

A Qualitative Study of Task and Work-Social Networks

by

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AUTHOR'S DECLARATION

I hereby declare that I am the sole author of this thesis. This is a true copy of the thesis, including any required final revisions, as accepted by my examiners.

I understand that my thesis may be made electronically available to the public.

Abstract

Despite the well-recognized importance of interpersonal relationships within the work environment, there is no comprehensive approach or set of studies that provide a complete picture. As a step towards providing a complete picture, this research presents a qualitative exploratory study of how people experience the work environment through task and work-social interactions and through policies and norms present in the work environment. The purpose of this study is to understand the overall work experience from purely work-social and purely task network perspective. A semi-structured question-based set of interviews were performed among professionals from a Canadian university alumni society. The transcripts of the interviews were then manually coded and analyzed using statistical methods. The study found an overall higher level of positive responses for co-workers in the work-social network, as well as a preference for work-social co-workers in building a team for a hypothetical company. The study also found a general willingness to select only the best ranked co-workers from task network, whereas a leniency towards the selection of co-workers from work-social network was observed despite their lower ranking. At the same time, the study identified some of the most desirable attributes of fellow co-workers both in the task and work-social networks from an employee's perspective. The significance of the people and team was found more important to the employees than factors such as specific task performed or compensation. This exploratory study provided insights into how employees view their co-workers and their work environment.

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Dedication

In loving memories of my mother, Shamim Khan.

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Chapter 1

Introduction and Purpose of the Study

The significance of social interaction in one's personal life is well recognized. Provided that there are some degree of social interactions take place within the work environment, does it play an important role in the workplace? Within the work environment one interacts with co-workers both verbally and virtually through electronic communication tools. One could summarize their work experience by describing the interactions that take place every day. Presumably there are two major categories of interactions that take place in the work environment: task related and non-task related. The latter is referred to as work-social. Although all the interactions studied in this research are among co-workers at work, the task related interactions refer to the interactions necessary to complete a task. Work-social interactions are more social in nature and not required to perform a task. For example, a project meeting would be task-related interaction whereas a conversation with a co-worker about the hockey game would be work-social interaction. This thesis attempts to learn about one's work experience through these two types of interactions.

In this modern day and age people spend a significant portion of their time at work. Although knowledge-based professions allow for independent work, as part of an organization, people work within a large group to establish a project or task. To ignore the existence of co-workers and the social lives of employees would give an incomplete picture of the workplace. One needs to constantly interact or communicate with other members of a group to complete a task. Given that there is a very obvious collaborative nature in most work environments, it is important that one understand how the various interactions take place at work.

In one example of previous research, Côté (2005) performed a comprehensive study among the employees of twenty nine companies and found a high correlation between social interaction and work strain. Underlying emotions in interactions are unavoidable despite the

popular belief that a ‘professional’ does not get biased or influenced by their emotions. Whether emotions affect one’s judgment or not, they certainly play a major role in one’s life, including the work-life. In recent years, Jasper (2011) performed theoretical research on the power of emotion within an organizational environment, concluding that “emotion is an essential ingredient of putatively rational action and that reason and emotion cannot be easily separated”.

Since the early fifties many researchers have acknowledged the need for an integrative approach to technical and social factors within an organization (Griffith & Dougherty, 2002). For example, sociologist Rogers (1995) took a Socio-Technical System (STS) approach, stating that STS is, “made up of people (the social system) using tools, techniques and knowledge (the technical system) to produce goods or services valued by customers (who are part of the organization’s external environment). How well the social and technical systems are designed with respect to one another and with respect to the demands of the external environment determines to a large extent how effective the organization will be.”

In another research paper, Bavelas, MacGregor and Safayeni (1982) suggested a theoretical two-fold model of an office, containing task structure and person-interaction-structure. They characterized the interdependencies of the two networks and how they mold each other in return. This conceptual model not only suggested the need for personal interaction to facilitate performance, but also emphasized the influence of social structure at work, stating: “the social structure, in turn, modifies the intended formal task-structure into the one actually used”. Although there has been some research (Safayeni et al., 2008) that utilized this network concept to analyze how the technical and social aspects of an organization complement one another, there are no empirical studies that specifically analyze an organization from a task and work-social network perspective. The concept of network interaction by Bavelas et al. (1982) essentially laid out the framework for this thesis.

It is important to learn about what types of interactions one finds to be helpful and pleasant at work. Knowing what most employees find helpful or pleasant can help one understand how to manage a team better. Similarly, knowing the interactions and behaviors that employees find unhelpful or unpleasant can equally benefit managers in an organization, allowing them to ensure that such behaviors do not take place within a team. Looking into the work environment from a task and work-social network perspective provides insight into what attributes people find most important in fellow co-workers. This may contribute to a better understanding of the social aspect of group building and enhance the employee's experience at work.

Despite references throughout the literature (see the review in Chapter 2) regarding the significance of social interactions at work, very little empirical research has been conducted to study how social interaction is perceived at work and its effect on employees. The intention of the research in this thesis is to explore how one experiences their workplace both through their work-social and task networks, and learn what employees' value in their relationship with their co-workers in these networks. The research also explored what factors matter most to people, such as the variety in work itself or other environmental factor such as the co-workers, team and wage.

The study was based on interviews conducted on professional who are alumni of the faculty of engineering at the University of Waterloo. The purpose of the interview questionnaire was to explore the following:

1. How people experience interaction in their work environment through purely task and purely social relationships. The study examined the positive qualities that are valued in co-workers as well as negative qualities that are undesirable in the workplace. The study also analyzed how positively people view their interactions at work. Factors such as the professional position or seniority of the co-workers were taken into consideration as well.

2. Whether there is a preference to work with co-workers whom they share a social relationship with (only within work environment) over those with whom they have a purely task related relationship. Who employees like to work with most by seniority was also explored.
3. An overview of work environment to observe whether the interactions with co-workers or team are related to overall satisfaction over other factors such as compensation etc.

The structure of the thesis is as follows. The second chapter begins with a review of existing theories and studies related to this thesis. Chapter three explains the detailed procedure and methodology used to conduct the interviews, while chapter four lays out the data analysis approach. Chapter five and six analyze the data using both quantitative and qualitative methods. Chapter seven synthesizes the results of previous sections and discusses the key findings of the study. Finally, chapter eight concludes a set of take-away points and suggestions for future research.

Chapter 2

Literature Review

The importance of interpersonal relationships within the work environment is well recognized by scholars in the field of organizational behavior. Although many studies have been performed in an effort to understand and improve employee behavior, job satisfaction, happiness, motivation, attitude, work culture etc., there are no studies that draw an all-inclusive picture of how one experience the interactions and relationships developed within an organization. In particular, it would be helpful to understand the importance of relationships at work that are not task-related at all. Although such interactions are common every day, little research has been done to determine their scope and importance. Filling this gap is one of the goals of this thesis. The purpose of this literature review is to draw attention to some of the key theories and concepts that relate to various interactions at work, and explain their effect on the employee.

The research described in this thesis is an exploratory qualitative study. The study incorporated an overview of work-life primarily from a two network perspective. While task network provides the overview of task related interactions and relationships, work-social entails the social side of the work-life that is purely voluntary. The research also studied the norms, culture, and job satisfaction of the participants to understand the overall work environment. Due to the broad nature of the study, it was challenging to find singular theory that can help explain the findings of the research. The research involved in this thesis does not operate within the boundaries of any particular one of these theories discussed in the subsequent sections. However, there are various elements of this previous work that have overlapping concepts, such as the theories about socialization and culture help to understand the how people may act within a certain work environment. Similarly, the literature about network interaction helps to analyze the network interaction observed from the study. Past studies about job satisfaction discussed below relate to the fourth segment of the interview

questionnaire. In other words, where appropriate, the relevance of previous literature to the research performed in this thesis is addressed.

2.1 The organization, Culture and Socialization

Before addressing the experiences of individuals in the work environment, the constraints and boundaries of the work environment itself should be defined. Weber (Weber & Weber, 1947) defined an organization as a ‘closed’ social relation or system with access limited to specific associated individuals, and limits enforced by a leader. In modern days, the concept of organization embraced other external elements such as environment and employee perception (Scott, 2008). While reflecting on half a century of literature in organizational sociology, Scott (2008) explained that organizations need to integrate: “regulative, normative, and cultural-cognitive features that define ‘social fitness’ (Meyer & Scott 1983).” Therefore, an organization is not an isolated ‘closed’ system anymore. Organizations are now defined based on a set of formal or informal constraints which result in patterns of behavior for any given level of analysis (MSCI 605 class lecture, University of Waterloo).

In defining the role of an individual within an organization, the theory of organizational socialization sheds some light. The theory of ‘Organizational Socialization’ refers to the vague procedures that assist a person when learning their way around a new role in an organization. These procedures are essentially the socialization processes that teach a person how to be socially skilled in a particular role. Organizational socialization is a continuous process that a person learns through their entire career, but is definitely most crucial when they start a new role (Van Maanen & Schein, 1977).

To understand the way people act within an organizational environment, it has become increasingly important to understand the culture of particular organizations. Edgar Schine is one of the most prominent scholars in organization sociology, working extensively on theories of organizational culture. Schein (1986) defined organizational culture as a “..deep phenomenon, merely manifested in a variety of behavior.” Schein explained that culture is

‘invented’, ‘discovered’ or ‘developed’ in learning to cope with problems of external adaptation and internal integration. Culture can be articulated as a set of norms, rituals, and rules that are followed within a group. It defines how a group communicates internally or externally and the level of formality that exists. It also defines a code of conduct that is developed by the group over the lifetime of the organization. Following this definition of organizational culture Schein also argued that culture is something that needs to be taught to a new member in the group. Scholars (Van Maanen & Schein, 1977) in this field explained culture essentially teaches “...what is appropriate and "smart" behavior within the organization and what is not.” It can be argued that while a given set of people may have enough stability and history to create a culture, some organizations may not have any culture because the people within the group change too quickly.

Organization socialization is alternatively known as ‘People Processing’ (Van Maanen, 1978). Most scholars agree that social knowledge and skills are necessary tools to assume a new role, and employees pursue different people processing methods in order to assimilate. For example, the particular way a supervisor communicates with his team can be seen as people processing. Social skills are considered to be an integral part of institutional theory. Institutional theory has a broad focus on norms and rules that are considered as foundational for social behavior. Fligstein (1997) argues that the basis of social skill is the “ability to relate to the situation of the other” or other person’s interest. He reasoned that the key factor for a skilled strategic actor is to understand the state of the other and act accordingly.

The culture of a team or organization can’t be separated from how individuals interact within that environment. Knowing the culture of a team helps one to understand what is expected of a person from a job. The work culture fills the gap between a written job description and what is expected in a particular work environment. For example, if the culture of the team is to frequently communicate, not doing so will be in conflict with behavioral norms, and hence found to be unappreciative behavior by other members of the team. Although the research done in this thesis is not directly related to previous works on organizational culture and

norms, an effort was made to survey the variety of norms and work culture experienced by different employees. When interpreting results, subject responses must be placed in the context of different organizational cultures.

2.1.1 Pro-social Behavior and Deviant Behavior

Pro-social behavior is defined as a pro-active helping act offered by one employee to others within an organization. These helpful behaviors may not always be part of a job, and are often times not officially part of an organizational reward system. However, as discussed above, they may be part of an organization's culture. Katz (1964), who is well known for his research in motivation, has even claimed that spontaneous performance of voluntary pro-social behavior is essential for an organization.

According to most literature on pro-social organizational behavior, researchers have identified two distinct types of behavior: the role-behavior or the social-behavior expected as part of an employee's job responsibilities and voluntary extra-role social behavior that is not a requirement of one's roles and responsibilities (Katz, 1964). One of the major challenges in this research is to define the in-role and extra role behavior. In most professional work environments, it is very difficult to precisely define the expected behavior of a person who assumes a particular role. Considering the definition of in-role behavior is somewhat vague, defining pro-social behavior can be problematic.

Previous literature has also attempted to find the causes of pro-social behavior. George (1991) performed empirical studies of two hundred and twenty one sales persons, concluding that a positive mood in the work environment increases pro-social behavior. Other studies in the field of social psychology also suggest a strong relationship between positive mood and helpfulness. For example, Organ (1988) hypothesized that pro-social behavior is one of the by-products of job satisfaction. He explained that when people are happy, satisfied, and feel content at work, they will more than likely be helpful in nature, even if such behavior is not required as part of their job.

Carlson, Charlin and Miller (1988) analyzed the positive effects of pro-social behavior, concluding that: “one’s social outlook is positively associated with the increase in helpfulness among those who experience positive affect.” Andersons and Williams (1996) conducted a survey of five hundred health professionals, and found that helping behavior at work is correlated with higher quality relationships, highlighting again the connection between working relationships and pro-social behavior.

On the opposite end of the spectrum, there is this idea of the workplace deviant behavior. Behavioral deviance refers to voluntary acts that are in conflict with organizational norms or culture (Kaplan, 1975), resembling the concept of pro-social extra role behavior, although in this case the behaviors are negative. Since every organization or group may have a different culture, two organizations cannot be directly compared. The topic was first brought up in the eighties; unfortunately there is still no comprehensive theoretical frame work for this concept.

One of the most interesting empirical studies in this field was done by Robinson and Bennett (1995). They offered an exhaustive list of behaviors, covering a wide range of attributes from the organizational (work slowly, wasting time) to the interpersonal level (verbal abuse, blaming others, favoritism). They claimed that organizational deviance should focus on interpersonal deviance. From the analysis, it was very clear that these behavioral deviances are seen as major concerns among the employees. The authors devised a framework for researchers to classify varying levels of deviance in the organizational and interpersonal domain. Managers can potentially use this framework to figure out what is acceptable and what is not acceptable within their team.

The aforementioned studies investigated the definition and causes of pro-social behavior and the workplace deviant. A key insight is that positive mood can increase the helpful nature of employees, and job satisfaction as a result. However, not adhering to organizational norms can cause problems within a group. Pro-social behavior explores the nature of helpful

behavior that goes above and beyond one's role. However, since defining the in-role behavior can be very difficult, there is a gap in literature. Previous literature motivated the split into task and social interactions utilized in this thesis. However, in contrast to previous literature, this thesis represents a unique holistic approach, exploring the work environment from a network interaction perspective.

2.1.2 Positive Organization Behavior and Emotion

In recent years, scholars have started to shift from static to more dynamic models of employee well-being. Interestingly, in the last decade a novel concept called "Positive Organization Behavior," or POB, has been introduced. POB essentially focuses on the effects of positive traits, states, and behaviors of an employee within an organization, allowing a better understanding of the work life (Bakker & Schaufeli, 2008). Luthans (2002) states that POB is: "the study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace" (p. 59). A few of the measurable psychological objects could be: hope, confidence, optimism, well-being, and emotional intelligence. One of the most cited papers in this field (Losada & Heaphy, 2004) performed empirical research studying the interpersonal relation of a business team, and proved the power of positive interactions and communication. They observed that teams consisting of peers, subordinates, and superiors scored much higher positive state when they spoke positively with each other. The researchers identified positive interaction as encouragement, support, humor, etc.

In recent times many researchers have also explored the idea of positive organizational behavior in relation to more direct benefits being offered by the company. For example, Muse, Giles and Field (2008) hypothesized and found that the offering of a benefit is certainly perceived as positive exchange between employee and employer and results into higher level "contextual performance behaviors" proving the effect of POB on employee behavior and performance.

Again the notion of positive behavior is seen as part of organization development along with development of individual performance and behavior. But none of the literature has been devoted to examining what is considered by the employees themselves to be positive behavior in general.

While many researchers discussed about the concept of positive organizational behavior and its effect in the workplace, other studied the influence of social relation or interaction and the influence on one's emotions in the workplace. Amabile and Kramer (2007) showed the importance of social interaction in the work environment involves two fundamental things: “..enabling people to move forward in their work and treating them decently as human beings”. The statement again shows the importance of positive social interaction in the work environment. Côté (2005) performed a comprehensive study involving the employees of twenty nine companies and found a high correlation between amount of asocial interaction and work strain. He successfully showed that “the factors pertaining to the social dynamics of emotions determines the strain level.” He proposed a theoretical model to help better understand the social interaction and how emotional regulation impacts strain. Many researchers (Ware, Manning, Wells, Duan, & Newhouse, 1984) concluded that social support and positive social interaction reduces the level of stress. The argument whether the relationship between interaction and strain level is positively or negatively related (Brotheridge & Grandey, 2002) continues to date.

“Emotional Dissonance” offers a partial explanation for the varying and contradictory results in the studies of social interaction and strain. Emotional dissonance is the discrepancy between a person's public shows of emotions and what they truly feel or experience. The higher the emotional dissonance, the higher the strain on a person is. On the other hand, research (Côté, 2005) shows an increase in pleasant emotions may not necessarily be related to a reduced amount of emotional dissonance. Emotional dissonance theory has been utilized as a tool to indirectly measure job stress, work strain, and satisfaction. “Emotional dissonance resulted in job dissatisfaction, which, in turn, stimulated withdrawal intentions”

(Abraham, 1999). In another study Reichers (1986) also found that employees feeling emotional dissonance are still happy with their job as long as they had social support from their co-workers

Even though organizational research has matured and branched off in many sub areas, very little is known about what a person experience in day-to-day life (Suddaby, 2010). Very little effort was found to evaluate the effect of emotion on individuals within work context. Most researchers recognize that the emotional effect at institutional work has not been examined thoroughly (Scott, 2008). In recent studies, Voronov (2012) introduced a theoretical framework for emotions in an organization and emphasized the “importance of emotions, their complicity with domination, and their contribution to both reproducing and transforming the institutional order.” In one of the recent studies, Jasper (2011) performed theoretical research on the power of emotion within an organizational environment, concluding that “emotion is an essential ingredient of putatively rational action and that reason and emotion cannot be easily separated”.

Amabeile and Kramer (2007) examined the positive and negative impact on the emotional state of an employee when they hear good news (a big project win) or bad news (employee reduction). The study was conducted among twenty five project teams; over one hundred members and thousands of dairy entries were collected. The data analysis claims positive emotions at work positively motivates people along with increasing their creativity, productivity, commitment to the work and collegiality.

The aforementioned studies certainly highlight how socialization and social interaction at work is very important to employees and has impact on their emotions. Despite the importance of social interaction at work, there is no comprehensive study that combines and compares the task and social interaction.

2.2 Job Satisfaction

Measurement of job satisfaction has been utilized for decades to understand employee job performance, motivation, productivity etc. Job satisfaction can be due to many aspects of a job including the perceived job characteristics, performance, remuneration, team cultures, the quality and quantity of work, employee relationships, organizational commitment, employee retention, overall satisfaction etc.

The research on job satisfaction and job performance goes back over three decades (Scarpello & Campbell, 1983) , but the methodology and findings are still somewhat controversial. Starting in the late sixties, many researchers claimed (Lawler, Edward, 1967; Hunt, & Osborn, 1982) a correlation between reward, job performance, and job satisfaction. Despite the mixed results and the variety of methodologies used to measure job satisfaction, there is no conclusive evidence that there is a strong correlation between job performance and job satisfaction (Locke, 1976). Job satisfaction is also measured to understand organizational commitment and for generally assessing individual commitment.

Since job satisfaction covers various parts of work life, and various facets of satisfaction, one common mistake is to consider a set of individual factors as defining overall job satisfaction. For example, one may be satisfied with their current job based on a family crisis or the current job market, but they may not be satisfied with their job situation overall.

There are many methodology have been devised to measure job satisfaction. In a review paper, researchers (van Saane, Sluiter, Verbeek, & Frings-Dresen, 2003) pointed out that despite many available instruments to measure job satisfaction, only a few meet psychometric quality criteria, stating: “Among the seven instruments that did meet the psychometric quality criteria, the MJS (Measurement of Job Satisfaction) included most of the work factors that were considered necessary for good content validity. No instruments were found to measure responsiveness and thus we could not confirm the responsiveness of job satisfaction instruments when used as evaluative tools.”

Evidently, there is no perfect method or tool to measure employee satisfaction. Job satisfaction touches many facets of a job, and any specific measure may not be representative of the entire situation. In this thesis, the purpose was not to measure job satisfaction. The questions related to job satisfaction in the interviews were intended to understand the culture, norms, and expectations in a particular work environment.

2.3 Network Interaction

Network approaches have been partially conceptualized in the existing literature. For example, Katz (1964) talked about a stable social interaction while sociologists emphasized the importance of social interaction in life (Tichy, Tushman, & Fombrun, 1979) . Tichy et al. (1979) concluded that “...although there is an interest in network approach, there has yet to emerge a comprehensive model based on network thinking that is capable of guiding our understandings of social and, in particular, organizational processes.”

Bavelas et al. (1982) offered a theoretical model of an organization that contained two distinct structures: task and social. The theory explained how these two structures are integrated and influence each other, stating that: “The social structure, in turn modifies the intended formal task-structure into the one actually used; Changes of the formal task-structure which result in changes of the existing social structure may often evoke an affect whose valence and referral will depend on local context.”

One of the recent key empirical studies (Safayeni et al., 2008) performed in this field offered a method to investigate organizational interaction from a network perspective. In a recent multi-year study Safayeni et al. (2008) took a network approach to analyze the effectiveness of social interaction and communication in requirement gathering for new product development in a multi-national tech company. This network approach helped identify the specific problem in communication among different working groups in the study. However, the study examined interaction as a whole and did not distinguish interaction by task or social relationship.

2.4 Summary

Although the importance of social interactions and relationships within the work environment have been discussed through various major research fields such as organizational culture and pro-social behavior, there exists no comprehensive approach or empirical study that explores the work environment from purely task or social network perspective.

Studies in pro-social behavior explore helpful extra-role behaviors. Unfortunately these studies do not provide insight into the specific attributes that are considered to be helpful behavior by employees. The theory of organizational culture helps to outline the types of behavior expected from an employee within a particular work environment, but it does not explain, independent of the culture, who people prefer to interact with. The field of job satisfaction attempts to understand the employee's perspective and determine factors that are important for job satisfaction, productivity, effective communication etc. Despite numerous empirical studies in this field, there are no studies that separate the work environment into task and work-social interactions, and hence no understanding of the relative importance of social interactions in job satisfaction

Although some literatures in socio technical system discussed the existence and importance of social interaction, this field has yet to develop an established theory and methodology. Although other researchers in this field proposed theoretical models for the analysis of task and social interactions in the work environment, no experiments studied these interactions separately.

The research described in this thesis is unique because it took a qualitative approach to investigate how one experiences their work environment purely from a work-social and a task network perspective.

Chapter 3

Methodology

The research is an exploratory, qualitative study and took an inductive approach. The aim was to observe and find trends using both quantitative and qualitative data analysis methods. To understand the nature of interactions and the complexity of the exchange of emotions which happen in organizational life, a semi-structured interview approach was determined to be the most effective. The questions were designed to get a range of attributes rather than yes or no answers. The semi-structure approach allowed the participants to express their own thoughts, and get clarification for any ambiguity in the question itself. Likewise, it permitted the interviewer to ask follow up questions to understand the participant's answers better, filter out any perception that the interviewer may have, and determine the participant's attitude towards his work life. On the other hand, semi-structured questions are not easy to code. Moreover, one needs to remember, that some people are more expressive than others. The interviewer needs to be careful while coding and make carefully thought out decision to avoid adding error in the transcribing process.

One of the major disadvantages of a closed-ended questionnaire is that it does not allow the participants to express themselves completely if their answers do not fall exactly into 'yes' or 'no' categories. In addition, often times the participants may not know what exactly the question is asking for. This can result in unintended wrong responses due to the fact that none of the answers properly express a participant's thoughts. Formulating, a scaled response for each question may also not be clear having varying meaning from person to person. Research shows (Russell & Bobko, 1992) that in the case of close ended questions, people may tend to agree or disagree based on the relative assertiveness of the question.

On the other hand, an semi-structured question based interview also inherits some systematic errors. For example, one needs to make a cautious effort not to influence the interviewee by his voice, tone, or gesture while conducting an interview. According to sociologist Goffman

(1959), part of social interaction is constructing an image of oneself to others which is socially acceptable. As a result, a mere frown from the interviewer may lead participants to modify his answer to 'fit in', e.g. to be more socially acceptable. Alternatively, since the participants do not know the interviewer, it may not have an adverse effect at all.

In the interview process, a conscious effort was made to eliminate any researcher bias. For instance, the interviewer thoughtfully re-used only the phrases and words or linguistics used by the participants when clarification of an answer was requested.

Despite the effort required to analyze data from the interviews, all these aforementioned cognitions can't be captured using multiple choice based surveys. Fifty minutes to hour and a half long in-person interviews were scheduled with individual participants. The questionnaire was broken down into four segments to understand the nature of task related and work-social relationships in the work environment. Lastly, an attempt was made to understand the overall work or group environment, and determine what the key factors are to people at work.

The details of the subjects, interview questionnaires and procedure are described in detail in the subsequent sections below.

3.1 Participants

An invitation was sent out for an in-person interview to a selected list of possible candidates. The candidates were all affiliated with the engineering alumni society in University of Waterloo and have post-graduate degree from faculty of engineering. All of the participants therefore had a formal educational background in a technical field and at least one post graduate degree from a Canadian university. A further selection criterion was based on their physical home location (postal code) so that the participants could be met physically for an interview. The invitation was written in the form of an electronic mail with a brief outline of

the research topic, along with a note of how much time the interview would require so that the participant were aware of the time commitment.

Number of Participants: Invitations were sent out to approximately 387 subjects. Over 59 people replied showing their interest to participate in the study. Considering the time commitment was one hour, the response rate was very impressive (6.5%). Due to physical remoteness (being too far away from the interviewer's location) and schedule challenges, only a total of 29 people were interviewed.

Length of Interview: The length of each interview varied based on the individual. Some people were naturally talkative while others had a reserved personality. Each interview lasted anywhere from fifty minutes to hour and a half. The interviews were taken over a period of three months. This gave the interviewer an opportunity to analyze an initial set of data, comprehend and find unintentional systematic errors within the interview process, and re-design the question set. Only the final data set (with the final question sets) were analyzed for this thesis.

Gender: An overwhelming number of the invitations made and responses received were for male participants. There was only one female out of the fifty nine subjects that replied. This is not unusual considering the faculty of engineering historically has very low enrolment of women.

Age: The age range of the participants varied significantly, ranging from late twenties to mid-sixties. This made the interview process quite unique. Although the exact ages of the participants were not recorded, on average participants had about 15-20 years of work experience, making the average age approximately 45 years.

Education: All of the participants had a formal technical educational background with at least one post graduate degree from a Canadian university. The participants varied in age, gender, ethnicity and professional background. Due to this assortment of participants, this can be considered a sample of population within the highly educated technical profession.

Profession: The participants were all mature professionals working in various types of organizations. The participants' work association varied from private to government and from small size organizations (over five full-time employees) to medium-large organizations (over two hundred under three thousand employees). Since the participants' educational background were technical (i.e. engineering), most worked for technical organizations. However, there were a few participants who worked in the financial industry. Due to the wide range of age, each of the participants was at a different stage in their professional career. However, only a few participants were young professionals, with the majority of the population at the peak of their professional career.

3.2 Procedure

Participants were each interviewed with the same set of questions. Permission was asked at the beginning of each interview to record the session for the ease of transcribing in the analysis phase. The participants were presented with Figure 3-1: Interaction Network Diagram explaining the relation between the participant and the topic of discussion.

Pilot Test: A few iterations were required before finalizing a set of questions that were well suited to this study. The data set only from the final questionnaire has been used for this study. In the initial phase, Figure 3-1: Interaction Network Diagram contained many more co-workers segregated into the peer, junior and supervisor levels. After a few interviews, it was recognized that this was not helpful, as participants may not have a sufficient number of team members to talk about from each level. Forcing participants to come up with too many

examples will just add noise, as many of the co-workers may not have any importance to them. It was decided as best to consider two main categories of co-workers (task and work-social) and allow the participants pick and choose who they want to discuss.



Figure 3-1: Interaction Network Diagram

Similarly, a set of multiple choice questions was designed to understand the group culture and job satisfaction. It was found very quickly that some people may have more than one answer to the same question such as ‘What would it take for you to consider a new job?’ For some the answer was quite complicated, consisting of a few choices that were offered in the questions. Hence, it was then decided to present interviewees with semi-structured questions. This allowed the participants to determine what the most important criteria are when considering a move from one job to another.

Interview Segments: The interview was ultimately structured in four segments of questionnaire. The questions, and the rationales behind them, were discussed in subsequent sections. In the first section of the questionnaire, the interviewee was asked to specify a few (minimum of two) co-workers he frequently collaborated with for task related matters. A series of questions (See question 1-2 in Appendix A) were asked to comprehend the relationship between the interviewee and their coworkers in the context of task-related circumstances.

The second part of the interview involved asking questions regarding purely social relationships in the work environment. Each participant was once again asked to specify a few co-workers they interacted with in a purely social context. Questions (see question 2-4 in Appendix A) were asked to understand the nature of the work social relationships.

Noticeably, at the second phase of the interview, some participants were observed to have difficulty specifying their social acquaintances, the reason being that some of the social connections at work are developed through frequent collaboration on a specific project or for other occupational reasons. Under these circumstances, the participant was advised to classify based on the relative strength of the work and social relationship.

In third section of the interview, the participants were asked to rate and rank their co-workers. The rating was done on a scale of 1 to 10 based on ‘helpfulness’ in the task network and ‘pleasantness’ in the work-social network. While rating and ranking seemed fairly straight forward for the participants, some were hesitant to or unsure of how to reverse rate themselves.

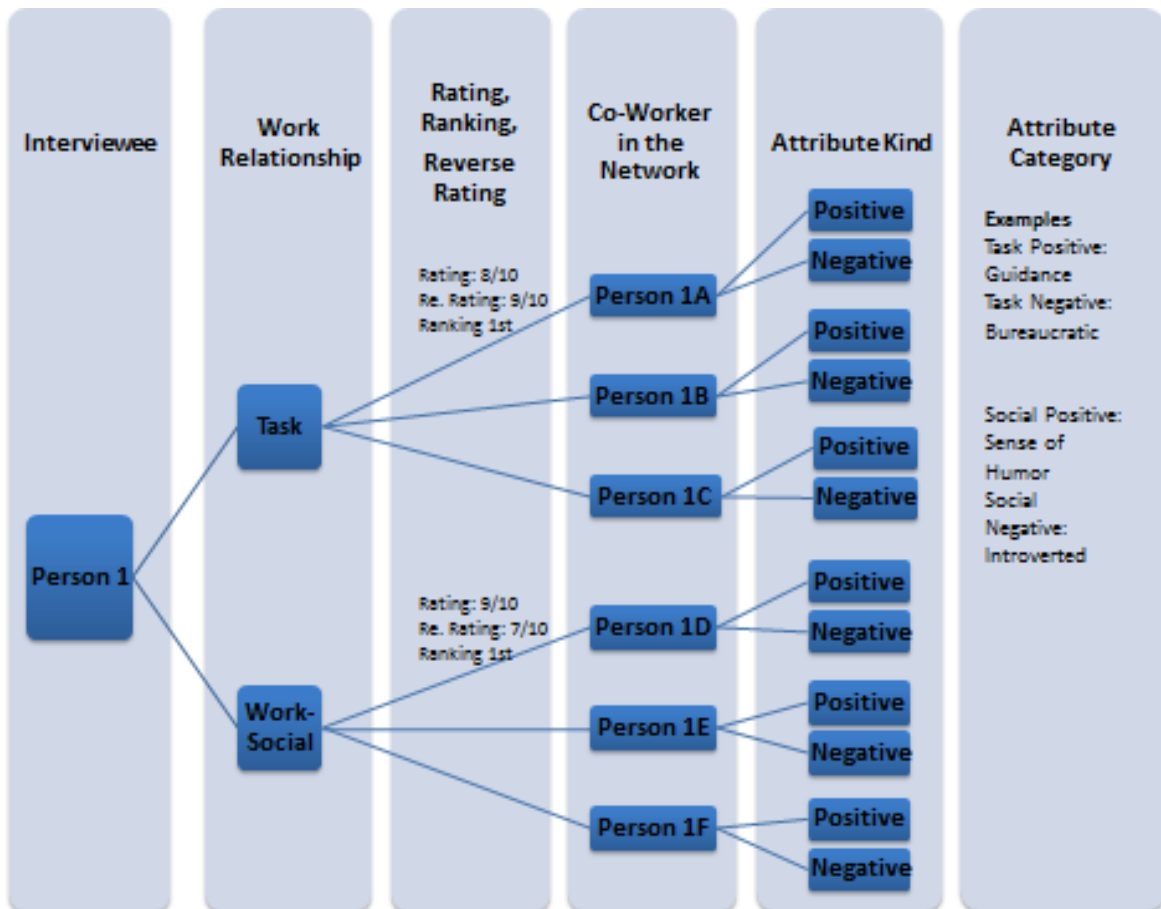


Figure 3-2: Interview Tree Diagram (Segment 1, 2, 3)

Figure 3-2 portrays the high-level approach to viewing the interview (segment one, two and three). For data analysis, all the responses were coded and grouped under various attribute categories. Cautious effort was made to code these responses. An effort was made to keep as much of the original description as possible when categorizing the responses. The helpful and the pleasant responses are referred to as positive attributes whereas the not so helpful and the not so pleasant attributes are referred to as negative attributes.

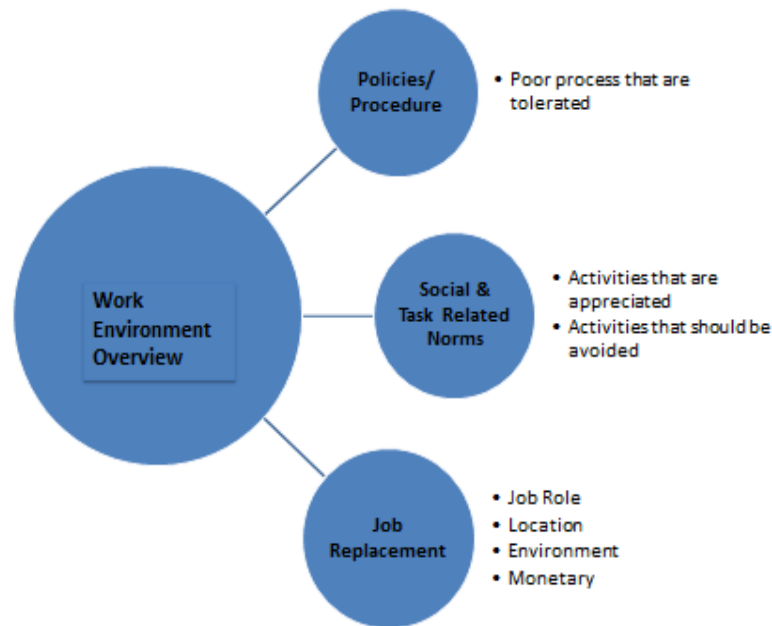


Figure 3-3: Interview Segment Four: Work Environment Overview

The fourth segment of the questionnaire (see question 13-17 in Appendix A) was designed to understand the norms observed within the work environment. In other words, the questions illuminated any ‘unwritten rules’, policies and procedure in the work setting. Additionally, a few questions were asked to uncover what participants value most within their work environment.

Figure 3-3 shows an overview how the work environment was broken down by question sets. Job replacement criteria were utilized to indirectly learn the most important criteria in one’s work-life.

3.3 Type of Questionnaire

The interview was designed in four segments with various question sets to determine information about the complexity of task and work-social social networks, interactions within

these networks, and the set of attributes that people value most within the task and work-social networks. Presumably, interactions that happen in the workplace are for the most part task related, since this is the primary purpose of a job. Because of this assumption, task network related questions were asked first. Arguably, the participants would feel more comfortable answering task network related question first as the interviews were performed in work environment context. Segment two of the interview involves questionnaire about the work-social network to capture network interaction that takes place outside of task context within the work environment. Segment three of the interview was designed to be able to compare preferences and find similarities and dissimilarities in choices that people make in task and work-social network. Also, since in segment one and two, the participants had already discussed what they find helpful, pleasant and so on, it would be easier for one to rate and rank their co-worker at this stage of the interview. After discussing about the network interactions in segment one through three, segment four focuses on the bigger picture of the work environment. This entails questions regarding the work environment to understand the norms, culture and policies in the workplace.

3.3.1 Segment One: Task Network Interaction

The purpose of this set of question was to understand the participant's work relationship from an interaction perspective. Each interviewee was asked to select a few co-workers they interact with frequently. The participant was then asked the seniority level of the selected co-workers within the organizational chart: whether they are peers, supervisors or juniors in work relation. This section was intended to investigate participant's work relationship and the type of attributes one values most in their co-workers through their positive and negative experiences. Questions were asked to find out what they find to be helpful behaviors at work and what is not so helpful. Here we specifically asked for 'not so helpful' behaviors of a co-worker instead of 'unhelpful' to avoid imposing a negative connotation from the questions. First, each participant was asked the following questions followed by queries to obtain clarification and general information if needed.

1. Describe a few specific examples of each person, what they do for you (task related) that you find helpful?
2. Describe a few specific examples of each person, what they do for you (task related) that you find ‘not so helpful’?

3.3.2 Segment Two: Work-Social Network Interaction

The question set in this section was designed to explore the nature of work related social relationships. The interviewees were asked to specify a few co-workers they socialize with in work environment context. The participants were then asked to provide more information to identify if they work within a same group, work together occasionally or have purely work-social relationship. The questions were asked to determine what they find to be pleasant about a person at work and what they find to be not so pleasant. Unlike the work related questions set, the word ‘pleasant’ was used instead of ‘helpful,’ since most social interactions do not exactly consist of helpful gestures. The intention of this set of questions was to investigate the most significant social qualities that people appreciate in work settings.

First, each participant was asked the following questions followed by queries to elaborate, as needed.

3. Describe a few specific examples of each person, what they do for you (in work social context) that you find pleasant?
4. Describe a few specific examples of each person, what they do for you (in work social context) that you find ‘not so pleasant’?

3.3.3 Segment Three: Comparison through Ranking and Rating

This segment of the interview was designed to understand and compare the most important attributes and preferences in each network. Each participant was asked to rank co-workers in

each network (task and work-social). The participants were also asked to rate the specified co-workers individually on a scale of 1 to 10 where 1 means not so helpful or least helpful and 10 refers to most helpful.

Participants were asked:

5. In the Task network, given a scale of 1 to 10, how would you rate each person?
6. In the Task network how would you rank these co-workers? (For example if one had discussed about three socially related co-workers, he'd have to rank 1st, 2nd and 3rd)

At the end of this rating and ranking, an attempt was made to gather information regarding each participant's perception of how others' would rate them on a scale of 1 to 10. They were asked,

7. On a scale of 1 to 10 how do you think each described individual would rate you?

Similarly, the participants were asked to rate the specified co-workers in work-social network on a scale of 1 to 10 where 1 means not so pleasant or least pleasant and 10 refers to most pleasant.

8. In the Work-social network, given a rating scale of 1 to 10, how would you rate each person?
9. In the Work-Social network, how would you rank these co-workers? (For example if one had discussed about three task related co-workers, he'd have to rank 1st, 2nd and 3rd)
10. On a scale of 1 to 10 how do you think each described individual would rate you?

Finally, one question was asked for each network to understand whether there is any preference in a hypothetical selection process for co-workers they interact with purely on a task basis or purely on a social basis. The participants were asked,

11. Hypothetically, if you open your own business and had an opportunity to employ one or two (based on how many specified in his network) people from this task network, who would you take with you?
12. Hypothetically, if you open your own business and had an opportunity to employ one or two (based on how many specified in his network) people from this work-social network, who would you take with you?

3.3.4 Segment Four: Work Environment Overview

In this segment the question set emphasized learning about the participant's over all work environment and policies, various norms, and the work culture that exists. According to Schine (1986) culture is learned by a team member to cope with external and internal problems within work environment. The following questions were asked to understand what behaviors or gestures are valued by the team:

13. What is the most preposterous process or poor policy you can think of at your work?
14. If a new person starts to work within your group, what would you advise him to do to be popular or liked by the other team members?
15. If a new person starts to work within your group, what would you advise him to refrain from doing?

A focused effort was made by means of the following questions to measure how participant value their job and gauge their level of job satisfaction:

16. Describe what do you enjoy about your work? What are the aspects of the job you like most?
17. If a head-hunter calls offering you a new job, what would it take (for example higher compensation, higher position, better environment, co-worker, less commute) for you to consider another job offer?

Chapter 4

Methods of Data Analysis

The interviews were recorded and transcribed for analysis. The categorization of attributes from the transcribed interviews is referred to as coding. Interview data is rich in nature and required both quantitative and qualitative analysis. Therefore a two-fold analysis approach was taken. While the quantitative analysis evaluated overall trends in the results, the qualitative data analysis focused on exploring the nature of the attributes and what they mean in the context of the work environment.

4.1 Data Coding

The first step of data analysis was data coding. Each interview was recorded and transcribed, and phrases were summarized by a set of representative words. The coding of the data was performed manually. Although cautious attempts were made to reduce researcher biases, they may not have been completely eliminated. One of the phases where researcher bias might have had an influence was the coding stage, when the researcher had to rephrase the original description of behavioral data. An effort was made to keep as much of the original description as possible. Moreover, while coding the data, another independent reviewer was brought in to minimize researcher bias. Table 4-1 shows examples of a few coded descriptions.

Original Transcription	Coded Data
Making fun of things consistently and that weren't always necessary	Insensitive
He is just a very friendly and humorous guy to be around	Friendly
He's got this specialized skill set that's quite technical to do this kind of work	Competent
Getting his time for something is often a challenge.	Hard to get hold off

Table 4-1: Sample Coding

4.2 Methods of Quantitative Data Analysis

The purpose of the quantitative analysis was to establish overall trends in the data, and assess the statistical significance of such trends.

The aspects of the data investigated using quantitative analyses are listed below. The details of the quantitative data analyses are discussed in Chapter 5.

1. Positivity of Work-social and Task Network Interactions

An effort was made to understand if there was any tendency toward positive (or negative) responses by network (Task and Work-Social).

2. Preference in the Selection Process from a Network Perspective

This part of analysis was designed to determine whether there was any statistical evidence for preference by network (work-social and task) in a hypothetical selection process. The analysis was extended to observe whether there was any preference to select co-worker by relationship (i.e. Supervisor, Peer and Junior)

3. Comparison of Rating and Ranking

The analysis of rating was utilized to determine the most valued attributes by network. A reverse rating value obtained from the participants was also analyzed to understand how people view themselves compared to the mentioned co-workers. The ranking in combination with the rating was analyzed to gain information about the selection process by network.

Hypothesis Acceptance Criterion

Both Mann-Whitney and *t*-tests were performed for individual cases to test whether one data set had higher values for the median and mean. When the *p*-value obtained in either test is less than or equal to 0.05, the hypothesis that one data set has a larger mean or median than the other is accepted.

Definition of Terms

Brief definitions of the various terms used frequently in the data analysis are given below, along with an explanation of the preferred methodology.

Through the interview process it became very clear that each individual communicated differently. Some subjects were more expressive and able to communicate better than others. Consequently, some subjects described a person in their network using multiple adjectives, while others decided to keep it brief and complete their answer with very few words despite an effort from the interviewer to get an extensive list of attributes. It was apparent that using the ratio of the total number of positive or negative responses did not take into consideration the fact that people are different in nature (i.e. more talkative) and one may have mentioned more words to describe the same attributes than others. To avoid any bias in the analysis, after careful consideration, an analysis based on the portion of responses meeting various criteria was used for all data sets.

For example, ‘The Portion of Positive Responses’ is defined as the total number of positive responses used to describe each person in the network divided by the total number of responses regarding that one particular person. This negates any bias and normalizes the data set for general use. Similarly, ‘The Portion of Negative Responses’ is defined as the total number of negative responses used to describe each person in the network divided by the total number of responses regarding that one particular person.

4.3 Methods of Qualitative Data Analysis

In the qualitative data analysis section, the focus was placed on understanding what attributes were valued in the context of the work environment

The qualitative data analysis explored the following points:

1. Understanding Attributes by Network Interaction

A qualitative data analysis approach was taken to identify the desirable and undesirable attributes in co-workers as stated by the participants.

2. Preference in Selection Process

This section analyzed the desirable attributes of co-workers who were chosen in a hypothetical selection process.

3. Preference of Attributes by Relationship

This section determined which attributes were preferred based on relationship (i.e. Supervisor, Peer and Junior).

4. Overview of the Work Environment

This analysis section was designed to explore the policies and procedures observed by an employee. This section also highlighted some of the norms as described by the participants and whether these effected one's decision in a hypothetical selection process.

Chapter 5

Quantitative Data Analysis

As explained in Chapter 4 subjects were asked to describe the positive attributes of their co-workers as ‘helpful’ or ‘pleasant’ and negative attributes of their co-workers as ‘not so helpful’ and ‘not so pleasant’. This data was coded and categorized for the quantitative analysis. The sub sections below utilize statistical analysis to find conclusions about two inquiries: (1) Positivity of work-social and task network Interaction and (2) Preference in a hypothetical selection process from a network perspective.

5.1 Positivity of Work-social and Task Network Interaction

In this section the portion of the total number of positive and negative attributes that were logged in both work-social and task network are analyzed.

Positivity of all Responses

Considering everyone in both networks (task and work-social network), what was the average portion of positive and negative responses?

First, the portion of positive and negative responses was calculated for each person in the network. Then the mean and median portion of positive and negative responses was calculated, along with the standard deviation. Table 8-1 in Appendix B shows the complete data set this analysis was derived from. The results are shown in Table 5-1.

Responses	Mean	Mean Error (+/-)	S.D.	Median
Portion of Positive Responses	0.600	0.041	0.220	0.625
Portion of Negative Responses	0.400	0.040	0.210	0.500

Table 5-1: Portion of Total Positive and Negative Responses

By performing a one-sided t -test, we can determine if the portion of positive responses is larger than 0.5. Since the sum of the portion of positive and negative responses equals one, this would indicate that the answers are more positive than negative. The p -value obtained was 10^{-6} , indicating that we can conclude that on average there are more positive responses than negative responses. In other words, people generally tend to describe co-workers with more positive attributes than negative ones.

Comparison of the Positivity of Attributes by Network

Do people tend to give a higher portion of positive attributes to those in their work-social network than those in their task network?

Portion of Positive Responses	Mean	Mean Error (+/-)	S.D.	Median
Task Network	0.560	0.053	0.200	0.600
Work-Social Network	0.652	0.057	0.210	0.400

Table 5-2: Positive Responses in Individual Networks

Data on the attributes of each co-worker was segregated into the two networks. The mean and median of the positive portion of the responses was determined for each network. To determine if the median positive portion of responses for work-social network was higher than for task, a one-sided Mann Whitney test was performed. The p -value obtained was 0.002. A t -test was also performed to compare the mean positive responses yielding a p -value of 0.007. Therefore, it can be concluded that people do tend to give a higher portion of positive attributes to those in their social network as compared to those in their task network.

5.2 Preference in Selection Process from a Network Perspective

In the interview questionnaire the participants were given a hypothetical situation where they can select to take a few of their co-workers with them to their own company. In this part of the analysis, the emphasis was on discovering if there is a generalization that can be made about who people prefer to 'Select' to work with them if they had the choice.

Comparison of Selected and Rejected Co-Workers by Positivity of Attributes

Do people tend to give a higher portion of positive attributes to those who they select than those they reject?

First we tested if subjects were consistently more positive about the co-workers they select than the ones they reject. To perform this test, first the mean portion of positive responses for each of the two groups (selected and rejected) was calculated along with the standard deviation.

Responses	Mean	Mean Error (+/-)	S.D	Median
Portion of Positive Responses for ' Selected ' Co-Worker	0.683	0.047	0.170	0.714
Portion of Positive Responses for ' Rejected ' Co-Worker	0.527	0.058	0.230	0.500

Table 5-3: Portion of Positive Response among Selected and Rejected Co-workers

A one-sided Mann Whitney/Wilcoxon test was performed to determine if the median portion of positive attributes for those selected is larger than the median portion of positive attributes for those rejected. The p -value obtained was 0.00002. A t -test was also performed to compare the means, yielding a p -value of .000004. Therefore, it can be concluded that people do tend to give a higher portion of positive attributes to those who they select compared to those they reject.

Comparison of Selection by Network

Do People tend to select co-workers from their work-social network over those from their task network?

Co-workers were categorized by work-social and task network. The proportion of selected individuals from each network was the calculated. The detailed data can be found in Table 8-4 and Table 8-6 in Appendix B. Table 5-4 shows the summary of the results found.

Selected Individuals	Mean Proportion	Mean Proportion Error (+/-)
Social	0.582	0.130
Task	0.340	0.120

Table 5-4: Mean Proportion of Selected individuals by Work-Social and Task Network

From Table 5-4 it seems that on average people do tend to select co-workers from their work-social network much more than their task network. To test this hypothesis, a *t*-test was performed on the difference in mean proportion yielding a *p*-value of 0.005. Therefore, it can be concluded that people do tend to select co-workers from their work-social network more than their task network.

Comparison of Selection by Relationship

Do people tend to ‘select’ more supervisors over juniors or peers?

First co-workers were categorized by relationship (i.e. supervisor, peer and junior). The proportion of individuals that were taken from each respective category was calculated. The detailed data can be found in Appendix B from Table 8-8 through Table 8-13. The results are summarized in Table 5-5.

Selected Individuals	Mean Proportion	Mean Proportion Error (+/-)
Supervisor	0.630	0.240
Peer	0.413	0.120
Junior	0.440	0.170

Table 5-5: Mean Proportion of Selected Co-Workers

From Table 5-5 it is noticeable that the mean proportion of selected supervisors is higher than peers or juniors. But one important note, since the population of supervisors is small, the error bar is much higher for this particular population and making a conclusion is potentially unreliable.

A *t*-test was performed to compare mean proportion of selected individuals between supervisor and peer yielding a *p*-value of 0.07. Since the *p*-value is marginal, it can't be conclude with high level confidence that people indeed select supervisors over peers.

A similar result (*p*-value 0.09) was found when comparing supervisors to juniors. Therefore, it can't be concluded with high confidence that people tend to select co-workers from one relationship (i.e. supervisor, peer, junior) over the others.

Selection by Gender

Do people tend to select female co-workers from either their work-social or task network compared to male co-workers?

To answer this question, all 114 co-workers were categorized by gender as described by the subjects. Since the number of women in either the work-social or tasks networks were significantly lower than the number of men, one should compare the proportion of women in the sample population to the proportion of women that are selected.

Network	Proportion of Men to Women (Total)	Proportion of Men to Women (Selected)
Work-Social	0.78	0.71
Task	0.75	0.70

Table 5-6: Proportion of Man to Woman

From Table 5-6 it can be noted that almost three-quarters of the sample population is composed of men. When it came to selecting women co-workers in either network, it was observed that the proportion of women selected was comparable to the proportion of women in the overall population of co-workers. This data therefore suggested that there was no direct bias in selection process by gender.

5.3 Comparison of Rating

During the interview process the subjects were asked to rate each person in their network individually on a scale of 1 to 10, where 1 is least helpful and 10 is most helpful. Accordingly, those in the work-social network were rated for how pleasant they are, where 1 is least pleasant and 10 is the most. The subjects were also asked to assume how the people in their network would rate them, referred to here as reverse rating. Below a general data analysis is performed to understand the average rating and reverse rating.

From Table 5-7 it was very clear that co-workers in the work-social network received a higher rating (on a scale of 1 to 10) on average than those in the task network. On the other hand, in the reverse rating it is noticeable that in general people rate themselves lower than their co-workers in both their work-social and task networks.

	Rating				Reverse Rating			
	Mean	Mean Error (+/-)	S.D.	Median	Mean	Mean Error (+/-)	S.D.	Median
Both Networks	6.84	0.36	2.00	7.00	5.78	0.60	3.25	7.00
Work-Social	7.46	0.52	1.90	8.00	6.20	0.92	3.40	8.00
Task	6.30	0.50	1.90	7.00	5.40	0.80	3.00	7.00

Table 5-7: Comparison of Rating between Networks (Average, Work-Social and Task)

Do co-workers from the work-social network receive higher ratings than those from the task network?

A Mann Whitney/Wilcoxon test was performed to determine if the median rating in work-social network was higher than that of the task network. The p -value obtained was 0.0006. Similarly, A t -test was also performed to verify the result by comparing the mean rating, yielding a p -value of 0.0002. Therefore, it can be concluded that co-workers in work-social network do indeed rate better than task network.

Rating and Reverse Rating

Do people tend to give higher rating to the people in their network compared to how they perceive or reverse rate themselves?

A Mann Whitney/Wilcoxon test was performed to determine if the median rating was higher than the median reverse rating. The p -value obtained was 0.06. Again a t -test was performed to find the p -value of the difference of the mean between rating and reverse rating. The p -value obtained from the t -test was 0.002. Therefore, considering both the Mann Whitney and t -tests, we can conclude that people do rate other co-workers in their network higher than they rate themselves.

5.4 Comparison of Ranking

Subjects were asked to rank their co-workers in both the work-social and task networks. This section analyzes the relative ranking between the two networks to determine if there is any obvious pattern or preference that can be observed in those co-workers who are selected. Note that although all co-workers are ranked, not all co-workers are selected.

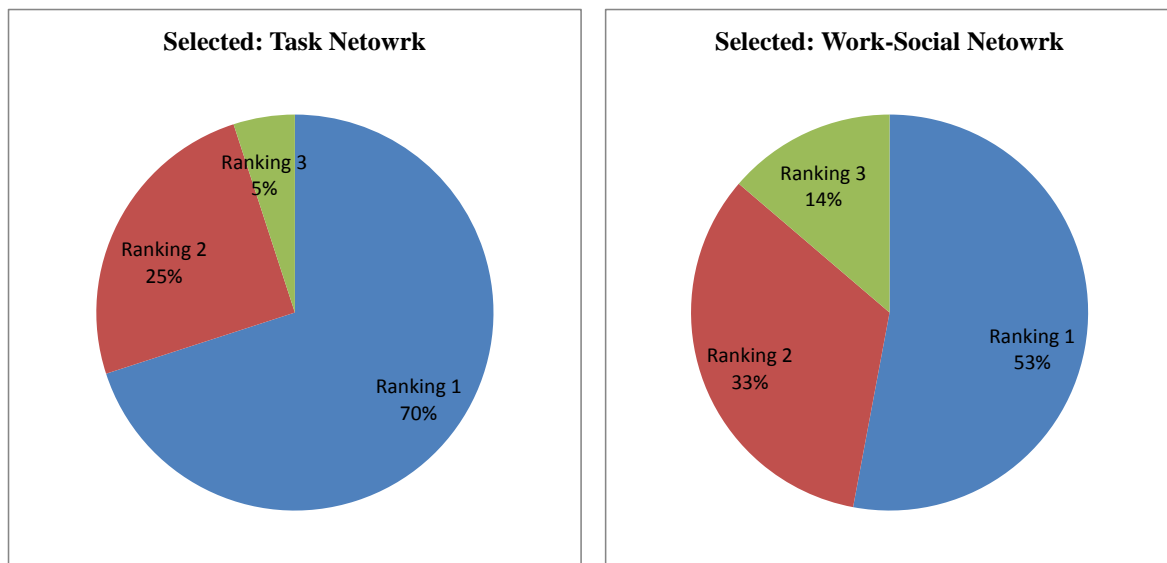


Figure 5-1: Comparison of Ranking (Task and Work-Social Network)

From Figure 5-1 it is evident that people mostly prefer to select rank 1 from their task network. On the other hand, people would equally select co-workers ranked 1 and 2 from their work-social network. In another words, a bias towards selecting people from the social network is noticeable, despite their weaker ranking.

Rating by Rank

Do people consistently rate the co-workers they select from their work-social network higher than those selected from their task network?

To compare the rating, first all the selected co-workers were grouped in work-social and task network and then broken down by their individual ranking. The average rating for each rank is compared in Table 5-8. A consistently higher rating in work-social network is noticeable through all rankings.

Selected Only								
Ranking	Overall Rating		Work-Social			Task		
	Mean	Median	Mean	Mean Error (+/-)	Median	Mean	Mean Error (+/-)	Median
Ranking 1	8.3	8	8.7	0.45	8	7.9	0.58	8
Ranking 2	7.6	8	7.7	0.78	8	7.2	1.03	7
Ranking 3	6.8	7	7.5	2.3	8	3	0	3

Table 5-8: Comparing Rating by Each Ranking

A Mann-Whitney test was performed to determine if the median rating for selected people in rank 1 in work-social network is higher than task network. The p -value obtained was 0.03. A t -test was performed to determine the mean difference. The p -value is calculated to be 0.02. Therefore, we can conclude that people do rate the selected (and rank 1) co-workers in the work-social network higher than their co-workers in the task network. Similarly a Mann-Whitney and t -test was performed to determine if there was a preference for work-social over task networks in Rank 2 selected co-workers. The associated p -values from the tests were not significant. (M-W p -value 0.21 and t -test p -value 0.19 respectively). A non-significant p -value was found for Rank 3 as well, indicating that there is no statistically significant preference for network in Rank 2 and 3.

Chapter 6

Qualitative Analysis

A quantitative analysis was used to establish general trends in positive and negative responses. Qualitative data analysis, on the other hand, clarifies what attributes are most important and valued by the subjects. This section analyzes the significant trends and patterns in positive and negative attribute data as found from the interviews after coding. An attempt was made to discover the meaning and impact of these attributes in the work environment. The subsections below analyze: (1) Understanding attributes by network interactions, (2) Preference in a hypothetical selection process and (3) An overview of the work environment.

6.1 Understanding Attributes by Network Interactions

The complete list of positive attributes in the work-social and task networks can be found in Table 8-18 of Appendix C. Any insignificant attribute categories (below 1%) were categorized as miscellaneous.

6.1.1 Comparison of Positive Attributes by Network

Table 6-1 lists the positive attributes that were common in both the work-social and task networks. Not surprisingly, it was evident that people mostly described specific skill sets that were required at work (i.e. competent) for task related co-workers whereas social skills (i.e. friendly) were the key qualities in the work-social network. The only four common qualities found in both networks were competent, trusting, friendly and respect.

One of the attributes that showed up in both work-social and task networks was ‘trust’. Trust showed up in various comments in the work-social network, showing the importance of trust in friendship or bond developed in the work environment. Trust showed up as the basis of ‘genuine conversation’.

Positive Attributes	% of Times Used	
	Work Social	Task
Competent	7	35
Trusting	5	15
Friendly	14	8
Respect	3	3

Table 6-1: Comparison of Similar Positive Attributes in both Network

For example one of the subjects stated,

“I trusted him implicitly. He knew what was going on here and I knew that whatever I told him was in confidence. It wouldn’t be shared with anyone. I trusted him in that way..”

On the other hand, in the task network ‘trust’ reflected reliability on one’s competency. For example subject 9 described simply how he trusted his co-worker would do a good job, stating:

“you trust him to do it well.”

Table 6-2 shows the complete list of positive attributes, the percentage of times they were used, and whether the attributes were a social (S) skill or task (T) related skill. Any attributes that comprised less than 2% of the total were labeled miscellaneous. In the task network about sixty percent (60%) of the attributes were related to ‘competency’, ‘trust’ and ‘guidance’; these made up a small percentage (12%) in work-social network.

For example one subject stated what he found helpful:

“He’s got this specialized skill set that’s quite technical to do this kind of work. He is able to do conceptual design work for computer systems.... It’s a very rare skill set.”

Work-Social Network			Task Network		
Positive Attribute Description	T/S	% of Times	Positive Attribute Description	T/S	% of Times
Friendly amicable conversation	S	16%	Competent	T	35%
Friendly	S	14%	Trusting	T	15%
Genuine conversation	S	13%	Guidance	T	10%
Sense of humor	S	13%	Friendly	S	8%
Similar views	S	9%	Accommodating	S	7%
Competent	T	7%	Quick response	T	5%
People's personality	S	5%	Commitment	T	4%
Positive personality	S	5%	Honesty	S	3%
Trusting	S	5%	Respect	S	3%
Vent outlet	S	4%	Sharing	S	3%
Respect	S	3%	None	T/S	2%
Well balanced personality	S	3%	Miscellaneous	T/S	5%
Miscellaneous	T/S	3%			
Total Responses		100%	Total Responses		100%

Table 6-2: Complete list of Positive Attributes

From Table 6-2, it can be noticed that the task network had a combination of both social and task related attributes (75% task, 25% social). From this observation, we can perhaps conclude that although task specific skills were the most important attributes of fellow co-workers, social qualities were considered significant as well. For example one comment highlighting helpful social skills was:

“he is very personable. He’s got a pretty good handle on his staff and their needs.”

From Table 6-2, it can be noticed that the work-social network was comprised almost entirely of social skills. In the work-social network, competency was mentioned infrequently (only 7%). Social skills (e.g. Friendly personality, friendly conversation, genuine conversation or exchange of interaction, sense of humor, positive personality etc.) made up about 93% of the total attributes. Although the aforementioned examples of attributes from the work-social network were shown as distinct attributes in the chart, a closer look at the data revealed that it was hard to draw a line between these attributes. Many attributes described similar qualities, and in some ways these attributes overlapped with each other. For example, some participants mentioned that they found a co-worker to be friendly while others mentioned that they had friendly amicable conversation with a co-worker. One can argue that to have a friendly conversation, one ought to be a friendly person. From the distribution of attributes, it was clear that people mentioned the friendly nature or personality of a fellow co-worker more than any other specific qualities. For example one of the subjects commented:

“We clicked. We had similar senses of humor. We would play off of each other’s sense of humor. I guess there was an immediate connection there because of that sense of humor. We had similar interests too.”

6.1.2 Comparison of Negative Attributes by Network

From the interviews it was quite intriguing to observe that the number of negative attributes were much more numerous than the number of positive attributes. Table 6-3 shows the total number of attributes grouped by network. In general there are more negative attributes in both the work-social and task networks.

Attributes	Work-Social	Task
Positive (Pleasant/Helpful)	10	9
Negative (Unpleasant/Unhelpful)	15	29

Table 6-3: Ratio of Positive and Negative Attributes in both Networks

Table 6-4 lists all of the common attributes (a total of 8) between work-social and task networks, along with a designation of whether they are Task (T) related attributes or Social (S) skills. It is noteworthy that out of 8 common negative attributes, 6 are social skills. The detailed list of negative attributes can be found in Table 8-19 of Appendix C. Any attribute that made up less than 1% of the total was labeled as miscellaneous.

Work-Social Network			Task Network		
Negative Attribute Description	T/S	% of Times Used	Negative Attribute Description	T/S	% of Times Used
None	T/S	21%	None	T/S	2%
Introverted	S	10%	Introverted	S	4%
Poor listener	S	8%	Poor listener	S	2%
Too laid back	T/S	8%	Too laid back	T/S	6%
Selfish	S	4%	Selfish	S	2%
Too focused	T	3%	Too focused	T	3%
Favoritism	T/S	3%	Favoritism	T/S	2%
low tolerance	S	3%	low tolerance	S	3%

Table 6-4: Comparison of Similar Negative Attributes in Both Networks

Interestingly, ‘too laid back’ or ‘too focused’ showed up in both networks as undesirable attributes. It is as if one needs to understand the balancing act of life by being neither too focused nor too laid back. Similarly, the attributes “too serious” or “not serious” were viewed as negatives. Clearly, one is neither liked by his co-workers when he is too serious nor when he is not serious enough. Again, this indicates the importance placed on successfully negotiating the balancing act required in the work environment.

From Table 6-5, it is evident that there were many different negative attributes. The negative attributes used to describe co-workers in the task network had a broader range (total of 29) than in the work-social (total of 15) network. In other words, people had many more ways to

describe what they found unhelpful about their co-workers than what they found to be helpful.

Work-Social Network			Task Network		
Negative Attribute Description	T/S	Percent age of	Negative Attribute Description	T/S	Percent age of
None	T/S	21%	Incompetent	T	11%
Introverted	S	10%	Too laid back	T/S	6%
Poor listener	S	8%	Undermining Authority	T	6%
Protective	S	8%	Naïve	T	5%
Too laid back	T/S	8%	Lack of vision	T	5%
Insensitive	S	7%	Ambiguous response	T	4%
Not serious	T/S	4%	Bureaucratic	T	4%
Selfish	S	4%	Introverted	S	4%
Too serious	T/S	4%	Lack of social skills	S	4%
Favoritism	T/S	3%	Not sharing	T/S	4%
low tolerance	S	3%	low tolerance	S	3%
Negative attitude	S	3%	Honesty	S	3%
Opinionated	S	3%	Too focused	T	3%
Too focused	T	3%	Non co-operative	T/S	2%
Miscellaneous	T/S	10%	Non Negotiative	T	2%
			Selfish	S	2%
			None	T/S	2%
			Arrogant	S	2%
			Back stabber	S	2%
			Defensive	S	2%
			Favoritism	T/S	2%
			Not enough exposure	T	2%
			Poor listener	S	2%
			Unreasonable	S	2%
			Hard to get hold off	T	2%
			No Self Motivation	T	2%
			Lack of Confidence	S	2%
			Different View	S	2%
			Miscellaneous	T/S	8%
Total Responses		100%	Total Responses		100%

Table 6-5: List of Negative Attributes

‘Incompetency’ was one of the most used attributes (11%) in the task network, but was nowhere to be seen in the social network. The task network was comprised of about 65% task related attributes and 35% social. Most of the work-social negative attributes were also related to social skills (about 70%). Interestingly, the most frequent response in the social network was ‘none’: subjects said they had nothing negative to mention about their co-

workers. For example one of the subjects failed to give any example of something that was not pleasant about co-workers, stating:

“ I can't think of anything. Again that's going to be difficult. These people were great to work with.”

6.2 Preference in Selection Process

In the effort to identify the most desirable attributes among selected co-workers, the positive attributes were sorted by network and by whether a co-worker was selected or rejected. Table 6-6 shows the complete list of positive and negative attributes observed for selected co-workers either in work-social or in task network. From the list it can be noticed that for selected work-social co-workers, more than 70% of the attributes were positive (considering 'none' as a positive category). Friendliness, as well as similar qualities, was considered the most desirable attribute among the selected co-workers in the work-social network. In this network, all of the attributes were related to social skills, except lack of competency.

On the other hand, in the task network 65% of all attributes were positive. 'Competency' was one of the key desirable qualities among the selected group of co-workers in the task network.

Attributes of Selected Co-Workers (Work-Social)				Attributes of Selected Co-Workers (Task)			
Description	T/S	Positive	Negative	Description	T/S	Positive	Negative
Friendly	S	11%		Competent	T	24%	
Friendly amicable conversation	S	13%		Trusting	T	13%	
Genuine conversation	S	11%		Guidance	T	7%	
Sense of humor	S	9%		Commitment	T	5%	
Similar views	S	9%		Friendly	S	4%	
none	S	1%	7%	Accommodating	T	3%	
Positive personality	S	5%		Incompetent	T		4%
People's personality	S	4%		Naïve	T		4%
Trusting	S	4%		Non Negotiative	T/S		3%
Competent	T	3%		Too focused	T/S		3%
Poor listener	S		3%	Undermining Authority	T		3%
Too laid back	S		3%	Honesty	S	2%	
Protective	S		3%	Quick response	T	2%	
Misc.	S	6%	10%	Hard to get hold off	T		2%
				Introverted	S		2%
				Lack of Confidence	S		2%
				Lack of vision	T		2%
				Poor listener	S		2%
				Misc.		4%	7%
Total	100%	74%	26%	Total	100%	65%	35%

Table 6-6: Attribute List for Selected Co-Workers

In either network, it was evident that there was no single quality that most people found undesirable. It was rather a combination of many attributes. Many small things appeared to have upset people.

6.3 Preference of Attributes by Relationship

Table 6-7 displays the top five positive and negative attributes categorized by relationship: supervisor, peer and junior. A few remarkable trends were noticeable from this distribution of attributes. Firstly, although the weight of the attributes varied, the peer, junior and supervisor group had similar positive attributes. However, ‘Guidance’ showed up to be one

of the most important positive attributes among supervisor. Considering a role of a supervisor at work, this was indeed an accurate representation of the work environment. In contrast, ‘competency’ was the key positive attribute among the peer and junior groups, although with a varying percentage of the total

	Supervisor	%	Peer	%	Junior	%
Positive	Guidance	21	Competent	17	Competent	30
	Competent	20	Friendly	11	Friendly	11
	Friendly	10	Friendly Conversation	11	Trusting	11
	Accommodating	10	Trusting	11	Friendly Conversation	10
	Trusting	7	Genuine Conversation	10	Similar Views	4
Negative	None	10	None	10	Incompetent	14
	Non-Negotiative	10	Too laid back	8	Too laid back	7
	Bureaucratic	6	Incompetent	4	None	7
	Favoritism	6	Introvert	6	Introvert	5
	Arrogant	6	Insensitive	4	Ambiguous Response	5

Table 6-7: Top 5 Common Attributes by Relationship

It was also noticed that in the peer and junior relationships, beside competency, the other common attributes were based on personality traits. In general, knowledge workers interact mostly with their peers and juniors. Interaction with supervisors is relatively infrequent and somewhat formal. This can partially explain the reason behind fewer personality traits in the supervisor positive attribute category.

More variation by relationship was observed in the negative attribute category. While a lack of ‘competency’ was considered to be a negative attribute both in peer and junior relationships, it did not seem to appear in the supervisor relationship at all.

6.4 Overview of Work Environment

This section analyzes the overall effect of a person's work environment, and the effects of norm and culture on the selection process. During the interview the participants were asked what one could do that would be appreciated at work (question 14-16, Appendix A). Similarly, the participants were asked what would upset their fellow co-workers. By asking these questions, it was hoped that one could understand the norms of positive behavior and tolerance level of negative behavior in various work environments.

6.4.1 Effect on the Selection Process

From the analysis of the interviews, it was clear that most who specified social skills as a valued asset in the work environment were also inclined to select more co-workers from their work-social network. All of the participants (a total of 9) who mentioned the importance of social skills in the work environment also preferred to select more co-workers from their social network over task. It is also apparent from the answers provided by the participants that people who spoke about the importance of social skills also preferred to select more co-workers from work-social network.

6.4.2 Overall Work Environment

A number of work environment related questions (See Appendix A, Question 13-17) were asked during the interview to understand the participants' work environment and what they found to be worth discussing. The responses were varied. Some talked about the importance of policies, some talked about the people they work and socialize with, while others just talked about the job itself. The responses were categorized recorded. The comments are categorized and listed below in Table 6-8.

A statistical analysis of the data was not undertaken due to the small number of data points and the variety of answers. For example, some mentioned that they liked their job because of

a team member they worked with. Others strictly mentioned that they liked the job itself, However, it was hard to determine if they only enjoyed the type of work, since the team environment seemed fairly important to these individuals as well. It should be noted that the responses about policies and procedures were all negative. The responses ranged from 'too many policies' in place to 'no policy' in place.

Factors Discussed about Work Environment			
	Co-Workers and Team	Policies and Procedures	Job Itself
Responses	15	6	8

Table 6-8: Factors Discussed about job

More details of the responses are analyzed in Chapter 7.

Chapter 7

Discussion

This study investigated how one experiences their work environment through work-social and task interactions. An effort has been made to understand and conceptualize the helpful-unhelpful and pleasant-unpleasant behaviors at work by studying interactions from a social and task network perspective.

7.1 Positivity of Work-social and Task Network Interaction

A few trends became evident in this study from a network perspective. The details are discussed in the subsequent sections.

One remarkable finding that came out of the data was how positive people are when they describe their co-workers, regardless of whether they actively worked with them or merely socialized within them in the work environment (described in Chapter 5). In addition, from the statistical analysis it was found that people responded more positively about co-workers in their work-social network than their task network.

Another study (Safayeni et al., 2008) performed on a Canadian large Multinational High tech Company (MHTC) found rather different results. The organizational norm for the ratio of the total number of helpful to unhelpful behaviors for various roles (project manager, sponsor etc.) in new product development was estimated to be 0.95. In other words, the study found a higher number of unhelpful behaviors than helpful behaviors. The study asked helpful and not so helpful attributes about the fellow co-workers but did not categorize co-workers in task and work-social network. One possible reason for this contradictory result could be the fact that in the present study all invited participants held higher degrees (Master's in the least) from well-reputed Canadian universities. Simply put, all of the participants had the educational background that allowed them to develop a successful career. All of them had been working for at least a few years and were well established in their professional life. The

higher percentage of positive attributes can be partially explained by the fact that someone established in their profession life is likely to have fewer complaints or negative examples to share about their co-workers. In addition, the participants volunteered their free-time outside of work for the interview; their eagerness is possibly a reflection of their positive outlook on work-life.

The result showing that people have more positive responses for their work-social (M=0.65, SD=0.21 Md=0.6) than task network (M=0.56, SD=0.2 Md=0.4) and more negative responses for their task (M=0.4, SD=0.2 Md=0.4) than work-social (M=0.34, SD=0.21 Md=0.28) network was perhaps not unusual either. The participants were asked to describe what they found unhelpful about co-workers in their task network. Usually task related interactions happen on an as-needed basis. The interactions could require task specific skills and competencies as well as other traits such as having a friendly nature, being accommodating, having the ability to be a good mentor, etc. Since one's job and efficiency are somewhat dependent on these types of interactions, there are more opportunities for one to get easily exasperated, which can be seen from the long list of unhelpful behaviors in (Table 8-19 in Appendix C). It is noteworthy to mention that even minor problems (e.g. hard to get hold off, too laid back, too focused, not sharing, honesty etc.) are described as unhelpful behaviors in the task network. On the other hand, social interaction at work happens on a somewhat voluntary basis. One does not need to have an interaction with another person but choose to do so, as he finds that it is 'mostly' pleasant. The topic of interactions are usually (as described by the participants) friendly conversation about family, small-talk, and jokes, or on the other end of the spectrum, about work frustration, etc. The level of interaction is not exactly 'needed' for the job, but may add some relief to a day's work. This suggests the following discussion about the specific descriptions and patterns in the attributes.

7.1.1 Similarities and Differences in Positive Attributes

The helpful and pleasant attributes described by the participants varied significantly. One of the major differences was the importance of ‘competency’ in the work-social and task networks as a positive attribute. In the task network, competency was found to be the most helpful attribute whereas it was ranked to be the 6th in work-social.

The quality of having a ‘trusting’ nature showed up in both networks. However, the word ‘trusting’ is used in different contexts in the two networks. For example, subject 19 used ‘trusting’ in the context of being reliable at work:

“you don’t need to go and specify everything in detail and follow-up with him. It saves me time and also it just takes away any additional items to worry about. I find him very reliable that if I give him a task and trust he will do it correctly.”

On the other hand trust showed up in the work-social network in the form of a trusting relationship that is built over many years or from genuine conversation. For example, subject 6 described trusting as a pleasant attribute in the work-social network:

“it’s simply a trust from friendship that goes back to high school..”

Most people noted that someone doing their own tasks properly is helpful to them because in this case they do not have to worry about it themselves. In other words, a person conducting their own work competently reduces the variety in the work environment for their co-workers, making it an indirectly helpful behavior. This supports the core concept of Ashby’s Law of Requisite Variety (Ashby, 1981).

In their work-social network, people emphasized a few attributes like having a friendly nature, being friendly, having a sense of humor, having a positive personality etc. Although these descriptions seem different, they also have some overlap. For example, one is likely to be a ‘friendly’ person if they can hold a ‘friendly amicable conversation’. The fact that

almost 93% of the positive attributes were related to social skills showed how people seek out friendly relationships at work. This allows them to have some humor in their interactions as well as some serious conversation about life and career.

Despite competency being one of the top positive attributes in the task network, we noticed that having a ‘friendly’ nature took place as one of the top five positive attributes in the task network as well, demonstrating the importance of social skills at work. Overall, the task network had a combination of both social and task related attributes (75% task, 25% social).

7.1.2 Similarities and Differences in Negative Attributes

‘No negative response’ being the biggest group in the work-social network helps to explain the smaller number of negative responses about co-workers in this network. As mentioned earlier, social interactions at work are strictly voluntary in nature, and since an employee can choose who to socialize with, they can certainly pick the co-workers they find pleasant to be around. For example subject 13 stated the following which is representative of many other responses:

“I can’t think of anything that I find truly unpleasant.”

Another subject (subject 10) explained the work-social relationship stating,

“On the social aspect, I guess, sometimes you just like the person and connect and you don’t think much. It happens on another level and you don’t even know why..... Also, this group of people are in the same boat; They’re going through the same things at work so we relate.”

In the task network, not only was the total number of negative attributes almost twice as large as in the work-social network, but there were also many more categories of attributes. This shows the different nature of relationships and interaction levels in the task network. The high volume of negative responses in the task network supports the finding that those in the task network were less likely to be selected.

Although competency is found to be a vital in the helpful behavior category, absence of competency is not found to be equally unhelpful. In other words, employees find many other behaviors that upset them more easily than being incompetent. For example, ‘too laid back’, ‘undermining authority’, ‘ambiguous response’ etc. were in the top five responses.

It was also noticed that employees found being either too focused or too laid back unhelpful, showing the desire for a balance in work life. For example in the task network, subject 20 expresses:

“Sometime he’s too laid back; he is also not very strong to ask people to complete a task, it becomes a problem when I’m under a deadline...”

Subject 18 expresses being too focused as a negative behavioral aspect, saying that:

“..The second thing is I’m worried that she works too hard, she is too focused, so I’m worried that she’s doing too much. “

The same pattern of valuing balance was also noticeable in the unpleasant attributes in the work-social network, again showing the importance of work-life balance in the employee’s mind. For example subject 1 stated,

“He is a bit too obsessive about the nuances of the game itself....he just takes the game a little bit too seriously.”

Although this subject appreciated the fact that his co-worker took the initiative to arrange a game, being too serious about it was seen as a negative quality.

7.2 Patterns in the Selection Process

Participants were asked to select some of their co-workers to work for a hypothetical company that they own and are in charge of. Even though there was no evidence for preference by relationship (supervisor, peer or junior) in the selection process, it was found that people prefer to select more co-workers from their work-social network than their task network. There was a higher portion of positive response and a much lower portion of

negative responses for selected co-workers in the work-social network compared to the task network (Work-Social positive responses: $M=0.65$, $SD=0.21$ $M_d=0.6$; Task positive responses: $M=0.56$, $SD=0.2$ $M_d=0.4$; Work-social negative responses: $M=0.4$, $SD=0.2$ $M_d=0.4$; Task negative response: $M=0.34$, $SD=0.21$ $M_d=0.28$). This finding is important because it enables one to understand what attributes are important and valued by employees within the work environment. The data indicate that people were more willing to hire co-workers with social skills (such as friendly, sense of humor etc.) than task specific skills. For example subject 8 stated his reason to choose certain co-workers from his network, *“Their relationship with other people starts with listening and therefore they are able to effectively deal with people because they listen to people and don’t boss them around.”*

The results indicated how people can be easily persuaded to hire someone based on the nature of their relationship in the social context despite a lack of competency.

7.2.1 Gender Bias in the Selection Process

Although there was no evidence for gender bias in the selection process of co-workers, there were few women in either network. The sample population for the study was chosen based on their association with an engineering alumni society. It is quite evident throughout the university system that there are significantly fewer women in this field than men. This may account for the small number of women in both networks, as most of the participants come from a technological educational background.

7.3 Rating, Ranking and Reverse Rating

The preference in the selection process for co-workers from the work-social network is again remarkably evident from the ranking and rating. Every participant was given an opportunity to rate and rank individuals in their networks. 70% of the co-workers selected from the task network ranked 1, while in the work-social network co-workers were almost equally selected from rank 1 and 2. This shows people’s reluctance to choose someone from the task network

unless they are the best, but they are keen to select someone from the work-social network despite a 2nd or 3rd ranking. Unfortunately ranking does not capture the differences, it only shows the subject's sequential preference among the given set of choices. For example, the difference between ranking 1 and 2 could be 5 on a scale of 10. To understand the relative differences in ranking, a rating comparison was introduced.

While comparing rating between those selected, a consistently higher mean was found for all rankings (rank 1, 2 and 3) in the work-social network. Therefore, the fact that co-workers in the work-social network rated higher on their relative ranking also increased their chances of being selected, even if they ranked 2nd or 3rd.

Interestingly, most subjects reverse-rated themselves comparatively low. There are potentially a few factors to consider here. First of all, the reverse rating depends on how people initially rate their co-workers. For example, if a subject already rated someone 9 out of 10, it could come across as overly confident to reverse rate themselves a 10 out of 10. Therefore if the initial rating of a co-worker was already high, this might have caused the subject to reverse-rate themselves a bit lower.

Secondly, this reverse rating was related to a hypothetical scenario. One might feel uncomfortable answering such question. Additionally, one might think that they would sound too arrogant if they rated themselves with a very high or a perfect score. Hence, people may have rated themselves lower to be humble in this hypothetical question, as there is no way for one to know the correct answer without a similar enquiry on the other side of the network.

7.4 Work Environment Overview

Subjects were asked to comment about their work environment and what they liked about their job. There were a variety of responses recorded. Some of the participants talked about their co-workers, others talked about the policy, and some others just simply enjoyed variety in the job. The comments are categorized and described below.

7.4.1 Work and the People Within

A general a desire for a variety of friendly human interactions in the work environment was quite evident from the remarks compiled from the interviews. Arguably, this was one of the main explanations for the observed higher portion of positive responses and higher likelihood of selection from the work-social network. For example subject 5 commented,

“..It was pleasant to go to work because of the people that I worked with. “

The above response shows how having co-workers one socially bonds with could be the highlight of the workplace.

Subject 15 described what he enjoyed about his job as:

“I like the combination of environment and the people; it’s been a place where I feel really comfortable; everyone tends to work together pretty well.”

A similar tone can also be found through other comments, such as (subject 13),

“I think probably one of the first things that I said was what I find interesting about my job is the people that I work with... The experiences when you work with that group of people that are generally positive even if the outcome is going poor. I think that’s one thing I like.”

All the aforementioned comments displayed how important the fellow co-workers are within the work environment.

Team Environment

Many people commented that it was very important to ‘*fit into the team*’. The importance of a coherent team was apparent in many comments, such as subject 10 mentioned,

“Little gestures of being inclusive on the social side keep the harmony going. I guess it’s not excluding anyone. “

Again another similar comment showed importance of being a team player within the work environment,

“We work on a team environment; if you walk in and you start showing off your knowledge or the knowledge that you think you have and starting taking about your personal accomplishments, that will really piss people off.”..It’s not ‘me-me’..”

Similarly, subject 10 brought up an aspect of trust and how it played a major role in his team,

“You don’t feel like if you make a mistake someone will put you under the bus..”

Interestingly ‘together’ or being part of a team also meant not being too close with a higher ranked manager. For example, one stated how being too friendly with a manager wouldn’t be appreciated by the team,

“I guess the worst thing you could do would be to kiss up to a particular manager. That would be the way to get everybody disgusted with you.”

7.4.2 Policies and Procedures

When it comes to discussing policies in the workplace the responses varied from too much process at work to no processes at work. For example, subject 7 stated,

“That was problem that we were having with no real set process. They had a process internally that was never shared, or understood by anybody.”

On the other hand, subject 10 pointed out that too much process can slow down the pace of work:

“The bureaucracy....when you want something a little more innovative or want to try something you rarely get it approved ..”

Then again, some other responses indicated frustration about an inappropriate policy created due to one ‘bad’ incident:

“It’s mostly with our policies that we have in place. It’s usually a policy is created when one mistake is made and then a policy comes down to hammer everybody.”

Management and Policies

Although all the participants were knowledge professionals and were established in their career, it was quite evident that most subjects were managed in some way. Top-management driven work culture was apparent in some instances through comments such as,

“...refrain from getting involved in conversations with executives that you haven’t earned the right to comment on yet.”

Some comments indicated that despite apparent flexibility at work, ultimately some environments did not have as much flexibility when it came to making major decision. For example, another participant said,

“..in my current work environment I think it’s more of a boss oriented job. The bosses and owner of the company want, although there are rules and regulations but if he doesn’t believe in the deal or the transaction he doesn’t do it....If he says no, it’s a no. “

Various unwritten policies made by the top management also came across in the discussion about policy. For example subject 6 explained how without support from management it’s hard to get any work ‘done’,

“They put the pressure on the management to make up their mind if they want to stand behind that person or not.”

The same pattern of not having a complete autonomy over one’s work showed up when subject 13 stated,

“A lot of frustration that people feel within the organization is one where we have no control over particular tasks in terms of applying resources against them”

7.4.3 Factors in Job Replacement

While one might assume that remuneration would be one of the key reasons for most people to move from one job to another, this study found otherwise. Most did not express any deep concerns about compensation, and rather focused on opportunity, better position in the organization, good environment etc. Some also brought up the issue of having a long commute to work. Some went as far as to state that they were willing to take a pay cut for better opportunities in their career. It should be noted that the participants were all highly educated mature professionals and had a successful career; this probably explained why most of participants did not think of compensation as a big factor in selecting a job. For example, subject 4 stated,

“It was always opportunity. They offered me less money. I took a pay cut. It was supposed to be a privilege to work at this company, at the time I saw opportunity there”

The higher salary was rather an obvious expectation with better role at work (Subject 6);

“At this stage of my career I’m looking for a promotion...so probably a sizeable increase in salary.”

Again subject 8 stated, *“It would have put most emphasis on work that I thought I would have liked better. I would also want to see some increase in salary.”*

Many participants put lot of emphasis on the work environment as one of the most important factors in considering a new job. For example, subject 12 mentioned,

“I would also be cautious about getting myself into a new environment where there is a risk of maybe having conflicts with other people. Which is actually the main challenge when joining a new company, how to establish a group relationship. That investment I have in the company that I’m working with now trying to build relationships, that’s not guaranteed when I walk into another one...”

Other comments were purely work-related, where people expressed how they like what they do (subject 9),

“Subject 9 - Variety of work, the type of work....The next minute I’m writing a report on something else. Every day is absolutely different.”

All these responses showed that for most participants (in this case a particular segment of professional as sample population) work environment, variety in the job, and the people at work were more important than payout.

Chapter 8

Conclusions and Future Research

8.1 Conclusions

Although the importance of interpersonal relationships within the work environment is well recognized by scholars (Amabile & Kramer, 2007) , there is no comprehensive approach or theory recognizing the role of social relationships at work. This thesis aimed to explore and better understand the work experience from the perspective of purely social and purely task-related networks. Research was performed on the perception of positive and negative behavior within the work environment. The preference in a hypothetical selection process of co-workers from each network was also explored.

The research in this thesis took an inductive approach, and the aim was to observe and find trends using both quantitative and qualitative analysis methods. A semi-structured question-based interview was performed among a small group of professionals. Based on the outcome of a pilot test, the interview format and questions were modified, and a final study was conducted among a larger group of participants. The research method and philosophy was unique in the sense that it approached the work experience purely from task and work-social networks to understand the purely task related relationships and the ones that were more social in nature.

The study found a remarkably high ratio of positive responses for co-workers both in the task and the work-social network. However, people responded more positively about co-workers in their work-social network than their task network, indicating that the differences in relationship in terms of interactions that occur in these two networks should be explored. In another related study, which focused only on a task network, Safayeni et al. (2008) found that respondents within a multi-national company were overall fairly negative about their co-workers. The difference between this finding and the results of the research performed in this thesis was presumably due to the sample population and the separation into two networks utilized in this thesis. One can choose whom they wish to socialize with in the work

environment, and therefore more positive responses are expected, whereas in task network one must work with another co-worker regardless of the quality of their social relationship.

The fact that ‘competency’ and ‘friendly nature’ showed up in the study as two of the major attributes in the task and work-social domain respectively raises the question of how rare these qualities might be perceived to be. If an attribute is a common feature in a certain environment (for example, person x comes to work five days a week), it may not be valued or mentioned much. However, people may be likely to mention an attribute that is rarely found. For example, person x comes to work only on Mondays.

The results of this study showed a higher preference for co-workers from the work-social network in the selection process for a hypothetical new company. Interestingly, most people felt comfortable selecting their 2nd or 3rd choice from the work-social network whereas they highly preferred to select only the 1st choice from the task network. This shows how people are reluctant to select someone from their task network unless they are the best, but they are still keen to select someone from their work-social despite a relative poor ranking. However the study did not find any evidence for preference in selection by relationship (supervisor, peer or junior).

The interviews also shed light on some interesting trends in the work environment. Most participants explained that the people and team they work with are just as important to them as the nature of their job. For most people, the work environment was one of the key factors to consider in a job, not just remuneration. This study was therefore able to investigate a person’s perception of their job and how it is integrated with the people they work with.

Knowledge about an employee’s perception of the positive and negative attributes of their co-workers is important, as that provides insights about what they value most. This can be helpful in building a strong and effective team through positive behavior and interaction. This research may also contribute to a better understanding of the social aspect of group building and enhance employee’s experience at work. Employee retention is one of the key

factors for consistent and stable team building. The findings of this thesis provide the foundations for a further study of how to create opportunities to build a better social experience in the work environment.

8.2 Limitation and Future Research

One of the limitations of the study was the group of participants. The participants were all well-educated, established in their work-life, and in the midpoint of their career (average age of 45), making them a unique set of sample population. One who is a fresh graduate may have a very different perspective on and set of expectation for their career. A further study should be conducted to research different demographics of professionals to understand the variations that may exist. It might be also worthwhile finding out if one should focus on a certain age group within the work environment based on stability in their career. For example, while the younger population might move from once organization to another, the mid-career professional might be more stable in their current job.

The findings of this thesis indicate the importance of social aspects of the work environment. A further study should be conducted to figure out not just whether or not social interactions are important to employees, but why they are so important in an organization to begin with. What purpose do these social interactions serve? Similarly, a deductive approach (as opposed to the inductive approach taken in this thesis) can be taken in a future study by taking out the social aspects of a work environment completely in order to understand the impact of not having a socially amicable work environment. From an organizational management perspective, it is important to know what value social interaction can bring.

A different route to explore would be to find how an organization can promote more effective social interactions. In other words, study of methodology and tools to design methods to encourage organization socialization.

This exploratory study was an initial step towards a better understanding of the work environment and interpersonal relationships at work from interaction and network perspective. This thesis paves the way for future studies that will help to establish a theory encompassing the social aspects of work life.

Appendix A

Interview Questionnaire

Task Network Interaction

1. Describe a few specific examples of each person, what they do for you (task related) that you find helpful?
2. Describe a few specific examples of each person, what they do for you (task related) that you find 'not so helpful'?

Work-Social Interaction

3. Describe a few specific examples of each person, what they do for you (in work social context) that you find pleasant?
4. Describe a few specific examples of each person, what they do for you (in work social context) that you find 'not so pleasant'?

Rating and Ranking

5. In the Task network, given a scale of 1 to 10, how would you rate each person?
6. In the Task network how would you rank these co-workers? (For example if one had discussed about three socially related co-workers, he'd have to rank 1st, 2nd and 3rd)
7. On a scale of 1 to 10 how do you think each described individual would rate you?
8. In the Work-social network, given a rating scale of 1 to 10, how would you rate each person?
9. In the Work-Social network, how would you rank these co-workers? (For example if one had discussed about three task related co-workers, he'd have to rank 1st, 2nd and 3rd)

Reverse Rating

10. On a scale of 1 to 10 how do you think each described individual would rate you?

Selection of Co-workers

11. Hypothetically, if you open your own business and had an opportunity to employ one or two (based on how many specified in his network) people from this task network, who would you take with you?
12. Hypothetically, if you open your own business and had an opportunity to employ one or two (based on how many specified in his network) people from this work-social network, who would you take with you?

Work Environment Overview

13. What is the most preposterous process or poor policy you can think of at your work?
14. If a new person starts to work within your group, what would you advise him to do to be popular or liked by the other team members?
15. If a new person starts to work within your group, what would you advise him to refrain from doing?
16. Describe what do you enjoy about your work? What are the aspects of the job you like most?
17. If a head-hunter calls offering you a new job, what would it take (for example higher compensation, higher position, better environment, co-worker, less commute) for you to consider another job offer?

Appendix B

Tables & Figures

Table 8-1: Comparing Total no. of Responses

Subject	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #1		1	1	50	50
Subject #1		8	2	80	20
Subject #1		1	2	33	67
Subject #1		3	1	75	25
Subject #1		3	2	60	40
Subject #1		1	1	50	50
Subject #2		1	4	20	80
Subject #2		4	1	80	20
Subject #2		3	1	75	25
Subject #2		7	2	78	22
Subject #2		2	3	40	60
Subject #3		1	5	17	83
Subject #3		4	3	57	43
Subject #3		4	1	80	20
Subject #3		2	1	67	33
Subject #4		1	2	33	67
Subject #4		2	1	67	33
Subject #4		1	2	33	67
Subject #4		1	1	50	50
Subject #4		2	1	67	33
Subject #4		4	0	100	0
Subject #5		1	0	100	0
Subject #5		6	1	86	14
Subject #5		3	1	75	25
Subject #5		2	1	67	33
Subject #5		2	6	25	75
Subject #5		1	2	33	67
Subject #5		1	5	17	83

*** Network Detail is grayed out to protect privacy

Subject	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #6		2	2	50	50
Subject #6		5	2	71	29
Subject #6		4	2	67	33
Subject #6		3	2	60	40
Subject #6		5	3	63	38
Subject #6		1	2	33	67
Subject #7		2	4	33	67
Subject #7		6	2	75	25
Subject #7		2	1	67	33
Subject #7		5	1	83	17
Subject #7		1	1	50	50
Subject #7		3	2	60	40
Subject #8		1	2	33	67
Subject #8		5	2	71	29
Subject #8		6	0	100	0
Subject #8		3	1	75	25
Subject #9		5	1	83	17
Subject #9		6	1	86	14
Subject #9		3	2	60	40
Subject #9		2	1	67	33
Subject #9		5	1	83	17
Subject #9		2	2	50	50
Subject #9		3	4	43	57
Subject #10		3	1	75	25
Subject #10		3	2	60	40
Subject #10		4	3	57	43
Subject #10		3	1	75	25
Subject #10		1	2	33	67
Subject #10		3	2	60	40

*** Network Detail is grayed out to protect privacy

Subject	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #11		2	1	67	33
Subject #11		3	1	75	25
Subject #11		1	1	50	50
Subject #11		5	2	71	29
Subject #11		2	3	40	60
Subject #11		2	1	67	33
Subject #12		0	1	0	100
Subject #12		4	2	67	33
Subject #12		3	1	75	25
Subject #12		8	1	89	11
Subject #12		3	2	60	40
Subject #13		3	2	60	40
Subject #13		5	1	83	17
Subject #13		4	3	57	43
Subject #13		5	1	83	17
Subject #13		5	1	83	17
Subject #13		3	2	60	40
Subject #14		3	2	60	40
Subject #14		1	3	25	75
Subject #14		3	3	50	50
Subject #14		2	1	67	33
Subject #14		5	2	71	29
Subject #14		2	4	33	67
Subject #15		2	2	50	50
Subject #15		1	1	50	50
Subject #15		4	1	80	20
Subject #15		3	0	100	0
Subject #15		4	0	100	0

*** Network Detail is grayed out to protect privacy

Subject	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #16		2	3	40	60
Subject #16		1	1	50	50
Subject #16		1	1	50	50
Subject #16		2	1	67	33
Subject #16		1	4	20	80
Subject #16		1	4	20	80
Subject #17		1	1	50	50
Subject #17		2	1	67	33
Subject #17		1	2	33	67
Subject #17		2	2	50	50
Subject #17		2	1	67	33
Subject #17		3	1	75	25
Subject #18		1	6	14	86
Subject #18		3	1	75	25
Subject #18		6	2	75	25
Subject #18		4	1	80	20
Subject #18		5	2	71	29
Subject #19		6	1	86	14
Subject #19		4	1	80	20
Subject #19		2	2	50	50
Subject #19		3	1	75	25
Subject #19		1	1	50	50
Subject #19		1	2	33	67
Subject #20		3	1	75	25
Subject #20		3	1	75	25
Subject #20		3	2	60	40
Subject #20		3	1	75	25
Subject #20		3	2	60	40
Subject #20		1	2	33	67

*** Network Detail is grayed out to protect privacy

(Table Ends)

Table 8-2: Comparing Responses in Work-Social Network

Work-Social Network							
Subject	Relationship	Relationship Type	Network	Positive	Negative	Portion of Positive	Portion of Negative
Subject #1	Social	Peer		8	2	80	20
Subject #1	Social	Peer		1	2	33	67
Subject #1	Social	Peer		1	1	50	50
Subject #2	Social	Peer		4	1	80	20
Subject #2	Social	Peer		3	1	75	25
Subject #3	Social	Junior		4	1	80	20
Subject #3	Social	Junior		2	1	67	33
Subject #4	Social	Peer		2	1	67	33
Subject #4	Social	Junior		1	2	33	67
Subject #4	Social	Junior		1	1	50	50
Subject #5	Social	Peer		6	1	86	14
Subject #5	Social	Peer		3	1	75	25
Subject #5	Social	Peer		1	2	33	67
Subject #6	Social	Peer		5	2	71	29
Subject #6	Social	Peer		4	2	67	33
Subject #6	Social	Peer		3	2	60	40
Subject #7	Social	Peer		2	1	67	33
Subject #7	Social	Peer		5	1	83	17
Subject #7	Social	Peer		3	2	60	40
Subject #8	Social	Supervisor		6	0	100	0
Subject #8	Social	Peer		3	1	75	25
Subject #9	Social	Supervisor		5	1	83	17
Subject #9	Social	Junior		6	1	86	14
Subject #9	Social	Junior		2	1	67	33
Subject #9	Social	Junior		5	1	83	17
Subject #10	Social	Peer		3	1	75	25
Subject #10	Social	Peer		3	1	75	25
Subject #10	Social	Peer		1	2	33	67
Subject #11	Social	Peer		2	1	67	33
Subject #11	Social	Peer		3	1	75	25
Subject #11	Social	Junior		1	1	50	50
Subject #12	Social	Junior		0	1	0	100
Subject #12	Social	Peer		4	2	67	33
Subject #13	Social	Peer		5	1	83	17
Subject #13	Social	Junior		5	1	83	17
Subject #13	Social	Junior		5	1	83	17
Subject #14	Social	Peer		3	3	50	50
Subject #14	Social	Peer		2	1	67	33
Subject #14	Social	Junior		2	4	33	67

(Table Continued)

Work-Social Network							
Subject	Relationship	Relationship Type	Network	Positive	Negative	Portion of Positive	Portion of Negative
Subject #15	Social	Junior		3	0	100	0
Subject #15	Social	Junior		4	0	100	0
Subject #16	Social	Peer		1	1	50	50
Subject #16	Social	Peer		1	1	50	50
Subject #16	Social	Peer		1	4	20	80
Subject #17	Social	Peer		1	2	33	67
Subject #17	Social	Peer		2	1	67	33
Subject #17	Social	Peer		3	1	75	25
Subject #18	Social	Supervisor		3	1	75	25
Subject #18	Social	Supervisor		4	1	80	20
Subject #19	Social	Peer		3	1	75	25
Subject #19	Social	Peer		1	1	50	50
Subject #19	Social	Junior		1	2	33	67
Subject #20	Social	Peer		3	1	75	25
Subject #20	Social	Peer		3	1	75	25
Subject #20	Social	Peer		3	1	75	25

(Table Ends)

Table 8-3: Comparing Responses in Task Network

Task Network							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #1	Task	Peer		1	1	50	50
Subject #1	Task	Peer		3	1	75	25
Subject #1	Task	Supervisor		3	2	60	40
Subject #2	Task	peer		1	4	20	80
Subject #2	Task	peer		7	2	78	22
Subject #2	Task	peer		2	3	40	60
Subject #3	Task	Peer		1	5	17	83
Subject #3	Task	Supervisor		4	3	57	43
Subject #4	Task	Junior		1	2	33	67
Subject #4	Task	Junior		2	1	67	33
Subject #4	Task	Peer		4	0	100	0
Subject #5	Task	Peer		1	0	100	0
Subject #5	Task	Peer		2	1	67	33
Subject #5	Task	Peer		2	6	25	75
Subject #5	Task	Supervisor		1	5	17	83
Subject #6	Task	Junior		2	2	50	50
Subject #6	Task	Peer		5	3	63	38
Subject #6	Task	Peer		1	2	33	67
Subject #7	Task	Peer		2	4	33	67
Subject #7	Task	Peer		6	2	75	25
Subject #7	Task	Peer		1	1	50	50
Subject #8	Task	Supervisor		1	2	33	67
Subject #8	Task	Supervisor		5	2	71	29
Subject #9	Task	Junior		3	2	60	40
Subject #9	Task	Junior		2	2	50	50
Subject #9	Task	Junior		3	4	43	57
Subject #10	Task	Junior		3	2	60	40
Subject #10	Task	Junior		4	3	57	43
Subject #10	Task	Junior		3	2	60	40
Subject #11	Task	Peer		5	2	71	29
Subject #11	Task	Peer		2	3	40	60
Subject #11	Task	Supervisor		2	1	67	33
Subject #12	task	Junior		3	1	75	25
Subject #12	task	Peer		8	1	89	11
Subject #12	task	Peer		3	2	60	40
Subject #13	Task	Peer		3	2	60	40
Subject #13	Task	Supervisor		4	3	57	43
Subject #13	Task	Peer		3	2	60	40
Subject #14	Task	Peer		3	2	60	40
Subject #14	Task	Junior		1	3	25	75
Subject #14	Task	Supervisor		5	2	71	29

(Table Continued)

Task Network							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #15	Task	Peer		2	2	50	50
Subject #15	Task	Peer		1	1	50	50
Subject #15	Task	Peer		4	1	80	20
Subject #16	Task	Peer		2	3	40	60
Subject #16	Task	Junior		2	1	67	33
Subject #16	Task	Junior		1	4	20	80
Subject #17	Task	Junior		1	1	50	50
Subject #17	Task	Junior		2	1	67	33
Subject #17	Task	Junior		2	2	50	50
Subject #18	Task	Peer		1	6	14	86
Subject #18	Task	Supervisor		6	2	75	25
Subject #18	Task	Junior		5	2	71	29
Subject #19	Task	Supervisor		6	1	86	14
Subject #19	Task	Junior		4	1	80	20
Subject #19	Task	Peer		2	2	50	50
Subject #20	Task	Supervisor		3	2	60	40
Subject #20	Task	Supervisor		3	2	60	40
Subject #20	Task	Junior		1	2	33	67

(Table Ends)

Table 8-4: Comparing Responses for Selected Work-Social Network

Work-Social Network (Selected Only)							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #1	Social	Peer		8	2	80	20
Subject #2	Social	Peer		4	1	80	20
Subject #3	Social	Junior		2	1	67	33
Subject #4	Social	Peer		2	1	67	33
Subject #5	Social	Peer		6	1	86	14
Subject #5	Social	Peer		3	1	75	25
Subject #5	Social	Peer		1	2	33	67
Subject #6	Social	Peer		4	2	67	33
Subject #6	Social	Peer		3	2	60	40
Subject #7	Social	Peer		2	1	67	33
Subject #8	Social	Supervisor		6	0	100	0
Subject #9	Social	Supervisor		5	1	83	17
Subject #9	Social	Junior		2	1	67	33
Subject #9	Social	Junior		5	1	83	17
Subject #10	Social	Peer		3	1	75	25
Subject #11	Social	Peer		3	1	75	25
Subject #12	Social	Peer		4	2	67	33
Subject #13	Social	Peer		5	1	83	17
Subject #13	Social	Junior		5	1	83	17
Subject #13	Social	Junior		5	1	83	17
Subject #14	Social	Peer		2	1	67	33
Subject #15	Social	Junior		3	0	100	0
Subject #17	Social	Peer		2	1	67	33
Subject #17	Social	Peer		3	1	75	25
Subject #18	Social	Supervisor		3	1	75	25
Subject #18	Social	Supervisor		4	1	80	20
Subject #19	Social	Peer		3	1	75	25
Subject #19	Social	Peer		1	1	50	50
Subject #19	Social	Junior		1	2	33	67
Subject #20	Social	Peer		3	1	75	25
Subject #20	Social	Peer		3	1	75	25
Subject #20	Social	Peer		3	1	75	25

*** Network Detail is grayed out to protect privacy

Table 8-5: Comparing Responses for Rejected Work-Social Network

Work-Social Network (Rejected Only)							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #1	Social	Peer		1	2	33	67
Subject #1	Social	Peer		1	1	50	50
Subject #2	Social	Peer		3	1	75	25
Subject #3	Social	Junior		4	1	80	20
Subject #4	Social	Junior		1	2	33	67
Subject #4	Social	Junior		1	1	50	50
Subject #6	Social	Peer		5	2	71	29
Subject #7	Social	Peer		5	1	83	17
Subject #7	Social	Peer		3	2	60	40
Subject #8	Social	Peer		3	1	75	25
Subject #9	Social	Junior		6	1	86	14
Subject #10	Social	Peer		3	1	75	25
Subject #10	Social	Peer		1	2	33	67
Subject #11	Social	Peer		2	1	67	33
Subject #11	Social	Junior		1	1	50	50
Subject #12	Social	Junior		0	1	0	100
Subject #14	Social	Peer		3	3	50	50
Subject #14	Social	Junior		2	4	33	67
Subject #15	Social	Junior		4	0	100	0
Subject #16	Social	Peer		1	1	50	50
Subject #16	Social	Peer		1	1	50	50
Subject #16	Social	Peer		1	4	20	80
Subject #17	Social	Peer		1	2	33	67

*** Network Detail is grayed out to protect privacy

Table 8-6: Comparing Responses for Selected Task Network

Subject	Subject	Relationship	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #1	Task	Supervisor		3	2	60	40
Subject #2	Task	Supervisor		4	3	57	43
Subject #3	Task	Junior		1	2	33	67
Subject #4	Task	Junior		2	1	67	33
Subject #7	Task	Peer		6	2	75	25
Subject #8	Task	Supervisor		5	2	71	29
Subject #9	Task	Junior		3	4	43	57
Subject #10	Task	Junior		3	2	60	40
Subject #10	Task	Junior		3	2	60	40
Subject #11	Task	Peer		5	2	71	29
Subject #11	Task	Supervisor		2	1	67	33
Subject #12	task	Peer		8	1	89	11
Subject #12	task	Peer		3	2	60	40
Subject #15	Task	Peer		2	2	50	50
Subject #15	Task	Peer		4	1	80	20
Subject #17	Task	Junior		2	1	67	33
Subject #18	Task	Junior		5	2	71	29
Subject #19	Task	Supervisor		6	1	86	14
Subject #20	Task	Supervisor		3	2	60	40

*** Network detail is grayed out to protect privacy

Table 8-7: Comparing Responses for Rejected Task Network

Task (Rejected Only)							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #1	Task	Peer		1	1	50	50
Subject #1	Task	Peer		3	1	75	25
Subject #2	Task	peer		1	4	20	80
Subject #2	Task	peer		7	2	78	22
Subject #2	Task	peer		2	3	40	60
Subject #3	Task	Peer		1	5	17	83
Subject #4	Task	Peer		4	0	100	0
Subject #5	Task	Peer		1	0	100	0
Subject #5	Task	Peer		2	1	67	33
Subject #5	Task	Peer		2	6	25	75
Subject #5	Task	Supervisor		1	5	17	83
Subject #6	Task	Junior		2	2	50	50
Subject #6	Task	Peer		5	3	63	38
Subject #6	Task	Peer		1	2	33	67
Subject #7	Task	Peer		2	4	33	67
Subject #7	Task	Peer		1	1	50	50
Subject #8	Task	Supervisor		1	2	33	67
Subject #9	Task	Junior		3	2	60	40
Subject #9	Task	Junior		2	2	50	50
Subject #10	Task	Junior		4	3	57	43
Subject #11	Task	Peer		2	3	40	60
Subject #12	task	Junior		3	1	75	25
Subject #13	Task	Peer		3	2	60	40
Subject #13	Task	Supervisor		4	3	57	43
Subject #13	Task	Peer		3	2	60	40
Subject #14	Task	Peer		3	2	60	40
Subject #14	Task	Junior		1	3	25	75
Subject #14	Task	Supervisor		5	2	71	29
Subject #15	Task	Peer		1	1	50	50
Subject #16	Task	Peer		2	3	40	60
Subject #16	Task	Junior		1	4	20	80
Subject #17	Task	Junior		1	1	50	50
Subject #17	Task	Junior		2	2	50	50
Subject #18	Task	Peer		1	6	14	86
Subject #18	Task	Supervisor		6	2	75	25
Subject #19	Task	Junior		4	1	80	20
Subject #19	Task	Peer		2	2	50	50
Subject #20	Task	Supervisor		3	2	60	40
Subject #20	Task	Junior		1	2	33	67

*** Network Detail is grayed out to protect privacy

Table 8-8: Selected Supervisors

Supervisors (Selected Only)							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #1	Task	Supervisor		3	2	60	40
Subject #3	Task	Supervisor		4	3	57	43
Subject #8	Social	Supervisor		3	1	75	25
Subject #8	Task	Supervisor		6	1	85	15
Subject #9	Social	Supervisor		4	1	80	20
Subject #11	Task	Supervisor		3	2	60	40
Subject #18	Social	Supervisor		6	0	100	0
Subject #18	Social	Supervisor		5	1	71	29
Subject #19	Task	Supervisor		2	1	66	34
Subject #20	Task	Supervisor		5	2	71	29

*** Network Detail is grayed out to protect privacy

Table 8-9: Rejected Supervisors

Supervisors (Rejected Only)							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #5	Task	Supervisor		1	5	17	83
Subject #8	Task	Supervisor		1	2	33	67
Subject #13	Task	Supervisor		4	3	57	43
Subject #14	Task	Supervisor		5	2	71	29
Subject #18	Task	Supervisor		6	2	75	25
Subject #20	Task	Supervisor		3	2	60	40

*** Network Detail is grayed out to protect privacy

Table 8-10: Selected Peers

Peers (selected Only)							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #1	Social	Peer		8	2	80	20
Subject #2	Social	Peer		4	1	80	20
Subject #4	Social	Peer		2	1	67	33
Subject #5	Social	Peer		6	1	86	14
Subject #5	Social	Peer		3	1	75	25
Subject #5	Social	Peer		1	2	33	67
Subject #6	Social	Peer		4	2	67	33
Subject #6	Social	Peer		3	2	60	40
Subject #7	Social	Peer		2	1	67	33
Subject #7	Task	Peer		2	75	25	75
Subject #10	Social	Peer		3	1	75	25
Subject #11	Social	Peer		3	1	75	25
Subject #11	Task	Peer		2	71	29	71
Subject #12	Social	Peer		4	2	67	33
Subject #12	task	Peer		1	89	11	89
Subject #12	task	Peer		2	60	40	60
Subject #13	Social	Peer		5	1	83	17
Subject #14	Social	Peer		2	1	67	33
Subject #15	Task	Peer		2	50	50	50
Subject #15	Task	Peer		1	80	20	80
Subject #17	Social	Peer		2	1	67	33
Subject #17	Social	Peer		3	1	75	25
Subject #19	Social	Peer		3	1	75	25
Subject #19	Social	Peer		1	1	50	50
Subject #20	Social	Peer		3	1	75	25
Subject #20	Social	Peer		3	1	75	25
Subject #20	Social	Peer		3	1	75	25

*** Network Detail is grayed out to protect privacy

Table 8-11: Rejected Peers

Peers (Rejected Only)							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #1	Social	Peer		1	2	33	67
Subject #1	Social	Peer		1	1	50	50
Subject #1	Task	Peer		1	1	50	50
Subject #1	Task	Peer		3	1	75	25
Subject #2	Social	Peer		3	1	75	25
Subject #2	Task	Peer		1	4	20	80
Subject #2	Task	Peer		7	2	78	22
Subject #2	Task	Peer		2	3	40	60
Subject #3	Task	Peer		1	5	17	83
Subject #4	Task	Peer		4	0	100	0
Subject #5	Task	Peer		1	0	100	0
Subject #5	Task	Peer		2	1	67	33
Subject #5	Task	Peer		2	6	25	75
Subject #6	Social	Peer		5	2	71	29
Subject #6	Task	Peer		5	3	63	38
Subject #6	Task	Peer		1	2	33	67
Subject #7	Social	Peer		5	1	83	17
Subject #7	Social	Peer		3	2	60	40
Subject #7	Task	Peer		2	4	33	67
Subject #7	Task	Peer		1	1	50	50
Subject #8	Social	Peer		3	1	75	25
Subject #10	Social	Peer		3	1	75	25
Subject #10	Social	Peer		1	2	33	67
Subject #11	Social	Peer		2	1	67	33
Subject #11	Task	Peer		2	3	40	60
Subject #13	Task	Peer		3	2	60	40
Subject #13	Task	Peer		3	2	60	40
Subject #14	Social	Peer		3	3	50	50
Subject #14	Task	Peer		3	2	60	40
Subject #15	Task	Peer		1	1	50	50
Subject #16	Social	Peer		1	1	50	50
Subject #16	Social	Peer		1	1	50	50
Subject #16	Social	Peer		1	4	20	80
Subject #16	Task	Peer		2	3	40	60
Subject #17	Social	Peer		1	2	33	67
Subject #18	Task	Peer		1	6	14	86
Subject #19	Task	Peer		2	2	50	50

*** Network Detail is grayed out to protect privacy

Table 8-12: Selected Juniors

Juniors (Selected Only)							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #3	Social	Junior		2	1	67	33
Subject #4	Task	Junior		2	33	67	33
Subject #4	Task	Junior		1	67	33	67
Subject #9	Social	Junior		2	1	67	33
Subject #9	Social	Junior		5	1	83	17
Subject #9	Task	Junior		4	43	57	43
Subject #10	Task	Junior		2	60	40	60
Subject #10	Task	Junior		2	60	40	60
Subject #13	Social	Junior		5	1	83	17
Subject #13	Social	Junior		5	1	83	17
Subject #15	Social	Junior		3	0	100	0
Subject #16	Task	Junior		1	67	33	67
Subject #17	Task	Junior		1	67	33	67
Subject #18	Task	Junior		2	71	29	71
Subject #19	Social	Junior		1	2	33	67

*** Network Detail is grayed out to protect privacy

Table 8-13: Rejected Juniors

Juniors (Rejected Only)							
Subject	Relationship	Relationship Type	Network	Total No. of Positive Responses	Total No. of Negative Responses	Portion of Positive Responses	Portion of Negative Responses
Subject #3	Social	Junior		4	1	80	20
Subject #4	Social	Junior		1	2	33	67
Subject #4	Social	Junior		1	1	50	50
Subject #6	Task	Junior		2	2	50	50
Subject #9	Social	Junior		6	1	86	14
Subject #9	Task	Junior		3	2	60	40
Subject #9	Task	Junior		2	2	50	50
Subject #10	Task	Junior		4	3	57	43
Subject #11	Social	Junior		1	1	50	50
Subject #12	Social	Junior		0	1	0	100
Subject #12	task	Junior		3	1	75	25
Subject #14	Social	Junior		2	4	33	67
Subject #14	Task	Junior		1	3	25	75
Subject #15	Social	Junior		4	0	100	0
Subject #16	Task	Junior		1	4	20	80
Subject #17	Task	Junior		1	1	50	50
Subject #17	Task	Junior		2	2	50	50
Subject #19	Task	Junior		4	1	80	20
Subject #20	Task	Junior		1	2	33	67

*** Network Detail is grayed out to protect privacy

Table 8-14: Comparison of Gender

Network	Men	Women	Selected Men	Selected Women	Proportion of Men to Women	Proportion of Men to Women (Selected)
Social	43	12	22	9	0.78	0.71
Task	44	15	14	6	0.75	0.70
Total	87	27	36	15		

Table 8-15: Ranking Comparison between Work Social and Task Network

Ranking	Overall	Work Social Network	Task Network
Ranking 1	27	13	14
Ranking 2	17	12	5
Ranking 3	7	6	1
Total	51	31	20

Table 8-16: Total Number of People in Networks by Relationship

Relationship	Task Network	Work Social Network	Total
Supervisor	12	4	16
Peer	28	36	64
Junior	19	15	34
Total			114

Table 8-17: Total Number of People in Both Networks by Relationship and Subjects

Subject	Task Supervisor	Task Peer	Task Junior	Social Supervisor	Social Peer	Social Junior	Total
Subject #1	1	2	0	0	3	0	6
Subject #2	0	3	0	0	2	0	5
Subject #3	1	1	0	0	0	2	4
Subject #4	0	1	2	0	1	2	6
Subject #8	2	0	0	2	1	0	5
Subject #9	0	0	3	0	0	3	6
Subject #10	0	0	3	0	3	0	6
Subject #11	1	2	0	0	2	1	6
Subject #12	0	2	1	0	1	1	5
Subject #13	1	2	0	0	1	2	6
Subject #14	1	1	1	0	2	1	6
Subject #15	0	3	0	0	0	2	5
Subject #16	0	1	2	0	3	0	6
Subject #17	0	0	3	0	3	0	6
Subject #18	1	1	1	2		0	5
Subject #19	1	1	1	0	2	1	6
Subject #20	2	0	1	0	3	0	6
Total	12	28	19	4	36	15	114

Appendix C

Qualitative Analysis Tables and Figures

Table 8-18: List of Positive Attributes in Work-Social and Task Network

Work-Social Network			Task Network		
Positive Attribute Description	Total No. of Responses	Percentage of Times Used	Positive Attribute Description	Total No. of Responses	Percentage of Times Used
Friendly amicable conversation	26	16%	Competent	57	35%
Friendly	22	14%	Trusting	25	15%
Genuine conversation	21	13%	Guidance	16	10%
Sense of humor	21	13%	Friendly	13	8%
Similar views	15	9%	Accommodating	12	7%
Competent	12	7%	Quick response	8	5%
People's personality	8	5%	Commitment	7	4%
Positive personality	8	5%	Honesty	5	3%
Trusting	8	5%	Respect	5	3%
Vent outlet	6	4%	Sharing	5	3%
Respect	5	3%	None	4	2%
Well balanced personality	5	3%	Miscellaneous	8	5%
Miscellaneous	5	3%	Genuine conversation		
None			Good communication skill		
Persistent			Good judgment		
Accommodating			Don't criticize		
Availability			Sense of humor		
			Similar View		
			Open to Suggestsions		
Total Responses	162	100%	Total Responses	165	100%

Table 8-19: List of Negative Attributes in Work-Social and Task Network

Work-Social Network			Task Network		
Negative Attribute Description	Total No. of Responses	Percentage of Times Used	Negative Attribute Description	Total No. of Responses	Percentage of Times Used
None	15	21%	Incompetent	14	11%
Introverted	7	10%	Too laid back	8	6%
Poor listener	6	8%	Undermining Authority	8	6%
Protective	6	8%	Naïve	7	5%
Too laid back	6	8%	Lack of vision	6	5%
Insensitive	5	7%	Ambiguous response	5	4%
Not serious	3	4%	Bureaucratic	5	4%
Selfish	3	4%	Introverted	5	4%
Too serious	3	4%	Lack of social skills	5	4%
Favoritism	2	3%	Not sharing	5	4%
low tolerance	2	3%	low tolerance	4	3%
Negative attitude	2	3%	Honesty	4	3%
Opinionated	2	3%	Too focused	4	3%
Too focused	2	3%	Non co-operative	3	2%
Miscellaneous	7	10%	Non Negotiative	3	2%
Naïve			Selfish	3	2%
Needs Attention			None	3	2%
Aggressive			Arrogant	3	2%
Arrogant			Back stabber	3	2%
Hard to get hold off			Defensive	3	2%
Different View			Favoritism	3	2%
			Not enough exposure	2	2%
			Poor listener	2	2%
			Unreasonable	2	2%
			Hard to get hold off	2	2%
			No Self Motivation	2	2%
			Lack of Confidence	2	2%
			Different View	2	2%
			Miscellaneous	10	8%
			Not accommodating		
			lack of human interaction		
			Not appreciated		
			not assertive		
			Needs Attention		
			No exposure		
			Not my fault attitude		
			Opinionated		
			Politically Incorrect		
			Too protective		
Total Responses	71	100%	Total Responses	128	100%

Table 8-20: Positive Attributes in Supervisor Relationship (in Both Networks)

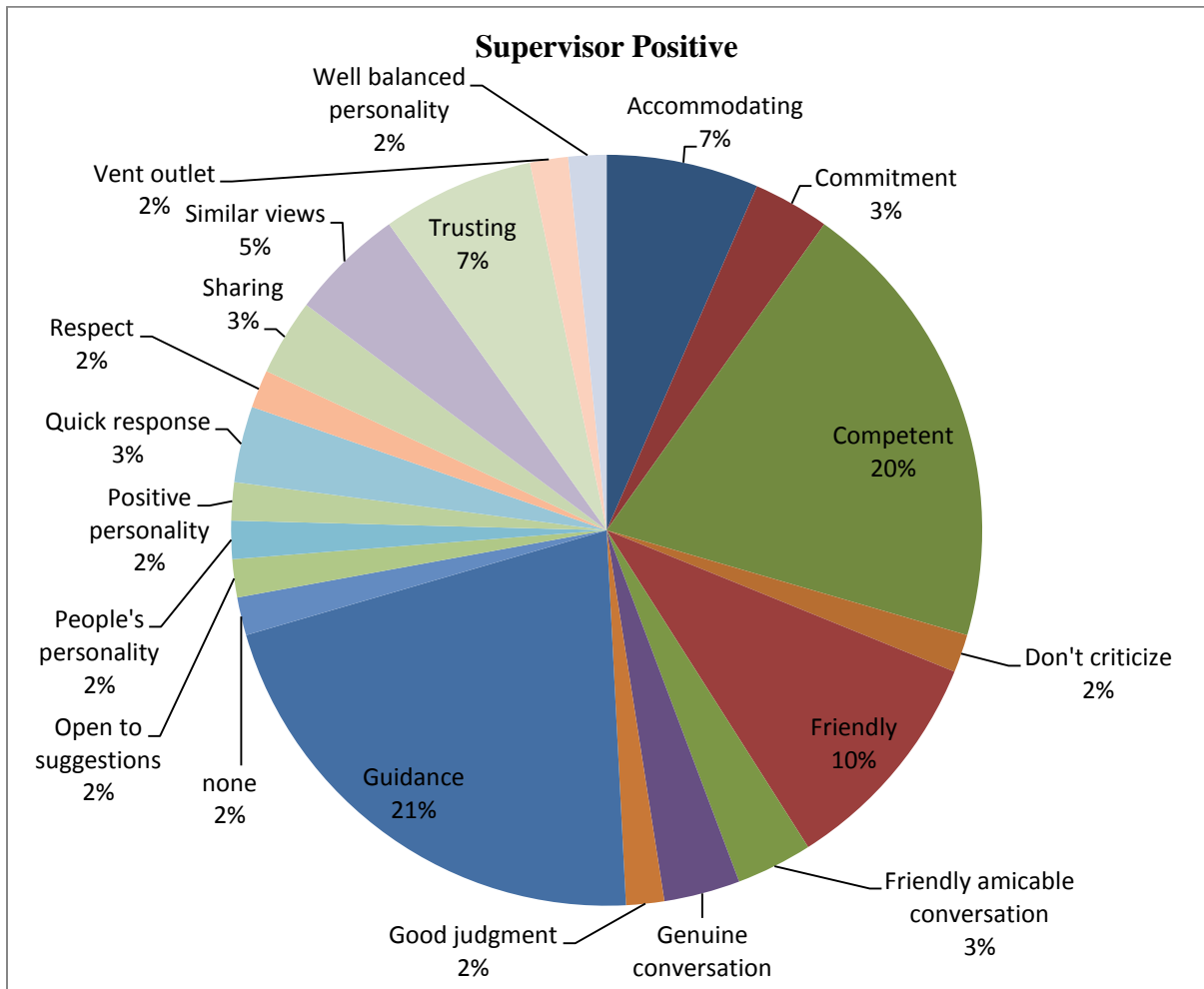


Table 8-21: Negative Attributes in Supervisor Relationship (in Both Networks)

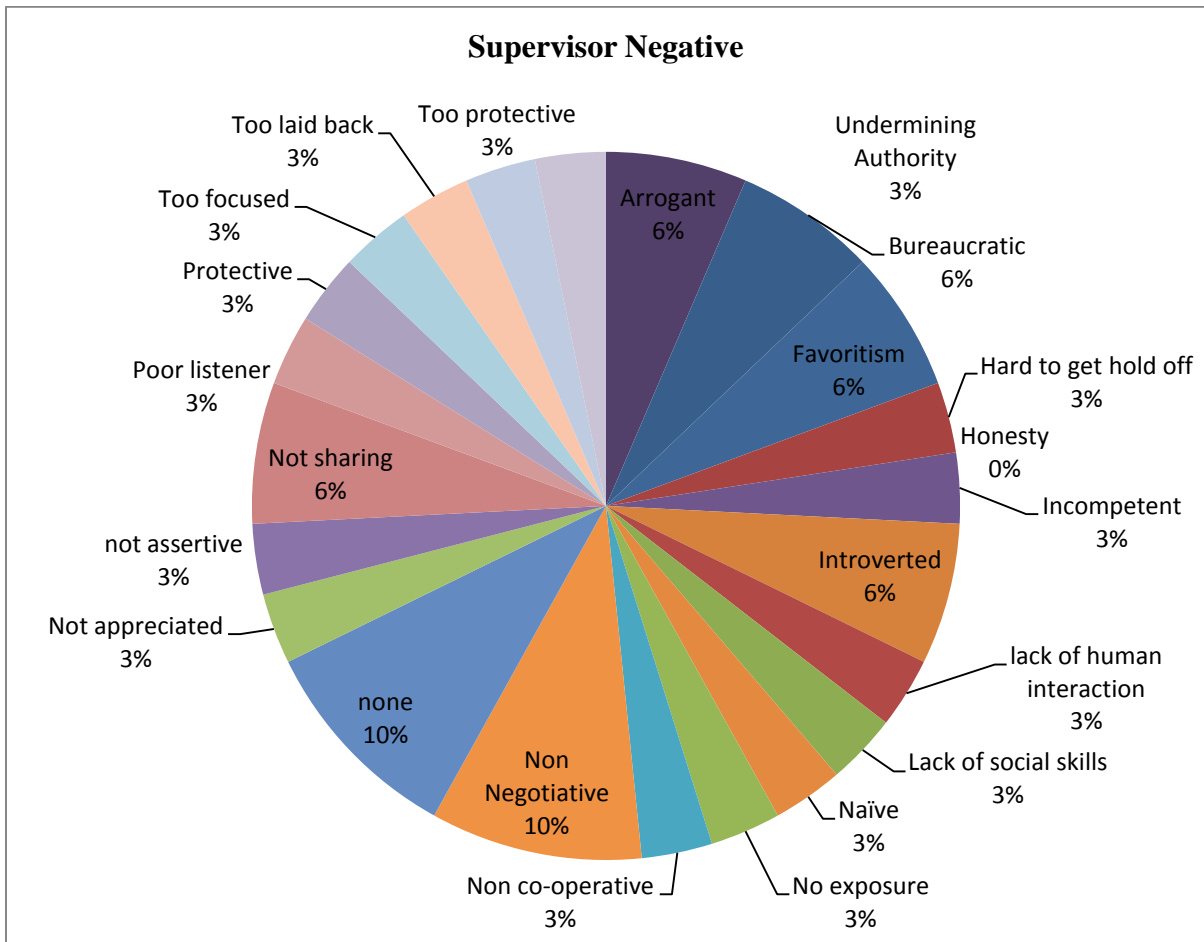


Table 8-22: Positive Attributes in Peer Relationship (in Both Networks)

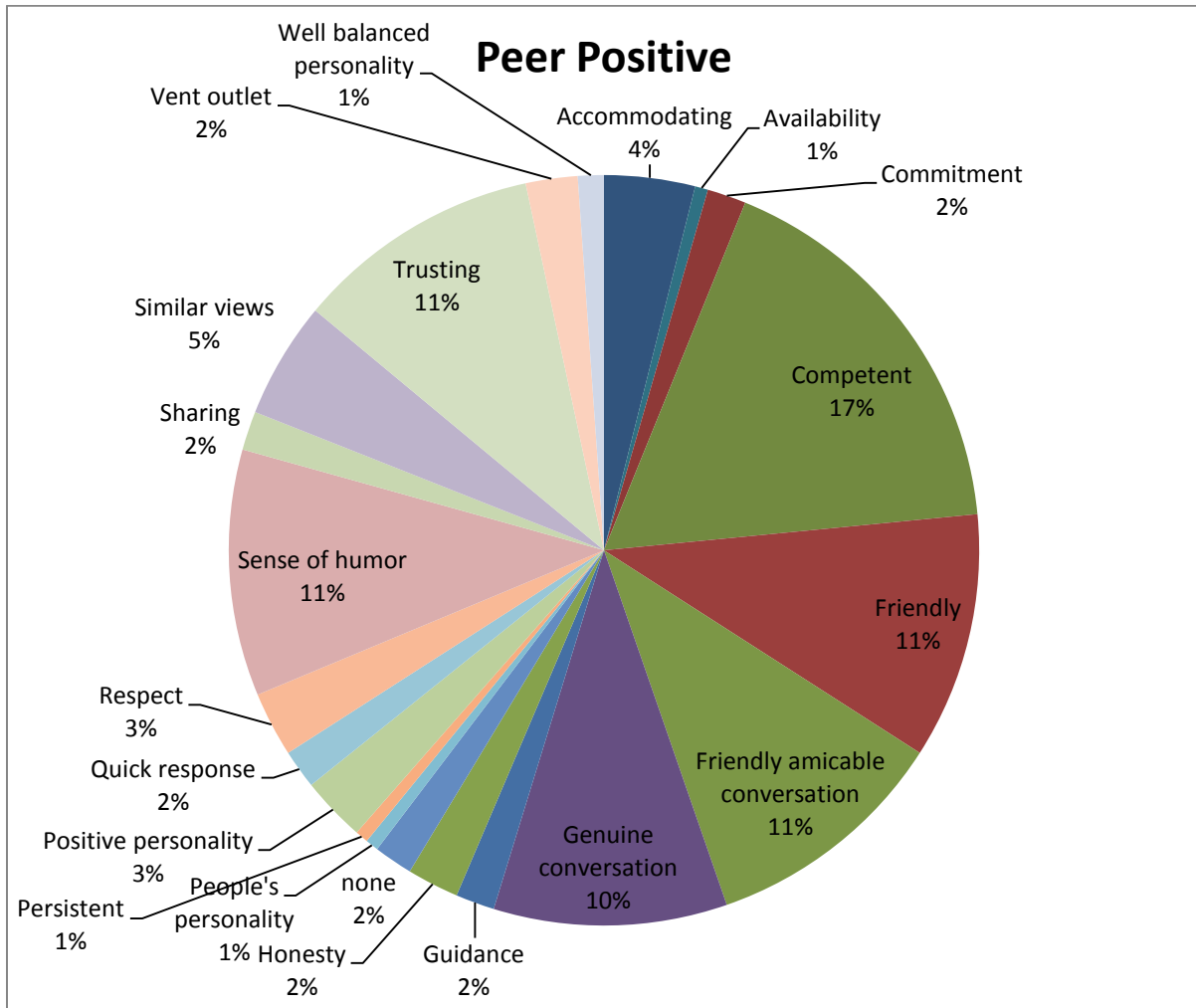


Table 8-23: Negative Attributes in Peer Relationship (in Both Networks)

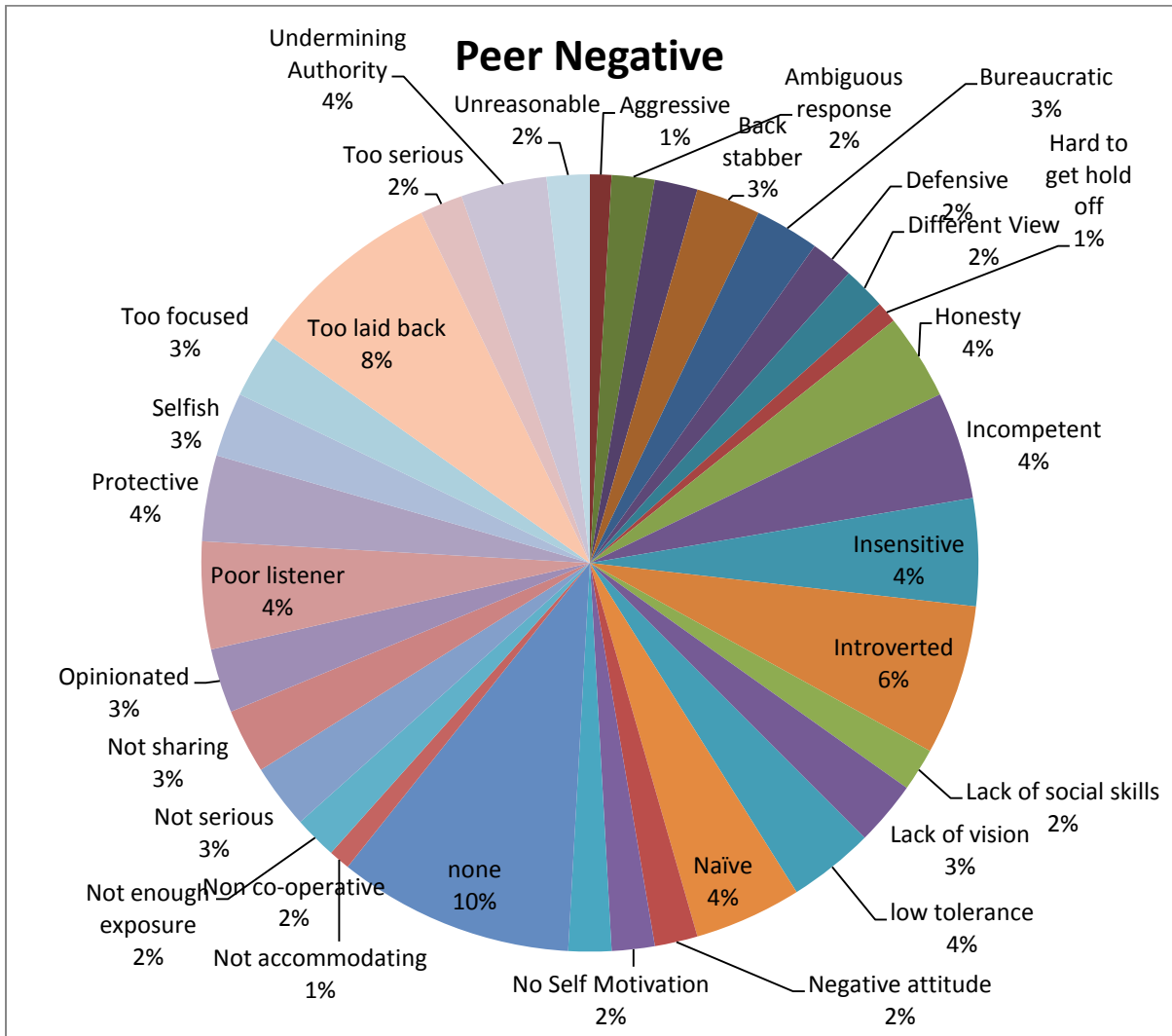


Table 8-24: Positive Attributes in Junior Relationship (in Both Networks)

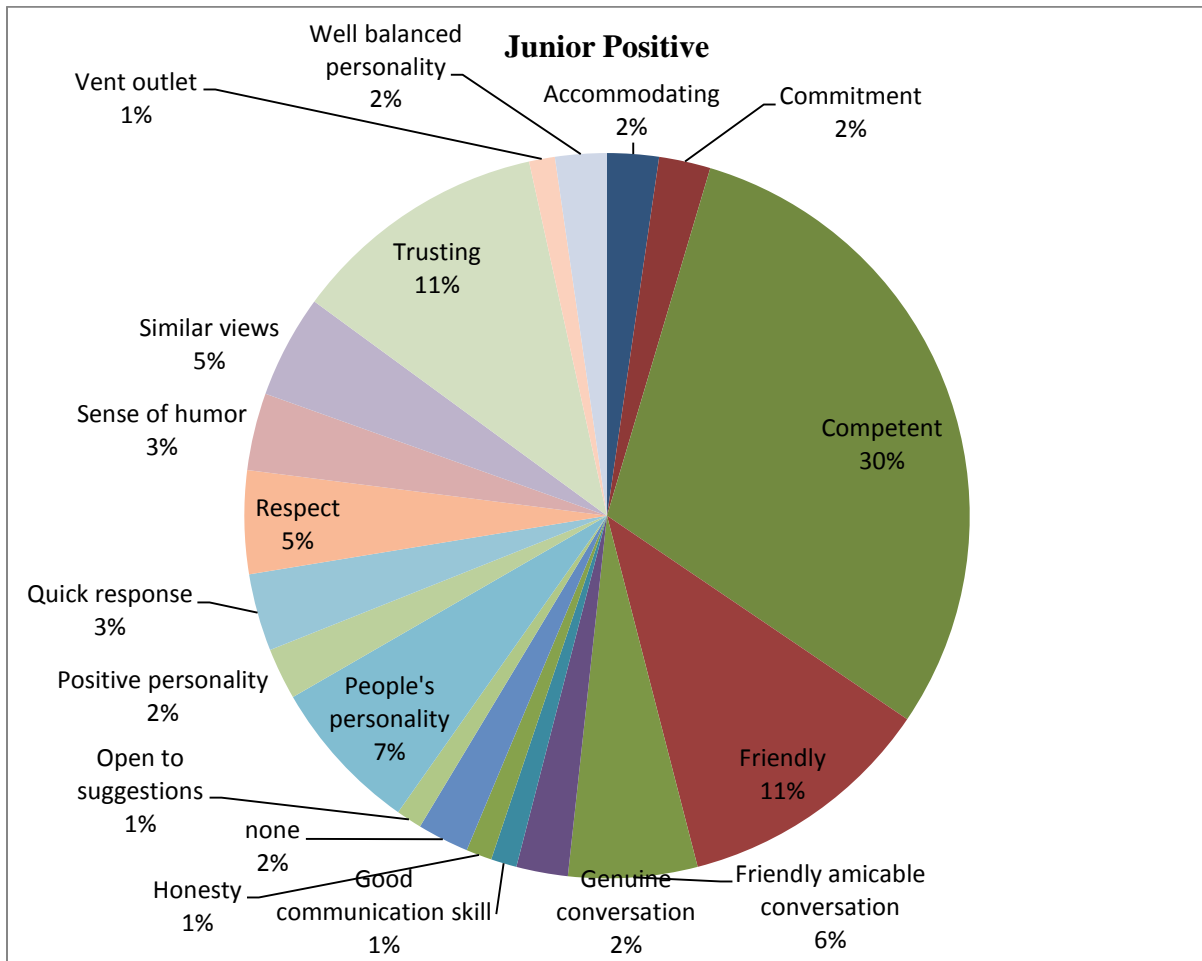


Table 8-25: Negative Attributes in Junior Relationship (in Both Networks)

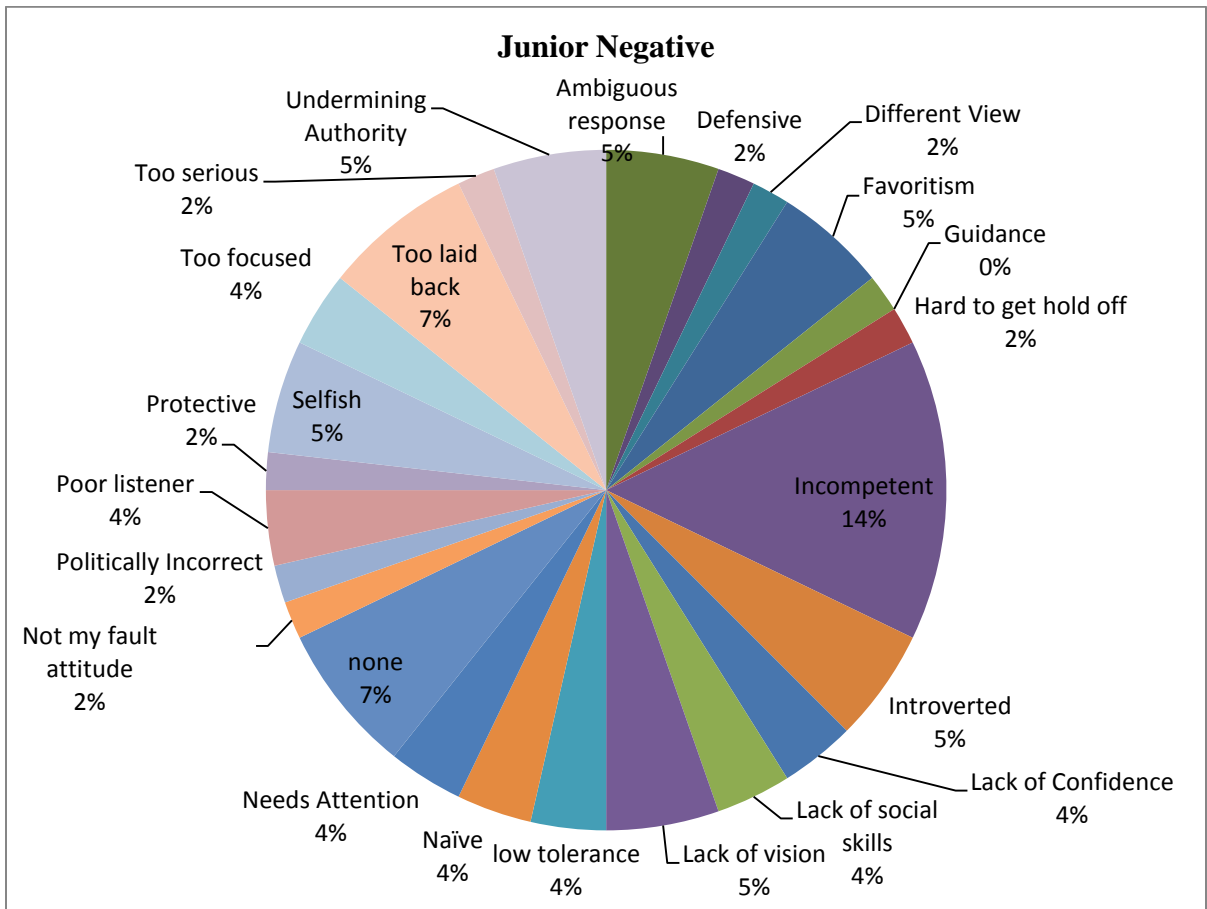
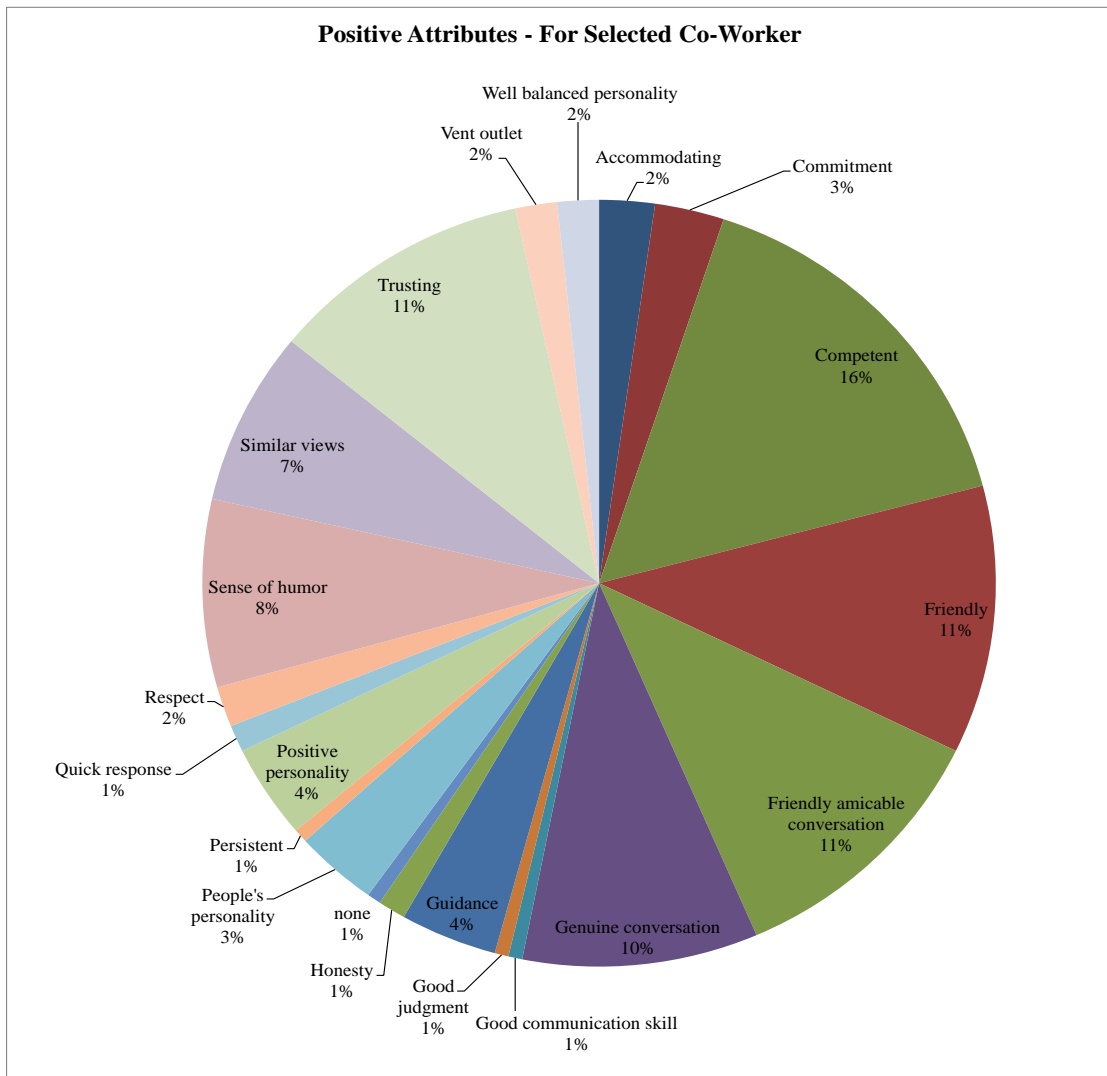


Table 8-26: Positive Attributes for Selected Co-Workers



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