Job Satisfaction in Virtual Management

Personality traits in a virtual management team based on trust and technology communication.

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Abstract

Background: Working in virtual teams from a distance has been a trend for the past decades and today, it is how many companies operate. As a company grows and gets more global, the leadership of the company gets more challenging and more complex. This puts high pressure on the workers and requires team members that have special skill to be operating a team from distance.

Purpose: The purpose of this study was to get a deeper understanding on the effect of different personality traits based on propensity to trust and technology communication anxiety, which are the predictors of job satisfaction in remote virtual team, according to the literature.

Hypotheses: Hypothesis 1A: Conscientiousness is negatively correlated with propensity to trust. Hypothesis 1B: Extraversion is positively correlated with propensity to trust. Hypothesis 1C: Agreeableness is positively correlated with propensity to trust. Hypothesis 2a: Neuroticism is positively correlated with technology communication anxiety. Hypothesis 2b: Openness is negatively correlated with technology communication anxiety. Hypothesis 3: Propensity to trust is positively correlated with perceived virtual teams usefulness Hypothesis 4: Technology communication anxiety is negatively correlated with job satisfaction in remote virtual team. Hypothesis 5: Perceived remote virtual team usefulness is positively correlated with job satisfaction in remote virtual teams.

Methodology: A quantitative study was conducted to address the aim of the study. In total, 54 questionnaires were gathered. After the quantitative study was analyzed, three interviews were conducted to interpret the findings.

Findings: Among five personality traits, only two of them are found to be predictors of technology communication anxiety and propensity to trust. Perceived usefulness is found to be the strongest predictor for job satisfaction. However, the R square shows that there are some other factors that affect job satisfaction.

Keywords: Virtual team, personality traits, technology communication anxiety, propensity to trust, perceived usefulness, job satisfaction
Acknowledgment

As an engineer, it was a challenge to complete this study and get a deeper knowledge in conducting a quantitative study. I would like to thank my supervisor Anders Vigren, examiner Professor Krushna Mahapatra and Lecturer Peter Lehman for guidance and advice during this process. Without their support, it would have been impossible to complete this study.

I would like to thank Özden Aylin Cakanlar for her support and guidance during this study, also thanks to my colleagues who helped me to distribute the questionnaire and participated in interviews. At the end, it has been a joyful process to learn how to conduct a study in the field of business administration and I am sure I will use the knowledge I gained through this writing process in my future job. I also would like to thank Linnaeus University because they organized this master’s program that has enabled students to attain deeper knowledge in many different areas that we did not study in Bachelor level studies.
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1. Introduction

The first chapter introduces the reader to the subject of this study. The concept of virtual organization is presented, followed by the problem discussion in the area, the purpose of the study and research questions.

1.1 Background

The world market is growing rapidly and global competition is increasing, while an emerging skills shortage and changing demographics are forcing companies to use their most highly paid and skilled talents more effectively (Lund, Manyika, & Ramaswamy, 2012).

“The world is flat” (Friedeman, 2007) describes one of the rules of how companies cope. (Friedemann, 2007 p. 457) This implies that the best companies are the best collaborators. In the flat world, more and more business will be done through collaboration within and between companies, for a very simple reason: The next layers of value creation – whether in technology, marketing, biomedicine, or manufacturing – are becoming so complex that no single firm or department is able to master them alone.

The five key trends in business for the next 15 year are forecasted in the research report “Foresight 2020” (The Economist Intelligence Unit, 2006). Three of these trends—globalization, atomization and knowledge management—have a significant effect on the structure, functioning and distribution of teams within and across boundaries. As organizations become global, the prevalence of multicultural and geographically dispersed teams will increase, especially as work get broken down into smaller units to be managed and delivered by specialist teams or individuals. Atomization will enable firms to “use the world as their supply base for talents and materials. As result, effective collaboration will become more important” (The Economist Intelligence Unit, 2006)

As a company grows and gets more global, the leadership of the company gets more challenging and more complex. It’s a fact that both the task and dimensions of leadership are critical to leading from distance. This puts great pressure on leaders and requires leaders that are especially skilled to lead a team from distance.
One interviewee noted the following (Connaughton, 2004):

*Leading from a distance is an absolute necessity in our industry. It will be that way in more and more industries. It is a difficult skill. People who have never done it don’t even recognize it as a separate skill. You’ll say, “Well, you don’t have any worldwide experience,” and they’ll say, “Well, what’s worldwide experience except putting me in a worldwide job?”* [Interviewee laughs] There are just so many aspects that many people don’t understand.

In the book *Towards the Virtual Organization*, Hale (1997) mentions that one of the major new buzzwords of the late 1990s is “virtual.” Readers probably have heard of virtual bookshops, virtual universities, virtual shopping malls, virtual offices and of course, remote virtual teams. Nowadays the buzzword has gone global. The early virtual bookshops have ushered in internet shopping, which is now routinely used to buy and sell all kinds of items. It is no secret that today is possible to study from a distance at many universities around the world. Teachers and students know very well that this is an option in today’s society, and both university employees and students operate in a virtual environment. Like it or not, the future worker is likely to end up in some kind of “virtual environment” in daily life or the workplace. Hale (1997) proposes the following definition of the virtual organization: “the virtual organization is the name given to any organization which is continually evolving, redefining and reinventing itself for practical business purposes”.

Additionally, virtual teams allow organizations to access the most qualified individuals for a particular job regardless of their location, enabling organizations to respond faster to increased competition, and provide greater flexibility to individuals working from home or on the road. Conversely, a company may not look for the most qualified individual; rather it takes advantage of high degrees of expertise while often paying less than the prevailing wage. Some find this business practice negative if cost savings are the only reason for the implementation of the virtual team (Robertson, 2006). Research findings from a study conducted by Ceridian Employer Services reveal that the ability to work in virtual teams has started to play a big role in the recruitment and retention of employees (DeLisser, 1999). Fifty percent of employees of large and small companies considered the ability to work in virtual teams a very attractive incentive to
join a company. Virtual teams offer high flexibility and other potential benefits, but they also create numerous leadership challenges. (Hunsaker, 2008)

Managing people who are geographically dispersed across time, space and organizational boundaries requires team leaders who are able to communicate effectively, to both understand and navigate interpersonal relationships. The virtual team leader of today needs to understand team dynamics, how to create a virtual team culture and what works best when managing from a distance a location Chamorro-Premuzic and Winsborough (2015) argue that one individuals personalities do not depend on hard skills or expertise and that these two have no connection on the dynamics of interpersonal relationship. They explained, “You can have the best talent joining your team, and it may still result in failure to perform as a cohesive team. In other words the way to create a team that’s worth more than the sum of its individual contributors is to select members on the basis of personality, soft skills, and values.”

With that said, a number of organizations are using personality profiling to build their teams (Chamorro-Premuzic & Winsborough, 2015). For example, Edmunds, a sort of Trip Advisor for cars, uses personality exams to find the most capable candidates for its decision-making team. Buffer, a social media companie, uses personality tests to create virtual teams and pilot novel organizational structures that avoid managers and formal roles. The New Zealand Army, which, of course, does have formal roles, froms its teams grounded on personality for outdoor development competitions through the mountains. It can be hard to get people to work together the way one would like, mostly because people are often too selfish to collaborate, selecting instead to compete as individuals. Freud (2015) made a point when he associated humans to hedgehogs in the winter times: When its get colder and colder during some season times the hedgehogs they huddle together to warm up, but then things become unbearably tricky as they hurt each other with their spines.

The Big Five Inventory (BFI), as described by John & Srivastava (1999), will be used to identify the different personality traits referenced in this study. The BFI is a psychological personality theory that is based on the fact that people's personalities are distinguishable and have universal features that are not cultural or situation dependent. This theory distinguishes five inventories that control these features in the study and which are central to personality (Costa & McCrae, 1992).
1.2 Problem Discussion

“Whether people are working in separate, remote locations or in the same corporate workplace, it’s the people that are the core of the high-performing team”, says Lynn Isabella of the Darden School of Business (Kenneth M. Eades, 2010). She also explains that “what it takes to row together with seven other people is a true manifestation of teamwork in action.” According to her, winning crews share some common characteristics. First, every rower on the boat must have a high level of mastery of technique, rowing strongly and well and at a level commensurate with other team members. Second, each rower must learn to row with (not against) his or her fellow rowers. As a member of the crew, each rower must learn how to follow and lead simultaneously. The athlete trying to stand out will only slow the boat down; individual star status does not make a good crew. Put in the context of business, Isabella says, “think of teamwork as a process of partnering with a distinct group of individuals to accomplish an objective meaningful to all.”

Working in teams is not new to business or a secret; it is a fact that all companies small or large have to do it. What is different and new are the conditions today that make teamwork a competitive business necessity. Virtual teams are on the increase, a trend that will only expand in the future (Weisband, 2008). Most of the companies that operate in the so called “flat world or global world” have a geographically dispersed workforce, mandating that much work is done in the virtual/distance workplace. For some, this is a new way to operate; for others, this is another day in the global paradise.

1.2.1. Managing the virtual team building process

During the early stages, a team may be characterized by an unclear purpose and low levels of agreement among team members. Leaders need to step in and provide guidance and direction. At the first meeting, the leader should establish ground rules (Sadri, 2012) These rules include where the group’s calendar is kept, who will keep it updated, when virtual team meetings will be, the medium to be used to conduct the meeting and how reporting will be done. In addition, it is helpful to discuss procedures for dealing with conflicts (Hunsaker, 2008).
Trust is an important component of many interpersonal relationships and interactions, whether face-to-face or virtual. The high-performing team is characterized by high levels of trust among members. So which personality type or what personality traits are important for an virtual team leader to build and maintain trust in the newly formed team?

1.2.2. Managing communication

The hallmark of a well-developed and well-managed team is well-managed communication. Given the complexities of globally dispersed team members, the team leader must be hyper vigilant about ensuring that his or her messages and directives are clear and understood, and aware of the nuances of the responses and feedback. Munter and Hamilton (Doumont, 2001) in Chapter 5 recommend using a range of communication styles that they categorize as “tell, sell, consult and join.” The tell/sell style focuses on control of the content and can be used in situations wherein the team can learn from the sender. The tell style informs or explains, while the sell style persuades or advocates for team members to change their thinking or behavior. The consult/join style is useful when the sender wants to learn from the audience — he or she does not have sufficient information and may require input from the audience. The result is to invite their involvement and buy-in (Doumont, 2001 pp.151-152). As in all forms of communication, technologically mediated communication carries a tone. Since individuals tend to be less inhibited when communicating technologically, virtual team communication has the potential to become harsh and provoke conflict.

1.2.3. Managing conflict

The goal of the virtual team leader is to facilitate the success of the team in completing its tasks and assignments. The leader empowers the team by establishing a common mission that the team members are committed to and resolve any conflicts that may arise. The leader needs to know whether to handle conflict directly, in the group or in another fashion. This is particularly important when engaging cross-culturally; virtual managers “need to recognize cultural characteristics and understand how to communicate in a way that prevents differences from derailing work projects,” says Zofi (2012). Zofi recommends five cross-cultural-communication strategies that she
calls LEARN (Listen - Effectively Communicate – Avoid Ambiguity – Respect Differences - No Judgment).

1.3 Purpose

The purpose of this master’s thesis is to get a deeper understanding of the effect of different personality traits based on the propensity to trust and technology communication anxiety. The study will test how these two factors, both which have been determined to be important to success in a virtual organization, impact the job satisfaction of an individual working in a virtual team. The different personality types will be tested with the two important factors and further, the two factors will be tested as to how they affect the job satisfaction of the individuals. The model has been previously tested by Jacques et al. (2009) on undergraduate students, and the authors suggested that a logical extension of their study would be a test in real work environments. The following research questions are presented.

- What effect do the personality traits from The Big Five Inventory (BFI) (John & Srivastava, 1999) have on propensity to trust and technology communication anxiety?
- How does the trust and technology communication anxiety effect the individual’s satisfaction working in an virtual team?
- What results come from testing the proposed model of traits (Jacques, 2009) in real life work environments to find a logical extension for the above-mentioned research questions?

1.4 Delimitations

The study aims to gather data from different companies in Sweden that work with virtual teams with colleagues that are located in different geographical locations and have experiences with working in a virtual environment. The focus in this study will be limited to trust and technology communication anxiety, since these are two of the important factors in perceiving usefulness of the teams and finding the recommended personality for a virtual organization.
1.5 Outline of the Study

Table 1 describes the chapters in this thesis work with a short description of what each chapter will present.

Table 1: Outline of the study, chapter by chapter

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Content</th>
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<tbody>
<tr>
<td><strong>Introduction</strong></td>
<td>Represents the basic background information about virtual management, problems of the area, purpose, delimitations of the study.</td>
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<tr>
<td><strong>Theoretical Framework</strong></td>
<td>Describes what can be found in the literature.</td>
</tr>
<tr>
<td><strong>Methodology</strong></td>
<td>Comprizes a variety of definition and clarification of several methods used in this study.</td>
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<tr>
<td><strong>Empirical Investigation</strong></td>
<td>Demonstrates the survey and interview study.</td>
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<tr>
<td><strong>Data Analysis</strong></td>
<td>Represents the analysis of survey findings.</td>
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<tr>
<td><strong>Conclusion</strong></td>
<td>The main points of the study.</td>
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<td><strong>Research Implications</strong></td>
<td>Contribution, further research and limitations are discussed.</td>
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1.6 Time Plan

Below, Table 2 describes the thesis time plan schedule and the different phases followed during the semester.

Table 2: Time plan of the study, month by month.

<table>
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<th>Chapter</th>
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2. Theoretical Framework

The theoretical framework mentioned in this chapter will be used as base for this thesis study.

The theoretical framework used in thesis work is based on personality traits taken from the below described literature. A model is created according to the connection found in various literature associated with virtual workplaces and personality traits.

2.1. Communication

Modern advances in networking and computer communications have led to the generation of teams that do not work face-to-face, but are geographically distributed and interact over communication networks through the internet (Wiesband, 2008). Over time, virtual teams have been representing a new and growing organization form, mostly as organizations move toward team-based work units, increasingly global business environments and greater network technologies (Jarvenpaa & Ives, 1994).

In this chapter, the author will describe how the difference between face-to-face communication and communication in virtual teams transcends boundaries of time and distance. The author will examine the effects of technological intervention on virtual team processes such as trust and technology communication anxiety, which are important factors in a virtual team (Jacques, 2009).

2.1.1 Face-to-face (F2F) communication

In face-to-face interaction, group members work in the same physical location and see and hear one another in “real time”. During face-to-face interactions, team members can see one another’s gestures and nods and observe eye contact, facial expression and other body language. Trust and cooperation among strangers increase over time through face-to-face conversation (Kollock, 1998; Rabbie, 1991) A team member can also feel and hear the other’s tone of speech and dialect; they can be aware of the timing of speech and who responds to whom in a different and more advanced way while communicating face to face.

According to Flaherty, Pearce and Rubin (1998), computer-mediated communication (CMC) is a functional alternative to face-to-face communication. Their results suggest
that internally-oriented people probably have more fun interacting with others in face-
to-face and computer mediated interactions than externally-oriented people do (Flahery et al., 1998, p. 262). However, our results suggest, that externals (people who feel they are controlled by others) choose a communication channel based on their particular communication needs. These results point out that different individuals reflect differently on which method of communication they choose and what the outcome means for them. Different personality types have different outcomes in how they see face-to-face communication and virtual communication through the internet.

2.1.2. Communication in virtual teams

The definition of virtual team refers to a team or group whose members are working remotely from a distance and who are geographically dispersed across time, space or technology. Cairncross (2001) has coined the phrase “the death of distance,” suggesting that distance may no longer be a limiting factor in our ability to communicate and is quickly becoming irrelevant to the way people interact.

However, many researchers point out issues with the view that the technology interaction is unbroken or transparent. For example, Olson and Olson (2000) argued that “distance matters” and group members who are remotely located or distributed from one another are likely to face obstacles in coordinating group efforts. According to Rice and Shook (1990), the more experience people have with the internet, the richer they view the channel. In today’s society it has become routine to communicate by the internet in daily life and most companies communicate virtually through various software. Many employees find the internet fun to use and a convenient way to handle daily research and communication. The question is: how do employees in these companies feel about working more and more remotely—going away from traditional face-to-face communication?
2.1. Personality Traits

Psychology literature is used to predict a variety of personality traits and outcomes. To capture different personality traits, researchers sometimes use the “The Big Five,” based on the “Five Factor Theory” (De Raad, 2000). Table 3 lists the factors that make up each of these five broad domains (Matthews, 2003).

Table 3: Trait facets associated with the “Big Five”

<table>
<thead>
<tr>
<th>Neuroticism vs. Emotional stability:</th>
<th>Anxiety (Tense), Angry hostility (Irritable), Depression (Not contented), Self-consciousness (Shy), Impulsiveness (Moody), Vulnerability (Not self-confident)</th>
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</thead>
<tbody>
<tr>
<td>Extraversion vs. Introversion:</td>
<td>Warmth (Outgoing), Gregariousness (Sociable), Assertiveness (Forceful), Activity (Energetic), Excitement seeking (Adventurous), Positive emotions (Enthusiastic)</td>
</tr>
<tr>
<td>Openness vs. Closeness to Experience:</td>
<td>Fantasy (Imaginative) Aesthetics (Artistic), Feelings (Excitable), Actions (Wide interests), Ideas (Curious), Values (Unconventional)</td>
</tr>
<tr>
<td>Agreeableness vs. Antagonism:</td>
<td>Trust (Forgiving), Straightforwardness (Not demanding), Altruism (welcoming), Compliance (Not stubborn), Modesty (Not show-off), Tender-mindedness (Sympathetic)</td>
</tr>
<tr>
<td>Conscientiousness vs. Lack of Direction</td>
<td>Competence (Efficient), Order (Organized), Dutifulness (Not careless), Achievement striving (Thorough), Self-discipline (NotLazy), Deliberation (Not impulsive)</td>
</tr>
</tbody>
</table>

Literature, The Big Five Inventory (BFI) (John & Srivastava, 1999) describes the five personality traits: extraversion, agreeableness, conscientiousness, neuroticism, and openness. More detailed description follows in the next chapter.

2.1.1. Extraversion

Extraversion is the degree to which an individual is talkative, full of energy, and emotionally expressive. Extraverts tend to have many friends and enter into relationships freely.
2.1.2. Agreeableness

The degree to which an individual is helpful and unselfish with others, has a forgiving nature, and is generally trusting. The individual tends to get along well with a variety of others and tends to trust others more quickly.

2.1.3. Conscientiousness

Conscientiousness is the degree to which an individual does a thorough job, is reliable, and perseveres until a job is finished. The conscientious individual hesitates to let others down and works in an orderly fashion to accomplish tasks.

2.1.4. Neuroticism

Neuroticism is the degree to which an individual is tense, worries more than others, and is moody. The neurotic individual is concerned about the details of work and often gets bogged down by them.

2.1.5. Openness

Openness is the degree to which an individual is original, curious about many things, and inventive. The open individual is likely to jump right in to trying new things and finds ways to make things work where others would give up more easily.

2.2. Model of Traits

The theoretical model developed by Jacques (2009) has been slightly modified to be used in this study. The model was developed by Jarvenpaa and Shaw (1998) was used on undergraduate managers (students) to test the “intention to use virtual reality teams.” In this study, the author will test the model on people that are already working in a virtual team, therefore, changing the outcome from intention to use to job satisfaction.

The model suggests that the stable personality traits of extraversion, agreeableness, conscientiousness, neuroticism, and openness will predict situation-specific traits of technology communication anxiety and propensity to trust others in virtual really teams.
The aim of using this model is to predict both the recommended personality and the most efficient individual to fit into a virtual team environment.

Figure 1: Proposed Model of Traits and Remote Virtual Team

Figure 1 identifies the constructs used in this study giving the construct names, their definitions, and conceptual sources for each of the variables listed (Jacques, 2009). The BFI traits are connected to propensity to trust and technology communication anxiety. Further the propensity to trust and technology communication are connected to job satisfaction and perceived virtual team usefulness. Note that there is no direct connection between job satisfaction and the personality trait. What follows is a theoretical grounding of the hypotheses suggested by the complete model and an account of the methods used to test the hypotheses. This is the actual model that this study will be based on.
2.2.1. Propensity to trust

Trust is certainly an important part of virtual team success. Jarvenpaa and Shaw (1998) point out, “Only trust can prevent geographical and organizational distances of team members from turning into unmanageable psychological distances” (p. 47). Research results support that trust is higher among people who share the same geography, both in social context (Kraut et al., 1990; Newcomb, 1961) and in the workplace (Kraut et al., 1990). Since a virtual team is not able to avoid the geographical distance between the members, the trust of each member has a big influence on the team members’ ability to operate and work efficiently together. Bradley and Vozikis (2004) have summarized the key points found in their empirical literature, shown in Table 4. These are important points that have great influence on propensity to trust in virtual teams and are key factors for a successful remote virtual team.

Table 4: Precursors of virtual team trust based on empirical research (Bradley, 2004)

| • Face-to-face meetings and rich communication media are important for trust in virtual teams. |
| • Communication training for all virtual team members may improve team trust. |
| • Initial organizational direction for virtual teams is essential for the early development of trust. |
| • All team members must be competent and reliable for trust to continue to develop. |
| • Selection of team members who have a high “propensity to trust” may improve the overall team trust environment. |
| • Individual team members perceive that a system of structural assurances is important for preventing theretofore unknown virtual members from taking advantage of them. |
| • Team members with recent prior virtual team experience are likely to positively influence high trust levels. |

Bradley and Vozikis (2004, p.100) explain that without trust, or with low levels of trust, virtual workers may engage in dysfunctional behavior designed to avoid interaction with other team members, such as low commitment to a project, lack of information sharing, and unilateral alterations of task structure and sequence. This definition has
important considerations for virtual teams, where lack of information exchange can make it difficult for a team to work together, if not impossible. Developing trust and minimizing the need for supervision for each employee are important, since it is very difficult to supervise and control remote employees (Handy, 1995). Trusting employees often goes against the traditional management methods, which consider control as an efficient way of operating and encouraging employee efficiency (Handy, 1995).

Jarvenpaa and Shaw (1998) examined the personal trust attitudes of virtual team members from 75 virtual teams consisting of four to six members each, with many of the members living in different countries. Jarvenpaa and Shaw (1998) found support for their hypotheses that team building exercises predict perceptions of ability (domain competence), integrity (dependability, reliability), and benevolence (care and concern for others), which in turn predict trust in global virtual teams.

Mayer, Davis and Schoorman (1995, p. 712) define trust as the “willingness to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.” The above-mentioned argument has importance since the team members working together in different geographical locations need to keep in contact, since monitoring each other is very difficult. Individuals with a lack of trust who have a habit of controlling others will have difficulty working in a virtual team. To this end, trust is a key to building high performance and good quality in the virtual team; a high level of trust will lead to a successful virtual team. For example, Galvin et al. (2002) argue that propensity to trust might be a factor in initial hiring decisions, and it should be a factor to be considered when assigning employees to virtual teams. Couch and Jones (1997) and Gurtman (1992) argue that trust is essential to the development and maintenance of team member relationships and is linked to the quality of those relationships.

There have been few studies linking elements of “the Big Five Inventory” and trust. The conscientious individual has the tendency to not let others down and seeks to be reliable to others. This individual finds it more difficult to trust in others in a team environment for fear that other people’s unreliable behavior will reflect on him/her (Jacques, 2009). Neuroticism is characterized by emotional instability, pessimism and low self-esteem. Neurotic people feel that they have no control. This perceived low
control has a negative influence on trust (Walczuch, 2001). People high in neuroticism often perceive that they have an unfavorable position in transaction processes (Angenent, 1998; Olson and Suls, 1998). Dohmen et al. (2008) argue that individuals who are more conscientious or more neurotic, trust less, as might be expected. On the other hand, individuals who are more agreeable or more open to experiences tend to trust more. Therefore:

**Hypothesis 1A: Conscientiousness is negatively correlated with propensity to trust.**

Two other studies link elements of “the Big Five Inventory” and trust. In one such study, Sutherland and Tan (2004) construct a theoretical framework linking extraversion and openness with higher propensity to trust, while higher levels of conscientiousness are related to lower propensity to trust. Another study by Dohmen et al. (2008) found that an individual who is more agreeable or open is more likely to trust more, while extraversion has no significant effect on trust. Extraverted personalities are said to be socially outgoing and are generally more careless and quick to change (Tan, 2004). From these arguments we predict that individual that are extraverted have a positive relation to propensity to trust. Therefore:

**Hypothesis 1B: Extraversion is positively correlated with propensity to trust.**

Agreeable individuals are said to hold an optimistic view by nature and generally believe people to be honest, decent and trustworthy (Tan, 2004). This personality trait results in an individual who, at the outset of a relationship, engages in trusting behaviors earlier than someone with a lower need to be agreeable (Jacques, 2009). Jacques et al. (2009) argue that agreeable individual may even trust too soon in a relationship, resulting in good outcomes when the trusted party is worthy of trust and negative outcomes when the trusted party is not. Indeed, Matzler, Mooradian and Renzl (2006) found that individuals high in agreeableness more readily share knowledge, thus resulting in higher levels of interpersonal trust. Therefore:

**Hypothesis 1C: Agreeableness is positively correlated with propensity to trust.**
2.2.2. Technology communication anxiety

Information technology (IT) has developed to be a key driver of remote work, allowing businesses to establish virtual arrangements that assist communication and permit greater employee flexibility without sacrificing managerial control (Freedman, 1993; Handy, 1995; Illingworth, 1994; Lucas & Baroudi, 1994; Mowshowitz, 1994). The ability to use information technology effectively (i.e., having lower levels of computer anxiety) is important in a remote work setting (Staples, 1998). The study proves that information technology plays a key role in how efficient an individual will be in a virtual organization.

There are many ways to use technology to communicate effectively. Two important guidelines can be used to communicate wisely with technology: match the technology with the message, and match the frequency with the type and phase of the task (Jonsen, 2012). Communicating frequently may be seen as important in virtual team (e.g. Webster & Wong, 2008), in others cases, communicating too frequently can be unproductive and results in members becoming frustrated (Jonsen, 2012). Johnson et al. (2009) raised the research question of whether there is a tipping point at which computer-mediated technology has a negative effect on virtual teams. Selecting the right technology for different tasks at hand can be crucial to the success of a team (See Figure 2) (Jonsen, 2012). To this end, the figure shows the range of importance of using different technology, and may result in companies changing technology to achieve the most efficient way to communicate.

Figure 2: Matching technology to process needs
Anxiety associated with using and learning to use technology has been explored in the literature (Lewis, Daley & Shea, 2005; Marcoulides, 1988, 1991). Beckers, Schmidt and Wicherts (2007) found that when using pencil/paper and computer collection methods, computer anxiety was more strongly related to trait anxiety than to state anxiety. However, they also found that in the computer collection, computer anxiety and state anxiety were related “suggesting that state anxiety in situations involving a computer is caused by pre-existing computer anxiety” (Beckers et al., 2007). Jacques (2009, p.147) mentions individuals working in virtual reality teams often find themselves using new technology for the first time and existing technology in new ways. Individuals with a general fear of using technology find it difficult to perform well in virtual teams, where technology is the primary communication instrument through which tasks are accomplished with other team members. In a study of personality and Information Technology (IT), Perrewe and Thatcher (2002) found that computer anxiety was negatively related to computer self-efficacy. This suggests that confidence in using computers is a function of an individual’s apprehension and ultimately leads to avoidance of computer usage. Since much of the communication in virtual teams is conducted over computers through the internet, investigating the roots of computer and technology anxiety will provide better insight into the causes of this phenomenon.

The highly neurotic individual worries about future events and responsibilities. This individual is also concerned about the details of how to accomplish tasks and the obstacles that are ahead. The thought of using new technology or familiar technology in new ways makes the neurotic individual avoid such situations, because there is uncertainty in future outcomes. This individual is more likely to experience anxiety with the concept of communication through unfamiliar media, and, without intensive training, will immediately reject the use of virtual teams as the means to accomplish work-related tasks (see Jacques, 2009). Therefore:

**Hypothesis 2a: Neuroticism is positively correlated with technology communication anxiety.**

The nature of an open individual is to be curious and try new things. This individual is naturally curious about communicating in remote virtual teams and would not be apprehensive of trying new ways of working with others. Because an individual with a
high need for openness is always looking for new ways to accomplish tasks, communicating over technology with others would be a welcome experience. Therefore:

*Hypothesis 2b: Openness is negatively correlated with technology communication anxiety.*

### 2.2.3. Remote Virtual team constructs

Davis et al. (1989) argue that computer systems cannot improve organizational performance if they are not used. They also researched a construct that measures the degree “to which an application contributes to the enhancement of the user’s performance.” This definition, which describes the perceived usefulness of an application, is a part of the Technology Acceptance Model (TAM) (Davis, Bagozzi & Warshaw, 1989). TAM also describes behavior intention, which is the strength of an individual’s intention to use the application under study and is derived from the more general theory of reasoned action (Ajzen & Fishbein, 1975, 1980). One of the advantages of these constructs is the capability to capture perceptions about a specific technology rather than take perceptions of the ease of use and intention to use technology in general.

The Technology Acceptance Model (TAM) (Davis, 1989; Davis & Venkatesh, 2000) suggests that perceived usefulness of technology is an important construct in understanding *why* individuals adopt technologies rather than *how*. Taken that trust is an important factor in successful performance of a remote virtual team, trust will be perceived as a necessary component to the usefulness of virtual teams as a means to accomplish tasks successfully. Therefore:

*Hypothesis 3: Propensity to trust is positively correlated with perceived virtual team usefulness.*

It is safe to assume that anxiety about any element of an unfamiliar technology would result in a reduced desire to use the technology. Individuals who feel anxiety when they use technology will be less likely to join a team when they are informed that using technology is a major component of communicating within the team. Technology changes quickly, making competency in today’s technology obsolete in the foreseeable future. This also reduces the likelihood that a technology averse individual will choose
to work in a virtual team. Hence,

_Hypothesis 4: Technology communication anxiety is negatively correlated with job satisfaction in a remote virtual team._

2.3. Job Satisfaction in a Virtual Organization

Job satisfaction has been defined as "a pleasurable or positive emotional state resulting from the appraisal of one's job or job experiences" (Locke, 1976, p. 1297). Numerous studies have linked job satisfaction to a number of critical outcomes such as performance, propensity to leave, and organizational commitment (see e.g. Levy & Williams, 1998). Job satisfaction in a virtual team has a big influence on an individual and the performance of the team because the distance between the individual and the team can make it even harder to feel satisfaction. Participants in a focus group researched by Staples (1998) suggested that perceptions of job satisfaction in a virtual environment depend on management and on the remote individuals’ competence in working remotely. Staples’ results (1998) suggest that high level of employee remote work “self-efficacy” will lead to higher levels of remote job satisfaction. In addition, the Technology Acceptance Model posits that perceived usefulness of technology predicts an individual’s intention to use that technology. Combining these above-mentioned factors, the author argues that the individuals who perceive remote virtual teams as useful will be more satisfied in a job in a remote virtual team. Therefore:

_Hypothesis 5: Perceived remote virtual team usefulness is positively correlated with job satisfaction in remote virtual teams._
3. Methodology

This chapter explains the research approach, methods and strategies. The author demonstrates how this study was conducted.

3.1 Research Approach

There are two main types of research approaches and gathering of data: qualitative and quantitative. A mixture of these two types is commonly used, because both are useful in different ways. The quantitative approach has a greater focus on hypothesis and theory testing through statistical analysis, while in qualitative research, there is a search for meaning and gaining a wider understanding by studying the totality of a phenomenon (Johnson and Christensen, 2012).

The qualitative research approach allows for further elaboration on topics that arise in the study and exploring them in depth. Qualitative researchers view human behavior as something that is continuously changing, and therefore, they are usually not interested in generalizing beyond the particular humans studied (Johnson and Christensen, 2012). In practice, the interconnection between different features of quantitative and qualitative study is not always straightforward and both types of research approaches have strengths and weaknesses (Bryman & Bell, 2011). Bryman and Bell recommend combining them in order to overcome the limitations of either approach. Moreover, Webb et al. (1996) suggest that using more than one method for measuring a concept can enhance the confidence in the findings over using a single research strategy. In the mixed methods approach, the researcher collects both quantitative and qualitative data to gain a more complete understanding of a research problem (Cresswell, 2014).

In this study, the author tested an existing theoretical model developed by Jacques (2009), which examined a work environment using virtual teams, which means this study uses a deductive approach based on Jacques’ model. A deductive approach means the research takes as a basis of what is known about a particular domain, in this case remote virtual teams, and uses theoretical considerations in the domain to deduct the hypotheses (Bryman & Bell, 2011).

In the first stage of the study, a quantitative study was performed to identify personality traits that have effects on two things—individuals’ ability to perceive trust and
technology communication anxiety—both of which could affect job satisfaction in remote virtual teams. In the second stage, a qualitative study was applied to explore the way employees make sense of these concepts in remote virtual teams and get more detailed views from interviewees. Hammersley (1996) refers to this process as triangulation, which means the qualitative research findings are used to corroborate the quantitative research findings. Triangulation is defined by Thurmond (2001) as the combination of two or more data sources, methodological approaches, theoretical perspectives or analytical methods within the same study. Using triangulation also improves the confidence of the findings, because the limitation of one approach can be overcome by using a second approach (Bryman & Bell, 2011).

3.2 Research Design

Research design provides the basic directions that are used to carry out the research project (Hair et al., 2015). There are three types of research design: exploratory, descriptive and explanatory research design (Saunders et al., 2016). Descriptive research is used to obtain data that explains the characteristics of the topic (Hair et al., 2015) and it seeks to quantify responses on one or more variables (Onwuegbuzie & Leech, 2006). According to Swatzell and Jennings (2007), descriptive research designs can be used if a researcher aims to find out more information about topic of interest in research to generate a hypothesis and it also enables researchers to identify variables and hypothetical situations that can be investigated through other research methods. Based on this, descriptive research was chosen in this study to develop different assumptions (hypotheses) and consequently test them to assess the differences in a large number of respondents. The purpose of this step was to validate the employees’ differences in trust and communication behavior and generalize the results. The effect of personality type on trust and technology communication in a remote environment was drawn and explained, based on the quantitative study. Specifically, the cause-effect relationship between different personality types, trust and technology communication anxiety was investigated.
3.3 Data Sources

When collecting data, one needs to differentiate between primary and secondary data. Primary data is new data that the researcher collects by various methods. Secondary data is data that is gathered from other sources that has already been documented and compiled. Examples of secondary data could be other researchers’ findings or statistical databases (Krishnaswamy & Satyaprasad, 2010). Collecting primary data can be done using several techniques, such as interviews, surveys, questionnaires, experiments, observations, focus groups, and so on.

In this study, primary data was collected for the specific research problem through conducting interviews and gathering surveys in Sweden. According to Hox and Boeije (2005), when researchers collect primary data, new data are added to the current store of knowledge, therefore, it can be interpreted that data gathered from employees in work environments using remote virtual team would be added to the existing store of knowledge of remote virtual teams.

3.4 Data Collection Instrument

3.4.1 Questionnaire design

The Likert scales attempts to measure attitudes or opinions and it enables the researcher to assess the strength of the agreement or disagreement about a statement (Hair et al., 2015). The Likert scale was used in this study, because the purpose was to specify the degree of respondents’ agreement or disagreement with each of the items. These kinds of scales typically have five response categories (Malhotra, 2010); therefore, five response categories were used in this study as well. In order to measure the dependent variable, personality traits, forty-four items were chosen from the Big Five Inventory (John & Srivastava, 1999), used to measure extraversion (8 items), agreeableness (9 items), conscientiousness (9 items), neuroticism (8 items) and openness (10 items).

Additionally, most of the following items were taken from the model that was tested on undergraduate managers by Jacque et al. (2009). Propensity to trust (Jarvenpaa and Shaw, 1998) was measured with seven items and the model also included an additional
four items that reflect general trust in others (Mayer et al., 1996). Technology communication anxiety was measured with nine items adapted from Marcoulides’ (1989) Computer Anxiety Scale. These items present anxiety in learning, using, communicating and working with people through new technology. Perceived usefulness (4 items) and job satisfaction (4 items) were measured with a total of eight items from the technology acceptance model (Davis, 1989; Venkatesh & Davis, 2000) (See Table 5: Operationalization).
<table>
<thead>
<tr>
<th>Theory</th>
<th>Component</th>
<th>Conceptual Definitions</th>
<th>Operational Definitions</th>
<th>Questions</th>
<th>Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personality Traits</td>
<td>Extraversion</td>
<td>The degree to which an individual is talkative, full of energy, and emotionally expressive.</td>
<td>It refers to what extent extraversion affects propensity to trust.</td>
<td>1, 6, 11, 16, 21,</td>
<td>26, 31, 36</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>Extraversion</td>
<td>The degree to which an individual is helpful and unselfish with others, has a forgiving nature, and is generally trusting.</td>
<td>It refers to what extent agreeableness affects propensity to trust.</td>
<td>2, 7, 12, 17, 22,</td>
<td>27, 32, 37, 42</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>Extraversion</td>
<td>The degree to which an individual does a thorough job, is reliable, and perseveres until a job is finished.</td>
<td>It refers to degree to what extent conscientiousness affects propensity to trust.</td>
<td>3, 8, 13, 18, 23,</td>
<td>28, 33, 38, 43</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>Extraversion</td>
<td>The degree to which an individual is tense, worries more than others, and is moody.</td>
<td>It refers to what extent neuroticism affects technology communication anxiety.</td>
<td>4, 9, 14, 19, 24,</td>
<td>29, 34, 39</td>
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<tr>
<td>Openness</td>
<td>Extraversion</td>
<td>The degree to which an individual is original, curious about many things, and inventive.</td>
<td>It refers to what extent openness affects technology communication anxiety.</td>
<td>5, 10, 15, 20, 25,</td>
<td>30, 35, 40, 41, 44</td>
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<tr>
<td>Propensity to Trust</td>
<td>Personality</td>
<td>Willingness to be vulnerable to the actions of another party based on the expectation that the other will perform a particular action important to the trustor, irrespective of the ability to monitor or control that other party.</td>
<td>It refers to what extent propensity to trust affects perceived remote virtual team usefulness.</td>
<td>45, 46, 47, 48, 49, 50, 51</td>
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<tr>
<td>Technology Communication</td>
<td>Anxiety</td>
<td>Anxiety associated with communicating with others over existing and new technology.</td>
<td>It refers to what extent technology communication anxiety affects job satisfaction in remote virtual teams.</td>
<td>56, 57, 58, 59, 60, 61, 62, 63, 64</td>
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**John & Srivastava (1999)**

**Jarvenpaa and Shaw (1998)**

**Marcoulides (1989)**

**Davis (1989)**

**Levy & Williams, (1998)**
3.4.2 Interview guide

The interview questions were based on theoretical framework and the type of interview was a semi-structured interview, which means the author had prepared questions in advance, however there was room for improvisation (Myers & Newman, 2007). The interview guide included different types of open questions that could help the researcher to explore the interviewees’ way of thinking regarding the concepts. The interview guide can be found in Appendix B.

3.4.3 Pretesting

Two senior lecturers in the Business Administration department and four senior managers that are working in remote virtual teams evaluated the questionnaire and suggested adjustments, which enabled the author to increase the face validity of the questionnaire. Face validity can be established by asking other people whether measures seem to reflect the concerned concepts (Bryman & Bell, 2011). The senior lecturers also pretested the interview guide and gave recommendations that were taken into consideration by the author.

3.5 Sampling

Jacques et al. (2009) examined the relationship between personality traits and perceptions of usefulness and the intention to use a remote virtual team. This study used students as sampling. The same authors called for further research that would extend their model to real work environments. Therefore, in this study, the sample consisted of employees that are in work environments using remote virtual teams. Moreover, the population was narrowed down to employees that had at least one year of working experience in a remote virtual team and at least three colleagues in different geographic locations working on the same virtual team. The delimitation was made in order to make sure that the sample participants have sufficient knowledge and experience when it comes to remote virtual teams.

The current population of employees working in remote virtual teams is unknown; therefore the author used non-probability sampling. First, the author used his own personal network in order to make the initial contact with the target group relevant to
this research. Thereafter, the author asked these respondents to identify other people that belonged to the target population, which is known as snowball sampling (Malhotra, 2010). Moreover, the author contacted different companies in Sweden in order to distribute the questionnaire. The characteristic of the target group was explained to the contact person in different companies. The most readily available employees that fit to the target group completed the questionnaire. This technique can be described as convenience sampling (Hair et al., 2011). The combination of snowball sampling and convenience sampling was used in this study to reach the purpose of the study. According to Hair et al. (2011), there is no statistical method for measuring the sampling error if the researcher uses non-probability sampling, which means it is not possible for the researcher to generalize the findings with any measured degree of confidence. Therefore, it can be assumed that using non-probability sampling in this study caused a limitation of this study, which will be discussed in the last chapter.

The online version of the questionnaire was distributed by email and social media. The questionnaire was created using Google Form on 15 March 2017 and participants could access it until the middle of April. It took approximately 10-15 minutes for respondents to answer the questionnaire.

In total, 54 employees working in Sweden in global and local companies that operate in a virtual team environment participated in the study. The low response rate is one of the limitations of the study, which will be discussed in the last chapter.

3.6. Analyzing the Data

In order to analyze the quantitative data, first frequency analysis was conducted in order to demonstrate the number of the responses for the various values of the variables (Hair et al., 2015). Descriptive analysis was also carried out to find the mean and standard deviation of the variables. For reliability, Cronbach’s alpha was calculated and it was considered that a value of less than 0.6 indicates unsatisfactory internal consistency reliability as stated by Malhotra and Birks (2003). In order to measure construct validity, a correlation analysis was carried out (Poorkaveh et al., 2012). According to Churchill (1979), scales that correlate highly could measure the same thing rather than a different construct. In other words, if a variable correlates too highly with other
variables \((r>0.8\) or \(r<0.8\)), it would be impossible to define the unique contribution of the variable (Field, 2009). According to the same author, the variable’s correlation coefficient should not be too low either, because it could raise the possibility that the variable does not measure the same construct as the other variables \((-0.3 < r < 0.3)\).

A multiple regression analysis was carried out to measure the relationship between variables. Regression analysis is a technique for measuring the linear relationship between two or more variables (Hair et al., 2015). According to the same authors, the acceptable level of statistical significance is 0.05, however some business situations accept a lower probability level \((p<0.10)\). Topliss & Costello (1972) also suggest that the \(p<0.10\) is the minimum level of significance that can be accepted. The level of significance can be defined as the level of risk that a researcher is willing to take that there is a relationship between two variables in the population from which the sample was taken, when in fact no such relationship exists (Bryman & Bell, 2011). In this study, the author rejected a hypothesis if the significance level was above 0.10. In other words, the hypotheses were accepted if statistically significant at the \(p<0.1\) level, the \(p<0.05\) level and the \(p<0.01\) level. A 95% confidence level was used in this study as suggested by Hair et al., (2015).

The first step in analyzing the qualitative data was to transcribe the interviews by sorting them by the concepts, which is referred to as the process of data reduction (Ghauri & Grønhaug, 2010). The second step was data display; this process helped the author to organize the data in a way that allow him to find connections and improve clarifications to connect findings and existing theories (Hair et al., 2011). The findings of the qualitative study were used to shed light on the findings of the quantitative study as well.

3.7 Quality Criteria

3.7.1 Validity

According to Malhotra and Birks (2003), validity is the extent to which a construct shows the characteristics that exists in the phenomenon that is under investigation. In other words, it has to do whether constructs measure what it is supposed to measure.
(Hair et al., 2015). Content validity (face validity), construct validity and criterion validity were all taken into consideration in this study as Hair et al. (2015) suggest.

Face validity can be assured by contacting a small sample of typical respondents or experts (Bryman & Bell, 2011; Hair et al., 2015). As previously mentioned, two senior lecturers and four senior managers working in remote virtual teams evaluated the questionnaire. To evaluate construct validity, most studies use correlational analysis (Poorkaveh et al., 2012). Therefore, the author conducted correlation analysis to assess the construct validity. Criterion validity is related to whether a construct performs as expected to other variables (Malhotra & Birks, 2003). The author has used previously tested items from previous studies in order to ensure criterion validity.

According to Cresswell (2014), using triangulation could help the researcher to provide validity to findings of qualitative study. In this study, the results of the interviews were used to shed light on the concepts and the findings of interviews were cross-checked to findings of the quantitative study.

3.7.2 Reliability

Reliability is related to the consistency of measure of a concept (Bryman & Bell, 2011). In order to ensure internal consistency reliability, Cronbach’s Alpha is measured as suggested by Hair et al. (2015). Moreover, according to Saunders et al. (2012), it could be efficient to adopt questions from other studies when it comes to reliability of the study. Qualitative reliability is related to whether the researcher’s approach is consistent across different researchers and different projects (Cresswell, 2014). In order to ensure reliability, the author derived the interview questions from the theoretical framework and created the interview questions based on operatlization of the concept.
4. Results

4.1 Demographic Statistics

In total, 54 questionnaire were collected. For gender distribution, 87.0% of the participants were male and 13% of the participants were female. The unequal gender distribution is certainly one of the limitations of the study. The detailed demographic information can be seen in Table 6.

Table 6: Demographic Statistic

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>47</td>
<td>13.0</td>
</tr>
<tr>
<td>Female</td>
<td>7</td>
<td>87.0</td>
</tr>
<tr>
<td>18-25</td>
<td>6</td>
<td>11.1</td>
</tr>
<tr>
<td>26-34</td>
<td>18</td>
<td>33.3</td>
</tr>
<tr>
<td>35-44</td>
<td>11</td>
<td>20.4</td>
</tr>
<tr>
<td>45-54</td>
<td>12</td>
<td>22.2</td>
</tr>
<tr>
<td>55-65</td>
<td>6</td>
<td>11.1</td>
</tr>
<tr>
<td>65+</td>
<td>1</td>
<td>1.9</td>
</tr>
</tbody>
</table>

As it can be seen in Table 6, the age groups ranges from 18 to over 65. The most popular range is between 26-34 (33.3%), followed by 45-54 (22.2%). The imbalanced age distribution could also increase the likelihood of providing prejudiced results.

4.2 Descriptive Statistics

The mean and standard deviation are presented in Table 7. The table shows us that the average for the personality traits is around 3.0 for the mean and mixed standard deviation. The technology anxiety mean is very low, which indicates that the anxiety is very low. The deviation is low as well, which indicates that the variation among the respondents’ answers is low. Job satisfaction and perceived remote virtual teams usefulness have a mean at 3.0 and slightly higher deviation than other concepts, showing that there is a difference in individual’s satisfaction working in remote virtual teams. According to Hair et al. (2015), if the standard deviation is smaller than 0.1, it
can be assumed that the answers are consistent. If standard deviation is larger than 0.3, it means there is a lot of variability in the opinions (Hair et al., 2015). Therefore, it can be seen that the answers do not vary much, in general.

Table 7: Mean and standard deviation

<table>
<thead>
<tr>
<th></th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>3.560</td>
<td>.77160</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>3.597</td>
<td>.49102</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>3.7819</td>
<td>.54943</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>2.3750</td>
<td>.65156</td>
</tr>
<tr>
<td>Openness</td>
<td>3.6000</td>
<td>.55218</td>
</tr>
<tr>
<td>Propensity to Trust</td>
<td>3.1720</td>
<td>.59414</td>
</tr>
<tr>
<td>Perceived Remote Virtual Team Usefulness</td>
<td>2.9537</td>
<td>.99061</td>
</tr>
<tr>
<td>Technology Communication Anxiety</td>
<td>1.7181</td>
<td>.70330</td>
</tr>
<tr>
<td>Job Satisfaction in remote virtual teams</td>
<td>3.0231</td>
<td>1.05203</td>
</tr>
</tbody>
</table>

4.3 Reliability and Validity

Table 8: Reliability test

<table>
<thead>
<tr>
<th></th>
<th>Cronbach’s Alpha</th>
<th>Number of items (Questions)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Extraversion</td>
<td>0.846</td>
<td>8</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.601</td>
<td>7</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.759</td>
<td>9</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>0.790</td>
<td>8</td>
</tr>
<tr>
<td>Openness</td>
<td>0.697</td>
<td>9</td>
</tr>
<tr>
<td>Propensity to Trust</td>
<td>0.657</td>
<td>7</td>
</tr>
<tr>
<td>Technology Communication Anxiety</td>
<td>0.916</td>
<td>9</td>
</tr>
<tr>
<td>Anxiety</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perceived Usefulness</td>
<td>0.956</td>
<td>4</td>
</tr>
<tr>
<td>Job Satisfaction</td>
<td>0.888</td>
<td>4</td>
</tr>
</tbody>
</table>
According to Malhotra and Birks (2003), a value of less than 0.6 means unsatisfactory internal reliability. Moreover, Sekaran (1992) also states that the minimum acceptable reliability coefficient level is 0.6. As seen in Table 8, the Cronbach’s Alpha values in this study are higher than 0.0, which demonstrates the reliability of the items of this study.

Regarding validity, a correlation analysis was conducted. The correlation table demonstrates that the variables do not correlate too high or too low with other variables (Appendix C). Moreover, multicollinearity was checked by comparing the correlation coefficients for variables, tolerances and variance inflation factors (VIF) values. Multicollinearity exists when the independent variables are highly correlated (r=9 and above) (Pallant, 2010). None of the coefficients are higher than 0.9.

4.4. Regression analysis

As mentioned previously, a multiple regression analysis was carried out to measure the relationship between variables.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.651</td>
<td>2.451</td>
<td>0.018</td>
</tr>
<tr>
<td>Agreeableness</td>
<td>0.512</td>
<td>0.494</td>
<td>3.929 0.000 0.941 1.062</td>
</tr>
<tr>
<td>Conscientiousness</td>
<td>0.039</td>
<td>0.036</td>
<td>0.289 0.774 0.960 1.042</td>
</tr>
<tr>
<td>Extraversion</td>
<td>-0.150</td>
<td>-0.195</td>
<td>-1.572 0.122 0.965 1.036</td>
</tr>
</tbody>
</table>

*Hypothesis IA: Conscientiousness is negatively correlated with propensity to trust.*

According to Hair et al. (2015), to be accepted as statistically significant, a rule of thumb is probability must be smaller than 0.05, however some business situations accept a lower probability level (p<0.10), as well. In Table 9, the information shows which independent variables are significant predictors for propensity to trust. In the significance column, the beta coefficient for conscientiousness is not found to be
significant (p>0.10). Therefore, it is assumed that there is no relationship between conscientiousness and propensity of trust. Consequently, Hypothesis 1A is rejected.

**Hypothesis 1B: Extraversion is positively correlated with propensity to trust.**

As it is shown in Table 9, the relationship between extraversion and propensity to trust does not meet the criteria of significance (p>0.10). In other words, extraversion is not a significant predictor of propensity to trust. Hence, Hypothesis 1B is rejected.

**Hypothesis 1C: Agreeableness is positively correlated with propensity to trust.**

In Table 9, the beta for agreeableness is significant (p=0.00). According to Hair et al. (2015), the standardized coefficients must be taken into consideration if multiple regressions are carried out. The standard coefficient (beta) of agreeableness is 0.494, which indicates a positive relationship between these two variables. This positive number indicates that the dependent variable (propensity to trust) would change 0.494 for every one unit of change in agreeableness. In other words, 0.494 is the estimated increase in propensity to trust associated with agreeableness when extraversion and conscientiousness are constant. Thus, Hypothesis 1C is accepted.

The R square (squared multiple correlation) for this multiple regression is 0.256. This number shows the amount of variation in the dependent variable associated with all independent variables considered together (Hair et al. 2015). This can be interpreted that there could be other independent variables that might contribute to the predictive capability of the regression model. Put differently, there are other factors that affect the propensity of trust that are not present in this study. According to Hair et al. (2015), in general, R square always increases as independent variables are added to the regression model, therefore the adjusted R square can be used because it recalculates the R square based on the number of predictor variables in the model, and this avoids overestimating the impact of adding an independent variable to the model. The adjusted R square is 0.211, which means in this case, approximately 21 percent of the variation in propensity to trust can be explained by these variables.
To assure the multicollinearity assumption was not violated, the correlation analysis, the VIF and the tolerance values are checked. Tolerance is an indicator of how much of the variability of the specified independent is not explained by the other independent variables in the model (Pallant, 2010). VIF values are just the opposite of the tolerance value. If tolerance value is very small (less than 0.10) it indicates the possibility of multicollinearity. In this case, none are less than 0.10, so multicollinearity is not violated. Moreover, according to Pallant (2010), VIF values above 10 would be a concern. In this case, Table 9 demonstrates that all of them are below 10. In conclusion, it can be assumed that this model does not violate the multicollinearity assumption.

Table 10: Regression analysis results - neuroticism and openness correlated with technology communication anxiety

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearly Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>Beta</td>
<td>t</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.412</td>
<td>0.620</td>
<td>0.538</td>
</tr>
<tr>
<td>Neuroticism</td>
<td>0.274</td>
<td>0.254</td>
<td>1.180</td>
</tr>
<tr>
<td>Openness</td>
<td>0.182</td>
<td>0.143</td>
<td>1.060</td>
</tr>
</tbody>
</table>

Hypothesis 2a: Neuroticism is positively correlated with technology communication anxiety.

The tables demonstrate there is a significant positive relationship between neuroticism and technology communication anxiety, but at a lower probability level (p< 0.1). The beta coefficient (0.254) indicates that there is a positive relationship between these two variables, but as mentioned, this relationship is significant at a lower probability level (p<0.1). VIF and tolerance values indicate that the model does not violate the multicollinearity assumption.

The R square is 0.097 and the adjusted R square is 0.061. This means the model explains approximately 6.1 % of the variance in technology communication anxiety. This indicates that there are some other factors that could increase the predictive capability of the regression model. Despite this relatively small value, hypothesis 2a is accepted.

Hypothesis 2b: Openness is negatively correlated with technology communication anxiety.
The beta coefficient of openness is not significant (p>0.1); consequently H2b is rejected.

**Hypothesis 3: Propensity to trust is positively correlated with perceived virtual teams usefulness.**

Table 11: Regression analysis result, propensity to trust and perceived remote virtual teams usefulness.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>Beta</td>
<td>t</td>
</tr>
<tr>
<td>(Constant)</td>
<td>2.259</td>
<td>3.068</td>
<td>0.003</td>
</tr>
<tr>
<td>Propensity to trust</td>
<td>0.216</td>
<td>0.129</td>
<td>0.941</td>
</tr>
</tbody>
</table>

Table 11 demonstrates that the relationship between propensity to trust and perceived virtual team usefulness is not significant (p> 0.5). Hence, Hypothesis 3 is rejected.

**Hypothesis 4: Technology communication anxiety is negatively correlated with job satisfaction in s.**

Table 12: Regression analysis result of technology communication anxiety and perceived remote virtual teams usefulness correlated with job satisfaction

<table>
<thead>
<tr>
<th>Model</th>
<th>Unstandardized Coefficients</th>
<th>Standardized Coefficients</th>
<th>Collinearity Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta</td>
<td>Beta</td>
<td>t</td>
</tr>
<tr>
<td>(Constant)</td>
<td>0.724</td>
<td>2.339</td>
<td>0.023</td>
</tr>
<tr>
<td>Technology Communication Anxiety</td>
<td>-0.192</td>
<td>-0.128</td>
<td>-1.688</td>
</tr>
<tr>
<td>Perceived remote virtual team usefulness</td>
<td>0.890</td>
<td>0.838</td>
<td>11.021</td>
</tr>
</tbody>
</table>

In Table 12, the beta coefficient for Technology communication anxiety is significant, but at a lower probability level. The beta coefficient (-0.128) indicates a negative relationship between technology communication anxiety and job satisfaction. This can be interpreted to mean that if technology communication decreases one unit, job satisfaction would increase 0.128. In other words, if a person has a higher technology communication anxiety while using remote virtual team, it can decrease his/her job satisfaction. Despite the low probability level, Hypothesis 4 is accepted.

**Hypothesis 5: Perceived remote virtual team usefulness is positively correlated with job**
When it comes to perceived usefulness, there is a positive relation between perceived remote virtual team usefulness and job satisfaction. Keeping in mind that the coefficient can range between -1.00 to +1.00 (Hair et al., 2015), the beta coefficient of perceived remote virtual team usefulness (0.838) indicates a strong relationship between these two variables at a high significance level (p=0.00). Therefore, the perceived remote virtual team usefulness is a definite predictor of job satisfaction. Consequently, H5 is accepted.

VIF and tolerance values denote that multicollinearity does not have any impact on this regression model. The R square is 0.706 and the adjusted R square is 0.697, which indicates that approximately 70% of the total variance in job satisfaction in remote virtual team is explained by these two variables. The remaining 30% is not explained by this regression model. Nevertheless, the model demonstrates that perceived usefulness is a stronger predictor than technology communication anxiety regarding job satisfaction in remote virtual teams.

Table 13: Summary of the regressions

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypothesis IA: Conscientious is negatively correlated with propensity to trust.</td>
<td>Rejected</td>
</tr>
<tr>
<td>Hypothesis IB: Extraversion is positively correlated with propensity to trust.</td>
<td>Rejected</td>
</tr>
<tr>
<td>Hypothesis IC: Agreeableness is positively correlated with propensity to trust.</td>
<td>Supported***</td>
</tr>
<tr>
<td>Hypothesis 2a: Neuroticism is positively correlated with technology communication anxiety.</td>
<td>Supported*</td>
</tr>
<tr>
<td>Hypothesis 2b: Openness is negatively correlated with technology communication anxiety.</td>
<td>Rejected</td>
</tr>
<tr>
<td>Hypothesis 3: Propensity to trust is positively correlated with perceived remote virtual teams usefulness.</td>
<td>Rejected</td>
</tr>
<tr>
<td>Hypothesis 4: Technology communication anxiety is negatively correlated with job satisfaction in remote virtual teams.</td>
<td>Supported*</td>
</tr>
<tr>
<td>Hypothesis 5: Perceived remote virtual team usefulness is positively correlated with job satisfaction in remote virtual teams.</td>
<td>Supported***</td>
</tr>
</tbody>
</table>

*p < 0.1; **p < 0.05 ; ***p < 0.01
The summary of the study results are presented in Table 13 and Figure 3, showing the standard regression weights and multiple correlations. The * is significance of $p<0.1$, ** indicates a significance of $p < 0.05$ and *** represents a significance of $p < 0.01$.

Figure 3: Study Results, Standard Regression Weights and Multiple Correlations
5. Empirical Investigation

This chapter reveals the interview findings. It shows the respondents’ opinions on the different factors in their work. The findings from the four interviews are summarized together and grouped into subsections by the different factors from the tested model.

5.1. Job Satisfaction and Usefulness of remote virtual teams

When the interviewers were asked what gives them most satisfaction and gives their work most value in remote virtual teams, both positive and negative responses were provided in the different interviews. Participant A said: *Every day I get the chance to make contact with many more colleagues in different locations and gain cultural experience.* Participant B said: *Everything is much faster to access online, I can more quickly get in contact with different people in the team by communicating online and can get access to information faster. It reminds me of my childhood where we mostly communicated by using different technology.* The above-mentioned participants were positively associated with working in a remote virtual team. In contrast, Participant C said: *When you are not physically in a place, it’s much harder to expedite services and get sufficient priority to your tasks.* This situation was mentioned by all the interviewees to various degrees as a “problem” in remote virtual teams. Team members can sometimes be unavailable or impossible to reach due to reasons that are out of other members’ control. Participant D said: *For me, it’s harder to communicate online and takes more time, I communicate faster and more efficiently when the communication is done face-to-face.* Participants C and D have a more negative impression towards remote virtual teams.

The interviewees were also asked to give an example of their team members’ job satisfaction and how they have seen the usefulness of virtual teams demonstrated by in their team members.

Participant X said: *I can see virtual teams members who have less self-efficacy, have a hard time making decisions, who don’t feel satisfied or do not deliver on the projects.*

Participant X said: *"It is somehow easier to acknowledge smaller successes with instant message (IM) technology. With small encouraging and congratulatory messages, it is*
possible to boost positivity in the team.” The example given above show how technology communication can be used to motivate people from a distance and shorten that gap, boosting the effect on job satisfaction.

Participant X said: “When individual tasks cannot be expedited, that will lead to delays. Communicating with different cultures also increases the risk of miscommunication and misinterpretation of instructions, which leads to re-work and lost resources.” This interviewee said it was important to understand the different cultures in the team to minimize the risk of miscommunication; this will benefit the team because resources are used more efficiently.

5.2. Propensity to Trust in remote virtual teams

The participants were asked how important propensity to trust was in their remote virtual teams, and how this affects the team’s performance. Participant X said: “Making sure that team members are empowered to effect their own work schedule and daily planning [is important]. This has led to the different team members in the team feeling more job satisfaction and performing better”. Participant X said: “[It’s good] when a team member is devoted not to only the tasks provided, but the project as a whole. The team member is empowered to make decisions of his own”. The above two interviews give a strong indication of how important it is to give responsibility and trust to the team members to get the best out of each team member and have a highly efficient team working toward a common goal.

The interviewees were also asked to give an example of their team member’s propensity to trust each other, when they experienced high trust and less trust in the team.

Participant X described incidence of less trust: “When there is lack of commitment from a team member and there are other priorities that clearly matter more to the team member, in that case, that team member was not given trust in the project.” Participant X said: “When each team member has the chance to plan their own project tasks that are in their responsibility, giving responsibility to a team member has given them a higher propensity to trust.”

Participant X said: “Having daily meeting (of 10 minutes) where the team identifies obstacles and agrees when current and next task will be finished. This has lead to a better team atmosphere and, in the long run, created high trust in each other.”
Participant X said: “Building some form of a relation face-to-face increases the trust and work efficiency while a team is separated from each other.” Further, all the interviewees had similar views to the participant who said: “It’s good to meet face to face at least once in a while to be able to build a more efficient team. It’s very hard to improve the team’s efficiency and trust past a certain point. A step to meet face-to-face is needed to be able to reach the next level of team efficiency.”

5.3. Technology Communication Anxiety

The participants were asked how important technology communication anxiety was in their remote virtual teams, and how this has an effect on the teams’ performance. Participant X said: "It’s very important that all team members have great interest in software usage and are very comfortable using different technology to communicate”. Participant X said: “Team members that are more resistant to new technology or find it harder to adopt new communication software are less efficient and their motivation drops.”

Further, Participant X mentioned: “Having members that are very skilled and have strong interest in communicating with different technology has affected the team positively. Those members are able to more easily see the benefits of internet communication and share this with the other members, which has resulted in getting the whole team more efficient and more comfortable to use technology as a way of communicating better remotely.” Further, Participant X mentioned: “It’s almost impossible to get away from communication problems due to insufficient bandwidth, especially in large meetings with many participants”. Another participant also said: “Even though mostly it works very well to communicate through technology, the few times it doesn’t work it feels very annoying and disappointing.”

Further, participants mentioned: “It is crucial to have simple and good technology to lower the anxiety of failure.” One example, given by Participant X was: “Technology that makes everyone see the availability of each team member is very important. Being able to see each member’s viability makes it easier to plan the meeting and minimalize the failure of not being able to contact each other.”
6. Discussion

Even though this study did not find a relationship between propensity to trust and usefulness of remote virtual teams, the previous studies show that there could be a positive relationship between these two variables (Handy, 1995). Therefore, it can be interpreted that the low response rate could be a possible reason the results did not yield the expected results. Personality traits, especially openness and neuroticism are significantly correlated to technology communication anxiety. In contrast, on the other side, propensity to trust correlates negatively to job satisfaction. However, it should be taken into consideration that the previous studies proved the effect of personality traits on job satisfaction, even though the result of this study differed. The low response rate might also have contributed to this separation. On the other side, Jacques et al. (2008) tested this model with undergraduate students and the results revealed a significant relationship between personality traits and technology communication anxiety and propensity to trust, which were also predictors of the intention to use virtual teams. In this study, only employees that work in a virtual teams participated, and the results showed that personality traits did not correlate with anxiety and trust. Moreover, perceived usefulness significantly correlated with job satisfaction. It can be assumed the employees give more importance to usefulness than other factors while working in remote virtual teams.

This result should also be interpreted with the existence of both collectivism and individualism characteristics in Swedish culture (Daun, 1991). Hofstede assigns a relatively high score to individualism in Sweden, thereby indicating Sweden to be an individualistic country. Lindström (2008), however, cautions that viewing Sweden as an individualist country provides a simplified and incomplete picture. In addition, Sweden has the characteristics of independence and self-sufficiency, which can be associated with individualist attributes. Nevertheless, Swedish individualism in Hampden-Turner and Trompennaars’s terms “has very different qualities” (Hampden-Turner and Troompenaars, 1993, p. 235) because the emphasis of Swedish culture is on sameness, equality and conformity, which can be associated with the collectivist side (Triandis, 1995). Taken together with the research done by Staples (1998), the results suggest that high level of employee remote work “self-efficacy” will lead to higher levels of remote job satisfaction. Therefore, it can be assumed that the uniqueness of Swedish culture
may have contributed to the fact that not all of the personality traits had an influence on technology communication anxiety and trust, which are the predictors of job satisfaction.

People who are already part of a remote virtual team are very likely to be already managing communication through technology. They are probably using the technology on a daily basis to communicate with their team in one way or another. The longer one works in a virtual team, the more one will get used to using different methods of communication and adapting to new ways of working. Communicating frequently is seen as important in a virtual team (e.g. Webster & Wong, 2008); in others cases, however, communicating too frequently can be unproductive and result in members becoming frustrated (Jonsen, 2012). To this end, even if a person has a slight anxiety of using technology as a means to communicate, he may get used to it the longer he works with it. Looking at the results, the study shows a very low relation between “neuroticism,” “technology communication anxiety” and “job satisfaction.” This relation shows that even if a person may have worked on a virtual team for long time, if he or she has neurotic personality traits, the anxiety of using technology as a means of communication may not diminish. The result can also be interpreted by using the above-mentioned finding to explain the negative connection between technology communication anxiety and job satisfaction in virtual teams. Neurotic personality traits were shown to have a small effect on job satisfaction and technology communication anxiety. The low result may be because employees who may have anxiety using technology for communication were supported by team members and got inspiration from them, lowering personal anxiety and even overcoming it.

Johnson et al. (2009) raised the research question of whether there is a tipping point at which computer-mediated technology has a negative effect on virtual teams. Selecting the right technology for different tasks at hand can be crucial to the success of a team (Jonsen, 2012). Some of the participants in the interviews indicated the great importance of having the right technology and that remote communication is crucial. Participant X said, “...it is crucial to have simple and good technology to lower the anxiety of failure.” Example given by participant X: ”Technology that makes everyone see the availability of each team member is very important. Been able to see each members availability makes it easier plan the meeting and minimizing the failure of not
being able to contact each other”. With these results, it safe to assume that the study supports the theory of Johnson et al. (2009) in that the type of technology used is important within the team to communicate efficiently.

The study found a relation with a significance of p<0.01 between agreeable personality traits and propensity to trust. This supporting the findings of Matzler, Mooradian and Renzl (2006) in that individuals high in agreeableness more readily share knowledge, thus resulting in higher levels of interpersonal trust.

High deviation has been found in job satisfaction in this study, meaning that the members working in a virtual environment have different levels of satisfaction working in that environment. The study result shows no relation between propensity to trust and perceived remote virtual team usefulness, keeping in mind that these individuals are already are working in that environment and have already build some kind of trust among their team members. For example one participant said: “Having daily meeting (10 minutes) where the team identifies obstacles and agrees when the current and next task will be finished has lead to a better team atmosphere and in the long run has created high trust in each other.” During the different interviews the author noticed that these individuals work frequently to build trust from a distance and that they had already mastered working remotely and may have other challenges that are not related with propensity to trust.

Bradley and Vozikis (2004, p.100) explain that without trust, or with low levels of trust, virtual workers may engage in dysfunctional behavior designed to avoid interaction with other team members, such as low commitment to a project, lack of information sharing, and unilateral alterations of task structure and sequence. During the interviews in this study, it has been found that members with low level of trust will be given lower levels of responsibility, leading to a drop in the commitment of that member to the projects. One participant stated, “[Problems come] when there is lack of commitment from a team member, and there are other priorities that clearly matter more to the team member. In that case, that team member was not given trust in the project.” With that said, the team members that were less committed to the project did not gain any trust from the team. The reason why some team members felt less commitment or chose other priorities was not found. On the other hand, the team members who were more
engaged in the project got more responsibility and had a higher propensity to trust the other individuals on the team.

A high relation between perceiving remote virtual team as useful and job satisfaction has been found in this study and supports the finding by Staples (1996). The results suggest that high level of employee remote work “self-efficacy” will lead to higher levels of remote job satisfaction. Interviewees mentioning “I can see that team member with less self-efficacy, or have hard to make decision don’t feel satisfied and do not deliver in the projects.” With this said, more self-efficacy leads to higher job satisfaction in remote virtual teams. While on the other hand, individuals that are not self-efficant or who need local management and leadership will feel less satisfied, mostly because these people do not feel comfortable making decisions and need close supervision and leadership.

It does not matter how high the propensity to trust is or how efficient the communication technology is in the virtual teams. There is one factor that cannot be ignored—the human touch and the benefits gained by face-to-face communication. The interview study findings were supported by all the interviewers who agreed with the participant who said: “It’s good to meet face to face at least once in a while to be able to build a more efficient team. It’s very hard to improve the team’s efficiency and trust past a certain point. A step to meet face-to-face is needed to be able to reach the next level of team efficiency.” A remote virtual team will never get away from the need to meet face-to-face and the benefits that it gives.
7. Conclusion

The purpose of this study was to get a deeper understanding of the effect of different personality traits on propensity to trust and technology communication anxiety. Jacques et al. (2009) had investigated personality traits as antecedents to perceptions of usefulness and the intention to use a remote virtual team, using students as the sample. In this study, the model is tested for the first time in a work environment as suggested by Jacques et al. (2009). This study uses job satisfaction instead of intention to use because the participants are already working in remote virtual teams. The quantitative study was designed to see the connection between personality traits, perceived usefulness and job satisfaction. The results have enabled the author to provide managerial implications to companies that use remote virtual teams. The results indicate that two personality trait components, agreeableness and neuroticism, significantly correlate respectively to propensity to trust and technology communication anxiety. Among the five personality traits, only these two predicted propensity to trust and technology communication anxiety. The agreeableness personality trait and propensity to trust had a high positive significant relationship. The relation between neurotic personality traits and technology communication correlated positively with each other, but at a low significance level. Furthermore, the low R square numbers indicate that there are other predictors for propensity to trust and technology communication anxiety that were not present in this study. Technology communication anxiety and job satisfaction negatively correlated with each other, but again, their relationship was at a low significance level, which can be interpreted as having other factors that affect this relationship. These study findings show no relation between propensity to trust and job satisfaction in a remote virtual team. On the other hand, the strong positive relationship between perceived usefulness and job satisfaction indicates that the individuals that perceive remote virtual team as useful have a high level of job satisfaction in remote virtual teams.

Jacque et al (2009) found in their study that personality traits are significant predictors of propensity to trust and technology communication anxiety, two indicators of potential success in remote virtual teams; however the same authors suggested that work environment, experience in using virtual teams, and having other relevant work experiences could impact the relationship among the constructs articulated in their
study, which have been used in this study as well. Therefore, it can be assumed that testing the model in a work environment might contribute to results that differ from the results of Jacque et al. (2009).

7.1 Theoretical Implications

This study has answered the call for future research of Jacque et al. (2009) to test the model in work environments. This study tests the model for the first time in work environments. Notably, different results were encountered in comparison to the results of Jacque et al. (2009), which used students as sampling frame. This study indicates a clear and strong connection between the perception of remote virtual team usefulness and job satisfaction. Moreover, a negative correlation between technology communication anxiety and job satisfaction was found as well, but at a low significance level. Only two personality traits (agreeableness and neuroticism) among five were correlated positively with propensity to trust and technology communication anxiety. However, the study also indicates no relationship between propensity to trust and perception of remote virtual team usefulness, which is contradictory to the previous study findings.

7.2 Managerial Implications

Galvin et al. (2002) argue that propensity to trust might be a factor in initial hiring decisions, and it should be a factor to be considered when assigning employees to virtual teams.

“Is experience working remote important or not?” Comparing the study done by Jacque et al. (2009) on undergraduates and this study done with individuals already working in a virtual environment, the results show that the experience of the individuals already working in an environment does have an effect on the results. Experience played a big part in the results found here which supports the findings of Bradley (2004). This implies that it is important to know if the individuals have experience working in a virtual environment when recruiting members for a virtual team. The study shows that the personality trait “agreeableness” is the most recommended trait to look for when it comes to propensity to trust in a virtual environment. It is reasonable that companies do personality test to recruit employees to work in remote virtual team. By including screening questions for different personality types, such as neuroticism, managers can
choose employees with traits that have low technology communication anxiety, which is a predictor of job satisfaction.

The technology (IT software) used in the team is important, both for facilitating in an efficient communication but also to make it easier to fulfil the needs of workers working remotely, also resulting in higher job satisfaction.

7.3 Future Research and Limitations

As all other studies, this study has faced a few limitations. First of all, the low response rate is one of the biggest limitations of this study, and clearly calls for a future study. It could be appropriate to try to increase participation by using different techniques in the future studies. This study has also used non-probability sampling, since the number of employees that are presently working in remote virtual team is unknown. In future studies, the research could try to identify the number of employees that are working in remote virtual teams in Sweden or other countries, which can enable him/her to generalize the findings.

As mentioned previously, the results indicate a low R square for propensity to trust and technology communication anxiety, which indicates that there are some other factors that were not present in this study. Therefore, in future studies, the researchers can include other personality traits that might affect propensity to trust and technology communication anxiety. Moreover, the relationship between propensity to trust and perceived usefulness can be tested again in different contexts to double-check the findings of this study.

This study shows that an individual with agreeableness personality trait may have a high level of trust and may be a recommended candidate for working efficiently in a virtual team. A further research suggestion would be to investigate different personality traits with agreeableness to see if any traits have a bigger effect than others on building trust in a virtual team.
The context of study has been limited to Sweden. It would be interesting to test the model in different countries and add culture as a moderator to see whether culture impacts the relationship between the different constructs.
References


Kraut, R. E., Fish, R. S., Root, R. W., & Chalfonte, B. L. (1990). Informal communication in organizations: Form, function, and technology. In Human reactions to technology: Claremont symposium on applied social psychology (pp. 145-199).


Appendices
Appendix A Survey

Scale:

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<th>Disagree Strongly</th>
<th>Disagree Partly</th>
<th>Neither agree nor disagree</th>
<th>Agree Partly</th>
<th>Agree Strongly</th>
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</table>

I see Myself as Someone Who...

___1. Is talkative
___2. Tends to find fault with others
___3. Does a thorough job
___4. Is depressed, feeling unhappy
___5. Is original, comes up with new ideas
___6. Is reserved, cautious
___7. Is helpful and unselfish with others
___8. Can be somewhat careless
___9. Is relaxed, handles stress well
___10. Is curious about many different things
___11. Is full of energy
___12. Starts debate with others
___13. Is a reliable worker
___14. Can be tense
___15. Is ingenious, a deep thinker
___16. Generates a lot of enthusiasm
___17. Has a forgiving nature
___18. Tends to be disorganized
___19. Worries a lot
___20. Has an active imagination
___21. Tends to be quiet
___22. Is generally trusting

___23. Tends to be lazy
___24. Is emotionally stable, not easily upset
___25. Is inventive (Creative, imaginative, innovative)
___26. Has an assertive personality (Ambitious, pushy)
___27. Can be cold and distant
___28. Perseveres until the task is finished
___29. Can be moody (Temperamental, emotional)
___30. Values artistic, aesthetic experience
___31. Is sometimes shy
___32. Is considerate and kind to almost
___33. Does things efficiently
___34. Remains calm in tense situations
___35. Prefers work that is routine
___36. Is outgoing, sociable
<table>
<thead>
<tr>
<th>Disagree Strongly</th>
<th>Disagree Partly</th>
<th>Neither agree nor disagree</th>
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<td>2</td>
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<td>4</td>
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</tbody>
</table>

___35. Prefers work that is routine

___36. Is outgoing, sociable

___37. Is sometimes rude to others

___38. Makes plans and follows through with them

___39. Gets nervous easily

___40. Likes to reflect, play with ideas

___41. Has few artistic interests

___42. Likes to cooperate with others

___43. Is easily distracted

___44. Is sophisticated in art, music, or Literature

My opinion on below statement is…

___45. One should be very cautious when working with others.

___46. Most colleagues tell the truth about the limits of their knowledge.

___47. The colleagues I work with can be counted on to do what they say they will do.

___48. If possible, it is best to avoid working remote with employees on projects.

___49. Most colleagues are honest in describing their experience and abilities.

___50. Most employees answer personal questions honestly.

___51. Most colleagues are very competent in terms of their work.

While working in a Virtual Team…

___52. I do NOT let other team members have any influence over issues/tasks that are important to a project

___53. I would want to have a good way to oversee the work of the other team members on a project

___54. I would be comfortable giving the other team members a task or problem that was critical to a project, even if I could not monitor them

___55. I would be comfortable giving the other team members complete responsibility for the completion of a project.
Disagree            Neither agree                Agree
Strongly            Partly nor disagree        Partly            Strongly
1                    2                                  3                      4                     5

____56. I experience anxiety when I think about training to learn a new technology
____57. I experience anxiety when I think about being around people who work with technology
____58. I experience anxiety when I think about using new software on a computer
____59. I experience anxiety when I think about learning new computer terms
____60. I experience anxiety when I think about attending workshop or computer class
____61. I experience anxiety when I think about being part of a team that communicates using new technology
____62. I experience anxiety when I think about talking to programmer/IT or technology expert
____63. I experience anxiety when I think about communicating with people over the Internet
____64. I experience anxiety when I think about getting error messages on a computer

My opinion on below statement is…

____65. Working within a virtual/distance remote team improves my performance in my job
____66. Working in a virtual team increases my productivity
____67. Working in virtual team enhances my effectiveness in my job
____68. Overall, I find virtual team useful.

Overall….

____69. I like working in a remote virtual team
____70. Working in a virtual team environment increases my job satisfaction.
____71. I find working in a virtual team to be useful in my job.
____72. If I could choose I would NOT working in a virtual team/organization/company

Gender:  ___ Male  ___ Female
Age:     ___ 18-25  ___ 26-34  ___ 35-44  ___ 45-54  ___ 55-65  ___ 65+

Thank you for your time and participation.
Appendix B Interview Guide

**Job Satisfaction**

What is giving you most satisfaction while working in virtual team? (Positive)
______________________________________________________________________
______________________________________________________________________

When have you experienced unhappy while working remote? Example (Negative)
______________________________________________________________________
______________________________________________________________________

When did you see your colleagues most satisfied in a project? (Positive)
______________________________________________________________________
______________________________________________________________________

When did you see your colleagues unhappy in a project? (Negative)
______________________________________________________________________
______________________________________________________________________

What can you do to increase the job satisfaction?
______________________________________________________________________
______________________________________________________________________

Other comments:
______________________________________________________________________
______________________________________________________________________

**Propensity to trust**

When did you experience high level of trust to you team member?
______________________________________________________________________
______________________________________________________________________

When did you experience that you can’t trust you team members?
______________________________________________________________________
______________________________________________________________________

What can make it easier to trust people in project task in a remote environment?
______________________________________________________________________
______________________________________________________________________
How can you best control team member’s job progress?

________________________________________________________________________

________________________________________________________________________

What makes you comfortable in the person, when giving a colleague a task to finish it?

________________________________________________________________________

________________________________________________________________________

Other comments:

________________________________________________________________________

________________________________________________________________________

**Technology communication anxiety**

Example when you felt anxiety with using technology as a way of communicating, in a project?

________________________________________________________________________

________________________________________________________________________

When has technology make you lose your job satisfaction, or make you emotional in any way?

________________________________________________________________________

________________________________________________________________________

How important is good software when communication to team members?

________________________________________________________________________

________________________________________________________________________

Have you ever seen that your team members have hard time communication through technology?

________________________________________________________________________

________________________________________________________________________

What is most important while working remote for you?

________________________________________________________________________

________________________________________________________________________
What is would or could contribute to increase your effectiveness in a remote organization?

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

Other comments on technology communication anxiety

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

Other comments on propensity to trust

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________

Other comments on Job satisfaction

______________________________________________________________________

______________________________________________________________________

______________________________________________________________________
## Appendix C Correlations Table

<table>
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<th>Extraversion</th>
<th>Propensity to Trust</th>
<th>Conscientiousness</th>
<th>Neuroticism</th>
<th>Openness</th>
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<th>Job satisfaction</th>
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* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).