet to achieve and the perceived discrepancy between where they are as newcomers and where they want to be as 'senior workers' lowers levels of job satisfaction.

In summary, we can see that there are conflicting findings concerning the beneficial effects of social support on satisfaction, anxiety, depression, commitments, turnover, stress, strain. While some studies provide evidence for the benefits of social support in achieving satisfaction and adjustment at work, other studies have found high levels of support among strained employees.

3.7.4 ROLE AMBIGUITY

Pettigrew (1971) mentions that organisational members especially newcomers are concerned with which behaviour is appropriate for their particular role within the organisation. Organ and Bateman, (1986) explain that when there is uncertainty concerning their job definition and duties, newcomers and organisational members experience role ambiguity. Rizzo, House, and Lirtzman, (1970) define role ambiguity as the presence or clarity of behavioural requirements that help to indicate what behaviour is appropriate in a particular position. Katz and Kahn, (1978) define role as the total requirements put before the employee who occupies a particular position. Each member of the role set (supervisory, subordinates, and those others with whom the member must work) has expectations about the focal person's behaviour. These expectations when melded with the focal person's own expectations and preferences result in role behaviour. These authors further state that levels of role ambiguity are determined by the role occupant's understanding of the behaviour expected by the individuals in a role set and the subsequent steps, which they take to meet those expectations and the future consequences of that behaviour.

Newcomers can rely on several feedback seeking methods for determining the appropriate behaviours necessary for their job and their fit in the organisation. Newcomers can directly ask coworkers, superiors, or friends at work but if they feel that this would jeopardise their position, they can also observe the behaviour

of their coworkers and duplicate it. Feedback in the form of negative or positive signs from their supervisors as well as coworkers would be the measuring point to change or keep the new behaviours.

Networks are a great source of job and organisation related information for individuals. However, it is possible that the plethora of information individuals receive may create confusion and in the process individuals experience higher role conflict/ambiguity. As Cross and Prusak (2002) explain actors in positions where they have direct and indirect contact with people through which they receive broad range of information, may lose perspective of their work and role while fulfilling their roles in the network (Cross & Prusak, 2002).

Newcomers experiencing role ambiguity display negative outcomes such as anxiety, distorted reality, and perform less effectively (Kahn, Wolf, Quinn, Snoek, & Rosenthal, 1964). This has also led to newcomers experiencing stress on the job, tension, fear, propensity to leave the organisation, and lower job satisfaction (Graen & Ginsburg, 1977; Kahn et al., 1964; Organ & Bateman, 1986; Rizzo et al., 1970; Senatra, 1980; Sorenson & Sorenson, 1972). Thus, role ambiguity may result in undesirable consequences for the individual and the organisation (Rizzo et al., 1970).

3.7.5 COMMITMENT

Allen and Meyer (1991) explain that organisational commitment has been criticised for the lack of consensus in construct design because measurements do not always correspond to the definition applied. They state that research on commitment has generally taken an attitudinal or behavioural approach. Mowday et al., (1982) offer a distinction between attitudinal and behavioural commitment. According to them, “attitudinal commitment focuses on the process by which people come to think about their relationship with the organisation... the extent to which their own values and goals are congruent with those of the organisation. Behavioural commitment, on the other hand related to the process by which individuals become locked into a certain organisation and how they deal with this problem” Hartman, and Johnson’s, (1989) definition of commitment along three

points which takes on both attitudinal and a behavioural approach. Their definition is as follows:

- A strong belief in and acceptance of the organisation's goals and values (attitudinal);
- A willingness to exert considerable effort on behalf of the organisation (behavioural);
- A strong desire to maintain membership in the organisation (attitudinal)

Allen and Meyer (1991) in their review of literature on commitment believed that three general themes appear that are affective, normative, and continuance commitment.

Affective commitment (affective attachment) describes as “cohesion commitment” (Kanter, 1968) which is “the attachment of an individual's fund of affectivity and emotion to the group” (p. 507). Personal characteristics, organisational structure, job-related characteristics, and work experiences affect Affective commitment (Mowday et al., 1982).

Continuance commitment (perceived costs) views the continuation of an action (e.g., remaining with an organisation) resulting from a recognition of the costs associated with its termination (Allen & Meyer, 1991). As this commitment describes the tendency to pursue a particular course of action, Allen and Meyer (1991) mention this falls under the category of behavioural commitment.

Normative commitment (obligation) is a perspective in which Marsh and Mannari (1977) describe employees as having a “lifetime commitment” approach. They add that employees “consider it morally right to stay in the company, regardless of how much status enhancement or satisfaction the firm gives him over the years” (p. 59).

Considering some of the antecedents of commitment, some authors suggest that structural characteristics of an organisation are one of the antecedents of commitment (Morris & Steers, 1980; Steers, 1977) while Hartman, and Johnson, (1989) explain that social integration, a concept found to be closely related to communication networks, has been found to be an antecedent to organisational

commitment. This is especially the case when there is a strong desire to maintain membership in the organisation (Buchanan, 1974; Lodahl, 1964). Becker (1960) found a positive relationship between commitment and membership in informal cliques while Antonovsky and Antonovsky (1974) established a positive relationship between overall patterns of participation between members. Studies also indicate a positive relationship between network involvement and organisational commitment (Buchanan, 1974; Eisenberg, Monge & Miller, 1983; Lodahl, 1964; Salancik & Pfeffer, 1977). Eisenberg et al., (1983) define network involvement as the extent to which people establish and maintain direct and/or indirect communication contacts with others in their organisation. This supports research on SNA that one of the outcomes of structural positioning in a network is commitment.

Current social network analysis has truly broadened to encompass several streams of research and while some are relevant to this study in particular, others are beyond scope of this research. This section is placed in Appendix A for further reading.

3.8 SUMMARY

This chapter looked at the origins of social network and its prevalence in our everyday lives specifically at the workplace. Analysts have taken the structural approach or the relational approach in explaining phenomenon relating to social analysis as explained and this has in turn affected the design of research and interpretation of results thereof. We saw that relationships are necessary aspects although the extent and degree to which actors develop and maintain relationships vary. Relationships are nonetheless useful in communicating, exchanging information and resources and just to maintain a social contact with other actors.

While relationships are important, it is the network position of the actor, which contributes to their power and promotion, meet deadlines, etc. Newcomers are motivated to maintain social ties to enhance personal friendship and social support with others in the workplace, and help improve their success on the job. By maintaining social ties, newcomer experience social inclusion allowing them to accomplish their work more effectively. At the same time, social ties with

coworkers, facilitating information exchange across subunits or organisational boundaries generates trust and promotes their job performance, reduces anxiety and increases their chances at success in the new job and organisation. Considering these positive aspects of maintaining social ties for information as well as for friendship is of great benefit for the newcomer, which should be encouraged by the organisation as well as their peers and supervisors.

The following chapter integrates the literature from organisational socialisation and social network analysis with a closer focus on newcomers to present the propositions accordingly.

CHAPTER 4. SOCIAL NETWORKS AND ORGANISATIONAL SOCIALISATION

4.1 INTRODUCTION

Organisational socialisation and social network analysis can be seen as two separate streams of research but as we have already seen from the respective chapters, elements from both streams interweave at strategic points thereby allowing for the integration and application to these two in this research. Morrison (2002) established that the role of social network ties during socialisation is to be taken seriously by organisations to ensure that newcomers are well adjusted and adapt to their new workplace. This chapter integrates the two concepts of organisational socialisation and social network analysis to reiterate that for newcomers forming relationships with other newcomers and ‘insiders’ is beneficial for their future within that organisational setup.

Prior research on network analysis has been limited or negligible in South Africa (SA) and since this is of great relevance for this context due to the dynamic workplace scenarios, this research will add great value for organisations in SA and academic literature.

This research has been modelled using Morrison’s (2002) research, which considered the role of social network ties during socialisation. While Morrison chose the ego-network method, this research works with whole networks so that individual bias perspectives do not hamper the overall picture.

4.2 SOCIAL NETWORKS AND OUTCOMES

Chapter two, which discussed organisational socialisation established that in literature this is the process whereby newcomers learn the behaviours and attitudes necessary for assuming roles in an organisation, thereby adapting from the role of an outsider to an integrated and effective insider (Thomas & Anderson, 2006). Further, they state that socialisation is a process which takes place whenever an employee crosses an organisational boundary, whether this is

external (i.e. between organisations) or internal (e.g. functional, hierarchical) (Van Maanen & Schein, 1979).

Louis (1980b) suggests that when newcomers enter an organisation they are faced with learning a new culture. This necessitates the assimilation and learning of the unofficial rules for sorting, labelling, and interpreting experience in the organisation to become effective organisational members. Accordingly, organisations can use several socialisation tactics such as Van Maanen and Schein's (1979) tactics to orientate newcomers depending on the organisation and the results they want to achieve. For example, organisations that want newcomers to be creative and innovate would benefit from choosing tactics that are individualised over institutional tactics.

Whatever the process utilised by the organisation for the socialisation of newcomers, research shows that organisational socialisation is beneficial for both employees and organisations to negate negative and high expectations of newcomers, manage their job and overall work experience. Organisation socialisation also reduces newcomer turnover, helps newcomers adjust to the organisation by learning about their job, and role, to ensure positive socialisation outcomes such as commitment, role clarity, performance, job satisfaction (Wanous & Colella, 1989; Wanous, 1992; Anderson & Ostroff, 1997). For organisations this process ensures that newcomers are successfully adapted and adjusted to their job, role, organisation, workers, and workgroups especially since organisations expend money and time during this process.

Feldman (1976a) explains that successful socialisation is the transformation from outsider to participating and effective insider. Socialisation researchers posit that socialisation tactics may influence certain antecedents such as job satisfaction, organisational commitment, and met expectations (e.g., Ashforth & Saks, 1996; Bauer, Morrison, & Callister 1998; Cable & Judge, 1996; Saks & Ashforth, 1997b), which indicate successful adjustment. This occurs by influencing newcomers' adjustment to their new jobs and environments (e.g., learning, task mastery, role clarity, and workgroup integration) (Cooper-Thomas & Anderson, 2002; Kammeyer-Mueller & Wanberg, 2003); and by influencing

perceptions of person-organisation (P-O) fit and values congruence (e.g., Cable & Parsons, 2001; Cooper-Thomas, van Vianen, & Anderson, 2004).

Regardless of whether it is consciously planned and managed or whether it occurs informally, Morrison (1993c) believes that socialisation provides newcomers with considerable information about appropriate roles and behaviours to learn and adjust. Information can include changes in or the development of new skills, knowledge, abilities, attitudes, values, and relationships, and the development of appropriate sense-making frameworks (Chao et al., 1994a; Chatman, 1991; De Vos et al., 2003; Louis, 1980b; Thomas & Anderson, 1998). This process facilitates newcomers to adapt to early entry experiences, and reduce uncertainty and anxiety associated with the reality shock of joining a new organisation (Bauer, Morrison, & Callister, 1998; Cable & Parsons, 2001; Jones, 1986; Van Maanen & Schein, 1979).

Some authors note that even with extensive formal socialisation processes, newcomers will be further socialised through social interactions between newcomers and “insiders” or more experienced members of their organisation also seen as referents (Feldman, 1981; Louis, 1990; Reichers, 1987). In addition, empirical research substantiates the importance of these referents, especially peers and supervisors, for helping newcomers to acquire information and “learn the ropes” (Louis, Posner & Powell, 1983; Morrison, 1993c; Ostroff & Kozlowski, 1992).

This occurs because individuals are essentially social beings with a need to connect with people for friendship or to seek information and advice. Researchers validate this process as proactive behaviour on the part of the newcomers to seek information and advice from peers, supervisors, mentors and other materials to cope and adapt thereby reducing uncertainty (Berger, 1979; Berlyne, 1960; Lanzetta, 1971). Consequently, this may lead to greater mastery of their jobs and subsequently newcomers may become integrated into their organisations (Dirsmith & Covalleski, 1985; Graen, Orris, & Johnson, 1973; Jablin, 1984).

Referents are seen to possess power, accessibility, expertise and familiarity with the newcomer’s role (Fisher, 1986; Morrison, 1993b) validating their position as credible sources of information about the organisation (Miller &

Jablin, 1991). Hence, they are referred to frequently (Falcione & Wilson, 1988; Louis et al., 1983) which Morrison (1993a) positives creating a positive effect on newcomer adjustment (Morrison, 1993a). Supervisors and co-workers provide cultural and technical information that facilitates newcomer integration into the work group, acquisition of task-relevant skills, and development of interpretive schemes relevant to a specific organisation that may be employed in future sense-making (Bauer & Green, 1994; Comer, 1991; Falcione & Wilson, 1988; Louis, 1980b; Morrison, 1993a). Louis, Posner, and Powell (1983) add that interaction with peers was available to more respondents than any other aid, and was significantly correlated with job satisfaction, commitment, and tenure intention.

While most organisations plan for formal socialisation processes, Katz (1985) is of the opinion that in the absence of formal programmes newcomers will be socialised by the informal social organisation. Insiders occupy various network positions in the informal network, which coexists alongside the hierarchical structure in an organisation and sometimes operates with greater influence than the hierarchy. Newcomers who then have access to key people within the informal network might benefit from the information and resources available from them. Research has shown that network positions often contribute to certain organisational outcomes in individuals for example, being central in the friendship network can lead to actors experiencing organisational commitment and regardless of their affinity for their work or job, as long as they have friends at work, they're likely to stay committed to the organisation (Morrison, 2002). Chapter three discusses this in greater detail but certain aspects of network position are used in establishing hypotheses.

In essence, we see that while organisations expend money and time in formally orientating newcomers, insiders, or referents such as peers, supervisors and coworkers may fill in the gaps by providing additional information regarding organisation, role, and culture of the organisation. They serve as anchors to newcomers by facilitating their entry into a new role or organisational set up and reducing uncertainty.

There is very little or negligible research conducted on socialisation and social networks in South Africa. The presence and prevalence of diversity in

terms of the different language speaking groups, level of skills and/or lack of skills present in several areas of the work place, makes this research relevant for the workplaces as well as for the greater body of research.

Having discussed the theories in detail, the following section considers the hypotheses in relation to newcomers.

4.3 HYPOTHESES

This thesis was adapted using Morrison's (2002) work on newcomers and their ego networks. Accordingly, some of the hypotheses have been modelled as found in her work. Other hypotheses have been designed in accordance with literature from organisation socialisation and social networks.

4.3.1 TENURE

Socialisation literature suggests that newcomers rely on co-workers, supervisors, and mentors in the organisation because of their knowledge and expertise regarding task domain, role responsibilities, and organisational culture (Graen, 1976; Schein, 1988; Morrison, 1993b, 2002). Hence, it is possible to assume that co-workers, supervisors, and mentors, collectively termed 'insiders' may have acquired this knowledge through their tenure in the organisation. This is because, tenure in the organisation may develop individual's familiarity, acceptance and understanding of roles, task, and organisation culture, which may over time then influence organisation outcomes (Allen & Meyer, 1991).

Newcomers, on the other hand, rely on organisation socialisation practices (Van Maanen & Schein, 1979; Jones, 1986), and individual proactive information seeking behaviour (Ashforth & Taylor, 1990; Louis, 1990; Miller & Jablin, 1991) to learn about their role, tasks, work group norms, organisational climate, and culture. In other words, socialisation provides the means for newcomers to adjust to the organisation and job. This study does not focus on socialisation tactics and newcomer proactive information seeking behaviour. However, it becomes necessary to mention briefly that newcomers learn relevant job, role, and organisation information through socialisation process and by proactively seeking information from insiders.

Typically, organisations give newcomers some time to master the basics of their job (Becker & Strauss, 1956) so that they begin to contribute towards the organisations goals. Therefore, they are expected to report higher role conflict/ambiguity and lower task mastery. When individuals experience role conflict/ambiguity, their task mastery (performance proficiency) lowers because they would not have a clear understanding of their roles and tasks (King & Sethi, 1998). On the other hand, the opposite may be true in that when individuals experience lower levels of role conflict/ambiguity, they would experience greater task mastery/performance proficiency. However, this is not assessed in this study, therefore we propose that individuals with longer tenure in the organisation would have greater task mastery. Research shows that the informal relationships newcomers cultivate with co-workers and supervisors are an important means of successful socialisation (Louis, 1980a; Reichers, 1987). Relationships with co-worker may help newcomers integrate the various pieces of information in the setting (Van Maanen, 1984). They may also communicate subtle values, norms, or expectations that supervisors or mentors may not understand (Schein, 1988). Louis, Posner and Powell (1983), showed that daily interactions with peers, supervisors and co-workers was one of the socialisation aids in helping newcomers feel effective. Gouldner (1957, 1958) defines peers, supervisors, and co-workers as reference groups because newcomers identify and refer to them when making judgments about their own effectiveness. They posit that interaction with co-workers significantly correlated with job satisfaction, commitment, and tenure intention.

Reichers (1985) postulated a number of foci that may be relevant to many employees, especially for newcomers, that included co-workers and superiors. Newcomers, with relative tenure, who cultivate and establish relationships with their co-workers as part of the proactive information seeking behaviour, may experience continuance co-worker commitment because they may perceive the cost of leaving these new relationships. However, newcomers may not have established themselves in the organisation to experience continuance organisation commitment because seniority, recognition, rewards, and tenure are built over

time. Therefore, tenured staff members are more likely to experience continuance organisational commitment and continuance co-worker commitment.

Another aspect of commitment is affective commitment, which is an emotional attachment to the organisation and coworkers. Allen and Meyer (1991) argue that research on tenure's influence on affective commitment has been for the most part neither strong nor consistent. However, as we see in chapter three, relationships are built on trust (Blau, 1964) and therefore over time individuals base their relationships on trust generating an emotional attachment. Tenured staff may also develop an emotional attachment to the organisation such that the strongly committed individual identifies with, is involved in, and enjoys membership in, the organisation (Allen & Meyer, 1990b).

Tenure in the organisation may lead individuals to feel familiarity with others, which may lead to normative co-worker and organisational commitment because over time they may have come to enjoy the benefits of the organisation and understand the concept of loyalty. Even though organisations may communicate that, they expect and value loyalty (Allen & Meyer, 1991), newcomers may not identify with those values in the early stages of their career with that organisation. In addition, cultural values of the organisation, employees, and the broader macro societal level culture influence normative commitment. Individuals with a collectivist orientation may promote organisational goals rather than personal ones therefore normative organisational commitment would be relevant.

Through research and theory mentioned in this section, the following hypotheses are developed.

Hypothesis 1: Individuals with shorter tenure will experience; (a) lower task mastery; (b) higher role conflict/ambiguity, than individuals with longer tenure.

Hypothesis 2: Individuals with longer tenure in the organisation will experience (a) higher affective organisational commitment; (b) higher normative organisational commitment; (c) higher continuance organisational commitment; (d) higher continuance

co-worker commitment; (e) higher affective co-worker commitment; (f) higher normative co-worker commitment; and (g) group orientation, than individuals with shorter tenure.

4.3.2 INFORMATION NETWORK

Drawing from literature on the strength of weak ties, individuals can benefit from having a large network of non-redundant information contacts as it may help in acquiring access to information otherwise unavailable, such as finding a job or promoted. Some authors emphasise that this information is available when a person has connections to a large network of people who are themselves not highly interconnected (Burt, 1992a; Podolny & Baron, 1997). Additionally, the combination of a large sized network and an absence of many connections among ties or low density among ties imply that sources of information will be diverse or unique (Burt, 1992a). Granovetter (1973) describes this as the strength of weak ties because relationships involve relatively low intimacy and infrequent contact between actors, through which they obtain a broad range of information.

Drawing from the concept of the strength of weak ties, Morrison (2002) believes that there is value in such large, low-density informational networks as they are ideal in providing information about the organisation's structure, rules, culture, and so forth to newcomers. This would give newcomers broader and more complete view of the organisation serving as a stepping block to building their commitment to the given organisation.

On the other hand, Morrison (2002) predicted that information obtained from these large, low-density networks might be irrelevant for providing job-related information, as the breath and variety of information are likely to be less important than its reliability and consistency. Therefore, she recommends the need for newcomers to acquire a smaller tighter group of contacts for obtaining information to master the job and clarify their role. Ostroff and Kozlowski, (1992) add that mentors who are familiar with newcomers' job and role requirements are good contacts to develop as they may be in a better position to be approached several times with questions. Morrison (2002) believes that such measures would further enable newcomers get up to speed with their job. Morrison (2002) and Ostroff and Kozlowski (1992) support that unlike large networks needed for

learning about the organisation, smaller networks of strong interrelated contacts may be best for job and role learning. Because of this discussion, the following hypotheses are suggested:

Hypothesis 3 - Individuals with shorter tenure with low-density information networks will have higher (a) affective organisational commitment; (b) normative organisational commitment; (c) continuance organisational commitment, (d) affective co-worker commitment, (e) normative co-worker commitment; (f) continuance co-worker commitment; and (g) group rather than individual orientation, than individuals with dense information network.

Hypothesis 4 – Individuals with shorter tenure with dense information networks will have (a) increased task mastery (performance) and (b) decreased role conflict/ambiguity than those with less dense networks than individuals with low-density information networks.

4.3.3 FRIENDSHIP NETWORK

In literature, social assimilation aspect of socialisation refers to newcomers becoming established through successful and satisfying work relationships as highlighted by Chao et al (1994b) and individuals' inclusion into their work groups (Ostroff & Kozlowski, 1992). This leads newcomers to feel both a part of their immediate work groups referred to as social integration and to the overall organisation referred to as organisational commitment (Bauer, Morrison, & Callister, 1998; Feldman, 1981; Reichers, 1987).

A dense network of strong relationships is an ideal one in which an actor feels socially supported with a sense of identity and belonging as it is likely to convey consistent social cues (Podolny & Baron, 1997). Furthermore, Krackhardt (1992) highlights the value of strong friendship ties for developing trust while Ibarra (1995) suggested that actors derive social and career support mostly from close-knit networks of relationships. By conveying support, identity, and acceptance, friendship networks made up of strong and interconnected ties will

facilitate the development of social integration and organisational commitment (Morrison, 2002).

In social exchange theory, Blau (1964) proposes that “individuals make contributions or investments for which they receive certain outcomes or rewards (Chenet, Tynan & Money, 2000), specifically from other people. Relationships are essentially norms of reciprocity through which individuals exchange information and resources and participate in prosocial behaviours (George & Bettenhausen, 1990). Relationships that involve direct and indirect ties to others facilitate both social bonding and networking, which may engender co-worker commitment.

Research suggests that attitudinal commitment is not contained or limited to just organisational commitment. Due to the coalition nature of organisations, individuals may experience commitment at many dimensions. Reichers (1985) and Becker (1992), suggest that an employee’s attachment to a particular entity such as top management, supervisor, coworkers, and organisation, may form the motive to generate attachment known as foci of commitment. Becker (1992) explains further that newcomers adopt attitudes and behaviours in order to be associated with a satisfying, self-defining relationship with another person or group.

Following up on newcomers’ need to generate attachment to the organisation as well as find meaningful relationships with others in the organisation, the following hypotheses are suggested.

Hypothesis 5 - Individuals with shorter tenure with dense friendship networks will have a greater sense of (a) affective coworker commitment; (c) continuance coworker commitment; (d) higher task mastery; (e) lower role conflict/ambiguity; (f) group rather than individual orientation than those with less dense networks

Hypothesis 6 – Tenured individuals with dense friendship network may experience a greater sense of (a) affective organisational commitment (b) normative organisational commitment and (c) continuance organisational

commitment; (d) normative co-worker commitment; than those with less dense networks.

4.3.4 DIVERSITY

The term demographic diversity refers to the degree to which a unit (e.g., a work group or organisation) is heterogeneous with respect to demographic attributes. In this research, diversity refers to demographic attributes of gender and ethnicity and tenure.

Affirmative Action policies in South Africa, encompassed in the Employment Equity Framework, have led the way to a more equitable representation of blacks, women, and people with disabilities in the workplace, in response to past gender and race discrimination (Horwitz, Bowmaker-Falconer, & Peter, 1996; Thomas & Bendixen, 2000). Based on South Africa's employment background, females and non-whites usually represent minorities in white collared professional organisations. Researchers who advocate for diversity believe that differences among group members, such as that found in South Africa, give rise to varied ideas, perspectives, knowledge, and skills that can improve their ability to solve problems and accomplish their work (Polzer, Milton, & Swann, 2002). However, Thomas (1996b) recognises that this diversity in South Africa has the potential to create new problems in the organisational environment. This is in keeping with opponents of diversity who argue that diversity decreases the effectiveness of group interaction because of conflict arising from differing viewpoints, personalities, skills, and abilities (Williams & O'Reilly, 1998).

Generally, research on the outcomes of demographic diversity has been varied. Van Knippenberg and Schippers (2007) found that demographic diversity was unrelated to group performance and related positively to member satisfaction, intent to remain, and commitment, as well as to perceived work group performance. There is also evidence that diverse work groups are beneficial for tasks requiring creativity and judgment (Jackson, 1991). Jehn et al. (1999) found that informational diversity (education and functional background) related positively to group performance and commitment. However, Tsui and O'Reilly (1989) found that differences in education, gender, and race between members of

superior-subordinate dyads are associated with subordinates experiencing increased role ambiguity, unfavourable performance evaluations, and a lower level of attraction by the superiors to these subordinates. Research that addresses the determinants of group performance in organisations suggests that success often hinges on the ability of the workgroup to embrace, experience, and manage (rather than avoid) disagreements that arise (Tjosvold, 1991; Gruenfeld et al., 1996).

Jehn, Northcraft, and Neale (1999) explain using social identity theory the mechanism through which individuals establish social identity and confirm affiliation by showing favouritism to members of their own social category (e.g., Billig & Tajfel, 1973). They suggest that this discrimination and self-segregation disrupts group interaction, creating conflict. This conflict could then lead to lower co-worker commitment.

Harrison, Price, and Bell, (1998) classify diversity into surface- and deep-level diversity. Surface level diversity describes readily detectable attributes such as race, gender, and age while deeper-level attributes assess attitudes, beliefs, and values (Jackson et al., 1995; Milliken & Martins, 1996). Harrison, Price, and Bell, (1998) explain that when heterogeneity is present at a deep level, information about these factors is communicated through verbal and non-verbal behaviour patterns and is only learned through extended, individualised interaction and information gathering. Although this research does not test for this type of diversity, we assume that tenured members, over time through interaction are more likely to experience deep-level diversity and may therefore experience greater co-worker commitment.

As mentioned earlier, Affirmative Action through the Employment Equity Framework ensures that previously disadvantaged people have equal representations especially in white-collared workplaces. The prevalence of diversity does not necessarily reveal organisational practices towards managing and valuing diversity to capitalise on diversity. Therefore, this research considers that diversity, whether planned or forced upon by law, leads to negative outcomes especially for individuals with relative tenure.

Accordingly, the following hypotheses are suggested.

Hypothesis 7 – Individuals with shorter tenure with networks that include females will display (a) lower task mastery (performance) and (b) higher role conflict/ambiguity than individuals with longer tenure.

Hypothesis 8 – Individuals with longer tenure with networks that include females will experience (a) higher affective organisational commitment; (b) higher normative organisational commitment; (c) higher continuance organisational commitment; (d) higher affective co-worker commitment; (e) higher normative co-worker commitment; (f) higher continuance co-worker commitment; (g) group rather than individual orientation than individuals with shorter tenure.

Hypothesis 9 – Individuals with shorter tenure, with networks that include minority race group will display (a) lower task mastery (performance) and (b) higher role conflict/ambiguity than individuals with longer tenure.

Hypothesis 10 – Individuals with longer tenure, with networks that include minority race group will experience (a) higher affective organisational commitment; (b) higher normative organisational commitment; (c) higher continuance organisational commitment; (d) higher affective co-worker commitment; (e) higher normative co-worker commitment; (f) higher continuance co-worker commitment; (g) group rather than individual orientation, than individuals with shorter tenure.

4.3.5 NETWORK POSITIONS AND ORGANISATIONAL OUTCOMES

Informal networks are similar to the organisational hierarchy whereby actors hold positions with varying degrees of influence. Actors can be central where they're in the 'thick of things'; peripheral where they are at the edge of the network without many connections to their coworkers perhaps limiting their group or even act as gate keepers of information, which could be a stumbling block or a

great resource to rely on. Actors hold these positions with varying degrees of success and influence, which can affect their work and certain organisational outcomes.

As an ongoing process of socialisation, co-workers, peers, and supervisors induct newcomers into the organisation. Co-workers, peers, and supervisors who belong to various networks in the organisation may draw newcomers during socialisation process into various positions within the informal networks. Social network research shows that various positions in the informal network may affect organisational outcomes relevant for each organisation. Accordingly, this following section briefly discusses positions of centrality and structural holes in a network, which may influence organisational, and co-worker commitment, role conflict/ambiguity, task mastery, and group vs. individual orientation.

A. Structural Holes

When people focus on activities inside their own group, it creates holes in the information flow between groups, or more simply, structural holes (Burt, 2004). Researchers believe that opinion and behaviour are more homogeneous within than between groups, so people whose networks bridge the structural holes between groups have earlier access to a broader diversity of information giving them an advantage in detecting and developing rewarding opportunities. In essence, this is a position of power through which individual can wield information for their own uses.

Reagans and McEvily (2003) demonstrate that having broad networks, by increasing one's perspective, can enhance the ability for people to convey complex ideas to diverse audiences. Their research further reiterates that network position might provide an ability to help absorb knowledge acquired elsewhere because then actors have greater access to information. Actors in such positions would have access to varied and diverse information and at the same time, they would have strong and weak tie connections to others in the network. In other words, they have large networks with less chance for bonding as is the case with smaller networks. This could lead to increased role conflict/ambiguity because disconnected networks expose the individual to conflicting preferences and

allegiances within which it is much harder to optimise (Podolny & Baron, 1997). Information from strong and weak connections may increase self-perceived task mastery because information from such large networks may provide individuals with information pertaining to their job. Although, Kahn et al., (1964) explain that role conflict is associated with individual-level maladies, such as lower task performance and lower organisational commitment, it is possible that information available from structural holes positions will increase task mastery by nature of the strong ties with some individuals in the network.

Hypothesis 11 – Individuals with shorter tenure whose information networks bridge structural holes between groups will have (a) higher task mastery; (b) higher role conflict/ambiguity; (c) lower affective organisational commitment; (d) lower normative organisational commitment; (e) lower continuance organisational commitment; (f) lower affective co-worker commitment; (g) lower normative co-worker commitment; (h) higher continuance co-worker commitment; and (i) individual rather than group orientation, than individuals with longer tenure.

B. Centrality

Bavelas (1948) and Shaw (1954) suggested that when a person is strategically located on the communication paths linking pairs of others, that person is centrally able to influence the group by withholding or distorting information in transmission. Shimbel (1953) stressed the responsibility of persons occupying such positions for the maintenance of communications while Cohn and Marriott (1958) emphasised their potential as coordinators of group processes essentially emphasising the potential for control and power.

Specifically, this research is concerned with degree, closeness, and reach-based centrality measures of positions in the network.

Shaw (1954) introduced the idea of using degree as an index of point centrality explaining that a point with relatively high *degree* is seen to be “in the thick of things” with visibility or the potential for activity in communication of such points. In a social network, actors with degree centrality would have direct

contact with many others, which may make them a major channel of information. This creates a sense of being a focal point of communication, and the individual would have weak and strong ties to others in the network. Strong ties would ensure that they receive high quality information while weak ties give a breath of information on various areas. This is particularly useful for receiving general organisational related information.

Closeness centrality, indicates whether an actor has achieved a sense of being independent of others (Freeman 1978/1979), making them less reliant on others to reach their destination. They would therefore have strong ties to those who are relevant to them and weak ties to others in the network. Strong direct ties to relevant others would then ensure that newcomers receive accurate job-related information, which may increase their self-perceived performance proficiency.

A similar position to closeness centrality is *reach-based* centrality, which counts the number of nodes each node can reach in k or less steps. This position indicates whether actors have direct or indirect connections with others making them more or less reliant on others to reach their destination.

Strong and weak ties to others in the network may generate co-worker commitment especially for newcomers who may rely on coworkers for job and organisation related information. In addition, when newcomers rely less on others to reach their destination, which means they have direct rather than indirect ties, they may be able to access information and resources relevant to their jobs and roles, which may serve to increase task mastery and decrease role conflict/ambiguity.

C. Betweenness

Betweenness centrality views an actor as being in a favoured position, which indicates the extent to which a node lies on the shortest path between every other pair of nodes highlighting the potential of a point to control communication.

Centrality position accord a person with both direct and indirect ties. Relationships that involve direct and indirect ties to others facilitate both social bonding and networking, discussed by Blau (1964) regarding social exchange theory discussed in section 4.3.3. Social bonding and networking may engender

co-worker commitment. However, centrality positions may increase role conflict/ambiguity and the stress arising from that may decrease organisational commitment.

The following hypotheses are based on the centrality and structural holes positioning in the network.

Hypothesis 12 – Individual with shorter tenure will experience (a) lower affective organisational commitment; (b) lower normative organisational commitment; (c) lower continuance organisational commitment; (d) higher affective co-worker commitment; (e) higher normative co-worker commitment; (f) higher continuance co-worker commitment; (g) higher task mastery; (h) higher role conflict/ambiguity; (i) individual rather than group orientation, than individuals with longer tenure.

4.4 SUMMARY

This chapter began with the integration of socialisation and social network literature to understand the importance of social network relationships for newcomer through which hypotheses were based upon. The following chapter discusses methodology followed to find samples, design measures, data collection procedures and the analyses required to test the hypotheses.

CHAPTER 5. METHODOLOGY

5.1 INTRODUCTION

This chapter describes the methodology followed to investigate the hypotheses presented in chapter four by conducting studies in three organisations.

5.2 RESEARCH OBJECTIVES

There are several objectives for this research and they are listed below.

- Understand the role of social networks during socialisation of newcomers especially for South Africa
- Research has shown that social networks can affect certain organisational outcomes in employees especially newcomers. With a particular focus on newcomers, this research aims to identify the effect of social networks and structural positions within the network on organisational and workgroup commitment variables, role ambiguity/conflict, task mastery (performance proficiency) and group vs. individual dimension.
- This research investigates whether belonging to friendship networks increases organisational commitment for newcomers.
- This research explores the nature of the friendship networks, and the demographic profile of people in the network to understand what brings people together.
- This research seeks to explore whether relationships with insiders belonging to the information network influences role conflict/ambiguity and task mastery.

The hypotheses discussed in section 4.3 provide the empirical support for the broad objectives of this study mentioned in section 5.2. These objectives have influenced the research design, sample selection, as well as the research analyses, which are accordingly presented.

5.3 RESEARCH DESIGN

The following section explains research design with particular emphasis on the method followed in carrying out the research while substantiating the particular choices beginning with the nature of research, followed by sample choice and description thereof.

5.3.1 NATURE OF RESEARCH

This research involves three case studies, as prior research in South Africa has been limited or non-existent. Cooper and Schindler (2003) assent that this type of research method is useful when there is clear lack of idea of the problems, which might appear during the research.

It is possible to utilise qualitative, quantitative or a combination of both techniques to accomplish the objectives of this research. However, as time is of essence, quantitative research method through the distribution of structured and standardised surveys suffices to investigate the research objectives. This type of technique also reduces interview and interviewee bias with the additional advantage of easy distribution and tabulation of results.

Having established the nature of the research, the next task defines the type of organisations to work with, discussed in the following section.

5.3.2 SAMPLE AND POPULATION

Hanneman and Riddle (2005) mention that for social network studies, analysts identify some population and conduct a census, i.e. include all elements of the population as units of observation because network methods focus on relations among actors, which does not allow actors to be sampled independently. In other words, by selecting one actor, it becomes necessary to include ties to all other actors (present and potential). As a result, network approaches tend to study whole populations by means of census, rather than by sample.

For the sake of convenience and this research, a full network method is necessary. The need of a census via a full network method is justified in that

observing only part of a population could lead to incorrect deductions about the network as discussed further by Borgatti and Molina (2003).

The typical population size for social network analysis within an organisational context (sometimes referred to as organisational network analysis) is between 10 and 60 network members (Foster & Falkowski, 1999). Social network analysis requires the interpretation of graphs therefore, by limiting the sample size so that it is greater than 10 but less than 60, makes it easier to interpret the graphical representation of the relationships between the respondents (Foster & Falkowski, 1999).

This research required constant contact with respondents and the organisations making it necessary to choose samples through a process of convenience by contacting potential samples through personal social network to gain access to their organisations. Since size of the organisation was restricted to conduct a full network analysis, the resultant pool of possible opportunities reduced drastically. At the same time, easy access to the organisation necessitated limiting the organisation search to the city of residence, which is Johannesburg, Gauteng.

A. Sample selection and description

As discussed in the previous section, sample selection was a difficult process due to the requirement to conduct a full network analysis. Additionally, organisations need to reflect the diversity of cultures, races, and ethnic groups present in South Africa. As a result, criteria included race dynamics in addition to the size of the organisation in defining and finding the ideal workplace(s) in which to conduct the investigation. As finding an appropriate organisation in which to conduct the study posed a challenge, the researcher contacted two people using her personal network to request their respective organisation's participation. These contacts held authoritative positions in their respective organisations making it easier to gain cooperation. The third organisation is the school at the academic institution where the researcher is based. Management from this school requested the use of the academic staff as part of the study.

The following section describes each organisation.

A.i. Organisation 1

Organisation 1 is an Asian based automobile organisation with several branch offices based in Johannesburg, South Africa. The target office is responsible for Southern Africa, which operates essentially like a regional office. Each department is small supporting the branch offices located in and around South Africa. Because of their specific function, this is the smallest office employing 24 people. Most of the staffs are senior managers who are required to trouble shoot problems and provide workable solutions.

A.ii. Organisation 2

This is an international non-governmental organisation (INGO) falling under an umbrella organisation. Organisation 2 in particular is the regional office responsible for operations of the Southern African countries, otherwise referred to as the 'home' office. Operations include managing HIV/AIDS projects, disaster management, food programming, and child sponsorship in the Southern African regional countries.

At the commencement of the distribution of the questionnaire, Organisation 2 employed 48 staff but during distribution of the first survey, two staff exited the organisation. This is a flexible organisation, which allows three members to work from home while another is located in a neighbouring country. As a regional office responsible for operations in the neighbouring countries, several individuals travel as a requirement of their job.

Working from home, location in a different country as well as frequent absence from the home office due to regular travel creates for interesting network dynamics, which may affect organisational outcomes explored in this research.

A.iii. Organisation 3

The third organisational workplace is the school to which the researcher belongs, in the academic institution. This school has six departments, the largest of which employs over 30 people. Five departments are located over two floors in one building while the sixth department is contained in the adjacent building. Lecturer's rooms are not located in a specific order nor segregated according to

their specific department with the exception of one department, which is located in a separate building where departmental members have rooms next to each other on the same floor. Newcomers have a probation period of 3 years, therefore the staff list for the questionnaire backdates to February 2007 to include those who left and died.

As this research considers the social network at Organisation 3 in its entirety, it was essential to contact every name on the list to ensure a higher response rate since missing links in a social network provide a distorted view.

As described, each of the three organisations operates with a different focus, have a diverse workforce and their details are as follows.

Table 5-1 is a summary of the basic statistics of all three companies to show the differences between race, gender, age, tenure, and nationality for each of the workplaces.

Table 5-1: Summary table of basic statics for each organisation

		Summary table of statistics					
		Organisation 1		Organisation 2		Organisation 3	
		N	%	N	%	N	%
Sample size		24		46		83	
No of respondents		18	75.00	21	45.65	44	53.01
Nationality	<i>South African</i>	12	72.22	13	61.90	35	79.55
	<i>Non South African</i>	6	33.33	8	38.10	9	20.45
Race	<i>Dominant</i>	<i>Asian</i>		<i>White</i>		<i>White</i>	
		12	66.67	11	52.38	31	70.45
	<i>Non-dominant</i>	6	33.33	10	47.62	13	29.55
Gender	<i>Female</i>	6	33.33	11	47.62	13	29.55
	<i>Male</i>	12	66.67	10	52.38	31	70.45
Age	<i>Average (years)</i>	38.61		43.52		36.80	
	<i>Std deviation</i>	13.40		9.13		12.34	
Tenure	<i>Average (years)</i>	7.67		4.85		5.46	
	<i>Std deviation</i>	7.85		5.43		6.99	

As Table 5-1 shows, Organisation 1 is Asian dominated, as it is an Asian based Organisation. Organisation 2 and 3 are White dominated. Organisation 2, which is an International NGO, employs a diverse workforce that represents the diversity of South Africa on nationality, race, and gender.

For Organisation 2, the non-dominant race category makes up for more than 47% of the organisations workforce. We observe a similar statistic with females in the same work place. As this is a regional office employing people with various skills regardless of race or gender, this organisation represents South Africa's multicultural diversity.

Organisation 3 displays the lowest number of females in the work place with less than 30% employed from a respondent list of forty-four. This is the academic institution, which is white male dominated. The average age of respondents in Organisation 3 is the lowest with 36.80 years, because this academic institution employs young people as junior lecturers while they complete their master's degree.

The organisations chosen would potentially offer a wealth of information to contribute to the larger body of social network research. Accordingly, the measures used to capture the organisational dynamics were crafted to best meet that need.

The following section discusses the design of the measures.

5.4 MEASURES

This research necessitated the design of two self-administered questionnaires each with a different focus. The first questionnaire unravels the friendship and information networks of respondents in each of the three workplaces. The second questionnaire, designed using previously tested psychometric scales, investigates organisational outcomes.

5.4.1 SURVEY 1: SOCIAL NETWORK RELATIONSHIPS

The first questionnaire, titled "Social Network Questionnaire – 1" investigates the type of relationships and networks formed by newcomers and 'insiders' within the organisation focusing on the social networks of the employees. Specifically, the two types of networks under consideration are information (job-related information) and friendship (their friends at work). These networks identify the nature and purpose of the ties connecting people in an organisational network.

The following, Table 5-2 is an excerpt from the first questionnaire beginning with instructions to respondents on how to fill out the questionnaire.

Table 5-2: Partial example of questionnaire one on social networks

Instructions to fill out questionnaire:

- 1 Below I have placed a list of the current staff members of ORGANISATION. We wish to explore two aspects of your relationship with each of these people. However, if you have never met a person please place a 'X' on the column next to the names 'Have never met' and don't answer any other question next to that name. For the people who you know, please answer the following two questions next to each of their names::
- 2 Please could you indicate the extent to which you have gone to each of these individuals for job-related information in the past (e.g. assistance with job, clarification). Please answer on the scales provided in the list under the sub heading '2.1 – Job related information'.
- 3 Please consider which of these staff members you would consider to be personal friends (e.g. non-work related social conversations), and place a 'X' against the names under the column '2.2'. (You can tick on more than one).

		2.1 Job related information					2.2
	Have never met	Seldom	Less than once a week	A few times a week	Once a day	Several times a day	Your friends at work
Department							
Name 1	①	①	②	③	④	⑤	○
Name 2	①	①	②	③	④	⑤	○
Name 3	①	①	②	③	④	⑤	○

As this questionnaire looks at social networks within each workplace, a column in the table lists alphabetically, the names of all staff members. Organisation 1 and Organisation 2, operate with a relatively small number of staff within each department therefore, the table alphabetically lists, the names of all staff members, excluding designations and titles. Organisation 3 staff list includes all teaching staff (professors, associate professors, senior and associate lecturers). Since there are five departments each consisting of large numbers of people, the left column as seen in Table 5-2, lists the academic staff in alphabetical order within each department in order to account for new members who may not have met everybody on that list.

Organisation 3 is an exceptionally large school where departmental staff are scattered in various locations within one building while one department is also located in another building. It is possible that some people are unknown, which resulted in modifying and adapting the questionnaire in accordance with the situation.

As Table 5-2 shows, this questionnaire has three column blocks beginning with ‘Have never met’, in case respondents have never met a specific person. Respondents place an ‘X’ on the column next to the names while leaving the rest of that row blank to indicate they have never met that person on the list. For people they did know, respondents place a tick against names under the two remaining sets of columns to determine how often they go to various people for job-related information and the person they consider as their friend at work. Each questionnaire includes instructions to ensure respondents understood how to respond to the questionnaire. Appendix A contains a copy of this questionnaire

5.4.2 SURVEY 2: WORK AND NETWORK OUTCOMES

The second questionnaire titled “Social Network Questionnaire – 2” examines the different organisational outcomes especially those relating to newcomers. The purpose of this questionnaire is to identify how well employees especially newcomers have learned and adjusted to the organisation. Accordingly, the measureable outcomes are organisational and workgroup commitment, role conflict, role ambiguity, and performance proficiency to indicate the level of task mastery. Appendix A contains a copy of this questionnaire.

This questionnaire begins by requesting the respondents to give their name, current position title, and field of study (if they are pursuing a degree). These are non-threatening questions designed to help them ease into the questionnaire. The purpose of asking respondents names is to match up the response to the first questionnaire with the second. Each questionnaire ends by thanking the respondents for participating and assuring the confidentiality of their response since feedback to organisation will be a group perspective rather than individual response.

This questionnaire used previously tested measures, which combined test several organisational outcome variables. Each measure is discussed below. Table 5-3 shows the original as well as this study's reliability coefficient measures.

Table 5-3 Overview of Variable and Scale Measures with reliability coefficient α

Variable Description	Variable Name	Original Reliability Coefficient α	Reliability Coefficient α for each organisation	
<i>Affective organisational commitment</i>	Afforg	.85	Organisation 1	.81
			Organisation 2	.86
			Organisation 3	.81
<i>Normative organisational commitment</i>	Normorg	.88	Organisation 1	.72
			Organisation 2	.79
			Organisation 3	.78
<i>Continuance organisational commitment</i>	Conorg	.88	Organisation 1	.91
			Organisation 2	.86
			Organisation 3	.81
<i>Affective coworker commitment</i>	Affco	.87	Organisation 1	.90
			Organisation 2	.90
			Organisation 3	.80
<i>Normative coworker commitment</i>	Normco	.77	Organisation 1	.89
			Organisation 2	.65
			Organisation 3	.64
<i>Continuance coworker commitment</i>	Conco	.88	Organisation 1	.87
			Organisation 2	.80
			Organisation 3	.84
<i>Role conflict/ambiguity</i>	Role	.77 (role conflict); .83 (role ambiguity)	Organisation 1	.71
	Con/am		Organisation 2	.77
			Organisation 3	.71
<i>Task mastery (performance proficiency)</i>	Perf	.78 to .82	Organisation 1	.78
			Organisation 2	.93
			Organisation 3	.66
<i>Group vs. individual</i>	Gpindiv	.77	Organisation 1	.64
			Organisation 2	.79
			Organisation 3	.73

Organisational commitment: Twenty questions describing affective and normative and continuance commitment as designed initially by Allen, and Meyer, (1990). The original instrument designed by Allen and Meyer (1990) contained eight item scales, however as length of survey was important, this research uses an adapted version by Clugston, Howell, and Dorfman, (2000), who changed the original eight item scale to a five item scale. A seven-point Likert

scale (strongly disagree to strongly agree) captured the responses. Table 5-3 shows the original as well as this study's reliability coefficient measures.

Coworker commitment: Twenty questions in various orders go back to assessing affective, normative and continuance commitment using an adaption of Allen and Meyer's (1990) commitment scale, modified by Clugston, Howell, and Dorfman, (2000). A five-point Likert scale (strongly disagree to strongly agree) captured the responses. Table 5-3 shows the original as well as this study's reliability coefficient measures.

Role conflict and ambiguity: Rizzo, House, and Lirtzman, (1970) developed the original scale to address role conflict and ambiguity. However, the scale has been criticised on the grounds of the confounding effects of scale wordings and attributional bias therefore this research uses King and Sethi's (1998), which they adapted from the original scale. These nine describe role conflict and ambiguity using the adapted version while a seven-point Likert scale to capture the responses. Table 5-3 shows the original as well as this study's reliability coefficient measures.

Task mastery: This is a six-item scale focusing on task mastery developed by Chao, O'Leary-Kelly, Wolf, Klein, and Gardner, (1994a), which indicates how well the respondents have mastered their tasks and are able to perform with proficiency. To break up the monotony of responding in a similar manner to all the questions, a seven point semantic differential scale (very true to very false) captured the responses to these questions. Table 5-3 shows the original as well as this study's reliability coefficient measures.

Collectivism/Individualism: Clugston, Howell, and Dorfman, (2000) used the original scale designed by Dorfman and Howell (1988) in their research. This scale is an adaptation of Hofstede's (1980b) ecological level constructs of culture to capture the essence of the cultural dimensions. While the original scale measures dimensions such as power distance, uncertainty avoidance, collectivism/individualism, and masculine/feminine, this research focuses exclusively on dimension of collectivism/individualism. Table 5-3 shows the original as well as this study's reliability coefficient measures.

Demographic profiles: Personal information questions about age, race, gender, and nationality can be intimidating for respondents and accordingly placed at the end of the questionnaire. South Africa has several ethnic groups or races segregated by the languages they speak so the ethnic section of the questionnaire captures this unique background.

Upon completion of the measures, the next task determined the method of distribution, discussed below.

5.5 METHOD OF DISTRIBUTION

As there were two questionnaires, respondents received the second questionnaire one week after the collection of the completed responses to questionnaire one. Every respondent initially received a detailed introductory letter explaining the purpose of the survey and accordingly requested their participation. Attached to the letter was the consent form for signature. Each introductory letter contained the researcher's contact details in case the participant required more information regarding the purpose of the research. A short information letter accompanied the second set of questionnaires.

Respondents at Organisation 2 and Organisation 1 preferred contact through emails and a contact person assisted with regular follow-up with individuals. This was especially of great importance at Organisation 2 where most international staff travelled on a regular basis. The main contact persons received email copies of the first questionnaire and the information letter at Organisation 1 and Organisation 2 and in addition, respondents in Organisation 2 received hard copies of the questionnaire. However, all the respondents from Organisation 2 preferred responding to an email copy.

As the researcher is a student at Organisation 3, access to academic was easier. Initially, the Head of School sent out the first email requesting the participation of all staff, effectively endorsing the distribution of the survey in the school. However, since distribution occurred during exams, lecturers were not available to complete the questionnaires through email. As a result, personal contact with each respondent became necessary to initiate a better response rate. This included handing them a hard copy of the questionnaire and the consent

form. This procedure took a longer time to collect the data from all three organisations. Part of the challenge was assuring confidentiality of the individual's response.

Organisation 2 staff completed and sent back their responses through emails. This was partly because international staff frequently travelled for extended periods working in locations with limited internet access. Due to time constraints, they found it easier to respond through emails. This was the same situation with Organisation 1 employees. However, at Organisation 3, respondents preferred to complete a hard copy, which they returned directly to the researcher or left it with the administration officer in an envelope. Distribution of the second questionnaire followed the previous procedure.

As respondents had the option to complete email copies and return their responses by email, every email with the attached questionnaire received detailed instructions on the method of saving a copy of the document, before completing it, and sending it back. This ensured that respondents did not lose their responses to the questionnaire, on the computer.

Each introductory letter requested participation from respondents as well as assuring them confidentiality of their responses, further discussed below.

5.6 ENSURING CONFIDENTIALITY

As social network analysis requires participants to describe their relationships, guidelines on ethical employee consent to participate will be utilised as described by Borgatti & Molina (2003, 2005). The authors also developed guidelines on managing collated data adhered to by social network analysts.

Both the questionnaires requested respondents to write their name but each name has a code according to the organisation they belong to and as such entered into Excel spreadsheet to ensure confidentiality of responses. Even though respondents state their names and positions in the questionnaires, the final presentation of this study and to the respective organisations will not exhibit this information.

The following section explains in detail data capturing and analyses.

5.7 DATA CAPTURING AND ANALYSIS

The researcher captured data on to Microsoft Excel spreadsheets. To ensure confidentiality each respondent and organisation received a coded. Each spreadsheet was then checked for missing values and typing errors before transferring data into UCINET (Borgatti, Everett, & Freeman, 2002) and SAS 9.1 for analysis.

5.7.1 SOCIAL NETWORKS

Excel spreadsheets captured data from the first questionnaire in a similar manner to conventional data where each row lists cases or names of individuals and the columns are the attributes of each actor, i.e. relations with each actor though of “attributes” of each actor (Hanneman & Riddle, 2005). Friendship ties are coded as present (coded as one) or absent (coded zero), likewise with ‘never met’ in which ‘never met a person’ is coded as one while ‘knowing a person’ is coded zero. Information ties measure the strength of the relationship as an indication of the frequency of contact therefore continuous scales captured the strength of the ties.

In accordance with the Ethics Committee at the University of Witwatersrand, each organisation and every respondent from each organisation received a code number to ensure confidentiality. The captured data appears in a matrix format for both the friendship and information networks, as illustrated in Table 5-4.

Table 5-4: Hanneman and Riddle (2005) - Matrix representation of friendship ties

Respondents	A1	A2	A3	A4
A1	-	1	1	0
A2	0	-	1	0
A3	1	1	-	1
A4	0	0	1	-

UCINET (Borgatti, Everett, & Freeman, 2002), which is software specific to social network, analysed captured data set in a matrix format for each organisational network. NetDraw (version 4.14, distributed along with UCINET) is the software, which allowed the graphical representation of the matrix data for

each network. The second questionnaire captured attributes such as age, gender, race, and tenure, which classified nodes in the graphs. Node shapes represent tenure in the organisation, while node colours represent gender and race for each graph. As respondents from Organisation 3 belong to departments of various sizes, node colours are accordingly colour coded to represent departments. Each graph is then analysed for the following tie strengths between actors in the information network, and k-cores described as follows.

- 1) *Tie strength*: Respondents indicated in the frequency of contact with others in the network for work-related information, where '1' indicated 'seldom' and '5' indicated 'several times a day'. In general, respondents indicated '1' when they know somebody or have worked with them in the past to co-author papers. By removing this tie strength, it is possible to obtain a clearer picture of the connections in the information network especially for Organisation 3, which is a larger sample.
- 2) *K-cores*: This aspect shows that node size is a reflection of the number of ties connecting them to others while node colour reveals those nodes sharing similar node size. Where possible, this aspect is run for the graphs.

It is possible to use attributes as node size, therefore in some graphs node sizes reflected the means for each respondent on specific organisational outcome variables of commitment to organisation and co-worker, role, performance, and group vs. individual. The means computed during correlations, which were uploaded into UCINET (Borgatti, Everett, & Freeman, 2002), for computation on the graphs gave the result for each variable. The results chapter displays only affective organisational commitment graphs because of space constraints. It is possible to save completed graphs as jpeg files, to insert into the results chapter for analysing the graphs.

Social network graphs do not show whether network positions directly affect organisational outcomes. However, each of the organisational network data subjected to various tests in the UCINET (Borgatti, Everett, & Freeman, 2002),

program revealed various network characteristics and positions summarised in Table 5-5.

Table 5-5: Description of variables for testing

Description of social network and organisational outcome variables for testing	
Variables	Description
Social network positions	
<i>Degree centrality</i>	Number of direct contacts an actor has with many others
<i>Closeness centrality</i>	Dependency of a particular actor on others to reach their destination
<i>Reach based centrality</i>	Number of nodes each node can reach in <i>k</i> or less steps
<i>Structural holes</i>	Structural holes are created when there are gaps in the information flow between groups
<i>Egonet density</i>	Total number of pairs of alters in the ego network, i.e., potential ties
<i>Egonet composition</i>	The extent to which an ego's network includes females
<i>Proximal Betweenness</i>	Potential of a point to control communication
<i>Multiple centrality</i>	Four normality centrality measures: degree, closeness, betweenness and eigenvector
Organisational outcomes	
<i>Affective organisational commitment</i>	Emotional attachment to the organisation
<i>Normative organisational commitment</i>	Lifetime commitment to the organisation/ obligation to remain with the organisation
<i>Continuance organisational commitment</i>	Perceived cost of leaving the organisation
<i>Affective coworker commitment</i>	Emotional attachment to co-workers
<i>Normative coworker commitment</i>	Lifetime commitment to co-workers / obligation to remain with co-workers
<i>Continuance coworker commitment</i>	Perceived cost of leaving co-workers
<i>Role conflict/ambiguity</i>	Mixed feedback or contradictory feedback leads to role conflict/Uncertain information about role behaviour leads to role ambiguity
<i>Task mastery (performance proficiency)</i>	Learning to perform the required work task
<i>Group vs. individual</i>	Group or individual orientation towards organisation and others

Table 5-5 describes specific characteristics and positions of networks such as centrality positions (degree, closeness, reach base and multiple), structural holes, egonet density, egonet composition and proximal betweenness. Each characteristic included several descriptive elements, not all of which were necessary; therefore, only one element from each characteristic was kept. Bivariate correlations and regression conducted on the network characteristics and organisational outcomes would allow us to reject or accept the hypotheses.

The following section describes the correlations and regression analyses used to test the hypothesis using a model to describe each of the procedures.

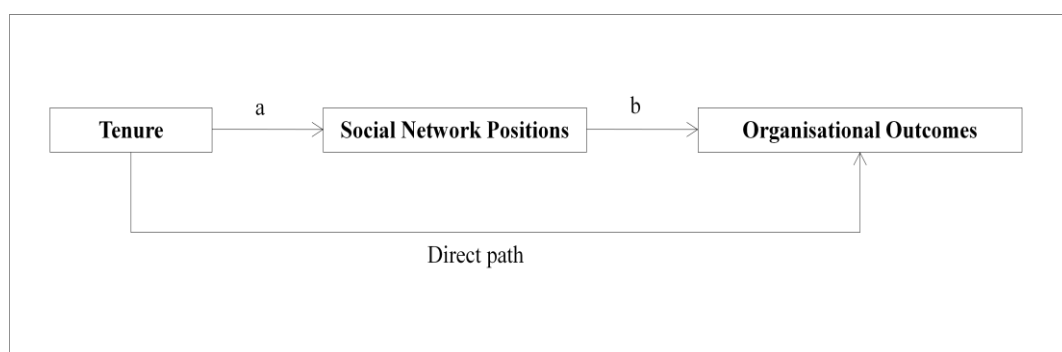
5.7.2 HYPOTHESIS TESTING

A. Hypothesised model for empirical research

Section 4.3 discussed the major relationships hypothesised in this study, summarised in Figure 5-1.

Figure 5-1 is used to determine whether mediation occurs through SNA positions and characteristics in the network. As the figure shows, several relationship paths need to be tested to determine the mediation role of SNA positions and characteristics. In this figure, path 'a', establishes whether tenure directly affects social network positions in the information and friendship networks. It then became necessary to distinguish newcomers versus seniors in the research. As tenure reflects relative newcomer status on a more continuous scale, this became the independent variable in conducting correlations and regression analyses.

Figure 5-1: Hypothesised model for empirical studies



In order to have a consistent definition of newcomer, as each organisation sets a different probation period for newcomers, this research defines newcomers as those whose tenure is three years or less with the organisation. Further, relative newcomers are those whose tenure is between three and four years in the organisation while seniors are individuals whose tenure is four years or greater with the organisation.

Multiple regression analyses for path 'a' in Figure 5-1 establish whether tenure has a direct effect on each of the social network positions in each organisation. The next path 'b' once again requires multiple regression tests to determine whether there is a direct relationship between each of the social network positions and the organisational outcomes for each organisation. O'Rourke, Hatcher and Stepanski (2005) recommend reviewing the standardised multiple regression coefficients or beta weights (β) as these are the regression coefficients that would be obtained if all the variables were standardised. Accordingly, beta weights from both path 'a' and 'b' multiplied together show whether tenure indirectly affects each of the organisational outcomes through various mediation variables, which are the social network positions. This indicates the 'indirect path' of tenure on organisational outcome variables.

Finally, beta weights from 'indirect path' added to beta weights from the 'total path' reveals whether social network positions mediate overall organisational outcomes.

The following sections describe analytical processes.

B. ANOVAs

The sample sizes for each organisation were small, in accordance with the specifications for a social network survey. However, small sample sizes restrict the power of standard statistical tests, therefore a possible solution to this problem was to aggregate all responses into one sample and test that sample. The following procedure describes the process to determine whether it is possible to aggregate all responses into one sample and regress that one sample.

The first strategy in the process to determine whether samples could be aggregated involved conducting ANOVA tests. ANOVA tests determined

whether means for each sample differed for each of the questions from the second questionnaire. P-values indicated whether sample means differed for each of those questions.

The next step involved comparing the means of the total summated variables (organisation and co-worker commitment, role clarity, task mastery and group vs. individual) instead of individual questions requiring the combination of multiple sub-questions into overall construct scores. This in turn required obtaining Cronbach's alpha for each of the organisational outcome variables. As each outcome variable is composed of a number of questions for respondents to consider, internal reliability of the multi-item construct measures was necessary before creating summated variables. Significant alphas indicated that combinations for each variable differed in internal reliability for each of the organisations. Removing questions with significant alphas and conducting the tests again revealed the right combination for each variable leaving final alphas greater than .60.

ANOVA tests for every total, aggregated outcome variable revealed significant differences between the organisations on the crucial outcome variables of normative organisational commitment, performance proficiency (task mastery), affective coworker commitment, normative coworker commitment, and continuance coworker commitment. These significant differences meant that it was not possible to aggregate the samples. Therefore, regression analyses would have to be done for each sample.

C. Correlation

The next step involved conducting bivariate correlations, which tested relationships between two variables. There are numerous statistical procedures used to examine bivariate relationships but this study used Pearson correlation coefficient, which allowed the researcher to test whether the correlation between two interval variables is zero in the population. PROC CORR in SAS 9.1 tested for bivariate correlations. Since sample sizes are small, therefore Kline (1998) recommends highlighting correlations above .30.

Bivariate correlations do not test for independent and dependent relationships, therefore regression analyses was the next step.

D. Multiple regression analyses

Data was imported into SAS 9.1 to conduct hierarchical multiple regression with mediation and moderation testing (Baron & Kenny, 1986). Data was analysed with Base SAS and Enterprise Guide using PROC REG to analyse majority of the data.

With regard to mediation tests as hypothesised in Figure 5-1, Baron and Kenny's (1986) mediation method is used to test these assumptions with the following conditions:

1. *Independent variable should regress significantly on the ultimate dependent variable.* In this study, we are interested in whether tenure directly organisational outcome variables (direct path).
2. *Independent variable should regress on the mediator.* Tenure should directly affect social network positions in the network (path 'a').
3. *When the mediator is included as a predictor along with the original independent variable, a) The mediator should be a significant predictor of the outcome (path $a*b$), and b) the coefficients of the independent variables should be significantly reduced.*

Sample sizes were small in keeping with SNA requirements but they can be insufficient for statistical inference (Ader et al., 2008). Therefore, this study followed bootstrapping to overcome this problem. Bootstrapping allowed the researcher to gather many alternative versions of the single statistic normally calculated from one sample by creating confidence intervals that are more accurate. A classic non-parametric bootstrap, with 10,000 re-samples and the BCA (bias and acceleration corrected) confidence interval approach allowed the researcher to determine the relationship paths between variables indicated in Figure 5-1.

The following section describes the limitations encountered in the process of determining the methodology for this study.

5.8 **LIMITATIONS**

- One of the limitations of this study is that it will only be applicable to similar organisational types.
- A second limitation is the response generated by the employees. As the questions will ask employees about their relationships with their co-workers, they may respond based on what the respondent believes to be socially acceptable responses rather than genuine responses.
- A third limitation is employees who voluntarily choose not to participate. These employees will represent missing data, which may affect the interpretation of the data received. To overcome this limitation, respondents received detailed information letter explaining this study and assuring them confidentiality of their responses. Consent forms distributed to potential respondents followed the ethical approach to data management to encourage respondents to respond with honesty.
- Time and scope constraints limited the number of outcomes this research could investigate. In particular, this research considers self-perceived performance proficiency (task mastery) which offers a biased view on whether newcomers have achieved task mastery. Self-perceived task mastery in conjunction with actual task mastery assessed by supervisors would have been a better indication of this outcome.
- Sample sizes are small limiting the number and type of tests that could be conducted on the data due to the lack of stability of the results. This problem was countered by bootstrapping regression analyses.
- This research followed a quantitative approach for easy distribution, collection, and tabulation of data. Haythornwaithe (1996) recommends combining qualitative approach with quantitative approach to fill in gaps that structured surveys do not consider. Time and access to several respondents limited direct contact with them. However, to clarify responses, it was possible to approach the respondents through email or telephone. In addition, Organisation 2 and 3 respondents wrote down additional pertinent information (such as whether they worked from home, part-time, etc). This

provided clues to decipher network positions of actors in both the friendship and information networks.

5.8.1 SAMPLE LIMITATIONS

In addition to the limitations mentioned above, the researcher encountered limitations during distribution of the structured surveys.

- One respondent lives in another city without much contact with the people in the Johannesburg office and thought it was unnecessary to participate in this research.
- Frequent absence from the office as well as lack of internet connection in some countries meant respondents were not easy to track.
- One respondent mentioned that there were times when two lecturers had to collaborate for a project and during that period were in contact almost on a daily basis. Nevertheless, when the work was completed, they did not have much contact afterwards. This person did not know how to classify that relationship.
- Some respondents realised after completing the questionnaire that they knew several people who were neither friends nor acquaintances. They also did not go to them for information pertaining to their work. These respondents required an additional column to capture people one meets on the passage or stairwell. Perhaps a 'Not Applicable' column would have been necessary.
- Inclusion of deceased and exited staff member's names confused some respondents.

The following chapter presents results of the analyses conducted on the collected data.

CHAPTER 6. RESULTS

6.1 INTRODUCTION

Chapter 5 on methodology explained in detail the tests and programs, which analyses the data from the surveys. This chapter presents the results from the tests and analyses, done on three different organisations, with preliminary explanations of the findings.

This chapter begins with the results from the UCINET program displaying the different networks of friendship, information and where possible ‘never met’ graphs for each of the three organisations from the first survey.

Subsequent sections, discuss results from correlations and regression analyses with brief descriptions of the findings.

6.2 SOCIAL NETWORKS

The following sections show and discuss the social networks (both friendship and information) for the three organisations. Section 5.7.1 explained the process for developing these network diagrams, which are presented here with explanations.

6.2.1 ORGANISATION 1 SOCIAL NETWORKS

Each respondent in this organisation answered about his or her friendship and information network ties to others and indicated persons they never met. Accordingly, each section presents an organisational network.

A. Friendship network

Figure 6-1 is the friendship network for Organisation 1. This organisation, though it is part of a large corporate body, is an entity by itself, comprised of a very limited number of employees. There are few employees within each department; therefore, node shapes denote tenure while node colours represent gender. This is a very small sample so it is possible to get a clear picture of the relationships between each node.

There are approximately two employees in this Organisation classified as newcomers. These are T6 and T11 with tenures less than three years while relative newcomers (T16 & T24) are employees whose tenures are between three and four years in the organisation.

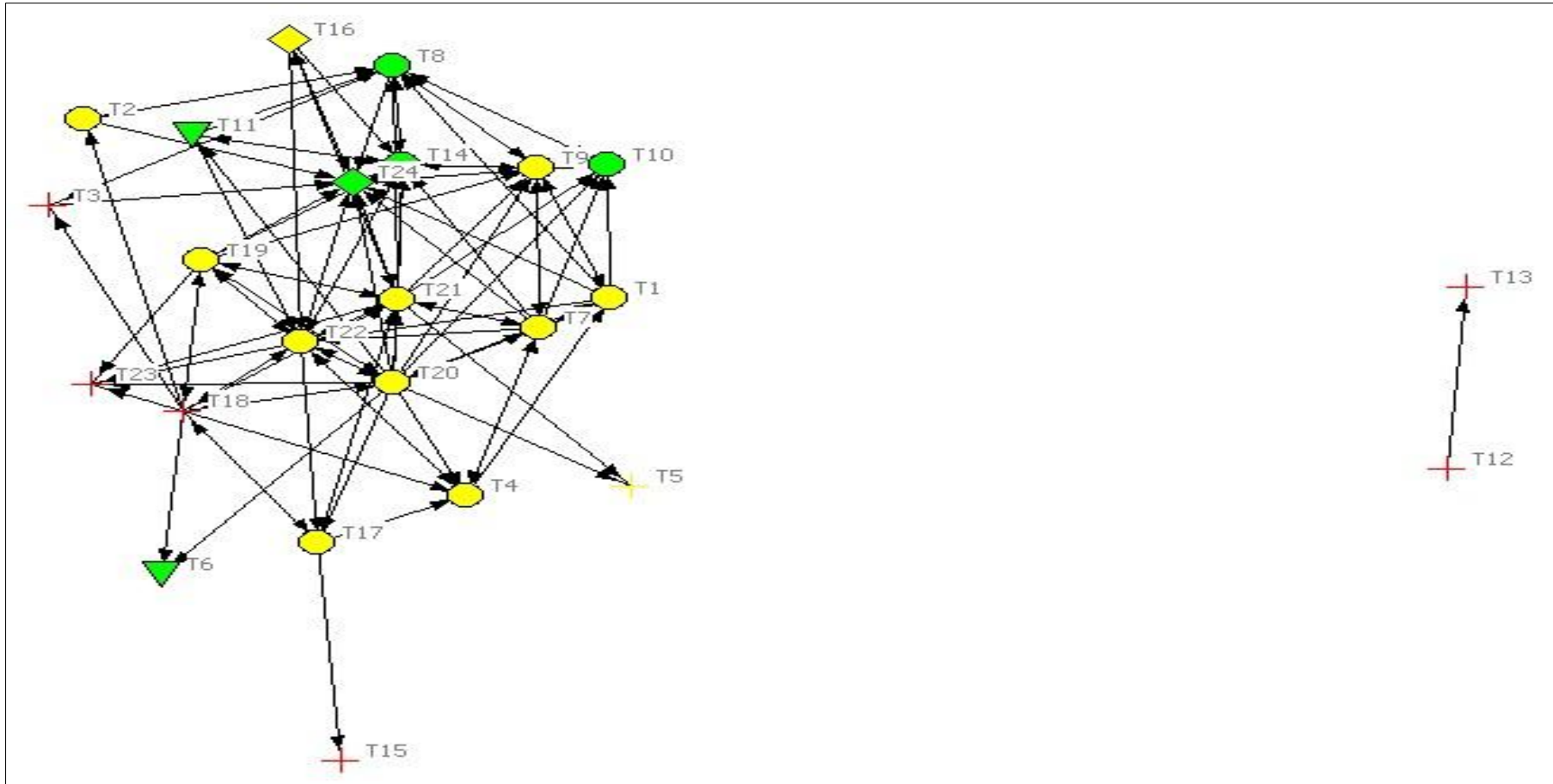
Overall, here we see that tenured males, who are the dominant gender group, cluster together sharing friendship ties with other males, while the majority female respondents who are located in relative proximity to each other, appear to have weak connections to each other. T6, who is a female newcomer, is isolated from the remaining four female nodes.

Figure 6-1 shows that the two newcomers, T6 and T11, both of whom are females, appear in the periphery of the friendship network. We may infer from this that newcomers have few friendship ties with others in this workplace perhaps indicating that friendship develops with tenure as people establish relationships over time with each other.

Majority of the males in this organisation, with tenure greater than 4 years, appear embedded in the network while one male, who is a relative newcomer (T16), appears in the periphery of the network. One female, T24, who is a relative newcomer, appears embedded in the friendship network, with ties to both male and female nodes. It is difficult to locate one central actor with the most number of connections, as it appears that several of the actors located in the centre of the friendship network have similar number of connections.

Two nodes appear isolated from the remaining network because they operate from a different location therefore they have no friendship connections to nodes in the rest of the network.

Figure 6-1: Friendship network – classified by gender and tenure



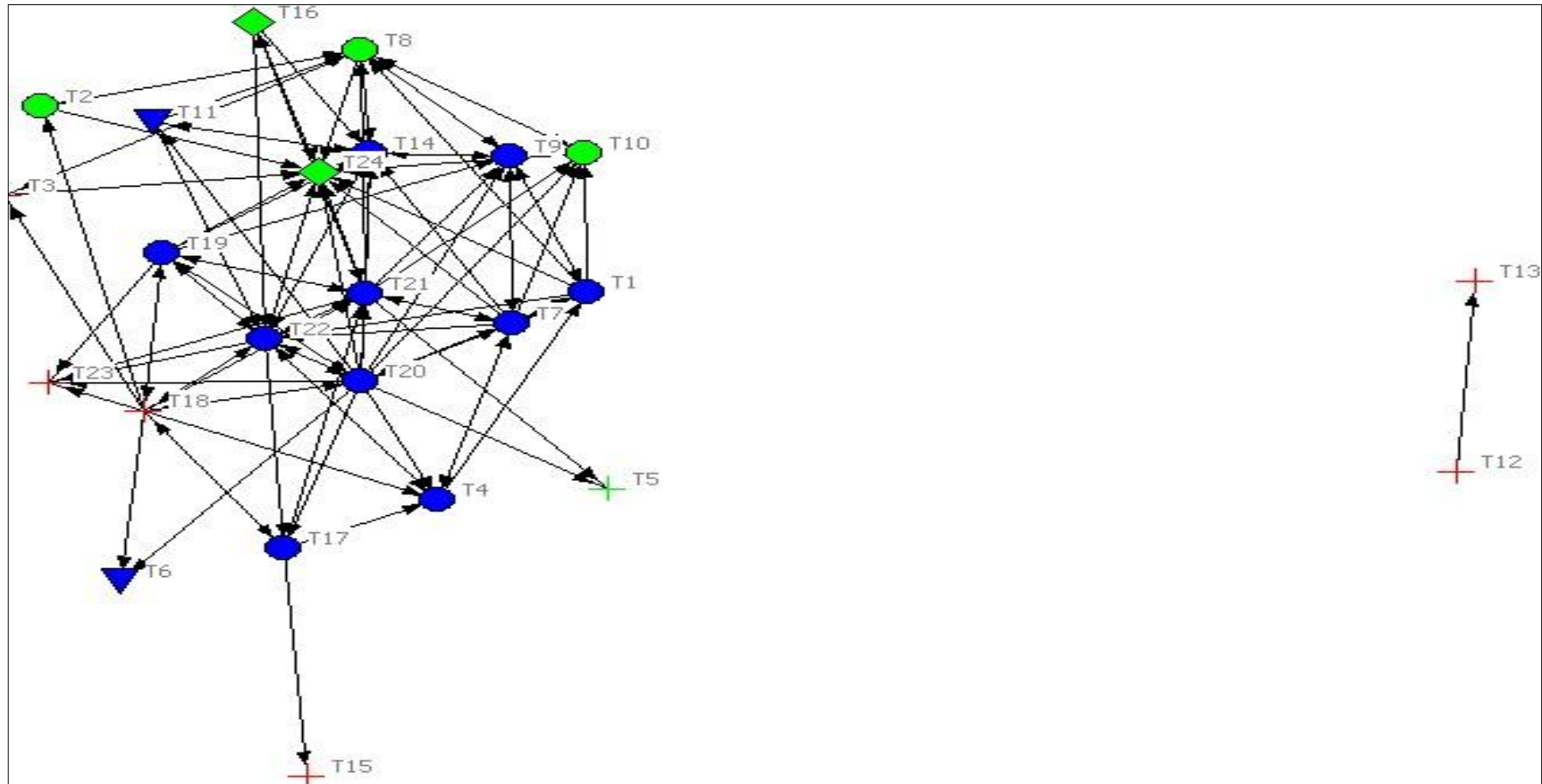
Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Gender: ■ - Female; ■ - Male; ■ - Non-respondents

For the next level of study, Figure 6-2 shows the race dynamics in the friendship network of Organisation 1. Asians are the dominant race group featuring prominently in the network while non-Asians make up a small percentage of the network with few ties to each other. Majority of the non-Asian respondents appear in the periphery while one who is a relative newcomer, appears is embedded in the network.

Two newcomers (T6 & T11), belonging to the dominant race group appear in the periphery of the network. From the above observations, we may infer that it seems tenure plays a role in developing friendship ties with others in the network. It would be interesting to find out whether hierarchical positions in this organisation influence an individual's position in the friendship network. However, this is beyond the scope of this research.

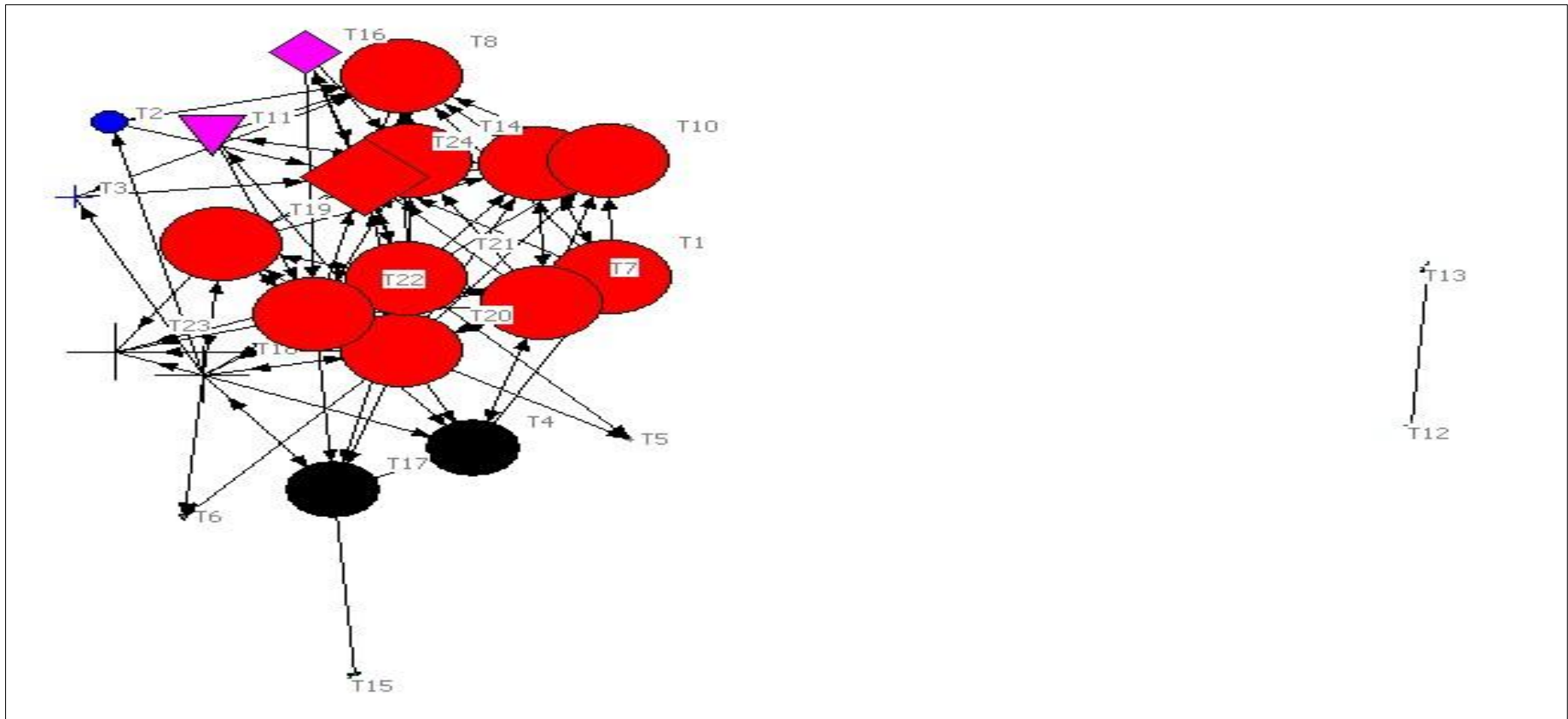
Figure 6-2: Friendship network – classified by tenure and race



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Race: ■ - White; ■ - Non-White; ■ - Non-respondents

Figure 6-3: Friendship network – K-core



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Figure 6-3 shows the friendship network with the K-cores aspect, where node size is a reflection of the number of ties connecting them to others while node colour reveals those nodes sharing similar node size. Red nodes located in proximity to each other are the largest as they have several ties connecting them to others while black nodes are one size smaller than the red. Pink nodes are smaller than the black nodes. Of the two pink nodes, one is a newcomer and the other a relative newcomer whose tenure is between three and four years. Newcomer T6, with a very small dark green node, does not have many friendship ties to others in the network; therefore, the node appears insignificant. T6 may be physically located in a separate place or has a job that does not require frequent contact with others in the organisation.

B. Information network

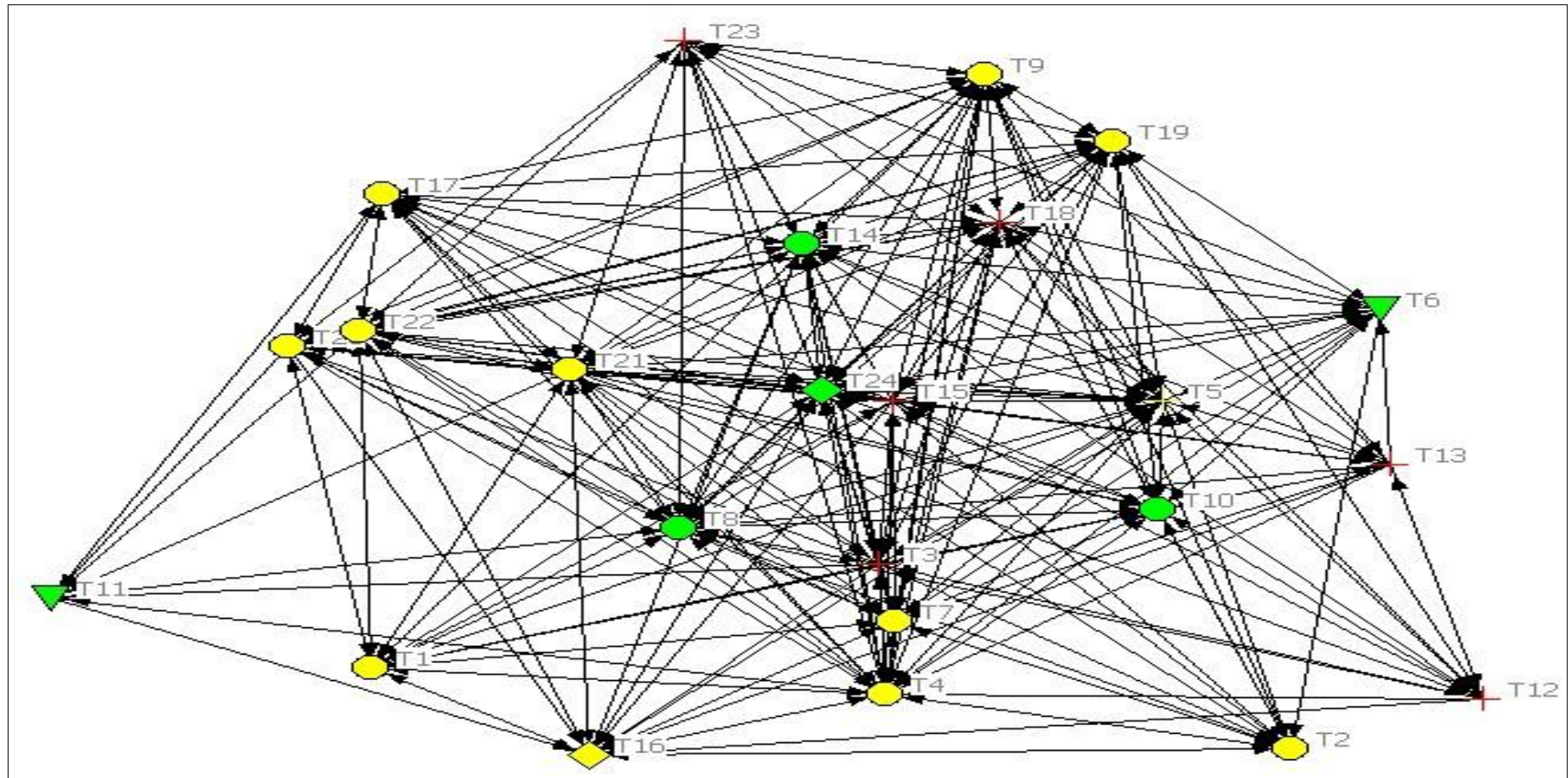
In this section, the focus of research will be on the information network, which measured tie strength, to determine the frequency of exchange of work-related information. This graph does not include ties with strength '1' because it cluttered up the nodal connections and it was difficult to view relationship patterns.

Figure 6-4 is the information network for Organisation 1, with a particular focus on tenure and gender. Here, the node shapes represent tenure in the organisation and node colour represents gender of the respondents.

Taking an overall look at Figure 6-4, we see that two nodes, T12 and T13, though isolated in the friendship network, are now a part of the information network. Therefore, we may infer from this sample that physical proximity plays a part in the formation of friendship ties while information ties cross boundaries and physical locations when actors need work related information.

Female nodes, T6 and T11, are the only two newcomers who appear in the periphery of the information network, which is similar to their position in the friendship network. Another female, T24, a relative newcomer, appears to be central in the information network with ties to several others. Interestingly, T4 who was located in the periphery of the friendship network is no longer in the periphery.

Figure 6-4: Information network – classified by tenure and gender



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; ⊕ Non-respondents

Gender: ■ - Female; ■ - Male; ■ - Non-respondents

Overall, we observe in Figure 6-4 that majority of the female nodes appear embedded in the information network with one holding a central position. Three non-respondents (T3, T5, & T15) have a central place in the network showing their relative importance as sources of information, because several actors go to them for work related information. This diagram does not show their position in the hierarchy of the organisation but we can see that they are central to the information network.

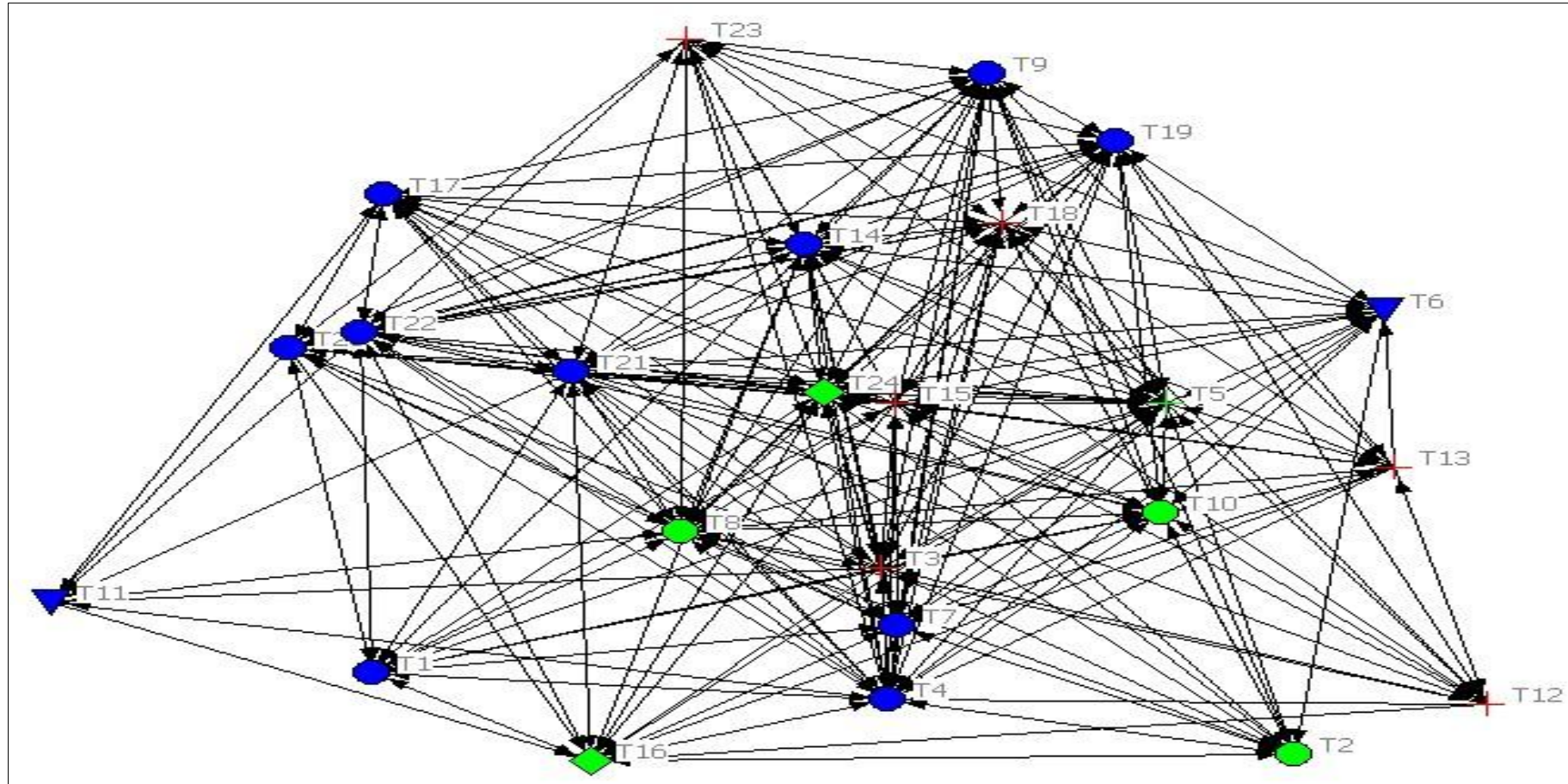
Interestingly, we see that female respondents, although fewer in number in the overall network, are embedded in the network, relative to the male counterparts who belong to the dominant gender group. Unlike in the friendship network, female nodes share information ties with each other.

Figure 6-5 shows the information network where node colours represent race dynamics. Here, the node colour represents race dynamics.

In this organisation, Asians (blue nodes) are the dominant race group, spread across the network while the non-Asians (green nodes) appear in close proximity. Of the three non-Asian respondents embedded in the network, one of which is a relative newcomer, is central in the information network with an extensive tie network. The remaining two non-Asian nodes appear in the periphery.

Several of the Asian respondents appear in the periphery of the network, while only two appear embedded in the network. Two newcomers (T6 & T11), who belong to the dominant race group, appear in the periphery of the network.

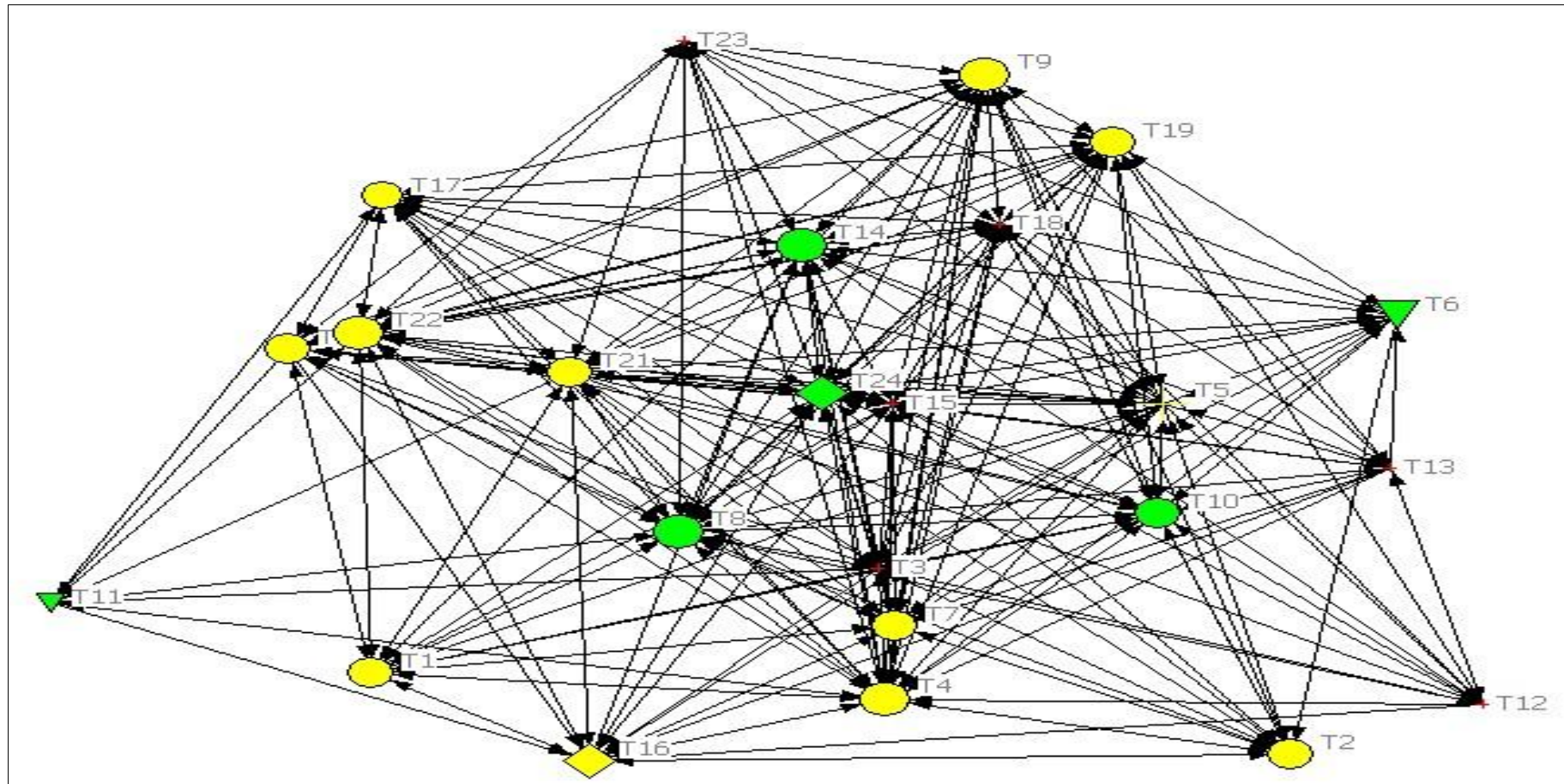
Figure 6-5: Information network – classified by tenure and race



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; ✚ Non-respondents

Race: ■ - White; ■ - Non-White; ■ - Non-respondents

Figure 6-6: Information network – Affective organisational commitment and gender



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Gender: ■ - Female; ■ - Male; ■ - Non-respondents

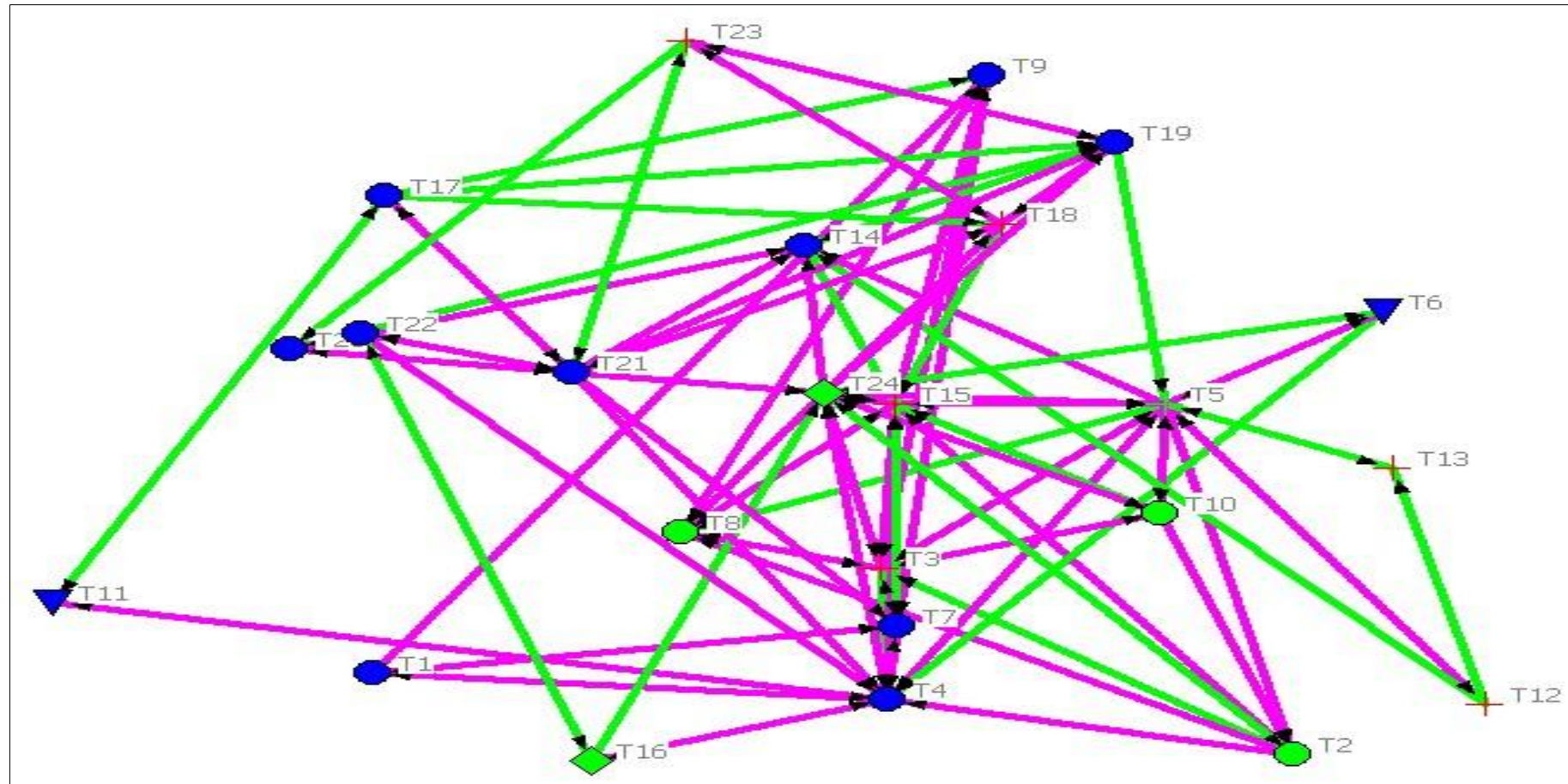
The next aspect of network graphs highlights affective organisational commitment scores for each respondent, in relation to gender and tenure. Affective organisational commitment measures emotional attachment to the organisation. In Figure 6-6, given the above, the size of each node reflects the affective organisational commitment scores for that particular respondent, captured in the second questionnaire. Each node is coloured according to gender.

Figure 6-6 tentatively suggests that tenure increases emotional attachment to the organisation. Overall, we see that affective organisational commitment affects several of the respondents with less effect on the newcomers. This phenomenon may be attributed to the practice of remaining with the organisation and rising through the ranks over years of service. Some of the have risen up the ranks in the organisation in their country of origin before transferring to the office in South Africa.

The first questionnaire on social network considered frequency of contact, in the information networks, for work related information measured as tie strength in particular tie strengths '4' and '5' which measure contacts occurring once a day to several times a day.

Accordingly, Figure 6-7, shows two tie strengths indicated by the different line colours (green & pink). This figure shows majority respondents engage with each other several times a day to exchange work-related information, as indicated by the pink lines. In particular, T4 who appears in the periphery, both in the friendship and information network, has reciprocal tie strength '5' with many others in the network. T24, who although appears to be central in the network, has fewer ties of strength '5'. Non-respondents, in particular T3, T5, and T15, appear to be key sources of information in the information network with each receiving ties of strength '4' and '5'.

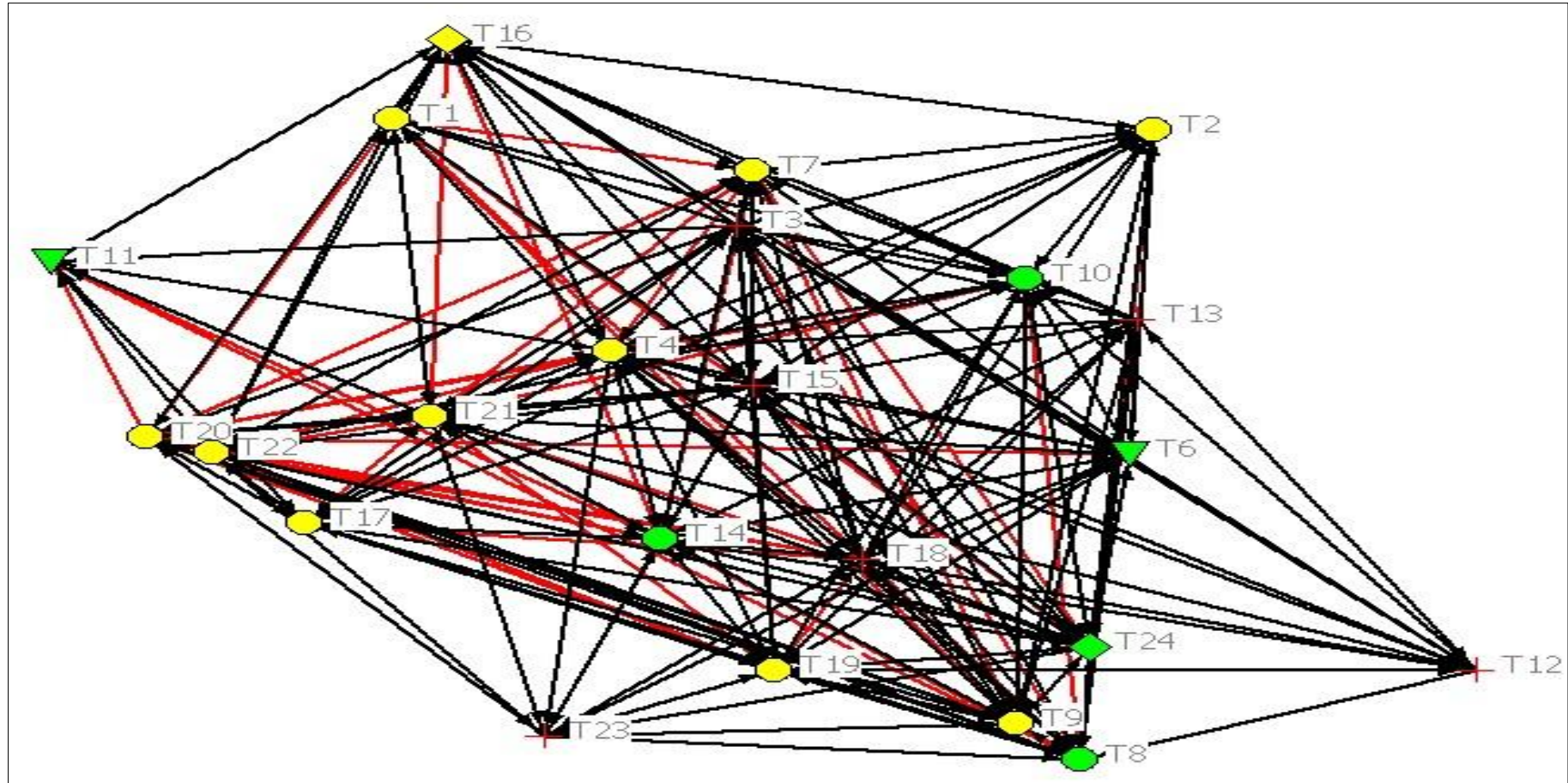
Figure 6-7: Information network showing tie strength according to race



Respondents: ▼ (newcomers): $|Tenure| \leq 3$; ◆ (relative newcomers): $3 \leq |Tenure| \leq 4$; ● (seniors): $|Tenure| \geq 4$; ✚ Non-respondents

Race: ■ - White; ■ - Non-White; ■ - Non-respondents; **Line colour:** Green - tie strength 4; Pink - ties strength 5

Figure 6-8: Multiple relations (information network and friendship network)



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Gender: ■ - Female; ■ - Male; ■ - Non-respondents; **Line colour:** Red - Friendship network; Black - Information network

As sample size is small in Organisation 1, it was possible to combine both the friendship and information network to observe multiple relations of the members in the organisation. Accordingly, Figure 6-8 captures multiple relations where node colours represent gender.

Figure 6-8 shows that majority of the males cluster in one section of the network sharing friendship and information ties with each other. Females clustered at the other end of the network share more information ties with each other than friendship ties. Newcomer T11, once again appears in the periphery displaying more information than friendship ties to others in the network.

Table 6-1 is a summary of the network trends from both the friendship and information networks from Organisation 1.

Table 6-1: Summary of social network trends for Organisation 1

Network trends for Organisation 1			
		Friendship network	Information network
Gender	<i>Female</i>	Majority female nodes appear in close proximity to each other but have weak connections with each other. One female node isolated from other females. Trend shows majority females in periphery of network of which two are newcomers. One female embedded in network with ties to many others.	Few female actors, majority of whom embedded in the network, of which one is a relative newcomer; two remaining female who are newcomers appear in the periphery of the network. Female nodes share more ties with each other than in the friendship network. Majority of the female nodes display affective organisational commitment; of the two that do not, one is a newcomer
	<i>Male</i>	Males are dominant group, clustered closer together with ties to each other; difficult to point most central actor. Tenured male actors embedded in network	Male dominant Organisation who are spread across the network. Several (n=5) appear in the periphery; two males embedded in the network. Majority male nodes show affective organisational commitment, including peripheral nodes
Race	<i>Asian</i>	Asians dominant group, more prominent in the network; two newcomers appear in the periphery of the network	Dominant race actors scattered in the network; majority appear in the periphery of which two are newcomers; only three are embedded in the network; have more multiple friendship and network ties with each other
	<i>Non-Asian</i>	Majority non-Asians appear in the periphery of the network with few ties to each other. One relative newcomer embedded in the network.	Majority of the non-Asians embedded in the network of which one relative newcomer central in the network; two non-Asian nodes peripheral; non-Asian actors share more information than friendship ties with each other.

The following section displays social network results for the second organisation.

6.2.2 ORGANISATION 2 - SOCIAL NETWORKS

This organisation is a larger in comparison to Organisation 1, employing a diverse group of people, both local as well as international. This section begins with the presentation of friendship network graphs.

A. Friendship network

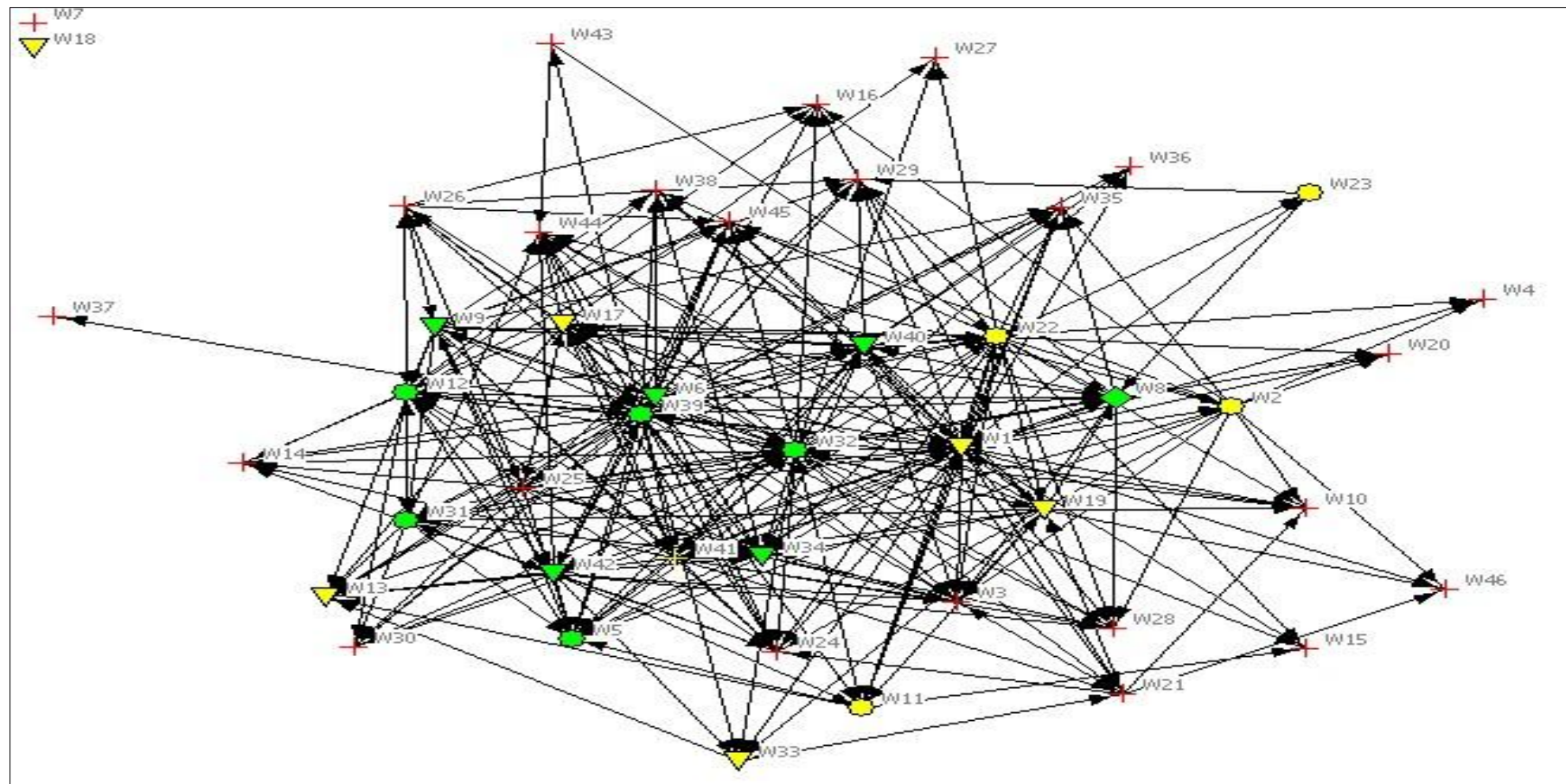
Figure 6-9 shows the friendship network for Organisation 2. Not all the actors in the network responded to the questionnaire so several of them appear in the periphery of the network.

In comparison to Organisation 1, Organisation 2 employs more newcomers divided equally between female and males. Female newcomers, W6, W34, and W40 appear embedded in the friendship network more than other female newcomers, W7, and W18 do. Two male newcomers occupy peripheral positions in the friendship network while the other three are embedded in the network. Actor W32 is a female with a central position in the network.

Male respondents are scattered across the network while their female counterparts appear clustered with female newcomers positioned closer to senior members as seen by proximity of W6 to W39 and W9 to W12.

W7 and W18 are isolates who are not friends with anyone according to this diagram. However, as they are not physically located at Organisation 2's main office, they have less chance to physically interact and make friends with their coworkers. It is possible that they will feature in the information network.

Figure 6-9: Friendship network – classified by tenure and gender



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

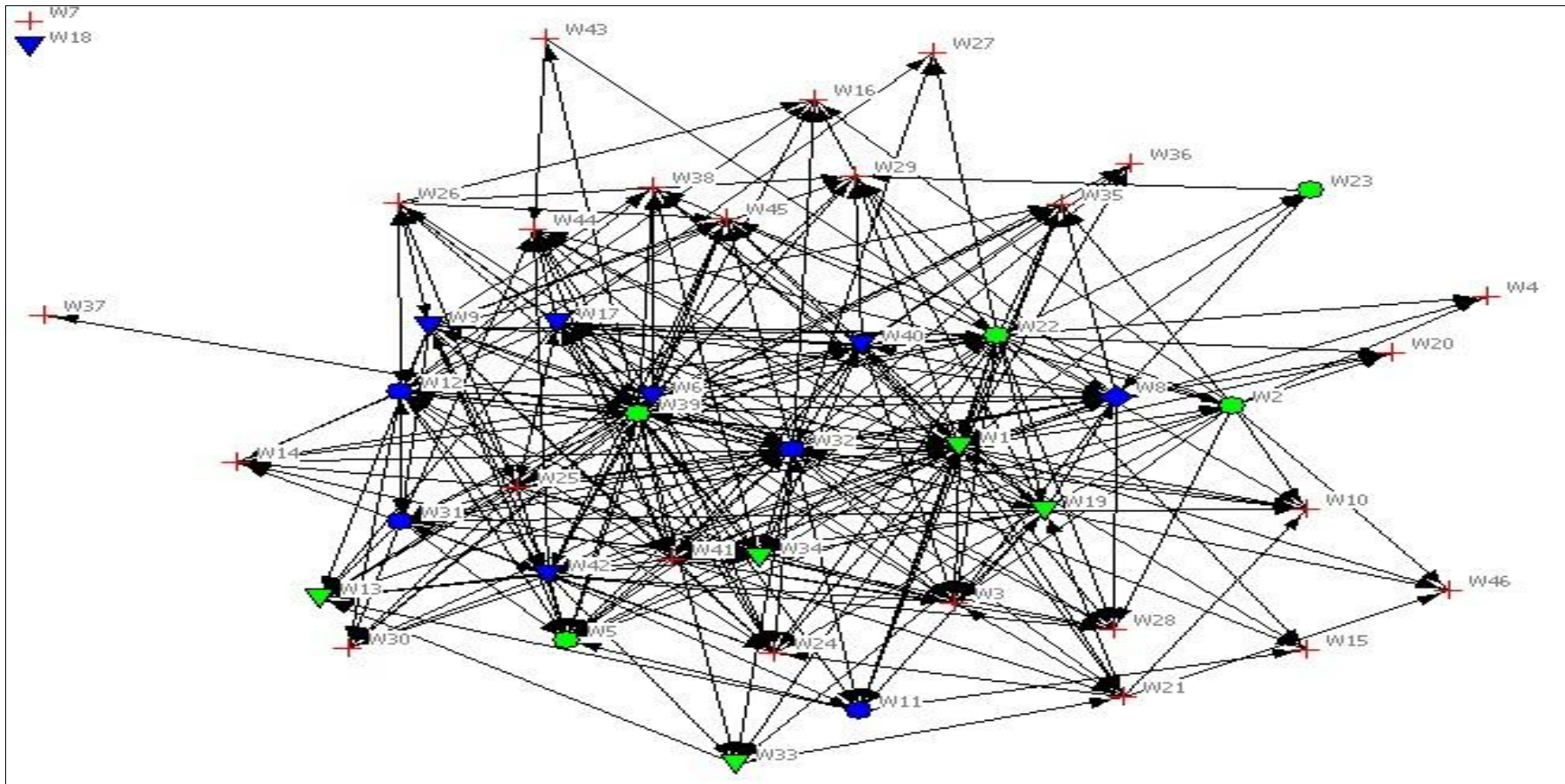
Gender: ■ - Female; ■ - Male; ■ - Non-respondents;

Moving to the next level of research, Figure 6-10 shows the race dynamics of the friendship network in Organisation 2. We can see that two non-white newcomers namely, W13 and W33 appear on the periphery of the friendship network. W33 in particular has few friendship ties to other non-white newcomers, while W13 has a more diverse friendship network.

Three non-white newcomers (W1, W19, and W34) appear embedded in the friendship network. From this, we may infer that perhaps race does not play a predominant role in establishing and maintaining ties in the friendship network of this organisation. Personality may play a role in determining an individual's friendship ties and placement in the network. However, as this is beyond the scope of this study, future studies may research this aspect.

Four actors belonging to the dominant race group (white) appear embedded in the network of which three are newcomers. Central node (W32) appears to be white with friendship ties to several others in the network.

Figure 6-10: Friendship network – classified by tenure and race



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Race: ■ - White; ■ - Non-White; ■ - Non-respondents

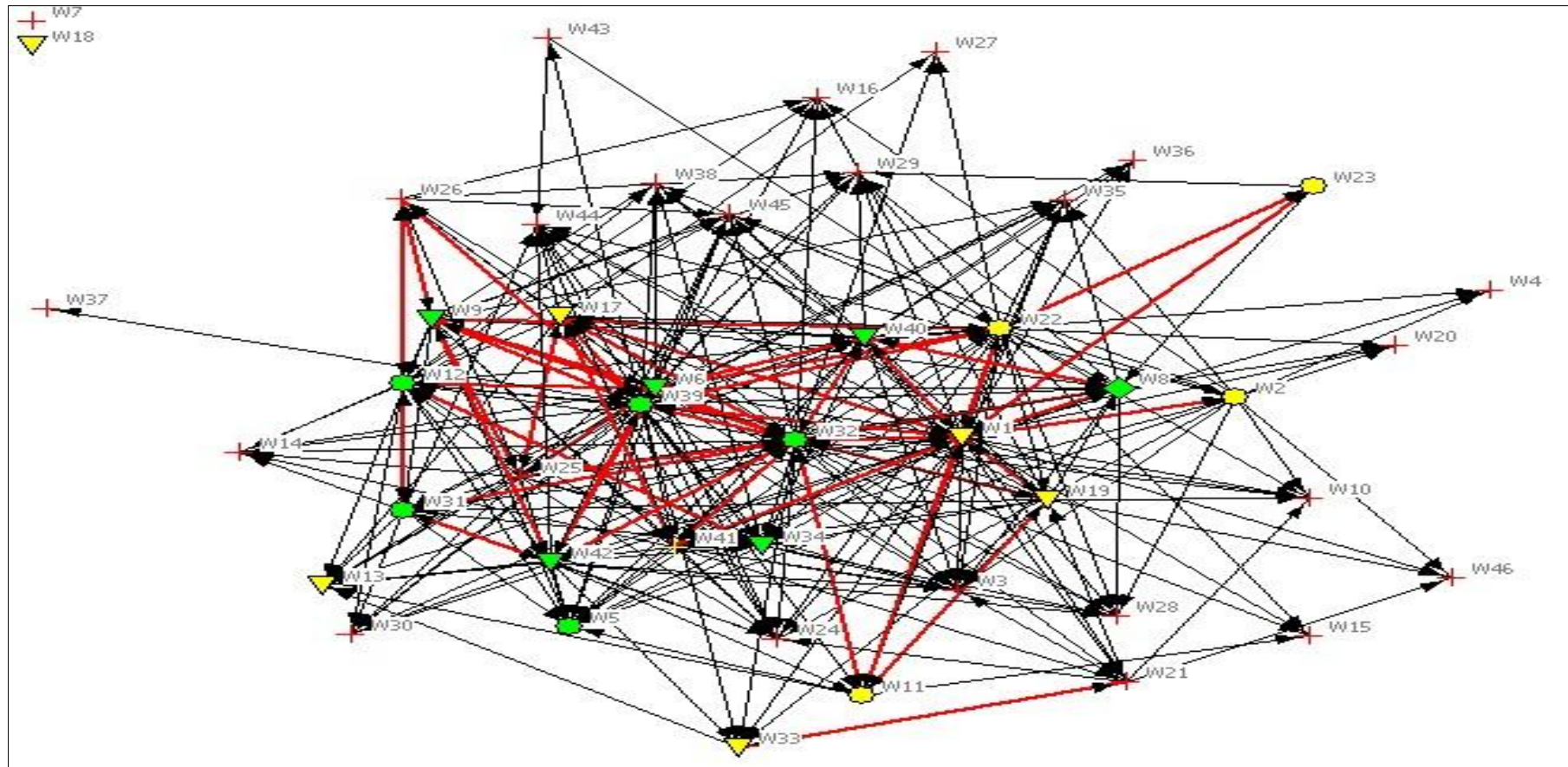
The following Figure 6-11 shows the reciprocal friendship ties actors have with others, highlighted with bold black lines. Actors located in the centre of the network display great reciprocity with each other than with members located in the periphery of the network. In reality, several actors located in the periphery did not respond to the questionnaire making it difficult to verify the reciprocal friendship ties among them.

Male newcomers W13 and W33 do not appear to share reciprocal friendship ties with other members of the network but male newcomers (W1, W17, and W19) embedded in the network appear to share reciprocal ties with each other and with others in the network. Three female newcomers (W6, W34, and W40) embedded in the network appear to have reciprocal friendship ties with other newcomers as well as with each other. This is a great way for newcomers to support one another especially when their work overlaps.

This organisation also employs international staffs, who travel extensively in the region. Some of the newcomers are international staff and maintaining friendship ties may help create a sense of belonging to the organisation, especially when frequent travels can break contact with others in the organisation

Figure 6-12 shows the K-cores aspect for each node in which, size reflects the number of ties the nodes has to others. Large red coloured nodes indicate actors with the most ties. Nodes in red represent actors in the centre of the friendship network with ties to several other actors. Several newcomers feature large red coloured nodes and they are located centrally in the friendship network. Dark blue nodes are smaller than the red nodes indicating that they do not have as many connections but still feature prominently in the network. These nodes appear on the edge of the network. The subsequent node sizes indicate that they have fewer ties to others in the network.

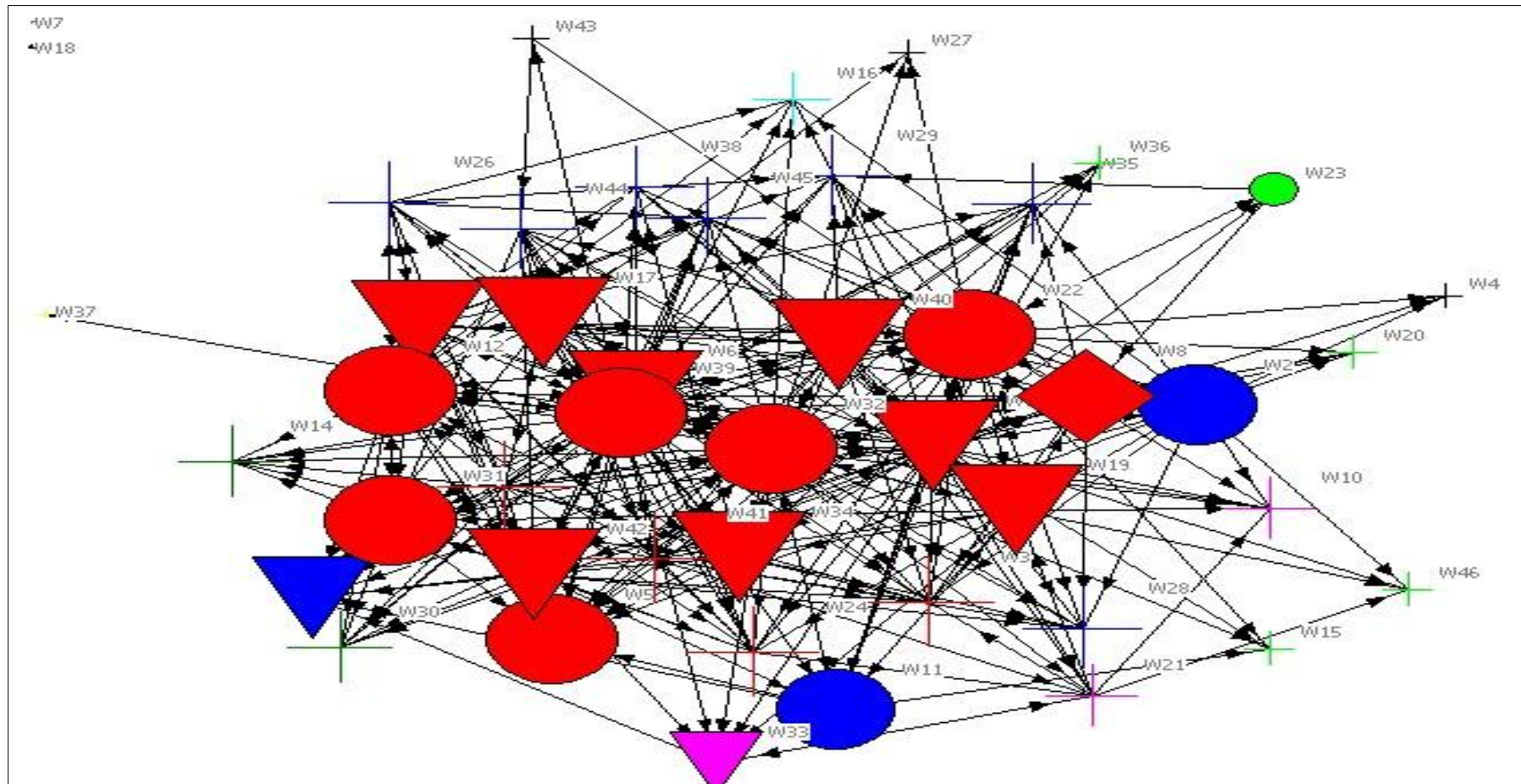
Figure 6-11: Friendship network – reciprocal ties



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Gender: ■ - Female; ■ - Male; ■ - Non-respondents;

Figure 6-12: Friendship network showing K-cores aspect



Respondents: ▼ (Newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

B. Information network

In the previous section, we discussed the friendship network patterns of Organisation 2. This section now discusses the information network patterns and relationships.

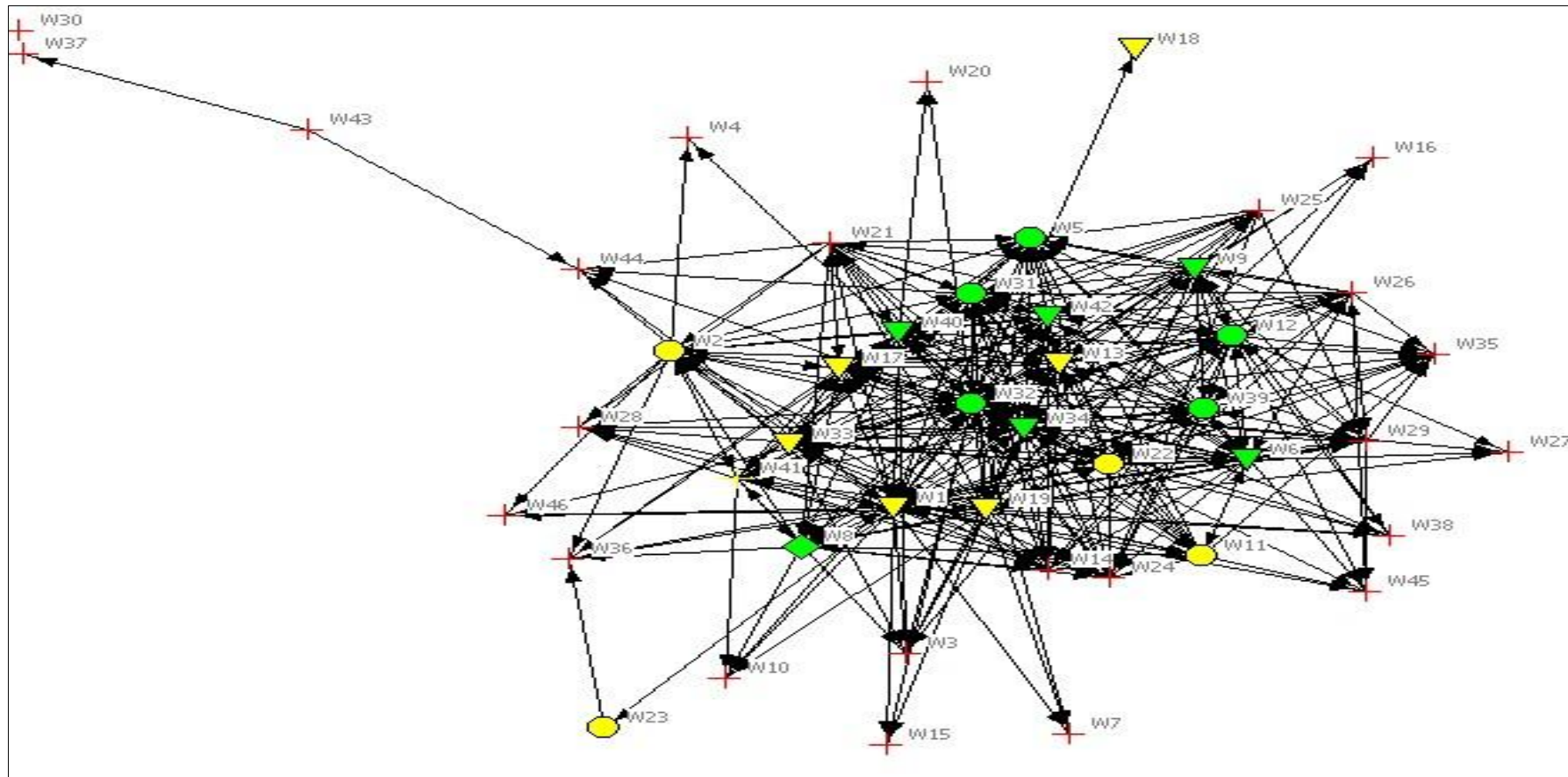
Figure 6-13 shows some very interesting patterns in the information network with the structural positions of newcomers in this organisation. Newcomers appear to congregate around the centre of the information network. In particular, male newcomer W13 who appeared in the periphery of the friendship network now appears to have a central position in the information network. Although, newcomer W33 no longer appears in the periphery of the network unlike in the friendship network, this actor is not central in the information network. W1, who was a central node in the friendship network, has moved closer to the periphery. Most of the newcomers surround two female nodes, W34 and W32 located at the centre of the information network.

A point worth noting is that male actors in this organisation do not appear to cluster but fan across the network, while their female counterparts cluster in small groups across the network.

As mentioned in the methodology chapter, Organisation 2 is a regional office that hires newcomers based on their expertise. At the same time, some individuals do move or relocate to this office from other offices located across the globe, through promotions. Such newcomers may have long tenure with the organisation per se but shorter tenure with the current office, which the questionnaires did not capture. These newcomers may have vital knowledge and that is essential to other actors. As recognised members of the global organisational network, they may take a central position in this information network.

At the same time, certain roles are supportive roles where they coordinate and provide key links between this office and other country offices around the globe. Therefore, this would then make them central figures in this information network.

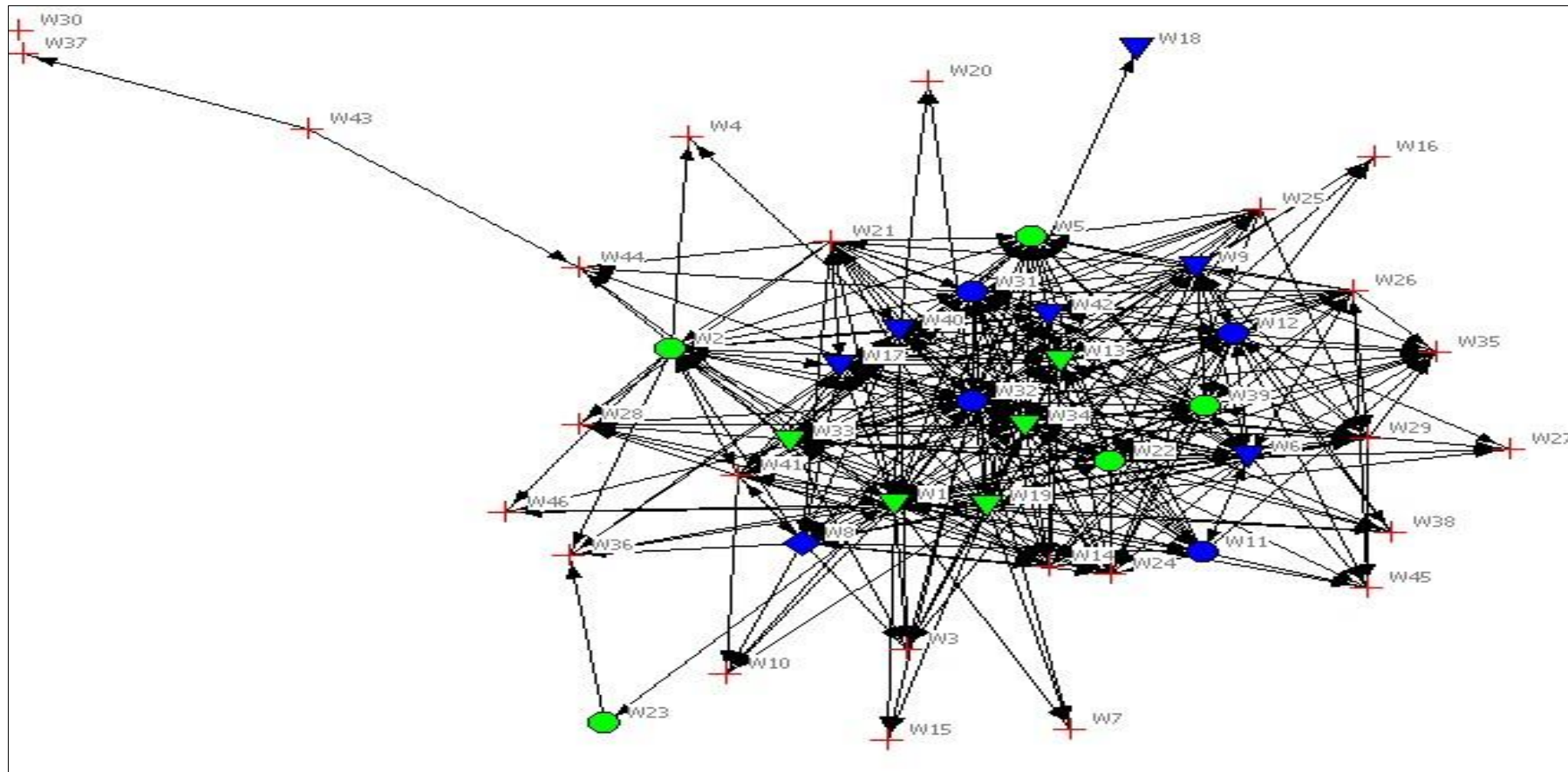
Figure 6-13: Information network – classified by tenure and gender



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Gender: ■ - Female; ■ - Male; ■ - Non-respondents

Figure 6-14: Information network – classified by tenure and race



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Race: ■ - White; ■ - Non-White; ■ - Non-respondents

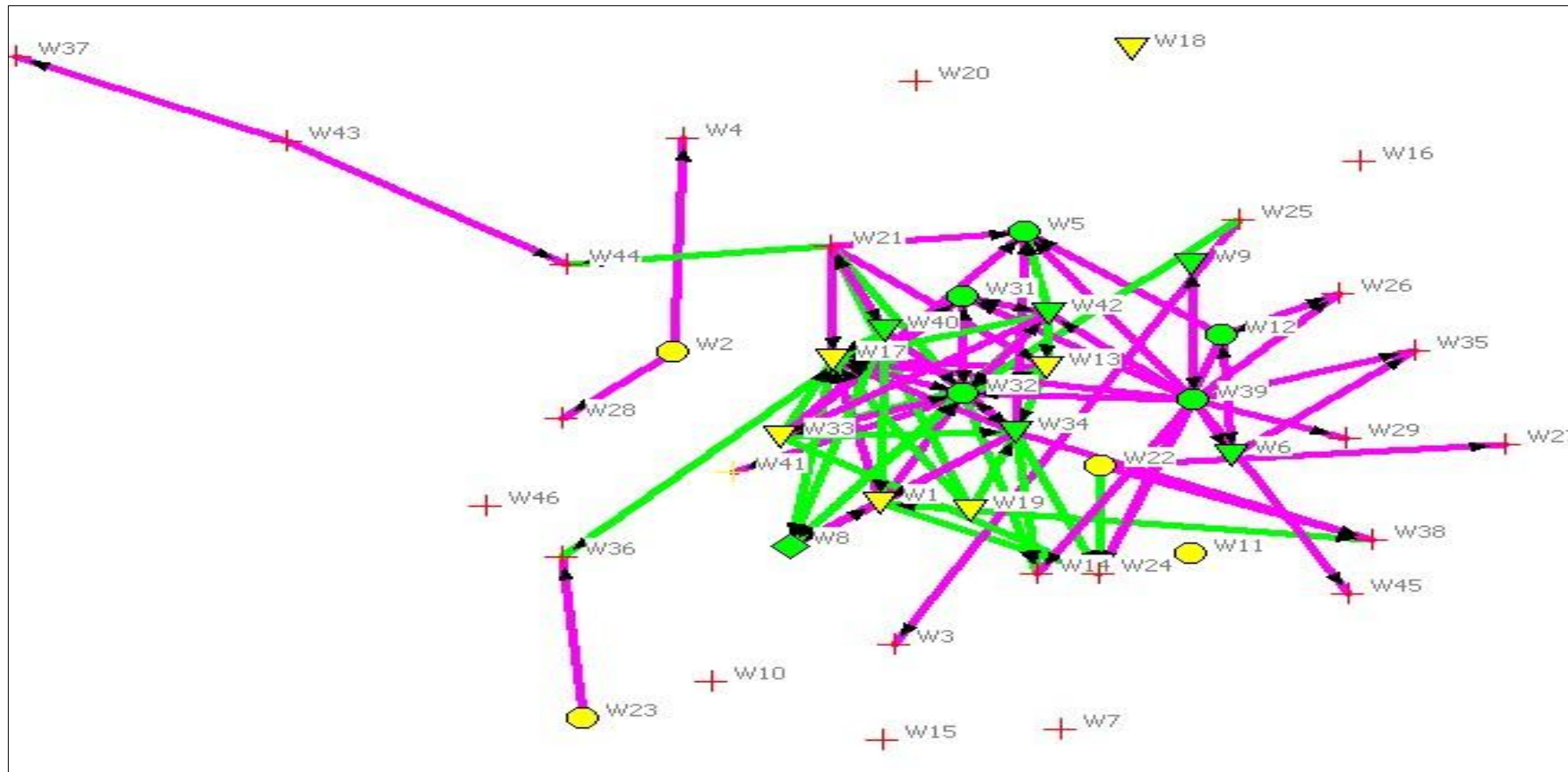
Figure 6-14 classifies the information network by tenure and race for Organisation 2. We observe that non-whites are central in the information network of Organisation 2 while actors, who are white, are less central. Four of the non-white newcomers appear to be more central than their white counterparts are. In particular, we observe that W13, who was in the periphery of the friendship network, is now more central in the information network.

The following graph explores the ties strengths between actors in the information network of Organisation 2.

Figure 6-15 shows the frequency of contact between actors defined as tie strength. We see that the frequency with which several actors contact female actor W32, ranges from once a day to several times a day while, actor W39, who is central in the information network, contacts other actors several times a day. Newcomer W17 reveals that actors contact him or her more than once a day for information a phenomenon seen with other newcomers like W34 and W42.

As mentioned before in relation to the information network classified by gender and tenure seen in Figure 6-13, newcomers with prior work experience especially from the broader organisation, may have vital knowledge and work related information essential to other actors, making them more central in the information network. At the same time, certain roles are supportive roles where they coordinate and provide key links between this office and other country offices and are thus central actors in the information network.

Figure 6-15: Information network showing tie strength between actors



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Gender: ■ - Female; ■ - Male; ■ - Non-respondents; **Line colour:** Green – tie strength 4; Pink – tie strength 5

Table 6-2 summarises key features found in the friendship and information networks of Organisation 2.

Table 6-2: Summary of social network trends for Organisation 2

Social network trends for Organisation 2			
		Friendship	Information network
Gender	<i>Female</i>	Female nodes clustered in network; 3 female newcomers embedded in network; two female newcomers in close proximity to senior members in network; female newcomers and insiders have several reciprocal ties with actors around them	Females fan across network; two female actors embedded in network; female newcomer appears to be central in the network; female newcomers embedded in network; not as many reciprocal strong ties for female embedded newcomers; female central actor has many reciprocal strong ties to other in the network
	<i>Male</i>	Male nodes scattered across network; three male newcomers embedded in network; two male newcomers peripheral; two isolates in the network; two embedded males have several reciprocal ties	No cluster for male actors; male newcomers embedded in network; reciprocal strong ties for one male newcomer
Race	<i>White</i>	Three white newcomers embedded in network; one central node is white with ties to several others	White actors embedded in network but less central than non-white actors
	<i>Non-White</i>	Two non-white newcomers in the periphery; one newcomer has diverse friendship network; three non-white embedded in network	Four non-white newcomers embedded in network; one newcomer moved from periphery in friendship network to become more central in information network

The following section looks at the social network graphs of Organisation 3.

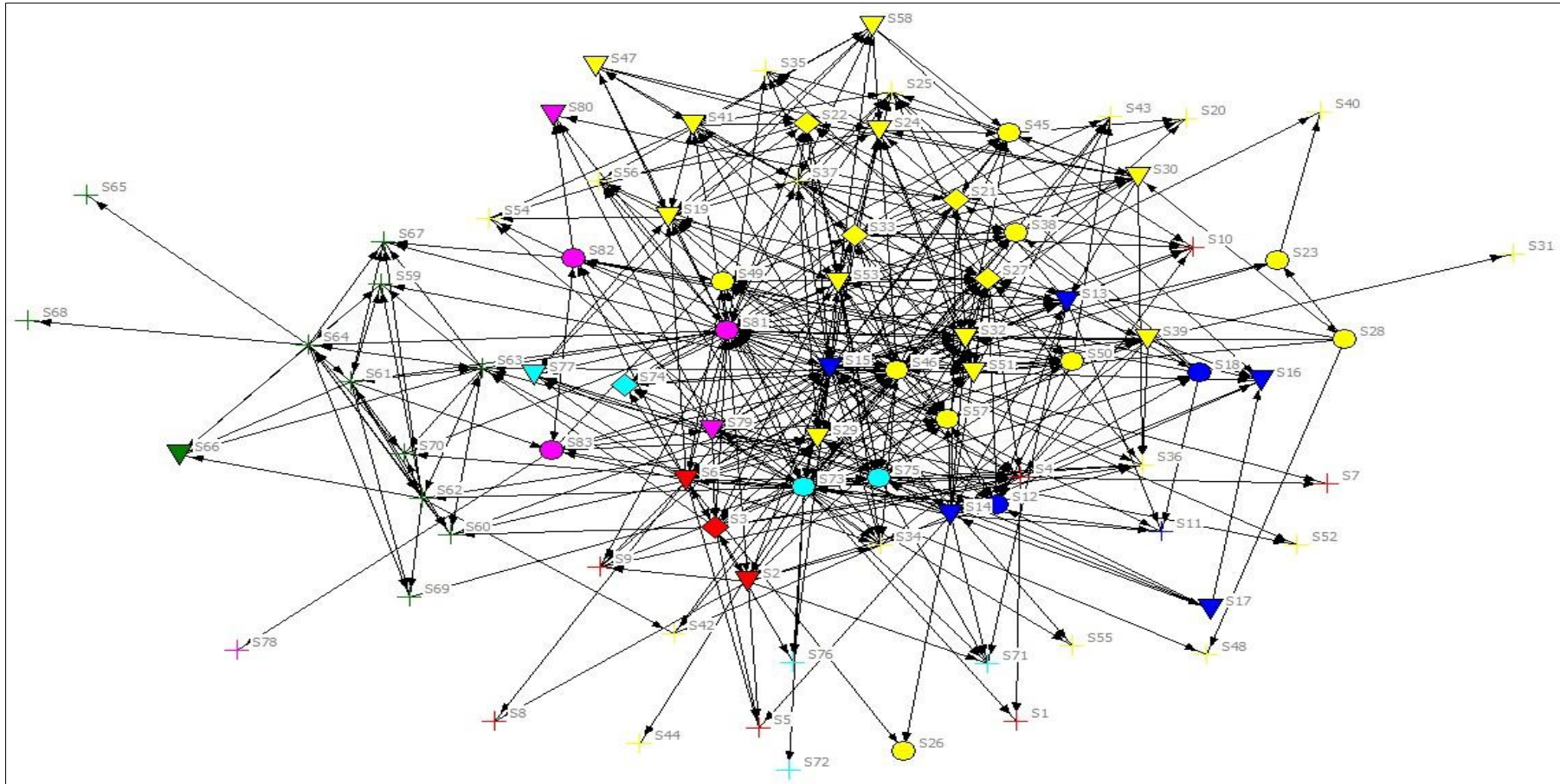
6.2.3 ORGANISATION 3 – SOCIAL NETWORKS

Organisation 3 belongs to a large academic institution and has six departments of various sizes, which make for a unique presentation of the results. Where possible, each respondent is colour coded according to his or her respective department, while the node shapes represent tenure.

A. Friendship network

Figure 6-16 shows the friendship network of Organisation 2 where each respondent is colour coded to represent his or her department and the shape.

Figure 6-16: Friendship network – classified according to tenure and departments



Respondents: ▼ (newcomers): $|Tenure| \leq 3$; ◆ (relative newcomers): $3 \leq |Tenure| \leq 4$; ● (seniors): $|Tenure| \geq 4$; + Non-respondents

Department codes: ■ - A; ■ - B; ■ - C; ■ - D; ■ - E; ■ - F;

In Figure 6-16, we see that actors from department 'D' form a cluster of strong ties with each other while actors in other departments are scattered with no definite pattern. Some of the actors from department 'D' have friendship ties with some of the central actors of the friendship network. Looking at physical proximity department 'D' is located in a separate building while the remaining departments are located in one building spread over two floors. Here some actors are allocated random office spaces while others choose office locations based on the proximity of friends or departmental peers. Because of the physical separation of department 'D', one may infer that this separation may have been one of the contributing factors in the formation of strong intra-departmental ties for those actors. Further, we can note that there is one newcomer, S66, who appears not to have friendship connections with anyone from other departments.

Respondents from department 'A' appear in close proximity to one another in the friendship network with newcomer S6 appearing to have more friendship ties to others in the network.

Actors in department F are a little more spread out albeit not as much as the those in department B. Newcomer S80 from department F appears in the periphery of the friendship network indicating he/she does not have many friends at work for various reasons. Two members from department F, one of whom is a newcomer, appears embedded in the friendship network indicating their connections with actors from other departments.

Newcomer S17 from department B appears in the periphery of the friendship network, far removed from members of that department while newcomer S15 is firmly embedded in the friendship network indicating he or she may have friendship connections with several actors from other departments.

Actors from department E also appear spread across the network with two actors, S73 and S75, positioned away from the two newcomers. Newcomer S77 appears in the periphery of the friendship network, with few friendship connections to others in the network.

Department C is the largest department with actors occupying a significant portion of the network. Partly due to the size of the department, several actors form a cluster in which actors near or at the periphery appear have few or no

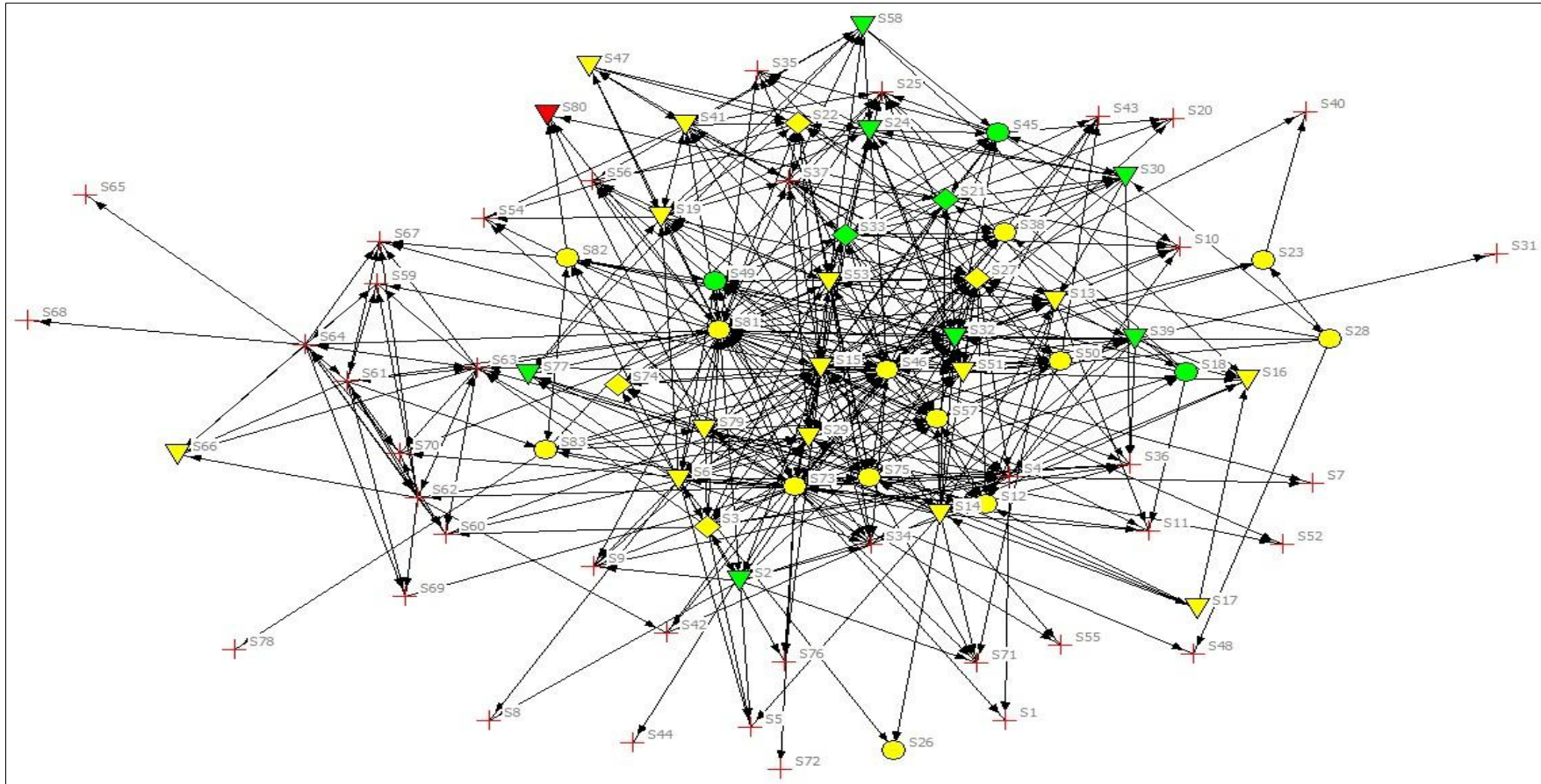
external connections. On the other hand, some embedded actors from this department, share external links with many others in the network. This department has more newcomers than the other departments with several of them appearing along the periphery of the network. Four of the newcomers specifically, S29, S33, S50, and S51, appear embedded in the friendship network with ties to members in their own department. Of the four newcomers mentioned, S29 has more connections with others in the network. Interestingly, actor S26 who belongs to department C is located on the opposite end of the network. This could be the case if the said actor is no longer an employee with this organisation.

The following Figure 6-17, looks at the friendship network in relation to tenure and gender. Node colours represent gender while node shape indicates tenure. There are seven female newcomers, four of whom appear in the periphery of the friendship network. Only one newcomer, S32 appears embedded in the friendship network with ties to several actors. Male newcomers appear comfortably embedded in the friendship network as exemplified by actors S15, S53, S51, and S29. One newcomer, in particular, S66 is at the very edge of friendship network, separated from his/her department as well. Some of the female actors are in close proximity to each other while others such as S2, S77, and S80 have positions further away with few or no friendship ties to other female actors.

The next graph, Figure 6-18 helps us understand the friendship network in relation to tenure and race. The node colours denote race. Here, whites are the predominant race group. As the figure shows, eight of the thirteen non-whites who responded to the questionnaire, are newcomers. Newcomer S29, who is a non-white, is positioned more centrally in the friendship network in comparison to all the other newcomers. Five of the non-white newcomers appear in the peripheral of the friendship network. There may be several reasons for this observation, one of which could be lack of initiative on the part of the newcomer to contact others.

In contrast, several newcomers, S15, S51, S32, S53, belonging to the dominant race group appear embedded in the friendship network with ties to various actors in the network.

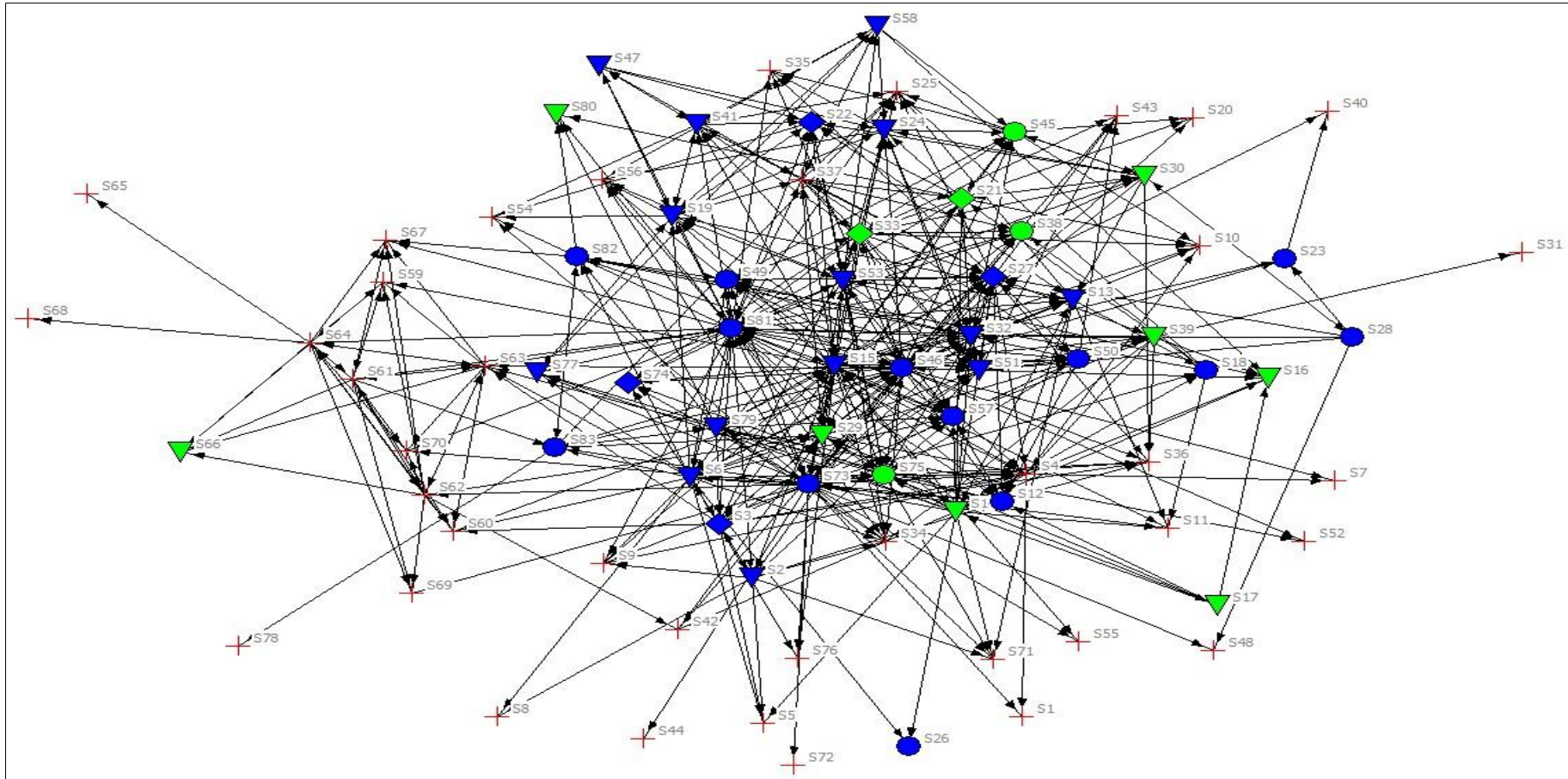
Figure 6-17: Friendship network – actors classified according to tenure and gender



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Gender: ■ - Female; ■ - Male; ■ - Non-respondents;

Figure 6-18: Friendship network – actors classified according to tenure and race



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Race: ■ - White; ■ - Non-White; ■ - Non-respondents

The following section focuses on the information network graphs of Organisation 3.

B. Information network

The following graph Figure 6-19 shows actors coded according to department and we observe a similar pattern as in the friendship network for this organisation.

Overall, we see that members of department D form a cluster of strong ties among themselves, while actors from department C appear positioned in one section of the network. Actors from departments B and E are less clustered indicating that actors appear not closely knit but seem well connected with nodes in other departments.

Newcomer S66 from department D now has direct connections to the information network unlike in the friendship network.

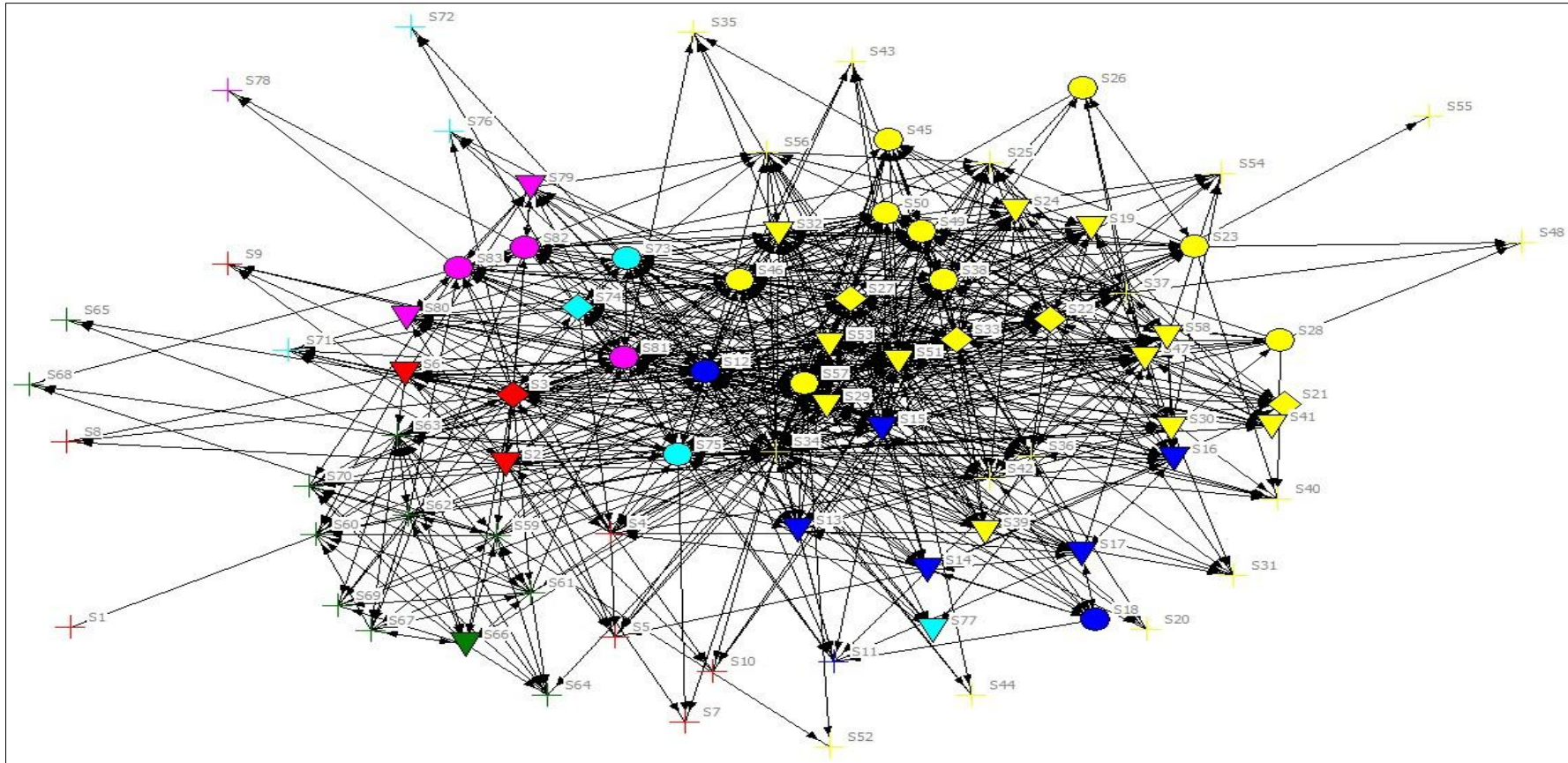
Two nodes from department B appear embedded deep in the information network; one of them is a newcomer. Newcomer from department E is located in the periphery while the other actors appear embedded in the network.

Figure 6-19 suggests that three newcomers from department C have central positions in the network, while five other newcomers appear in the periphery of the network. This department allows young students pursuing their master's degree to lecture at the same time. Not all the junior lecturers are interested in pursuing an academic career so perhaps for some of the newcomers this is a temporary job while they complete their postgraduate degree.

Actors in department A are in close proximity to each other but they do not form a cluster. Rather we see that they have connections to each other as well as to actors in other departments.

Looking at department F in Figure 6-19, only one actor is embedded in the information network, while the remaining four appear in the periphery even though they are connected to actors in other departments.

Figure 6-19: Information network – classified by tenure and department



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Department codes: ■ - A; ■ - B; ■ - C; ■ - D; ■ - E; ■ - F;

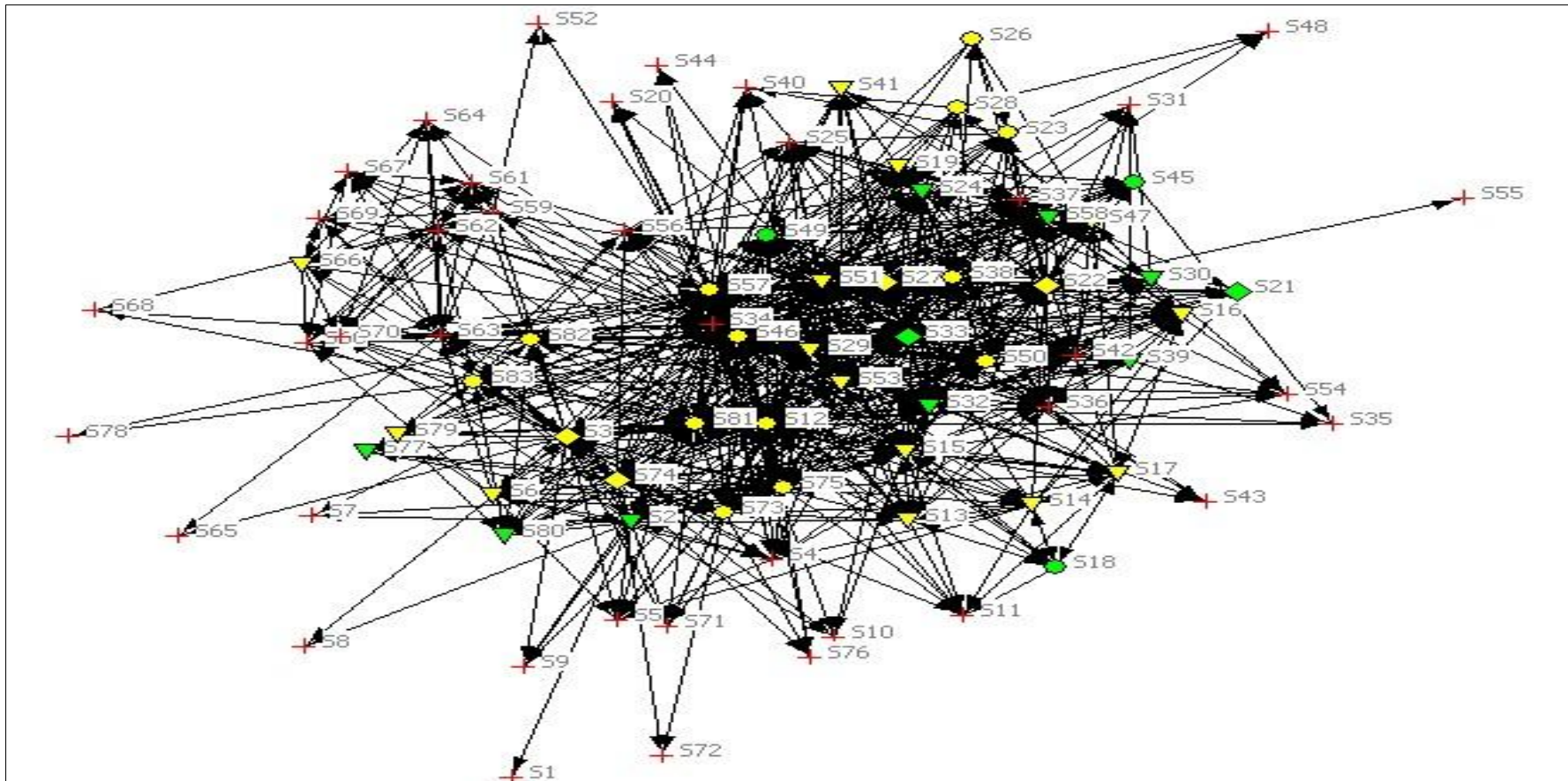
The following Figure 6-20 shows the gender placement in the information network. Among the female respondents, two newcomers and one relative newcomer are in isolation from other newcomers. Further, we can observe that three particular female nodes corresponding to S39, S77, and S18 appear to be in proximity to each other according to figure but do not share connections with each other. The same phenomenon exists between nodes S58, S21, and S30. This could reflect lack of interaction based on the segregation of the departments as well as proximity to one another. At the same time, if each of these actors is from a different department, they may not feel the necessity to connect for work-related information exchange.

In the information network, we notice that males have a more central position in the network with the exception of S32, S33, and S49 who are the only females central in the information network.

Figure 6-21, which follows, shows the dynamics of race on the information network. Whites are the dominant race group in this organisation, which is evident looking at node colours. Central actors belong to the dominant group with the exception of three non-white actors one of which is a newcomer. In particular, one notices that certain non-white newcomers S66, S80, and S17 appear in the periphery of the information network. Interestingly, S66 and S80 also appear in the periphery of the friendship network.

S66 belongs to a closely-knit department, which is located in a separate building, isolated from the other departments. For this reason, it is possible that not many actors in other department know this actor.

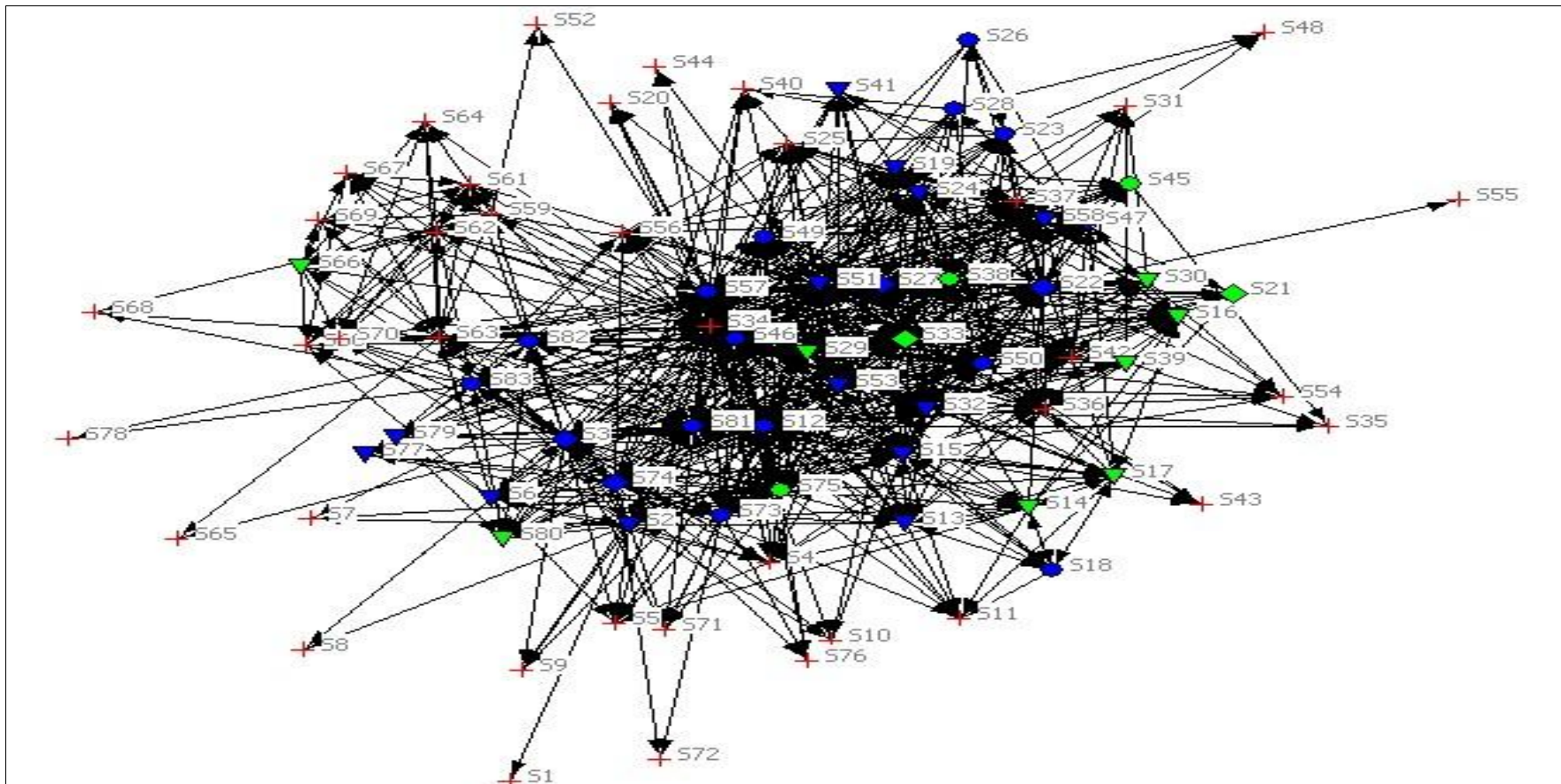
Figure 6-20: Information network – Classified by tenure and gender



Respondents: ▼ (newcomers): $|Tenure| \leq 3$; ◆ (relative newcomers): $3 \leq |Tenure| \leq 4$; ● (seniors): $|Tenure| \geq 4$; + Non-respondents

Gender: ■ - Female; ■ - Male; ■ - Non-respondents;

Figure 6-21: Information network – Classified by tenure and race



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Race: ■ - White; ■ - Non-White; ■ - Non-respondents

Having seen the different levels of connectivity that exists between actors in the information network, we now focus on the strength of their relationships.

The following Figure 6-22 looks at the tie strength, which reflects frequency of contact for work-related information.

Members of department D have strong ties with each other and only one person has an external strong link with an actor in another department. This is department is physically located in another building and this physical isolation has served to create a strong bond among the members of that particular department while they rely less on actors in the rest of the network.

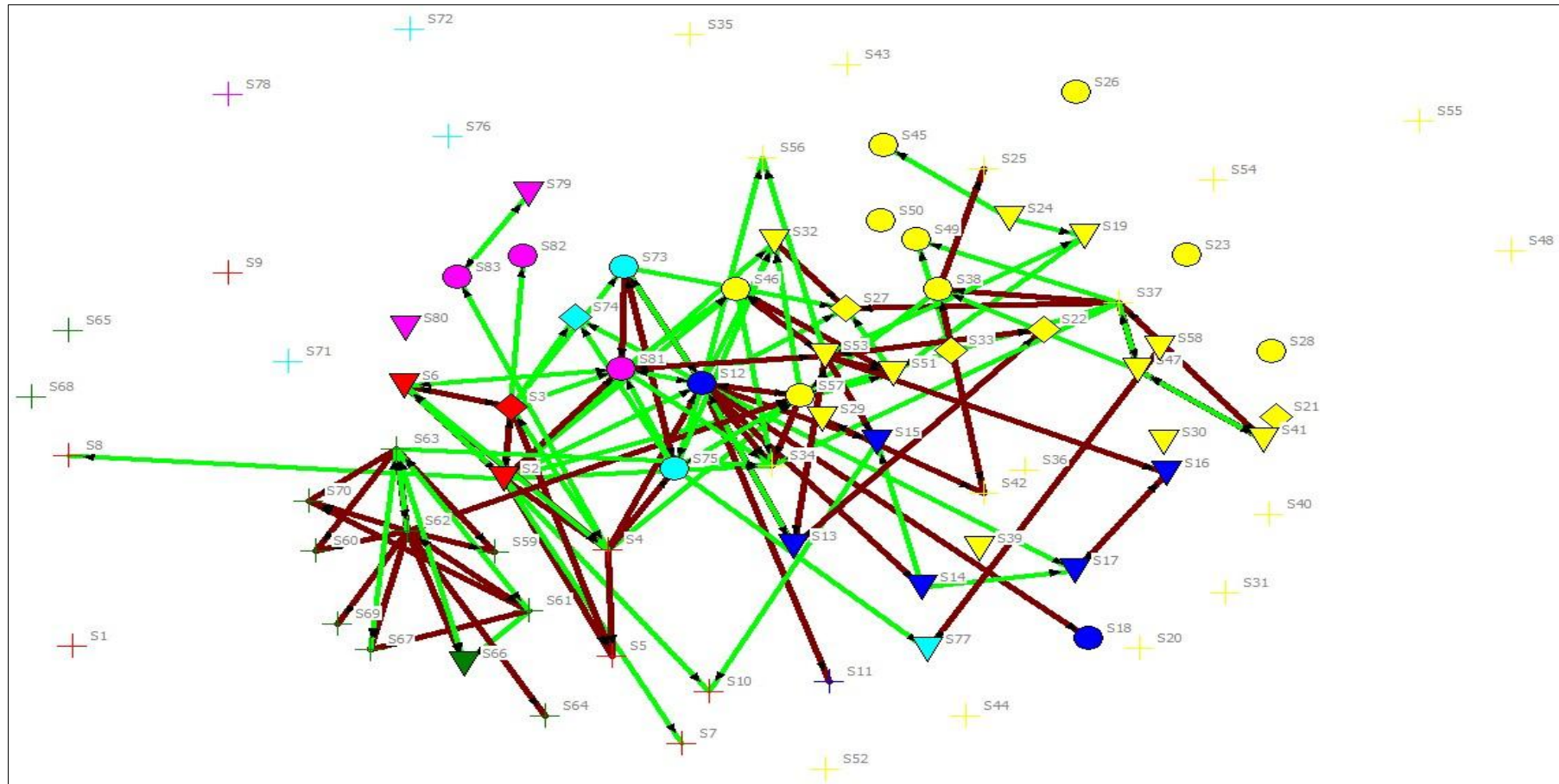
Members of department F, though positioned in close proximity to each other in the network, do not appear to have strong connections with each other. The connections imply that they do not rely too much on each other for information relating to their work. Actor S80, who is a newcomer probably has tie strength 3 with the remaining actors in department and therefore appears disconnected with other members of the department in this particular figure. Only one actor from this department appeared embedded in the centre of the information network with close ties to actors in other departments.

Looking at department C, we see that three newcomers appear embedded in the network with close ties to actors within their department while those in the periphery do not have strong ties to each other.

Department E nodes appear spread across the network, suggesting that they do not have strong ties with each other. However, they do have tie strengths of both '5' and '5' with actors from other departments, suggesting that the members of this department do network, but just not as strongly with each other. Newcomer, S77 has a position close to the periphery of the network with a relatively strong tie to only one member from the same department but shows a stronger connection with a newcomer from department C.

Newcomers from department B are scattered but display strong connections with one another while S13 and S15 show strong ties to members from other departments. Only one member from this department is embedded firmly in the information network with strong connections to members of other departments.

Figure 6-22: Information network showing tie strength of relationships



Respondents: ▼ (newcomers): $|Tenure| \leq 3$; ◆ (relative newcomers): $3 \leq |Tenure| \leq 4$; ● (seniors): $|Tenure| \geq 4$; ✚ Non-respondents

Department codes: Red - A; Blue - B; Yellow - C; Green - D; Cyan - E; Magenta - F; **Line colour:** Green - Tie strength 4; Dark brown - Tie strength 5

In Figure 6-22, we see that only three people from department A responded to both the first and the second surveys. Two of them have tenures less than 3 years and we can see that they have strong connections with each other as well as with actors from the other departments

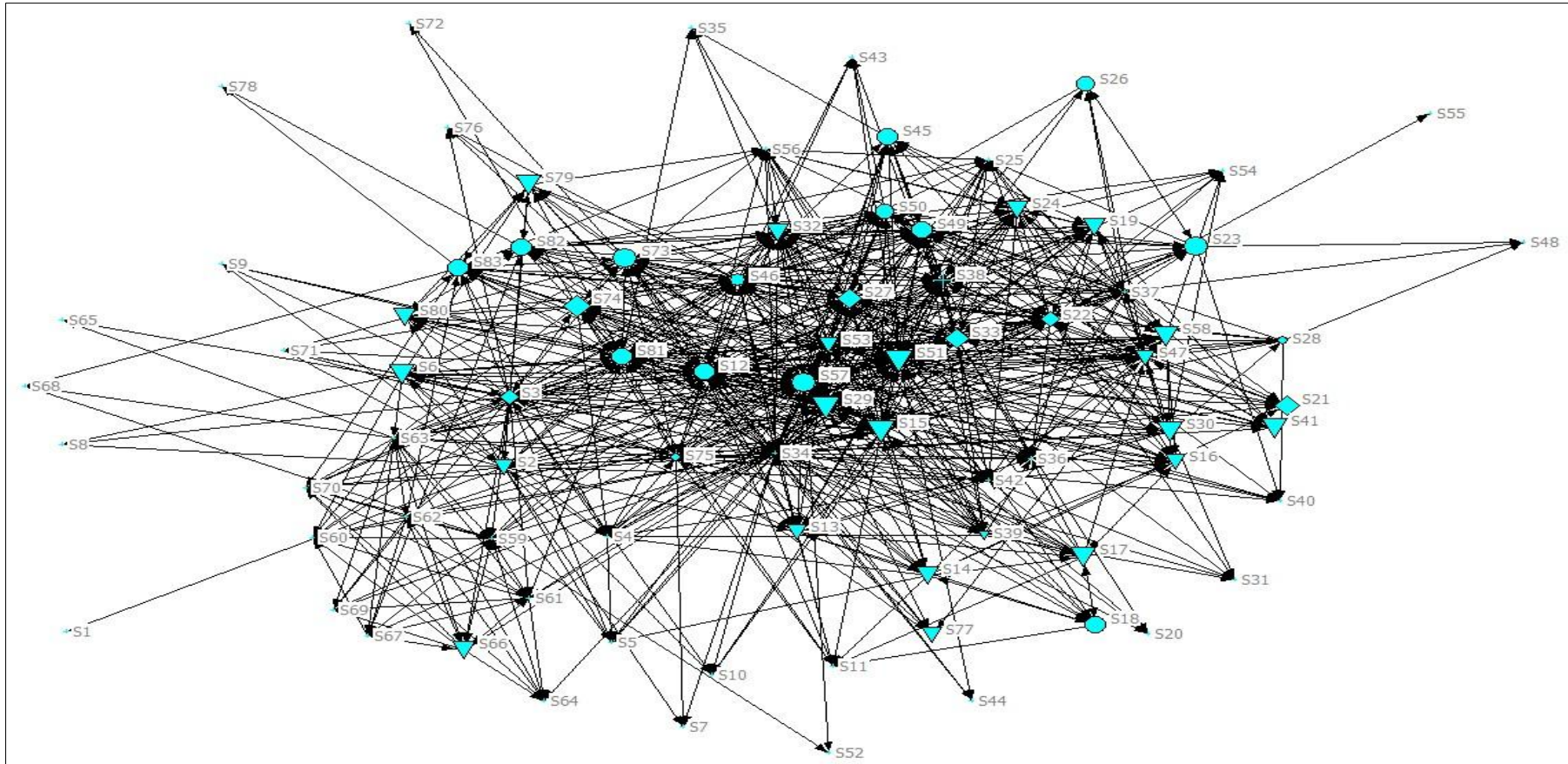
Actors located in the centre of the information network have strong ties to actors in other departments. Although some of the actors are not positioned in close proximity to one another especially actors from department B, they have strong ties to one another but not to actors in other departments. Due to physical isolation of department D, actors have strong information ties to one another.

Overall, we see that newcomers are embedded in the information network with strong ties to actors around them. Newcomers, S15 and S51 have reciprocal strong ties with other actors in the network.

We now focus on another area of the information network, which is affective organisational commitment, which measures an individual's emotional attachment to the organisation. This phenomenon attributes the practice of an individual's long-term commitment to the organisation. Figure 6-23 shows affective organisational commitment scores for each node as reflected by the node size. Three newcomers, S15, S51, and S29 show large node size, which reflects their scores on this attribute. In particular, S15 and S51 have strong ties to others in the network and their position in the centre of the information network is a reflection of their affective commitment to the organisation.

The sample size for this organisation is larger than for the other two organisations, which means there is a possibility that some actors are unknown in the network. One reason is that some lecturers work part-time, which means they work in the evenings or for a few hours during the week as they have a second job as well. Secondly, because of the physical isolation of department D, interaction between actors in this department and members of other departments is only on need basis, which means they only know people relevant to their work. Hence it is possible that some actors are unknown in the information network. Accordingly, the last section looks at Organisation 3's 'never met' network to identify actors who are unknown to others as shown in Figure 6-24.

Figure 6-23: Information network – tenure with affective organisational commitment



Respondents: ▼ (newcomers): $|Tenure| \leq 3$; ◆ (relative newcomers): $3 \leq |Tenure| \leq 4$; ● (seniors): $|Tenure| \geq 4$; + Non-respondents;

Node size - affective organisational commitment scores

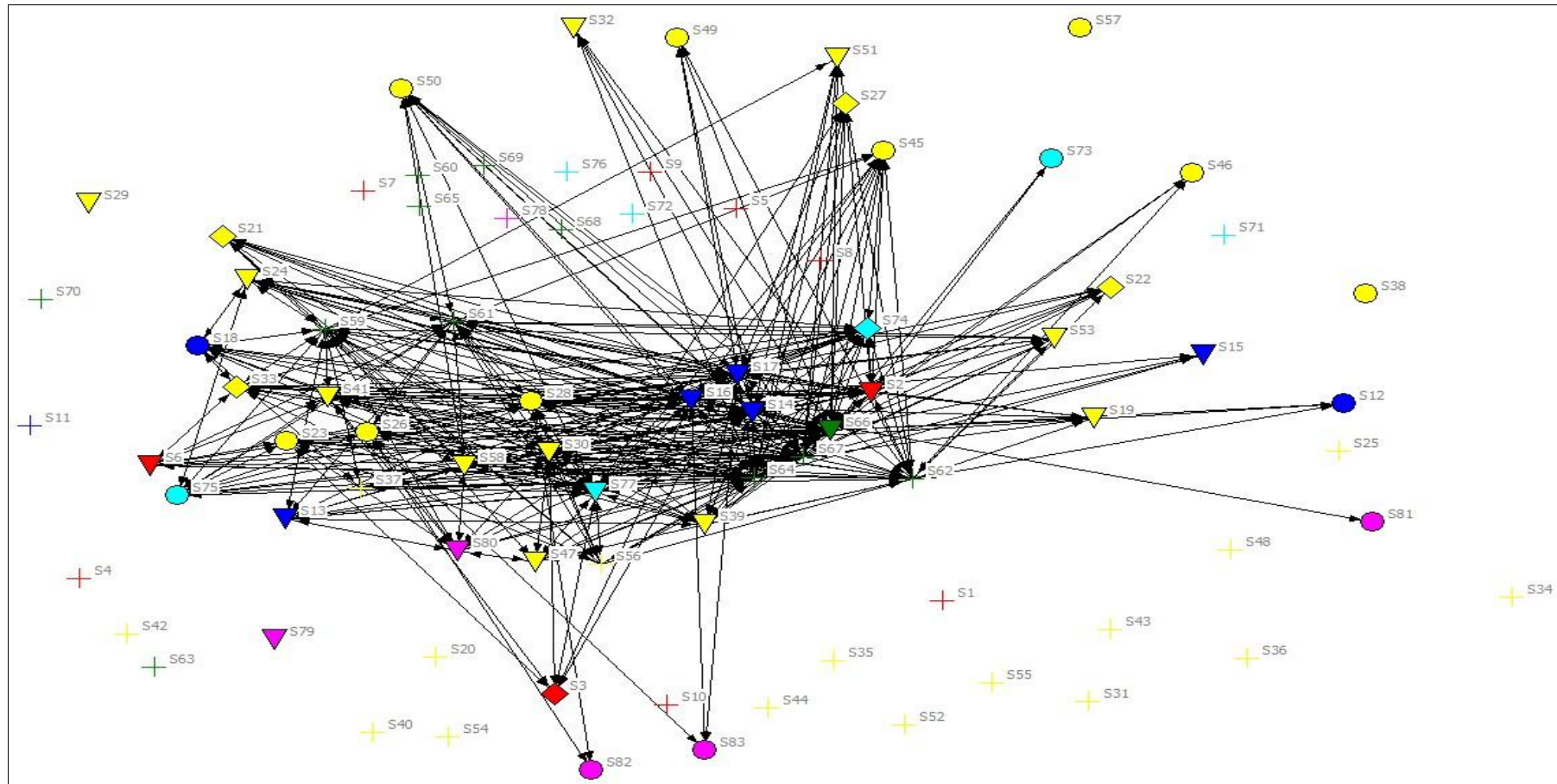
C. Never met

Because of the possibility that some actors may be unknown in the information network, the last section considers Organisation 3's 'never met' network to identify actors who are unknown to others.

Figure 6-24 helps us identify actors, especially newcomers, who are unknown in the organisation. We see that four of the newcomers feature prominently in this figure, three of whom belong to department B. Some of the lecturers work part-time as mentioned earlier so others members of the network have never met them. Some of the newcomers from department C, S30, S58, as well as S28 who is not a newcomer do not appear to be well known.

As some newcomers may not wish to pursue an academic career, they may limit their contacts only to people relevant for their task, and in doing so limit chances for collaboration and sharing of information and resources. This diagram clearly shows that actor S66 from department D is an isolated newcomer with few connections to peers from other departments. The organisation concerned will have to arrange for staff members to meet regularly to become familiar with co-workers.

Figure 6-24: Never met – Classified according to departments and tenure



Respondents: ▼ (newcomers): $|\text{Tenure}| \leq 3$; ◆ (relative newcomers): $3 \leq |\text{Tenure}| \leq 4$; ● (seniors): $|\text{Tenure}| \geq 4$; + Non-respondents

Department codes: ■ - A; ■ - B; ■ - C; ■ - D; ■ - E; ■ - F;

Table 6-3 is a summary of the overall trends found in each network of Organisation 3.

Table 6-3: Summary of network trends for Organisation 3

Network trends for Organisation 3		
	Friendship network trends	Information network trends
Department		
<i>A</i>	Actors in close proximity to each other with several ties to others	Actors in close proximity with ties to each other and to other actors; one newcomer is closer to the periphery; one newcomer is embedded in the 'never met' network
<i>B</i>	Actors spread across network; one newcomer is peripheral while another is embedded in the network;	Actors not clustered; three embedded actors well connected with other actors, of which one newcomer is relatively less central than the other 2, one of which is a newcomer; strong ties to each other; three newcomers central in the 'never met' network
<i>C</i>	Largest department; actors form a cluster positioned in proximity to each other; four newcomers embedded in the network, while some are peripheral	Largest department; actors form a cluster positioned in proximity to each other; three newcomers central in the network; five newcomers are peripheral; three newcomers embedded in network; three actors embedded in the 'never met' network
<i>D</i>	Tight knit cluster; not many connections outside department; newcomer relatively isolated from other departments	Tight knit cluster with strong ties to each other; newcomer connected to other departments; one actor has external strong tie; newcomer is central in the 'never met' network
<i>E</i>	Actors spread across the network, not a tight knit department; two senior actors embedded in network; newcomer is peripheral	Actors not clustered; newcomer is peripheral; not many strong ties to each other but to other actors; two actors appear in the 'never met' network
<i>F</i>	Actors spread out; one newcomer is peripheral; two actors embedded in network of which one is a newcomer; another newcomer is peripheral.	Actors in close proximity to each other; one actor embedded; one actor embedded in network; two newcomers are peripheral of which one does not have strong ties to department actors;
Gender		
<i>Female</i>	Generally, females spread across the network with few connections to each other. Female newcomers predominantly (n=4) not connected to other females; three females embedded in the network of which one is a newcomer;	Females generally scattered across network with few connections to each other; five females in the periphery of which three are newcomers; female peripheral newcomers appear to be isolated from other females in the network; three females embedded in the network of which one is a newcomer.

Network trends for Organisation 3			
		Friendship network trends	Information network trends
	<i>Male</i>	Males dominant group; males are more scattered but some form a cluster in the network centre; male newcomers are embedded in the network;	Males dominant group; males are more scattered but form a cluster in the network centre; males are more central, in comparison to women; male newcomers (n=4) more central in the network than female newcomers (n=1)
Race	<i>White</i>	Dominant race group; spread across network; seven white newcomers embedded in network of which four are central in the network; two newcomers are in the peripheral	Dominant race group; spread across network; five actors appear in the periphery of which three are newcomers; two white newcomers central in the network;
	<i>Non-white</i>	Actors spread across network; eight newcomers of which one newcomer embedded in network; five newcomers are peripheral;	Actors spread across network; three non-whites embedded in network of which one is a newcomer; five non-white newcomers peripheral with few or no ties to other non-whites
Other			Affective organisational commitment shows up strongly for the three newcomers central in the information network

Chapter 7 discusses the results found in this section while the following section presents results of other analyses done using programs mentioned in chapter 5 of methodology.

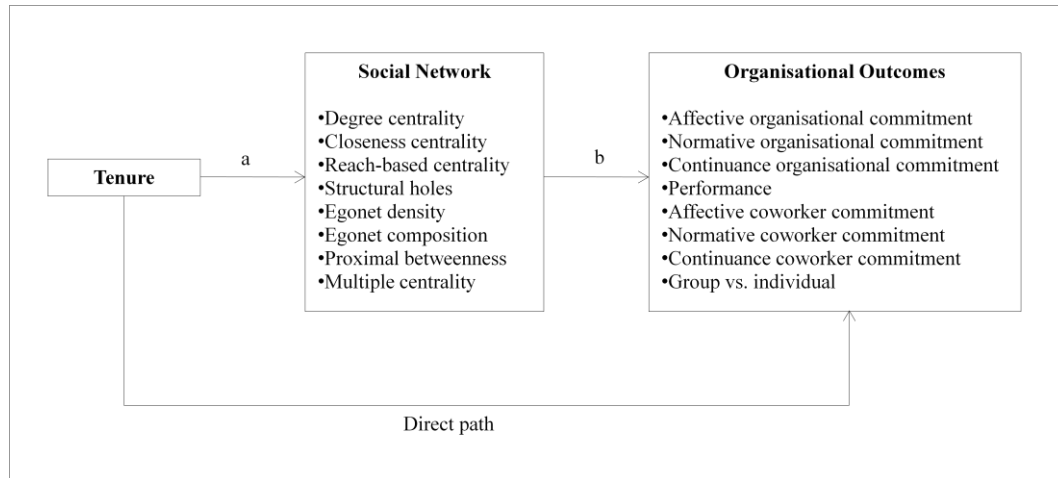
6.3 ANALYSIS OF ORGANISATIONAL OUTCOMES

Section 6.2 assessed social networks on their own using the data collected from the first questionnaire on an actor's friendship and information/advice network. The follow-up questionnaire asked respondents about specific organisational outcomes. The outcomes included:

- Commitment to the organisation and co-workers;
- Task mastery;
- Role conflict and role ambiguity; and
- Group vs. individual orientation towards their organisation and co-workers.

An essential component of this research is the focus on newcomers and their organisational outcomes through their social network positions. This relationship featured in Figure 6-25 forms as a reference for the tests to follow.

Figure 6-25: Hypothesised model for empirical research



6.3.1 AMENABILITY OF SAMPLE TO COLLATION

The sample sizes for each of the three organisations were small, in accordance with the specifications for a social network survey. Small sample sizes restrict the power of standard statistical tests, therefore a possible solution to this problem was to aggregate all responses into one sample and test that sample. This is a two-step process to determine whether the sample means can aggregate to form one sample.

In the first step, ANOVA tests were conducted for each of the 53 questions, with organisation as the class variable. Several individual questions showed significant differences and Table 6-4 summarises these findings. The F-statistic indicates when the sample means differ for those questions.

In the second step, a comparative study was done on the means of the total summated variables (organisation and co-worker commitment, role conflict/ambiguity, task mastery and group vs. individual) instead of individual questions. This required combining multiple sub-questions into overall construct scores, which in turn required obtaining Cronbach's alpha for each of the organisational outcome variables. Each outcome variable is composed of a number of questions for respondents to consider. Therefore before creating summated variables it is necessary to consider the internal reliability of the multi-item construct measures. Table 6-5 summarises the Cronbach's alphas obtained for each variable for the individual organisations. The results show that

combinations for each variable differ in internal reliability for each of the organisations as indicated by the significant alphas.

Table 6-4: Questions for which significant inter-firm differences exist

	Questions that were significant	F Value
Qs 8	Lifetime commitment to organisation	11.36 ^{***}
Qs 10	Remain loyal to organisation	12.59 ^{***}
Qs 12	Moving is unethical	10.56 ^{***}
Qs 13	Moral obligation to remain with organisation	6.18 ^{***}
Qs 14	Value of remaining loyal to organisation	19.15 ^{***}
Qs 16	Organisation has personal meaning	3.11 [*]
Qs 19	Don't feel right to leave organisation	9.08 ^{***}
Qs 24	Not developed skills and abilities to perform	15.74 ^{**}
Qs 25	Not yet learned the "ropes" of job	61.62 ^{**}
Qs 30	Emotionally attached to co-workers	3.38 ^{**}
Qs 33	Remain loyal to co-workers	6.62 ^{***}
Qs 39	Group welfare > individual welfare	4.54 ^{**}
Qs 40	Changing coworkers unethical	3.48 ^{**}
Qs 41	Group not individual success important	8.91 ^{***}
Qs 46	Encourage group loyalty not individual goals	14.40 ^{***}
Qs 47	Give up individual goal to benefit group success	9.72 ^{***}

N=84 ^{***} p<0.01, ^{**} p<0.05, ^{*} p<0.10

Tests were run again by systematically removing questions with significant alphas to find the right combination and the final alphas were recalculated for the variables, which are shown in Table 6-5. For the purposes of this study, acceptable alphas were greater than .60. The analysis uses averages instead of summated variables in order to facilitate comparability.

The next analysis involved conducting ANOVA tests for every total, aggregated outcome variable the results of which can be seen in Table 6-6. ANOVA analysis on the final summated variables uncovers significant differences between the organisations on the crucial outcome variables of normative organisational commitment, performance proficiency (task mastery), affective co-worker commitment, normative co-worker commitment, and continuance co-worker commitment.

Table 6-5: Summary of alphas for each organisational outcome variable

Summary of alphas for each organisational outcome variable					
Variable	Questions (Qs)	Organisation	Alpha with no Qs removed	Questions removed	Final Alpha
Affective Organisational Commitment	6, 7, 8, 9, 16	Organisation 1 Organisation 2 Organisation 3	.81 .86 .81	No questions removed	
Normative Organisational Commitment	10, 12, 13, 14, 19	Organisation 1 Organisation 2 Organisation 3	.56 .80 .82	Qs 10 - loyal to organisation	.72 .79 .78
Continuance Organisational Commitment	11, 15, 17, 18, 20	Organisation 1 Organisation 2 Organisation 3	.91 .86 .81	No questions removed	
Performance Proficiency	21, 22, 23, 24, 25, 26	Organisation 1 Organisation 2 Organisation 3	.47 .63 .12	Qs 24 – No appropriate skills and abilities for job Qs 25 – not learned ‘ropes’ of job	.78 .93 .66
Affective Coworker commitment	27, 28, 29, 30, 38	Organisation 1 Organisation 2 Organisation 3	.70 .86 .86	Qs 38 – discuss co-workers outside work	.90 .90 .80
Normative Coworker commitment	31, 32, 33, 40, 44	Organisation 1 Organisation 2 Organisation 3	.77 .57 .56	Qs 40 – changing co-workers is unethical (only from Organisation 1 and 2) Qs 33 – remain loyal with co-workers (only from Organisation 3)	.89 .65 .64
Continuance Coworker commitment	34, 35, 36, 37, 42	Organisation 1 Organisation 2 Organisation 3	.75 .76 .86	Qs 42 – staying with coworkers necessary	.87 .80 .84
Group vs. Individual	39, 41, 43, 45, 46, 47	Organisation 1 Organisation 2 Organisation 3	.64 .79 .73	No questions removed	
Role conflict / ambiguity	48, 49, 50, 51, 52, 53, 54, 55, 56, 57	Organisation 1 Organisation 2 Organisation 3	.71 .77 .71	No questions removed	

Multiple comparisons (not shown here but available on request) show that for affective organisational commitment variable, the means for Organisation 1 was higher than the means for both Organisation 2 and Organisation 3. For normative organisational commitment, the mean for Organisation 1 were higher than the means of both Organisation 2 and Organisation 3. The means for Organisation 3 was lower than the means of both Organisation 1 and Organisation

2 for normative co-worker commitment. Lastly, looking at the group vs. individual variable, the means for Organisation 1 were once again higher than the means for both Organisation 2 and Organisation 3.

Table 6-6: ANOVA to compare means of respondents for each variable

Variable	No of questions per variable	F value
Affective Organisational Commitment	5	5.62***
Normative Organisational Commitment	4	17.96***
Continuance Organisational Commitment	5	.93
Performance Proficiency	4	.79
Affective Coworker Commitment	4	1.65
Normative Co-worker commitment	4	7.77***
Continuance Co-worker commitment	4	.19
Group vs. Individual	6	10.34***
Role Conflict and Ambiguity	10	.81

N=84 df1=2, df2=83; *** p<0.01, ** p<0.05, * p<0.10

Table 6-6 shows that for four of the nine organisational outcome variables, the means for each organisation significantly differs for the variables, which suggests that the analysis should not collate of the samples. This means that each sample is treated and tested separately even though sample sizes are small.

The next section presents correlation matrices conducted for organisation outcomes and social network variables.

6.4 CORRELATIONS

Results in the previous section focused on ANOVA and Cronbach's alpha results, which resulted in keeping the samples separate. The next step necessitated running correlation tests using SAS programming for organisational outcome and social network variables for each organisational network. The results of these correlations appear in Appendix A and not under this section to conserve space in this chapter for more relevant data. However, this section discusses significant features found in those correlation tables.

6.4.1 TENURE BASED CORRELATIONS

As the focus of this survey is on newcomers and their responses to the organisational outcomes through direct or indirect interaction with the SNA characteristics, tenure (controlled for gender, age, and race) is therefore the independent variable.

This research focuses on newcomers and their responses to the organisational outcomes through direct or indirect interaction with SNA characteristics. Although a researcher can ‘identify’ newcomers via an arbitrary tag (such as those who joined in the last year), as the social network analysis did by necessity, tenure reflects relative newcomer status on a more continuous scale. Accordingly, the analysis generally maintains tenure as the independent variable to correlate against SNA variables and organisational outcome responses for each organisational network. Gender, age, and race are therefore the control variables when tenure is the independent variable.

Correlations do not distinguish between independent and dependent variables but as this is the first stage in the process, the distinctions are mentioned, which will be tested during regression analyses.

Table 6-7 is a summary of correlations between tenure for each of the organisational networks against SNA variables and organisational outcomes. As the organisational outcomes remain constant for both friendship and information networks, they are placed in one row. The following sections discuss the preliminary findings for each organisation. Because sample sizes are small, significance is jeopardised by small samples, it is necessary to highlight magnitudes greater than .30 (Kline, 1998).

A. Organisation 1

With correlations higher than .30 highlighted in bold for Organisation 1 in Table 6-7 we can see that while tenure in the friendship network has a positive relationship with egonet composition (gender), it has a negative effect on that SNA variable in the information network. Egonet composition (race) shows a negative relationship with tenure in the friendship network but no relationship in the information network. This organisation’s friendship and information networks

correlate with affective organisational commitment, group vs. individual and role conflict/ambiguity, which make up the organisational outcome variables.

Looking at information network for Organisation 1, tenure correlates positively with degree centrality, structural holes, egonet density, and proximal betweenness. We see higher positive correlation values with the information network where proximal betweenness is at .66.

For Organisation 1, SNA variables have a greater impact on the information network than on the friendship network. Role conflict/ambiguity and egonet composition (gender) correlate negatively with tenure for the information network while all the others correlate positively.

An interesting aspect we see is that group vs. individual organisational variable interacts with tenure for Organisation 1 and not for the other two organisations.

B. Organisation 2

Looking at Table 6-7, tenure correlates negatively with egonet composition (race) in Organisation 2's friendship network and positively in the information network. Tenure correlates with continuance organisation commitment and performance outcomes for both the friendship and information networks, even though it is not a high correlation. Tenure shows a medium positive correlation with closeness centrality for the information network.

C. Organisation 3

Tenure for Organisation 3's friendship network correlates with only one SNA variable that of multiple centrality. The information network on the other hand has positive correlations with all the SNA variables from which we can infer that tenure plays a major role in the network positions for the information network.

Tenure has low positive correlation with continuance organisational commitment and negative correlation with role conflict/ambiguity. Tenure shows a positive correlation with egonet composition for both gender and race in the information network.

Table 6-7: Correlation between SNA variables, organisational outcomes against tenure

		Pearson correlations																	
		DC	FCC	RBC	SH	ED	EC1 (Gender)	EC2 (Race)	PB	MC	Afforg	Normorg	Conorg	Perf	Affco	Normco	Conco	Gpindiv	Role con/am
Organisation 1																			
Tenure																			
Friend		.09	-.12	.12	-.01	.02	.39 [†]	-.30 [†]	-.03	-.24									
Information		.52 ^{**}	.42 [†]	-.13	.60 ^{**}	.58 ^{**}	-.31 [†]	.03	.66 ^{***}	.35 [†]	.42 [†]	.26	-.06	-.29	.26	.28	-.18	.45 [*]	-.51 ^{**}
Organisation 2																			
Tenure																			
Friend		-.01	-.23	.05	.03	-.04	.21	-.43 [*]	.00	.05									
Information		-.05	.43 [*]	-.03	-.01	-.23	.16	.40 [*]	-.02	.13	.13	.13	.48 ^{**}	.52 ^{**}	.06	-.01	-.11	.04	.21
Organisation 3																			
Tenure																			
Friend		.12	.08	.18	.09	.12	-.11	-.16	.05	.33 ^{**}									
Information		.47 ^{***}	.50 ^{***}	.48 ^{***}	.48 ^{***}	.49 ^{***}	.34 ^{**}	.34 ^{**}	.61 ^{***}	.49 ^{***}	.12	.08	.28 [*]	-.04	.05	.06	.16	-.21	-.30 [*]

*** p<0.01, ** p<0.05, * p<0.10, † Indicates correlations greater than .30

DC – Degree centrality; **FCC** – Freeman’s closeness centrality; **RBC** – Reach based centrality; **SH** – Structural holes; **ED** – Egonet density; **EC** – Egonet composition; **PB** – Proximal Betweenness; **MC** – Multiple centrality; **Afforg** – Affective organisational commitment; **Normorg** – Normative organisational commitment; **Conorg** – Continuance organisational commitment; **Perf** – Performance; **Affco** – Affective coworker commitment; **Normco** – Normative coworker commitment; **Conco** – Continuance coworker commitment; **Gpindiv** – Group vs. individual; **Role con/am** – Role conflict/ambiguity.

Having presented the findings from Table 6-7, Table 6-8 summarises the correlations significant at the 1%, 5%, and 10% levels. This gives the reader a quick reference of the significant correlations for each organisational network.

Correlations displayed in Table 6-8 are preliminary findings of the significant relationships; however, they do not confirm whether tenure directly affects SNA variables and the organisational outcomes. As correlation coefficients measure the strength of the linear relations between the dependent and independent variable, this is not enough to infer a direct relationship between the two variables.

Table 6-8 - Summary of significant correlations

Organisation	Relationship with Tenure	Significance
Organisation 1 - Friend	<i>Egonet composition (Gender)</i>	† (positive)
	<i>Egonet composition (Race)</i>	† (negative)
	<i>Group vs. Individual</i>	* (positive)
	<i>Role conflict/ambiguity</i>	** (negative)
Organisation 1 – Information	<i>Degree Centrality</i>	** (positive)
	<i>Structural Holes</i>	** (positive)
	<i>Egonet Density</i>	** (positive)
	<i>Proximal Betweenness</i>	*** (positive)
	<i>Group vs. Individual</i>	* (positive)
	<i>Role conflict/ambiguity</i>	** (negative)
Organisation 2 – Friendship	<i>Egonet composition (Race)</i>	* (negative)
	<i>Continuance Organisation</i>	** (positive)
	<i>Performance</i>	** (positive)
Organisation 2 – Information	<i>Closeness Centrality</i>	* (positive)
	<i>Egonet composition (Race)</i>	* (positive)
	<i>Continuance Organisation</i>	** (positive)
	<i>Performance</i>	** (positive)
Organisation 3 – Friend	<i>Multiple Centrality</i>	** (positive)
	<i>Continuance Organisation</i>	** (positive)
	<i>Role conflict/ambiguity</i>	* (negative)
Organisation 3 – Information	<i>Degree Centrality</i>	*** (positive)
	<i>Closeness Centrality</i>	*** (positive)
	<i>Reach Based Centrality</i>	*** (positive)
	<i>Structural Holes</i>	*** (positive)
	<i>Egonet Density</i>	*** (positive)
	<i>Egonet Composition (gender)</i>	** (positive)
	<i>Egonet Composition (race)</i>	** (positive)
	<i>Proximal Betweenness</i>	*** (positive)
	<i>Multiple Centrality</i>	*** (positive)
	<i>Continuance Organisation</i>	* (positive)
	<i>Role conflict/ambiguity</i>	* (negative)

*** p<0.01, ** p<0.05, * p<0.10; † Indicates correlations greater than .30

In order to predict whether there is relationship between the response variable and the predictor variables, regression analyses is a necessary process. Regression analyses allows the researcher to predict the observed values of 'X' affecting the corresponding 'Y' values especially when there are more than one variable to add to the equation. Accordingly, in the following section, presents results from multiple regression analyses to determine whether structural position in a network predicted specific organisational outcomes.

6.5 REGRESSIONS

In section 6.4, the analysis reviewed the bivariate correlations of tenure, the main focal independent variable, with the dependent variables of SNA outcomes and the organisational outcomes. For this research, regression analyses allow the researcher to verify the relationship direction when tenure is regressed with organisational outcomes as indicated by the 'direct path' in Figure 6-25. It also allows the researcher to test the mediation effects of SNA variables on the relationship between tenure and specific organisational outcomes as indicated by path 'a*b' with the direct path.

6.5.1 ASSUMPTION TESTING

There are several assumptions underlying multiple regressions. Cohen et al., (2003) identify them as normality of residuals, linearity, homoscedasticity, and reasonable levels of outliers and multicollinearity. Accordingly, the examination of residual plots and diagnostic statistics helped in the assessment process of these assumptions for each of the variables.

Tests revealed that multicollinearity was a problem with some of the SNA variables. Regressions of multiple SNA outputs generated by UCINET programming showed high correlation for several variables that necessitated their removal.

Beta weights, which represent standardised regression coefficients, are used instead of non-standardised coefficients, to assess the relative importance of predictor variables.

As mentioned before, sample sizes are small to suit SNA but as Adèr, Mellenbergh, and Hand, (2008) assert, small sample sizes are insufficient for statistical inference. Bootstrapping may help to overcome this problem, as it allows the researcher to gather many alternative versions of the single statistic normally calculated from one sample by creating confidence intervals that are more accurate. Bootstrapping assumes that the sample is an accurate reflection of the population and as a result does not help with inaccurate samples, which do not reflect the population. However, by nature, SNA analyses are likened to case studies where the underlying distribution is relevant, making it possible to bootstrap.

Accordingly, Table 6-9 to Table 6-14 show the results of a classic non-parametric bootstrap, with 10,000 re-samples and the BCA (bias and acceleration corrected) confidence interval approach to infer the relationship between SNA variables, which are the independent variables and organisational outcomes, which are the dependent variables. These tables show the beta weights (standardised multiple regression coefficients), which reveals the relative importance of organisational outcomes, in relation to the structural characteristics of the respondents in each of the organisational network situation, as well as the bootstrapped confidence intervals. This analysis applies the same cut offs discussed above to standardised coefficients as to correlations. Beta weights .30 to .50 are medium and beta weights greater than .50 are large. In Figure 6-25, this is the path followed by 'b'.

Table 6-9: Organisation 1 (Friendship network) – path ‘b’

Dependent Variables – Organisation 3 Friendship										
		Affective organisation	Normative organisation	Continuance organisation	Performance	Affective coworker	Normative coworker	Continuance coworker	Group vs. individual	Role conflict / ambiguity
Degree centrality	B	.020	-.013	.021	-.015	-.005	-.006	.001	-.013	-.021
	CI	.00, .06*	-.04, .14	-.04, .14	-.05, .01	-.05, .03	-.05, .03	-.03, .06	-.03, .01	-.04, .01
	β	.356[†]	-.197	.194	-.220	-.070	-.095	.019	-.345[†]	-.382[†]
	R ²	.445	.080	.206	.538	.368	.267	.034	.396	.539
Freemans Closeness centrality	B	.752	.294	-.652	.234	.469	-.225	-.378	.052	.029
	CI	-.13, 2.75	-.88, 3.45	-1.81, 4.90	-1.31, 1.93	-.43, 2.37	-1.19, 2.18	-1.15, 1.43	-.41, 1.07	-.65, 1.81
	β	.480[†]	.157	-.220	.120	.247	-.120	-.274	.048	.018
	R ²	.518	.070	.213	.514	.407	.270	.087	.313	.436
Reach based centrality	B	.150	-.128	.178	-.134	-.044	-.060	.015	-.113	-.183
	CI	.01, .50*	-.53, .19	-.35, 1.12	-.46, .04	-.40, .22	-.40, .27	-.25, .50	-.26, .12	-.34, .05
	β	.325[†]	-.232	.204	-.233	-.080	-.109	.037	-.355[†]	-.399[†]
	R ²	.430	.090	.208	.542	.369	.269	.035	.400	.547
Structural holes	B	.107	-.081	.041	-.078	-.039	-.063	-.037	-.089	-.133
	CI	.02, .39*	-.37, .12	-.28, .81	-.27, .06	-.30, .14	-.28, .14	-.21, .32	-.20, .06	-.23, .01
	β	.301[†]	-.190	.061	-.176	-.091	-.147	-.119	-.363[†]	-.376[†]
	R ²	.430	.082	.182	.529	.371	.278	.046	.419	.551
Ego Density	B	.005	-.002	.002	-.002	-.001	-.002	-.001	-.004	-.006
	CI	.00, .02*	-.01, .01	-.01, .04	-.01, .00	-.01, .01	-.01, .01	-.01, .01	-.01, .00	-.01, .00
	β	.314[†]	-.111	.076	-.103	-.079	-.102	-.096	-.409[†]	-.379[†]
	R ²	.431	.062	.183	.512	.369	.268	.041	.438	.544
Egonet composition (Gender)	B	3.186	2.896	-4.647	2.409	.858	-.198	-3.088	-.247	.729
	CI	-2.22, 6.25	-3.17, 8.03	-13.50, 2.26	-1.65, 7.50	-2.56, 8.60	-4.37, 9.06	-7.89, -.48*	-2.96, 1.67	-1.70, 7.51
	β	.619^{††}	.470[†]	-.476[†]	.374[†]	.138	-.032	-.682^{††}	-.069	.143
	R ²	.539	.158	.288	.571	.373	.261	.257	.314	.446
Egonet composition (Race)	B	-.665	-1.199	-.104	.925	.172	.169	1.404	.062	.232
	CI	1.56, -5.87	17.58, -5.79	11.67, -8.02	4.87, -4.70	5.63, -6.26	6.51, -3.85	6.83, -1.55	6.38, -3.06	3.01, -1.52
	β	-.157	-.249	-.013	.232	.049	.045	.366[†]	.021	.084
	R ²	.389	.19	.138	.35	.277	.253	.117	.288	.457
Proximal betweenness	B	.008	-.012	-.005	-.007	-.008	-.011	-.009	-.012	-.017
	CI	-.00, .04	.05, .01*	-.03, .08	-.03, .01	-.04, .01	-.04, .01	-.02, .02	-.03, .00	-.04, -.01*
	β	.186	-.242	-.064	-.134	-.162	-.218	-.246	-.439[†]	-.419[†]
	R ²	.386	.104	.183	.520	.387	.302	.087	.481	.591
Multiple Centrality	B	.030	-.038	.309	.010	-.087	.085	.196	-.037	-.066
	CI	-.10, .33	-.28, .28	-.05, .76	-.19, .16	-.32, .10	-.18, .33	.01, .42*	-.19, .12	-.24, .08
	β	.076	-.079	.408[†]	.020	-.180	.178	.559^{††}	-.133	-.167
	R ²	.361	.058	.332	.504	.394	.289	.321	.328	.462

[†] |.30| ≤ β ≤ |.50|; ^{††} β ≥ |.50|; * - Indicates CI is significant at the 1% level, Inferred from CI's drawn using BCA bootstraps with 10,000 re-samples

Table 6-10: Organisation 1 (Information network) – path ‘b’

		Dependent Variables – Organisation 3 Friendship								
		Affective organisation	Normative organisation	Continuance organisation	Performance	Affective coworker	Normative coworker	Continuance coworker	Group vs. individual	Role conflict / ambiguity
Degree centrality	B	.040	.009	-.032	.019	.009	.008	-.017	-.010	.016
	CI	.01, .10*	-.06, .08	-.08, .06	-.02, .06	-.04, .08	-.04, .08	-.04, .03	-.04, .02	-.01, .07
	β	.606 ^{††}	.112	-.256	.228	.108	.103	-.289	-.222	.240
	R ²	.620	.062	.226	.541	.373	.268	.094	.347	.477
Freemans Closeness centrality	B	.071	.051	-.008	.016	.043	.052	-.008	.013	.045
	CI	.03, .14*	-.03, .13	-.10, .16	-.06, .09	-.02, .12	-.02, .14	-.05, .11	-.02, .06	-.01, .10
	β	.782 ^{††}	.469 [†]	-.049	.144	.397 [†]	.480 [†]	-.105	.202	.499 [†]
	R ²	.713	.181	.181	.516	.456	.394	.040	.335	.581
Reach based centrality	B	.302	.114	-.115	-.083	.212	.262	-.019	.247	.258
	CI	.01, 1.26*	-.55, .81	-1.07, .91	-.83, .21	-.20, .92	-.15, .84	-.37, .70	-.05, .61	-.11, .51
	β	.374 [†]	.118	-.075	-.082	.216	.272	-.027	.444 [†]	.322 [†]
	R ²	.451	.062	.183	.509	.396	.311	.035	.446	.507
Structural holes	B	.219	.061	-.073	.044	.047	.087	-.080	-.068	.086
	CI	.06, .52*	-.25, .45	-.42, .49	-.21, .31	-.22, .44	-.17, .48	-.23, .22	-.24, .10	-.1, .40
	β	.597 ^{††}	.138	-.105	.096	.106	.198	-.248	-.268	.237
	R ²	.599	.066	.187	.510	.372	.287	.076	.361	.474
Ego Density	B	.005	.002	-.003	.002	.001	.002	-.002	-.001	.002
	CI	.00, .01*	-.01, .01	-.01, .01	-.00, .01	-.01, .01	-.00, .01	-.01, .00	-.01, .00	-.00, .01
	β	.659 ^{††}	.189	-.203	.166	.119	.207	-.316 [†]	-.228	.289
	R ²	.648	.077	.207	.523	.374	.289	.101	.347	.492
Egonet composition (Gender)	B	-5.563	5.823	9.746	-8.962	12.407	12.095	2.899	5.346	4.289
	CI	-24.94, 5.46	-17.77, 25.02	-24.33, 37.00	-19.30, 7.83	-1.68, 28.75	1.04, 31.72*	-9.94, 17.60	-2.350, 16.81	-5.50, 21.90
	β	-.283	.247	.261	-.364 [†]	.520 ^{††}	.514 ^{††}	.168	.394 [†]	.219
	R ²	.389	.078	.207	.559	.476	.369	.046	.376	.456
Egonet composition (Race)	B	.692	3.516	-5.429	5.74	.248	-.965	-.191	2.9	1.373
	CI	11.14, -3.71	15.18, -3.89	8.56, -26.92	11.23, -3.47	6.42, -8.04	4.17, -11.79	6.25, -12.84	8.90, -1.48	5.86, -3.00
	β	.048	-.201	-.202	.427 [†]	.021	-.077	-.015	.295	.146
	R ²	.378	-.217	.175	.491	.276	.257	.049	.368	.473
Proximal betweenness	B	.056	.014	-.067	.038	.018	-.003	-.038	-.023	.020
	CI	-.00, .158	-.08, .16	-.14, .06	-.02, .12	-.06, .15	-.08, .14	-.10, .01	-.07, .03	-.03, .11
	β	.525 ^{††}	.108	-.330 [†]	.279	.135	-.021	-.400 [†]	-.306 [†]	.188
	R ²	.520	.060	.244	.550	.375	.261	.130	.367	.457
Multiple Centrality	B	.604	.364	-.134	.158	.215	.281	-.055	.086	.280
	CI	.19, 1.06*	-.38, .95	-.80, 1.70	-.60, .60	-.30, .93	-.27, 1.04	-.38, 1.03	-.20, .44	-.16, .84
	β	.785 ^{††}	.396 [†]	-.092	.164	.231	.305 [†]	-.081	.161	.367 [†]
	R ²	.750	.153	.185	.521	.398	.320	.038	.328	.522

[†] |.30| ≤ β ≤ |.50|; ^{††} β ≥ |.50|; * - Indicates CI is significant at the 1% level, Inferred from CI's drawn using BCA bootstraps with 10,000 re-samples

Table 6-11: Organisation 2 (Friendship network) – path ‘b’

		Dependent Variables – Organisation 3 Friendship								
		Affective organisation	Normative organisation	Continuance organisation	Performance	Affective coworker	Normative coworker	Continuance coworker	Group vs. individual	Role conflict / ambiguity
Degree Centrality	<i>B</i>	-.004	-.006	.007	-.012	.003	-.001	.008	-.003	.002
	<i>CI</i>	-.05, .02	-.04, .04	-.03, .03	-.04, .01	-.01, .03	-.02, .01	-.02, .02	-.02, .01	-.02, .02
	β	-.066	-.083	.107	-.221	.082	-.023	.262	-.083	.047
	R^2	.223	.086	.431	.375	.192	.028	.094	.350	.051
Freemans Closeness Centrality	<i>B</i>	.003	-.012	-.012	-.0423	-.016	-.013	.012	-.005	.006
	<i>CI</i>	-.10, .08	-.10, .09	-.09, .04	-.16, .00	-.06, .03	-.07, .04	-.03, .05	-.04, .03	-.03, .04
	β	.020	-.076	-.087	-.382[†]	-.202	-.201	.188	-.075	.081
	R^2	.220	.085	.428	.457	.220	.061	.068	.349	.055
Reach Based Centrality	<i>B</i>	-.053	-.026	.037	-.003	-.008	-.004	.035	-.014	.021
	<i>CI</i>	-.18, .07	-.14, .10	-.09, .11	-.12, .06	-.09, .05	-.07, .04	-.04, .08	-.07, .03	-.07, .09
	β	-.308[†]	-.127	.211	-.020	-.074	-.049	.442[†]	-.152	.220
	R^2	.290	.092	.455	.337	.190	.030	.185	.361	.085
Structural Holes	<i>B</i>	-.005	-.012	.010	-.048	.019	.002	.018	-.001	.002
	<i>CI</i>	-.13, .07	-.12, .10	-.09, .08	-.14, .00	-.03, .10	-.05, .04	-.06, .06	-.05, .04	-.07, .07
	β	-.027	-.053	.050	-.293	.161	.022	.199	-.009	.022
	R^2	.220	.083	.424	.414	.210	.028	.074	.344	.050
Ego Density	<i>B</i>	-.000	-.000	.000	-.001	.000	.000	.000	.000	-.000
	<i>CI</i>	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00
	β	-.004	-.045	.065	-.308[†]	.168	.073	.196	.016	-.034
	R^2	.219	.082	.425	.419	.211	.033	.072	.344	.050
Egonet Composition (Gender)	<i>B</i>	-3.634	-1.992	.564	-1.289	.753	1.281	1.732	.508	.223
	<i>CI</i>	-7.29, 2.35	-9.08, 6.33	-5.86, 4.85	-7.01, 2.073	-3.98, 4.73	-2.32, 5.21	-.88, 4.13	-3.00, 2.97	-3.52, 3.55
	β	-.422[†]	-.199	.064	-.180	.144	.301	.434[†]	.114	.046
	R^2	.338	.107	.425	.358	.200	.088	.165	.353	.051
Egonet Composition (Race)	<i>B</i>	.02	.029	-.134	.915	.281	.498	-.158	.405	-.199
	<i>CI</i>	4.91, -4.41	5.20, -2.69	4.26, -2.17	4.85, -.93	2.11, -1.41	2.11, -1.32	1.95, -1.87	1.95, -.87	1.80, -1.91
	β	.004	.172	-.025	.213	.089	.195	-.066	.152	-.069
	R^2	.219	.095	.422	.359	.19	.047	.041	.356	.052
Proximal Betweenness	<i>B</i>	-.000	-.001	.001	-.004	.002	.001	.001	.001	-.000
	<i>CI</i>	-.01, .01	-.01, .01	-.01, .01	-.01, .00	-.00, .01	-.00, .00	-.01, .00	-.00, .00	-.01, .01
	β	-.003	-.040	.034	-.326[†]	.235	.136	.139	.063	-.033
	R^2	.219	.082	.423	.433	.236	.045	.056	.348	.050
Multiple Centrality	<i>B</i>	.049	-.028	.011	.053	-.004	.029	-.007	.038	-.045
	<i>CI</i>	-.17, .23	-.24, .15	-.22, .21	-.04, .17	-.10, .09	-.06, .11	-.14, .11	-.06, .12	-.15, .09
	β	.081	-.04	.01	.143	-.012	.104	-.017	.123	-.118
	R^2	.037	.179	.249	.169	.105	.208	.112	.13	.190

[†] $-.30 \leq \beta \leq -.50$; ^{††} $\beta \geq .50$; * - Indicates CI is significant at the 1% level, Inferred from CI's drawn using BCA bootstraps with 10,000 re-samples

Table 6-12: Organisation 2 (Information network) – path ‘b’

		Dependent Variables – Organisation 3 Friendship								
		Affective organisation	Normative organisation	Continuance organisation	Performance	Affective coworker	Normative coworker	Continuance coworker	Group vs. individual	Role conflict / ambiguity
Degree centrality	<i>B</i>	-.012	.012	.032	-.003	-.004	-.005	.029	-.009	.004
	<i>CI</i>	-.09, .04	-.07, .07	-.03, .07	-.06, .03	-.05, .03	-.03, .02	.01, .06*	-.05, .02	-.05, .04
	β	-.103	.089	.277	-.032	-.063	-.083	.552^{††}	-.159	.070
	<i>R</i> ²	.227	.086	.477	.337	.189	.033	.257	.362	.053
Freemans Closeness centrality	<i>B</i>	2.939	-.283	-1.605	4.057	-3.220	-1.649	-1.841	1.079	-4.026
	<i>CI</i>	-13.51, 2.65	-11.49, 16.38	-11.90, 27.72	-6.85, 24.30	-11.68, 1.43	-8.10, 6.91	-8.41, 7.47	-5.17, 6.10	-9.40, 1.18
	β	.122	-.011	-.065	.202	-.219	-.138	-.165	.086	-.299
	<i>R</i> ²	.231	.081	.425	.369	.225	.043	.061	.350	.120
Reach based centrality	<i>B</i>	-.017	.073	.113	-.003	-.015	-.007	.085	-.003	.016
	<i>CI</i>	-.24, .12	-.11, .20	-.04, .18	-.18, .08	-.15, .05	-.09, .04	.03, .16*	-.07, .08	-.13, .10
	β	-.054	.205	.361[†]	-.011	-.080	-.047	.596^{††}	-.021	.094
	<i>R</i> ²	.222	.115	.530	.337	.192	.030	.333	.345	.056
Structural holes	<i>B</i>	-.012	.040	.060	-.013	-.013	-.007	.051	.003	-.004
	<i>CI</i>	-.16, .08	-.08, .13	-.06, .11	-.12, .47	-.09, .03	-.06, .03	.01, .10*	-.04, .05	-.10, .06
	β	-.056	.168	.279	-.078	-.100	-.072	.532^{††}	.031	-.030
	<i>R</i> ²	.222	.105	.489	.342	.195	.032	.283	.345	.050
Ego Density	<i>B</i>	.001	.002	.002	.001	.000	.000	.001	.000	.001
	<i>CI</i>	-.00, .00	-.00, .00	.00, .00*	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	.00, .00*
	β	.122	.319[†]	.423[†]	.224	.076	-.037	.365[†]	-.139	.490[†]
	<i>R</i> ²	.230	.153	.549	.372	.191	.029	.134	.358	.220
Egonet composition (Gender)	<i>B</i>	-3.887	-3.028	-1.193	-.075	-1.900	-1.165	.226	-.274	-.447
	<i>CI</i>	-8.81, -.62*	-12.97, .21	-5.81, 4.28	-3.88, 3.11	-6.70, -.26*	-6.73, .75	-2.33, 3.40	-3.71, .89	-5.65, 2.39
	β	-.477[†]	.320[†]	-.143	-.011	-.383[†]	-.289	.060	-.065	-.098
	<i>R</i> ²	.431	.176	.441	.337	.323	.106	.042	.348	.058
Egonet composition (Race)	<i>B</i>	2.516	.938	-.287	-.213	-.010	.387	-.320	.982	-.298
	<i>CI</i>	6.12, -1.90	4.65, -2.51	4.40, -2.91	7.29, -1.66	1.94, 1.48	2.23, -1.32	1.85, -1.91	2.46, .23*	1.88, -1.65
	β	.440[†]	.141	-.049	-.045	-.003	.137	-.121	.331[†]	-.093
	<i>R</i> ²	.385	.097	.424	.338	.186	.044	.052	.438	.057
Proximal betweenness	<i>B</i>	-.003	.002	.002	-.007	-.001	.000	.006	.003	-.003
	<i>CI</i>	-.03, .01	-.04, .02	-.03, .01	-.03, -.00*	-.01, .01	-.01, .01	-.01, .01	-.01, .01	-.02, .01
	β	-.120	.078	.101	-.346[†]	-.066	.009	.504^{††}	.213	-.245
	<i>R</i> ²	.231	.086	.431	.449	.190	.028	.277	.387	.105
Multiple centrality	<i>B</i>	-.132	-.028	.069	.037	-.101	-.061	.085	-.055	-.028
	<i>CI</i>	-.32, .06	-.26, .22	-.08, .24	-.08, .19	-.21, .01	-.16, .03	-.01, .21	-.16, .04	-.14, .07
	β	-.341[†]	-.062	.173	.115	-.429[†]	-.322[†]	.473[†]	-.275	-.130
	<i>R</i> ²	.315	.084	.447	.347	.339	.113	.223	.407	.063

[†] |.30| ≤ β ≤ |.50|; ^{††} β ≥ |.50|; * - Indicates CI is significant at the 1% level, Inferred from CI's drawn using BCA bootstraps with 10,000 re-samples

Table 6-13: Organisation 3 (Friendship network) – path ‘b’

		Dependent Variables – Organisation 3 Friendship								
		Affective organisation	Normative organisation	Continuance organisation	Performance	Affective coworker	Normative coworker	Continuance coworker	Group vs. individual	Role conflict / ambiguity
Degree centrality	<i>B</i>	.016	-.012	.018	.006	.009	-.006	.010	-.011	-.022
	<i>CI</i>	-.01, .05	-.04, .02	-.01, .05	-.01, .02	-.02, .03	-.03, .01	-.01, .03	-.03, .00	-.03, -.01*
	β	.156	-.112	.150	.090	.143	-.140	.157	-.215	-.345†
	<i>R</i> ²	.055	.190	.270	.162	.124	.219	.135	.167	.292
Freemans Closeness centrality	<i>B</i>	6.383	5.887	1.214	2.416	3.380	-1.579	.612	-6.229	7.142
	<i>CI</i>	-1.13, 29.00	-4.26, 14.88	-14.24, 16.81	-7.78, 1.09	-3.32, 1.83	-9.50, 3.74	-9.26, 9.79	-12.03, 1.26	1.89, 12.49*
	β	.135	.116	.021	.083	.121	-.073	.021	-.256	.242
	<i>R</i> ²	.050	.191	.249	.161	.119	.206	.113	.185	.236
Reach based centrality	<i>B</i>	.028	-.022	.040	.003	.012	-.009	.020	-.020	-.033
	<i>CI</i>	-.023, .09	-.07, .03	-.01, .09	-.02, .03	-.03, .05	-.04, .02	-.01, .05	-.05, -.00*	-.05, -.00*
	β	.154	-.113	.185	.029	.118	-.106	.180	-.220	-.291
	<i>R</i> ²	.054	.190	.280	.155	.118	.211	.142	.168	.258
Structural holes	<i>B</i>	.023	-.016	.024	.009	.012	-.007	.013	-.015	-.033
	<i>CI</i>	-.02, .06	-.05, .03	-.02, .07	-.01, .03	-.03, .04	-.04, .02	-.02, .04	-.04, .00	-.05, -.01*
	β	.156	-.105	.135	.099	.142	-.112	.140	-.199	-.367†
	<i>R</i> ²	.056	.189	.266	.164	.124	.213	.131	.161	.309
Ego Density	<i>B</i>	.000	.000	.000	.000	.000	.000	.000	.000	-.001
	<i>CI</i>	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, -.00*
	β	.157	-.101	.128	.134	.154	-.122	.135	-.216	-.364†
	<i>R</i> ²	.055	.187	.264	.171	.127	.215	.129	.166	.302
Egonet composition (Gender)	<i>B</i>	.966	-1.847	1.037	1.375	.159	-.409	.017	.164	-.206
	<i>CI</i>	-2.38, 3.32	-3.74, .34	-1.31, 3.65	-.02, 2.78	-1.09, 1.55	-1.40, .62	-1.68, 1.41	-1.23, 1.53	-1.62, 1.19
	β	.129	-.231	.115	.298	.036	-.120	.004	.043	-.044
	<i>R</i> ²	.046	.221	.260	.227	.106	.213	.112	.125	.182
Egonet composition (Race)	<i>B</i>	1.471	.274	.366	.576	1.058	-.002	.690	.015	-.272
	<i>CI</i>	3.81, -0.10	2.18, -1.22	3.16, -2.03	1.69, -0.65	2.07, 2.23	1.16, -.97	1.88, -.78	1.07, -.86	1.03, -2.02
	β	.239	.041	.049	.148	.285	-.001	.181	-.005	-.067
	<i>R</i> ²	.071	.194	.210	.108	.173	.155	.108	.129	.0214
Proximal betweenness	<i>B</i>	.002	-.001	.001	.000	.000	-.001	.001	-.001	-.002
	<i>CI</i>	-.00, .01	-.00, .00	-.00, .01	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, -.00*
	β	.185	-.127	.096	.052	.049	-.191	.104	-.113	-.333†
	<i>R</i> ²	.065	.193	.258	.157	.107	.235	.122	.135	.285
Multiple centrality	<i>B</i>	.034	-.006	.038	.011	.001	-.013	.023	-.018	-.018
	<i>CI</i>	-.03, .117	-.07, .05	-.02, .10	-.02, .04	-.04, .04	-.05, .02	-.01, .05	-.05, .01	-.05, .03
	β	.172	-.028	.159	.090	.008	-.142	.187	-.175	-.147
	<i>R</i> ²	.056	.179	.268	.161	.105	.104	.139	.147	.198

† $|\beta| \geq .30$; * $|\beta| \geq .50$; ** $|\beta| \geq .50$; - Indicates CI is significant at the 1% level, Inferred from CI's drawn using BCA bootstraps with 10,000 re-samples

Table 6-14: Organisation 3 (Information network) – path ‘b’

		Dependent Variables: Organisation 3 Information								
		Affective organisation	Normative organisation	Continuance organisation	Performance	Affective coworker	Normative coworker	Continuance coworker	Group vs. individual	Role conflict / ambiguity
Degree centrality	<i>B</i>	.015	-.017	-.001	-.007	-.012	-.010	.005	-.002	-.026
	<i>CI</i>	-.04, .08	-.06, .03	-.05, .05	-.03, .03	-.05, .02	-.03, .01	-.02, .03	-.02, .02	-.05, -.00*
	<i>β</i>	.101	-.108	-.005	-.079	-.142	-.145	.058	-.029	-.282
	<i>R2</i>	.040	.186	.249	.159	.119	.216	.114	.124	.237
Freemans Closeness centrality	<i>B</i>	15.218	-.588	4.292	12.587	-.356	4.823	2.576	7.283	-8.651
	<i>CI</i>	-27.92, 51.64	-42.00, 32.54	-37.98, 42.87	-3.96, 36.16	-2.64, 18.62	-12.77, 2.17	-21.33, 22.99	-11.15, 23.51	-29.23, 15.10
	<i>β</i>	.132	-.005	.031	.177	-.005	.092	.036	.123	-.120
	<i>R2</i>	.045	.178	.250	.176	.105	.207	.113	.134	.191
Reach based centrality	<i>B</i>	.025	-.030	.021	-.007	-.023	-.007	.004	-.007	-.033
	<i>CI</i>	-.02, .08	-.08, .01	-.04, .07	-.03, .03	-.05, .01	-.03, .01	-.03, .03	-.04, .02	-.06, -.01*
	<i>β</i>	.163	-.186	.115	-.079	-.255	-.098	.045	-.094	-.348†
	<i>R2</i>	.050	.201	.258	.158	.149	.207	.113	.129	.262
Structural holes	<i>B</i>	.016	-.017	.012	-.005	-.015	-.004	.003	-.004	-.021
	<i>CI</i>	-.01, .05	-.05, .01	-.02, .04	-.02, .02	-.03, .00	-.02, .01	-.02, .02	-.02, .01	-.03, -.00*
	<i>β</i>	.174	-.177	.110	-.089	-.278	-.097	.051	-.078	-.362†
	<i>R2</i>	.053	.199	.257	.160	.157	.207	.114	.127	.269
Ego Density	<i>B</i>	.000	.000	.000	.000	.000	.000	.000	.000	.000
	<i>CI</i>	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, .00	-.00, -.00*
	<i>β</i>	.188	-.193	.130	-.105	-.248	-.121	.084	-.119	-.362†
	<i>R2</i>	.056	.203	.260	.162	.146	.211	.117	.133	.268
Egonet composition (Gender)	<i>B</i>	.450	2.411	8.540	1.464	-2.317	1.378	1.997	-.151	.579
	<i>CI</i>	-11.46, 1.88	-6.86, 11.13	-2.60, 19.93	-4.78, 7.18	-7.48, 2.20	-2.96, 5.36	-3.15, 8.46	-5.06, 3.77	-4.85, 7.28
	<i>β</i>	.015	.077	.242	.081	-.134	.103	.109	-.010	.032
	<i>R2</i>	.033	.183	.294	.159	.119	.209	.121	.123	.181
Egonet composition (Race)	<i>B</i>	-5.341	.937	-8.883	-.865	-3.258	.522	.167	1.948	-4.863
	<i>CI</i>	3.65, -16.86	9.91, -8.22	2.34, -21.87	4.33, -6.75	1.25, -8.21	4.06, -3.50	6.06, -6.41	5.94, -2.16	0.22, -9.84
	<i>β</i>	-.170	.027	-.234	-.045	-.173	.036	.009	.120	-.236
	<i>R2</i>	.053	.200	.285	.148	.145	.178	.101	.142	.266
Proximal betweenness	<i>B</i>	.006	-.002	.004	.000	-.004	-.001	.001	.000	-.006
	<i>CI</i>	-.00, .02	-.01, .01	-.00, .01	-.00, .01	-.01, .00	-.01, .00	-.00, .01	-.00, .00	-.01, -.00*
	<i>β</i>	.245	-.087	.119	-.009	-.257	-.081	.073	.009	-.374†
	<i>R2</i>	.066	.182	.257	.154	.142	.205	.115	.123	.258
Multiple centrality	<i>B</i>	.049	-.028	.011	.053	-.004	.029	-.007	.038	-.045
	<i>CI</i>	-.17, .23	-.24, .15	-.22, .21	-.04, .17	-.10, .09	-.06, .11	-.14, .11	-.06, .12	-.15, .09
	<i>β</i>	.081	-.042	.015	.143	-.012	.104	-.017	.123	-.118
	<i>R2</i>	.037	.179	.249	.169	.105	.208	.112	.134	.190

† $-.30 \leq \beta \leq -.50$; †† $\beta \geq .50$; * - Indicates CI is significant at the 1% level, Inferred from CI's drawn using BCA bootstraps with 10,000 re-samples

Table 6-15 summarises regressions with significant confidence intervals and beta weights for each relationship between the social network analysis variable on the organisational outcomes. This allows the reader to reference the key relationships and note their strengths. It was necessary to control for tenure, gender, race, and age to arrive at these results.

Using Table 6-15 for reference, the proceeding sub-section discusses the findings for the relationship between SNA variable and organisational outcome for each organisation network.

A. Organisation 1

A.i. Friendship network

Taking an overall look at the friendship network in Table 6-15, we see that all the SNA variables have a relationship with certain organisational outcome variables. Key organisation outcome variables affected are affective organisation commitment, group vs. individual and role conflict/ambiguity. To a lesser extent, SNA variables affect normative organisation, continuance organisation, and continuance co-worker commitment. Affective organisational commitment consistently shows a positive beta, giving an early indication of employees' are emotional attached to the organisation. Role conflict/ambiguity and group vs. individual outcomes show negative beta from which we may infer that these two variables have a negative influence on employees.

Egonet composition for gender in the friendship network affects an individual's performance and egonet composition (race) which measures the presence of whites in an ego's network shows a large positive beta with continuance co-worker

On the other hand, multiple centrality creates a large positive beta value for continuance co-worker commitment. Centrality measures location of a person on the communication paths linking pairs of others (Bavelas, 1948; Shaw, 1954) in which information exchange could include social identity (norms) and social support (Podolny & Baron, 1997). Such information exchange may enhance relationships through which individuals experience continuance co-worker commitment.

Table 6-15– summary table of regressions with significant confidence interval and β

Relationship	SNA	Outcome	Confidence Interval	β
Organisation 1 Friendship	Degree Centrality	Affective Organisation	Significantly positive	Positive Medium
	Degree Centrality	Group vs. Individual		Negative Medium
	Degree Centrality	Role conflict/ambiguity		Negative Medium
	Closeness Centrality	Affective Organisation	Significantly positive	Positive Medium
	Reach Based Centrality	Affective Organisation		Positive Medium
	Reach Based Centrality	Group vs. Individual		Negative Medium
	Reach Based Centrality	Role conflict/ambiguity		Negative Medium
	Structural Holes	Affective Organisation		Positive Medium
	Structural Holes	Group vs. Individual		Negative Medium
	Structural Holes	Role conflict/ambiguity		Negative Medium
	Egonet Density	Affective Organisation	Significantly positive	Positive Medium
	Egonet Density	Group vs. Individual		Negative Medium
	Egonet Density	Role conflict/ambiguity		Negative Medium
	Egonet Composition (gender)	Affective Organisation		Positive Large
	Egonet Composition (gender)	Normative Organisation		Positive Medium
	Egonet Composition (gender)	Continuance Organisation		Negative Medium
	Egonet Composition (gender)	Performance		Positive Medium
	Egonet Composition (gender)	Continuance Coworker	Significantly negative	Negative Large
	Egonet Composition (race)	Continuance Coworker		Positive medium
	Proximal Betweenness	Normative Organisation	Significantly positive	
	Proximal Betweenness	Group vs. Individual		Negative Medium
	Proximal Betweenness	Role conflict/ambiguity	Significantly negative	Negative Medium
	Multiple Centrality	Continuance Organisation		Positive Medium
	Multiple Centrality	Continuance Coworker	Significantly positive	Positive Large
Organisation 1 Information	Degree Centrality	Affective Organisation	Significantly positive	Positive Large
	Closeness Centrality	Affective Organisation	Significantly positive	Positive Large
	Closeness Centrality	Normative Organisation		Positive Medium
	Closeness Centrality	Affective Coworker		Positive Medium
	Closeness Centrality	Normative Coworker		Positive Medium
	Closeness Centrality	Role conflict/ambiguity		Positive Medium
	Reach Based Centrality	Affective Organisation	Significantly positive	Positive Medium
	Reach Based Centrality	Group vs. Individual		Positive Medium

Relationship	SNA	Outcome	Confidence Interval	β
	<i>Reach Based Centrality</i>	<i>Role conflict/ambiguity</i>		Positive Medium
	<i>Structural Holes</i>	<i>Affective Organisation</i>	Significantly positive	Positive Large
	<i>Ego density</i>	<i>Affective Organisation</i>	Significantly positive	Positive Large
	<i>Ego Density</i>	<i>Continuance Coworker</i>		Negative Medium
	<i>Egonet Composition (gender)</i>	<i>Performance</i>		Negative Medium
	<i>Egonet Composition (gender)</i>	<i>Affective Coworker</i>		Positive Large
	<i>Egonet Composition (gender)</i>	<i>Normative Coworker</i>	Significantly positive	Positive Large
	<i>Egonet Composition (gender)</i>	<i>Group vs. Individual</i>		Positive Medium
	<i>Egonet Composition (Race)</i>	<i>Performance</i>		Positive medium
	<i>Proximal Betweenness</i>	<i>Affective Coworker</i>		Positive Large
	<i>Proximal Betweenness</i>	<i>Continuance Organisation</i>		Negative Medium
	<i>Proximal Betweenness</i>	<i>Continuance Coworker</i>		Negative Medium
	<i>Proximal Betweenness</i>	<i>Group vs. Individual</i>		Negative Medium
	<i>Multiple Centrality</i>	<i>Affective Coworker</i>	Significantly positive	Positive Large
	<i>Multiple Centrality</i>	<i>Normative Organisation</i>		Positive Medium
	<i>Multiple Centrality</i>	<i>Normative Coworker</i>		Positive Medium
	<i>Multiple Centrality</i>	<i>Role conflict/ambiguity</i>		Positive Medium
Organisation 2 Friendship	<i>Closeness Centrality</i>	<i>Performance</i>		Negative Medium
	<i>Reach Based Centrality</i>	<i>Continuance Coworker</i>		Positive Medium
	<i>Reach Based Centrality</i>	<i>Affective organisation</i>		Negative Medium
	<i>Ego Density</i>	<i>Performance</i>		Negative Medium
	<i>Egonet Composition (gender)</i>	<i>Affective Organisation</i>		Negative Medium
	<i>Egonet Composition (gender)</i>	<i>Continuance Coworker</i>		Positive Medium
	<i>Proximal Betweenness</i>	<i>Performance</i>		Negative Medium
Organisation 2 Information	<i>Degree Centrality</i>	<i>Continuance Coworker</i>	Significantly positive	Positive Large
	<i>Reach Based Centrality</i>	<i>Continuance Organisation</i>		Positive Medium
	<i>Reach Based Centrality</i>	<i>Continuance Coworker</i>	Significantly positive	Positive Large
	<i>Structural Holes</i>	<i>Continuance Coworker</i>	Significantly positive	Positive Large
	<i>Ego Density</i>	<i>Normative Organisation</i>		Positive Medium
	<i>Ego Density</i>	<i>Continuance Organisation</i>	Significantly positive	Positive Medium
	<i>Ego Density</i>	<i>Continuance Coworker</i>		Positive Medium
	<i>Ego Density</i>	<i>Role conflict/ambiguity</i>	Significantly positive	Positive Medium
	<i>Egonet Composition (gender)</i>	<i>Affective Organisation</i>	Significantly negative	Negative Medium

Relationship	SNA	Outcome	Confidence Interval	β
Organisation 3 Friendship	<i>Egonet Composition (gender)</i>	<i>Normative Organisation</i>		Positive Medium
	<i>Egonet Composition (gender)</i>	<i>Affective Coworker</i>	Significantly negative	Negative Medium
	<i>Egonet Composition (Race)</i>	<i>Affective Organisation</i>		Positive Medium
	<i>Egonet Composition (Race)</i>	<i>Group vs. Individual</i>	Significantly negative	Positive medium
	<i>Proximal Betweenness</i>	<i>Performance</i>	Significantly negative	Negative Medium
	<i>Proximal Betweenness</i>	<i>Continuance Coworker</i>		Positive Large
	<i>Multiple Centrality</i>	<i>Affective Organisation</i>		Negative Medium
	<i>Multiple Centrality</i>	<i>Affective Coworker</i>		Negative Medium
	<i>Multiple Centrality</i>	<i>Normative Coworker</i>		Negative Medium
	<i>Multiple Centrality</i>	<i>Continuance Coworker</i>		Positive Medium
	<i>Degree Centrality</i>	<i>Role conflict/ambiguity</i>	Significantly negative	Negative Medium
	<i>Closeness Centrality</i>	<i>Role conflict/ambiguity</i>	Significantly positive	
	<i>Reach Based Centrality</i>	<i>Group vs. Individual</i>	Significantly negative	
	<i>Reach Based Centrality</i>	<i>Role conflict/ambiguity</i>	Significantly negative	
	<i>Structural Holes</i>	<i>Role conflict/ambiguity</i>	Significantly negative	Negative Medium
Organisation 3 Information	<i>Ego Density</i>	<i>Role conflict/ambiguity</i>	Significantly negative	Negative Medium
	<i>Egonet Composition (Race)</i>	<i>Affective Co-worker</i>	Significantly positive	
	<i>Proximal Betweenness</i>	<i>Role conflict/ambiguity</i>	Significantly negative	Negative Medium
	<i>Degree Centrality</i>	<i>Role conflict/ambiguity</i>	Significantly negative	-.282
	<i>Reach Based Centrality</i>	<i>Role conflict/ambiguity</i>	Significantly negative	Negative Medium
	<i>Structural Holes</i>	<i>Role conflict/ambiguity</i>	Significantly negative	Negative Medium
	<i>Ego Density</i>	<i>Role conflict/ambiguity</i>	Significantly negative	Negative Medium
	<i>Proximal Betweenness</i>	<i>Role conflict/ambiguity</i>	Significantly negative	Negative Medium

Medium – Indicates $|\beta| \leq .50$, **Large** – Indicates $|\beta| > .50$

A.ii. *Information Network*

Similar to the friendship network, all SNA variables for the information network have a relationship with certain organisation outcome variables as seen in Table 6-15. While, closeness centrality did not appear to have much effect on the friendship network, we see the opposite in the information network. In the friendship network, degree centrality has more effect than in the information network. Organisational outcome most affected is, affective organisational commitment, suggesting that certain positions in the network occupied by employees engender emotional attached to the organisation.

Affective and normative co-worker commitment outcomes in the information network appear to be important but continuance co-worker shows a negative medium beta weight with egonet density, suggesting, that as the number of ties to alters increase, individuals experience negative continuance coworker commitment.

Egonet composition (race), which measures the presence of non-whites in an actor's network, affects performance in the information network.

We can see that confidence intervals for are significantly positive while beta weights are generally medium. The information network reflects positive large beta weights most notably for affective organisational commitment, affective coworker commitment and to a less extent on normative coworker commitment. We can infer from this that the respective structural positions in the network seem to influence certain organisational outcomes in varying degrees.

B. *Organisation 2*

B.i. *Friendship network*

Unlike Organisation 1, where all the SNA variables affected certain organisation outcomes, in Organisation 2, five of the eight variables affect only three organisation outcome variables in particular performance, continuance co-worker commitment, and affective organisation commitment.

For Organisation 2, affective organisation commitment shows negative beta value suggesting that employees have a negative attachment to the organisation.

The distribution of this questionnaire took place in the wake of a major organisation-restructuring program during which time, three staffs resigned from this office. From this, we may gather that individuals in the organisation have mixed feelings about their job, role, and the organisation.

Continuance co-worker commitment, on the other hand, shows a positive beta through egonet composition and reach based centrality.

Reach based centrality, which looks at searching for key individuals who are well positioned to reach many people in a few number of steps (Borgatti, Everett, & Freeman, 2002) highlights the extent of a person's network. We may surmise that the wider the network for individuals, the greater their continuance co-worker commitment.

B.ii. Information network

In the information network, we see that seven of the eight SNA variables affect certain organisational outcomes. Closeness centrality has no affect on the information network for Organisation 2.

The most affected variables in the information network are continuance co-worker and continuance organisational commitment variables. In fact, other variables are affected very marginally compared to the above mentioned variables.

Egonet composition for race has a positive influence on affective organisation commitment and group vs. individual orientation.

We see that continuance coworker commitment displays large positive beta weights in conjunction with centrality measures, structural holes, and proximal betweenness. Actors in networks that bridge the structural holes between groups have weak and strong ties to other actors (Granovetter, 1985). Centrality measures location of a person on the communication paths linking pairs of others (Bavelas, 1948; Shaw, 1954) in which information exchange could include social identity (norms) and social support (Podolny & Baron, 1997) while proximal betweenness reveals actors whose nodes lie on the shortest path between every other pair of nodes (Hanneman & Riddle, 2005). Individuals in these positions have access to resources and information with ties to many other actors in the network and such a

position appears to increase continuance coworker commitment for the organisational members of Organisation 2.

Affective commitment for organisation and coworker, normative coworker commitment, and performance display negative beta weights.

C. Organisation 3

C.i. Friendship network

Organisation 3 reveals that role conflict/ambiguity is the key organisational outcome of several SNA variables while group vs. individual variable is affected to a lesser extent by reach-based centrality. We may infer from these preliminary test results that employees at Organisation 3 experience role conflict/ambiguity.

Egonet composition for race has a relationship with affective co-workers commitment; however, beta weight for this relationship is insignificant.

C.ii. Information network

The information network for Organisation 3 reflects a similar picture to the friendship network. Role conflict/ambiguity is the only organisation outcome variable to be affected by the SNA variables and we see that the confidence intervals are significantly negative while all the beta weights have a negative medium value.

6.5.2 ADDITIONAL TENURE BASED REGRESSIONS

Regression analyses in section 6.5.1 tested the effect of SNA variables on organisational outcome variables for all employees, controlling for tenure, race, age, and gender specified by path 'b' in Figure 6-25. The results are not conclusive since tenure was one of the controlled variables. As tenure reflects relative newcomer statuses on a more continuous scale further regression analyses testing two separate relationships with tenure as the independent variable will reveal how tenure affects organisational outcome variables especially through SNA variables, which are mediation variables.

This is a mediation procedure as discussed by Baron and Kenny (1986). The hypothesised model for this research showcased in Figure 6-25 predicts the following mediation relationships:

- Hypothesis 3 and 4 suggests that network density in information networks, as measured by egonet density has a mediating effect on organisational and coworker commitment, task mastery, role conflict/ambiguity for newcomers
- Hypothesis 5 suggests that network density in friendship network, as measured by egonet density has a mediating effect on affective and normative co-worker commitment, task mastery, role conflict/ambiguity and group vs. individual for newcomers
- Hypothesis 6 suggests that network density in friendship networks, as measured by egonet density, has a mediating effect on organisational commitment and normative co-worker commitment for tenured individuals;
- Hypothesis 7 suggests that the presence of females in a newcomer's network as measured by egonet composition (gender) has a mediating effect on task mastery and role conflict/ambiguity;
- Hypothesis 8 suggests that the presence of females in tenured individuals network as measured by egonet composition (gender) has a mediating effect on organisation and co-worker commitment variables;
- Hypothesis 9 suggests that the presence of minority race individuals in a newcomer's network as measured by egonet composition (race) has a mediating effect on task mastery and role conflict/ambiguity;
- Hypothesis 10 suggests that the presence of minority race individuals in tenured individuals network as measured by egonet composition (race) has a mediating effect on organisation and co-worker commitment variables;
- Hypothesis 11 suggests that structural holes position for newcomers will have a mediating effect on their task mastery (as measured by performance proficiency) and role conflict/ambiguity and co-worker commitment. Structural holes will mediate weakly with organisation commitment and two other co-worker commitment variables that of affective and normative;

- Hypothesis 12 suggests that centrality positions in the network will mediate strongly for task mastery, role conflict/ambiguity, and continuance co-worker commitment. Structural holes will mediate weakly with organisation commitment and two other co-worker commitment variables that of affective and normative.

Baron and Kenny's (1986) mediation method is used to test these assumptions (also see Hoyle & Kenny, 1999; James & Brett, 1984; Mackinnon, Lockwood, Hoffman, West & Sheets, 2005) with the following conditions:

1. *Independent variable(s) should regress significantly on the ultimate dependent variable.*
2. *Independent variable(s) should regress on the mediator.*
3. *When the mediator is included as a predictor along with the original independent variable, (a) The mediator should be a significant predictor of the outcome, and (b) The coefficients of the independent variables should be significantly reduced.*

Table 6-16 identifies three separate steps followed to determine how tenure affects structural positions in the network as well as the organisational outcomes.

To arrive at the results presented in Table 6-16, the researcher first tested for the direct relationship between tenure and the organisation outcomes, presented under 'Model 1'. To simplify the procedure, significant values summarised in Table 6-15, formed the basis for further regressions. The results shed light on the direct relationship between tenure and organisational outcomes for each relationship.

Table 6-16 - Additional Tenure-Based Regression Analyses

Additional Tenure-Based Regression Analyses													
Relationships for which SNA characteristic affected outcomes (see Table 6-9 to Table 6-14)			Model 1: Tenure → Outcome (Direct path)			Model 2: Tenure → SNA Characteristic			Model 3: SNA Characteristic → Outcome (Controlling for tenure)			Indirect path magnitude	Total path
Organisation	SNA	Outcome	B ₁	CI ₁	β ₁	B ₂	CI ₂	β ₂	B ₃	CI ₃	β ₃	(β ₂ *β ₃)	(β ₂ *β ₃) + β ₁
Org 1 Friendship network	DC	Afforg	.068	-.06, .26	.545⁺⁺	.186	-3.27, 3.68	.086	.020	.00, .06*	.356⁺	.031	.576⁺⁺
	DC	Gpindiv	.025	-.16, .11	.289	.186	-3.27, 3.68	.086	-.013	-.03, .01	-.345⁺	-.030	.259
	DC	Role con/am	-.024	-.13, .04	-.294	.186	-3.27, 3.68	.086	-.021	-.04, .01	-.382⁺	-.033	-.327⁺
	CC	Afforg	.068	-.06, .26	.545⁺⁺	.014	-.12, .11	.167	.752	-.13, 2.75	.480⁺	.080	.625⁺⁺
	RBC	Afforg	.068	-.06, .26	.545⁺⁺	.027	-.39, .45	.102	.150	.01, .50*	.325⁺	.033	.578⁺⁺
	RBC	Gpindiv	.025	-.16, .11	.289	.027	-.39, .45	.102	-.113	-.26, .12	-.355⁺	-.036	.253
	RBC	Role con/am	-.024	-.13, .04	-.294	.027	-.39, .45	.102	-.183	-.34, .05	-.399⁺	-.041	-.335⁺
	SH	Afforg	.068	-.06, .26	.545⁺⁺	.003	-.55, .52	.010	.107	.02, .39*	.301⁺	.003	.548⁺⁺
	SH	Gpindiv	.025	-.16, .11	.289	.003	-.55, .52	.010	-.089	-.20, .06	-.363⁺	-.004	.285
	SH	Role con/am	-.024	-.13, .04	-.294	.003	-.55, .52	.010	-.133	-.23, .01	-.376⁺	-.004	-.298
	ED	Afforg	.068	-.06, .26	.545⁺⁺	-.007	-13.75, 11.73	-.001	.005	.00, .02*	.314⁺	.000	.545⁺⁺
	ED	Gpindiv	.025	-.16, .11	.289	-.007	-13.75, 11.73	-.001	-.004	-.01, .00	-.409⁺	.000	.289
	ED	Role con/am	-.024	-.13, .04	-.294	-.007	-13.75, 11.73	-.001	-.006	-.01, .00	-.379⁺	.000	-.294
	EC (gender)	Afforg	.068	-.06, .26	.545⁺⁺	.006	-.01, .03	.242	3.186	-2.22, 6.25	.619⁺⁺	.150	.695⁺⁺
	EC (gender)	Normorg	.058	-.13, .22	.411⁺	.006	-.01, .03	.242	2.896	-3.17, 8.03	.470⁺	.114	.525⁺⁺
	EC (gender)	Conorg	.018	-.26, .47	.075	.006	-.01, .03	.242	-4.647	-13.50, 2.26	-.476⁺	-.115	-.040
	EC (gender)	Perf	-.040	-.20, .07	-.338⁺	.006	-.01, .03	.242	2.409	-1.65, 7.50	.374⁺	.091	-.247
	EC (gender)	Conco	-.028	-.16, .19	-.244	.006	-.01, .03	.242	-3.088	-7.89, -.48*	-.682⁺⁺	-.165	-.409⁺
	EC (race)	Conco	-.028	-.16, .19	-.244	-.004	-.04, .01	-.145	1.404	-1.55, 6.83	.366⁺	-.053	-.297
	PB	Normorg	.058	-.13, .22	.411⁺	-.344	-5.77, 2.99	-.111	-.012	.05, .01*	-.242	.027	.438⁺
	PB	Gpindiv	.025	-.16, .11	.289	-.344	-5.77, 2.99	-.111	-.012	-.03, .00	-.439⁺	.049	.338⁺
	PB	Role con/am	-.024	-.13, .04	-.294	-.344	-5.77, 2.99	-.111	-.017	-.04, -.01*	-.419⁺	.047	-.247
Org 1 Information network	MC	Conorg	.018	-.26, .47	.075	-.074	-.45, .42	-.235	.309	-.05, .76	.408⁺	-.096	-.021
	MC	Conco	-.028	-.16, .19	-.244	-.074	-.45, .42	-.235	.196	.01, .42*	.559⁺⁺	-.131	-.375⁺
	DC	Afforg	.011	-.03, .08	.064	1.239	-2.09, 3.34	.672⁺⁺	.040	.01, .10*	.606⁺⁺	.407	.471⁺
	CC	Afforg	.011	-.03, .08	.064	.888	-.64, 2.73	.696⁺⁺	.071	.03, .14*	.782⁺⁺	.544	.608⁺⁺
	CC	Normorg	.058	-.13, .22	.411⁺	.888	-.64, 2.73	.696⁺⁺	.051	-.03, .13	.469⁺	.326	.737⁺⁺
	CC	Affco	.036	-.27, .13	.344⁺	.888	-.64, 2.73	.696⁺⁺	.043	-.02, .12	.397⁺	.276	.620⁺⁺
	CC	Normco	.043	-.11, .15	.389⁺	.888	-.64, 2.73	.696⁺⁺	.052	-.02, .14	.480⁺	.334	.723⁺⁺

Additional Tenure-Based Regression Analyses													
Relationships for which SNA characteristic affected outcomes (see Table 6-9 to Table 6-14)			Model 1: Tenure → Outcome (Direct path)			Model 2: Tenure → SNA Characteristic			Model 3: SNA Characteristic → Outcome (Controlling for tenure)			Indirect path magnitude	Total path
Organisation	SNA	Outcome	B ₁	CI ₁	β ₁	B ₂	CI ₂	β ₂	B ₃	CI ₃	β ₃	(β ₂ *β ₃)	(β ₂ *β ₃)+ β ₁
	CC	Role con/am	-.020	-.05, .01	-.179	.888	-.64, 2.73	.696^{††}	.045	-.01, .10	.499[†]	.347	.168
	RBC	Afforg	.011	-.03, .08	.064	.004	-.28, .22	.026	.302	.01, 1.26*	.374[†]	.010	.074
	RBC	Gpindiv	.025	-.16, .11	.289	.004	-.28, .22	.026	.247	-.05, .61	.444[†]	.012	.301[†]
	RBC	Role con/am	-.020	-.05, .01	-.179	.004	-.28, .22	.026	.258	-.11, .51	.322[†]	.008	-.171
	SH	Afforg	.011	-.03, .08	.064	.241	-.31, .61	.726	.219	.06, .52*	.597^{††}	.433	.497[†]
	ED	Afforg	.011	-.03, .08	.064	11.454	-12.68, 27.81	.768^{††}	.005	.00, .01*	.659^{††}	.506	.570^{††}
	ED	Conco	-.028	-.16, .19	-.244	11.454	-12.68, 27.81	.768^{††}	-.002	-.01, .00	-.316[†]	-.243	-.487[†]
	EC (gender)	Perf	-.040	-.20, .07	-.338[†]	.000	-.010, .00	-.012	-8.962	-19.30, 7.83	-.364[†]	.004	-.334[†]
	EC (gender)	Affco	-.011	-.06, .02	-.109	.000	-.010, .00	-.012	12.407	-1.68, 28.75	.520^{††}	-.006	-.115
	EC (gender)	Normco	.043	-.11, .15	.389[†]	.000	-.010, .00	-.012	12.095	1.04, 31.72*	.514^{††}	-.006	.383[†]
	EC (gender)	Gpindiv	.025	-.16, .11	.289	.000	-.010, .00	-.012	5.346	-2.350, 16.81	.394[†]	-.005	.284
	EC (race)	Perf	-.040	-.20, .07	-.338	-.001	-.01, .01	-.061	5.74	-3.47, 11.23	.427[†]	-.026	-.364[†]
	PB	Affco	-.011	-.06, .02	-.109	.742	-1.49, 1.61	.665^{††}	.056	-.00, .158	.525^{††}	.349	.240
	PB	Conorg	.018	-.26, .47	.075	.742	-1.49, 1.61	.665^{††}	-.067	-.14, .06	-.330[†]	-.219	-.144
	PB	Conco	-.028	-.16, .19	-.244	.742	-1.49, 1.61	.665^{††}	-.038	-.10, .01	-.400[†]	-.266	-.510^{††}
	PB	Gpindiv	.025	-.16, .11	.289	.742	-1.49, 1.61	.665^{††}	-.023	-.07, .03	-.306[†]	-.203	.086
	MC	Affco	-.011	-.06, .02	-.109	.089	-.13, .33	.572^{††}	.604	.19, 1.06*	.785^{††}	.449	.340[†]
	MC	Normorg	.058	-.13, .22	.411[†]	.089	-.13, .33	.572^{††}	.364	-.38, .95	.396[†]	.227	.638^{††}
	MC	Normco	.043	-.11, .15	.389[†]	.089	-.13, .33	.572^{††}	.281	-.27, 1.04	.305[†]	.174	.563^{††}
	MC	Role con/am	-.024	-.13, .04	-.294	.089	-.13, .33	.572^{††}	.280	-.16, .84	.367[†]	.210	-.084
Org 2 Friendship network	CC	Perf	.091	-.03, .23	.432[†]	-.445	-1.80, .59	-.233	-.042	-.16, .00	-.382[†]	.089	.521^{††}
	RBC	Conco	-.013	-.09, .05	-.108	-.057	-.69, .84	-.039	.035	-.04, .08	.442[†]	-.017	-.125
	RBC	Afforg	-.035	-.13, .09	-.137	-.057	-.69, .84	-.039	-.053	-.18, .07	-.308[†]	.012	-.125
	ED	Perf	.091	-.03, .23	.432[†]	-13.909	-54.74, 39.59	-.209	-.001	-.00, .00	-.308[†]	.064	.496[†]
	EC (gender)	Afforg	-.035	-.13, .09	-.137	.011	-.00, .02	.374^{††}	-3.634	-7.29, 2.35	-.422[†]	-.158	-.295
	EC (gender)	Conco	-.013	-.09, .05	-.108	.011	-.00, .02	.374[†]	1.732	-.88, 4.13	.434[†]	.162	.054
	PB	Perf	.091	-.03, .23	.432[†]	-2.079	-13.33, 1.87	-.125	-.004	-.01, .00	-.326[†]	.041	.473[†]
Org 2 Information network	DC	Conco	-.013	-.09, .05	-.108	-.061	-1.27, 1.22	-.027	.029	.01, .06*	.552^{††}	-.015	-.123
	RBC	Conorg	.122	.02, .24*	.467[†]	.003	-.45, .48	.003	.113	-.04, .18	.361[†]	.001	.468[†]
	RBC	Conco	-.013	-.09, .05	-.108	.003	-.45, .48	.003	.085	.03, .16*	.596^{††}	.002	-.106

Additional Tenure-Based Regression Analyses													
Relationships for which SNA characteristic affected outcomes (see Table 6-9 to Table 6-14)			Model 1: Tenure → Outcome (Direct path)			Model 2: Tenure → SNA Characteristic			Model 3: SNA Characteristic → Outcome (Controlling for tenure)			Indirect path magnitude	Total path
Organisation	SNA	Outcome	B ₁	CI ₁	β ₁	B ₂	CI ₂	β ₂	B ₃	CI ₃	β ₃	(β ₂ *β ₃)	(β ₂ *β ₃)+ β ₁
	SH	Conco	-.013	-.09, .05	-.108	-.004	-.71, .84	-.003	.051	.01, .10*	.532 ^{††}	-.002	-.110
	ED	Normorg	.046	-.09, .21	.155	-.23.132	-51.42, .95	-.477 ^{††}	.002	-.00, .00	.319 [†]	-.152	.003
	ED	Conorg	.122	.02, .24*	.467 [†]	-.23.132	-51.42, .95	-.477 [†]	.002	.00, .00*	.423 [†]	-.202	.265
	ED	Conco	-.013	-.09, .05	-.108	-.23.132	-51.42, .95	-.477 [†]	.001	-.00, .00	.365 [†]	-.174	-.282
	ED	Role con/am	.037	-.06, .12	.261	-.23.132	-51.42, .95	-.477 [†]	.001	.00, .00*	.490 [†]	-.234	.027
	EC (gender)	Afforg	-.035	-.13, .09	-.137	.007	-.00, .02	.221	-3.887	-8.81, -.62*	-.477 [†]	-.105	-.242
	EC (gender)	Normorg	.046	-.09, .21	.155	.007	-.00, .02	.221	-3.028	-12.97, .21	.320 [†]	.071	.226
	EC (gender)	Affco	-.011	-.06, .02	-.109	.007	-.00, .02	.221	-1.900	-6.70, -.26*	-.383 [†]	-.085	-.194
	EC (race)	Afforg	-.035	-.13, .09	-.137	.011	-.01, .03	.243	2.516	6.12, 1.90	.440 [†]	.107	-.030
	EC (race)	Gpindiv	-.022	-.08, .07	-.165	.011	-.01, .03	.243	.982	.23*, 2.46	.331 [†]	.080	-.085
	PB	Perf	.091	-.03, .23	.432 [†]	.604	-5.05, 14.54	.057	-.007	-.03, -.00*	-.346 [†]	-.020	.412 [†]
	PB	Conco	-.013	-.09, .05	-.108	.604	-5.05, 14.54	.057	.006	-.01, .01	.504 ^{††}	.029	-.079
	MC	Afforg	-.035	-.13, .09	-.137	.127	-.22, .56	.193	-.132	-.32, .06	-.341 [†]	-.066	-.203
	MC	Affco	-.011	-.06, .02	-.109	.127	-.22, .56	.193	-.101	-.21, .01	-.429 [†]	-.083	-.192
	MC	Normco	-.006	-.06, .13	-.049	.127	-.22, .56	.193	-.061	-.16, .03	-.322 [†]	-.062	-.111
	MC	Conco	-.013	-.06, .05	-.108	.127	-.22, .56	.193	.085	-.01, .21	.473 [†]	.091	-.017
Org 3 Friendship network	DC	Role con/am	-.020	-.05, .01	-.179	-.017	-.58, .75	-.010	-.022	-.03, -.01*	-.345 [†]	.003	-.176
	CC	Role con/am	-.020	-.05, .01	-.179	.000	-.00, .00	.003	7.142	1.89, 12.49*	.242	.001	-.178
	RBC	Gpindiv	-.004	-.04, .02	-.039	.042	-.23, .39	.043	-.020	-.05, -.00*	-.220	-.009	-.048
	RBC	Role con/am	-.020	-.05, .01	-.179	.042	-.23, .39	.043	-.033	-.05, -.00*	-.291	-.013	-.192
	SH	Role con/am	-.020	-.05, .01	-.179	-.032	-.43, .56	-.026	-.033	-.05, -.01*	-.367 [†]	.010	-.169
	ED	Role con/am	-.020	-.05, .01	-.179	-.303	-23.21, 31.14	-.005	-.001	-.00, -.00*	-.364 [†]	.002	-.177
	EC (race)	Affco	-.017	-.06, .02	-.168	-.002	-.01, .00	-.076	1.058	2.23, 2.07*	.285	-.022	-.190
	PB	Role con/am	-.020	-.05, .01	-.179	.533	-3.88, 8.59	.030	-.002	-.00, -.00*	-.333 [†]	-.010	-.189
Org 3 Information network	DC	Role con/am	-.020	-.05, .01	-.179	.445	.16, .77*	.364 [†]	-.026	-.05, -.00*	-.282	-.103	-.282
	RBC	Role con/am	-.020	-.05, .01	-.179	.429	.03, .89*	.368 [†]	-.033	-.06, -.01*	-.348 [†]	-.128	-.307 [†]
	SH	Role con/am	-.020	-.05, .01	-.179	.706	.02, 1.47*	.364 [†]	-.021	-.03, -.00*	-.362 [†]	-.132	-.311 [†]
	ED	Role con/am	-.020	-.05, .01	-.179	89.530	-2.60, 189.12	.364 [†]	.000	-.00, -.00*	-.362 [†]	-.132	-.311 [†]
	PB	Role con/am	-.020	-.05, .01	-.179	3.675	1.87, 5.91*	.518 ^{††}	-.006	-.01, -.00*	-.374 [†]	-.194	-.373 [†]

[†] |.30| ≤ β ≤ |.50|, ^{††} β ≥ |.50|, * Indicates CI is significant at the 1% level

The second step determined tenure's direct relationship with SNA variables in order to understand whether tenure in a specific organisational network verified a person's structural position in that network. The results of this analysis presented in Table 6-16 under 'Model 2' verify the effect of tenure on structural positioning in the network.

The third step calculated the 'indirect path magnitude' shown in Table 6-16 which determine whether structural positions based on tenure in the organisation affect organisational outcomes.

Table 6-17 summarises the β weights for relationships where the SNA variable has a seemingly significant or important mediating effect between tenure and the organisational outcomes.

Table 6-17 – Summary table for significant indirect path magnitude

Relationships for which tenure affects outcomes through an SNA mediator (see Table 6-9 - Table 6-14)			Indirect path magnitude
	SNA	Outcome	($\beta_2 * \beta_3$)
Organisation 1 information	DC	Afforg	.407 [†]
	CC	Afforg	.544 ^{††}
	CC	Normorg	.326 [†]
	CC	Normco	.334 [†]
	CC	Role con/am	.347 [†]
	SH	Afforg	.433 [†]
	ED	Afforg	.506 ^{††}
	PB	Affco	.349 [†]
	MC	Affco	.449 [†]

[†] $|\beta| \geq .30$, ^{††} $\beta \geq .50$, * CI is significant at the 1% level

SNA is the mediation variable and Table 6-17 indicates that this mediation variable affects only the information network for Organisation 1. The β weights are positive and while most fall within the medium range, two show large values. Closeness centrality with affective organisational commitment shows a value of .544 and egonet density with affective organisational commitment shows a value of .506. The results further reveal a pattern where structural positions in the network based on tenure show a marked affect on affective organisational commitment, which measures emotional attachment to the organisation.

This does not give a complete picture because it fails to show that tenure has a direct affect. Total path in Table 6-16 reveals whether tenure has a direct effect on a particular organisational outcome variable and whether the mediation variable has an influence in the overall outcome. Table 6-18 is then a summary of those relationships in which tenure directly affects organisational outcome as well as the relationships in which tenure in combination with the mediation variable affects organisational variables.

Table 6-18 gives the summary of the direct effect of tenure on the organisational outcome as well as the influence of the SNA variable on tenure on organisational variable. Overall, we see that for Organisation 1's friendship and information network, tenure affects several of the commitment variables while the mediation variables only affect the information network. For Organisation 2 tenure affects performance and to a lesser extent continuance organisational commitment while for Organisation 3 we see that role conflict/ambiguity is the only organisational variable of importance. Tenure and the SNA variables do not appear to affect Organisation 3's friendship network.

The following sections discuss the results for each organisational network with reference to Table 6-16.

A. Organisation 1

In Organisation 1 friendship network, tenure has a positive direct relationship with both affective and normative organisational commitment variables suggesting that tenure increases emotional commitment and creates a sense of obligation to remain with the organisation. Of the two organisational commitment variables, affective organisational commitment appears to have a stronger direct relationship with tenure. Their corresponding SNA mediation variables have almost no effect on that.

In Organisation 1's friendship network as seen in Table 6-16, tenure has a direct negative effect on role conflict/ambiguity regardless of structural position in network implying that newcomers experience role conflict/ambiguity.

Table 6-18: Summary table of significant β s

Summary table of significant β							
Relationships for which SNA characteristic affected outcomes (see Table 6-9 - Table 6-14)			Model 1: Tenure $\rightarrow$ Outcome (Direct path)			Indirect path magnitude	Total path
	SNA	Outcome	B_1	CI_1	β_1	$(\beta_2 * \beta_3)$	$(\beta_2 * \beta_3) + \beta_1$
Org 1 Friendship network	DC	Afforg	.068	-.06, .26	.545 ^{††}	.031	.576 ^{††}
	DC	Role con/am	-.024	-.13, .04	-.294	-.033	-.327 [†]
	CC	Afforg	.068	-.06, .26	.545 ^{††}	.080	.625 ^{††}
	RBC	Afforg	.068	-.06, .26	.545 ^{††}	.033	.578 ^{††}
	RBC	Role con/am	-.024	-.13, .04	-.294	-.041	-.335 [†]
	SH	Afforg	.068	-.06, .26	.545 ^{††}	.003	.548 ^{††}
	ED	Afforg	.068	-.06, .26	.545 ^{††}	.000	.545 ^{††}
	EC(gender)	Afforg	.068	-.06, .26	.545 ^{††}	.150	.695 ^{††}
	EC(gender)	Normorg	.058	-.13, .22	.411 [†]	.114	.525 ^{††}
	EC(gender)	Perf	-.040	-.20, .07	-.338 [†]	.091	-.247
	EC (gender)	Conco	-.028	-.16, .19	-.244	-.165	-.409 [†]
	PB	Normorg	.058	-.13, .22	.411 [†]	.027	.438 [†]
	PB	Gpindiv	.025	-.16, .11	.289	.049	.338 [†]
	MC	Conco	-.028	-.16, .19	-.244	-.132	-.376 [†]
Org 1 Information network	DC	Afforg	.011	-.03, .08	.064	.407 [†]	.471 [†]
	CC	Afforg	.011	-.03, .08	.064	.544 ^{††}	.608 ^{††}
	CC	Normorg	.058	-.13, .22	.411 [†]	.327 [†]	.738 ^{††}
	CC	Affco	.036	-.27, .13	.344 [†]	.276	.620 ^{††}
	CC	Normco	.043	-.11, .15	.389 [†]	.334 [†]	.723 ^{††}
	CC	Role con/am	-.020	-.05, .01	-.179	.347 [†]	.168
	RBC	Gpindiv	.025	-.16, .11	.289	.012	.301 [†]
	SH	Afforg	.011	-.03, .08	.064	.434 [†]	.498 [†]
	ED	Afforg	.011	-.03, .08	.064	.506 ^{††}	.570 ^{††}
	ED	Conco	-.028	-.16, .19	-.244	-.243	-.487 [†]
	EC (gender)	Perf	-.040	-.20, .07	-.338 [†]	.004	-.334 [†]
	EC (gender)	Normco	.043	-.11, .15	.389 [†]	-.006	.383 [†]
	EC (race)	Perf	-.040	-.20, .07	-.338 [†]	-.026	-.364 [†]
	PB	Affco	-.011	-.06, .02	-.109	.349 [†]	.240
	PB	Conco	-.028	-.16, .19	-.244	-.266	-.510 ^{††}
	MC	Affco	-.011	-.06, .02	-.109	.449 [†]	.340 [†]
	MC	Normorg	.058	-.13, .22	.411 [†]	.227	.638 ^{††}
	MC	Normco	.043	-.11, .15	.389 [†]	.174	.563 ^{††}
Org 2 Friendship network	CC	Perf	.091	-.03, .23	.432 [†]	.089	.521 ^{††}
	ED	Perf	.091	-.03, .23	.432 [†]	.064	.496 [†]
	PB	Perf	.091	-.03, .23	.432 [†]	.041	.473 [†]
Org 2 Information network	RBC	Conorg	.122	.02, .24*	.467 [†]	.001	.468 [†]
	ED	Conorg	.122	.02, .24*	.467 [†]	-.202	.265
	PB	Perf	.091	-.03, .23	.432 [†]	-.020	.412 [†]
Org 3 Information network	RBC	Role con/am	-.020	-.05, .01	-.179	-.128	-.307 [†]
	SH	Role con/am	-.020	-.05, .01	-.179	-.132	-.311 [†]
	ED	Role con/am	-.020	-.05, .01	-.179	-.132	-.311 [†]
	PB	Role con/am	-.020	-.05, .01	-.179	-.194	-.373 [†]

[†] β $|\beta| \geq .30$, $\beta \geq .50$, ^{††} $\beta \geq .50$, * -Indicates CI is significant at the 1% level

Although tenure does not have a strong direct relationship with continuance co-worker commitment for the Organisation 1, the presence of females in a newcomer's network influences continuance co-worker commitment, which measures perceived costs for leaving their co-workers, who may be their friends at work. This is a similar relationship between tenure and continuance co-worker with multiple centrality as the mediation variable.

Tenure has a direct negative effect on performance proficiency suggesting that newcomers experience higher task mastery. Interestingly, egonet composition, which although has a variance of less than 10% on the relationship, serves to decrease the overall indirect effect of tenure on the performance index. (Perhaps rather than the aspect of gender per se it is the accessibility and validity of the resources available from a person who occupies a particular position, which causes this effect).

Tenure has no significant direct effect on group vs. individual variable but proximal betweenness, a mediating construct, increases the indirect effect of tenure this variable for seniors in the organisation.

For the most part, mediation variables have little to no effect on the relationship between tenure and the organisational outcome variables with three specific exceptions. Tenure has little direct effect on continuance co-worker commitment but egonet composition and multiple centrality reinforce the indirect effect of tenure on the organisational outcome. Egonet composition (gender) weakens the direct relationship between tenure and performance for newcomers indicating that the presence of females in an ego's network lowers task mastery. On the other hand, we observe that the presence of Asians in an ego's network increases task mastery.

Moving on to Organisation 1 information network, we see that tenure has a direct positive effect on co-worker commitment outcomes but a negative direct effect on performance. Unlike in the friendship network, affective organisation commitment does not seem to be an important organisational outcome while tenure directly affects normative organisational commitment and all the three-coworker commitment variables.

Tenure has a direct negative relationship with performance with proximal betweenness as the mediating variable while egonet density influences the indirect effect of tenure on continuance co-worker commitment.

Tenure has a negative low relationship with role conflict/ambiguity, which suggests that in the information network newcomers experience relatively low role conflict/ambiguity. On the other hand, tenure indirectly increases role conflict/ambiguity through closeness centrality. However, closeness centrality position cancels role conflict/ambiguity for newcomers. This is reflected by the positive relatively low beta weight in the total path effect.

Tenure directly affects continuance organisation commitment and with the influence of both egonet density and proximal betweenness, increases newcomer's continuance coworker commitment.

B. Organisation 2

For the friendship network in Organisation 2, performance is the key organisational outcome variable affected directly by tenure. Network positions show little or no effect in increasing or decreasing the indirect affect of tenure on performance however, observe that closeness centrality increases the total affect of tenure on performance from a medium beta of .432 to a large beta of .521. Perhaps for Organisation 2 employees, friendship ties are synonymous with access to information.

Reviewing the information network, tenure has a direct effect on continuance organisation commitment and to a lesser extent on performance. Structural positions of reach based centrality and proximal betweenness appear to have almost no effect on the relationship between tenure and the organisational outcomes. However, egonet density has a cancelling affect on the relationship between tenure and continuance organisational commitment. Results reveal that while tenure in Organisation 2 directly increases continuance organisational commitment, which assesses perceived costs of leaving the organisation, density of a person's network serves to decrease perceived costs of leaving the organisation.

C. Organisation 3

As mentioned earlier, Organisation 3 friendship network shows no relationship between tenure and the organisational outcomes as well as with the mediator variables. On the other hand, in the information network tenure has very low direct negative relationship with role conflict/ambiguity. However, tenure, through four of the mediation variables, indirectly affects role conflict/ambiguity. We see that role conflict/ambiguity is evident, more for newcomers than for the seniors in Organisation 3. By the very nature of the positions, structural holes and reach based centrality accord a person with greater access to information, resources, and ties (Burt, 1992; Bavelas, 1948; Shaw, 1954). Onus then lies on those individuals in such positions to act as transmitters of the information and resources acting as a link between different people and departments. Such people may struggle to keep up with their own work while also fulfilling their roles in the network (Cross & Prusak, 2002).

6.6 SUMMARY

Social networks have been analysed on several levels beginning with a direct interpretation of the network graphs presented in section 140 of this chapter. Newcomers in each organisational network (friendship and information network) occupy various structural positions depending on the type of network, size of organisation, and type of organisation giving a glimpse of the informal network structures in each organisation.

Overall, we that female actors feature differently in each organisation beginning with Organisation 1 where they held less central positions in both the friendship and information networks. We observe a similar trend amongst female actors in Organisation 3. On the other hand, females in Organisation 2 featured more prominently in both the networks.

Race relations also differed in each of the three organisations with Organisation 2 showing that actors who do not belong to the dominant race group have integrated with people in the organisation.

These graphs give a general picture of the inner workings of each organisational network but these results are inconclusive. Therefore, correlations and regression analyses provided the statistical background for the assumptions.

Results from correlations and regressions provide varying results for each of the organisational networks as already mentioned under each relevant section. The following chapter interprets and discusses in detail with reference to literature the results from all the analyses and tests.

CHAPTER 7. DISCUSSION AND RECOMMENDATIONS

Chapter six presented results from analyses conducted to establish hypotheses and objectives of this research. The findings for each organisational network reveal that organisational outcomes and social network variables feature differently for each organisation. Accordingly, this chapter discusses the findings by organisation.

This section begins with a summary of the major findings and conclusions associated with each individual hypothesis from the friendship and information network. Table 7-1 summarises findings and outcomes of hypotheses with regard to the friendship network and Table 7-2 does the same with the information network for the three organisations. Due to space constraints, these tables only summarise findings, which support or do not support respective hypotheses. Appendix C contains the table with the remaining hypotheses for which there was no finding or support.

This chapter then proceeds with discussion, recommendations, and conclusions in relation to the results discussed in the previous chapter.

Table 7-1: Summary of friendship network findings for hypotheses

Friendship network findings for hypotheses					
Specific hypotheses	Measured by	Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
H1: Shorter tenure	Tenure				
a) Lower Perf		Higher Perf for shorter tenure	Higher Perf for longer tenure	No effect	Rejected for Org 1; Rejected for Org 2
b) Higher role con/am		Low role con/am for shorter tenure	No effect	No effect	Rejected for Org 1
H2: Longer tenure	Tenure				
a) Higher Afforg		Higher Afforg for longer tenure	No effect	No effect	Supported for Org 1
b) Higher Normorg		Higher Normorg for longer tenure	No effect	No effect	Supported for Org 1
c) Higher Conco		Low Conco for shorter tenure	No effect	No effect	Rejected for Org 1
H5: Shorter tenure - dense friendship networks	ED				
c) Higher Perf		No effect	ED - Higher Perf for longer tenure	No effect	Rejected for Org 2
H6: Longer tenure - dense friendship networks	ED				
a) Higher Afforg		ED - Higher Afforg for loner tenure	No effect	No effect	Supported for Org 1
H7: Shorter tenure - gender diversity	EC (gender)				
a) Lower task mastery		EC - lower Perf for shorter tenure	No effect	No effect	Supported for Org 1
H8: Longer tenure - gender diversity	EC (gender)				
a) Higher Afforg		EC - Higher Afforg for longer tenure	No effect	No effect	Supported for Org 1

Specific hypotheses	Measured by	Friendship network findings for hypotheses			
		Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
b) Higher Normorg		EC - higher Normorg for longer tenure	No effect	No effect	Supported for Org 1
f) Higher Conco		EC - higher Conco for shorter tenure	No effect	No effect	Rejected for Org 1
H11: Structural holes in friendship network	SH				
c) Lower Afforg		SH – Higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
H12: Centrality positions	DC				
a) Lower Afforg		DC – Higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
h) Higher role conflict/ambiguity		DC - higher role con/am for shorter tenure	No effect	No effect	Supported for Org 1
H12: Centrality positions	CC				
a) Lower Afforg		CC - higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
g) Higher task mastery		No effect	CC - Higher Perf for longer tenure	No effect	Rejected for Org 1
h) Higher role conflict/ambiguity		No effect	No effect	No effect	Probably rejected
H12: Centrality positions	RBC				
a) Lower Afforg		RBC – higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
h) Higher role conflict/ambiguity		RBC - higher role con/am for shorter tenure	No effect	No effect	Supported for Org 1
H12: Centrality positions	PB				
b) Lower Normorg		PB - Higher Normorg for longer tenure	No effect	No effect	Rejected for Org 1
g) Higher task mastery		No effect	PB - Higher Perf for longer tenure	No effect	Rejected for Org 2

Specific hypotheses	Measured by	Friendship network findings for hypotheses			
		Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
i) Individual rather than group		Gpindiv - higher for longer tenure	No effect	No effect	Rejected for Org 1
H12: Centrality positions f) Higher Conco	MC	MC - higher Conco for shorter tenure	No effect	No effect	Supported for Org 1

* Please refer to the 'Glossary of terms' for abbreviations found in page XXX

Table 7-2: Summary of findings in information networks

Specific hypotheses	Measured by	Information network findings for hypotheses			
		Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
H1: Shorter tenure	Tenure				
a) Lower Perf		Higher Perf for shorter tenure	Perf for longer tenure	No effect	Rejected for Org 1; and Rejected for Org 2
b) Higher role con/am		Lower role con/am for shorter tenure	No effect	Lower role con/am for shorter tenure	Rejected for Org 1; and Rejected for Org 3
H2: Longer tenure	Tenure				
b) Higher Normorg		Higher Normorg for longer tenure	No effect	No effect	Supported for Org 1
c) Higher Conorg		No effect	Longer tenure increases Conorg	No effect	Supported for Org 2
d) Higher Conco		Little effect on Conco	No effect	No effect	Rejected for Org 1
e) Higher Affco		Higher Affco for longer tenure	No effect	No effect	Supported for Org 1
f) Higher Normco		Higher Normco for longer tenure	No effect	No effect	Supported for Org 1
H3: Shorter tenure - Low density information networks					
a) Higher Afforg	ED	ED - higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
c) Higher Conorg		No effect	ED – lower Conorg for longer tenure	No effect	Rejected for Org 2
f) Higher Conco		ED - Higher Conco for shorter tenure	No effect	No effect	Supported for Org 1
H4: Short tenure - dense information network					
b) Lower role conflict/ambiguity		No effect	No effect	ED - Higher role con/am for shorter tenure	Rejected for Org 3

Specific hypotheses	Measured by	Information network findings for hypotheses			
		Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
H7: Short tenure - gender diversity	EC (gender)				
a) Lower task mastery		EC – Higher Perf for shorter tenure	No effect	No effect	Rejected for Org 1
H8: Longer tenure - gender diversity					
e) Higher Normco		EC – Higher Normco for longer tenure	No effect	No effect	Supported for Org 1
H9: Short tenure - race diversity	EC (race)				
a) Lower task mastery		EC race - Higher Perf for shorter tenure	No effect	No effect	Rejected for Org 1
H11: Structural holes in friendship network	SH				
b) Higher role con/am		No effect		SH – higher role con/am for shorter tenure	Supported for Org 1
c) Lower Afforg		SH - higher Afforg for longer tenure			Rejected for Org 1
H12: Centrality positions	DC				
a) Lower Afforg		DC - Higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
H12: Centrality positions	CC				
a) Lower Afforg		CC - Higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
b) Lower Normorg		CC - Higher Normorg for longer tenure	No effect	No effect	Rejected for Org 1
d) Higher Affco		CC - Higher Affco for longer tenure	No effect	No effect	Rejected for Org 1
e) Higher Normco		CC - Higher Normco for longer tenure	No effect	No effect	Rejected for Org 1

Specific hypotheses	Measured by	Information network findings for hypotheses			
		Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
H12: Centrality positions	RBC				
c) Lower Conorg		No effect	RBC - Higher Conorg for longer tenure	No effect	Rejected for Org 1
h) Higher role conflict/ambiguity		No effect	No effect	RBC - Higher role con/am for shorter tenure	Supported for Org 1
i) Individual rather than group		RBC - Higher Gpindiv for longer tenure	No effect	No effect	Rejected for Org 1
H12: Centrality positions	PB				
d) Higher Affco		PB - Higher Affco for longer tenure	No effect	No effect	Rejected for Org 1
f) Higher Conco		PB - Higher Conco for shorter tenure	No effect	No effect	Supported for Org 1
g) Higher task mastery		No effect	PB - Higher Perf for longer tenure	No effect	Rejected for Org 2
h) Higher role conflict/ambiguity		No effect	No effect	PB - Higher role con/am for relative tenure	Supported for Org 3
H12: Centrality positions	MC				
b) Lower Normorg		MC - Higher Normorg for longer tenure	No effect	No effect	Rejected for Org 1
d) Higher Affco		MC - Higher Affco for longer tenure	No effect	No effect	Rejected for Org 1
e) Higher Normco		MC - Higher Normco for longer tenure	No effect	No effect	Rejected for Org 1

* Please refer to the 'Glossary of terms' for abbreviations found in page XXX

Findings from Table 7-1 and Table 7-2 show that some hypotheses are supported. It is surprising to find that social network positions do not appear to influence organisational outcomes but rather tenure plays a greater role in determining significant organisational outcomes. The following section discusses the findings in relation to the hypotheses.

7.1 ROLE OF TENURE ON SOCIALISATION OUTCOMES

The following section highlights tenure's effect on various organisation outcomes through the mediating role of specific social network positions and characteristics. Tenure was the independent variable because it reflects relative newcomer status on a more continuous scale.

7.1.1 ORGANISATION 1

A. Friendship network

Section 6.2 covers the network graphs for each organisation that featured in this research. From these graphs, we can sometimes ascertain various trends, including tenure, gender, race, and trends for respondents. These graphs encapsulate network positions of respondents for both the friendship and information networks. Table 6.1 shows the summary of network trends for Organisation 1 from which we may glean relationship patterns between actors.

Organisation 1 has only two newcomers and one relative newcomer with tenure ranging between three and four years. Newcomers appear in the periphery of the friendship network, while the relative newcomer actor appears embedded in the network. Tenured staff members, as can be expected, feature more prominently in the friendship network based on their numbers within the organisation. The placement of the newcomers indicates on a preliminary level that tenure influences position in the network because it takes time to cultivate and establish relationships.

Moreover, Organisation 1 had the highest response rate, which gives the reader an opportunity to observe and understand relationship patterns between actors. Non-respondents mostly appear in the periphery of the network while two

other non-respondents, physically separated from the remaining actors appear disconnected from the remaining actors in the friendship network.

In addition to tenure, friendship network graphs reveal gender and race dynamics of the actors.

- *Gender*: As an automobile manufacturer, Organisation 1 appears to employ fewer females in comparison to males. Males who are the dominant gender group appear to spread out in the network with ties to other males. Tenured females on the other hand, appear in closer proximity, sharing relatively fewer ties with each other.
- *Race*: Organisation 1 is an Asian based organisation in which Asians are the dominant race group. This is evident because of their large presence in the Organisation. Non-Asians, who are not the dominant race group, appear in the periphery of the friendship network.

It is possible to deduce on a preliminary level, taking into account the social network graphs, that tenure does affect an actor's position in the friendship network of Organisation 1. Perhaps as Blau (1964) explains, trust builds over time, leading one to believe that tenured staff members of Organisation 1 may have established relationships based on trust built over the years of working together and therefore have more connections with others in the network. At the same time, it is possible that the two newcomers, who appear in the periphery, do not work in close physical proximity to others in the network and therefore have fewer friendship ties to others.

While the network graphs give an overall picture of the gender, race, and tenure dynamics, they do not statistically prove the relationship patterns, and as a result, correlation and regression tests, which followed, gave a more reliable point of view.

Section 6.5.2 presented regression results that investigated tenure's relationships with social network variables and organisational outcomes for each organisational network. This section now focuses on key features that stand out for Organisation 1's friendship network.

A.i. Direct relationship

In the friendship network, tenure has a strong, positive, and direct influence on an individual's affective organisational commitment and to a lesser extent on normative organisational commitment. Affective organisation commitment refers to an employee's emotional attachment to, identification with, and involvement in the organisation and its goals (Allen & Meyer, 1990b). Normative organisation commitment develops when individuals feel an obligation to remain with the organisation (Wiener, 1982).

The findings suggest that tenure in the organisation influences an individual's emotional commitment and creates a sense of obligation to remain with the organisation. This finding supports *Hypothesis 2a and 2b*, which proposed that longer tenured individuals in the organisation, would experience affective and normative organisational commitment. The findings in this research suggest that tenured staff experience greater organisational commitment with almost no involvement from the social network positions.

It is possible that as a professional organisation, employees maintain relationships with others in the network, but as such, these ties may not necessarily offer information and resources pertaining to job and organisation.

Tenure directly affects an individual's organisational commitment more than any other outcome in the friendship network of this organisation, specifically affective and normative organisational commitment, and there are several theories that might explain this phenomenon. Considering overall commitment to organisation, some authors note that when tenure, a personal demographic variable that is one of the antecedents of commitment, has a positive relationship with commitment, it may be a reflection of the growth processes and personal change involved in the development of identification with the organisation (Hall et al., 1970 & Lee, 1971). The presence of ties observed in the friendship network may indicate trust between actors (Blau, 1964). Actors who remain longer with the organisation cultivate trust worthy relationships with several others implying that over time, friendship grows and this encourages individuals to achieve social integration, which is an antecedent to organisational commitment (Hartman & Johnson, 1989).

One possible theory that supports affective commitment is perceived organisational support (POS). This theory reflects the global beliefs employees develop concerning the extent to which their organisation values their contribution and cares about them (Eisenberger, Huntington, Hutchison, & Sowa, 1986). Settoon et al., (1996) add that when employees feel supported by their organisation they may attempt to repay their debt through affective commitment to the organisation. Essentially, individuals may subdue their goals to promote that of the organisation. This may link with the concept of individualism and collectivism.

The concept of individualism and collectivism in culture maintains that individuals with a collectivist orientation promote the organisational goals rather than individual ones emphasising their belonging to the social group (Hofstede, 1984). According to Eaton and Louw (2000), countries such as Korea, People's Republic of China, Japan, Hong Kong, Malaysia, and India feature as collectivist cultures. Organisation 1 is an Asia based organisation where Asians are the dominant race, which could mean that the organisation as well as Asian individuals may feature on the collectivism dimension displaying interdependency rather than independence (Eaton & Louw, 2000). Further, Morris, Davis, and Allen, (1994) posit that collectivism involves the subordination of personal interests to the goals of the larger work group/organisation. If members, specifically Asian members of this organisation orientate along the collectivism dimension, lifetime commitment to the organisation (normative organisation commitment) would promote the organisational goals more than individual goals because by remaining they would ensure continuity.

In the friendship network, tenure has a negative, albeit moderate direct effect on role conflict/ambiguity. This surprising finding runs against *Hypothesis 1b*, which proposed that individuals with relatively shorter tenure, i.e. newcomers, would experience higher role conflict/ambiguity. Socialisation literature suggests that newcomers would experience higher role conflict/ambiguity as they try to cope with their roles and expectations (Kahn, et al, 1964; King & Sethi, 1998). However, we find that newcomers in Organisation 1 experience lower role conflict/ambiguity. One reason could be that supervisors assign newcomers with

more limited roles and responsibilities in keeping with their short tenure in the organisation. As management begins to trust them, over time they may take on additional responsibilities. Several senior respondents hold manager positions in Organisation 1. It may be possible that managers have more a wider range of responsibilities.

An underlying assumption is that individuals experiencing low levels of role conflict/ambiguity should have the favourable effect of experiencing greater task mastery. Individuals with shorted tenure report higher self-perceived task mastery when they experience lower levels role clarity/ambiguity. Again, this finding runs against *Hypothesis 1a*, which suggests that newcomers would experience lower levels of task mastery. It appears that through formal and informal socialisation process, newcomers have gained the necessary information to understand their job and have adjusted to their job. Newcomers might possibly have more clearly defined and narrow roles leading to a better self-view of their mastery of a more limited field of roles. We may deduce from this particular relationship that newcomers benefit from having limited field of roles, which ensures that they master their tasks before taking on more.

A.ii. Mediating role

In the friendship network of Organisation 1, there was no strong mediation. However, there are smaller effects of SNA variables, which are worth taking a note.

Individuals with relatively shorter tenure in Organisation 1 appear to experience higher task mastery but egonet composition, which measures the presence of females in an ego's network, weakens overall task mastery for newcomers. It is interesting to note that tenured individuals, whose networks include females, experience task mastery. This relationship is indicated by 'Indirect path magnitude' in Table 6-18. However, this is an indirect path magnitude, which weakens newcomers overall task mastery. This finding supports *Hypothesis 7a* to show that the presence of females in an ego's network lowers performance proficiency. Opponents of diversity have argued that diversity lowers the effectiveness of group interaction because of conflict arising from differing viewpoints, personalities, skills, and abilities (Williams & O'Reilly, 1998).

In the friendship network, individuals with relatively shorter tenure report lower continuance co-worker commitment. Egonet composition for gender reinforces the relationship through which, newcomers experience higher continuance co-worker commitment. This finding runs against *Hypothesis 8f*, which suggested that the presence of females would influence continuance co-worker commitment in tenured individuals and it is surprising for two reasons. The first is that tenured individuals do not report continuance co-worker commitment, as theory suggests. Secondly, the presence of females in an ego's network influences continuance co-worker commitment for newcomers. Newcomers appear to have established ties with their female co-workers, which affects their perceived cost of leaving their co-workers.

Multiple centrality measures also appear to reinforce newcomer's continuance co-worker commitment. Newcomers may have direct and indirect ties to several others, which may be of importance to them. These ties therefore represent the perceived cost of leaving their co-workers, indicated by continuance co-worker commitment.

Individuals with relatively shorter tenure experience lower role conflict/ambiguity but degree centrality, and reach-based centrality reinforce newcomer's overall sense of role conflict/ambiguity.

Freeman (1978/1979) explains that an actor in a degree centrality position has direct contact with many others becoming a major channel of information. Reach-based centrality measures the number of steps individuals can reach others in the network in few steps. Degree centrality and reach-based centrality accord a person with direct and indirect ties to several others in the network making them a major channel of information. Actors in such positions may therefore, lose perspective of their work and role while fulfilling their roles in the network (Cross & Prusak, 2002). This finding supports *Hypothesis 2h* for both degree centrality and reach-based centrality, which suggest that individuals with shorter tenure with degree centrality and closeness centrality would experience higher role conflict/ambiguity.

Organisation 1 has three relationships of concern, namely, degree centrality and reach-based centrality weakening newcomer's overall role conflict/ambiguity

and the presence of females in an ego's network (egonet composition – gender) weakening self-perceived task mastery. Centrality positions show newcomer's relative importance in relation to others in the friendship network. However, newcomers experience greater role conflict/ambiguity when they have direct and indirect ties with others in the network through which they receive a broad range of information. Organisation 1 may want to assess whether newcomers receive valid and reliable role information and consider tools to manage this outcome, to facilitate newcomers accomplishing their given work.

At the same time, we notice that newcomers experience lower task mastery with the presence of females in their network. Organisation 1 may want to encourage newcomers to establish relationships with others who may be relevant for their work.

The following section discusses findings from the information network.

B. Information network

Organisation 1's information networks show similar network dynamics observed in the friendship network. Firstly, we observe that the two newcomers once again appear in the periphery of the information network, at opposite ends to each other, while the only relative newcomer (tenure between three and four years) appears embedded in the network. Some seniors appear in the periphery of the network. One attribute this study did not focus on was the hierarchical positions of these actors, which may have exposed a node's relative importance to others.

Social network graphs allow one to observe gender and race dynamics of a particular network. Accordingly, each graph uses these demographic variables to identify whether gender and race determine a person's position in the network.

- *Gender:* As an automobile manufacturer, this organisation appears to employ few females. Females, although few in number, appear embedded in the information network in comparison to males, who are the dominant gender group. Male nodes appear spread across the network with several nodes appearing in the periphery.

- *Race*: Organisation 1 is an Asia based manufacturer whose employees are predominantly Asians. Non-Asians, although fewer in number, appear embedded in the information network while in the friendship network they appear in the periphery. We may infer from this that non-Asian actors embedded in the network may have key information and resources for exchange.

Based on the observations of the information network graphs, we might possibly state that tenure may play a role in determining placement in the information network. One possible reason for this may be in line with Blau's (1964) explanation that ties between actors are an indication of trust, which actors build and maintain over time. Trust between actors then accords them with giving out and receiving valuable information pertaining to the functioning of others' positions and work. Over time when such actors build their reputation, they may become central in the information network. At the same time, certain positions in the hierarchy, such as administrative and coordinating positions, which serve to connect people from different departments or functions, may also play a role in the placement within the information network. Podolny and Baron (1997) explain that because of task interdependencies, resource flows, and opportunities for contact associated with organisational roles, individuals to some degree 'inherit' networks by virtue of their formal organisational positions. Information received from such sources is authentic and thereby serves to bind activities and functions

Organisation 1 is a corporate organisation where perhaps there is a need to maintain the professional working relationships with each other. Although, there is a semblance of a friendship network, it does not appear to have much role on organisational outcomes. On the other hand, the information network takes on a different pattern in comparison to the friendship network as we see with the regression analyses.

Tenure appears to have direct relationships with different organisational outcomes in the information network in comparison to the friendship network. The distinguishing factor for Organisation 1 information network is the mediating role of the SNA variables. The following section discussed tenure's direct

relationship with organisation outcomes and the mediating role is discussed separately.

B.i. Direct relationship

On a brief note, we observe that tenure has direct positive relationships with normative organisational commitment, normative co-worker commitment, and affective co-worker commitment. The findings support *Hypotheses 2b* (higher normative organisation commitment for tenured individuals), *Hypothesis 2d* (higher affective co-worker commitment for tenured individuals), and *Hypothesis 2e* (higher normative co-worker commitment for tenured individuals). Normative commitment reflects individual's lifetime commitment and a sense of obligation to the organisation as well as to their co-workers while affective co-worker commitment reflects emotional attachment to coworkers (Allen & Meyer, 1991). Actors cultivate and establish relationships with co-workers and peers over time and as a result, actors in Organisation 1, experience higher co-worker commitment in which they feel emotional attachment as well as lifetime commitment to their co-workers and organisation. This practise maybe attributed to the inherent Asian culture.

Chapter three focused briefly on cultural dynamics, specifically individualism/collectivism, affecting individuals' orientation towards organisation and coworkers. The concept of individualism/collectivism in culture maintains that individuals with a collectivist orientation promote the organisational goals rather than individual ones emphasising belonging to the social group (Hofstede, 1984). According to Eaton and Louw (2000), countries such as Korea, People's Republic of China, Japan, Hong Kong, Malaysia, and India feature as collectivist cultures. Organisation 1 is an Asia based organisation where Asians are the dominant race, which could mean that the organisation as well as individuals may feature on the collectivism dimension displaying interdependency rather than independence (Eaton & Louw, 2000). Collectivism involves the subordination of personal interests to the goals of the larger work group/organisation (Morris, Davis, & Allen, 1994). If members of this organisation orientate along the collectivism dimension, lifetime commitment to the organisation and co-workers would promote the organisational goals more than individual goals.

Newcomers report higher self-perceived task mastery in Organisation 1's information network. This finding runs against *Hypothesis 1a*, which proposed that newcomers would experience lower task mastery. As organisations expend time and money orientating newcomers so that they adjust to the organisation and to the job (Van Maanen and Schein, 1979), we see that newcomers in Organisation 1 may have adjusted to their tasks, indicated by higher self-perceived task mastery. However, it must be noted that this study assessed self-perceived task mastery rather than actual task mastery, which supervisors assess. Individuals with relatively short tenure in the organisation report lower role conflict/ambiguity. This finding runs against *Hypothesis 1b*, which suggested that newcomers would experience higher role conflict/ambiguity. It is possible that Organisation 1 assigns newcomers with a limited scope of work, which they have mastered leading to higher self-perceived task mastery and lower role conflict/ambiguity.

B.ii. Mediating role

As mentioned earlier, social network positions appear to mediate significantly in the information network unlike in the friendship network. Of particular note, degree centrality, closeness centrality, structural holes, egonet density, proximal betweenness, and multiple centrality measures appear to mediate the total path effect. Each of these positions by way of definition accords a person with strong and weak ties to others in the network, while at the same time giving them a position through which they can control the flow of information.

Degree centrality reinforces overall affective organisation commitment for tenured individuals. Research shows that centrality positions accord newcomers with a broad range of information through which they may experience higher role conflict/ambiguity and lower organisational commitment. This finding runs against *Hypothesis 12a*, which proposed that degree centrality would mediate negatively to lower newcomers' overall affective organisational commitment. However, degree centrality reinforces affective organisational commitment for tenured individuals suggesting that direct access to people leads them to enjoy

membership in the organisation and in the process form emotional attachment to the organisation (Allen & Meyer, 1990b)

Closeness centrality, which indicates whether an actor has achieved a sense of being independent of others (Freeman 1978/1979), plays a mediating role on normative organisation commitment, affective co-worker commitment, normative co-worker commitment, and role conflict/ambiguity for tenured members of Company 1. These findings run against *Hypothesis 12a*, *12b*, and *12e*, which suggested that individuals with shorter tenure would report lower affective organisational commitment, lower normative commitment, and higher normative co-worker commitment, respectively. However, findings suggest that closeness centrality reinforces normative organisation commitment, affective co-worker commitment, and normative co-worker commitment for tenured individuals. We may deduce that a senior or tenured individual establishes and maintains contacts with key persons who could contribute towards his or her career enhancement. Organisation 1's respondents were mostly heads of departments. In order for them to meet deadlines and accomplish goals, they would have to collaborate with other departments necessitating good working relationships. In addition, ties to other relevant people based on trust (Blau, 1964) may be the reason that two co-worker commitment variables, namely, affective co-worker and normative co-worker, appear important.

Another mediating variable is the concept of structural holes. The findings concerning structural holes require that we lay the basis of our perception along the thought process of Burt (2004). He wrote that people, whose networks bridge the structural holes between groups, have earlier access to a broader diversity of information, giving them an advantage in detecting and developing rewarding opportunities. At the same time, such positions accord individuals with a combination of strong and weak ties to many others in the network. The combination of ties and diverse information reinforces affective organisational commitment for tenured individuals, through which they develop emotional attachment to the organisation. This finding runs against *Hypothesis 11c*, which suggested that individuals with shorter tenure would report lower affective organisational commitment.

Reach-based centrality appears to reinforce, marginally, collectivism in tenured individuals. This finding runs against *Hypothesis 12i*, which suggested that reach-based centrality would mediate an individualist orientation for individuals with shorter tenure. This mediator shows that tenured individuals are less dependent on others to reach their destination. They may perhaps have relatively more direct links with others in comparison to newcomers. It would therefore, be in their interest to maintain those direct links in order to ensure future interactions, which may perhaps reflect on the group rather than individual orientation. This relationship links with other findings in which tenure in the organisation increases affective and normative organisational commitment. These two commitment variables indicate that tenured individuals have an emotional attachment and a sense of lifetime commitment or obligation to remain with the organisation. Normative commitment has links with the collectivist culture (Allen & Meyer, 1991); therefore, it makes sense that tenured individuals would have a collectivist orientation with the added link of normative commitment.

Organisation 1's information network shows that social network variables directly mediate several organisational outcomes especially for tenured individuals. Newcomers in Organisation 1 appear to experience increased task mastery and lower levels of role conflict/ambiguity, which is an anomaly with research findings. Organisation 1 may therefore need to consider delegating some responsibilities to individuals with relative tenure.

7.1.2 ORGANISATION 2

A. Friendship network

Organisation 2 is the regional office of an INGO for Southern Africa, whose employees are South Africans as well as people from around the world. Employees from this office support operations in the surrounding Southern African countries, which may imply that this organisation recruits candidates based on their expertise in an area.

One major difference between Organisation 1 and Organisation 2 is the number of newcomers employed by Organisation 2, who feature prominently in the friendship network. Newcomers hold various network positions in the

friendship network, but in particular, we note that five of the ten newcomers appear embedded in the network while only two newcomers appear in the periphery. Only one senior appears in the periphery of the friendship network and some other seniors appear in close proximity to a few of the newcomers sharing reciprocal friendship ties with them.

Organisation 2 appears to employ a diverse range of people for their skills and abilities in keeping with the requirements for a regional office, which is reflective in the basic demographic statistics on gender and race. These statistics reveal that demographic variables have relatively equal distributions on the dimensions of female/male for gender and whites/non-whites for race. Network graphs on the respective dimensions reveal that males and females equally represent newcomers with more female newcomers nodes located in the centre of the network while some of male newcomers appear in the periphery.

Network graphs for the friendship network gives a picture of both gender and race patterns.

- *Gender:* In the friendship network, females, majority of whom are white, and are the dominant race group, appear to form a cluster with ties to other females as well as males; while their male counterparts appear scattered in the network. More number of female nodes appear embedded in the friendship network when compared to males, with a large number of male nodes appearing in the periphery. Considering race and gender relations of actors in the network, we may infer that these actors have information and resources relevant to others in the network. Administrative or coordinative positions may also play a part in their network positions. An aspect not explored in this study includes personality types of the individuals in central positions that may be considered for future study.
- *Race:* Although, there is equal representation of white and non-white actors in the networks, their placement across the network differs. Non-white actors are spread across the network while some of their white counter parts appear to cluster in one section of the network. We note that three non-white newcomers appear embedded in the network, while two other non-white newcomers

appear in the periphery of the network. Proponent of diversity advocate that differences among group members give rise to varied ideas, perspectives, knowledge, and skills that can improve their ability to solve problems and accomplish their work (Polzer, Milton, & Swann, 2002) which may be a reason for the diversity of race in Organisation 2.

From these observations, we may draw preliminary conclusions that tenure in Organisation 2 does not appear to affect an actor's position in the network. To substantiate this observation regression analyses investigates relationship patterns.

A.i. Direct relationship

Regression tests determined the relationship between tenure, social network variables, and the organisational outcomes. Findings reveal that for Organisation 2's friendship network, tenure has a direct relationship with performance. This finding runs against *Hypothesis 1a*, which suggested that individuals with shorter tenure would report lower task mastery.

Saks and Ashforth (1997a) mention that effective socialisation of newcomers may lead to higher performance; however, results indicate that for Organisation 2, senior staff, i.e. not newcomers, experience greater task mastery. Socialisation literature shows that newcomers rely on experienced peers and direct supervisors as important sources of job-related information because they may be more familiar with newcomers' jobs (Dalton & Thompson, 1986; Evan, 1963; Falcione & Wilson, 1988; Louis, Posner & Powell, 1983). It makes sense then that seniors in the organisations, who are newcomers' peers and supervisors, understand their own work, which reflects in their self-perceived task mastery.

As Organisation 2 is a regional office requiring their employees to travel to different country offices as support staff for a specified area of operation, part of their job includes knowing the right persons to contact for work related information. Familiarity with customs, operations, and modus of operations would go a long way in ensuring that seniors have ready access to information and resources. Several respondents, who travel extensively, noted down that their social network extends to the global organisational network. Seniority in the organisation through many years of service would potentially create high trust

relations, which newcomers may take years to build especially if their counter parts live in other countries.

Another reason for self-perceived higher task mastery among tenured staff may be that friendship ties are synonymous with access to information partly because several actors regularly travel for extended periods. By maintaining friendship ties, they are able to access information and request participation and coordination from others in the network as and when required.

A.ii. Mediating role

Three of the eight mediating variables show small mediation role in the total path on performance. The three specific social network variables are egonet density, closeness centrality, and proximal betweenness. Egonet density, measures potential ties in an ego's network; closeness centrality measures whether an actor's has achieved a sense of independence of others; and proximal betweenness measures an actor's ability to control the flow of information. Because of their frequent travels, respondents in Organisation 2 may find it challenging to maintain friendship ties, and perhaps this could be one reason for a weak mediation of SNA variables. Although, mediating variables are not significant, each of them reinforces actors' overall task mastery for tenured individuals rather than for newcomers. These findings run against *Hypothesis 12g*, (lower affective organisational commitment for shorter tenured individuals with closeness centrality); *Hypothesis 12b* (lower normative organisational commitment for shorter tenured individuals with proximal betweenness); and *Hypothesis 5c* (higher task mastery for shorter tenured individuals dense friendship networks). Closeness centrality and egonet density accord a person with several ties to others and through proximal betweenness, they are able to control the flow of information. When actors have a wider network with the ability to control the flow of information, they are less reliant on any one person. This ensures that they are able to get the work done and have access to people within the office as well as with the wider organisational network to tap in to resources. In addition, the term tenure indicates that people have acquired task mastery over a period and are therefore proficient at what they do.

B. Information network

As we observed in the friendship network, newcomers in Organisation 2's information network feature prominently in the network. Several of the newcomers appear to cluster around one central senior while only one newcomer appears in the periphery of the information network.

Organisation 2's demographics equally represent both genders and we observe almost equal distribution between whites, who are the dominant race and the non-whites. Social network graphs gender and race distribution, show similar dynamics between the two demographic variables in terms of the positioning in the network.

- *Gender*: In the graph representing gender, a few females congregate in one end of the network while the remaining female nodes spread out with ties to each other as well as to males. Males on the other hand, appear to spread across the network with three appearing in the periphery.
- *Race*: Nodes based on race show a similar pattern to that observed in the gender graph. All the non-white newcomers appear embedded in the network while only three of the five white newcomers appear in the same position, with the fourth placed in the periphery.

Proponents of diversity hold that differences among group members give rise to varied ideas, perspectives, knowledge, and skills that can improve their ability to solve problems and accomplish their work (Polzer, Milton, & Swann, 2002). In keeping with diversity, Organisation 2 appears to employ individuals from diverse backgrounds who have the necessary skills and abilities to do their jobs, thereby authenticating the belief of some people.

Regression results show that tenure appears to increase self-perceived task mastery and perceived costs of leaving as indicated by continuance organisation commitment. However, egonet density negatively mediates overall continuance organisational commitment in newcomers.

B.i. Direct relationship

Tenure's direct relationship with continuance organisational commitment can be explained by Becker's (1960) work on the idea of side bets. He explained that individuals stake some unrelated aspect of their lives on continued organisational membership. Individuals may choose to stay in the organisation by staking their reputation for stability, which may generate the sense of obligation to remain with the organisation. He further claims that aspects such as non-portable pensions, tenure in the organisation, organisation-specific skills, status, age, or other factors combine as accumulated investments, rewards, and sunk costs contribute towards increased perception cost of leaving. By the very nature of their jobs, tenured respondents may have built an extensive network with the global organisational members. They may be highly regarded in the organisation but should they leave and join another organisation, they will have to start all over again to prove themselves. In addition, since several tenured respondents are international staffs, benefits accrued to them would be lost or forgone when they leave the organisation. This finding supports *Hypothesis 2c* which suggested that tenured individuals would report continuance organisational commitment.

Tenured staff in the information network also experience greater task mastery. This finding runs against *Hypothesis 1a*, which suggested that newcomers would experience lower task mastery. Once again, we may associate experienced peers and direct supervisors as important sources of job-related information making them ideal sources for newcomers (Dalton & Thompson, 1986; Evan, 1963; Falcione & Wilson, 1988; Louis, Posner & Powell, 1983). By association, seniors, who are newcomers' peers and supervisors, understand their own work, which reflects in their self-perceived task mastery.

B.ii. Mediating role

In Organisation 2's information network, mediating SNA variable egonet density, which measures the potential ties in an ego's network, weakens overall continuance organisational commitment in tenured individuals. This is an interesting finding because it runs against *Hypothesis 3c*, which suggested that shorter tenured individuals with low-density information networks would report

increased continuance organisation commitment. However, egonet density weakens continuance organisation commitment for tenured individuals. Some respondents mentioned having a wider network with members from the global organisation. Actors with potentially large networks extending to the wider global organisation would have direct access to resources and information relevant for their job through strong and weak ties. Individuals can benefit from having a large network of non-redundant information contacts as it may help in acquiring access to information otherwise unavailable, such as promotions and finding (Morrison, 2002). The umbrella organisation may offer similar benefits and rewards they receive in this office, which lowers tenured staffs perceived cost of leaving this organisation.

Organisation 2's friendship and information network show that SNA variables do not play significant mediating roles. The exception is where egonet density mediates continuance organisational commitment negatively.

7.1.3 ORGANISATION 3

A. Friendship network

Organisation 3 is an academic environment with a large sample size. This organisation employs the highest number of newcomers in comparison to the other two organisations. Newcomers feature prominently in the friendship and information networks with several of them embedded in the large networks with only a few appearing in the periphery.

Each department has varying numbers of newcomers. Department C employ the highest number of newcomers and department D has only one newcomer. Newcomers appear both in the periphery as well as in the centre of the friendship network where 'the action is'. Several newcomers from department C are embedded in the network with ties to members in their departments as well as in others.

Friendship network graphs show gender and race relations for the actors.

- *Gender*: Organisation 3 is an academic environment that employs few females relative to males. There is a general lack of connection between females in the friendship network. One female newcomer and two relative female newcomers belonging to the same department are embedded in the network. Another five female newcomers appear in the periphery of the network.
- *Race*: Company 3 employs few non-whites, majority of whom are spread across the network. Four non-white newcomers appear in the periphery of the friendship network with one newcomer and a relative newcomer embedded in the network.

As mentioned in chapter six, Organisation 3's friendship network shows no relationship between tenure and the organisational. Nevertheless, Company 3's friendship network graphs for show that respondents have friendship connections with others in the network. Although, actors have friendship ties to others in the network, it is possible that friendship ties do not affect any of the organisation's outcomes. One plausible reason could be responses to both questionnaires, specifically to organisational outcomes, do not reflect their true orientation. To save time, respondents may have randomly placed a tick on the response boxes, without clearly thinking about the question and their response to that question. There may be other salient features not covered in this study such as satisfaction to both job and organisation, which may be more important than the organisation outcome variables covered in this study.

B. Information network

Social network graphs for Organisation 3 reveals similar patterns of newcomer positions between friendship and information networks. In Organisation 3, there are many newcomers, several of whom appear embedded in the information network especially from department C. Some newcomers from other departments appear in the periphery of the network.

- *Gender*: Several female actors appear in the periphery of the information network with few or no ties to other females. Females are also scattered across

the network. Males on the other hand, cluster in certain areas of the network, with ties to females and other males.

- *Race:* Several non-white actors appear in the periphery of the network, majority of who are newcomers. One newcomer and another relative newcomer appear embedded in the network.

The following section considers the information network of Organisation 3.

B.i. Direct relationship

Tenure, in the information network shows a different pattern of interaction namely that with role conflict/ambiguity displaying a negative low beta weight. In other words, newcomers report lower role conflict/ambiguity. This is a surprising finding runs against *Hypothesis 1b*, which suggested that newcomers would report higher role conflict/ambiguity. As this is an academic environment, newcomers are required to understand their work, lecture, publish articles for journals. Some may also be working towards completing their postgraduate degrees. In the pursuit of completing their studies and establishing relationships, newcomers may experience lower level of role conflict/ambiguity because they focus on their particular tasks.

B.ii. Mediation role

However, mediating social network variables reinforce role conflict/ambiguity in newcomers. In particular, we notice three different positions and one network characteristic that of reach based centrality, structural holes, proximal betweenness, and egonet density, respectively, reinforcing role conflict/ambiguity. The three network positions are indicative of the connectivity of newcomers and in addition network density, which signifies potential ties in an ego's network, all reveal that when newcomers have a wealth of strong and weak ties to others in the network, they experience role conflict/ambiguity.

Gaps in the information flow between groups create structural holes (Burt, 2004). Actors in such positions have strong and weak ties to others in the network through which they create the opportunity to detect and develop rewarding opportunities (Reagans & McEvily 2003), but newcomers in structural holes

experience higher role conflict/ambiguity. Newcomers in such a position, may have access to a wealth of information through their contacts with their co-workers and as a result maybe be inundated with information overload. This finding supports *Hypothesis 11b*, which proposed that individuals with shorter tenure in structural holes would report higher role conflict/ambiguity.

Ehrlich and Carboni, (2005) suggest that those in structural holes positions may be promoted earlier because they have access to a broader diversity of information. This position may Individuals positioned in structural holes may be more noticeable to people of influence in the network. It may be possible that tenured staff of influence will identify newcomers who feature prominently in the network. This may lead to assigning newcomers with additional responsible task as and when the need arises (e.g. when a lecturer leaves they are asked to step in either temporarily or permanently).

We observe that reach based centrality, which counts the number of nodes each node can reach in k or less steps, reinforces role conflict/ambiguity for individuals with shorter tenure. Perhaps newcomers in Organisation 3 place a greater focus on embedding themselves in the information network by building ties to key people who feature prominently in the network. If such a case were true, then it is possible that not all people who feature prominently in the network offer information pertaining to their job, thereby increasing role conflict/ambiguity.

By the very nature of the positions structural holes and reach based centrality accord a person with greater access to information, resources, and ties (Burt, 1992a; Bavelas, 1948; Shaw, 1954). Onus then lies on those individuals in such positions to act as transmitters of the information and resources and as a link between different people and departments. Such people may struggle to keep up with their own work while also fulfilling their roles in the network (Cross & Prusak, 2002). This finding supports *Hypothesis 12h*, which suggested that reach-based centrality would reinforce role conflict/ambiguity in individuals with shorter tenure.

A network characteristic that features in the information network is egonet density, which measures the total number of pairs of alters in the ego network,

i.e., potential ties (Borgatti, Everett, & Freeman, 2002). Egonet density reinforces role conflict/ambiguity in individuals with shorter tenure leading one to believe that when newcomers have a combination of strong and weak ties in a large network dense network, they experience role conflict/ambiguity. This runs against *Hypothesis 4b*, which proposed that newcomers with dense information networks would report lower role conflict/ambiguity. Morrison (2002) suggests that job-related information available from strong and weak ties in a large network offer a variety of information that may not be reliable or consistent thereby increasing role conflict/ambiguity. Hence, we could say that newcomers would benefit from having a smaller circle, with reliable members to acquire their work related information. Most often, information got from several sources could leave a person very confused, and as a result is not able to pay full justice to the immediate task.

Proximal betweenness is a SNA index highlighting the potential of a point to control communication. Newcomers who have the potential to control communication experience an increase in role conflict/ambiguity. Communication is not just limited to the academic work but also to administrative work and the less involved newcomers are with the administrative work, which takes them away from their core work (lecturing, research, and writing academic articles), and thus, they are able to focus on their work and build their reputation. This finding supports *Hypothesis 12h*.

The following section provides an overview of the findings.

7.2 **OVERVIEW**

These discussions reveal that each organisation network has different salient features, which are of equal importance depending on the organisational set up, diversity dynamics as well as size of organisations.

This study proposed that social networks would mediate newcomer's organisational outcomes. Findings suggest that social networks do not have much mediation effect. Social networks appear to have little or no mediation effect on the friendship networks of the three organisations. Where there is little mediation,

it is a minor effect. However, social networks do mediate in the information network, which are worth highlighting.

Social networks mediate strongly in the information network of Organisation 1. For the most part, mediation reinforces specific organisation outcomes but in some cases, mediation weakens overall organisation outcomes. There are only three mediation variables, which have little or no effect in the information network of Organisation 1, and they are egonet composition (gender and race), and reach-based centrality.

Individuals with short tenure in Organisation 3, report low role conflict/ambiguity. Although social network variables show a low, negative value, they reinforce feelings of role conflict/ambiguity in individuals, so that this outcome becomes moderately higher.

In Organisation 2, egonet density as a mediator weakens tenured individuals' overall continuance organisational commitment.

From the discussions in this chapter, it is possible to note that social networks do not appear to be important in friendship networks. Although respondents in each organisation appear to have friendship ties with others in the network, these ties may not be conducive to send and receive work related information. Hence, placement in the friendship network may not be important.

However, mediation in the information network suggests that information pertaining to the effective functioning within the organisation is available in these networks. Information networks assessed frequency of contact with others for work related information, which indicated the strength of the relationship between individuals. Rather than just assessing whether there is a relationship, frequency of contact between actors indicated the relative importance of a person who has information relevant to others, which may make them more central in relation to others. As actors become central, they invariably have access to information and resources, which may further enhance their position in the network because as Brass, Galaskiewicz, Greve, and Tsai (2004) explain, actors in central network positions have greater access to, and potential control over, relevant resources, such as information in a communication network. Actors who are able to control relevant resources and thereby increase others' dependence on themselves acquire

power. Although this explanation might be relevant for Organisation 1, organisation 3 has a different mediating effect.

7.3 LIMITATIONS OF THIS RESEARCH

Chapter six discussed several limitations encountered during data collection and analyses of the results. This section presents limitations encountered in the interpretation of the findings.

- 1) Full network methods dictate obtaining responses from everyone in the network. In theory, this is possible but this has proved to be a challenge for this research following repeated requests to complete the survey and assuring confidentiality of the responses. This gives an incomplete picture of the network especially when several individuals appear in the periphery, as they were non-respondents.
- 2) This research followed a case study approach by investigating social networks in three separate organisations. Each organisation operated in a different industry (automobile manufacturing, international NGO and academic institution) making it difficult to generalise findings. Salient features of each organisational network appears to be relevant for that particular organisational making it difficult to generalise the results. We may be able to apply the results to other similar organisations but factors such as organisation size, culture of organisation, cultural values of employees, prevalence of newcomers appear to influence the informal structures.
- 3) As this research did not focus on the hierarchical positions of the actors occupying various network positions, it was not possible to infer an actor's relative importance in the network. Some actors may hold particular positions in the informal network based on the information and resources in their possession, which may or may not be of importance to others. In the academic institution, certain actors hold coordinating positions through which others in their department depend on to ensure success in their work.
- 4) Respondents from Organisation 2 did not accurately specify their tenure in the organisation. Individuals transferred from other offices to this specific

location mention that they are newcomers to that particular office, when in fact they are tenured individuals in the global organisation. Friendship and information network graphs for Organisation 2 showed that there were ten newcomers but it now appears that this might not be an accurate description of the actual dynamics of the organisation. The global office may be the employer for some of the staff members of this Organisation, while they are physically located in this office, which may mean that such employees may feel, committed to the global office, rather than to the one studied.

7.4 RECOMMENDATIONS FOR FUTURE RESEARCH

Management implications and recommendations for the relevant organisations have been included in the discussions. This section therefore discusses recommendations for future research.

- 1) The surveys collected demographic and attributional data for each respondent. Of note, tenure, a demographic variable has been the key defining variable used to distinguish between newcomers and tenured staff controlling for age, race, and gender. Social network graphs offered a brief glimpse on the racial dynamics for each of the three organisations and regression analyses provided further clues on racial dynamics of the organisation. The results are not very conclusive; therefore, further research on social networks in SA could include race and nationality dynamics of the workplaces.
- 2) This study did not consider actors' hierarchical positions in the network, which may have assisted in understanding a particular actor's importance in terms of information and resources they possess. Further research could include hierarchy positions of actors.
- 3) One of the limitations stemmed from lack of response from each sample. In future, researchers may need to have greater cooperation from the organisation to ensure better response rate. In this research, key personnel such as administrative officers and secretaries collected sealed completed responses from individuals, future studies need to ensure that researchers

have direct contact with potential respondents to ensure confidentiality of their responses.

- 4) Some of the respondents recommended using online surveys to ensure a better response rate as individuals would be assured confidentiality of their responses.
- 5) Socialisation literature discussed individual differences influencing newcomer proactive information seeking process. This research did not focus on individual differences such as self-efficacy and personality type, which may influence a person's ability to seek and maintain relationships with others in the network. Personality type may affect whether individuals appear in the periphery due to lack of social skills or because of general lack of interest. Organisations can then accordingly equip individuals to develop, change, and engage with others in the network.
- 6) This research defined newcomers as those with tenure of three years or less based on Organisation 3's definition of a newcomer. However, research on socialisation considers newcomers during the first three, six, nine, and twelve months in the organisation such as longitudinal analyses conducted by Ashforth and Saks (1996) and Allen and Meyer (1990). Three years is perhaps too long a time period during which time organisations may experience turnover of newcomers and newcomers may have adjusted and become tenured citizens of the organisation. Future research of this particular type and magnitude may have to limit newcomer's tenure to twelve months or less to analyse their attitudes and behaviours before they become integrated into the organisation.

These recommendations arise from limitations encountered during the course of this study. Each of these recommendations may assist researchers and organisations to unblock and reveal relationship patterns not covered in this study. It is not always possible to consider every factor, which may be of relevance for study of relationship patterns but the prerogative lies with the researcher in deciding key elements for study. While these recommendations were beyond the scope of this study, it is possible include in the future.

7.5 **CONCLUSION**

This purpose of this study was to establish the importance of social network relationships for newcomers during socialisation process especially in South Africa. To an extent, this study accomplished this purpose but findings reveal that the mediation role played by social network features is of little or no effect on the overall organisational outcomes especially in the friendship networks. Social network graphs reveal that newcomers and tenured respondents have ties to one another in friendship networks but regression analyses revealed that tenure in the organisation influenced organisational outcomes more than the position in social networks. Perhaps future research that considers certain factors mentioned in section 7.4 may reveal other dynamics, which affect the role of social networks influencing relationships and organisational outcomes

However, social networks are significant in information networks for Organisation 1 and Organisation 3. Possible reasons for this significance may lie with the fact that individuals exchange relevant organisation and job-related information and resources in the information network rather than in the friendship networks.

The discussions arising from the three case studies reveal that each organisation network has different salient features, which are of importance depending on the organisational set up, diversity dynamics as well as size of organisations. While it is not possible to generalise the results because each organisation is a unique setting, one salient feature that stood out for Organisation 1 and Organisation 3 is role conflict/ambiguity for newcomers. Newcomers appear to experience low levels of this particular organisational outcome but in Organisation 3, a particular social network variable plays a mediating role, which increases newcomers, overall role conflict/ambiguity.

This study examined gender and race diversity in keeping with South Africa's unique and dynamic workforce environment. Results of these tests were not conclusive because gender and race diversity do not appear to mediate organisational outcomes.

So, in response to the research question: *How does a newcomer's relationship with others in workplace social networks affect organisational*

outcomes in South Africa?, we can conclude from the findings of this research that information networks appear to be important for individuals with short and long tenure in the organisation. However, the results suggest that other factors (e.g., organisation, work group, culture, etc) appear to influence the extent to which information network are important in an organisation, which would be an interesting scope for future studies.

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APENDIX A: Additional Social Network Literature

This section contains additional social network literature, which was not applicable for the current study.

A.1 DARK SIDE OF NETWORKS

Majority of the literature on networks and collaboration focuses on the positive aspect of collaborative networks, these see them as appropriate devices to tackle problems and successfully coordinate political, social, and economic action. Network scholars have focused on understanding how to structure collaboration in a way that leads to solving problems. Network authors argue that social networks, compared to hierarchies, are a better solution to solving non routine, non-standardised, or even ill-structured (Simon, 1973) or wicked (Rittel & Webber, 1973) problems (Raab & Milwaard, 2003). On the other hand, in such networks actors can also misuse the power and resources available through the network positions they occupy.

Patterns of individual and group action create, maintain, and change social capital while different groups have differential access to social capital and other resources (Raab & Milwaard, 2003). The authors further suggest that different groups may receive differential benefits from their own and other's social capital. Actors in positions where they have built up considerable social wealth through their connections with others as well as access to resources can use their position to withhold or use the information to their advantage to gain promotions, better access to valuable resources and information.

Social networks form through connections of exchange between actors. Blau (1964) believes that trust develops because in the process of exchanging actors face the risk that the other person might leak the information. By anticipating that the other actor will not leak the information, trust develops. Burt (1997b) defines trust as "cooperation in today's game to signal future cooperation". With this attitude, actors maintain ties in order that both parties will

benefit from future exchanges. As such, trust, which is one of the essential components, which bind people together, may also constrain and prevent alternative futures. Following Granovetter's (1985) embeddedness perspective, actors with relational ties with other actors in the organisation, which would normally provide for trust and control, can be misused deceit and misconduct.

Some researchers state that organisations models on ethical decision-making and behaviour have been the dominant focus of research. These very models attempt to define unethical behaviour and decision making as described in Figure A1.

According to Granovetter (1992), neither the under-socialised perspective of neither individual acting in isolation nor the over-socialised view of individuals obedient to norms and culture is adequate in explaining behaviour. Jones (1991) adds that characteristics of moral issues interact with individual and organisational attributes in influencing ethical decision-making.

Brass, Butterfield, and Skaggs (1998) posit that unethical behaviour is inherently a social phenomenon because it involves relationships between actors embedded in social relationships. They define unethical behaviour as "behaviour that has harmful effect upon others and is either illegal or morally unacceptable to the larger community".

There are several perspectives as to what generates unethical behaviour and decision-making. Trevino and Youngblood (1990) look at the 'bad apples or 'bad barrels' perspectives to explain such conduct. According to the bad apples perspective, personal characteristics of individuals attribute to unethical behaviour while the bad barrels considers organisational and societal variables influencing unethical decision and behaviours of organisational members. In relation to the diagram, bad apples perspective attributes to individual factors such as locus of control, cognitive moral development, and Machiavellianism. To counter these effects, some researchers recommend organisation should attempt to attract individuals who have desirable characteristics (Blasi, 1980; Thoma & Rest, 1986). As the attraction-selection-attrition (Schneider, 1987a) principle mentions, recruits are attracted to organisations which they perceive are similar in values and principles to their own therefore the onus lies on the organisation to advertise

those principles which would attract similar individuals. This would then ensure there is a better person-organisation and person-job fit, where 'fit' is the match between an individual's own values and the values of the organisation (Cooper-Thomas, Van Vianen, & Anderson, 2004). Brass, Butterfield, and Skaggs (1998) further mentions advice certain researchers have already mentioned which is that organisations should also develop individual moral character through training programs.

On the other hand, the bad barrels perspective includes organisational factors such as climate, reward, systems, norms and codes of conduct as well as societal factors. While these perspectives offer endless discussion Brass, Butterfield, and Skaggs, (1998) explain that researchers have abandoned the bad apples/bad barrels perspectives because they believe that ethical/unethical decision-making and behaviour is a complex interaction between individuals and organisational factors.

Brass, Butterfield, and Skaggs, (1998) developed a model of unethical behaviour as seen in Figure A1

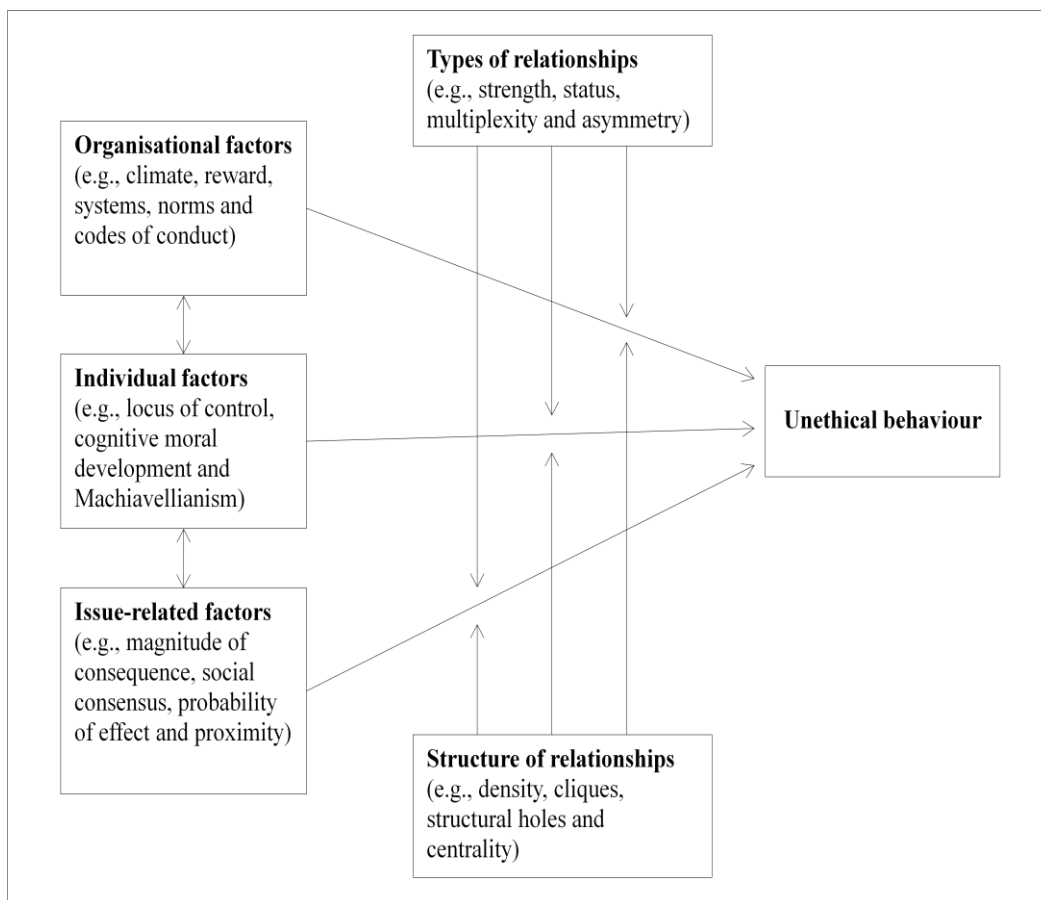
, which describes the aggregate factors which may lead to individual unethical behaviour.

A.1.1 Types of relationships

Brass, Butterfield, and Skaggs, (1998) used the social network perspective to show relationships between actors in a network are based on trust with an expectation for future interaction creating strong and weak ties between actors. Granovetter (1973) describes strong relationships between actors involving trust, intimacy, cooperation, and frequency of contact, which over time can create opportunities for unethical behaviour. However, Brass, Butterfield, and Skaggs, (1998) point that the cost of behaving unethically in a strong relationship is greater than in a weak one, which they suggest, could be negatively related to the likelihood of unethical behaviour. At the same time, Jones (1991) suggests that people who are more aware of the moral nature of issues are less likely to act unethically toward others they are close to.

Figure A1 further reveals multiplex relationships that are characterised by the degree to which two actors are linked by more than one type of relationships (Burt, 1983b), also affect unethical behaviour. Brass, Butterfield, and Skaggs, (1998) believe that this poses additional constraint on unethical behaviour because the cost of breaking the relationship with the other party increases by the very nature of the links between them. They give an example of how an unethical act in a business relationship may cost a friendship tie as well.

Figure A1: Brass, Butterfield, and Skaggs, (1998): Model of unethical behaviour



This does not guarantee that multiplexity inhibits unethical behaviour and decision-making but rather it reduces such conduct. Granovetter (1992) suggested that acts such as embezzlement require trust in strong relationships and since these events occur infrequently, he believes that the constraints of strong relationships usually outweigh the opportunities.

On the other hand, Carley and Krackhardt (1990) suggest that opportunities for unethical conduct are more prevalent in asymmetrical relationships because there is more opportunity for payoffs for the individual is non-trusting and emotionally uninvolved in the relationship. Brass, Butterfield, and Skaggs, (1998) also suggest that in these types of relationships individuals with lower status are more at risk of being treated unethically especially if the other person has greater power creating dependency.

For the type relationship individuals maintain with others in the network, strength, multiplexity, symmetry and status equality, frequency of contact create increased opportunity and payoffs for unethical behaviour while empathy and proximal psychological proximity and the cost of losing a strong multiplex relationship decreases unethical behaviour (Brass, Butterfield, & Skaggs, 1998).

A.1.2 Structure of relationships

Looking at the structure of relationships, Brass, Butterfield, and Skaggs, (1998) considered structural holes, centrality and density as possible network positions which could lead to unethical behaviour.

According to Burt (1992a) structural holes is the term used to indicate the absence of a link between two actors. He points the opportunity for unethical behaviour when a third party represents the structural hole in a relationship between two people brokering one actor against the other. In this position they have great power to wield information to their advantage should they choose to. Accurate, ambiguous, or distorted information strategically move between contacts by the broker. The information and control benefits reinforce one another at any moment in time, and cumulate together over time. As the two actors have no link, they are unaware of the unethical behaviour on the part of the third party. This is possible when the person has low moral character. Burt (1997b) adds that networks rich in structural holes present opportunities for entrepreneurial behaviour as it gives the actor opportunities to build bridges between otherwise disconnected contacts.

Closeness centrality, which refers to the extent to which an individual can reach all others in the network in the fewest number of direct or indirect links, is

another network position that offers an opportunity for an unethical conduct. High closeness centrality suggests that there is high surveillance of activities and extensive loss of reputation and power through unethical conduct. Brass, Butterfield, and Skaggs, (1998) suggest an actor is not likely to be concerned about surveillance and loss of reputation if the norms and reward systems condone or promote unethical behaviour.

Lastly, we look at density, in which a network is highly interconnected, with higher surveillance thereby inhibiting unethical behaviour. Jones (1991b) adds that density of relationships may enhance social consensus on issues, thereby increasing moral intensity, perception, judgment, intent, and action.

As these positions indicate, structural hole is perhaps the best position from which to conduct unethical behaviour between two actors not connected to each other. A central person will find it more difficult to follow unethical behaviour since their position automatically comes with increased surveillance through their many connections as well as prominence. The same may apply in a dense network of strong ties, as there is a greater loss for reputation and power if actors indulge in unethical behaviour.

The examples mentioned under sections ‘types of relationships’ and ‘structures of relationships’ have mostly focused on individual actors who may possibly act unethically on their own. Brass, Butterfield, and Skaggs, (1998) mention that there is the phenomenon of unethical behaviour involving cooperation among several actors in a network. Through research conducted by Baker and Faulkner’s (1993), it is possible to picture certain aspects of such cooperation. They argue that such conspiracies require the concealment of sparse, decentralised, weak-tie networks which is enhanced by coordination of activity found in dense, centralised, strong-tie networks. While conspiracies do occur through large networks that are more easily detected, the presence of weak ties as well several peripheral actors ensure success.

The discussion on dark networks has shown the individual perspective where actors can manipulate their position in the network as well as their connections to other actors to their advantage. Not all positions offer the possibilities as actors are limited by prominence, surveillance as well as power

which could be lost should they indulge in unethical behaviour. As Brass, Butterfield, and Skaggs, (1998) suggested organisations can employ different tactics such as ensuring there is a better fit when individuals are recruited, giving them training in the practices of the organisation and rewarding ethical behaviour in the organisation.

A.2 RESEARCH ON SOCIAL NETWORKS

There are several research streams encompassing organisational network. Borgatti and Foster (2003) organised them along the following categories: social capital, embeddedness, network organisations, board interlocks, joint ventures and inter-firm alliances, knowledge management, social cognition and group processes. While social capital is largely a micro (individual) concept even though there is a macro approach as well, embeddedness, network organisation, board interlocks, and joint ventures/alliances are mostly macro concepts.

This study discusses social capital, embeddedness, and network organisations, as they are relevant to this research

A.2.1 Social Capital

Ehrlich and Carboni (2005) describe social capital as the total sum of potential or actual resources e.g. information, that an actor accrues because of interpersonal relationships. Some authors explain that in the process of acquiring and learning, social capital becomes the property of individuals (Belliveau, O'Reilly & Wade, 1996; Burt, 1997, 2000; Coleman, 1988), of organisations (Leana & Van Buren, 1999), and of communities (Fukuyama, 1995, Putnam, 1995; Woolcock & Narayan, 2000).

Degenne and Forsé, (1999) distinguish social capital from other resources such as political, economic, and symbolic with the assumption that social action is directed at a goal requiring cooperation or competition from other actors. From this standpoint, they assert that social capital involves expectations and reciprocal obligations between individuals further assuming that individuals act not only because of past relations or because of the efficacy of the present action, but also as if future returns on capital were already operation in the present situation. Ehrlich and Carboni (2005) summarise that social capital translates into being

able to get favours granted, getting rapid response to requests, or having access to influential people. This shows that while it is important for actors to consider the number of contacts, social capital is essentially the value of each of the connections since not all contacts have the same value.

Some authors believe that an important way in which an actor's social capital develops is the presence of a dense network of strong support or being in a privileged role with respect to other people, otherwise referred to as structural holes (Ehrlich & Carboni, 2005). This is in line with Coleman (1990) who posits that a dense ego-network in which the ego's alters are able to coordinate with each other to help ego contribute towards social capital.

In contrast is Burt's (1992a) structural holes concept which redirects attention from viewing social capital as ties to resource filled others to the shape or topology of an actor's ego-network where the spanning of structural holes provides the actual mechanism relating weak ties to positive outcomes as discussed in Granovetter's (1973) strength of weak ties theory.

While the presence of dense ego-networks and weak ties enhances an individual's social capital, the absence or presence of fewer ties to others in the organisation appears to create less favourable situations for some others. Research in the area of minority status and job mobility has found that minorities have fewer ties in the organisation leading to less successful salary negotiations (Seidel et al., 2000). They point that this finding creates a link that a network process provides the mechanism that relates minority status to less successful salary negotiations. Research into the affect of racial and gender difference on social capital varied where McGuire (2000) concluded that network characteristics explain the racial and gender differences in employee status and James (2000) suggested that social capital mediates the relationship between race and social support among organisation managers. Burt (1998) examined and posited that gender moderates the relationship between social capital and mobility – finding that structural holes benefit men more than women.

Most researchers consider the positive aspects of social capital but some have examined the negative consequences of social capital termed the 'dark side' in which social ties imprison actors in maladaptive situations or facilitate

undesirable behaviour (Gargiulo & Benassi, 1999; Gulati & Westphal, 1999; Portes & Landolt, 1996; Portes & Sensenbrenner, 1993; Putnam, 2000; Volker & Flap, 2001). By the very nature of the structural holes position, actors are in possession or have access to a wealth of information which can be used to their advantage in any way possible thereby bringing out 'dark side' of social capital.

Borgatti, and Foster, (2003) argue that to a large extent, social capital is just a powerful renaming and collecting together of a large swath of network research from social support literature as discussed by Walker, Wasserman and Wellman (1994) to social resource theory as considered by Lin (1982, 1988). They believe management and social capital, promises to bring together a variety of research, relating to a person's ties of network position. It also relates to significant outcomes, such as power (Brass, 1984; Brass & Burkhardt, 1993; Kilduff & Krackhardt, 1994), employment (Fernandez, Castilla & Moore, 2000; Krackhardt & Porter, 1985; 1986), individual performance (Baldwin & Bedell, 1997; Mehra, Kilduff & Brass, 2001; Sparrowe, Liden, Wayne & Kraimer, 2001), and team performance (Hansen, 1999; Tsai, 2001).

A.2.2. Embeddedness

Borgatti and Foster (2003) point towards a fad-like success among organisational scholars on the concept of embedded-ness after Granovetter (1985) expanded on it. Supporters of embeddedness assert that all economic behaviour embedded in a larger social context establishes that economics was a branch of sociology. Granovetter saw that economic exchanges embedded in social networks offered a middle ground from two alternative approaches to explaining economic action where one approach looked at role based and the other on the instrumental rational actor. Recent empirical work has focused on the performance benefits of embedded ties, which are often associated with closer and more exclusive business relationships (Uzzi, 1997).

A central theme in this research is that repetitive market relations and the linking of social and business relationships generate embedded logics of exchange that differ from those emerging in traditional arms-length market relations (DiMaggio & Louch, 1998; Uzzi, 1996, 1999; Uzzi & Gillespie, 2002).

Embedded ties have been found to affect the choice of joint venture partners (Gulati & Gargiulo, 1999), the cost of capital (Uzzi, 1999; Uzzi & Gillespie, 2002), consumer purchasing decisions (DiMaggio & Louch, 1998), the continuity of client relations (Baker, Faulkner & Fisher, 1998), and the performance of firms with close ties to both competitors (Ingram & Roberts, 2000) and suppliers (Uzzi, 1997).

Granovetter (1985) contrasted his embeddedness perspective against the transaction cost economics (TCE) as posited by Williamson (1975). Granovetter's (1985) concept of embedded ties generate economic performance while TCE reverses the traditional logic of embeddedness by suggesting that economic performance is the driver of exchange behaviour. However, other theorists have blended the two concepts, as TCE is a relational theory (Blumberg, 2001; DiMaggio & Louch, 1998; Jones, Hesterly, & Borgatti, 1997). Jones et al., (1997) found a blend of embeddedness and TCE where social ties existed because of the competitive advantage they offered through safeguarding economic transactions.

A.2.3. Networks and organisations

Borgatti and Foster (2003) state that during the 1980s and 1990s, 'network organisation' (and related terms) became a fashionable description for organisational forms characterised by repetitive exchanges among semi-autonomous organisations that rely on trust and embedded social relationships to protect transactions and reduce their costs (Bradach & Eccles, 1989; Eccles, 1981; Jarillo, 1988; Powell, 1990). Most of this research argued that as commerce became more global, hypercompetitive and turbulent, both markets and hierarchies displayed inefficiencies as modes of organising production (Miles & Snow, 1992; Powell, 1990). In their place, a network organisational form emerged that balanced the flexibility of markets with the predictability of traditional hierarchies (Achrol, 1997; Miles & Snow, 1992; Powell, 1990; Snow, Miles & Coleman, 1992; see Rice & Gattiker, 2000, for a different view).

Borgatti and Foster (2003) contend that studies of network organisations have generated "diverse, varied, inconsistent, and contradictory" findings as terminologies and core concepts are not definite.

A.2.4 Social Cognition

In this stream, researchers analyse and follow the perceptions of actions of actors in a network and who or what influences them. Carley and Krackhardt (1996) suggested that cognition of the network determines interaction, and interaction in turn changes the network. For example, Krackhardt (1990) relates accurate perceptions to power, where in a case study (Krackhardt, 1992), a union failed to succeed in unionising a plant because it did not understand the ‘who respects whom’ network among the employees and therefore failed to capitalise on the network.

While considering how actors develop the perceptions that they do Casciaro (1998) found that an actor’s personality, hierarchical position, and centrality in the network affected the accuracy of his/her perception of the network.

Another perspective, which sought to discover patterns in perceptual errors, offered examples from studies in which respondents were over-reporting their ties to high status individuals (Brewer, 2000; Krebs & Denton, 1997; Webster, 1995) where they themselves are more central to others (Johnson & Orbach, 2002; Kumbasar, Romney & Batchelder, 1994). An egocentric network method would exaggerate such claims made by respondents while a full network method will uncover these perceptual errors to give a more balance picture of the true nature of ties between actors in a network. A full network method shows clearly that all respondents, including those in high status positions respond to the surveys.

These perspectives discussed in this section offer insight into the various methods and approaches to social network analysis. It is possible to draw from other areas and adapt as we can see between TCE and embeddedness so long as there is sufficient support from empirical studies.

APPENDIX B: Correlations

Appendix B contains the correlation matrix for the SNA and organisation outcome variables.

Table B1: Organisation 1 - Friendship network correlations

	Pearson Correlation Coefficients																			
	Mean	SD	DC	FCC	RBC	SH	ED	EC	EC	PB	FNMC	Afforg	Normorg	Conorg	Perf	Affco	Normco	Conco	Gpindiv	
	(Gender) (Race)																			
DC	28.62	18.49																		
FCC	11.10	2.19	.42**																	
RBC	13.69	4.24	.82***	.83***																
SH	3.59	2.73	.95***	.31	.71***															
ED	54.08	63.29	.95***	.28	.69***	.96***														
EC (Gender)	.76	.22	-.17	-.25	-.33	-.20	-.11													
EC (Race)	.68	.34	-.26	-.61***	-.52**	-.09	-.16	-.42**												
PB	20.33	23.17	.89***	.25	.65***	.96***	.95***	-.05	-.16											
FNMC	4.18	2.61	-.02	-.15	-.14	.04	.07	-.03	.22	.05										
Afforg	6.07	.98	.23	.28	.21	.22	.20	.22	.08	.12	-.05									
Normorg	5.15	1.11	-.17	.11	-.19	-.19	-.13	.23	-.14	-.25	-.13	.63***								
Conorg	2.98	1.85	.15	.03	.15	.06	.04	-.22	-.06	-.09	.43*	.03	.23							
Perf	2.13	.92	-.36	.01	-.38	-.28	-.22	.07	.46*	-.19	-.04	.16	.23	-.52**						
Affco	3.46	.82	-.24	.10	-.24	-.22	-.21	.06	.23	-.24	-.29	.38	.56	-.01	.51**					
Normco	3.01	.86	.06	-.35	.06	-.05	-.03	-.42*	.17	-.16	.33	.39	.50**	.51**	-.02	.70***				
Conco	2.13	.89	-.03	-.18	-.02	-.13	-.10	-.33	.20	-.23	.55**	-.03	.23	.80***	-.16	.29	.55**			
Gpindiv	3.64	.67	-.20	-.22	-.19	-.31	-.29	.09	-.13	-.36	-.21	.39	.60**	.27	-.26	.65***	.55**	.36		
Role	3.41	.64	-.39	-.01	-.42*	-.38	-.45*	-.59**	.41	-.50**	.05	-.17	-.14	-.04	.25	-.05	.11	.13	-.20	

*** p<0.01, ** p<0.05, * p<0.10

Table B2: Organisation 1 - Information network correlations

Pearson Correlation Coefficients																			
	Mean	SD	DC	FCC	RBC	SH	ED	EC (Gender)	EC (Race)	PB	FNMC	Afforg	Normorg	Conorg	Perf	Affco	Normco	Conco	Gpindiv
DC	51.16	15.43																	
FCC	75.05	11.32	.88***																
RBC	20.50	1.22	.23	.51**															
SH	8.94	2.71	.96***	.85***	.18														
ED	297.42	123.61	.97***	.87***	.21	.99***													
EC (Gender)	0.76	.05	-.02	.27	.55**	.01	-.01												
EC (Race)	.65	.07	-.31	-.38*	-.18	-.42**	-.36*	-.41**											
PB	24.00	9.81	.92***	.74***	.01	.91***	.91***	-.19	-.21										
FNMC	4.72	1.35	.89***	.98***	.52**	.84***	.87***	.19	-.29	.76***									
Afforg	6.07	.98	.71***	.73***	.11	.68***	.73***	-.35	.08	.60**	.76***								
Normorg	5.15	1.11	.20	.40	.05	.21	.25	.04*	.20	.19	.37	.63***							
Conorg	2.98	1.85	-.21	.00	.14	-.10	-.14	.39	-.29	-.30	-.04	.03	.23						
Perf	2.13	.92	.18	.15	-.17	.03	.07	-.33	.47***	.19	.19	.16	.23	-.52**					
Affco	3.46	.82	.26	.45*	.03	.23	.23	-.01	.08	.29	.36	.38	.56**	-.01	.51**				
Normco	3.01	.86	-.02	.24	.04	.07	.07	-.01	-.01	-.12	.18	.39	.50**	.51**	-.02	.70***			
Conco	2.13	.89	-.29	-.12	.01	-.26	-.31	.11	-.02	-.33	-.11	-.03	.23	.80***	-.16	.29	.55**		
Gpindiv	3.64	.67	-.07	.13	.12	-.05	-.05	-.19	.35	.04	.12	.39	.60**	.27	-.26	.65***	.55**	.36	
Role	3.41	.64	-.24	.04	.33	-.32	-.26	.23	.12	-.47*	.06	-.17	-.14	-.04	.25	-.05	.11	.13	-.20

*** p<0.01, ** p<0.05, * p<0.10

Table B3: Organisation 2 – Friendship network correlations

		Pearson Correlation Coefficients																	
	Mean	SD	DC	FCC	RBC	SH	ED	EC	EC	PB	FNMC	Afforg	Normorg	Conorg	Perf	Affco	Normco	Conco	Gpindiv
	(Gender) (Race)																		
DC	27.63	19.36																	
FCC	14.36	12.50	.21																
RBC	27.61	7.18	.85***	.61***															
SH	6.25	5.91	.97***	.19	.85***														
ED	216.43	291.83	.80***	.14	.69***	.80***													
EC (Gender)	.42	.22	.09	.58***	.31**	.08	.04												
EC (Race)	.23	.29	-.72***	-.82***	-.56***	-.66***	-.64***	.24											
PB	42.13	68.17	.71***	.06	.58***	.79***	.38**	.05	-.52***										
FNMC	0.59	.16	.77***	.34**	.69***	.69***	.53***	.22	-.56***	.46***									
Afforg	4.90	1.38	-.03	.20	-.01	-.01	.17	-.47**	-.11	-.10	-.22								
Normorg	3.24	1.61	.18	.04	.26	.23	.21	-.27	.02	.13	.07	.53**							
Conorg	3.52	1.42	.38*	.15	.43*	.38*	.34	.02	.14	.12	.31	.34	.67***						
Perf	2.00	1.15	-.03	.40*	.00	-.06	.04	.03	.20	-.31	.20	.22	.18	.49**					
Affco	3.50	.84	-.16	-.10	-.15	-.16	-.06	-.43*	.01	-.10	-.41*	.37	.16	-.03	.15				
Normco	3.14	.68	-.04	-.19	-.09	.00	.05	.16	.10	.10	-.09	.24	.48**	.22	.04	.64***			
Conco	2.13	.64	.26	.22	.40*	.21	.21	.28	-.11	.16	.40*	-.02	.50**	.53**	-.01	-.20	.18		
Gpindiv	3.10	.72	-.18	-.24	-.28	-.03	-.04	.20	.33	.07	-.28	.10	.19	.02	-.11	.34	.34	.21	
Role	3.13	.77	.01	.01	.16	.01	-.06	.09	.07	-.05	.16	.24	.29	.47**	.49**	.28	.10	.23	.06
*** p<0.01, ** p<0.05, * p<0.10																			

*** p<0.01, ** p<0.05, * p<0.10

Table B4: Organisation 2 – Information network correlations

Pearson Correlation Coefficients																			
	Mean	SD	DC	FCC	RBC	SH	ED	EC (Gender)	EC (Race)	PB	MC	Afforg	Normorg	Conorg	Perf	Affco	Normco	Conco	Gpindiv
DC	18.36	13.76																	
FCC	4.07	.51	.71***																
RBC	28.60	6.91	.82***	.57***															
SH	8.82	7.02	.97***	.70***	.74***														
ED	234.51	253.74	.94***	.64***	.69***	.97***													
EC (Gender)	.42	.21	-.10	-.12	.19	-.04	-.08												
EC (Race)	.31	.32	-.73***	-.10	-.65***	-.71***	-.66***	.06											
PB	23.59	43.71	.87***	.56***	.62***	.94***	.97***	-.01	-.05										
FNMC	5.81	3.53	.82***	.57***	1.00***	.74***	.69***	.19	-.22	.62***									
Afforg	4.90	1.38	.11	.05	-.11	.09	.12	-.45**	.47**	.06	-.11								
Normorg	3.24	1.61	.02	-.01	.02	.00	.01	-.17	.27	-.01	.02	.53							
Conorg	3.52	1.42	.20	-.08	.37	.16	.14	.20	-.02	.14	.37	.34	.67***						
Perf	2.00	1.15	-.11	-.39*	.05	-.22	-.24	-.15	-.03	-.30	.05	.22	.18	.49**					
Affco	3.50	.84	.10	-.21	-.10	.16	.18	-.05	.43*	.20	-.10	.37	.16	-.03	.15				
Normco	3.14	.68	-.13	-.10	-.09	-.11	-.06	-.30	.30	-.01	-.30	.24	.48**	.22	.04	.64***			
Conco	2.13	.64	.48**	-.18	.56**	.52**	.33	.06	-.06	.50**	.42*	-.02	.50**	.53**	-.01	-.20	.18		
Gpindiv	3.10	.72	-.34	.14	-.21	-.13	-.03	-.07	.07	.05	-.44*	.10	.19	.02	-.11	.34	.34	.21	
Role	3.13	.77	.03	-.16	.07	-.03	.27	-.05	.05	-.23	-.08	.24	.29	.47**	.49**	.28	.10	.23	.06

*** p<0.01, ** p<0.05, * p<0.10

Table B5 – Organisation 3 - Friendship network correlations

Pearson Correlation Coefficients																			
	Mean	SD	DC	FCC	RBC	SH	ED	EC (Gender)	EC (Race)	PB	FNMC	Afforg	Normorg	Conorg	Perf	Affco	Normco	Conco	Gpindiv
DC	12.81	11.05																	
FCC	2.75	.03	-.30**																
RBC	43.12	7.09	.94***	-.24**															
SH	7.20	7.29	.99***	-.30**	.90***														
ED	180.94	350.76	.93***	-.17	.81***	.96***													
EC (Gender)	.19	.20	.14	.01	.11	.15	.09												
EC (Race)	.74	.26	-.07	-.17	-.20*	-.05	-.07	.25**											
PB	49.39	100.61	.81***	-.20	.70***	.83***	.86***	.08	-.02										
FNMC	7.33	5.45	.72***	.03	.79***	.65***	.61***	.18	-.20*	.57***									
Afforg	5.05	1.21	.18	.07	.18	.17	.18	.06	.09	.18	.17								
Normorg	2.93	1.30	-.16	.06	-.16	-.15	-.16	-.08	.19	-.22	-.14	.28*							
Conorg	3.03	1.46	.11	-.10	.16	.10	.07	.20	.06	.02	.12	.44***	.37**						
Perf	2.24	.76	.07	-.05	-.01	.10	.09	.26*	.27	.03	-.08	-.24	-.16	.03					
Affco	3.07	.73	.24	.09	.21	.23	.24	-.11	.14	.11	.02	.39**	.12	.13	.00				
Normco	2.50	.56	-.08	-.12	-.06	-.06	-.09	-.08	.11	-.22	-.21	.27*	.57***	.35**	-.07	.43***			
Conco	2.22	.75	.12	-.03	.15	.11	.08	.08	.20	.05	.12	.30*	.27*	.70***	.14	.25	.29		
Gpindiv	2.81	.62	-.31**	-.20	-.31**	-.28*	-.31**	.18	.13	-.16	-.22	.12	.30*	.07	-.10	-.09	.27*	.15	
Role	3.32	.79	-.40**	.07	-.39**	-.40**	-.41**	.05	.17	-.35**	-.33	.05	.26*	.16	.26*	.11	.20	.28*	.18

*** p<0.01, ** p<0.05, * p<0.10

Table B6 – Organisation 3 - Information network correlations

	Mean	SD	DC2	FCC3	RBC1	SH2	ED3	EC (Gender)	EC (Race)	PB1	FNMC4	Afforg	Normorg	Conorg	Perf	Affco	Normco	Conco	Gpindiv
DC2	17.75	10.09																	
FCC3	3.45	.05	-.54***																
RBC1	63.23	9.92	.91***	-.51***															
SH2	28.93	15.92	.90***	-.51***	1.00***														
ED3	2111.00	1866.00	.87***	-.49***	.97***	.98***													
EC (Gender)	.23	.08	.48***	-.18	.57***	.53***	.49***												
EC (Race)	.78	.08	.68***	-.45***	.72***	.70***	.61***	.53											
PB1	55.34	62.64	.90***	-.50***	.90***	.92***	.93***	.41***	.58***										
FNMC4	8.72	2.64	.76***	-.20*	.77***	.73***	.65***	.67***	.67***	.62***									
Afforg	5.05	1.21	.14	.13	.20	.21	.22	.05	-.12	.24	.10								
Normorg	2.93	1.30	-.15	-.06	-.20	-.19	-.20	-.03	-.00	-.10	-.08	.28*							
Conorg	3.03	1.46	.03	.08	.13	.13	.13	.14	-.12	.16	.07	.44***	.37						
Perf	2.24	.76	-.16	-.02	-.16	-.16	-.16	-.08	-.04	-.07	-.05	-.24	-.16	.03					
Affco	3.07	.73	-.02	-.01	-.09	-.09	-.06	-.08	-.15	-.03	-.02	.39**	.12	.13	.00				
Normco	2.50	.56	-.13	-.02	-.10	-.09	-.10	-.05	-.02	-.05	-.01	.27*	.57***	.35**	-.07	.43***			
Conco	2.22	.75	.04	.05	.03	.03	.05	.04	.06	.07	.01	.30*	.27*	.70***	.14	.25	.29*		
Gpindiv	2.81	.62	-.18	.00	-.24	-.23	-.26*	-.09	.07	-.21	.00	.12	.30*	.07	-.10	-.09	.27*	.15	
Role	3.32	0.79	-.43***	-.32**	-.45***	-.46***	-.46***	-.15	-.27*	-.43***	-.32**	.05	.26*	.16	.26*	.11	.20	.28*	.18

*** p<0.01, ** p<0.05, * p<0.10

APPENDIX C: SURVEY QUESTIONS AND INTRODUCTION LETTERS

C.1. QUESTIONNAIRE 1

Dear Sir/Madam,

Newcomers enter organisations such as company 1 and become part of the organisational culture and life through the socialisation process. Socialisation facilitates the adjustment of newcomers to organisations.

Newcomers build relationships and form networks with other newcomers and with ‘insiders’ as a basis for friendships or to exchange resources and information. Such networks can further assist in absorbing the newcomer into the organisation. They can affect organisational and work group commitment, job satisfaction, performance and task mastery.

Accordingly, I am studying the relationships that are formed at work. I ask for your help in completing this and a short follow-up survey, as part of an initiative approved by the Senior Management Team at ORGANISATION . The title of my research is “The importance of social network relationships during socialisation of newcomers in the South African context”.

Participation is voluntary in this study. However, if you choose to participate please fill out the attached consent form and complete the attached consent questionnaire as carefully and honestly as possible which will take approximately 10 minutes. Questions are asked about your personal circumstances but it will be held confidentially, only to be seen by myself. Your response will be looked at in relation to all other responses. Feedback will only be given to the organisation in the form of group responses and not individual perceptions.

To respond to the questionnaire, please download and save the questionnaire in your hard drive. Once you have answered the questions, please send back the completed questionnaire by email to divspaul@gmail.com. If you prefer to print

and complete the questionnaire I can pick up the completed one from you. This will ensure that no one will have access to the completed questionnaire and will further ensure your confidentiality.

This research will contribute both to a larger body of knowledge on the importance of social networks during socialisation process as well as the management's understanding of workplace dynamics. This can help in the development of improved work place practices and ensure retention of key and valuable staff. Your participation in this study will be greatly appreciated.

Kind regards,
Divya Paul

SOCIAL NETWORK QUESTIONNAIRE - 1

Name: _____

Surname:

1. Consider your personal network of people whose inputs are relevant to your career. Now, please could you provide an estimate of the percentage of that network which lies outside of ORGANISATION (e.g. in other organisations, business groups, etc). _____%

2. Below I have placed a list of the current staff members of ORGANISATION. We wish to explore two aspects of your relationship with each of these people. However, if you have never met a person please place a 'X' on the column next to the names 'Have never met' and don't answer any other question next to that name. For the people who you know, please answer the following two questions next to each of their names::
 - 2.1. Please could you indicate the extent to which you have gone to each of these individuals for job-related information in the past (e.g. assistance with job, clarification). Please answer on the scales provided in the list under the sub heading '2.1 – Job related information'.

 - 2.2. Please consider which of these staff members you would consider to be personal friends (e.g. non-work related social conversations), and place a 'X' against the names under the column '2.2'. (you can tick on more than one)

		2.1 Job related information					2.2
	Have never met	Seldom	Less than once a week	A few times a week	Once a day	Several times a day	Your friends at work
Name 1	①	①	②	③	④	⑤	○
Name 2	①	①	②	③	④	⑤	○
Name 3	①	①	②	③	④	⑤	○
Name 4	①	①	②	③	④	⑤	○

		2.1 Job related information					2.2
	Have never met	Seldom	Less than once a week	A few times a week	Once a day	Several times a day	Your friends at work
Name 5	①	①	②	③	④	⑤	○
Name 6	①	①	②	③	④	⑤	○
Name 7	①	①	②	③	④	⑤	○
Name 8	①	①	②	③	④	⑤	○
Name 9	①	①	②	③	④	⑤	○

3. In total consider the total network of people within and outside ORGANISATION who are relevant to your career. Now, please estimate the extent to which you feel that your network is adequate for your needs.

Completely sufficient for my needs	① ② ③ ④ ⑤ ⑥ ⑦	Completely insufficient for my needs

Thank you for taking the time to complete this questionnaire. I would like to reiterate again, that your response will be kept confidential as I will be the only person who will see your name on this completed questionnaire and feedback to ORGANISATION will be given as a group response and not as an individual response.

C.2. QUESTIONNAIRE 2

Dear Sir/Madam,

In July 2009, you completed the first part of the survey on social networks in organisations. This is the follow-up survey which follows to assess the outcomes of the relationships formed.

The results of this survey will be compared with the first survey to see how effective these relationships are in various important work areas.

This survey will take approximately 15 minutes to complete. Questions are asked about your personal circumstances but it will be held confidential. Feedback will be given to the organisation in the form of group responses and not individual perceptions.

To respond to the questionnaire, please download and save the questionnaire in your hard drive. Once you have answered the questions on the saved document, please send back the completed questionnaire by email to divspaul@gmail.com. If you prefer to print and complete the questionnaire I can pick up the completed one from you. This will ensure that no one will have access to the completed questionnaire and will further ensure your confidentiality.

Thank you for considering participating.

Kind regards,

Divya

SOCIAL NETWORK QUESTIONNAIRE - 2

Please follow the instructions within each section of the questionnaire and fill as required

Surname: _____

Initials: _____

Staff Number: _____

1. Current Position Title:

2. Position title when you first joined ORGANISATION:

3. Please indicate the date you joined ORGANISATION: _____

(M/Y)

4. Are you currently studying to a higher degree/diploma/certificate?

☐ Yes

☐ No

5. If yes, which degree/diploma/certificate?

For the following section, please read the questions and answer accordingly, placing a X on the most appropriate box for each question.

Question	Strongly Disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
6. I would be very happy to spend the rest of my career with ORGANISATION	①	②	③	④	⑤	⑥	⑦
7. I enjoy discussing ORGANISATION with people outside of it	①	②	③	④	⑤	⑥	⑦
8. I really feel as if ORGANISATION's problems are my own	①	②	③	④	⑤	⑥	⑦
9. I feel emotionally attached to ORGANISATION	①	②	③	④	⑤	⑥	⑦
10. I believe that a person must always be loyal to organisation	①	②	③	④	⑤	⑥	⑦

Question	Strongly Disagree	Moderately disagree	Slightly disagree	Neutral	Slightly agree	Moderately agree	Strongly agree
11. One of the few negative consequences of leaving ORGANISATION would be the scarcity of available alternatives	①	②	③	④	⑤	⑥	⑦
12. Moving from company to company seems unethical to me	①	②	③	④	⑤	⑥	⑦
13. I feel a sense of moral obligation to remain with ORGANISATION	①	②	③	④	⑤	⑥	⑦
14. I was taught to believe in the value of remaining loyal to ORGANISATION.	①	②	③	④	⑤	⑥	⑦
15. Right now, staying with ORGANISATION is a matter of necessity as much as desire	①	②	③	④	⑤	⑥	⑦
16. ORGANISATION has a great deal of personal meaning for me	①	②	③	④	⑤	⑥	⑦
17. I feel that I have too few options to consider leaving ORGANISATION	①	②	③	④	⑤	⑥	⑦
18. Leaving would require considerable personal sacrifice because another company may not match the overall benefits I have here	①	②	③	④	⑤	⑥	⑦
19. If I got another offer for a better job elsewhere, I would not feel it was right to leave ORGANISATION	①	②	③	④	⑤	⑥	⑦
20. It would be too costly for me to leave ORGANISATION in the near future	①	②	③	④	⑤	⑥	⑦

Please place a 'X' in the most appropriate box

21. I have learned how to successfully perform my job	Very true	① ② ③ ④ ⑤ ⑥ ⑦	Very False
22. I have learned to be efficient in my job	Very true	① ② ③ ④ ⑤ ⑥ ⑦	Very False
23. I have mastered the required	Very	① ② ③ ④ ⑤ ⑥ ⑦	Very

tasks for my job	true		False
24. I have not fully developed the appropriate skills and abilities to successfully perform my job	Very true	① ② ③ ④ ⑤ ⑥ ⑦	Very False
25. I have not yet learned the “ropes” of my job	Very true	① ② ③ ④ ⑤ ⑥ ⑦	Very False
26. I understand what all the duties of my job entail	Very true	① ② ③ ④ ⑤ ⑥ ⑦	Very False

For the following sections, please read the question and answer accordingly ticking on the most appropriate box for each question.

Question	Strongly Disagree	Disagree	Neutral	Agree	Strongly agree
27. I would be very happy to spend the rest of my career working with my current co-workers	①	②	③	④	⑤
28. I really feel as if my co-worker's problems are my own	①	②	③	④	⑤
29. Working with my co-workers has a great deal of personal meaning for me	①	②	③	④	⑤
30. I feel emotionally attached to my co-workers	①	②	③	④	⑤
31. I believe that a person must always be loyal to his or her co-workers	①	②	③	④	⑤
32. I feel a sense of moral obligation to remain with my co-workers.	①	②	③	④	⑤
33. I was taught to believe in the value of remaining loyal to a group of co-workers	①	②	③	④	⑤
34. One of the few negative consequences of leaving my co-workers would be the scarcity of available alternatives	①	②	③	④	⑤
35. I feel that I have too few options to consider working with another group of co-workers	①	②	③	④	⑤

36. Leaving would require considerable personal sacrifice because another group of co-workers may not match the overall benefits I have here	①	②	③	④	⑤
37. It would be too costly for me to leave my co-workers in the near future	①	②	③	④	⑤
38. I enjoy discussing my co-workers with people outside of the ORGANISATION	①	②	③	④	⑤
39. Group welfare is more important than individual rewards	①	②	③	④	⑤
40. Changing co-workers seems unethical to me	①	②	③	④	⑤
41. Group success is more important than individual success	①	②	③	④	⑤
42. Right now, staying with my co-workers is a matter of necessity as much as desire	①	②	③	④	⑤
43. Being accepted by members of your work group is very important	①	②	③	④	⑤
44. If I got another offer for a better job elsewhere, I would not feel it was right to leave my co-workers	①	②	③	④	⑤
45. Employees should only pursue their goals after considering the welfare of the group	①	②	③	④	⑤
46. Managers should encourage group loyalty even if individual goals suffer	①	②	③	④	⑤
47. Individuals may be expected to give up their goals in order to benefit group success	①	②	③	④	⑤

Please place a 'X' on the most appropriate box

Question	Very True	Slightly True	True	Neutral	False	Slightly false	Very false
48. I have to work under incompatible policies and procedures	①	②	③	④	⑤	⑥	⑦
49. I work with two or more groups who operate quite differently	①	②	③	④	⑤	⑥	⑦
50. I receive incompatible requests from two or more people	①	②	③	④	⑤	⑥	⑦
51. I work on many unnecessary assignments	①	②	③	④	⑤	⑥	⑦
52. I have to do things that should be done differently	①	②	③	④	⑤	⑥	⑦
53. I feel certain about how much authority I have on my job	①	②	③	④	⑤	⑥	⑦
54. I know what my responsibilities are	①	②	③	④	⑤	⑥	⑦
55. I know what is exactly expected of me	①	②	③	④	⑤	⑥	⑦

Question	Very True	Slightly True	True	Neutral	False	Slightly false	Very false
56. Job explanation is clear concerning what is to be done	①	②	③	④	⑤	⑥	⑦
57. I perform work that suits my values	①	②	③	④	⑤	⑥	⑦

Please place a 'X' on the boxes where required and place write your answer where required

58. Gender: (please tick the ☐ Male ☐ Female appropriate)			
59. Age: On your last birthday: _____ (years)			
60. Race: (please tick the appropriate)			
Black: 3. North Sotho 4. South Sotho 5. Tswana, 6. Zulu 7. Xhosa 8. Swazi 9. Ndebele 10. Shangaan-Tsonga 11. Venda	White: 12. Afrikaans 13. English 14. Other (please specify) _____ _____	Indian: 15. Gujarati 16. Tamil 17. Other (please specify) _____ _____	18. Coloured ☐ Other: (Please specify) _____ _____
61. Nationality: (please tick the appropriate)			
19. South African national	☐ Foreign national with SA Permanent Residence (please mention nationality) _____	☐ Foreign national with work permit (please mention nationality) _____	

Thank you for taking the time to complete this questionnaire. I would like to reiterate again, that your response will be kept confidential as I will be the only person who will see your name on this completed questionnaire and feedback to ORGANISATION will be given as a group response and not as an individual response.

* Please note – format of questionnaire changed in keeping with the margin requirements.

APPENDIX D: HYPOTHESES FINDINGS

Table D1: Friendship network findings for hypotheses

Specific hypotheses	Measured by	Friendship network findings for hypotheses			
		Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
H1: Shorter tenure	Tenure				
a) Lower Perf		Higher Perf for shorter tenure	Higher Perf for longer tenure	No effect	Rejected for Org 1; Rejected for Org 2
b) Higher role con/am		Low role con/am for shorter tenure	No effect	No effect	Rejected for Org 1
H2: Longer tenure	Tenure				
a) Higher Afforg		Higher Afforg for longer tenure	No effect	No effect	Supported for Org 1
b) Higher Normorg		Higher Normorg for longer tenure	No effect	No effect	Supported for Org 1
c) Higher Conco		Low Conco for shorter tenure	No effect	No effect	Rejected for Org 1
c) Higher Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Group rather than individual		Little effect	No effect	No effect	Probably rejected
H5: Shorter tenure - dense friendship networks	ED				
a) Higher Affco		No effect	No effect	No effect	Probably rejected
b) Higher Conco		No effect	No effect	No effect	Probably rejected
c) Higher Perf		No effect	ED - Higher Perf for longer tenure	No effect	Rejected for Org 2
d) Lower role conflict/ambiguity		No effect	No effect	No effect	Probably rejected

Friendship network findings for hypotheses					
Specific hypotheses	Measured by	Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
e) Group rather than individual		No effect	No effect	No effect	Probably rejected
H6: Longer tenure - dense friendship networks	ED				
a) Higher Afforg		ED - Higher Afforg for loner tenure	No effect	No effect	Supported for Org 1
b) Higher Normorg		No effect	No effect	No effect	Probably rejected
c) Higher Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Normco		No effect	No effect	No effect	Probably rejected
H7: Shorter tenure - gender diversity	EC (gender)				
a) Lower task mastery		EC - lower Perf for shorter tenure	No effect	No effect	Supported for Org 1
b) Higher role con/am			No effect	No effect	Rejected for Org 1
H8: Longer tenure - gender diversity					
a) Higher Afforg		EC - Higher Afforg for longer tenure			Supported for Org 1
b) Higher Normorg		EC - higher Normorg for longer tenure	No effect	No effect	Supported for Org 1
c) Higher Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		EC - higher Conco for shorter tenure	No effect	No effect	Rejected for Org 1
g) Group rather than individual		No effect	No effect	No effect	Probably rejected
H9: Shorter tenure - race diversity	EC (race)				
a) Lower task mastery		No effect	No effect	No effect	Probably rejected
b) Higher role con/am		No effect	No effect	No effect	Probably rejected

Specific hypotheses	Measured by	Friendship network findings for hypotheses			
		Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
H10: Longer tenure - race diversity	EC (race)				
a) Higher Afforg		No effect	No effect	No effect	Probably rejected
b) Higher Normorg		No effect	No effect	No effect	Probably rejected
c) Higher Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Group rather than individual		No effect	No effect	No effect	Probably rejected
H11: Structural holes in friendship network	SH				
a) Higher Perf		No effect	No effect	No effect	Probably rejected
b) Higher role con/am		No effect	No effect	No effect	Probably rejected
c) Lower Afforg		SH – Higher Afforg for longer tenure			Rejected for Org 1
d) Lower Normorg		No effect	No effect	No effect	Probably rejected
e) Lower Conorg		No effect	No effect	No effect	Probably rejected
f) Lower Affco		No effect	No effect	No effect	Probably rejected
g) Lower Normco		No effect	No effect	No effect	Probably rejected
h) Higher Conco		No effect	No effect	No effect	Probably rejected
i) Individual rather than Group		No effect	No effect	No effect	Probably rejected
H12: Centrality positions	DC				
a) Lower Afforg		DC – Higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
b) Lower Normorg		No effect	No effect	No effect	Probably rejected
c) Lower Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Higher task mastery		No effect	No effect	No effect	Rejected for Org 2

Friendship network findings for hypotheses					
Specific hypotheses	Measured by	Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
h) Higher role conflict/ambiguity	CC	DC - higher role con/am for shorter tenure	No effect	No effect	Supported for Org 1
i) Individual rather than group		No effect	No effect	No effect	Probably rejected <i>Probably rejected</i>
H12: Centrality positions					
a) Lower Afforg		CC - higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
b) Lower Normorg		No effect	No effect	No effect	Probably rejected
c) Lower Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Higher task mastery		No effect	CC - Higher Perf for longer tenure	No effect	Rejected for Org 1
h) Higher role conflict/ambiguity	RBC	No effect	No effect	No effect	Probably rejected
i) Individual rather than group		No effect	No effect	No effect	Probably rejected
H12: Centrality positions					
a) Lower Afforg		RBC – higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
b) Lower Normorg		No effect	No effect	No effect	Probably rejected
c) Lower Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Lower task mastery		No effect	No effect	No effect	Probably rejected
h) Higher role conflict/ambiguity	PB	RBC - higher role con/am for shorter tenure	No effect	No effect	Supported for Org 1
i) Individual rather than group		No effect	No effect	No effect	Probably rejected
H12: Centrality positions					
a) Lower Afforg			No effect	No effect	Probably rejected

Friendship network findings for hypotheses					
Specific hypotheses	Measured by	Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
b) Lower Normorg		PB - Higher Normorg for longer tenure	No effect	No effect	Rejected for Org 1
c) Lower Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Higher task mastery		No effect	PB - Higher Perf for longer tenure	No effect	Rejected for Org 2
h) Higher role conflict/ambiguity		No effect	No effect	No effect	Probably rejected
i) Individual rather than group		Gpindiv - higher for longer tenure	No effect	No effect	Rejected for Org 1
H12: Centrality positions	MC				
a) Lower Afforg		No effect	No effect	No effect	Probably rejected
b) Lower Normorg		No effect	No effect	No effect	Probably rejected
c) Lower Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		MC - higher Conco for shorter tenure	No effect	No effect	Supported for Org 1
g) Higher task mastery		No effect	No effect	No effect	Probably rejected
h) Higher role conflict/ambiguity		No effect	No effect	No effect	Probably rejected
i) Individual rather than group		No effect	No effect	No effect	Probably rejected

* Please see 'Glossary of terms' for abbreviations found in page 'X'

Table D2: Information network findings for hypotheses

Information network findings for hypotheses					
Specific hypotheses	Measured by	Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
H1: Shorter tenure	Tenure				
a) Lower Perf		Higher Perf for shorter tenure	Perf for longer tenure	No effect	Rejected for Org 1; and Rejected for Org 2
b) Higher role con/am		Lower role con/am for shorter tenure	No effect	Lower role con/am for shorter tenure	Rejected for Org 1; and Rejected for Org 3
H2: Longer tenure	Tenure				
a) Higher Afforg		No effect	No effect	No effect	Probably rejected
b) Higher Normorg		Higher Normorg for longer tenure	No effect	No effect	Supported for Org 1
c) Higher Conorg		No effect	Longer tenure increases Conorg	No effect	Supported for Org 2
d) Higher Conco		Little effect on Conco	No effect	No effect	Rejected for Org 1
e) Higher Affco		Higher Affco for longer tenure	No effect	No effect	Supported for Org 1
f) Higher Normco		Higher Normco for longer tenure	No effect	No effect	Supported for Org 1
g) Group rather than individual		No effect	No effect	No effect	Probably rejected
H3: Shorter tenure - Low density information networks					
a) Higher Afforg	ED	ED - higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
b) Higher Normorg		No effect	No effect	No effect	
c) Higher Conorg		No effect	ED – lower Conorg for longer tenure	No effect	Rejected for Org 2
d) Higher Affco		No effect		No effect	Probably rejected
e) Higher Normco		No effect		No effect	Probably rejected
f) Higher Conco		ED - Higher Conco for shorter tenure		No effect	Supported for Org 1

Specific hypotheses	Measured by	Information network findings for hypotheses			
		Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
g) group vs. individual		No effect		No effect	Probably rejected
H4: Short tenure - dense information network					
a) Higher task mastery;		No effect	No effect	No effect	Probably rejected
b) Lower role conflict/ambiguity		No effect	No effect	ED - Higher role con/am for shorter tenure	Rejected for Org 3
H7: Short tenure - gender diversity	EC (gender)				
a) Lower task mastery		EC – Higher Perf for shorter tenure	No effect	No effect	Rejected for Org 1
b) Higher role con/am		No effect	No effect	No effect	Probably rejected
H8: Longer tenure - gender diversity					
a) Higher Afforg		No effect	No effect	No effect	Probably rejected
b) Higher Normorg		No effect	No effect	No effect	Probably rejected
c) Higher Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		EC – Higher Normco for longer tenure	No effect	No effect	Supported for Org 1
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Group rather than individual		No effect	No effect	No effect	Probably rejected
H9: Short tenure - race diversity	EC (race)				
a) Lower task mastery		EC race - Higher Perf for shorter tenure	No effect	No effect	Rejected for Org 1
b) Higher role con/am		No effect	No effect	No effect	Probably rejected
H10: Longer tenure - race diversity	EC (race)				
a) Higher Afforg		No effect	No effect	No effect	Probably rejected

Specific hypotheses	Measured by	Information network findings for hypotheses			
		Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
b) Higher Normorg	SH	No effect	No effect	No effect	Probably rejected
c) Higher Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Group rather than individual		No effect	No effect	No effect	Probably rejected
H11: Structural holes in friendship network					
a) Higher Perf		No effect	No effect	No effect	Probably rejected
b) Higher role con/am		No effect		SH – higher role con/am for shorter tenure	Supported for Org 1
c) Lower Afforg		SH - higher Afforg for longer tenure			Rejected for Org 1
d) Lower Normorg	DC	No effect	No effect	No effect	Probably rejected
e) Lower Conorg		No effect	No effect	No effect	Probably rejected
f) Lower Affco		No effect	No effect	No effect	Probably rejected
g) Lower Normco		No effect	No effect	No effect	Probably rejected
h) Higher Conco		No effect	No effect	No effect	Probably rejected
i) Individual rather than Group		No effect	No effect	No effect	Probably rejected
H12: Centrality positions					
a) Lower Afforg		DC - Higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
b) Lower Normorg		No effect	No effect	No effect	Probably rejected
c) Lower Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Higher task mastery		No effect	No effect	No effect	Probably rejected

Information network findings for hypotheses					
Specific hypotheses	Measured by	Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
h) Higher role conflict/ambiguity	CC	No effect	No effect	No effect	Probably rejected
i) Individual rather than group		No effect	No effect	No effect	Probably rejected
H12: Centrality positions					
a) Lower Afforg		CC - Higher Afforg for longer tenure	No effect	No effect	Rejected for Org 1
b) Lower Normorg		CC - Higher Normorg for longer tenure	No effect	No effect	Rejected for Org 1
c) Lower Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		CC - Higher Affco for longer tenure	No effect	No effect	Rejected for Org 1
e) Higher Normco		CC - Higher Normco for longer tenure	No effect	No effect	Rejected for Org 1
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Higher task mastery		No effect	No effect	No effect	Probably rejected
h) Higher role conflict/ambiguity	RBC	No effect	No effect	No effect	Probably rejected
i) Individual rather than group		No effect	No effect	No effect	Probably rejected
H12: Centrality positions					
a) Lower Afforg		No effect	No effect	No effect	Probably rejected
b) Lower Normorg		No effect	No effect	No effect	Probably rejected
c) Lower Conorg		No effect	RBC - Higher Conorg for longer tenure	No effect	Rejected for Org 1
d) Higher Affco		No effect	No effect	No effect	Probably rejected
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Higher task mastery		No effect	No effect	No effect	Probably rejected
h) Higher role conflict/ambiguity		No effect	No effect	RBC - Higher role con/am for shorter tenure	Supported for Org 1
i) Individual rather than group		RBC - Higher Gpindiv for longer tenure	No effect	No effect	Rejected for Org 1

Specific hypotheses	Measured by	Information network findings for hypotheses			
		Findings for Organisation 1	Findings for Organisation 2	Findings for Organisation 3	Rejection/support for hypothesis
H12: Centrality positions	<i>PB</i>				
a) Lower Afforg		No effect	No effect	No effect	Probably rejected
b) Lower Normorg		No effect	No effect	No effect	Probably rejected
c) Lower Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		PB - Higher Affco for longer tenure	No effect	No effect	Rejected for Org 1
e) Higher Normco		No effect	No effect	No effect	Probably rejected
f) Higher Conco		PB - Higher Conco for shorter tenure	No effect	No effect	Supported for Org 1
g) Higher task mastery		No effect	PB - Higher Perf for longer tenure	No effect	Rejected for Org 2
h) Higher role conflict/ambiguity		No effect	No effect	PB - Higher role con/am for relative tenure	Supported for Org 3
i) Individual rather than group		No effect	No effect	No effect	Probably rejected
H12: Centrality positions	<i>MC</i>				
a) Lower Afforg		No effect	No effect	No effect	Probably rejected
b) Lower Normorg		MC - Higher Normorg for longer tenure	No effect	No effect	Rejected for Org 1
c) Lower Conorg		No effect	No effect	No effect	Probably rejected
d) Higher Affco		MC - Higher Affco for longer tenure	No effect	No effect	Rejected for Org 1
e) Higher Normco		MC - Higher Normco for longer tenure	No effect	No effect	Rejected for Org 1
f) Higher Conco		No effect	No effect	No effect	Probably rejected
g) Higher task mastery		No effect	No effect	No effect	Probably rejected
h) Higher role conflict/ambiguity		No effect	No effect	No effect	Probably rejected
i) Individual rather than group		No effect	No effect	No effect	Probably rejected

* Please see 'Glossary of terms' for abbreviations found in page 'X'

