Virtual Team Management & Organisational Identification
- A Mixed Method Study

Authors: Tim Holmlund
Oscar Lindqvist

Supervisor: Vladimir Vanyushyn
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Tim Holmlund    Oscar Lindqvist
Summary

The rapid development of information technology has enabled the use of virtual teams, which are teams whose members use IT to coordinate their activities from a dispersed setting. The phenomenon of virtual teams raises questions regarding issues related to this type of work, i.e. organisational identification and other problems related to virtual work. We have investigated how to best manage these teams in order for managers to be successful in the virtual environment by studying the advantages and disadvantages as well as success factors. The study has used a mixed methodology, where we have interviewed 8 managers that are active in virtual work and we have also conducted a survey to investigate how members of virtual teams perceives issues of organisational identification and issues related to virtual work.

One of the most important findings of this study is that there was a positive relationship between level of organisational identification and level of virtuality, member involvement, and previous experience. The strongest predictor for organisational identification was although the level of member involvement.

We can conclude that the main advantages of virtual work were cost reduction and the access to competence. The main disadvantage of virtual work was identified as lack of interpersonal relations in the workplace. Other disadvantages were found as unorganised meetings, unprioritised work as well as technological issues.

The most important success factors were found to be Clear roles and Responsibilities, Pre-agreement/time plan, Defined Strategies. These three factors could be summarised as ‘What needs to be done, when and by who’. Moreover, clear and distinct communication within the team in order to avoid misunderstandings, followed by User-friendly technology and to have previous experience of technology used was also identified as important factors in virtual work. Other success factors identified was the use of Face-to-Face meetings.

**Keywords:** Virtual Teams, Organisational Identification, Management, Project Management, Teleworking, Success Factors, IT, Social Identification.
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1. Introduction

In this chapter an introduction to the subject and a problematization of research gaps will be presented. Consequently, will our research questions and the purpose of this study be stated and explained. A discussion of limitations that the authors had to take into account and finally a disposition is also provided in order to give the reader an overview.

1.1 Virtual Workplace

Since the time of industrialisation employers have had central locations from where employees work, but with recent advancements in communication technology new forms of conducting work have emerged (Heikki, 2006, p. 79). The shift from a production-based to a service-based economy with the help of technological development has opened up the possibility for workers with intellectual tasks to work from other locations than a physical workplace (Mukherjee et al., 2012, p. 274). These advancements have resulted in a phenomenon referred to as virtual teams and Martin et al. (2004, p. 808) define virtual teams as “teams whose members use technology to varying degrees in working across locational, temporal, and relational boundaries to accomplish an interdependent task”. Furthermore, the increased global competition for talent has also been a contributing factor to the strong trend of virtual teams (Reed & Knight, 2009, p. 422).

Digitalisation has accelerated the trend that more people work from home and by 2015, 90% of the Swedish labour organisation “Unionen” members had the possibility to work remotely (Nandorf, 2015). In the USA, 30-45% of the organisations use virtual teams, which would suggest that virtual teams are a trend that is here to stay (Biro, 2014). Moreover, (Heikki, 2006, p.79) projected that by 2010 the number of workers that is not bound by a physical workplace would reach 40 million in the US; this projection gives a hint on how the development of both communication tools and the workplace culture has developed during the last 15 years. Moreover, it also suggests that the physical workplace does not possess the same role as it once had, because people can work from any location they perceive most effective. Information technology and increased globalisation have also enabled companies to take advantage of low cost economies by establishing subsidiaries to a greater extent, at lower cost (Casey, 2010, p. 84). Outsourced call centres are one example of how companies can reduce their costs by working virtually (Thite, 2010, p. 7).

Martins et al. (2004, p.805) stated that in 1999, 50% of the companies which employ over 5000 employees use virtual dispersed collaboration teams. A study by Heikki (2006, p. 79) indicates that a flexible workplace can enhance performance and contribute to a higher degree of personal achievements.
1.2 Virtual Working Teams

Communication systems and information technology have created many advantages in the world today; one of the advantages is the use of virtual teams. The ever changing business environment, globalisation, increased competition, and the need of fast response to customers have contributed to the increased use of temporary dislocated teams (Powell et al., 2004, p. 6). The world is becoming more projectified (Bakker, 2010, p. 466), and virtual teams are not an exception from this trend, which suggest that virtual team research overlaps into the area of project management.

Furthermore, engagement in multiple, temporary intellectual tasks has substituted the more physical and less intellectual tasks; and this in combination with enhanced information communication technology has enabled the collaboration to be conducted in a virtual (dispersed) setting (Verburg et al., 2013, pp. 68-69). There are many definitions of virtual teams and one definition is: “A virtual team is a team whose members use internet, intranets, extranets, and other networks to communicate, coordinate, and collaborate with each other on tasks and projects even though they may work in different geographical locations” (Casey, 2010, p. 84). In a review by Martin et al. (2004, p. 808) another definition is stated as “teams whose members use technology to varying degrees in working across locational, temporal, and relational boundaries to accomplish an interdependent task”. The definitions seem to address similar features, the locational, technical and cross-boundary collaboration are the main features that identify a virtual team compared to a regular face-to-face team. The main difference is the level of virtuality in the definitions and in this paper we will use the latter definition since we think of virtual teams as teams that can meet in special occasions; and thereby do not only have technology as only mean of communication.

Verburg et al. (2013, p. 69) suggest two general approaches in the concept of virtuality level, one approach is the technology oriented approach which focuses on quality and frequency of communication compared to the amount of communication that is face-to-face. The other approach Verburg et al. (2013, p. 69) describe is the system oriented approach which views the technology as the only means of a communication tool. In this study we use the technology oriented approach regarding the virtuality in teams, and hence to investigate the perceptions rather than the technical dependence on only information communication technology. This approach is in line with the definition provided by Martin et al. (2004, p. 808) which states that the technology can be used in various degrees and still be considered a virtual team. The level of virtuality and virtual communication can differ between team settings and task and is thereby more suitable for investigation. For example, in globally distributed teams the level of virtuality is often higher due to large distances and lower budgets; and this leads to a higher dependence on suitable communication tools (Verburg et al., 2013, p.69).

Common identified advantages with working in virtual teams is the reduction of travel costs, increased coordination and the time-saving of bringing a physical team together (Martins et al., 2004, p. 806). The advantages is not only favourable for the company, when long distance travel is reduced there are also positive environmental effect. The advantage of be able to have a project on-going during 24 hours a day and the presence of local expertise is also identified in research (Verburg et al., 2013, p.69). Management research on virtual teams identifies planning and control, defined clear responsibilities, clear communications and trust as critical success factors (Verburg et al., 2013, p.70). Some of the most discussed problems in the framework of virtual team management are
communication and the issue of organisation identification (Martins et al., 2004, p. 820; Zander et al., 2012, p. 593). Project management research also mention culture (awareness and empathy) as well as time zone differences as major distraction factors to bear in mind (Lee-Kelly & Sankey, 2007, p. 61)

1.3 Problem Background
The use and idea with dispersed virtual teams can be seen as a rather new phenomenon because the use of information technology has increased extensively during recent years (Casey, 2010, p. 84). Although a recent study by Zander et al. (2012, pp. 600-601) identified a need for research in the area of multicultural teams and global virtual leadership. This indicates a need for further understanding of the virtual team, organisational identification and the management of global virtual teams. One reason for the lack of research is the fast development in the area and that the researchers are unable to keep up with the development (Zander et al., 2012, p. 592). Martins et al. (2004, p.820) discussed a similar lack of research in the area in 2004, where feedback, defined roles, interactions and performance evaluation in the framework of virtual teams was barely researched. Zander et al. (2012, p.601) extends the arguments with identifying the need of a global perspective on leadership, which connects to the identified issue regarding cultural awareness and time zone differences (Lee-Kelly & Sankey, 2007, p. 61). Hence, there is a need of further investigation of the perception of efficiency and function, in global virtual teams by managers. Virtual teams are unique from a managerial, technological and social perspective and there are needs for additional and targeted research (Powell et al., 2004, p. 7).

Moreover, Martins et al. (2004, p. 821) states that interpersonal processes related to the long-term success of the team, have also been scarcely researched. One topic within interpersonal processes is social identification, which refers to how people experience a sense of belonging to a social category (Fiol & O’Connor, 2005, p. 19). Virtual work decreases the emphasis upon the visible and tangible aspects of organisations and instead the focuses relies on psychological dimensions, for example, organisational identification (Wiesenfeld et al., 2001, p. 214). Organisational identification can be defined as “Identification is a person’s sense of belonging with a social category” (Ashforth & Mael, 1989, cited in Fiol & O’Connor, 2005, p. 19) which relates to the social identity theory. Furthermore, with the rapid growth of virtual teams and the vitality of identification in those teams in mind, combined with an incomplete research, begs for further understanding of the topic (Fiol & O’Connor, 2005, p. 20). Gajendran & Joshi (2012, p. 1254) emphasise this issue of organisational identification in the context of communication and member involvement; a member that is in a distant position can have a harder time to observe his contribution. The lack of tangible involvement can contribute to decreased motivation and lower organisational identification. However, Martins et al. (2004, pp. 822-823) state that there is a need for a new methodological approach because a great deal of research has been conducted in a laboratory environment using students working on short-term tasks; some examples of more recent studies conducted in a similar laboratory manner are Balthazard et al. (2009) Iorio & Taylor, (2015) and Kapur et al. (2013).

After identifying the issues above, the study aims to explore the issue of employees’ organisational identification when working virtually. These are complemented by investigating the perceived advantages and disadvantages from the managerial perspective as well as identify critical success factors. The focus is not aiming at a
specific industry rather the diversification of virtual teams will provide broader knowledge and therefore will we include both the public and private sector. By answering the questions stated below, the paper fulfils the identified gaps and shed new light on the area of virtual team management.

1.4 Problem Statement
Based on the problem background and the identified gaps in current research, has resulted in following research question.

RQ1: Do members in dispersed virtual teams perceive issues with organisational identification?
RQ2: How does the manager perceive the advantages and disadvantages as well as handle issues when managing virtual teams?

Based on the two sided approach we will have a sub question in order to give a comprehensive view of the success factors that needs to be present in order to be successful in a virtual work environment.

Sub Question (RQ3): What are the main success factors when working in a virtual setting?

1.5 Purpose
The overarching aim of this degree project is to gain a deeper understanding of how members in dispersed virtual teams can perceive problems of organisational identification. In other words, how the members feel a sense of belonging to an organisation and how their actions and their existence are recognised in the team. We investigate organisational identity in an exploratory setting by using members as subjects for the study and gather data by using questionnaires. A purpose of the aim is to receive data from a diverse dataset in order to develop an overview of the issue of organisational identification in dispersed virtual teams as well as advantages and disadvantages of managing these teams. To investigate how the virtual working environment is functioning we are also looking at possible success factors to complement our overview. Furthermore, as included in the overarching aim is to investigate virtual teams from a managers’ perspective, in order to acknowledge the advantages and the disadvantages of working virtually. Moreover we use semi-structured interviews in order to get a clear and comprehensive picture of the managerial perspective. The idea of using semi-structured interviews is to receive qualitative and useful data for analysis. The study is thereby aiming to understand the whole picture of how an organisation the factors present in virtual work.

1.6 Contribution
The study aims to contribute to a deeper understanding of virtual teams and what role organisational identity plays in those teams. Furthermore, the thesis provides knowledge of the nature of virtual teams from a managerial perspective. The study both contributes theoretically and practically by shedding new light on under-researched areas acknowledged by previous research.
The methodological gap is filled by using a non-laboratory setting by investigating a population that are working virtually at different degrees.

1.6.1 Theoretical Contribution
This papers’ theoretical contribution provides new insights in a theoretical identified gap; as stated in the problematization there is some areas that are under researched. As mentioned is there an identified need for further research both in the area of global team management (Zander et al., 2012, pp. 600-601; Powell et al., 2004, p. 7) as well as the interpersonal process and organisation identification (Martin et al. 2004, p. 821; Fiol & O’Connor, 2005, p. 20).

There also exist a need for research in different methodological settings than previous conducted studies, identified by Martin et al. (2004, pp.822-823) as non-laboratory and more of a field study on actual users on virtual teams. This subject and the aim of this research can contribute to a higher theoretical knowledge in an area that is under-research, thereby contribute theoretically to the field of management.

1.6.2 Practical Contribution
The practical contribution is to gain a deeper understanding of organisational identity in virtual teams, which can be beneficial for companies, executives, students and employees working in different virtual environments. A deeper understanding can increase productivity in the virtual working team, decrease employee turnover as well as increase job satisfaction (Abrams & De Moura, 2001, pp. 141-142). Furthermore, virtual teams are rapidly growing in numbers worldwide and it is reasonable to assume that the phenomenon is here to stay. This advancement calls for a deeper understanding in order for business life to take informed decisions. Stakeholders that have a relation to a virtual team can reflect upon the advantages and disadvantages to be connected in a supply chain of which a virtual team is part of.

1.7 Delimitations
The study does not include a comparison with a face-to-face team and a virtual team, since substantial of research has been conducted in that area already and it lies outside the scope of this study. Due to time constraints must the focus be quite narrow in scope in order to deliver a high quality paper in the timeframe. With these aspects considered the study focuses on virtual team only, however certain aspects of physical team are also covered to emphasize the difference between face-to-face teams and virtual teams. Furthermore, the study only investigates the phenomenon in a specific point in time, due to time constraints. Therefore, a longitudinal study has not been considered although some aspects of virtual teams could indeed be identified using such an approach. A major delimitation is the access to organisations engaged in virtual work. As previously stated a great deal of firms are active in virtual work to some degree, but it might be difficult to find a company that is willing to participate in the study because it requires some time and effort from the company. The difficulty of access is delimitation, because it limits our potential to find a great number of respondents for the sample, hence the focus is on a few numbers of firms.

To achieve a reliable result and to enhance the contribution, this study is limited to focus on the advantages and disadvantages on the management of virtual teams, the aim are on explaining this. However, no extensive focus lies upon the role of leadership styles in virtual teams.
Of course the main style (transformational and transactional) is discussed and also special skills regarding the virtual setting will be of importance. This limitation is necessary in order to keep the subject in a manageable direction.

Moreover, resources is one limitation and funds to travel and collect a substantial amount of data in person, the authors use questionnaires and semi-structured interviews and this is considered as a reliable data collection technique and is not limiting the data collection in terms of quality. To conduct interviews over phone and the use of questionnaires also keep the authors from influencing the respondents by body language and similar ‘silent’ language and the ethical and confirmability considerations can be kept within limits.

The study use questionnaires to gather quantitative data. The qualitative data are received through semi-structured interviews. In previous researches (Gajendran & Joshi, 2012; Iorio & Taylor, 2015; Kapur et al. 2013) the quantitative data has been the main source of investigation, but in order to fulfil the stated purpose and answer the questions this paper use a mixed multi-method in order to gather reliable data. One can argue for the higher reliability of a solely quantitative data collection, and a multiple method can be perceived as a limitation but the authors is viewing this as an opportunity to shed light on the identified gap.

1.8 Disposition

Chapter 1 - Introduction
Introduction to the subject and a problematization identified from earlier studies. This is followed by the research question and the purpose of this study. A discussion of limitations that the authors had to take into account and finally a disposition is provided as a conclusion of the chapter in order to give the reader an overview.

Chapter 2 - Theoretical framework and Previous Studies
The theoretical chapter begins with a literature review of the current research which is presented in order to develop a theoretical knowledge. The review is followed by a discussion of the relevant theories and the theoretical framework that is used in this paper.

Chapter 3 - Methodology and Philosophy
The methodology chapter will consist of a presentation of the methodological choices as well as a thorough motivation why each has been selected. It will be discussed both from a theoretical as well as a practical perspective, and a comparison of the relative advantages and disadvantages of alternative approaches will be discussed. Furthermore, the authors epistemological, ontological, and axiological assumptions be presented and reflected upon. Finally the chapter concludes with the practical method used when conducting the study, here we discuss the creation of the questionnaire and interview guide.
Chapter 4 – Results
A presentation of empirical findings from the interviews and questionnaires are presented. The chapter begins with a presentation of the qualitative data, in which each interview is presented. The quantitative data are presented as descriptive statistics with tables and textual descriptions.

Chapter 5 - Analysis
A presentation, discussion and analysis of the findings, the chapter begins with analysing the qualitative data in a template analysis. The template analysis is followed by a descriptive and regression analysis of the quantitative data. The chapter concludes with an analysis of the common themes found from both the quantitative and qualitative data.

Chapter 6 – Conclusion & Recommendations
The conclusion presents our findings and restates the research questions in order to draw conclusions regarding the questions and purpose. The chapter continues with a discussion of the most important findings that focuses on the practical and theoretical implications of the thesis, how can the thesis be used in both the academic and in the field. This is followed by a discussion of issues that came up during the construction and the chapter ends with a general discussion of our overall impression of the thesis. The final section consists of recommendations for further research, what we as authors, have identified and acknowledge during the construction of the thesis.

Chapter 7 - Reference list
The reference list is provided in alphabetic order and consists of academic articles, books, and news-articles.
### 1.9 Definitions

<table>
<thead>
<tr>
<th>Phrase</th>
<th>Definition</th>
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<tbody>
<tr>
<td>Categorisation</td>
<td>The process of creation of group distinctive characteristics</td>
</tr>
<tr>
<td>Collocated</td>
<td>Working at the same physical place</td>
</tr>
<tr>
<td>Dispersed</td>
<td>Working apart from each other</td>
</tr>
<tr>
<td>Face-To-Face (F2F)</td>
<td>Physical meetings with communication between the individual face to face</td>
</tr>
<tr>
<td>Hybrid Teams</td>
<td>Teams that work both apart and collocated and uses technology in various degrees</td>
</tr>
<tr>
<td>Media Richness</td>
<td>Quality of information through a virtual communication medium</td>
</tr>
<tr>
<td>Prototype</td>
<td>The most stereotypical individual (real or imagined) of a group that embodies all characteristics that define the group.</td>
</tr>
<tr>
<td>Situational Leadership</td>
<td>Leadership with focus on the subordinates and situation</td>
</tr>
<tr>
<td>Teleworking</td>
<td>Working in dispersed setting with main communication through technology</td>
</tr>
<tr>
<td>Transactional Leadership</td>
<td>Task-oriented leadership style</td>
</tr>
<tr>
<td>Transformational Leadership</td>
<td>Individual-oriented leadership style</td>
</tr>
<tr>
<td>Virtual Teams</td>
<td>Teams whose members primarily use technology to communicate and conduct everyday business tasks</td>
</tr>
<tr>
<td>Organisational Identification</td>
<td>Identification is a person’s sense of belonging with a social category (Ashforth &amp; Mael, 1989)</td>
</tr>
</tbody>
</table>
Theoretical Framework

The theoretical framework chapter begins with a literature review of current research and is presented in order to develop a theoretical knowledge as well as to introduce the reader to the literature used in this paper. This is followed by a compiled section of major theories that has been a basis for this study.

2.1 Review of Prior Research

Research in management and leadership style are discussing the success factors of virtual project managers in comparison with ordinary project managers that manage a collocated team, Iorio & Taylor (2015, p. 404) discuss that the previous experience of a virtual working setting is crucial for performance in a virtual team. Further Iorio & Taylor (2015, p. 404) states that the experience of using the technology should be one criteria for choosing a leader for a specific project. The authors are receiving these results from a regression model in which data from graduate students are collected; the results indicated that ordinary leadership programs are not sufficient in providing the necessary tools for virtual working environments (Iorio & Taylor, 2015, p. 402). Moreover evidence is found that previous experience is not only an important factor for the manager, but also the level of previous experience of the used technology enhances the engagement in troubleshooting activities (Iorio & Taylor, 2015, p. 402).

In a study of critical success-factors in project management, Verburg et al. (2012, pp.68-79) focuses on the virtual working environment. The authors define virtual working as either according to the system-oriented approach or the technology-oriented approach, with the main difference that the technology-oriented approach is defining the virtual work as work conducted by only information communication technology (ICT) as a mean of communication. An important aspect to bear in mind according to the authors is the multi-engagement in many projects by employees, this is more common and is easier when the communication is conducted virtually (Verburg et al., 2012, p. 69).

The study has identified a number of success factors from previous studies which seem to have a great impact on the functioning of virtual teams, among others is trust, planning, clarity of roles, diversity, cultural awareness and technology knowledge (Verburg et al., 2012, p. 70). Similar factors are discussed in many articles and one can thereby argue for that these factors are of great importance according to previous studies. The study was conducted on a sample of 30 managers and the authors used in-debt interviews resulting in qualitative data and 276 attributes that were considered important, these attributes was then ranked and connected in a hierarchical map that maps the values and benefits towards the attributes mentioned (Verburg et al., 2012, pp. 71-73). The result show that the value of accomplishment is the most mentioned value, and the highest benefit is faster project conduct, this is connected to the attributes of corporate support for virtual work and clear communication rules (Verburg et al., 2012, p. 74). The authors conclude that the most relevant conditions for a successful virtual project are (1) communication and collaboration within the team, including trust, clear communication rules, and openness (Verburg et al., 2012, p. 77). As well as (2) organisational support, including technical, corporate, and multi-media support, both in terms of infrastructure, policies, rewards, and incentive systems. Another finding that the authors did was that the reputation was seen as an important value and the internal motivation is a crucial factor for managers (Verburg et al., 2012, p. 78). We are going to
relate the success factors and see whether the same factors are seen as important for our sample.

In a longitudinal exploratory research conducted by Casey (2010, p. 84) she present key success factors that are related to management of virtual teams. The author has combined 11 years of research in the area of Global Software Development in order to receive substantial data in the field (Casey, 2010, p. 84). This longitudinal study resulted in six project management areas that were seen as important for virtual team success (Casey, 2010, p. 89). The areas are presented in Table 2, and most of the conclusions are in line with Verburg et al. (2012), which further enhance the importance of the findings.

Table 2: Project Management Area

<table>
<thead>
<tr>
<th>Project Management Area</th>
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<tbody>
<tr>
<td>Organisational Virtual Team Strategy</td>
<td>Long term organisational strategy which is supported by senior management, the strategy must be directly linked to objectives and goals or to the organisation.</td>
</tr>
<tr>
<td>Risk Management</td>
<td>Risk must be incorporated in all software planned projects, especially in virtual team management. High risk of delay and failure due to cultural, political and linguistic differences.</td>
</tr>
<tr>
<td>Infrastructure</td>
<td>Dependable electrical supply, internet connection, bandwidth, and good software tools. Important to have warranties worldwide when distributing hardware tools. Videoconferences was requested and wanted in order to see who’s talking and enhance understanding.</td>
</tr>
<tr>
<td>Implementation of a virtual team process</td>
<td>formal systems for identifying members’ skill level and areas, formal system for finding experts in areas, team members need to be informed about the process of other members, need for agreement on how the process is carried out. A problem in this study was that the process was exported from Ireland to Malaysia, with many problems related to knowledge and culture</td>
</tr>
<tr>
<td>Team structure and organisation</td>
<td>Establish roles, responsibilities, relationships etc. includes team size and mixtures, also experience in the teams is crucial for an effective collaboration.</td>
</tr>
<tr>
<td>Conflict management</td>
<td>Harder to handle in virtual workplaces since the normal “ways” of complaining is not the same, hence an aggressive impression easy develops</td>
</tr>
</tbody>
</table>

The findings are contributing to the understanding of project management in virtual settings, and in order to receive an efficient team the manager have to consider all these aspects and work actively with them in mind (Casey, 2010, p. 94). Casey (2010, p. 94) points out that a manager of a virtual team have to deal with the specific demands that is put on her in the virtual working environment. The study illustrates that these demands consists among others of the cultural, geographical, temporal, and linguistic differences which cannot be solved, only managed in different directions (Casey, 2010, pp. 93-94). Therefore one can argue for the importance of managing a virtual team, and the question if there are differences between virtual team management and face-to-face team management? We will have the findings of Casey (2010) in mind when exploring the issue.
So far, critical success factors seem to be communication, trust, clarity in roles and responsibilities, organisational support and management skill; this is further strengthened in a case study from 2008 by Lee-Kelly & Sankey (2008, pp. 58-59). The paper is conducted with aim of providing a comparison between a virtual and F2F teams, both on the terms of efficiency in certain areas and differentiation in general. The authors present a question that is useful in management in general and virtual teams in particular; “How can I manage them if I can’t see them?” (Lee-Kelly & Sankey, 2008, p. 51). This question can be seen as a guideline for research in management and connects to the identified issues of member inclusion and sense of belonging in a team. The identification issue is an important factor for success and the authors (among others) are questioning the view of an efficient project as measured by time, budget and quality (the iron triangle); with suggestions of new “soft” measures for instance project outcome and perceived project success (Lee-Kelly & Sankey, 2008, p 54). The data was collected by semi-structured interviews and the key issues identified was; management agenda and decisions, requirements creep, asymmetry in processes, unclear roles and responsibilities, time zones, over-communication, dissonance, cultural differences, and trust (Lee-Kelly & Sankey, 2008, pp. 59-60). These issues are similar to the ones discussed by Verburg et al. (2012) as well as Casey (2010); this indicates that the virtual team management and the virtual working environment are experience similar issues in many studies. Lee-Kelly & Sankey (2012, p. 61) concludes that virtual teams fulfils its purpose when there is a need for cross-functional and cross-boundary work, and that the main key success factor is to have a defined strategy as well as high cultural awareness. The findings are applicable to this study since it provides a knowledge base that relates to similar samples and studies.

The cultural differences are also discussed in a paper by Kapur et al. (2013, p. 422) in the field of personality and how it impact on virtual team performance. The authors have conducted an exploratory laboratory-study on students in India and the US by using the five-factor model (conscientiousness, agreeableness, extraversion, openness to experience, and neuroticism) to compare the sample groups (Kapur et al., 2013, pp. 416-417). One of the findings was that agreeableness and project success was correlated in the US sample, and on the other hand, project success and conscientiousness was correlated in the Indian sample (Kapur et al., 2013, p. 422). The authors provides an explanation of this by referring to cultural differences in which the Indian sample is more task oriented and the US sample is more social and interpersonal oriented (Kapur et al., 2013, p. 422). These findings goes in line with Verburg et al. (2012), Casey (2010), Lee-Kelly & Sankey (2008) which all present the cultural differences as a dependent factor in the virtual working environment. We will use the cultural difference as a measure in order to see of the findings is apparent in our sample as well.

One of the issues mentioned above when working in dispersed settings is the issue of member inclusion in decisions as well as organisation identification. In a report by Gajendran & Joshi (2012, pp.1252-1261) this issue is discussed around the theory of leader-member exchange (LMX). Theory of LMX is about the communication between the member and leader, and a high LMX can be seen as the member receiving attention and care from an authority, which contributes to a willingness to act and reduce the uncertainty of the member value (Gajendran & Joshi, 2012, p. 1253). The feeling of being out of the loop and/or isolated from the group is more common in dispersed setting in comparison with face-to-face settings (Gajendran & Joshi, 2012, p. 1252).
The authors have used a deductive approach with stated hypotheses; the quantitative data is collected by surveys from the employees in large multinational company (Gajendran & Joshi, 2012, pp. 1254-1255). The result of the study indicates that high communication between the leader and the member will enhance the member inclusion and also contributes to a higher team innovation (Gajendran & Joshi, 2012, p. 1257). Another key finding is that the leadership style can influence team outcome and innovation (Gajendran & Joshi, 2012, p. 1257). The authors further conclude that the past experience of team members is a crucial factor for team success this conclusion goes somewhat hand in hand with the conclusion stated by Iorio & Taylor (2015)(Gajendran & Joshi, 2012, p. 1257). The past experience and the member inclusion will be considered in the study; hence the findings of Gajendran & Joshi (2015) are interesting to our study in many aspects.

Moreover, in a paper by Fiol & O’Connor (2005) the authors aim to untangle contradictions regarding virtual teams and social identity theory. They are applying the current knowledge about social identity theory in a virtual team context in order to generate 10 propositions regarding the nature of virtual teams. The propositions are posted in Table 3 below.

Table 3: Propositions

<table>
<thead>
<tr>
<th>Propositions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 &quot;The need for uncertainty reduction compared to self-enhancement needs is relatively stronger motivator for member identification in pure virtual teams than face to face or hybrid settings&quot;</td>
</tr>
<tr>
<td>2 &quot;Greater team member tolerance for ambiguity will reduce the relatively strong need for uncertainty reduction as a motivator for identification in pure virtual settings&quot;</td>
</tr>
<tr>
<td>3A &quot;Members of pure virtual teams develop more stable categorizations of their team than do members from face-to face teams”. Consequently, 3B: “Members of hybrid teams that begin in a virtual setting develop less stable categorizations of their team in the short term than do team members in the other settings.”</td>
</tr>
<tr>
<td>3B &quot;Members of hybrid teams that begin in virtual settings develop less stable categorizations of their team in the short term than do team members in the other settings&quot;</td>
</tr>
<tr>
<td>4 &quot;Rich media will weaken the proposed relationship between pure virtual teams and the development of stable team categorizations and between hybrid teams (beginning virtually) and the development of unstable categories, leading to the development of more moderately stable categories in both these team settings.&quot;</td>
</tr>
<tr>
<td>5 Greater team member tolerance for ambiguity will weaken the proposed relationship between pure virtual teams and the development of stable team categorizations and between hybrid teams (beginning virtually) and the development of unstable categories, leading to the development of more moderately stable categories in both these team settings.&quot;</td>
</tr>
<tr>
<td>6 &quot;Subgroup identification by diversity fault line is relatively most prevalent in hybrid teams and to a lesser extent in pure virtual teams, potentially reducing the salience of the entire team as a target for identification.&quot;</td>
</tr>
<tr>
<td>7 &quot;Rich media in virtual teams facilitate the transmission of cues that highlight visible diversity fault lines, thereby promoting identification with sub-groups based on those fault lines, and this effect is relatively most pronounced in pure virtual teams.&quot;</td>
</tr>
</tbody>
</table>
Greater team member tolerance for ambiguity will weaken the proposed effects of experienced media richness on the tendency for individuals in virtual teams (especially pure virtual) to identify with subgroups based on the visible diversity fault lines.

Subgroup identification by locational fault line is relatively most prevalent in hybrid teams with some collocated members, potentially reducing the salience of the entire team as a target for identification.

The greater the clarity of members' roles in relation to the team's tasks, the more salient will be the team as a target for identification, and this effect will be relatively most pronounced in pure virtual teams.

The low saliency of memberships in pure virtual teams makes members less probable to be satisfied about self-enhancement needs in comparison to face-to-face or hybrid teams, where people can get cues about the group characteristics and values through interaction (Fiol & O'Connor, 2005, p. 22). This results in that there are major uncertainties and members can reduce the uncertainty by self-projecting on the team. Since virtual team members have stronger reason for uncertainty reduction, this tendency will be guided by each individual's tolerance for ambiguity (Fiol & O'Connor, 2005, p. 22). Furthermore, the degree of face-to-face contact largely affects what types of communication cues from which the members can use in order to grasp the elements of what characterises their team (Fiol & O'Connor, 2005, p. 23). Social categorisation in teams with no face-to-face contact will emerge faster and be more polarised; this is due to that the initial assumptions about the team has been constructed in a virtual setting, which often generate rigid categorisations (Fiol & O'Connor, 2005, p. 23).

The development in advanced communication technology has generated communication media that provides more and richer cues in which the team members can use for categorisation (Fiol & O'Connor, 2005, p. 24).

People have different degree of tolerance for ambiguity and individuals that have a low tolerance for ambiguity are more inclined to reduce it quickly rather than to achieve an accurate picture (Fiol & O'Connor, 2005, p. 24). Comparatively, individuals that have a low tolerance for ambiguity use early cues in order to form a stable picture of a person or group (Fiol & O'Connor, 2005, p. 24). Social categories, in which members identify themselves tend to maximise the similarities within the group an exaggerated the differences with other groups (Fiol & O'Connor, 2005, p. 25). Members of virtual teams are often characterised by a high degree of diversity, but the diversity does not necessarily results in diversity fault lines due to the extensive nature of diversity in virtual teams (Fiol & O'Connor, 2005, p. 25). Moreover, the lack of visibility of demographic differences is also a reason for why diversity does not possess the same role as the other team constellations (Fiol & O'Connor, 2005, p. 25).

On the other hand does a rich communication medium encourage the transfer of cues, and it can highlight diversity fault lines and therefore enable sub-groups to identify based on those traits (Fiol & O'Connor, 2005, p. 26). Diversity fault lines can drag the focus away from the group as a whole in favour of small sub-groups (Fiol & O'Connor, 2005, p. 26). Moreover, rich media might magnify the tendency to form sub-groups; because it highlights visible differences between the members of the team (Fiol & O'Connor, 2005, p. 26).
Physical proximity promotes identification, because the presence of others promotes familiarity and fondness (Fiol & O’Connor, 2005, p. 26). However, it is only very close proximity that it is thought to generate identification through locational closeness (Fiol & O’Connor, 2005, p. 27). In contrast, in hybrid teams with one part of the group with close proximity are the risks of sub-groups the greatest (Fiol & O’Connor, 2005, p. 27). Clear roles of members will increase the sense of belonging to the group and the saliency of the team, hence promotes identification (Fiol & O’Connor, 2005, p. 27).

In a study by Wiesenfeldt (2001) he aimed to examine to relationship between employees need for affiliation, work-based social support, and social identity in a virtual teams context. The author initially used semi-structured interviews, consequent by a survey with a sample of 325 people in which the 250 individuals responded. The author has used two independent variables in order to find a relationship between “need for affiliation” and “work-based social support” and organisational identification (Wiesenfeldt, 2001, p. 220). The need for affiliation refers to a persons need to belong to an organisation or group, the need to belong is “individual” meaning that it differs from person to person (Wiesenfeldt, 2001, pp. 216-217). Moreover, individuals that possess a low degree of need for affiliation are more probable to view themselves as independent from the organisation (Wiesenfeldt, 2001, p. 216). People with a low need for affiliation see fewer benefits with organisational identification, because defining themselves in relation to their organisational membership will not satisfy their need for expressing themselves according to their personal characteristic (Wiesenfeldt, 2001, p. 217).

Work-based social support refers to the degree of which people perceive that they have beneficial social relationships with others at the workplace (Wiesenfeldt, 2001, p. 218). The study finds that need for affiliation have a positive relationship with organisational identity and that the relationship becomes stronger when work-based social support is high (Wiesenfeldt, 2001, p. 227).

The study tests data from 297 self-reported surveys conducted at a religious university for men (Mael & Ashforth, 1992, p. 103). The authors are testing a model of organisational identity, consisting of organisational and individual antecedents. Organisational antecedents are stated to be distinctness of the organisation, organisational prestige, interorganisational competition, and interorganisational competition (negative determinant of organisational identity) (Mael & Ashforth, 1992, p. 107). Individual antecedents are individual tenure, recency of memberships, number of comparable organisations joined, existence of mentor, satisfaction with organisation and sentimentality (Mael & Ashforth, 1992, p. 107). Moreover, the authors aim was to provide a partial test to be used when investigating organisational identity in relation to the stated antecedents (Mael & Ashforth, 1992, p. 104).

The test provided by the authors is indeed useful for us, because we can use it in order to assess perceived organisational identification as well as to measure the antecedents mentioned above.
In a summary by Heikki (2006, p. 79) he discusses how the use of virtual teams has emerged and become a more common way of organizing. Furthermore, the article does cover obstacles that can be encountered while working virtually. The author states that there are two types of obstacles; Task and resource related obstacles and management related obstacles. Task and resource related obstacles refer to that work has to be conducted at a physical place due to the means of production are present there (Heikki, 2006, p. 80). Management related obstacles are concerning; perceived performance advantages of working collocated, managers want to manage face-to-face, employees want to be managed face-to-face and social contacts and support that is closer in a collocated setting (Heikki, 2004, pp. 80-81).

To solve the identified issues with dispersed working environment Heikki (2006, pp. 81-82) suggest two means of solutions and the first is solving with technology, including technological resources and support.

The other mean of solving the issues is with managerial actions by a focus on task support, modified reward mechanisms, maintaining and enhancing organisational identity, and responding to other social needs (Heikki, 2006, pp. 83-84). The author concludes by giving two key “lessons”, (1) “Managers needs to carefully evaluate the feasibility and potential obstacles of telework for a given organization and given type of work.”, (2) “The success of virtual work arrangements cannot be guaranteed with technological solutions only. In most cases, strong and visible managerial interventions are also necessary.” (Heikki, 2006, p. 85). The findings of Heikki (2006) about teleworking will be interesting to look at in our sample, since it is in line with the latter part of our research question.

In a review of current studies and further research areas in the field of global virtual teams by Zander et al. (2012, p. 592) the authors discusses themes for successful global leadership. The paper investigates the current literature in the areas of leading virtual teams, leading multicultural teams and the competences of team leader (Zander et al., 2012, p. 593). Literatures on leading virtual teams are describing competences and styles of a leader, these factors are resulting in a research theme that the authors call; “Global leaders as boundary spanners, bridge makers & blenders” (Zander et al., 2012, p. 598). The boundary spanning refers to a leaders competence of identify himself with a group and thereby ease the communication between groups by take all groups into consideration in decisions. The bridge making theme is more of “resolve conflicts by bringing cultural and linguistic boundaries between team members”. And finally the blending is about blending the different members into well function groups, taken into account the multicultural and preventing intergroup rivalry (Zander et al., 2012, p. 598).

Leading multicultural teams’ literature tends to consider the competences, styles and strategies and modes of a leader; this is resulting in a research theme called: People-oriented leadership in global teams (Zander et al., 2012, p. 598). This theme focuses on transformational and inspirational leadership as a success factor for leading global virtual teams (Zander et al., 2012, p. 598). The transformational leadership style combined with a performance focus have been shown to be better when leading virtual teams in a global environment, compared to a transactional style (Zander et al., 2012, p. 601). The differences between the styles will be discussed in this study in order to see if the styles matter as the finding of Zander et al. (2012) indicates.
Finally Zander et al. (2012, p. 598) review the area of team leader in the light of cultural intelligence and global mind-set, and bicultural and biculturalism; resulting in a research theme of leveraging global team diversity. The arguments provided in the article is interesting since the authors states that cultural differences can be of lower dependence in virtual teams that in face-to-face teams (Zander et al., 2012, p. 600). The current literature seems to provide evidence on negative aspects of the diversity and not on the factual situations, however, the leaders who have a high knowledge and cultural awareness (cultural intelligence) have a great advantage and may be more fit for managing a global virtual team (Zander et al., 2012, p. 600).
Table 4: Evaluations of Previous Studies

<table>
<thead>
<tr>
<th>Author (Year)</th>
<th>Research Question/Aim</th>
<th>Key Findings</th>
<th>Data and Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heikki, T. (2006)</td>
<td>Obstacles with working remotely</td>
<td>Managers need to identify the main obstacles of virtual working. Strong and visible managerial interventions. Combined with technological solutions is one recipe for success. Training on both technology and support of the technology.</td>
<td>Summary</td>
</tr>
<tr>
<td>Iorio, J. &amp; Taylor, J.E., (2015)</td>
<td>Exploring associations between the prior experiences of potential leadership candidates and their level of engagement in transactional, transformational and technological interactions that support execution of virtual project team work and relationship.</td>
<td>Leaders with experiences from virtual working conditions is more successful in working virtually, leaders who have experience should therefore be selected to lead virtual/distributed teams.</td>
<td>Experimental Laboratory study: 4 virtual teams with 5 students. Regression analysis, deductive approach.</td>
</tr>
<tr>
<td>Kapur et al., (2013)</td>
<td>Examination of personality factors on performance of globally distributed virtual teams</td>
<td>Students who are outgoing and assertive may be more successful in achieving individual satisfaction in virtual interaction situations while working in a global project. Personality traits as well as cultural differences effects team performance and success.</td>
<td>Exploratory experimental study: Students in US and India 3-5 in each group 57 in US and 55 in India.</td>
</tr>
<tr>
<td>Lee-Kelly, L. &amp; Sankey, T. (2008)</td>
<td>How virtual teams operate, why one project appears to be more successful than the other and how possible solutions such as personal development training might be used to improve project success.</td>
<td>Time-zone and cultural differences affects communication and team cooperation. Also unclear roles, trust and leadership style are also important factors that is affecting the performance.</td>
<td>Qualitative Case study, textual- analysis and semi-structured interviews. Banking industry</td>
</tr>
<tr>
<td>Casey, V. (2010)</td>
<td>What were the key factors and variables which needed to be considered and addressed to develop and facilitate effective virtual team operation? Did the extensive experience gained by team members and managers who had previously been offshored to, provide any insight or understanding to facilitate the off shoring of their work and the effective operation of the virtual team?</td>
<td>The strategies, processes and procedures needs to be modified to meet the new challenges of virtual teams. The role of a project manager in a virtual team is not only to manage, monitor and coordinate, he must also have a specific strategy that address the specific challenges of the virtual and dispersed setting. This involves, clear deadlines, clear role and responsibility, cultural-awareness, trust and training.</td>
<td>Case-study, observational research (longitudinal) document review, direct observation, interviews focus groups and questionnaires with participants in Ireland and Malaysia</td>
</tr>
<tr>
<td>Verburg et al., (2013)</td>
<td>What conditions do project managers perceive as the most important to get the work done when working in fully dispersed settings?</td>
<td>Trust, Clear communication, technical support and overall corporate support are the most important factors for the success of virtual teams.</td>
<td>Qualitative Means-end chain method: interview with 30 project managers in 9 global companies, In-depth and structured interviews</td>
</tr>
<tr>
<td>Zander et al., (2012)</td>
<td>Increase knowledge of leading global teams, highlight trends and suggest directions for future research.</td>
<td>Three high relevant themes of leadership in dispersed teams: (1) Global team leaders as boundary spanners, bridge makers, and blenders. (2) People oriented leadership in global teams. (3) Leveraging global team diversity. These themes combined with</td>
<td>Meta-analysis</td>
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</table>
Mentioning and coaching is seen as important factor for success. The mentioned themes are also subject for future research.

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Title</th>
<th>Summary</th>
<th>Methodology</th>
</tr>
</thead>
<tbody>
<tr>
<td>Martins et al., (2004)</td>
<td>Virtual teams: What do we know and where do we go from here?</td>
<td>There is need for further research in areas such as Team inputs, Team processes, and team outcomes. Much has been done but there is more to cover. (Ex. diversity, team size, organisational context, monitoring and back up, social integration, knowledge management, team creativity.)</td>
<td>Meta-analysis</td>
</tr>
<tr>
<td>Gajendran, R. &amp; Joshi, A. (2012)</td>
<td>How can leaders of globally distributed teams foster member inclusion in team decision?</td>
<td>Communication frequency has a high impact on member influence, especially when it is leader-member communication. Identifies that leadership styles influences team member performance and innovation.</td>
<td>Online-survey, 146 responses in a global IT company,</td>
</tr>
<tr>
<td>Fiol, C.M. &amp; O'Connor, E.J (2005)</td>
<td>Untangle the contradictions and address some of the gaps by tracing the mechanisms and moderating processes through which identification develops in hybrid and virtual teams.</td>
<td>The paper addressed the pressing need to untangle the confusing array of prescriptions currently facing those attempting manoeuvre in a virtual world. Virtual teams are more diverse than f2f teams. Most critical efforts vary across settings, from nurturing politeness in f2f teams, to prove role clarity and team legitimacy in pure virtual teams. Communication of role clarity and external team legitimacy are situational factors that have an important influence on boundary definitions especially in pure virtual teams.</td>
<td>Multivariate and multilevel approach</td>
</tr>
<tr>
<td>Mukherjee et al., (2012)</td>
<td>Leading virtual teams: How do social cognitive and behavioural capabilities matter?</td>
<td>The propositions demonstrate that for effective VT leadership to happen it is important to understand the specific set of capabilities that contributes to successful management of a particular VT stage.</td>
<td>Meta-analysis</td>
</tr>
<tr>
<td>Powell, A., Piccoli, C. &amp; Ives, B (2009)</td>
<td>Virtual teams: A review of current literature and directions for future research</td>
<td>The aim of the article is to clarify what is known and what is not known about virtual teams. The article presents a comprehensive list of issues that has been examined by virtual team research until 2009. The article examines the literature in order to identify promising under researched areas.</td>
<td>Meta-analysis</td>
</tr>
<tr>
<td>Wiesenfeld, B., Raghuram, S. &amp; Garud, R (2001)</td>
<td>Organisational identification among virtual workers: The role of need for affiliation and perceived work based social support</td>
<td>Need for affiliation was significantly and positively related to virtual workers. Individuals that who recognized their personal need for to feel part of the organisation also reported significant efforts to keep their organisational identity salient. Organisational identification was a significant predictor of virtual workers strength of organisational identification.</td>
<td>Field studies with semi-structured interviews, as well as a survey with a sample of 250 virtual workers at a sales division at a large technology company. Longitudinal study</td>
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</table>
2.2 Theoretical Framework

In this section we discuss the relevant theories that can be applied in the study. We start with the Social Identity Theory and explanations of the different part that is relevant and important for this study. Since this paper is investigating organisational identification the theory of social identity will be used as an aid in providing a deeper knowledge in the area. Furthermore, the transformational and transactional leadership theory will be discussed in order to put light on the differences of leadership styles in a virtual context. The different styles can help us better understand the perceived advantages and disadvantages from a managerial perspective.

2.1.1 Social Identity Theory and Organisational Identification

“Organizational contexts provide a near-perfect arena for the operation of social identity processes.” (Hogg & Terry, 2001, p. 1). The statement suggests that social identity theory is a very relevant theory in order to understand organisational contexts, because organisations are basically groups of people. Social identity theory comprises that a social category of which an individual feel a sense of belonging to, defines who one is in regards to that category (Hogg & Terry, 2001, p. 3). People obtain a substantial portion of their self-worth and meaning from their group memberships (Jost & Elsbach, 2001, p. 183). In fact, people do partially derive their self-concept from the group they belong to (Jost & ElsBach, 2001, p. 183).

Two fundamental socio-cognitive processes in social identity theory (SIT) are categorization and self-enhancement (Hogg & Terry, 2001, p. 4). “Categorization is a basic cognitive process which operates on social and non-social stimuli alike, to highlight and bring into focus those aspects of experience that are subjectively meaningful in a particular context” (Hogg & Terry, 2001, p. 4). Categorisation is the process in which people use to create group distinctive characteristics and perceptions in order to function within a certain social environment (Hogg & Terry, 2001, p. 4). Intergroup behaviour is influenced by self-enhancement in the sense that members of groups have a positive bias when evaluating the in-group (Hogg & Terry, 2001, p. 6). Correspondingly, social categories tend to maximize the similarities within the in-group and exaggerate the differences with other groups (Fiol & O’Connor, 2005, p. 25). People have a tendency to view themselves in a good light in comparison to pertinent others (Hogg & Terry, 2001, p. 4).

The features and characteristics that define groups are often represented by a prototype. A prototype can be seen as the most stereotypical member (real or imagined) of the group and embodies all characteristics that define a group and distinguish it from others (Hogg & Terry, 2001, p. 5). Prototypes are context dependent, meaning that they are affected by which out-group that is contextually salient (Hogg & Terry, 2001, p. 5). Contextually salient refers to that group memberships are visible in different social situations (Ashforth & Mael, 1989, p. 21) Nationality is a good example of how these processes work; a Swede living in Sweden would probably not characterise his group membership as “Swedish” while residing in Sweden, but the salience increases while he resides elsewhere in the world. Furthermore, people categorise themselves according to the category they perceive as most meaningful and they feel they belong to (Hogg & Terry, 2001, p. 7).
Individuals are inclined to reduce subjective uncertainty about their perceptions, feelings, and one’s position in society (Hogg & Terry, 2001, p. 6). Uncertainty reduction is the process individuals employ when making generalisations about objects and social entities in order to comprehend a complex world. Uncertainty reduction exists in order for individuals to feel confidence in how to behave in certain social contexts (Hogg & Terry, 2001, p. 6). People have different degree of tolerance for uncertainty (Fiol & O’Connor, 2005, p. 25). Unfortunately, uncertainty reduction can lead to illusive categorisations if cues are inadequate and the tolerance for ambiguity is low (Fiol & O’Connor, 2005, p. 22). However, categorisation is necessary because it allows people to respond quickly to stimulus without excessive assessment (Moreland et al., 2001, p. 95).

Ambiguous membership is a term describing a member that possesses a membership that could be considered vague, problematic, or unstable (Bartel & Dutton, 2001, p. 116). The modern organisation are built upon a variety of connections with other organisations which has led to that the boundary has been blurred; also the use of virtual teams has delineated the limit of what should be considered an organisation (Bartel & Dutton, 2001, p. 115). Virtual workers in hybrid teams can be considered ambiguous members, because they are not present at the workplace in physical manner (Bartel & Dutton, 2001, p. 117). Ambiguous identities are problematic because it can be very stressful with feelings of exclusion, insecurity, and instability for the ambiguous member (Bartel & Dutton, 2001, p. 119). In fact, negative perceptions of a typical group member is often more extreme than in comparison with an out-group member (Bartel & Dutton, 2001, p. 119). Moreover, ambiguous members are often more subject to repeated acts of exclusion than members that have a clear identity putting them inside or outside the organisation (Bartel & Dutton, 2001, p. 119).

Identity memberships in an organisation are guided by two processes; “Granting” and “claiming” of memberships (Bartel & Dutton, 2001, p 118). Granting refers to that the individuals of the group acts in a manner that invites the new/ambiguous member and claiming means that a prospective member acts in a way that signals that he/she have the intentions to join the group (Bartel & Dutton, 2001, pp. 120-124). Leaders in the organisation have often the possibility to grant memberships by equipping the member with resources that signals the individual is a full member (Bartel & Dutton, 2001, p. 125). Moreover, resources can refer to both tangible (material, tools, etc.) and intangible resources for example: sharing of information, cultural information, etc. (Bartel & Dutton, 2001, p. 125). Claiming displays can be both physical and verbal and is used to assert that one is a deserving member (Bartel & Dutton, 2001, p. 120).

The aim of this section was to introduce the reader to the fundamentals of social identity theory as well as present key concepts that can be useful in our quest of answer the research questions. The concept of uncertainty reduction can be used in order to assess how virtual workers categorisation process works, with the limited social cues accompanied by working virtually in mind. Furthermore, virtual workers can be viewed as ambiguous members if one part of the team are working face-to-face and the other part are working remotely, the risk is that two separate groups emerge with an ambiguous line between them. Therefore it is vital to be aware of the issues that can arise if a virtual worker is considered an ambiguous member.
2.1.2 Leadership Theory

2.1.2.1 Transformational and Transactional

The visionary school of leadership has identified the transactional and the transformational leadership style (Yang et al., 2011, p. 259). The transactional leadership is about being active as a manager and very task oriented, including planning, structuring and provide clear objectives (Iorio & Taylor, 2015, p. 396; Tyssen et al., 2014, pp. 267-268). Moreover is transactional leadership using rewards in a higher degree than transformational in order to reward subordinates for achieving a certain objective (Yang et al., 2011, p. 259). One can thereby argue for that the transactional leadership style is more of a traditional style, including a strong leader with high authority. Tyssen et al. (2014, p. 367) emphasise this and states that it is “the underlying assumptions of these theories is a series of leader-follower bargains and exchanges that provide the necessary motivation for the followers to pursue the path set”.

The transformational leadership style on the other hand, is about leading the individual subordinate and their beliefs, motivations, and behaviour and not the tasks per se (Tyssen et al., 2014, p. 368). Tyssen et al. (2014, p. 368) presents propositions of the suitableness of having different leadership styles in diverse contexts, but mention also that charisma, intellectual stimulation, inspirational motivation and the leaders’ role as a coach is important aspects of the transformational style. Yang et al. (2011, p. 259) also present showing charisma as one important tool for transformational leadership combined with creating trust, respect, and a vision. In contrast of using rewards as a tool for achieving a target, a transformational leader sets high expectations and demonstrates desired behaviour (Yang et al., 2011, p. 259). Thereby one can think of the transformational leadership style as more modern style and involves much more member participation in the decision-making process. An understanding of the leadership styles is crucial when discussing management.

2.1.2.2 Situational Leadership

In addition to the previous leadership styles, there is also situational leadership theory (SLT). Situational leadership is based upon a leader's task-oriented behaviour and relational oriented behaviour. The core idea of situational leadership is that the follower’s readiness or maturity should guide whether the leader should adopt a task or relational oriented approach of leadership (Hersey & Blanchard, 1988, p.170). The follower's maturity are divided into four levels R1-R4 and refers to the follower's ability and willingness to perform tasks, with R1 representing the lowest ability and a low willingness to perform a task, and R4 the highest of both parameters (Hersey & Blanchard, 1988, p.171). A follower with a low R should be met with a more task-oriented behaviour and one with a high R should be handled with a more relational oriented behaviour (Hersey & Blanchard, 1988, pp. 173-174).
2.3 Summarized Framework
The framework is consisting of relevant concepts which guides our empirical analysis and connect the research questions with the outcomes of an efficient team. The framework is here to enhance the understanding of our choices of method and to give a clear picture of how all ties together.

Figure 1: Summarized Framework

The framework shows how organisational identification in team members is dependent on communication, level of virtuality, cultural differences, initial contact, and recency of membership, interorganisational competition and polarisation as well as member involvement. The member organisational identification is connected with team performance and efficiency of communication as well as staff turnover. Management and leadership of dispersed virtual teams are connected both to the success factors and the performance since the manager has a substantial overview of both performance and team members. RQ2 is therefore both tied to the performance or outcome as well as the critical success factors. RQ3 are connected to both the organisational identification and the management and leadership and leads to the outcome.
3. Method

The methodology chapter will consist of a presentation of the methodological choices as well as a thorough motivation how the stances fit our study. It will be discussed both from a theoretical, philosophical as well as a practical perspective. A comparison of the relative advantages and disadvantages of alternative approaches will also be discussed.

3.1 Research Philosophy

The research philosophy is important since it comprises vital assumptions about the researcher’s view of reality and these assumptions will affect the research strategy as well as methodological choices (Saunders et al., 2009, p. 108). Further, Bryman & Bell, (2011, p. 23) states that questions of social ontology cannot be separated from research, since it will trickle down into the ways research is conducted. The main influence of research philosophy is how the researcher sees the relationship between knowledge and the process of how it is created (Saunders et al., 2009, p. 108). One philosophical approach is not better than another, although one can be better at accomplishing certain type of research (Saunders et al., 2009, p. 109). There are two main ways of thinking when it comes to research philosophy; epistemology and ontology (Saunders et al., 2009, p. 109). These will be further elaborated as well as the author’s philosophical stances will be described. Furthermore, our view regarding the role of values in research; Axiology will also be stated in the coming sections.

3.1.2 Epistemology

Epistemology refers to what is or should be acceptable knowledge within a field of study (Bryman & Bell, 2011, p. 15). A major question is whether the social world should be studied according to the same rules as the natural science (Bryman & Bell, 2011, p. 15). Saunders et al. (2009, p. 113) states that researchers believing that social science should be studied similar to the natural world could be characterised as a positivist. On the other end of the spectrum there is interpretivist that argues that people and their institutions are hugely different from the subjects of natural science, and therefore demands a different logic of research approach (Bryman & Bell, 2011, p. 16). The interpretivist approach differs between research among humans and objects, because we as social actors or humans interpret our world in a subjective meaning (Saunders et al., 2009, p. 116).

The positivist view upon the role of research is that it should test theories and contribute to the development of laws (Bryman & Bell, 2011, p. 15). Further, positivist prefers working with an observable social reality and that the end goal is to generate law-like generalisations similar to those in natural science (Saunders et al., 2009, p. 113). Another, characteristic of positivism is the view that the research should be value free (Bryman & Bell, 2011, p. 15).

However, organisation studies has been very inclined towards empirical research and there are a confidence in the conduct of collection and processing of data can confirm or reject different hypothesis and theories. However this view has been questioned by a variety of intellectual orientations (Alvesson, 2003, p. 13). A common criticism to positivism is that it ignores that the world of business and management are far more complex to generalise in to definite laws (Saunders et al., 2009, p. 115). Furthermore, it does not address the subjective meaning of social action (Bryman & Bell, 2011, p. 16). The positivist approach is not suitable for our research since a lot of rich insights of the
complex world of virtual teams can be missed if we reduce the study to law-like
generalisations (Saunders et al., 2009, p. 116). Moreover, Blomquist et al. (2010, p. 5)
criticised that project management research has become too rationalistic, to the point
that it does not generate any useful theories.

Therefore, the interpretivist view is more in line with our epistemological assumptions
because our view is that people and virtual teams are very different from the natural
science and therefore demands us to embrace the subjectivity of human action in order
to generate any useful findings.

3.1.2 Ontology

“Questions of social ontology are concerned with the nature of social entities”
(Bryman & Bell, 2011, p. 20). A major issue is whether social entities should be
viewed as objective entities that are independent from social actors, or if they are social
constructions based on the perceptions from social actors (Bryman & Bell, 2011, p. 20).
The objectivist ontological view argues that entities exist in a reality independent of
social actors (Saunders et al., 2009, p. 110). Objectivist view an organisation as a
tangible object, with set of rules and procedures that constrains the people that inhabits
it, hence it is external to social actors (Bryman & Bell, 2011, p. 21). The objectivist
view on virtual teams would therefore be that a virtual team is a fixed and stable entity,
with a stated goal and set of rules that guides the members of the team. However, the
objectivist view misses to capture the dynamic nature of virtual teams, as well as it does
not address the meanings that people attach to a social phenomenon, i.e. organisational
identity (Saunders et al., 2009, p. 111). Therefore another ontological stance is called
for.

The other major ontological view is subjectivism, which proposes that social
phenomenon’s are made from the perceptions of actions of social actors (Saunders et
al., 2009, p. 111). A form of subjectivism is a term called constructionism (Saunders et
al., 2009, p. 111). Constructionism proposes that the social order is in a constant state of
revision, and that a social phenomenon and meanings attached to it is created by social
actors (Bryman & Bell, 2011, p. 22). This view believes that organisational culture is a
result from social interaction by the stakeholders of the organisation (Saunders et al.,
2009, p. 111). Since the study is about investigating organisational identity in virtual
teams, should the constructionist view be the most appropriate. This view allows us to
investigate how people attach meaning to an organisation through the use of social
identity. Furthermore, this ontological stance captures the dynamic and ever changing
state of revision of organisational culture in virtual teams (Bryman & Bell, 2011, p. 22).

3.1.3 Axiology and Preconceptions

Axiology refers to what role values have in our research choices (Saunders et al., 2009,
p. 116). The role of values is vital to reflect about, since the researchers values can
trickle down into all parts of the research process from choice of subject to conclusions
(Bryman & Bell, 2011, p. 30). Furthermore, Saunders et al. (2009, p. 116) argues that
researchers should state their own personal values in relation to the topic they are
investigating. By reflecting about your preconceptions, you can enhance the awareness
of value judgements whilst drawing conclusions from data (Saunders et al., 2009, p.
118). Moreover, Bryman & Bell (2011, p. 30) states that it is almost impossible to keep
the values apart from the research, because prior knowledge, experience, and attitudes
of the researcher will influence how the researcher see things and also what he/she sees.
Another approach is to embrace the values because they play a large part in interpreting results (Saunders et al, 2009, p. 119).

The choice of subject is a question that commonly arises while discussing the role of values in research, and our previous experiences of working virtually has indeed affected our choice of subject. We have worked virtually in school when for example conducting group work. We have used Google document, Facebook, Skype, and other tools of communication as means of coordination. The experience of working virtually has provided us with a basic understanding of the issues that can arise from this work method. This is an asset for us, in the sense that it can help us to grasp and analyse the data retrieved from the interviews and surveys. Furthermore, since we are business students we possess extensive knowledge of issues that can be encountered in organisations and the external environment enclosing it. Our extensive knowledge in business administration and economics will also be beneficial for this research since it will help us to analyse data and comprehend the literature assembled for this study. Regarding the subject has both of us taken courses in project management in which the virtual work environment is growing. However, untrammeled intrusion of values should be excluded from the study in order to acquire reliability.

3.2 Research Approach

Management research is generally built on three approaches, the deductive, the inductive and the combination of these, namely the abductive approach (Polsa, 2013, p. 288). The deductive approach is investigating quantitative data in a visible manner, in order to test a given theory in a specific environment (Polsa, 2013, p. 289). This is conducted in order to explain causal relationships, generalise findings in the qualitative data, often by use of hypotheses which results in reliable data that useful in various empirical settings, both complicated and simple (Polsa, 2013, p. 289; Saunders et al., 2009, p. 125). The deductive approach is not in line with this study due to the nature of the research question and purpose; hence it would limit the study to explore the qualitative features of the stated purpose.

The inductive approach on the other hand which is used to develop a ‘context-sensitive theory’ by analysing qualitative data in a non-generalizable manner (Polsa, 2013, p. 289; Saunders et al., 2009, p. 127). The inductive approach is used to discover qualitative features of an identified problem, by closely study the meanings and research context (Saunders et al., 2009, p. 126). The objective with the inductive approach is to develop a theory from the identified problem, though Polsa (2013, p. 289) argues that the findings of an inductive approach is in seldom resulting in an interesting theory. The concept and the qualitative features of the inductive approach can be useful in this study, though this paper is not about developing a new theory.

An abductive approach can be seen as a multiple approach which combines the deductive and inductive approach (Polsa, 2013, p. 289). Polsa (2013, p.289) describes the abductive approach as a circular research process, by that she argues that the research is not bound to existing literature or empirical data, rather the researcher uses both in order to find or generate a theory. Moreover, the abductive approach offers a higher degree of creativity by investigate events from new angles, and applying existing theory to a known empirical context (Polsa, 2013, p. 289). The approach creates opportunities for the researchers that would be limited in a pure inductive or deductive approach since the researcher can go from theory to data and back (Polsa, 2013, p. 289).
Saunders et al. (2012, p. 147) further explains the abductive approach as a process of finding a surprising fact, then gather evidence in order to find a suitable theory to answer on how the event could have occurred. As this study will use qualitative data as well as quantitative data and will go from theory and back to the empirical data (creation of questions for interviews and questionnaires from theory) the abductive approach will fit the purpose as well as the research questions.

3.3 Research Design

This paper is aiming at gaining an understanding on perceptions of managers and the issues of organisational identity; one can thereby argue for that the paper has an exploratory purpose (Saunders et al., 2009, p. 139). We as authors on the other hand argues for the purpose of an exploratory research with descriptive features, the objectives are to explore the perceived advantages and disadvantages of managers’ perception by semi-structured interviews as well as describe the issues of organisation identification by use of quantitative data. Saunders et al. (2009, pp. 139-141) differentiate between the studies by stating that the exploratory study explore what has happened, the explanatory explain what has happened and the descriptive describe the occurrence. The use of multiple purposes is common when a research question has multiple purposes as well (Saunders et al., 2009, p. 139).

3.4 Data Collection Method

This paper is as mentioned using the abductive approach, this enable the authors to use multiple data collection instruments (Polsa, 2013, p. 289). The main data collection techniques is the qualitative and quantitative data collection, as the name suggests one is more considered to numerical data and the other on words (Saunders et al., 2009, p.151). Both methods are used to collect, summarise and draw conclusions of a specific sample, though in different procedures (Saunders et al., 2009, p.151). The use of quantitative method is more common in large data sets and when there is countable and quantifiable data available for instance in survey, descriptive or experimental research (Saunders et al., 2009, p.151). On the other hand is qualitative method more frequently used in case-studies when detailed information is requested (Saunders et al., 2009, p.151). The qualitative method is often combined with purposeful sampling and the quantitative method is commonly combined with the probability sampling (Sandelowski, 2000, p. 248).

In order to expand the research towards both quantitative and qualitative data and to enhance the analytical power of this study the use of mixed method is used. Sandelowski (2000, p. 254) argues that a mixed method can be conducted in “an almost limitless array of combinations of sampling, and data collection and analysis techniques” (Sandelowski, 2000, p. 254). Triangulation is another well-known key concept in which the methods is combined, this is discussed by Bryman & Bell (2011, p. 397) as a well-established practise. The triangulation is as straight forward as it sounds with a process that uses multiple methods in order to generate findings. The research today is of varying kind and the line between qualitative and quantitative methods is diminishing in certain areas when qualitative data with verbal answers can be transformed into numbers and is part of quantitative data procedures (Sandelowski, 2000, pp. 250-251). Hence the use of a mixed method that is in line with this study and allows us to use multiple techniques to clarify, elaborate, expand the scope of, and
explain the received data in a more reliable manner (Sandelowski, 2000, pp. 247-248; Malterud, 2001, p. 487).

This study will use questionnaires to gather quantitative data in order to gain an understanding of how members in a dispersed virtual team perceive the issues of organisational identification. The result of the data will include distinct quantitative data as well as some qualitative data, this in order to explore the perceived issues in a reliable way. The qualitative features of this study is the semi-structural interviews with managers which aims for give an understanding of how the managers perceive the advantages and disadvantages as well as handle issues when working virtually.

### 3.5 Research Strategy/Design

In order to answer to the stated research questions and fulfil the purpose; a clear research strategy is necessary. Since the paper is using a mixed method approach the strategy is not bound to a certain strategy (Saunders et al., 2009, p. 141). This study will use a *survey strategy* in order to gather data through questionnaires; the strategy is closely linked both to the exploratory and the descriptive research purposes, hence, very suitable for this degree project (Saunders et al., 2009, p. 144). Furthermore, one can argue for the use of grounded theory strategy, the paper is using a form of triangulation in order to enhance the understanding of the data as well as trying to explain the behaviour and issues of organisation identification and managers’ perceptions (Saunders et al., 2009, pp. 146-149). The strategy of grounded theory is closely connected to the combination of methods (Saunders et al., 2009, p. 148) but this paper will not use this method since it fits better in a longitudinal study. Rather the study will develop the *case study* and combine this strategy with the survey strategy, Saunders et al. (2009, p. 146) argues for the advantages by using triangulation and the combination of designs. Though Morse (2005, pp. 583-585) is of another opinion, the authors of this paper claim that this combination strengthen the overall reliability, trustworthiness, and the validity of this paper due to the use of both quantitative and qualitative data and a combination of the designs.

### 3.6 Time Horizon

This paper which uses a mixed data collection method which involves qualitative and quantitative features and has taken an interpretivist view of the world will favour by taking a cross-sectional study. This paper will investigate and identify issues and advantages that are origin from a longer period of time but we will investigate the sample at one time. There is of course time constraint that contributes to this decision in this paper, but a cross-sectional study is suitable when using survey and descriptive strategies (Saunders et al., 2009, p. 155), hence it is also suitable in this thesis.
**Figure 2: Methods**

- **Epistemology**
  - Interpretivism
  - Positivism

- **Ontology**
  - Constructionism
  - Objectivism

- **Research Approach**
  - Deductive
  - Inductive
  - Abductive

- **Research Design**
  - Exploratory
  - Explanatory
  - Descriptive
  - Exploratory-descriptive

- **Data Collection Method**
  - Qualitative
  - Quantitative
  - Mixed-method

- **Research Strategy**
  - Survey-Case Strategy, Grounded theory, Action research, Archival research, Experiment

- **Time Horizon**
  - Cross-sectional
  - Longitudinal
3.7 Ethical, Legal and Societal Considerations
Ethical concerns will be present while planning the research, seek access to organisations, individuals, the collection, analysing of data as well as presenting the report (Saunders et al. 2009, p. 184). There are four main concerns regarding ethical issues in business research; whether there is harm to participants, lack of informed consent, invasion of privacy, or whether deception is present in the study (Bryman & Bell, 2011, p. 128). Harm to participants refers to physical harm, damage to participant’s self-esteem, stress, and harm to career opportunities or future employment (Bryman & Bell, 2011, p. 128).

In this study we will avoid exposing any individual or an organisation as far as possible by using pseudonyms to refer to each entity or individual. Researchers should concern for keeping the confidentiality of anonymity of accounts and records (Bryman & Bell, 2011, p. 129). The reason for why we have decided to use pseudonyms is because that some information might be sensitive and can potentially damage an organisation or an individual. Furthermore, it can be difficult to assess beforehand what information that can lead to damage or repercussions, therefore it is better to “be safe than sorry”. Lack of informed consent refers to that participants should have been provided enough information about the study in order to be able to take an informed decision whether he/she would like to participate in the research (Bryman & Bell, 2011, p. 133). Therefore, will the participants of the study be informed about all relevant information they need to comprehend what the study concerns. However, Bryman & Bell (2011, p. 133) also states that it can be very difficult to present all relevant information the participants require in order to take an informed decision. We offered each interview participant the questions in advance in order to make them feel more comfortable with the study. We think that this has not affected the result; it has rather contributed to better discussions since the respondent had a chance to think about the subject in advance.

Invasion of privacy refers to that researcher does not have the right to intrude on a respondent's privacy or disrespect any individual's values (Bryman & Bell, 2011, p. 136). The problem here is that it can be very hard to know what questions that can be considered private, since what is private or sensitive depends from person to person (Bryman & Bell, 2011, p. 136). Therefore, we shall provide an opportunity for the respondents to skip a question or withdraw from the study if they perceive it to be too private. However, given the nature of our subject it is unlikely that it would be perceived as sensitive.

Deception refers to when the researchers present the study for the respondents as something other than it is (Bryman & Bell, 2011, p. 136). This study will have no elements of deception, as the authors are aware of the issue and have taken it into consideration.

The societal considerations that we have identified is that if the development of virtual work keep moving forward as it has done, it will reduce the need for travel and this will lower the environmental impact. Other societal implications are that the different governmental departments can cooperate and use their resources better when travel is reduced.
3.8 Search Strategy and Source criticism
The search for literature in this paper has mainly been conducted using the University Library database to find scientific articles. The authors have used relevant terms and keywords in order to find relevant articles, for instance: management, virtual teams, and work from home, project, teleworking, and project management. Some articles have also been searched for by using keywords referencing to the special area on attention, for instance: multiple method, qualitative, quantitative method, research approaches. Moreover, has a scan of the reference lists of articles used been conducted in order to find more relevant articles in the area of research, Martins et al. (2004, p. 806) argues for the last method as efficient and useful. After receiving the articles a first separation has been conducted by reading the abstract and conducting an overview of key findings, if the articles are of relevance a thorough review is conducted and the article is used in the paper.

The paper has also some relevant books and other sources that is not published and scientific reviewed, though the books are well cited used as previous course books, and can be seen as being of academic relevance. The sources from newspaper and similar are from well-known papers and consists of data that are used to enhance the interest and confirming information. These sources are also reviewed thoroughly in order to keep the relevance and reliability high. We see the diversity of articles, books and other sources as a mean of increasing the reliability and validity of this paper. The authors has critically evaluated the content of the articles and books in order to strengthen the overall quality of the paper, the sources that was excluded was in general too old or not connected to our subject. The age of the sources are very important in this subject since the information technology has developed fast during the last years, hence we have taken the age in special consideration.

3.9 Practical Method

3.9.1 Questionnaire design
In this study we have used Google Forms in order to construct and distribute our survey. Google form is an application in Google Drive in which people can construct a survey as well as make changes in real time. Furthermore, Google Form can be connected to an excel spread sheet which is beneficial for us because it eases the data management, which makes the analysis simpler to conduct. The survey was distributed through a URL link that we sent to potential respondents that was selected according to our sampling strategy. A major risk is that a respondent has the possibility to fill in the same form several times. Although, Google Form has a feature that demands from the respondent to log in to their Google account and would therefore limit the respondent for 1 answer per individual. However, we have decided to not use this feature because the risk is that we suffer from a higher loss of respondents due to people's inclination of indolence. Since people that not already have a Google account might not bother to register an account just to fill in a form is the downside larger than the benefits with log in. Furthermore, the survey must also be aligned with the ethical guidelines and by demanding the respondents to register an account the risk is that their anonymity is compromised.

The questionnaire is anchored in theory meaning that we have based the questions from findings from previous studies. See the Table 5.
Initially, the questions were written in English in order for international readers to understand what the questions are about. However, since our sample is partially Swedish speakers and because we do not want any misinterpretation of the meaning of the question from the respondent’s side, we have translated the questions to Swedish. The translation has not been “word by word translation”, rather has the question been interpreted and then expressed in a manner that fits with the Swedish language. However, this translation method is risky in the sense that it can generate translation errors, but since we both are native speakers in Swedish and has very high comprehension of the English language we perceive the risk to be quite low. The English speaking participants has of course received a survey with the questions in English. The questions are either ranging from 1 to 5 with 1 meaning Strongly disagree and 5 Strongly agree. Why we used 1 to 5 is due to the survey used by Ashforth & Mael (1992) which used 1 to 5, and since we are adopting and using this test we found it appropriate to use 1 to 5 on every question. The only exception is the last question that discusses the success factors, in which the sample must choose between 1 to 4 in order to remove the “middle” answers.

<table>
<thead>
<tr>
<th>Question</th>
<th>Questionnaire Questions</th>
<th>Article</th>
</tr>
</thead>
<tbody>
<tr>
<td>1, 2</td>
<td>Years of service, Presence at the workplace</td>
<td>General Questions</td>
</tr>
<tr>
<td>3, 4</td>
<td>F2F before project, Amount of virtual work</td>
<td>General to show level of virtuality</td>
</tr>
<tr>
<td>5</td>
<td>Worktime at the workplace</td>
<td>Lee-Kelly &amp; Sankey, 2008; Zander et al., 2012</td>
</tr>
<tr>
<td>6</td>
<td>International Collegues</td>
<td>Heikki, 2006; Verburg et al., 2012</td>
</tr>
<tr>
<td>7, 8, 9, 10</td>
<td>Technological Support, Formation Of An Accurate Picture, Categorization, Salience of Cultural Differences</td>
<td>Fiol &amp; O’Connor, 2005</td>
</tr>
<tr>
<td>11, 12, 13, 14, 15</td>
<td>I say &quot;We&quot;, Success Of Group, Interested What Other Thinks, When Someone Praise, Media Critique</td>
<td>Mael &amp; Ashforth, 1992</td>
</tr>
<tr>
<td>16, 17, 18, 19, 20</td>
<td>Influence Team Decisions, My Views Have Influence, High Quality Communication, I initiate communication, Manager Initiate Communication</td>
<td>Gajendran &amp; Joshi, 2012</td>
</tr>
<tr>
<td>21, 22</td>
<td>Low Communication Involvement, High Communication Involvement</td>
<td>Kapur et al., 2013</td>
</tr>
<tr>
<td>23, 24, 25</td>
<td>I Consider Myself Experienced, No experience, Experience Software</td>
<td>Gajendran &amp; Joshi, 2012; Iorio &amp; Taylor, 2015</td>
</tr>
<tr>
<td>26</td>
<td>Success Factors</td>
<td>Casey, 2010; Lee-Kelly &amp; Sankey, 2008; Verburg et al., 2012; Zander et al., 2012</td>
</tr>
</tbody>
</table>
3.9.2 Sample Design
The sample for this paper was collected in two main approaches, the first approach is purposive sampling or judgemental sampling and is an approach in which the authors select suitable respondents (Saunders et al., 2009, p. 237). In the approach must the authors base their decision on how the respondents will fit to the specific study and is suitable when the sample is small and the purposes are rather narrow (Saunders et al., 2009, pp. 237-239). Furthermore, this study is also adopting the snowball sampling. Snowball sampling is used to gain access to more respondents within the business area of our targeted sample.

The approach is conducted in the way that we asked our first respondents if they know any other that can contribute to the study and this goes on and on until a favourable sample is collected (Saunders et al., 2009, p. 240). The snowball sampling is suitable for this study since it enables the authors to find new respondents to both the questionnaire and the interviews; hence it contributes to a stronger data material and thereby to a more accurate result. In this study we have contacted relevant respondents from diverse industries who have a high knowledge in the area, and is working in a virtual working environment on a daily basis, we asked them if they know anyone else who could contribute to this study, thereby adapting the snowball approach. The respondents are taken from our personal network and from other relevant companies/agencies. The sample has been from the IT-sector, production companies, PR and advertising businesses, government agencies and county councils.

3.9.3 Construction of Interview Guide
The construction of the interview guide was conducted for our semi-structured interviews in a way that we as interviewers can feel free to follow the guide without being limited by it. In other words we have conducted the guide so that the main topics will be covered but the direction of the interview can move rather freely. This is most suitable for this papers’ choice of having an exploratory feature in the qualitative part of our research design, and is firmly established in literature as well (Saunders et al., 2009, p. 320).

The questions are ranked according to subject and how important each question are to this paper; this in order to be able to cover the most important areas during the interviews without taking too much time for the respondent. The questions are derived from previous studies and cover the areas of organisational identification, leadership styles, success factors, advantages and disadvantages of virtual work, and some open questions to create discussions. Every question is revised to make sure that the questions is not leading the answers in a certain direction since that can cause bias (Saunders et al., 2012, p. 393) Each question is linked to theory and are contributing to provide an answer to our purpose. The purpose is, as stated above; to investigate virtual teams from a managers’ perspective, in order to acknowledge the advantages and disadvantages of working virtually.

3.9.4 Conducting the interviews
The interviews are conducted by both the authors and are recorded in order to transcribe the interview. All interviews was conducted in Swedish since the respondents are Swedish speaking, therefore was the interview guide translated into Swedish. The translation is of though a weak link, but we have made sure that the substance of the questions is not lost in the translation. Since the questions are part of a guide and not written in stone there is some room for explanation of the substance if it is unclear for
the respondents. The interviews are recorded after the consent of the participant during the process in order to be transcribed. The transcriptions are conducted in order to ensure that no information is lost from the interviews and it allows us to conduct a thorough template analysis. The interviews were between 10:56 and 25:30 minutes long and all was conducted through telephone. The difference in length was due to the different experiences that the respondent had, and also due to the willingness to talk and the level of explanation on the questions. Every interview are conducted by one of us with cohering by the other; this to ensure that the interview was moving in a good pace and in the right direction. In Table 6 we have provided detailed information regarding the interviews.

Table 6: Interview Summary

<table>
<thead>
<tr>
<th>Interview</th>
<th>Name/Date</th>
<th>Position</th>
<th>Length</th>
<th>Media</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Adam/20150320</td>
<td>Project Manager</td>
<td>15:15</td>
<td>Phone</td>
</tr>
<tr>
<td>2</td>
<td>Beatrice/20150323</td>
<td>Development Manager</td>
<td>10:56</td>
<td>Phone</td>
</tr>
<tr>
<td>3</td>
<td>Claes/20150324</td>
<td>Vice Director</td>
<td>18:57</td>
<td>Phone</td>
</tr>
<tr>
<td>4</td>
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<td>Harald/20150415</td>
<td>CEO</td>
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3.9.5 Data Analysis
The data analysis was conducted in two different manners since this thesis is producing both qualitative and quantitative data. The qualitative data which are derived from the interviews will at first be transcribed as mentioned above. After the transcription the data is presented and finally analysed using a template analysis (Saunders et al., 2009, p. 505). The template analysis is a procedure that is used when analysing qualitative data, it combines the inductive and deductive approaches in data analysis (Saunders et al., 2009, p. 505). The analysis uses codes or categories that are connected to themes from the interviews. Codes can be added and removed depending on how the analysis are conducted and how it goes, thereby enable the authors to use the template as an on-going tool to be able to analyse the data extensive (Saunders et al., 2009, pp. 505-506).

The codes are often shown hierarchically in order to describe the analytical process in a better way; this contributes to a clear overview of the themes and on-going revision (Saunders et al., 2009, pp. 506-507). We have implemented the template analysis as it fits our degree project and its sample well. The data have also been colour-coded in order to visually show the different themes in the data and have contributed to a thoroughly analysis. The coding has been conducted in order for us to be able to analyse our data in a systematic manner. However, some researchers criticize the coding approach because codes miss to capture the context from which the theme was derived from (Bryman & Bell, 2011, p. 588). We have summarised the interviews in a
trustworthy manner in the results chapter and hence the context of which the codes were derived from is not lost. Furthermore, the categorisation of codes has also been in line with our epistemological assumptions, since coding comprises researcher to interpret transcriptions of the interviews in order to grasp the meaning of a statement.

The quantitative analysis will be conducted by analysing the questions by the use of descriptive statistics; this will be complemented by multiple regression analysis of with organisation identification as the dependent variable. The usage of regression analysis will be conducted in order to show the correlation between our dependent variable and the explanation variables. In other words how organisational identification correlates to; member involvement, level of virtualness, and previous experience. The analysis is conducted in SPSS and outputs from the program will be presented with an explanation of how we interpreted the results.

3.10 Quality Criteria
The discussion of quality criteria is divided into two sections, at first a discussion of the quantitative features of validity, reliability and generalizability are presented. In the latter part of the section is a discussion of the qualitative features of quality presented, sorted in trustworthiness and authenticity and the related sub-criteria.

3.10.1 Validity
Validity refers to the question of that the study is concerning what it is intended to concern (Saunders et al., 2009, p. 157). Is the data collection collecting the right data, is the question relevant to the subject et cetera (Saunders et al., 2009, p. 157). General threats to the validity are history, testing, instrumentation, morality, maturation and ambiguity about causal direction (Saunders et al., 2009, p. 157). The questionnaire and the interview guide are constructed with the base received from previous literature and studies that is relevant to the subject. Everything is reviewed in order to be sure that the questions are relating to what we want to investigate, in order to enhance the validity of this paper and we are confident.

3.10.2 Reliability
In a quantitative setting, the reliability criteria is important due to it refers to the extent the findings are connected to the analytical procedures and data collection techniques used (Saunders et al., 2009, p. 156). One of the main questions regarding reliability is that if the results are the same regardless of occasion and time of collecting the data (Saunders et al., 2009, p. 156). Saunders et al. (2009, pp. 156-157) mention that the main threats can be seen as subject or participant error, subject or participant bias, observer error, and observer bias. In the quantitative part of this paper the authors will have the issues in mind and have clear questions and a transparent analysis in order to keep the reliability high. There are participation and subject bias that we cannot affect since we do not have direct access to our sample. Hence we believe that the answers we receive are from participants that have an opinion regarding the matter and therefore we think that we have very little bias regarding participants.

3.10.3 Generalizability
Since this paper is conducted with an aim towards a specific sample and in a subject that is diverse and constantly evolving, a generalisation of the findings is not possible. We have also investigated a sample that is very specific and we are not aiming for
creating any generalizable data. The qualitative features will be used to enhance and clarify the qualitative features.

3.10.4 Trustworthiness
The idea of trustworthiness in a qualitative research is separated into four criteria which are used to identify the quality-level of trustworthiness in a qualitative research (Bryman & Bell, 2011, p. 395). The criteria of trustworthiness are credibility, transferability, dependability, and confirmability (Bryman & Bell, 2011, p. 395).

3.10.4.1 Credibility
The criteria of credibility can be seen as the overall research is conducted in a good manner (Bryman & Bell, 2011, p. 396). Since one of the main objectives with a research is to mediate a reliable result to interested parties some confirmation of the findings has to be conducted, Bryman & Bell (2011, p. 396) discuss respondent validation and triangulation as credible instruments for achieving the desired outcome. Respondent validation can be conducted by replying the answers to the respondent in order to see that all have been perceived as it should by the researchers (Bryman & Bell, 2011, pp. 396-397). Triangulation means that the researchers use different methods in order to confirm the findings, often a mix of qualitative and quantitative methods (Bryman & Bell, 2011, p. 397). In this study the authors will use respondent confirmation regarding the semi-structured in order to get a confirmation that the findings are interpreted accurate and are believable. By that we will let the respondents know how we interpreted the interview by summarize the key questions. We are using direct quotes, primary and secondary data in the empirical chapter in order to enhance the credibility.

3.10.4.2 Transferability
The transferability criteria are quite similar to the external validity of a quantitative research, which are the criteria of how the findings can be used in other contexts or generalizable (Bryman & Bell, 2011, p. 43; Malterud, 2001, p. 484). In a qualitative setting a small group is researched extensively contributing to detail findings of this particular group, this finding is called a thick description, and is contradictory to a wide description gained in a quantitative study (Bryman & Bell, 2011, p. 398). In order to deliver high transferability in this paper we provide a detail description of the findings in the empirical chapter as well as a description of the analysis as well as tables of how we have interpreted the interview.

3.10.4.3 Dependability
Dependability can be seen as a complement to the reliability in a quantitative research, in order to maintain a high level of dependability the researcher need to have easy access to complete records of the research conducted (Bryman & Bell, 2011, p. 398).

One can argue for the use of an auditing approach in order to have a dependable study, this in order to have the process ‘audited’ to ensure a high quality (Bryman & Bell, 2011, p. 398). In this paper all the records of the interviews and questionnaires will be kept during the process, as well as drafts and notes taken.

3.10.4.4 Confirmability
The objectivity of a qualitative research is of crucial importance in order to receive an unbiased result (Bryman & Bell, 2011, p. 398). To be objective means that the author is not allowing his values and/or theoretical inclinations intrude the research (Bryman &
Bell, 2011, p. 398). To be complete objective is considered almost impossible, as in this study the subject is known to the authors and we have both worked a lot in a virtual setting and we have perceptions of advantages and disadvantages, hence the objectivity is hard to maintain completely. Bryman & Bell (2011, p. 398) argues for that the researchers can only act in good faith and that is sufficient to keep a high confirmability. In this paper we have acted in good faith and we have worked against the issue of subjectivity when evaluated research and conducting interviews. We have also mentioned the preconceptions in order to acknowledge that there exists possible issues of subjectivity and we have used these to our favour.

3.10.5 Authenticity

Authenticity is the other main criteria for a qualitative research, this criteria is consisting of five sub-criteria which are: Fairness, Ontological authenticity, Educative authenticity, Catalytic authenticity, and Tactical authenticity (Bryman & Bell, 2011, pp. 398-399). The five criteria are used to gain a broad understanding of the political impact of the research (Bryman & Bell, 2011, p. 398). Fairness is about if the conducted research is pinpointing the views of the sample investigated, Ontological authenticity is regarding the samples’ enhanced understanding of their social environment (Bryman & Bell, 2011, pp.398-399). Furthermore, the educative authenticity is regarding if the study is enhancing the perspectives of other members in the sample (Bryman & Bell, 2011, p. 399). The catalytic authenticity asks if the research has spurred members to advance their circumstances, and finally the tactical is about if the study has “empowered members to take the steps necessary for engaging in action” (Bryman & Bell, 2011, p. 399). This paper has taken the wide meanings of the mentioned authenticity criteria into consideration when conducting the study.
4. Result

The results are a product of interviews and a survey. The qualitative data will be presented as separate interviews in order to give a clear picture of how the respondents have provided answers. The quantitative data is presented with descriptive statistics and tables to show the results.

4.1 Qualitative Data

The qualitative data presentation in alphabetic order is presented.

4.1.1 Interview with Adam

Adam is a project manager and has previous experience as a vice project manager, he has a lot of experience of working in a virtual setting. He says that the virtual work environment is natural for him and that it is because “everyone is not sitting under the same roof anymore” and that the knowledge needed for the project is dispersed around the world.

When asked to identify the most important factors for virtual work environments Adam said that motivation is the far most important factor. By motivation he means that the employees must be motivated by the manager since the manager has not as much control of the members in a dispersed setting, in comparison to a collocated team with a higher degree of personal contact. Furthermore we asked how he motivates members of his dispersed team, there he states that the question is about how you act as a leader and that the leadership is crucial for motivation and he mention that “I believe that a situational leadership is very important when working with virtual teams”. On the question about his own leadership style he said that he uses a situational leadership that can be adjusted towards the specific member, competence or task, “you have to put all the necessary tools together in order to make the individual member as efficient as possible, it can demand that you use a coaching [transformational] or a task oriented leadership style [transactional]”.

Moreover, we asked about the main risks of working in a dispersed setting. The main risks that Adam identified was the risk of not following the time plan, that the members is not prioritising the project since virtual projects are often temporary and are not always the closest and most tangible/visible tasks. The “normal” manager may not be involved in the project and want to have a member focusing on his normal tasks instead of this temporary project, this is an issue since a project is temporary and the members has other tasks to handle as well. It is of importance that the members have time to put on the virtual team even though it is not always visible for the people around. Further the question about the main advantages arises and Adam stated that “the main advantages and also a necessary is that you get access to the required competence, you work in a virtual setting because the people and the competence needed is not available locally, at least that is how I see it”. Adam also gave an example of how the search process can create a virtual team in an instant, when they were looking for a specific IT competence the company found it in the US and thereby was a virtual project team created.
We asked Adam about how the internal conflicts are solved and if it are handled differently in a collocated team and a dispersed, Adam answered that there is usually less conflicts in a virtual team than in a collocated team. This had a lot to do with that the manager is often working directly and close to the members which leads to less contact areas and less potential conflict areas. Further Adam said, “in order to minimise conflicts the communication must work, as long as there is a high quality communication the conflicts are next to nothing”. On the questions about the importance of organisational identification Adam said that it is a very important part of a virtual team, since as described above, “the work is often close between the manager and the member on a daily basis and this creates a need for a larger meeting with everyone involved on maybe a weekly basis in order to create some kind of team belonging/identification”. Adam developed his reasoning by explaining that it creates another kind of responsibility, “it is far easier to tell a person that ‘I do not have time’, than to tell the same thing to 15 persons”.

Adam emphasise that it is of crucial importance that the members meet at least in a virtual setting for achieving progress, that is how a project develops and how close the project is regarding following the time plan. These meetings are for Adam not on daily basis, rather on a weekly basis since the most of his projects have more of a long term character, though completely necessary and” it is on these meetings you receive inputs and the members can tell about their progress”. The question about if he can see any difficulties of creating this identity in a virtual setting Adam stated that it can be hard but it all depends on the tools that you use. Adam works in a company that provides tools for video meetings and conferences, this implies that he has access to great tools and he said that “If we didn’t have the possibility of this (using the tools) it would almost be impossible to handle a more complex virtual project by only use phone and email”. We therefore asked if he thought that video was demanded and Adam answered that the face-to-face contact that is possible through video tools is needed. He provided an explanation that he had never worked in a virtual project with only textual and linguistic communication, it had always included video. He continued by saying that even when he works in a completely virtual setting he is always aiming for meeting all the members at least one time in a face-to-face setting, regarding where in the world they might be located. It is one of the objectives for the main project manager to arrange some kind of meeting, it can be in the beginning of the project as a workshop for a day or a weekend or when the initial tests are conducted. This in order to as mentioned; get to know each other and to get familiar with the products. Finally we asked Adam if there was anything that he wanted to add, and he said that he see the virtual working environment as the future and “We are going to work more and more virtually as the tools are getting better and we are in a global environment today, in order to get access to the best products and solutions you have to find the right individuals and they are not sitting in the same building, it is as simple as that”. He concluded with the following statement “well we are going from being a generalist to a specialist and that is why this happens”.
4.1.2 Interview with Beatrice

Beatrice are currently working as a development manager in the public sector, before this she was engaged in a large virtual project within the public sector with an aim of enhancing the development in a certain geographic area. The project was put together as a special skill project, with cross sectional and cross boundary project with members from different areas and levels of the public sector. Beatrice’s previous experience of virtual work was substantial and she states that: “we worked virtually all the time and it is the same in my current position”. Beatrice mentioned that one of the reasons that the project was progressing was that there was a clear list of activities, a time plan, and also a duty to declare what has been conducted towards the Swedish Agency for Economic and Regional growth (Tillväxtverket). On the question regarding the success factors of dispersed working Beatrice answered that a tight communication between the involved parties was of high importance. Most of the members in the project knew each other before this project began and that was one advantage according to Beatrice. Another advantage as Beatrice mentioned was the cost saving which was one of the reasons of using the virtual setting in the specific project.

On the question of the main disadvantages of virtual work was that the project ended too early according to her, there was no one that could take over the project and continue the process, this was as Beatrice stated “it was as in a lot of other cases, a need for a driving spirit in order to keep up the progress, and not the system [public sector] unfortunately”. We asked Beatrice if she experienced that there was harder to get the members engaged when working in a virtual setting, she answered that it was much easier during the project. She argues that “we had decided that these efforts will be conducted, and thereby could we not just let them vanish” One of the issues was that the outside support was not sufficient but the team was both engaged and active internally until the setbacks became too much to bear. Beatrice stated that the group identification is important but in this project there was no issue with this because the members knew each other. Beatrice finally emphasised the importance of communication in the virtual setting.

4.1.3 Interview with Claes

Claes works as a vice director at an entity in the public sector and has been having his position for 12 years. He states that in his leader role he has been involved in several international projects that were conducted virtually. He stated that his experience of virtual work has been acquired in recent years, because it was not common to work in a virtual setting 12 years ago, though he has been following the development of virtual work closely in certain aspects.

When asked about success factors regarding virtual work he emphasizes the importance of user friendly technologies; “The technology should be easy to understand, easy to use, and preferably should you not be able to make any mistakes”. Furthermore, He also stated that they have tried to accustom different managers within the municipality with video meetings technology but he perceive that it is very often technical problems; “It is always something that is in malfunction, especially with the technology”. The main reason for why they have implemented video technology is to reduce travelling.
When questioned about the richness of the media, he stresses that higher video quality is not important for him because the quality is already high and there is no need to improve this. He also believes that it depends from project to project if ‘sound only’ is necessary for successful projects.

Claes identifies the main advantages of working in a virtual setting as; no travelling, no time-loss, and reduced environmental impact. Another aspect he considers is that virtual meetings are more efficient than in comparison to face-to-face meetings, given that an agenda has been properly made and a chairman are leading the meeting. “In general, I believe people perceive that they have shorter time in these types of meetings so therefore is the communication more effective, shorter and more direct”.

Moreover, he also states that an advantage with videoconferences in comparison to telephone conferences is that you actually know who is talking; he perceives it to be more secure to see the person he talks to. When asked about the disadvantages and risks of working in a virtual setting he once again underline the technology aspect; “We tell them to test the technology the day before, or an hour before so that we can be certain that it works. So it is always that risk you have to take, that someone gets disconnected from a meeting and not get back in so they miss the meeting”. Further on, he discusses issues of body language: “You cannot see how people react in the same manner, you cannot see body language in the same way.”

Regarding how they solve conflicts in a virtual environment compared to a physical setting he states that he finds no major differences. However, he finds the communication in virtual meetings to be more honest in comparison to meetings where people sit in the same room. Claes does not believe that it is harder to motivate people in a virtual context rather the opposite, he illustrates by using an example in a project he was a member in and with participants from several countries and said that people felt pushed because they had a meeting every second week. He states that in a normal international collaboration between public sector organisations they would normally meet around 3 times per year, but since they had access to good communication tools they could have a meeting every second week. “Everyone had to have something to bring to the table prior to the meeting, otherwise when you have ‘these’ you cannot meet every second week”. He experienced that these types of meetings enhanced people’s involvement in a project.

Claes believes a strong group feeling is important for success in virtual projects. His measures to enhance group feeling in a project is to have a face-to-face meeting prior to the project start, because he finds it much easier to work in an virtual environment when you have met face-to-face beforehand. “We always begin with a physical meeting in order for people to get acquainted to each other, talk to everyone preferably, see each other, to be introduced to each other, in order to build social relations in a sense”. Furthermore, he also finds it easier for new people in the work group to function well within the meeting if the other members have met face-to-face beforehand. Further on, he emphasises that the time before a video meeting start, can be used for small talk in order to build a “lighter atmosphere” during the meeting.
Claes characterises his leadership style in virtual teams to be; more structured, clearer communication, and simpler work language. He also stresses the importance of checking that all participants in the team has understood the meaning of a message; “You have to be much more exact to make sure that everyone has understood the meaning of what has been said. You have to check all the time; have you understood how you interpret this?”

Claes concludes that he perceives it difficult to implement comprehensive virtual work in his organisation due to old habits. “It is incredible difficult to break old habits of travelling to a meeting”. He discusses: that in order for change to happen, must the individual have something to gain from virtual work, instead of driving 45 minutes for a meeting. He believes more user friendly technology can solve these issues.

4.1.4 Interview with David

David works as a project manager in an international environment, the main field is the construction industry in the UK. His role as a project manager are international collaboration by contractors and their workers, 90 % of the communication is conducted by IT-communication and phone.

We asked David to mention some critical success factors when working as a project manager in a dispersed setting; he stated that it is very important to be clear and distinct. Further he said “especially for me is it important to be very good at formulate, to use the technical terms in the right way, things can have very different meanings especially as in my case with a language barrier” this in order to take away possible misunderstandings that can arise. We followed that argument and asked about if there is problem with cultural differences, David stated that there are large cultural differences and those are visible in both the way the employees conduct work but also the time that they work.

One of the main differences is in the hierarchical structure and the communication between the manager and employees, in UK there is a much more formal structure and in Sweden the structure is more levelled. David said that this creates communication problems due to that the communication must go through the managers in UK instead of going directly to the workers in order for something to happen. David further states that this is one of the issues when working in an international project and it is something to accept since there is a different culture in the UK. On the question of the main disadvantages of working dispersed David mention that everything takes much more time when working dispersed, “the ways of decision is much longer when working dispersed compared to face-to-face”. Another disadvantage is visible when working against a larger organisation; in this case David felt that it could be hard to reach the right point of contact when not working under the same roof. He develops his argument by saying, “it can take five to six emails before it reach the right person and then it has taken a week, instead of an hour if the same issue had arisen at a collocated office”. David also emphasise further the disadvantages of a language barrier, especially for the more senior managers who are not as good at formulate in English, this issue becomes much more visible when the communication is in written form since there is not as much room for making themselves understandable as it is when discussing face-to-face.
We asked David about internal conflicts and how to solve them when working virtually. He stated that it is much harder to correct an individual when working dispersed, it is easier to avoid each other, “if someone has slip up and they know it and you need to call and correct them, they can just ignore your call, and if you send an email they can ignore it, thereby is it hard to push a project hard when working dispersed since you have no one to force”. We asked David about getting members engaged and active and if that is different in a virtual setting. David stated that it can sometimes be harder, but as he has experienced about dispersed work is that when a problem arise it is much harder to get things done, but as all goes well the engagement is not harder in the dispersed setting and he said that “it all comes down to that people must take their responsibility and do their tasks on time”.

We continued and talked about the need for strong organisational identification or group identification as in this case, David said that he thought that the identification is far more important when working dispersed and that the responsibilities must be clear in order to be able to control the dispersed group. He continues by stating “It is very important that everyone that works with a project feels engaged and have a will to act, and as said earlier it is only when everyone is on time with their tasks this works, because when it starts to arse around it will go bad”, “but when everyone have a strong group feeling and is comfortable with each other and everyone wants to proceed with the project and have a common objective it is rather painless to work dispersed”. When we asked about the leadership style David was not sure on what we meant but finally he said that he believes that he lets the members conduct their work and he keeps his distance and try to be nice towards the members, but if the members is not completing their tasks or if they in some sense mess up he corrects them rather hard in order to get the members back on track. David ended with stating an important phrase that ties his experience of working dispersed together, he said that “it is easier to letting someone down that is located 1000 miles away than someone that it sitting next to you”.

**4.1.5 Interview with Elisabeth**

Elisabeth works as a senior international adviser at an entity in the public sector. She has been employed since 1999. She has extensive experience of virtual environments. Elisabeth identifies clear and distinct communication and a well-defined strategy as crucial success factors in virtual projects. The major advantages with working virtually are the access to competence and experience that is possible in the virtual work environment. Elisabeth emphasizes that it is vital for members of a project to enter some sort of partnership agreement so everyone know how everything is going to happen and what is expected of each other. She also advocates that this agreement should be written down in order for the members to understand what is demanded from them. “Also that you write it down so that all partners know the deal and the agreement must be of quality, it needs to be thorough”. Furthermore, she also states that the partnership agreement can be beneficial in the case of solving conflicts. In the case an internal conflict arises in a workgroup she stated: “A governing group can take decisions in certain difficult questions regarding the collaboration, and it is good when you cannot solve conflicts, to summon the governing group with reference to the partnership agreement and demand a decision”.

Furthermore, she emphasizes the importance of meeting in a physical setting in both minor and major conflicts because she perceives it to be the most efficient way to solve conflicts of significance. Especially in international conflicts but also in conflicts
between local actors. She also stated that it is important to be able to see each other when solving major conflicts because a large portion of communication consists of body language and therefore is video meetings a very important mean of communication.” I believe that you have to be able to see and listen to each other, and to see the reactions of the other person and it leads to better understanding”. Another aspect of meeting in physical setting is that you “can shake hands and hug if needed”.

Elisabeth finds it harder to motivate members in a virtual setting when the cultural barriers are high. “It is of course harder with involvement, especially with other cultures that you do not have a direct contact with”. She underlines that you are more dependent of the representatives of each organisations because the level of motivation and involvement depends on how they have succeeded to involve their members.

Elisabeth finds it very important to establish a sense of group feeling in the work-group. Perhaps even more important in comparison to a face-to-face setting, this is because people are often from different organisational cultures. “If you have a group feeling it becomes much easier, there are a lot of advantages of it I believe, it is important”. She believes that feedback is a great tool to enhance group feeling and to help each other out, because it increases the ability to develop ideas. Regarding the formation of a mutual group identity she states that there are difficulties because people usually work from other organisations and therefore people pursue rewards and benefits that are connected to the own organisation rather than the collaboration; “Co-workers within the own organisation want success and rewards there, and that makes it harder if you are from different organisations”.

Her leadership style in virtual teams she characterises as: “I believe that you have to be more responsive, and to be able to understand the cause and affect problem rather than if you just work within your own organisation, in order to be able to find flexible solutions adjusted to different organisational members”. She concludes with that a culture of communication is vital when working across organisational borders and also to be responsive.

4.1.6 Interview with Felicia
Felicia is working as an account manager at an international public relations company, she has worked there 3,5 years and are working most of her time in a dispersed setting. The company has most of its clients in the Nordic countries and there are a lot of virtual teams working together between the countries. Felicia explains that the tools she uses are often email, Google documents, or intranet with combined windows.

We started to ask her about her perception of the tools and which she favours, she replied that mail is the most convenient tool since “As you are sitting most of the time at the computer you are able to conduct many tasks at the same time and you can finish the current task and then reply the email. And when we have phone-conferences there can be 10 different countries involved and it can be hard to grasp what is discussed, as well as the quality on the English language can also be a barrier for understanding, so I would say that I prefer email”. Felicia also said that if there are smaller groups, or perhaps one other person it is much easier to just grab a phone and discuss the matter straight ahead.
Further we asked Felicia about important success-factors for working in a dispersed setting, she said that clarity about expectations on what needs to be done and what oneself need to do in the framework of the project. Also quick replies and that the members are asking the questions directly is mentioned by Felicia. Moreover she said that “The transparency and that the members is easy to reach is also important, both when things are moving on fine and also when things is not going according to plans”. She sees the main advantage of working virtually as the financial gain of lower traveling costs. The main disadvantages with the dispersed working environment are according to Felicia the lack of personal contact and that it is hard to get a grip on who the person behind the screen actually are in person. This contributes according to Felicia to misunderstandings and that one can have a hard time to accept that something is delayed due the lack of knowledge on the circumstances, she also replied that “it is easy to miss small things in the communication that can create a conflict, also the dispersed setting is not giving the same we-feeling in the group”. Felicia has not experienced a need for always work in a collocated setting, but she says “if you can meet each other at least a few times makes a big difference and contributes to a higher understanding of how the other members work and how you are as a person, it is also harder to get to know other members through email, it is much easier to develop a relationship with a person that is sitting next to you”. Felicia tells that they usually do not meet up in the beginning of a new project, they rather meet during the project, but not as a part of the project. This is due to both time and cost of traveling said Felicia.

We asked how she solving the internal conflicts when working dispersed and if it differs from working face-to-face. She explains that it differs a bit, in a collocated setting it is easier to grab someone that you have a dispute with and solve it face to face, in a dispersed setting you often go through the closest manager and you often do it after a while, which can contribute to a larger conflict than it was in the beginning. Felicia said that one of the reasons for conflicts in a dispersed setting is the mentioned lack of interpersonal contact between the members. On the question of perceived member engagement and active participation in the dispersed setting Felicia do not think that it is harder than in a collocated setting, it has more of the type of task to do, she said that “if it is a boring task it is hard to engage members even in a collocated setting”.

Moreover we asked about the advantages of a strong group feeling in a dispersed setting and Felicia emphasised the importance and said that it contributes to create an environment in which one help each other and not compete against each other, this enhance the quality of the work and are also crucial for results. In the question of how to create a group feeling Felicia said that it can be hard if you never have met the person in person and much easier when you work collocated since you can have lunch with each other and thereby form an interpersonal relationship which gives a larger picture of the actual persons in the team. She also mentions that cultural differences contribute to a barrier for interpersonal relationships due to different ways of conducting work. In the end Felicia finishes off with adding what she identifies as important for having a successful virtual team and she emphasis that companies need to “invest in technological tools that ease virtual work”, she continued with saying that there is a lot of great tools on the market and many companies use them, but not all.
She finished with saying “companies do not invest enough in it [virtual working tools], they rather expects that you as an employee just accept to work virtually as it is right now”.

4.1.7 Interview with Günther
Günther works at a major international production company, where he works as a team leader. He has been having his position for 1.5 years and in his leadership role he has responsibility of 11 individuals. He has for the last 15 years worked globally within the company group and therefore acquired a lot of experience of virtual work.

When asked about the means of communication, he stated that he mostly uses different kinds of IT-instruments, E-mail, video conferences, and he has correspondence with training centres all around the world. When questioned about success factors in virtual teams he states: “Information, information, information”. He continues to emphasize the importance of keeping people in your group updated regarding current events and to inform people within the administration how errors will affect people. Furthermore, he also identifies structure as an important factor in virtual work.

Günter believes one of the advantages of virtual work is that it is “fast and simple” and that you have fast access to people. He develops his thoughts by saying; “If it is something that quickly needs to be discussed, videoconferences are very good, and if you compare to a personal conversation is it rather important to see the picture of a person so you can read people”. Moreover, he finds the risks of virtual work to be that it can be hard to read people despite good video equipment. Günther said: “However, I think that [video meetings] as a substitute never can replace personal meetings”. When we asked him regarding how he solves conflicts in a dispersed setting he replied that he is not afraid of conflicts and when a conflict emerges he tries to solve it as soon as possible. He also emphasised that there are cultural differences regarding how people solve conflicts.

Günther finds distinct and clear communication as vital factors in solving conflicts in a virtual setting, but he prefers to solve them in video meetings, because you can read body language. Moreover, Günther does not change his leadership style when working in a virtual setting; rather he uses the same style as he does in a physical setting. He underlines that even though his leadership style does not change, does the personal interaction between him as a leader and subordinates change along with the culture. He states that the subordinates treat a leader differently depending on the culture. “[Subordinates] behaviour is very different especially when it comes to questioning a certain position”. He underlines cultural differences as an issue; “It is a very different softness abroad in comparison to Sweden for better or worse”.

We asked him if it was harder to motivate people in a dispersed setting but Günther does not believe that is the case for his work group; “No i don’t think so, I have a very self-going workgroup and we have very good communication within the group and everyone are aware of what to do...I’m very happy to work with these guys, it works really well” and “People that sit more remote are often more self-going”.

In terms of importance of group feeling in the workgroup; he emphasizes that it is vital for members of the group to feel a sense of group belonging. His measures to enhance the group feeling within his group are to schedule meetings during breakfast so they can
eat together but also to have physical meetings. Furthermore, he states that it is important to keep yourself updated regarding what happens in everyone's life. He also states that people have tendency to do other activities after work when people from abroad visit the office, for example going out for a beer or two which can enhance interpersonal relationships.

We asked Günther if it was anything he wanted to add regarding virtual work, he replied: “It's always difficult to manage people you don't have full insight upon, you have to trust your staff” Moreover, he also states that sometimes is it relieving to not know so much about people's private life, which can be the case in virtual work.

4.1.8 Interview with Harald
Harald works as a CEO and owner in an advertising business and he has a long experience of the marketing and advertising business as he has had many companies in different settings since 1999. He explains that he conducts his business by either use in-house staff or when that is not available he uses his network to find specialists and experts in the requested areas; depending of the customer and the project.

We asked Harald to identify important success factors in the virtual working environment and he said that relations is the most important and with it comes the tools necessary of keeping the relations, by that he referred to internet and telephone. Harald see the major advantage with working virtually as a financial gain that companies does since the need of in-house personnel is lower when working virtually. He said that “the main advantage with virtual work is that you can get a high quality on both products and services and only when you need it, it may be the case that you pay more per hour, but you will receive a better product at the time that you want it” he also said that the alternative is to have an employee that is performing the same thing 3 to 4 times a year but you will have to pay him during the whole year. Harald concluded this by emphasise that it is the “right competence at the right time and place” that is one of the drivers behind working virtually.

Furthermore we asked Harald about the disadvantages of working virtually; he explained that the social and interpersonal relationships are the main disadvantages. He explained “Coffee Breaks, Smalltalk and to grab a beer together, the relationships is much more shallow and professional” when working in a dispersed setting. Moreover we asked Harald how he solves internal conflicts when working dispersed and if it is a difference from collocated work, on this Harald said that it is much easier to have misunderstandings when you communicate through emails and text messages when you do not meet the person you work with face-to-face. He also stated that “the personal meeting is in all levels superior”. As a source for misunderstandings in conflicts he said that “in an email you can only communicate the number of words in the actual message, in a meeting there is body-language, feelings, accents, smells and all that, which gives much more comprehensive information in the communication” he further said that it is because of this that the communication must be clear and it can be favourable to have a physical meeting with the persons involved.
Harald said that to motivate members in the virtual teams is not harder in a virtual setting, it can rather be the opposite since the members are paid for a specific task and thereby engage themselves in that task. He also said that “it has more with the individual to do than the phenomenon of virtual work”, further he developed his argumentation by explaining that a bad leader or boss can affect the motivation negatively even in a physical working environment, and that some people could be more successful as a virtual project manager instead of a physical project manager. He also said that it is more tied to the leadership style and personality of a leader. This lead us to the question of how Harald is as a leader, he explains that he trusts that people take responsibility and that they do their best to perform. Harald further elaborate that his leadership style works well in a virtual project setting and “it is no other [leadership style] that works, you have to trust that people do what they said they would do, and if they do not complete it, then it is much easier to not hire them again, since you do not have a personal relationship, no contract of employment and nothing to take into consideration as you have in a physical organisation”.

We asked Harald about the group identification and the group feeling, he said that it is important in the virtual setting due to the lack of a full picture for the individual member, he argued that “the one who does 3d-valuations do not know what the text writer in Kiruna does”, it is often only the project owner and project leader that has a full insight on the project as a whole. On the question if it is harder to create strong group identification Harald answered that it is much depending on the length of the project as well as what kind of project it is. Sometimes there is no need for group identification, when there is a short-term task, but if the project is longer there is a higher degree of willingness of creating group identification according to Harald. Harald concludes his reasoning by saying that “the rules are: I deliver this to you and you will receive it in a week, and a week after that I send you an invoice, and if everything went well you maybe can get an offer on another job”, this is the virtual work environment when handling short term tasks according to Harald.

4.2 Quantitative Data
We have received 22 respondents for our survey. The survey was distributed with the help of the managers we interviewed. Therefore, we are unable to estimate a number of how many potential respondents that got presented with the survey; hence we are unable to calculate the response rate accurate. However, we estimate that around 100 individuals got presented with the survey. The data in the following sections will be presented in diagrams and tables. Most of the questions are conducted as mentioned in the practical method, with a likert scale ranging from 1 to 5 with 5 being Strongly Agree and 1 Strongly disagree. The respondents were also asked to rank each of a given amount of factors on a scale from 1-4, were 1 represented not important at all, and 4 was very important (Figure 3). These factors are concluded in theory to be influential success factors in virtual work.
4.2.1 Success Factors

The most important success factors according to the respondents are trust and clear roles/responsibilities in a virtual setting. The second most important factors were identified as: Technical support, defined strategies, high communication frequency, good conflict management, leaders’ competence and technical experience of the technology used.

![Success Factors](image)

However, the results are somewhat incoherent since the second tier of success factors are very close to numbers in the first tier of success factors. Furthermore, the least important success factors were identified as cultural awareness and working experience. Cultural awareness was ranked as the least important factor.

4.2.2 Organisational Identification

<table>
<thead>
<tr>
<th>Questions</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I say “We”</td>
<td>22</td>
<td>2.00</td>
<td>5.00</td>
<td>4.1364</td>
<td>.88884</td>
</tr>
<tr>
<td>Success Of Group</td>
<td>22</td>
<td>3.00</td>
<td>5.00</td>
<td>4.4545</td>
<td>.59580</td>
</tr>
<tr>
<td>Interested What Other Thinks</td>
<td>22</td>
<td>1.00</td>
<td>5.00</td>
<td>3.6364</td>
<td>1.09307</td>
</tr>
<tr>
<td>When Someone Praise</td>
<td>22</td>
<td>2.00</td>
<td>5.00</td>
<td>4.0455</td>
<td>.84387</td>
</tr>
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<td>Media Critique</td>
<td>22</td>
<td>1.00</td>
<td>5.00</td>
<td>3.2727</td>
<td>1.16217</td>
</tr>
<tr>
<td>Org ID</td>
<td>22</td>
<td>13.00</td>
<td>24.00</td>
<td>19.5455</td>
<td>2.75555</td>
</tr>
</tbody>
</table>

In terms of organisational identification the respondents scored high. According to the test it can be concluded that the respondents identified with their work.
group/organisation. However, one of the questions scored a lower number than the rest of the questions. The question regarding “if a story in media criticised my organisation i would feel embarrassed” resulted in a mean that was somewhat lower than the rest of the questions. Furthermore, we also constructed an index ranging from 5-25 with a mean of 19.54. The index illustrates the combined mean of the answers. An index with a value of 25 would indicate a result with all respondents entered 5 in the survey for all organisational identification questions and 5 would represent a result when all participants entered the lowest score regarding organisational identification.

4.2.3 Characteristics

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological Support</td>
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<td>1.00</td>
<td>5.00</td>
<td>3.3182</td>
<td>1.08612</td>
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<tr>
<td>Formation Of An Accurate Picture</td>
<td>22</td>
<td>1.00</td>
<td>5.00</td>
<td>2.9091</td>
<td>1.06499</td>
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<tr>
<td>Categorization</td>
<td>22</td>
<td>1.00</td>
<td>5.00</td>
<td>3.5000</td>
<td>1.01183</td>
</tr>
<tr>
<td>Salience of Cultural Differences</td>
<td>22</td>
<td>1.00</td>
<td>5.00</td>
<td>2.8636</td>
<td>1.16682</td>
</tr>
</tbody>
</table>

The characteristics questions are not able to index since each question should be analysed by itself. However, the first question about, if the respondents found themselves able to form an accurate picture of a person in a dispersed setting resulted in a mean of 2.90, which is a fairly average score. The second question; regarding if categorisation is more polarised in a dispersed setting generated a fairly strong result with a mean of 3.50. The question about the saliency of cultural differences generated a fairly average result with a mean of 2.86. The respondents also found a need for increased technological support while working dispersed with a mean result of 3.32 indicating that it is of importance.
### 4.2.4 Leader Member communication (LMX)

<table>
<thead>
<tr>
<th>Table 9: Leader Member Involvement (LMX)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Influence Team Decisions</td>
</tr>
<tr>
<td>My Views Have Influence</td>
</tr>
<tr>
<td>High Quality Communication</td>
</tr>
<tr>
<td>I initiate communication</td>
</tr>
<tr>
<td>Manager Initiate Communication</td>
</tr>
<tr>
<td>Low Communication Involvement</td>
</tr>
<tr>
<td>High Communication Involvement</td>
</tr>
<tr>
<td>IndexLMX</td>
</tr>
</tbody>
</table>

The questions regarding leader member communication resulted in an indexed value of 26.63 with 35 maximum. This would indicate that the communication between the leader and members of the groups are good. The highest score got the question about members influence in team decisions, with a mean score of 4.54. Furthermore, the lowest score was regarding managers’ initiation of work related questions with a mean score of 2.95. However, 2.95 should not be considered a low score since the maximum is 5.

### 4.2.5 Previous Experience of virtual work

<table>
<thead>
<tr>
<th>Table 10: Previous Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>N</strong></td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>I Consider Myself Experienced</td>
</tr>
<tr>
<td>No experience</td>
</tr>
<tr>
<td>Experience Software</td>
</tr>
<tr>
<td>IndexEXP</td>
</tr>
</tbody>
</table>

The questions regarding previous experience of virtual work resulted in a fairly high indexed value of 10.36 out of a maximum 15.00, which indicate that the majority of the respondents have had previous experience of virtual work prior to their current position. Notice the standard deviation is 1.70, which means that there are substantial variations in the sample.
4.2.6 Virtualness

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Presence at the workplace</td>
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<td>1.00</td>
<td>5.00</td>
<td>3.1818</td>
<td>1.05272</td>
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<tr>
<td>Amount of virtual work</td>
<td>22</td>
<td>2.00</td>
<td>5.00</td>
<td>3.7273</td>
<td>1.27920</td>
</tr>
<tr>
<td>Worktime at the workplace</td>
<td>22</td>
<td>1.00</td>
<td>5.00</td>
<td>4.6364</td>
<td>.90214</td>
</tr>
<tr>
<td>International colleagues</td>
<td>22</td>
<td>1.00</td>
<td>5.00</td>
<td>3.0000</td>
<td>1.27242</td>
</tr>
<tr>
<td>Index Virtualness</td>
<td>22</td>
<td>9.00</td>
<td>20.00</td>
<td>14.5455</td>
<td>2.50195</td>
</tr>
</tbody>
</table>

In terms of virtualness does our respondents score high; the indexed value of virtualness is 14.54 which should be considered a fairly high number since the maximum score is 20.00. Furthermore, the direct question regarding virtualness in the workplace scored high with a mean of 3.72. These numbers indicate that the sample is representative regarding virtual work.
5. Analysis

This chapter begins with a qualitative template analysis in order to gain a deeper understanding of what has been discussed in the interviews. Subsequently, will a statistical analysis be provided to analyse our quantitative material. Furthermore, a comparative analysis between the two methods have also been conducted in order to acquire a more comprehensive view of the analysis and to make room for discussion.

5.1 Qualitative Analysis

The analysis of the result is presented in the following matrixes which are based on seven themes that are central in virtual work. The themes are derived from the conducted interviews and the top axis consist the first letter of the pseudonym used for each participant. To the left are the factors that has been mentioned and discussed by the respondents. A dot in the boxes refers to an answer for that certain factor from a specific respondent. The factors are coded (see code list below) in order to conduct an appropriate template analysis. Coding refers to that the interviews have been broken down into different parts in order to acquire a comprehensive picture of our data (Bryman & Bell, 2011, p. 577).

Table 12: Template Analysis

<table>
<thead>
<tr>
<th>Theme</th>
<th>Factors</th>
<th>Issues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Saving</td>
<td>COST</td>
<td>4.1 Technology malfunction</td>
</tr>
<tr>
<td>Time Saving</td>
<td>TIME</td>
<td>4.2 Language Barrier</td>
</tr>
<tr>
<td>Environmental impact</td>
<td>ENVIR</td>
<td>4.3 Intangible Tasks</td>
</tr>
<tr>
<td>Competence Access</td>
<td>COMPAC</td>
<td>4.4 Habits of Physical Meetings</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4.5 Low Media Richness</td>
</tr>
<tr>
<td>Experience</td>
<td>EXPE</td>
<td>5.0 Conflict Solving</td>
</tr>
<tr>
<td>Communication Frequency</td>
<td>COMFREQ</td>
<td>5.1 Physical Meeting</td>
</tr>
<tr>
<td>User Friendly technologies</td>
<td>TECH</td>
<td>4.8 Dependent Position</td>
</tr>
<tr>
<td>Experience</td>
<td>RELA</td>
<td>6.1 Group Feeling</td>
</tr>
<tr>
<td>Transparency</td>
<td>TRANS</td>
<td>6.2 Social Cues</td>
</tr>
<tr>
<td>Unorganised meetings</td>
<td>UNOME</td>
<td>6.4 Physical Meetings</td>
</tr>
<tr>
<td>Interpersonal relations</td>
<td>INTEREL</td>
<td>7.0 Leadership Style/Characteristics</td>
</tr>
<tr>
<td>Influence</td>
<td>INFLU</td>
<td>7.1 Common/Clear Objectives</td>
</tr>
<tr>
<td>Unprioritised Work</td>
<td>UNPRI</td>
<td>7.2 Flexibility</td>
</tr>
<tr>
<td>Long ways of Decisions</td>
<td>DECWAY</td>
<td>7.3 Responsive</td>
</tr>
<tr>
<td>Technology issues</td>
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<td>7.4 Transactional</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.5 Transformational</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7.6 Situational</td>
</tr>
</tbody>
</table>
5.1.1 Advantages

Table 13: Advantages

<table>
<thead>
<tr>
<th>Advantages</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>COST</td>
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<tr>
<td>TIME</td>
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<td>ENVIR</td>
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<td></td>
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<tr>
<td>COMPAC</td>
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</tr>
</tbody>
</table>

From the interviews it is reasonable to assume that the most important factors for which companies are engaged in virtual work are cost reduction, time saving and access to competence. As respondent A stated “the main advantages and also a necessary is that you get access to the required competence, you work in a virtual setting because the people and the competence needed is not available locally, at least that is how I see it”. This view was also mentioned by respondent E, G and H and connects to the findings of Lee-Kelly & Sankey (2012, p. 61) who concludes that the virtual team is well suited when it comes to efficient use of competence through both cross-functional and cross-boundary levels. The cost aspect are mentioned by four of our respondents and they all goes in line with respondent H who see a financial gain of using a virtual project team and respondent F who said it is costly to travel around and meet everyone in person; this combined with respondent G who stated it is “fast and simple”. These arguments goes in line with Martins et al. (2004, p. 806) who identified reduction of travel-costs and time saving as advantages. The environmental aspect was considered by one of the participants and could indicate that the environmental aspect of virtual work is a secondary factor for being involved in virtual work.

5.1.2 Success factors

Table 14: Success Factors

<table>
<thead>
<tr>
<th>Success factors</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>TECH</td>
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</tr>
<tr>
<td>EXPE</td>
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</tr>
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<td>DICOM</td>
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<tr>
<td>MOTI</td>
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</tr>
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</tr>
<tr>
<td>PHYSMET</td>
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<td>*</td>
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</tr>
<tr>
<td>PREAG/TME</td>
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</tr>
<tr>
<td>RELA</td>
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<td>*</td>
<td></td>
</tr>
<tr>
<td>TRANS</td>
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<td>*</td>
</tr>
</tbody>
</table>

The critical success factors is seen as crucial for being successful in the virtual work environment, here we can identify that Communication Frequency, Distinct Communication and Pre-Agreement/Time-plan are the most mentioned factors by our sample of managers in virtual teams. The communication frequency and distinct communication are also mentioned in other managerial studies for example Verburg et al. (2012, p. 70) and Gajendran & Joshi (2012, p. 1253) who also discuss the importance of planning, clarity of roles which is in line with our finding of pre-agreement and time plan.
In an article by Verburg et al. (2012, p. 70) the authors mention motivation as a crucial factor which is mentioned in our data, though only by 1 respondent, Verburg et al. (2012, p. 70) also discuss the user friendly technologies as an important factor, this is well in line with our findings since it is touched upon by 3 respondents. Another factor that is well mentioned in previous studies is previous experience in both the technology and tasks (Gajendran & Joshi (2012); Iorio & Taylor (2015)), this factor is only mentioned by one of our respondents indicating that it is of importance but not as important as stated in previous studies. Our respondents mention media richness, physical meetings and relations as important factors for success which is not as discussed in previous studies and is thereby interesting to investigate.

### 5.1.3 Disadvantages

Table 15: Disadvantages

<table>
<thead>
<tr>
<th>Disadvantages</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
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</thead>
<tbody>
<tr>
<td>UNOME</td>
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</tr>
<tr>
<td>INTEREL</td>
<td></td>
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<td></td>
<td>*</td>
<td>*</td>
<td>*</td>
</tr>
<tr>
<td>INFLU</td>
<td></td>
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<td>*</td>
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</tr>
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<td>UNPRI</td>
<td>*</td>
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<td></td>
</tr>
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<td></td>
<td></td>
</tr>
<tr>
<td>TECHIS</td>
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</table>

The most identified disadvantage in our data is the lack or loss of interpersonal relations, this loss is explained by the difficulty of getting to know another person when only communicating through information technology media. As respondent F stated “if you can meet each other at least a few times it makes a big difference and contributes to a higher understanding of how the other members work and how you are as a person, it is also harder to get to know other members through email, it is much easier to develop a relationship with a person that is sitting next to you”, this disadvantage is recognised in Heikki, (2004, pp. 80-81) who identifies social connections as an obstacle. There are lacks of discussions of the negative aspects about virtual work in literature, hence these findings are interesting to acknowledge.

The disadvantage of non-prioritised tasks and unorganised meetings are mentioned by our respondents and can be connected to Verburg et al. (2012, p. 77) which also identify an issue of multiple engagement in various projects as a disadvantage for success of the virtual team. As respondent B said with experience from the public sector “it [the virtual project] was as in a lot of other cases, a need for a driving spirit in order to keep up the progress and not the system [public sector] unfortunately”. The lack of influence, technical issues and long ways of decision is other identified disadvantages that our respondents said, the lack of influence is connected to the findings of Gajendran & Joshi (2012, p. 1252) who discuss this problem around the concept of leader member exchange. Technical problems goes hand in hand with the success factor discussed above about user friendly technologies, also emphasised by Verburg et al. (2012, p. 70).
5.1.4 Issues

Table 16: Issues

<table>
<thead>
<tr>
<th>Issues</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
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<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
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<td>LANGUAGE</td>
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</table>

One major issue that our respondents identified was the cultural difference that is present when working in a global virtual setting. Half of our respondents found that cultural differences is one of the issues and for example respondent G stated that “[subordinates] behaviour is very different especially when it comes to questioning a certain position” and respondent E said that “It is of course harder with involvement, especially with other cultures that you do not have a direct contact with”. The cultural differences are also well established in previous studies and are presented as of high importance in the studies of Verburg et al. (2012), Casey (2010) and Lee-Kelly & Sankey (2008).

Though in the review of Zander et al. (2012, p. 600) she argues that in some cases; cultural differences can be of lower importance compared to face-to-face teams. This is contradicted to our study since it is of high importance to our respondents. Moreover, Intangible tasks, Low media richness, misunderstandings, and perceived dependent positions are seen as main issues according to the managers’. Dissonance is discussed as one key issue by Lee-Kelly & Sankey (2008, pp. 59-60) and this can be tied to both misunderstandings and low media richness since as respondent F said “And when we have phone-conferences there can be 10 different countries involved and it can be hard to grasp what is discussed, as well as the quality on the English language can also be a barrier for understanding, so I would say that I prefer email”, these issues are due to low quality tools which creates misunderstandings according to respondent F who also emphasised a language barrier. Habits of physical meetings is one issue mentioned by respondent C and is discussed by Heikki (2004, p. 81) as management related obstacles were there might be perceived advantages, and willingness to work collocated and have meetings in person. The intangible tasks are explained by respondent A who stated that “since we are working dispersed it can be the case that you prioritise closer and more tangible tasks, you can have your closest manager telling you to do tasks that are not related to the virtual project”. This multi-engagement is often the case when managing virtual project team and is identified by 2 respondents, and discussed further by Verburg et al. (2012, p. 69).
5.1.5 Conflict Solving

The most important factors to resolve conflicts in a virtual workplace were identified by the respondents as the degree of communication frequency and the managers’ ability to take direct action. Respondent A emphasized the importance of communication frequency: “to minimise conflicts the communication must work, as long as there is a high quality communication the conflicts are next to nothing”. The statement implies that the communication flow must be high as well to be of quality. Direct action refers to solving a conflict when it occurs, respondent G stated: “I want to handle conflicts directly when they turn up”. Two respondents mentioned that they prefer to resolve conflicts in a physical meeting. Respondent E stated: “Even in small conflicts I think it is better to meet in a physical setting even if I work internationally” and “I find it very important in major conflicts to be able to see each other”. Respondent E further emphasized that video meetings are not always adequate in an international setting. The statement could be interpreted that physical meetings promotes other ways of communication not available in video meetings. The literature has found this to be useful, for instance Zander et al. (2012, p. 598) stresses the importance of bringing down linguistic boundaries between team members in order to resolve conflicts.

5.1.6 Organisation Identification

All of the respondents found it vital for a team to have a sense of group feeling. Respondent F stated: “It’s very important to have a strong group feeling and that you in some way help each other out and work together and that you don’t compete with each other, because the results will then turn bad” and we received similar answers from all remaining respondents. These answers are also in line with previous findings that suggest that a high group feeling/organisational identification might enhance productivity, job satisfaction and decrease employee turnover (Abrams & De Moura, 2001, pp.141-142). Furthermore, 4 respondents mention the lack of social cues in a virtual setting. Respondent H compared a physical team with a virtual: “Coffee Breaks, Smalltalk and to grab a beer together, the relationships is much more shallow and professional [in a virtual setting]”, in this statement he emphasised that the spare time of work can be used to acquire social cues in order to get acquainted with colleagues.
He also stated: “in an email you can only communicate the number of words in the actual message, in a meeting there is body-language, feelings, accents, smells and all that, which gives much more comprehensive information in the communication”. The statement underlines that face-to-face communication comprises much more cues in comparison to other sorts of communication. These findings correspond well with previous research, since people in face-to-face and hybrid teams can obtain social cues through interaction which can be used to create group identification (Fiol & O’Connor, 2005, p. 22).

The project managers’ measures in order to enhance group feeling are physical meetings but also video meetings; the reason for this is because richer communication media is believed to generate more multilateral communication. This is also supported by Fiol & O’Connor (2005, p. 23) who states that the degree of face-to-face contact largely affects what types of communication cues for which the members can use in order to grasp the elements of what characterises their team. Furthermore, richer social cues can also counteract polarised and extreme categorisations of members and workgroups (Fiol & O’Connor, 2005, p. 23). However, Fiol & O’Connor (2005, p. 23) also argues that pure virtual teams usually have more stable categorisations and can therefore experience more stable organisational identification in comparison to hybrid teams, at least in the short term.

5.1.7 Leadership Style/Characteristics

Table 19: Leadership styles and Characteristics

<table>
<thead>
<tr>
<th>Leadership Style/Characteristics</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
<th>F</th>
<th>G</th>
<th>H</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMOBJ</td>
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<td>FLEX</td>
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<td>RESP</td>
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<td>TRANS</td>
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<tr>
<td>TRANSFO</td>
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<td>SITUAT</td>
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</tbody>
</table>

The most common leadership style among the managers was the transformational style with 3 respondents who defined their style according to the transformational characteristics. Respondent H defined his leadership as: “I trust that people take their responsibility and that people do their best...” The quote could be interpreted as the manager’s job is to delegate what needs to be done instead of focusing on the details, which are indications of the transformational leadership characteristic. The fact that the transformational was the most used can be explained by previous literature that identifies transformational leadership with a performance focus as a success factor in virtual teams (Zander et al., 2012, p. 601). However, the situational leadership style comprises elements that are similar to the transformational style but have a focus upon the followers’ abilities and therefore can situational leadership also be successful in virtual teams.

Moreover, two people of each style answered that they used either the situational or the transactional leadership style. Three respondents perceived common objectives as a leadership success factor in a virtual context and two respondents raised the characteristic of flexibility as a trait in a leader. One respondent highlighted responsiveness as an important trait in her leadership.
5.2 Analysis of Quantitative Data
The analysis of the questionnaire is conducted by analysing descriptive statistics as well as conducting a multiple-regression analysis. The sample is a bit too small to be analysed completely reliable with a regression model, though we think that a Multilinear regression model will show tendencies and will contribute to the paper. The results should therefore be read with this in mind and we cannot trust the figures to a full extent.

5.2.1 Organisational Identification Measure
The measure on organisational identification is based on the five questions from Ashforth & Mael (1992, p. 122) and is our dependent variable in the following analysis. By summarise the answers and by create an index, we are able to compare the index of organisational identification to the other main themes that are present in the questionnaire. We conducted a test to check for reliability that is called Cronbach’s Alpha, the score was 0.525 and should range around 0.7 in order to be considered as high reliable. The scale ranges from 0 to 1 and measure the interrelatedness of scores in order to measure internal consistency (Kottner & Streiner, 2010, p. 927). Though Kottner & Streiner (2010, pp. 927-928) argue that the α is more accurate when there is a unidimensional measure and since this study is looking at the quite intangible measure of organisational identification it is of lower relevance. The measure of organisational identification that is applied in this study is used and published in earlier publications (Ashforth & Mael 1992, p. 122) and have a high academic value; hence the measure is reliable to this study.

In the table below we publish the correlations between the main themes, we can see that the correlations is quite strong with the highest between Org ID and LMX by .45 and the lowest between Org ID and Prev Experience. The single correlation between Org ID and LMX has a one-tailed p-value of 0.019, this indicates that the correlation is statistically significant (two tailed = 0.038) no other predictor are significant in this test,
Table 20: Correlations

<table>
<thead>
<tr>
<th></th>
<th>Org ID</th>
<th>LMX</th>
<th>Prev Experience</th>
<th>Level of Virtualness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Correlation</td>
<td>Org ID</td>
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<td>.446</td>
<td>.250</td>
</tr>
<tr>
<td></td>
<td>LMX</td>
<td>.446</td>
<td>1.000</td>
<td>.302</td>
</tr>
<tr>
<td></td>
<td>Prev Experience</td>
<td>.250</td>
<td>.302</td>
<td>1.000</td>
</tr>
<tr>
<td></td>
<td>Level of Virtualness</td>
<td>.383</td>
<td>.375</td>
<td>.253</td>
</tr>
<tr>
<td>Sig. (1-tailed)</td>
<td>Org ID</td>
<td>.019</td>
<td>.131</td>
<td>.039</td>
</tr>
<tr>
<td></td>
<td>LMX</td>
<td>.019</td>
<td>.086</td>
<td>.043</td>
</tr>
<tr>
<td></td>
<td>Prev Experience</td>
<td>.131</td>
<td>.086</td>
<td>.128</td>
</tr>
<tr>
<td></td>
<td>Level of Virtualness</td>
<td>.039</td>
<td>.043</td>
<td>.128</td>
</tr>
<tr>
<td>N</td>
<td>Org ID</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>LMX</td>
<td>22</td>
<td>22</td>
<td>22</td>
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<tr>
<td></td>
<td>Prev Experience</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>Level of Virtualness</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
</tbody>
</table>

Table 21: Model Summary

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
<th>Durbin-Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.510a</td>
<td>.260</td>
<td>.137</td>
<td>2.5592</td>
<td>1.481</td>
</tr>
</tbody>
</table>

The summary provides us data on the grade of explanation and we can see that 26% of the value on organisational identification can be accounted for by the explaining variables. This number is derived from the R Square which gives a figure on how much of the variation of the response variable that is explained by the explanatory variables (Moore et al., 2010, p. 599).

Table 22: ANOVA

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regression</td>
<td>41,497</td>
<td>3</td>
<td>13.832</td>
<td>2.111</td>
<td>.135a</td>
</tr>
<tr>
<td>Residual</td>
<td>117,958</td>
<td>18</td>
<td>6,553</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>159,455</td>
<td>21</td>
<td></td>
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</tbody>
</table>

The ANOVA table show the analysis of variances in the different themes, the table shows us if the correlation (R square) is statistically significant, and as seen in the table it is not statistically significant in a 0.05 (0.05 < 0.135) significance level. Hence the different correlations among and inside the groups can be statistically significant as seen above.
5.2.2 Organisational Identification and Virtualness

From the scatterplot derived from the regression analysis we can see a low positive relationship between organisational identification and the level of virtualness in one’s position. This can be explained by that pure virtual teams usually enjoy more stable and distinct categorisation of the members and the team as a whole, at least in the short run (Fiol & O’Connor, 2005, p. 23). Unfortunately, is the relationship not very strong with a $R^2$ 0.1. However, 0.1 indicates that the level of virtualness can explain 10% of the value of organisational identification.
5.2.3 Organisational Identification and Member Involvement

Figure 5: Organisation Identification and Member Involvement

In Figure 5 above we have looked at the member involvement and how that correlates to organisational identification. Previous studies have shown that higher member involvement and leader-member communication results in a higher team success (Gajendran & Joshi, 2012, p. 1257). As we can see in the scatterplot there is a positive correlation between the member involvement and the organisational identification. This result goes hand in hand with the findings of Gajendran & Joshi (2012) since the members that have a higher communication frequency and quality feel more involved in the team and the team decisions. There is a higher degree of uncertainty in a dispersed setting therefore is this result quite expected and can be discussed as both a result from an active and experienced leader as well as a high functional virtual team. As we discussed in the result above are the responses of member involvement rather high and this gives an indication on that our sample perceive them to a high degree involved in the team progress.
5.2.4 Organisational Identification and Previous Experience

In the result we could see that the questions about experience in virtual work and overall experience was quite high with scores of 4.4 /5 and 3.6 /5. The question of experience before the current positions was though lower with 2.4 /5. As we can see above is the linear relationship weak and we cannot draw any conclusions on how this correlates to organisation identification due to among others a small sample. But from the questions we can see that the experience is important and that previous experience was not as important as stated in previous studies for example Iorio & Taylor (2015, p. 404). The authors discuss the importance of team member experience in order to have a satisfying communication and troubleshooting (Iorio & Taylor, 2015, p. 402). Gajendran & Joshi (2012, p. 1257) are also emphasising the importance of previous experience in a virtual team, this goes hand in hand with our result from the individual questions of experience.
5.2.5 Characteristics of virtual work

Table 23: Characteristics

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>N</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Technological Support</td>
<td>22</td>
<td>1,00</td>
<td>5,00</td>
<td>3,3182</td>
<td>1,08612</td>
</tr>
<tr>
<td>Formation Of An Accurate Picture</td>
<td>22</td>
<td>1,00</td>
<td>5,00</td>
<td>2,9091</td>
<td>1,06499</td>
</tr>
<tr>
<td>Categorization</td>
<td>22</td>
<td>1,00</td>
<td>5,00</td>
<td>3,5000</td>
<td>1,01183</td>
</tr>
<tr>
<td>Salience of Cultural Differences</td>
<td>22</td>
<td>1,00</td>
<td>5,00</td>
<td>2,8636</td>
<td>1,16682</td>
</tr>
</tbody>
</table>

We asked the respondents if they perceive it to be difficult to form an accurate picture of a person while working dispersed and the result with a mean of 2,90 indicates that remote work have some implications regarding that question. Moreover, the respondents found it easier to categorise people according to a person's perceived characteristics while working dispersed with a mean result of 3,50. Both of these questions are interlinked with each other since they refer to categorisation in virtual work. Categorisation assumptions are also supported by theory, because Fiol & O’Connor (2005, p. 22) suggest that people's views of each other in a dispersed setting are often more polarised and extreme. The process is guided by the concept of uncertainty reduction, which means that individuals are inclined to reduce uncertainty in order to comprehend a complicated environment (Hogg & Terry, 2001, p. 6). This depends on the limited social cues that are available for the virtual worker as well upon the virtual workers tolerance for uncertainty which differs from person to person (Fiol & O’Connor, 2005, p. 25).

The respondents found to some degree that cultural differences are more salient in a virtual setting compared to a face-to-face setting. The mean score of this question was 2,86, which indicate that the respondents to some degree found cultural differences issues more salient in a virtual setting. However the result is somewhat surprising, because Zander et al. (2012, p. 600) states that cultural differences can play a lesser role in a virtual setting compared to a face-to-face setting. It thereby contradicts the previous findings and is surprising. Though, since the sample is small we cannot fully derive any conclusions regarding the result.

We asked the respondents about if their need for technical support increased when they work virtually and the result with a mean of 3,31 indicate that the respondents feel a strong need for technical support. Moreover, technological support has also been identified by several authors to be of vital importance in virtual teams (Verburg et al., 2012, p. 77; Heikki, 2006, pp. 81-82).
5.2.6 Organisational Identification and Face-to-Face meeting

The respondents that did not meet up face-to-face in the start-up phase of a project had a stronger sense of organisational identification. In contrast, did the respondent which had a face-to-face meeting in the early phase of a project, a lower degree of organisational identification. According to Fiol and O’Connor (2005, p. 23) Proposition 3a: “Members of pure virtual teams develop more stable categorizations of their team than do members of face-to-face teams”. This proposition could explain why the respondents that did not meet face-to-face enjoyed higher feelings of organisational identification in comparison to the group that arranged a meeting in the start-up phase. Comparatively, does Fiol & O’Connor’s (2005, p. 23) 3B proposition states: “Members of hybrid teams that begin in virtual settings develop less stable categorizations of their team in the short term than do team members in the other settings”. The reason for why hybrid teams has lower organisational identification is because they have already formed a picture of what characterises their group and in these meetings they have to rethink how they categorise their group (Fiol & O’Connor, 2005, p. 23).
5.3 Combined Analysis

Based on the previous analysis we have found several aspects which could be seen as central themes in virtual work. The aim of this section is to provide a comparative analysis in order to be able to support our conclusions. This section provides a comparative analysis and hence will not cover aspects or questions that are only present in either one of the methods, since they have been covered in the previous analytical chapters.

5.3.1 What needs to be done, when and by whom?

A major theme identified while comparing the quantitative and the qualitative analysis are ‘what needs to be done, when and by whom’. This theme has been concluded since the most important success factors according to the quantitative analysis seem to be clear roles and defined strategies. Comparatively, the majority of the leaders in the qualitative analysis mentioned a pre-agreement or a time plan as critical success factors in virtual teams. This finding goes in line with among others Gajendran & Joshi (2012, p. 1253) who emphasise planning as crucial for team success, Lee-Kelly & Sankey (2012, p. 61) who concludes defined strategies as a key success factor, and Casey (2010, p. 89) who discuss team structure and organisation. Clear roles are also believed to enhance group identification (Fiol & O’Connor, 2005, p. 27).

Furthermore, a large portion of the leaders mentioned distinct communication as an important factor for success in a dispersed setting. Distinct communication can be viewed as a prerequisite in order for the other factors to be clear. In example, if the communication is unclear it is very hard to comprehend the roles/responsibilities, strategies and when a task should be completed. Moreover, clear communication rules within the team have also been concluded in literature to be of importance for success in virtual teams (Verburg et al., 2012, p. 77).

This leads us to the next success factor mentioned in both our qualitative and quantitative result; communication frequency. Both the leaders and the members of dispersed teams have reported high communication frequency as a crucial factor, this finding is not unexpected since both previous literature and theory are discussing the importance of having a high communication frequency and high member involvement (Gajendran & Joshi 2012, p. 1253; Verburg et al., 2012, p. 70).

5.3.2 Technology

One major theme of the merged analysis is the issue of technology. Both technical experience and user-friendly technologies was reported as important factors for success in virtual teams. We proposed in the previous section that the communication must be of quality and of high frequency and therefore must the technology function and be easy to handle. This can also be supported by Casey (2010, p. 89) who identified functioning technology and technical support as crucial factors. Verburg et al. (2012, p. 77) discuss the importance of organisational (technical) support and as we can see in our result this seems to be of high importance to this sample as well, thereby strengthening the conclusions of previous studies.

5.3.3 Trust

Trust was ranked as the far most important success factor in the quantitative study; this goes hand in hand with lot of previous studies for example Verburg et al. (2012) and Casey (2010). Though in the qualitative study trust was not mentioned by itself at any
point, though there were a lot of discussions around it and how to increase trust and collaboration. As respondent G said: “It’s always difficult to manage people you don’t have full insight upon, you have to trust your staff”, can trust be seen as a cornerstone of virtual work. We cannot with any empirical evidence show that trust is the most important success factor for managers, since it was not mentioned by the majority. Though, we can on the other hand give examples on how managers see and try to enhance trust in their teams. The managers mentioned physical meetings, relations, transparency and media richness as success factors in which all can be important parts in establishing trust in a virtual team.

5.3.4 Cultural differences
Cultural differences were identified as an issue in a virtual setting both by the qualitative as well as the quantitative sample. The leaders mentioned that cultural differences could be an obstacle in virtual work. Furthermore, the question regarding the salience of cultural differences got rather strong result. However, cultural awareness was identified as the lowest success factor, which is rather surprising, considering how the project leaders underlined the importance of it. However, there are vast amount of literature suggesting that cultural differences are an issue in virtual work, which indicates that the result of that individual question might be out of line with previous research as well as our other findings. The low response rate also contributes to be cautious to conclude too much from the specific question. Which leads us to a conclusion that cultural issues are a major theme in virtual work since this is both identified in half of our sample as well as previous literature also suggest that so is the case, see; Verburg et al. (2012), Casey (2010), Lee-Kelly & Sankey (2008) and Kapur (2013)

5.3.5 Organisational identification
In terms of organisational identification all the managers did emphasize the importance of a strong group feeling in organisations. Furthermore, several leaders did also mentions the lack of social cues in a virtual setting in comparison to a face-to-face arrangement. This is in line with the quantitative analysis as well, since the question regarding categorisation and forming an accurate picture of someone in a virtual work scored high and is related to that issue. This could mean that since there are lacks of social cues, people’s categorisations of people are very stable but sometimes illusive (Fiol & O’Connor, 2005, pp. 23-24).

5.3.6 Face-to-Face
In the quantitative survey we asked about if the members usually meet each other face to face in the start-up phase of a project, we asked similar questions to the managers during the interviews and the results are in line with each other. The majority of the respondents stated that they do not meet face to face in the start-up of a new project. According to our managerial population this is often a result of lack of time and resources, one respondent also expressed that the idea with a virtual team is that it can be constructed fast and this contradicts the idea of having a physical meeting in the beginning. Though the managerial population are united in their perception that a physical meeting brings advantages, even to a fully virtual team. Physical meetings are according to our sample a fast and simple way to solve conflicts as well. In the quantitative study we only asked about a physical meeting in the beginning of a project, it can of course be the case that the members meet physically later on since this is not included in the question.
5.4 Revised Framework

The revised framework provides an overview of the identified areas in this thesis, this enhance the understanding for the findings discussed above. Management and leadership have been discussed and we have identified that the preferred leadership style is the transformational and/or situational; hence the transactional was not seen as a favourable style in a dispersed setting. The leadership style connects to the factual setting that is depending on; level of virtualness, member involvement and experience (the line-up and experience of the team). These themes are further connected to the advantages that we have identified, both in the sample and theory. The managers has identified success factors which are seen as crucial for virtual work, these factors are also ranked as of high importance by the members of virtual teams, this is presented as the box between the main concepts to the left in the Figure 8. The organisational identification was highly ranked by our sample and there was also a positive correlation between organisational identification and the level of virtuality, member involvement (LMX) and previous experience; presented as the middle box at the top. These factors are connected to the advantages on the right and the connection is based on both our findings and theory.
6. Conclusions & Recommendations

In this chapter we will present our most important findings of the study. Furthermore, there are also a discussion regarding if the research questions has been answered and if the objectives have been achieved. This is followed by recommendations for managers and for further studies. Practical and theoretical implications as well as limitations are also discussed.

6.1 Conclusion

The overarching aim of this study was to gain a deeper understanding regarding if members of dispersed virtual teams perceives issues of organisational identification in their teams. Moreover, we have also had a focus upon the leader’s role in those teams and how their views regarding advantages and disadvantages of virtual work and how they handle those issues. Another aim was to investigate how the virtual work environment is functioning and also to identify success factors that are of importance in virtual teams. The purpose is fulfilled by answering the stated research questions:

RQ 1: Do members in a dispersed virtual team perceive issues with organisational identification.
RQ 2: How does the manager perceive the advantages and disadvantages as well as handle issues when managing virtual teams?

Sub Question (RQ 3): What are the main success factors when working in a virtual setting?

One of the most important findings of this study is that there was a positive relationship between level of organisational identification and level of virtuality, member involvement, and previous experience. The strongest predictor for organisational identification was although the level of member involvement. According to our results, we cannot conclude that virtual workers experience higher problems with organisational identification. On the contrary, members that worked to a higher extent in a virtual setting reported higher scores of organisational identification which indicates that the organisational identification is high in a virtual setting.

After investigating the result and analysis from the qualitative sample we can conclude that the main advantages of working dispersed was the cost saving and the access to competence. The cost saving aspect derived from less travel and lower need of having personnel with special skills employed over time. These advantages contribute to the environmental aspect and timesaving as well, since a virtual team are more flexible in terms of location. The main disadvantages are stated as the lack of interpersonal relations that are more present in a collocated work place. Unorganised meetings and unprioritised work was also identified as disadvantages in the virtual environment. The technological issues were also mentioned as a disadvantage, when working virtually the technology must be user friendly and technical support available. The most widely used leadership styles was transformational and situational leadership.

The identified success factors were identified as Clear roles and Responsibilities, Pre-agreement/time plan, Defined Strategies. These three factors could be summarized as ‘What needs to be done, when and by who’.

68
The factors *Clear and distinct Communication, User friendly technology, and User experience of the technology* emphasises the importance of high quality communication tools and the knowledge to use them. Furthermore, users of that technology must be very distinct and clear in their communication in order to avoid misunderstandings.

Other success factors identified are *Face-to-Face meetings* and *Trust*. Even though teams get more ‘virtual’ there is still a need for face-to-face meetings according to our sample. In contrast to the technological development of video equipment there is still a need for physical meetings and as respondent E said: “[you] can shake hands and hug if needed”. The physical meeting is therefore important for interpersonal relations and crucial for developing trust.

We have gained an understanding and an overview of the issues of organisational identification as well as advantages/disadvantages of the virtual working environment. The issues with organisational identification are not in any way more present in the virtual setting, it is rather as we has discussed the opposite. We have identified advantages and disadvantages as well as critical success factors from the field, these findings has contributed to an enhanced understanding of virtual managers perception when managing virtual teams. One of the most important finding is the discrepancy between the managers and the member’s view of the role of cultural differences in virtual work. The managers emphasized cultural differences as a major issue whilst the members did not regard it as a significant obstacle for successful virtual work.

### 6.2 Theoretical Implications

The theoretical implications of this study are that it provides the existing theory with a combined study of members and managers in virtual teams. The study contributes to fill the gap in the identified area of global team management that are discussed in literature (Zander et al., 2012, pp. 600-601; Powell et al., 2004, p. 7) by investigating teams that are active all over the world. The two sided approach used in this study is rather unique and provides other insights than a study that focuses only on managers or members. Moreover, this study is a field study that studying managers and members in real virtual and hybrid teams and it is not conducted as a laboratory study that is the case with many previous studies, see Balthazard et al. (2009) Iorio & Taylor, (2015) and Kapur et al. (2013). This contributes to real world data, which are more reliable, and up to date, this further enhances the theoretical implications of the study.

### 6.3 Practical Implications

Our recommendations for virtual managers are to increase the member involvement in the workgroup to enhance organisational identification; this can be done by allowing the team members to influence decisions that are relevant for the team or the firm.
Moreover should...

- A manager in a virtual team adopt either a transformational or situational leadership style in order to be successful within virtual team management.

- A manager try to overcome the listed issues that are present in virtual work, since the managers’ role is to guarantee that the roles and responsibilities of the team are clear.

- A manager provide a defined strategy and some sort of pre-agreement for the project.

- A manager provide high quality technology and supply education in how to use it.

- A manager facilitate an environment that promotes distinct and frequent communication; this is also good for managing conflicts.

As an overall recommendation, we have identified that companies need to invest both time and money in user friendly technologies. In general, a virtual manager should organise a face-to-face meeting or an event, in order to promote interpersonal relations within the project group at least one time during the project time span.

6.4 Identified issues and Limitations

In the construction of this thesis the authors has encountered several problem that needed to be handled. The main issue was the problem to get access to respondents, as stated above; this thesis has used snowball sampling with a start from our personal network. By asking the first respondent to distribute the questionnaire we had no direct insight to the respondents and were not able to remind the individual possible respondent. We have estimated that our questionnaire reached around 100 individuals and this implied that we had a response rate of around 20-25%. We think that with more time and better access to the sample we could have reached more people and receive a higher response rate. The low responses limited our analysis of the quantitative data since the sample is not sufficient for a completely trustworthy regression analysis. Since a lot of previous research is conducted by the use of students and in laboratory environments it can indicate on difficulties to access on a broader level. Though we are confident with our data and since the data are collected from the field there are variations in the data that we cannot affect.

6.5 Recommendations for further research

In the construction of the thesis we developed ideas that we could not investigate to a fully extent. We also had a feeling that there were several aspects that was not fully exhausted in the interviews because of our inexperience of conducting semi-structured interviews, but also due to the nature of this type of interview technique with a set of questions to rely upon. Therefore we would recommend someone conducting a similar study to use an unstructured interview instead. An unstructured interview can provide new insight that differs from the ones that we have discussed, it will demand more time but it could be interesting. We would also recommend a similar study as this with a mixed method but with a larger sample in the quantitative area since we think that the members in virtual teams have experiences and knowledge that is not present in the
literature today. To have this similar but larger sample can also be combined with pure virtual teams only and not a combination with hybrids which is used in this thesis. As stated in previous literature (Martins et al., 2004, p. 820; Zander et al., 2012, p. 601; Lee-Kelly & Sankey, 2007, p. 61) there is a need for research within virtual management and this thesis has contributed to fill the gap, though there is still a large gap to fill and a lot of areas that needs to be researched further.

6.6 Concluding Remarks
When conducting the interviews we perceived the respondents to have a view of virtual work as something very natural and a subject in which they had not really reflected about prior to our meeting. We believe that virtual work has evolved to be a cornerstone in modern businesses due to the rapid development of IT solutions. One can argue for the view of virtual work as a daily process, but as we have found in this study there are many factors and issues that needs to addressed in order to become successful in virtual work. The study has been interesting to conduct and has provided us with a new insight in the world of management and especially towards the virtual project management.
References


Fiol, M.C., & O’Connor, E.J. (2005). Identification in Face-to-Face, Hybrid, and Pure Virtual


Appendix

A direct copy from the original questionnaire is provided as well as a copy on the interview guide used during the data collection.

Questionnaire:

Degree project about virtual teams
Our names are Tim Holmlund and Oscar Lindquist and We are studying the International Business Program at Umeå School Of Business and Economics. This study is part of our degree project and therefore we are very grateful if you would like to participate by filling in this survey. The answers will be handled anonymously, and no answers can be traced to any individual. The responses will be used in order to find ways to improve work-environments and efficiency in virtual teams.

The purpose of this study is the gain a deeper understanding about members in virtual teams and how they perceive issues regarding group belonging. Furthermore, the focus will also lie upon certain factors that members of virtual teams perceive as important in a virtual setting. With virtual teams we mean workgroups that use IT to communicate and that are not bound to a physical location to conduct their work-tasks. Virtual teams usually consist of members that works from different locations but with a common goal. The estimated time to complete this form is 5 minutes.

If you have any questions regarding this survey, please contact us by mail or phone. +4670-3377479/+4670-8309368, Tim.Holmlund@gmail.com, Oscar.Carl.Lindquist@gmail.com

The Workplace

1. How long have you been working at your current workplace?
   - <6 month
   - 6 month-1 year
   - 2-3 year
   - 4-5 year
   - 5 years+

2. To what degree do you have to be present at the workplace to be able to conduct your work tasks?
   - Bound to the workplace
   - Completely free

3. In the starting phase of a new virtual project, do you usually meet face-to-face?
   - Yes
   - No

4. In a normal week, what amount of your worktime would you perceive you work in a virtual setting?
   - 0%
   - 20-40%
   - 40-60%
5. In a normal week, what amount of your worktime are you present at your workplace?
- 0%
- 20-40%
- 40-60%
- 60-80%
- 80-100%

Below you will find several statements, please fill in to what grade you agree or disagree with the statement.

6. Most of my colleagues work from another country than I do.

   1 2 3 4 5

   Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

7. I think technological support is more important when working in a virtual setting.

   1 2 3 4 5

   Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

8. I believe that I form an accurate picture of peoples character when working virtually.

   1 2 3 4 5

   Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

9. I find myself categorize other members according to attributes in a higher degree when working dispersed.

   1 2 3 4 5

   Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

10. I believe that cultural differences becomes more salient in a virtual setting compared to a face-to-face setting?

    1 2 3 4 5

    Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

**In a VIRTUAL context...**

11. When I talk about a work group in which i am a member of, I usually say ‘we’ rather than ‘they’

    1 2 3 4 5

    Strongly disagree ☐ ☐ ☐ ☐ ☐ Strongly agree

12. The successes of my workgroup are my successes.

    1 2 3 4 5
<table>
<thead>
<tr>
<th></th>
<th>Strongly disagree</th>
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<th></th>
<th></th>
<th></th>
<th>Strongly agree</th>
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<tr>
<td>13. I am very interested in what others think about my workgroup.</td>
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<td>14. When someone praises my workgroup, it feels like a personal compliment.</td>
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<td>15. If a story in the media criticized my organisation, I would feel embarrassed</td>
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<td>16. I have a high degree of influence in my team’s decisions.</td>
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<td>17. My views have a real influence in the team’s decisions.</td>
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<td>18. My communication with my team leader (manager) is of high quality (frequency and overall quality)</td>
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<td>19. I usually initiate contact with my manager regarding work related questions.</td>
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<td>20. My manager usually makes the initial contact regarding work related questions.</td>
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<tr>
<td>21. High frequency communication with my manager enhance my perceived sense of involvement</td>
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<td>22. Low frequency of team/employee communication decrease my perceived sense of involvement</td>
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</table>
23. I consider myself as experienced of working dispersed/virtually.

24. I was not used to work dispersed/virtually before I got this position

25. I was familiar with the technology (software) when I got this position

26. Grade the following factors according to how important they are for successful virtual projects.

<table>
<thead>
<tr>
<th>Factor</th>
<th>0. Not important at all</th>
<th>1.</th>
<th>2.</th>
<th>3. Very important</th>
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<tbody>
<tr>
<td>Trust</td>
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<tr>
<td>Clear Roles/Responsibilities</td>
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<td>Cultural Awareness</td>
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<td>Technical Support</td>
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<tr>
<td>Defined Strategies</td>
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<tr>
<td>High communication frequency within the workgroup.</td>
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<td>Good conflict management</td>
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<tr>
<td>Technical experience of the technology used.</td>
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<tr>
<td>Working Experience</td>
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<tr>
<td>Leaders competence</td>
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Examensarbete om Virtuella Team

Vi som genomför denna studie heter Tim och Oscar, och studerar Civilekonomprogrammet på Handelshögskolan vid Umeå Universitet. Då studien är en del av vårt examensarbete är vi oerhört tacksamma för att ni tar er tid att svara på denna enkät. Svaren behandlas anonymt, och inga svar kommer att kunna spåras till en enskild individ. Svaren kommer att användas som underlag för att undersöka hur man kan förbättra arbetsmiljö och effektivitet inom distansarbete.


Har ni några frågor under enkäten eller i övrigt, så är ni välkomna att kontakta oss via mail eller telefon. 070-3377479/070-8309368, Tim.Holmlund@gmail.com, Oscar.Carl.Lindquist@gmail.com

Arbetsplatsen

Hur länge har du jobbat på din nuvarande arbetsplats?
- ○ C <6 Mån
- ○ C 6 Mån-1 År
- ○ C 2-3 År
- ○ C 4-5 År
- ○ C 5 År >

Är du tvungen att vara närvarande fysiskt på din arbetsplats för att utföra dina arbetsuppgifter?

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<tr>
<td>Helt närvarande</td>
<td>C</td>
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Vid uppstartsfasen av ett virtuellt projekt (Projektarbete som involverar medlemmar från olika geografiska platser): brukar ni mötas fysiskt?
- ○ C Ja
- ○ C Nej

Virtualitet på arbetsplatsen

Under en normal arbetsvecka, hur stor del är du engagerad i virtuellt arbete? dvs arbete som involverar medlemmar från olika geografiska platser med IT som kommunikationsmedel.
- ○ C 0%
- ○ C 20-40%
- ○ C 40-60%
- ○ C 60-80%
- ○ C 80-100%

Under en normal arbetsvecka, hur stor del av din arbetstid befinner du dig på din arbetsplats?
- ○ C 0%
- ○ C 20-40%
- ○ C 40-60%
- ○ C 60-80%
Nedan följer flera påståenden angående faktorer som har anknytning till virtuellt arbete. Var vänlig svara till vilken grad Ni instämmer med påståenden.

De flesta av mina kollegor arbetar från Sverige

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<tr>
<td>Jag har större behov av teknisk support, när jag jobbar på distans.</td>
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<td>Jag upplever att jag kan forma en tydlig bild av folks karaktär, när jag jobbar på distans.</td>
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<tr>
<td>Jag kategoriserar medarbetare på grund av deras egenskaper i en högre utsträckning då jag arbetar på distans.</td>
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<tr>
<td>Jag tycker att kulturella skillnader blir tydligare i en virtuell arbetsmiljö.</td>
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I ett VIRTUELLT sammanhang: fyll i hur väl påståendet överstämmer med dig själv.

När jag talar om min arbetsgrupp brukar jag säga ”Vi” snarare än ”Dom”?

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<tr>
<td>Min arbetsgrupps framgång är min framgång.</td>
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<tr>
<td>Jag bryr mig väldigt mycket om vad andra tycker om min arbetsgrupp.</td>
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<tr>
<td>När någon berömmer min arbetsgrupp så känns det som en personlig komplimang.</td>
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<tr>
<td>Om min organisation blir kritiserad i media så skäms jag.</td>
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**I ett VIRTUELLT sammanhang: Arbetstagares engagemenag på arbetsplatsen.**
Jag känner att jag kan påverka beslut inom min arbetsgrupp.

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Mina åsikter spelar stor roll när vi ska ta beslut inom min arbetsgrupp.

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Jag upplever att kommunikationen med min chef är av hög kvalitet.

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Det är oftast jag som tar initiativ till arbetsrelaterade samtal med min chef (ansikte mot ansikte, telefon, e-post etc.).

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</tr>
</thead>
</table>

Det är oftast min chef som tar initiativ till arbetsrelaterade samtal med mig (ansikte mot ansikte, telefon, e-post etc.).

<table>
<thead>
<tr>
<th>Instämmer inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Instämmer helt</th>
</tr>
</thead>
</table>

Hög kommunikationsfrekvens mellan mig och min chef ökar min upplevda känsla av delaktighet i beslut.

<table>
<thead>
<tr>
<th>Instämmer inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Instämmer helt</th>
</tr>
</thead>
</table>

Låg kommunikationsfrekvens mellan mig och mina kollegor sänker min upplevda delaktighet i beslut.

<table>
<thead>
<tr>
<th>Instämmer inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Instämmer helt</th>
</tr>
</thead>
</table>

**Erfarenhet av virtuellt arbete.**
Jag anser att jag är erfaren då det kommer till att arbeta på distans/virtuellt.

<table>
<thead>
<tr>
<th>Instämmer inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Instämmer helt</th>
</tr>
</thead>
</table>

Jag hade inte arbetat på distans/virtuellt innan jag fick denna tjänst.

<table>
<thead>
<tr>
<th>Instämmer inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Instämmer helt</th>
</tr>
</thead>
</table>

Instämmer inte alls | 1 | 2 | 3 | 4 | 5 | Instämmer helt |
Jag hade tidigare kunskap om tekniken som vi använder när vi arbetar på distans innan jag fick min nuvarande tjänst.

<table>
<thead>
<tr>
<th>Instämmer inte alls</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Instämmer helt</th>
</tr>
</thead>
</table>

Bedöm hur följande faktorer är avgörande för lyckat virtuellt arbete.

<table>
<thead>
<tr>
<th>0. Inte viktigt alls</th>
<th>1.</th>
<th>2</th>
<th>3. Mycket viktigt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Förtryende (kollegor och chef)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tydliga Rollen/Ansvarsområden</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kulturell Medvetenhet</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Högkvalitativ teknisk Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Definierade Strategier</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hög Kommunikationsfrekvens inom arbetsgruppen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bra konflikthantaning</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erfarenhet av tekniken som används</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arbetslivserfarenhet hos kollegor</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Arbetslivserfarenhet hos Chefen</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

100 %: Du är klar.
Interview Guide:
INTERVIEW QUESTIONS - LEADER

- Current position? How long have you had this position?
- What is your previous experience of virtual teams?
- Can you identify the most important success-factors for working in dispersed setting?
- What can you see as the main risks within these kind of work?
- What are the main advantages in working in a dispersed setting?
- What are the main disadvantages in working in a dispersed setting?
- How do you solve internal conflicts in a virtual setting?
- Is member involvement or active participation harder to reach in a dispersed setting? why?

Organisational identity
- Do you see any benefits with a strong group feeling in virtual teams?
- What measures do you as a leader take to form a sense of group feeling when leading virtual teams?
- What difficulties do you perceive in the forming of a group identity in a virtual setting?
- Do you see any benefits with a strong group feeling in virtual teams?

Leadership styles
- What leadership style do you usually use?
- What leadership style do you use when leading a dispersed workgroup, is it different from a physical work group?
- Is there anything that you want to add?