Leaders and subordinates perceptions concerning leader and climate dimensions in a Swedish company

Susanne Engström

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Acknowledgement

It was important to me to conduct a study that where interesting and developing as a last part of my academic studies. During courses in Human Resources and Project Psychology together with my work experience, interest in leadership and climate arose. I had a wish to do a dissertation in which I could combine those aspects in an empirical work. After a lot of struggle to find a company who would allow me to do the research at them, I found Company X. I would therefore like to thank the CEO and the Human Resource persons who gave me the opportunity to carry out my study at their company. I wish to thank a person within the IT department for her help connected with the dispatch of the questionnaire and the collection of data. Another person that I would like to thank is my supervisor Max Rapp Ricciardi, without his advises and encouragement I do not know if I had pulled this off.

I hope that people find my work interesting and take their time to read it.

Susanne Engström   Göteborg, February 2006

"No matter how much work individuals can do, no matter how engaging their personality, they will not advance far in business if they cannot work together and through others."

John Craig
(www.cybernation.com, 2006)

Table of context

Leaders and subordinates perceptions concerning leadership and climate dimensions in a Swedish company

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Abstract. This dissertation is part of an MSc program in International Project Management, at the University of Chalmers Lindholmen (Sweden) and Northumbria University (England). This dissertation studies the organisational climate and the existing leadership styles in a Swedish company. The aim was to investigate leaders and employees perceptions about the existing leadership styles and explore the organisational climate. It includes a study about leadership and climate dimension based on theory as well as empiric data. The theoretical part includes background to the subjects' leadership and organisational climate. Background to the subject was obtained by studying literature and research articles. The empirical part includes data gathered through a questionnaire. The ambition with the study was also to provide the management with information that could encourage development within the company. If management understands the needs of their employees, the quality on work could be improved.

The results of the empirical study shows that there were no significant differences in perceptions regarding leadership style dimensions between neither leaders nor subordinates. However, regarding the climate dimension significant differences were found in perceptions between the two groups. Psychometrical analysis was made in order to distinguishing correlation between leadership style and work climate. Leaders result revealed that there were no significant correlations, though samples from subordinates showed significant correlations. The result was analysed and compared with reference data concerning both leadership styles and climate dimensions and several differences were found. The result indicated that both inquired dimensions; leadership and climate where scored significantly higher compared to reference data.

The conclusions of the study are that result found in this research supports theories concerning both leadership styles and climate dimensions. The study reveals differences in between leaders and subordinates perceptions of the climate dimensions and in deeper analysis it was indicated that the result of the subordinates had a higher degree of correlation with references data.

Leaders' awareness of differences in perception of their leadership style and what co-workers perceive are critical for leadership success. A large discrepancy reveals lack of self knowledge and poor leadership, which in turn could leads to a negative organisational climate. A company with a positive organisational climate gives a good hearsay and are most probably more competitive committing competent personnel and it most certainly gives higher quality on the work performed by the employees.

Keywords: Leadership, Creativity, Innovation, climate and CPE-model.

Introduction

The subjects' management and leadership have caught the interest of a great number of researchers during the last century, for instance Ekvall and Arvonen (1991) and Andersen (1994). Leadership research followed changes that correspond to development in the industrial society. In earlier leadership theories made in the forties, fifties and the sixties, research pointed out two different leadership dimensions/styles. One of the dimensions captured leadership behaviour and focused on production and the other dimension captured leadership behaviour that focused on relations with the employees (Ekvall and Arvonen, 1994; Hersey and Blanchard, 1982). Later on research in the subject shown a third dimension that appeared a dimension focused on changes namely the Change dimension (Ekvall and Arvonen, 1991). This dimension describes leaders who creates visions, accepts new ideas, makes quick decisions, encourages cooperation between co-workers, are not overcautious and does not stress plans that must be followed. The fact that this "new" dimension of leadership was found, should not be considered unexpected since the environment on the global market have experienced a great deal of changes during the last decades. Companies are obliged to undergo large changes in order to stay competitive. The leadership culture within companies has changed focus from production and relation dimensions, to pay more attention to ongoing changes. The pressure on developing new products faster than the competitors have for a long time been a strategy of many companies on the global market. In order to maintain market shares, companies must create effective product development processes. Combined with innovativeness, companies could be successful operators on the market, for this reason it is important that manager focus on changes in the development.

Another subject that has been an issue for investigation during the last decades is the working environment. In innovation research, (Ekvall, 1997; Ekvall and Rydhammar, 1999) a number of theories have been presented that shows the importance of the manager role, e.g. assumptions and interpretations. Managers' cognition is their ability to make use of internal and external resources and the capacity to raises the innovative performance of people working in the organisation. Ekvall (1996) found that organisational climate could affects the result of the operation or task positively. Ekvall claimed that leaders attitude and behaviour are important both as part of the climate but also for general influence.

The present study has been conducted at a Swedish company that operates on the global market of trading electric distribution. The company is an affiliated company to one of the main actors on the Nordic as well as the European market. The investigated company (hereby called Company X) goals are to offer their customers excellent services within their business and have Sweden's most satisfied customers. Company X acts in the area around Gothenburg, in the western part of Sweden. Until 1997, the Swedish government controlled the market of trading electric distribution, but during the last decade, this market has become open for private companies. It means that this market is now exposed and opens for tough marketing competition. A lot of changes have taken place on this market and companies have given possibility to expand and become successful. Company X is an actor on a "young" market that characterizes changes and keen competition.

This put mangers and management behaviour in focus and makes it interesting to investigate how changes at Company X affected the employees, and what kind of leadership behaviour that is prevailed in the company.

Disposition

This study consists of seven chapters. Chapter one gives a short introduction to the leadership topic, the innovative climate and disposition used in the study. It describes the conditions and background that underlie the study of Company X. It also describes the reference frame applied in the dissertation, see Figure 1. In chapter two is the purpose and aim with the study described.

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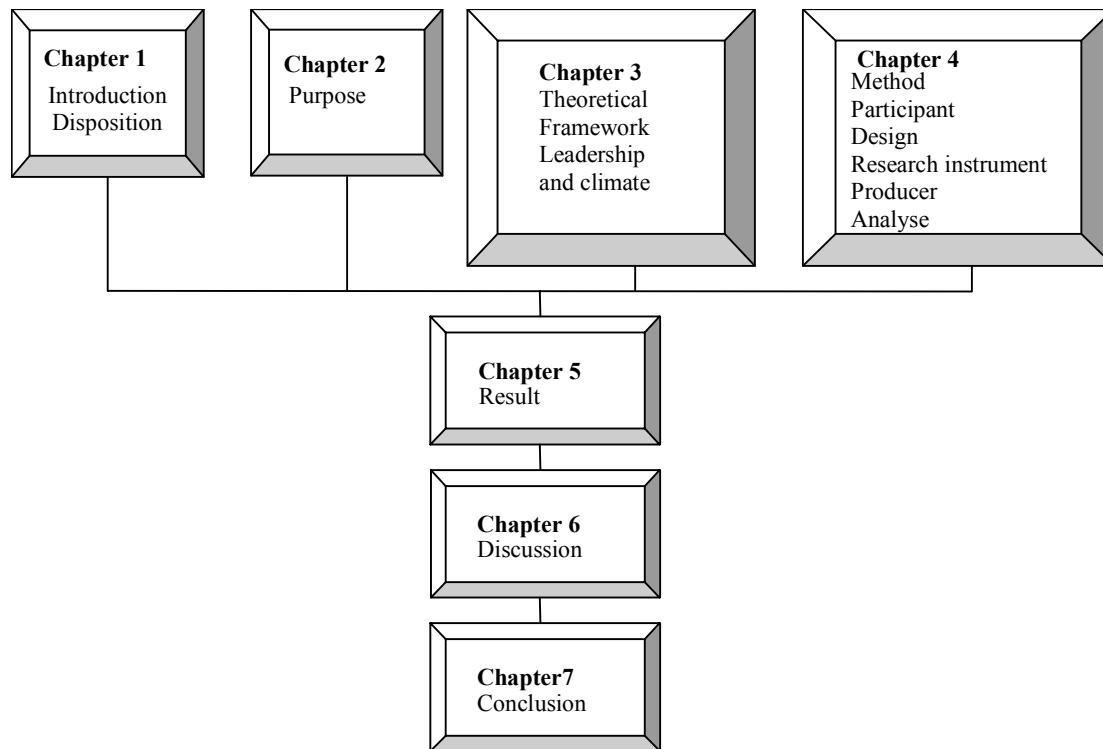
Figure 1. Disposition of the dissertation.

In chapter three the theoretical background relevant to the subject leadership behaviour and innovative work climate is described. It gives understanding to the development that have taken place during the twentieth century and why different dimensions and needs have come to the light. This fact is mainly based on books and articles relevant to the topic. The fourth chapter describes the method used in the study for gathering data, research tools used and how the participators were selected. Chapter five analyses findings made in the study and those are presented as objective as possible in order to facilitate the interpretation of the result for the reader. In the sixth chapter is the result interpreted and analysed. The last chapter summarises the study.

Purpose

The purpose of this study is to explore what kind of leadership and climate dimensions that exists at a global Swedish company. The objective is to identify the prevailing leadership style and relate this to what consequences it has on the working climate in the organisation.

The first part of the study will be to investigate what kind of leadership and climate dimensions that exists within Company X. Second part will explore the perceptions among leaders and subordinates in these existing dimensions and compare leaders and employees opinions. The third part identifies if there are correlations between different leadership styles and climate factors. Is there any relationship or can it be seen as; a leader with a "Change profile" has higher figures in some of the climate dimensions, for example the conflict dimension?

The leadership study will compare the result with norm data provided by Ekvall and Arvonen (Ekvall and Arvonen, 1994, 1996a, 1996b). This norm data have been gathered during a long time period and includes companies all over the world.

The creative climate study will compare the result with norm data provided by Ekvall (1996a, 1996b) and reveal if the climate at the company is stagnated or innovative. Innovative organisations invest in new products that increase the long-term survival of the company. Stagnated companies are unsuccessful in creating new products and are facing commercial trouble, (Isaksen et. al 1998).

The study is aiming to give answers on following questions:
- ♣ What kind of leadership and climate dimensions exists within Company X?
- ♣ Are there any significant differences between leaders and subordinates perceptions of the leader dimension in the organisation?
- ♣ Are there any significant differences between leaders and subordinates perceptions of the climate dimension in the organisation?
- ♣ Are there any positive correlations between the leadership dimension and the climate factors?
- ♣ Will the result show if Company X is Innovative or Stagnated by comparing the result from this study with reference data?

Theoretical Framework

The term leadership has been used in organisations for more than a century. It derives from Latin and means "to lead" or "to guide". This chapter gives a background to the theories about leadership, leader behaviour, innovations and organisational climate. These theories points out the development made through each area during the last century.

Leadership

Leadership is without a doubt an extensive subject with deep historical roots. The term connotes images of powerful and dynamic individuals who command victorious army or shape the course of nations. The widespread fascination of leadership may be because it is such a mysteries process, as well as it touches everyone's life. Leadership has been defined in terms of traits, behaviours, influence patterns, role relationship and occupation of an administrative position. House (Yukl, 2005) made following definition of leadership; "Leadership is the ability of an individual to influence, motivate and enable others to contribute towards the effectiveness and success of the organisations".

Leaders' characteristics

Literature (Kotter, 1999; Blanchard et. al, 1985; Briner et. al, 2001; Boddy, 2002) describes how to become a successful leader, and what attributes that is needed to become successful. Since the first ideas were formulated long time ago, large amount of ideas about characteristics for successful leadership have been conducted in the subject. It has been made by descriptions of what successful leaders really does and proposal of what they should do. Management has been seen as a strategically activity, an activity concentrated on certain interests, e.g. for economics, production or activity for motivating employees. Sorensen (Svedberg 2003) commented the various meaning of leadership and called it the leadership contradictions see Table 1.

Leadership contradiction	
Establish close cooperation to the employees.	**Keep distance.**
A close cooperation is condition for open communication, guidance, inspiration and motivation.	*Distances is necessary for judgments and see both sides of a conflict.*
Go in front and show the way.	**Be in the background.**
Be visible, be a good example.	*Hold a low profile so your employees could be seen and grown.*
Trust the employee.	**Follow the work.**
Trusts promote responsibility and motivation. Do not look over their shoulders.	*By control show you interest by their work and achievements.*
Be tolerant.	**Be clear and show how thing should be done.**
Show tolerance means that you understand that people are different and that there is plenty of ways to do things.	Principled prevent confusion and insecurity.
Think of department goal.	**Be loyal to the whole picture.**
Focus on tasks, stand with both feet on the ground.	*Broad-minded attitude will give respects through the long run both by college and employees.*
Plan your time orderly.	**Be available.**
Prioritise means that you concentrate on important things and to not let you ruled by things around you.	*Flexibility is necessary in order to handle unforeseen.*
Express feeling and thoughts.	**Be diplomatic.**

By openness can you easy show employees what you mean and what you stand for.	*Be discreet, prevent spoiling your work.*
Be visionary.	**Stand with both feet on the ground.**
Give you the opportunity to think untraditional and in long terms.	*Be able to solve ordinary tasks.*
Aim for consensus.	**Do not dread for making decisions.**
Dialog among people prevent that decisions will be undermined.	*Decisions prevent that things will be delayed. Keep up the speed.*
Be dynamic.	**Be thoughtful.**
Sometime you have to take decisions without basic data.	*Use all knowledge before decisions are taken.*
Be self-conscious.	**Have a humble attitude.**
Otherwise will you spread uncertainty around you.	*Otherwise will you loose the ability to follow changes in your surroundings.*

Table 1. The leadership contradictions.

As shown in Table 1, there is not anything like the expression "the right way to doing things". Sorensen illustrated the dilemma of leadership. Leaders' that serve as a model and have qualities like "Goes in front and show the way" could be classified as an authorial leader, or the opposite, if leaders take position in the background, the leader should be classified as democratic. It is essential to develop an organisation structure, with leaders that understand all different needs in an organisation (Boddy, 2002).

Short history of leadership

> *"The key to successful leadership today is influence, not authority"*
> *Kenneth Blanchard*
> *(www.wisdomquotes.com, 2006)*

In the 1900s the leadership studies went hand in hand with studies of the society, political, military and financial elites. Leadership was considered an art, for which some people had the capacity to lead, "The Great Man theory" said that you are born to be a leader. A typical "Great Man" was a person endowed with unique qualities that were able to move the masses and inspire them (Clinton 1992).

Frederick W Taylor was in the early 1900 a researcher that focused on factory plant management. He developed a theory named Scientific Management or "Taylorism" which focused on problems in production, such as low productivity, high turnover and the relationship between subordinates and management. Problems arose because of an insufficient organisation and methods of production in the workplace. The production was controlled by laws, which were independent of human judgement. With improved techniques and methods, the output from the production could be increased. Taylor meant that subordinates only were an instrument in the production and not human beings, they only worked for their money and did not care about the task (Hersey and Blanchard, 1982).

One of the earliest studying approaches in leadership was the trait approach. The trait approach emphasized leaders with attribute such as personality, motives, values and skills. During world war two, people began to ask what traits leaders needed to win the war and what universal trait that was common to all leaders. Hundreds of trait studies conducted

during the 1930s and 1940s sought to discover these qualities, but this massive research effort failed to find any traits that would guarantee leadership success (Yukl, 2005).

The behaviour approach began in the early 1950s since many researchers became discouraged with the trait approach and began to pay closer attention to what leaders actually do in work (Yukl, 2005). During 1950 to 1960, conceptualized leadership research the behaviour aspect and researcher were interested to find out what key patterns that existed. Stogdills' result (Yukl, 2005) pointed out two different dimensions of leader styles, one focused on production and the other focused on personnel and employee. Blake and Mouton (Blake and Mouton, 1961) found that leadership was an integration of the two dimensions and that leader could be concerned for their co-workers as well as for tasks. In research conducted by Likert in the 1950 at the Michigan University, he found three critical characteristics of effective leaders. These characteristics were "Task oriented behaviour", "Relationship oriented behaviour" and "Participative leadership".

Unable to determine which particular behaviour patterns that resulted in effective leadership, researchers in the 1960s to 1970s then attempted to match behaviour patterns that worked best in specific contexts or situations. These theories are called Contingency or Situational leadership. The situational leadership theorists took the research in another direction. "Hersey and Blanchard" and "Tannenbaum and Schmidt" found that leadership is depended on situations demands; maturity of subordinates and that leader adapted their behaviours to the situational requirements (Arvonen and Ekvall 1996). Hersey and Blanchard (1988) found in research that leadership style of an individual is the behaviour pattern that a person exhibits while attempting to influence activities on others. A situational leader allows subordinates to participate in decisions; the main focus shifts from organisational needs to the needs of subordinates (Hersey and Blanchard, 1982).

Fielders' contingency theory diverges from situational leadership theorists. Fielders stated that it would not be possible for a leader to change behaviour in different situations since personality is a stable factor that will not likely be changed (Arvonen and Ekvall 1996). Fiedlers' empirical study from 1971 (Ekvall and Arvonen, 1994) showed that an adequate leader in an unpleasant situation or very pleasant situation would be a leader with qualities in the task orientation.

Earlier research by Mintzberg (1973) showed that the traditional management described planning, administration, control and the short-term horizon of organisations. The main consideration was how to improve or maintain the quality and performance of products, how to substitute one goal with another and how to implement decisions.

In the 1980s researchers tried to found interactions of trait, behaviour, situation and group facilitation in order to determine that leadership is simply "doing the right thing" in order to achieve excellence. The researchers had to find out the meaning of the right thing so they started to do research on companies and developed lists of traits, behaviour patterns, group facilitation strategies and culture-shaping practices for leaders. Lower order of improvements can be seen as an exchange process, a transaction. For this reason Bass (1985) called this type of leadership behaviour "transactional leadership". Bass (1985) found out that the dimension of transformational leadership correlated with satisfaction of the leader and effectiveness across different situations. There are differences in transformational and transactional leaders. A transformational leader may be less willing to accept the facts and more likely to seek new ways of doing things while taking maximum advantage of the opportunities. Transactional leaders on the other hand would focus on work, forced to keep time in mind and not willing to take risks. Bass claimed that personalities of subordinates would affect leaders' ability to be transformative. Charismatic leadership is central to the transformational leadership process there a charismatic leader have great referent power and

influence. Charisma is a two way process, a leader is seen as charismatic when subordinates complement leaders with values and power.

Leadership theories

> *"Leadership is the ability to use collected capacity of individuals to reach common objectives in an effective way"*
>
> *Thomas Nilsson*
> *(Course; Att leda grupper, 2003)*

During the last century intense research has been carried out about leadership and leader behaviours. In order to understand the development in leadership theories it is necessary to see the connection to what time period they were developed since each historical period has its cultural, social and material conditions that influenced on how problems were approached and solved. The historical development of leadership theories will be described in the following chapters.

The Great Man theory

Early research on leadership was based on studies of people who were already great leaders. At the beginning of the twentieth century, leaders were regarded as superior individuals who could be differentiated from masses or followers, whom they manage to accomplish great things or to make impact on the human race as a flow of history. The research stated "Leaders are born and not made" (Clinton, 1992). The idea of the theory was also that a "Great Man" would arise almost by magic, researchers pointed out Jesus, Buddha, Eisenhower and Churchill as examples of Great men's. One fact was that people in leading position often were from the aristocracy and the top of the society (Dotlich et. al 2002).

> *"The most dangerous leadership myth is that leaders are born -- that there is a genetic factor to leadership. This myth asserts that people simply either have certain charismatic qualities or not. That's nonsense; in fact, the opposite is true. Leaders are made rather than born"*
>
> *Warren G Bennis*
> *(www.wisdomquotes.com, 2006)*

Trait theory

Lewin, Lippert and White (Svedberg, 2003) made a number of classic studies in the subject theory of trait in the 1930s to 1940s. Their studies did not only explain the impact that leaders' have on every single person but also how the work climate of a group of people with norms was influenced by leaders. Authoritarian and Democratic leadership demands high amount of leader activity opposite to leaders with an Abdicate leadership style. The columns below each leadership styles describe both leaders (left column) and employees (right column) point of views, see Figure 2.
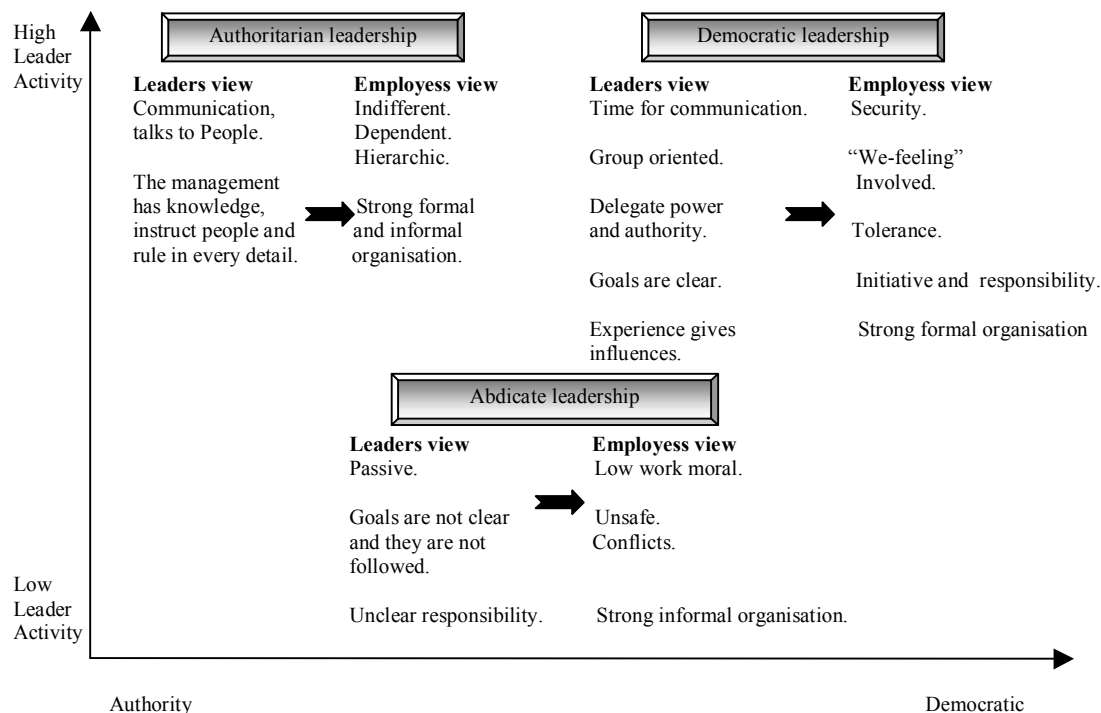
Figure 2. Authoritarian vs. Democratic leadership.

An authoritarian leader can be seen as a dictator but also as a father figure. As a fact, people can become dependent and stop thinking which leads to that their commitment are lost. The opposite of an authority leader is a democratic leader. A democratic leader is willing to involve people in the work; they delegate work tasks and establish condition so that employees feel they contribute in solving problems and tasks. As a result, people will act mature and take responsibilities. Abdicated leadership is when the leader cannot handle the responsibility that follows by being a leader; this leadership appears when the formal leader loose control and must take fights with the employees.

Behaviour theory

After the era that focused on study the leader, The Great Mans' and Trait leaders', time changed and researcher began to study the behavioural approach of the leader (Clinton, 1992). Behaviour leaders seek to involve other people in the work process. They consider it important to include subordinates, superiors and other stakeholders. Stogdill, Likert and McGregor are example of researchers that founded the behaviour theories and each theory are described in following section of this chapter.

The contributions of the Ohio State University research groups, with Stogdill, Hemphill, Shartle and Halpin, are all well known. They did famous series of studies on leadership starting in the 1950's (Ekvall and Arvonen 1994). They found two critical characteristics, which were independent of one another, namely "Consideration" and "Initiating structure", where consideration is people orientation and initiating structure is task orientation. Consideration is the degree to which a leader acts in a friendly and supportive manner towards his or her subordinates and the degree to which a leader defines and structures his or her role and roles of subordinates towards achieving goals of the group. About the same time as the "Ohio State studies", the Michigan Leadership Studies were conducted.

These Studies in leadership theories at Michigan University were performed by Likert, Katz, Kahn, Seamore, Bowers and Mann (Misumi, 1988). They found three critical characteristics of effective leaders; "Task oriented behaviour", "Relationship oriented behaviour" and Participative leadership (Ekvall and Arvonen 1994). The researchers meant that the task-oriented leader had different tasks than the subordinates; which included planning, scheduling work, coordinating activities and providing necessary resources. They also meant that they have to spend time in guiding subordinates in setting goals that were both challenging and achievable. In the relationship oriented behaviour the leader was not only concentrated on the task, but also on their relationship with their subordinates. They were more considerate, helpful and supportive with their subordinates, including helping them with their career and personal problems. They recognised the effort made and rewarded people for their work. They helped to setup goals, provided guidelines and time for the subordinates which gave them the opportunities to achieve target goals. The third finding was a style managing participative leadership. It looked at the group level as well as individually, for example using team meetings to share ideas and involve the team in group decisions and problem-solving. Such a leader model promotes good team behaviour and the role tends to be more supportive. The leader role is to guide and help to resolve problem and to make people with differences in attitude working together. The leader would make the final decisions and take recommendations from the team into account. The effect of participative leadership was to build a cohesive team, which worked together rather than a set of individuals.

Tannenbaum and Schmidt (Svedberg, 2003), two researchers in 1958 studied leadership behaviours adapted to situations especially involvement and distribution of power between leaders and employees. They believed that the most important decision a group have to take was; "How a decisions should be taken". Tannenbaum and Schmidt meant that the most important issue was how the power should be divided between all involved in a team. They meant that a leader must be able to delegate responsibilities dependent on the maturity of the employees. Figure 3 shows how the model of leadership styles by Tannenbaum and Schmidt from the start gives the leader all power, but in terms of the maturity of the group, the employees would become more and more involved in taking decisions.

| Autocratic decision by leader. | Leader proposes decision, listens to feedback, and then decides. | Team proposes decision, leader has final decision | Joint decision with team as equals decision | Full delegation of decision to team. |
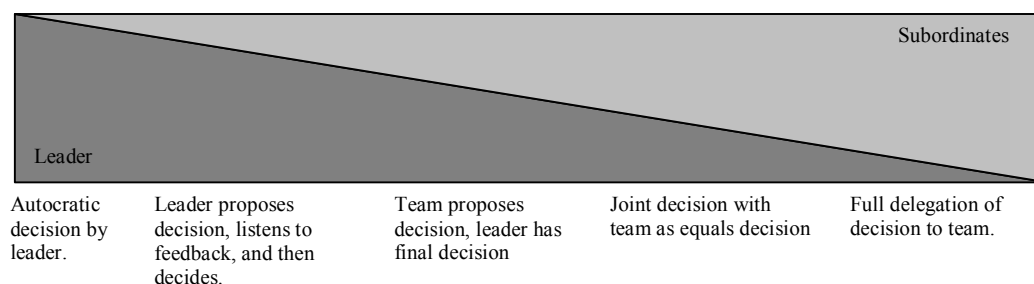
Figure 3. Influence between leader and employees.

In 1960s, Douglas McGregor defined contrasting assumptions about the nature of humans at the work place, and called it theory X and theory Y. The X and Y theories represented two different ways in which leaders scrutinize employees. Theory X leaders believed that employees were motivated mainly by money, that they are lazy, uncooperative and have poor work habits. Theory Y leaders on the other hand believed that subordinates worked hard, were cooperative, and had positive attitudes. Theory X leaders liked to retain most of their authority and made their decisions on their own. They informed their

subordinates and assumed that they would carry out the instructions. The theory Y leader let the group participate in decisions. A Y leader is a "Democratic" leader who allows members of a work group to vote in decisions and is a consensual leader who encourages group discussions and decisions which reflect the "consensus" of the group (Heil et. al 2000).

Bass (1985) defined transformational leadership in terms of how the leader affects the subordinates. The transformational leaders increase awareness and promote a higher quality of performance and also greater innovativeness among the subordinates. It is important that the followers trust, admire and respect the transformational leader. Bass describes higher-order changes that involve changes in attitude, belief, value and need. The transformational leader motivates the followers to do more than they originally expected. Bass describes the following ways to achieve that see Figure 4.

- Raise the level of awareness among the co-workers, which includes the importance of knowing the goals and the value from the outcomes.
- To persuade someone in the sake of the team and organisation to do more than they originally thought they would do.
- Raising the groups' need by Abraham Maslow's hierarchy. In 1943, Abraham Maslow described the needs for human beings. Maslow has designed a five level triangle, where the basics and fundamental needs were placed in the bottom.

Figure 4. Abraham Maslow's Hierarchy.

Contingency theory

The famous studies at the Ohio State University and the Michigan University reduced the leadership behaviour in to two basic categories; Consideration and Initiating structure. Next period in leadership research focused on how leaders performed these two basic functions. Leadership style was the topic which described the fundamental ways that leaders operated and lies in the concept of all contingence theory models (Clinton, 1992). Figure 5 illustrate different contingency models with respectively responsible researcher. Clinton (1992) divided the overall model into Single or Multi leadership styles approaches.
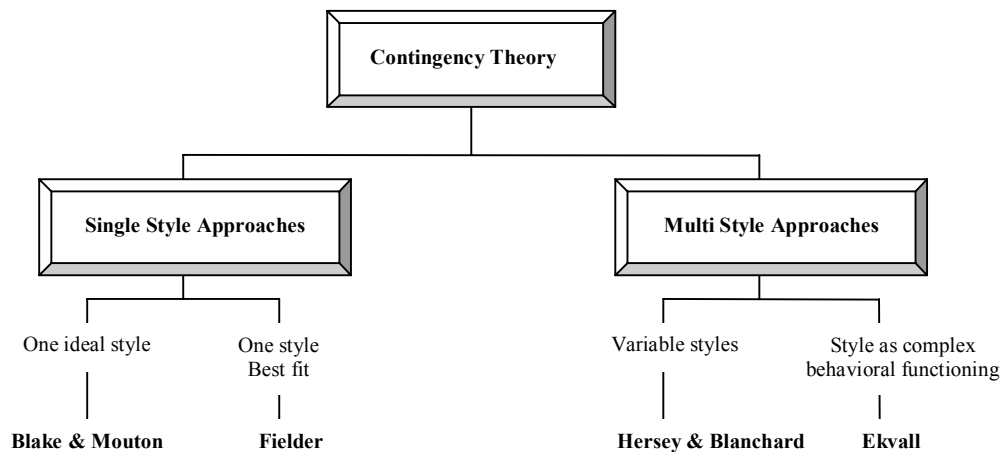
Figure 5. Various Contingency theories in terms of style approaches.

Blake and Mouton developed their Managerial Grid theory in 1964 (Svedberg, 2003). The formal practise of leadership involved in the theory was to work with certain tasks through other people. These two aspects (task and people) formed an overall picture of leadership styles. According to Blake and Mouton leadership styles are a broad outline that focuses on questions like "Why? and How?". Blake and Mouton described leadership on the basis of leaders' ability to correspond to the need from employees and their work task, named "Concern for people" and "Concern for production". These two dimensions would result in five different leader styles, which result in five different cultures of work, see Figure 6.
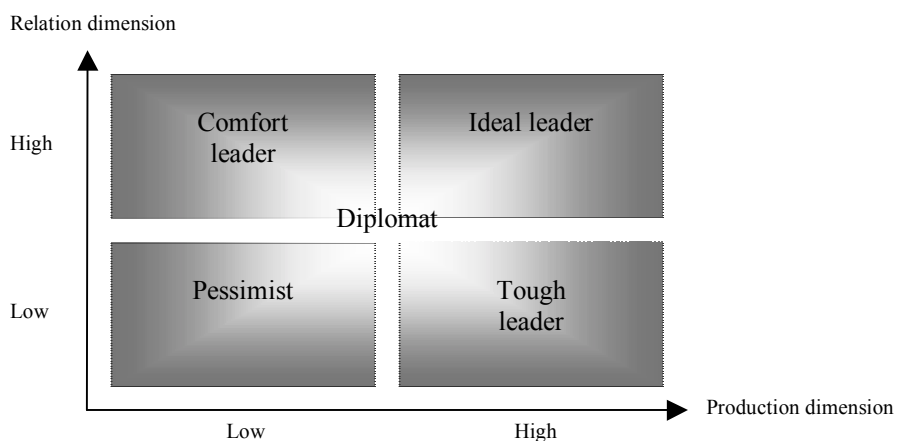
Figure 6. Relation dimension vs. Production dimension.

Ideal leader – are the best leaders according to Blake and Mouton. This type of leader has concern for both "Relation" and "Production". The work environment characteristics of a high degree of shared responsibilities with high participation, involvements and commitments.
Diplomat leader - creates an environment where work would be done in a way of satisfaction. This type of leader is careful and sometimes makes a lot of compromises that lead to confusion among the employees.

Comfort leader - sees that work is done peacefully in the group without any certain engagement. Discussions are encouraged but could lead to conflicts, which would be damped and not solved.

Tough leader - leaders concentrated on "Production". The work should be done no matter what, and conflicts are not solved, conflicts are determined by the leader.

Pessimist - leaders believe that tasks should be done without any certain effort and commitments. Employees are looking after them selves, conflict are avoided but not without complains (Svedberg, 2003).

Fiedler developed in 1967 what is known as the Contingency Model of leadership. Fiedler was the first management theorist who said that leadership effectiveness depends on the situation. Fiedler distinguished leadership behaviour from leadership style. Leadership behaviour is a specific response that a leader can make in a particular situation. Fiedler's contingency model is based on the following assumptions; *"Leaders are either task-oriented or relationship-oriented"*. Achieving a goal motivates a task-oriented leader. They have a controlled or structured style in order to get the job done. Developing close interpersonal relationships among subordinates motivates a relationship-oriented leader. According to Fielder a leader cannot be trained to change their leadership style. A leader is stucked with their basic orientation; therefore the work environment must be adapted to fit the leaders' style. An organisations need is to change the situation in order to be more effective. Three aspects that could be changed according to Fiedler Contingency Model;

1. Change the leader and subordinates relationship. This means that if the leader is relationship-oriented this leader type shall be placed in a part of the organisation where developing of people are the primary work.
2. Change the task structure, meaning increase or decrease the task structure according to the leader's style.
3. Change the position of power which includes rewards and punishments. Intend to provide group decisions for the relation oriented leader or increase the control flow information for the task oriented leader.

Reddin (The working manager.com 2004) was another researcher that took the research of contingency theories to the next level in 1970's. Reddin first developed a relatively simple method of measuring what he called "situational demands" – i.e. things that decided how managers must operate to be most effective. The model was based on two basic dimensions of leadership identified by the Ohio State studies; task orientation and relationships orientation. Reddin introduced a third dimension called effectiveness. Effectiveness is the result when a leader uses a certain style of leadership for a particular situation. Task orientation was earlier described as when the leader directs the subordinates towards goal characterised by planning, organisation and control. Relationship orientation was earlier described as when a leader had a working relationship characterised by mutual trust, respect for subordinates' ideas and consideration for their feelings. The last dimension effectiveness was earlier described as when the extent to which a leader achieve the output requirements of his or her position. Reddin's research showed that different styles of relationships orientation and degrees of task orientation were independent of effectiveness, it correlated upon the situation.

In the 1960s, researcher such as Hersey and Blanchard (1982) asserted that a successful leader must adapt leadership style after certain situations. Hersey and Blanchard proposed a contingency theory that specified the appropriate type of leadership behaviour for different levels of subordinates' maturity in relation to the work (Yukl, 2005). This leadership theory has still influence on today's leader. The Hersey and Blanchard theory is built on thought

about a relation between "Production" and "Relation" dimensions. Leaders act instructive when they concentrate on how tasks shall be solved and supportive when they concentrate on develop initiative, attitude and feeling among employees before solving a task. Hersey and Blanchard situational theory can be described as a growth curve for a specific task with four different stages that characterise the development of the group and their members. Leaders' main issue is to help the group in their development of becoming independent. Figure 7 shows the different stages in the situational theory.
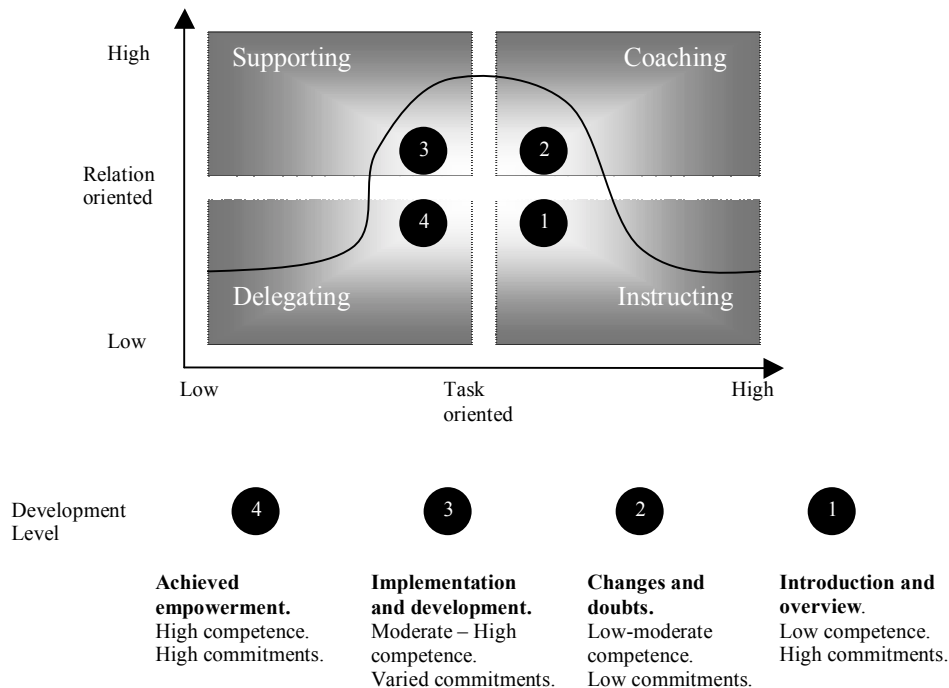
Figure 7. Situational leadership theory.

In the stage *"Introduction and overview"* the group starts to work with new tasks, the detailed level for solving these tasks are low among the team, but their commitments are high. They are positive to learn new things. Leaders use an instructive style in order to teach the team, give them clear instruction, show how the task shall be solve and check results.

In *"Changes and doubts"* the team realised that the task was much more difficult than they first understood, they can become frustrated and disappointed. The team has reached a higher level of competence but the commitment falls down. The leader must give much more instructions but also support to the team members, meaning that the leader coaches the team.

In *"Implementation and development"* the competence has increased among the members but the need for instruction has decreased. The team has still doubt about their ability to solve the tasks so the leader must be supportive. The leader can start to delegate responsibilities and step back.

In *"Achieved empowerments"* the team are nearly independent. The group is committed and trusts their own ability to solve tasks. The leader stays in the background, trusts the team and is available when the team needs support.

Ekvall (1993) established a model over leadership styles see Figure 8. This model implies that a leader had a general leader style, which was a result of his personality, and all his leader experience. Other thing that also influenced the behaviour was the leaders' perception of a situation and how the leader interprets the situation. How a leader understands

a situation was influenced by his personality, experience and the situation in an objective sense. The behaviour of a leader in concrete situations could be varied dependent on how the leader understands the situation, but since the general personality of a leader influences on the perception, the situation would be interpreted in the same way. This leads to minor variation in leader behaviour; instead it will be the personalities and leadership style that will affect the leader behaviour.
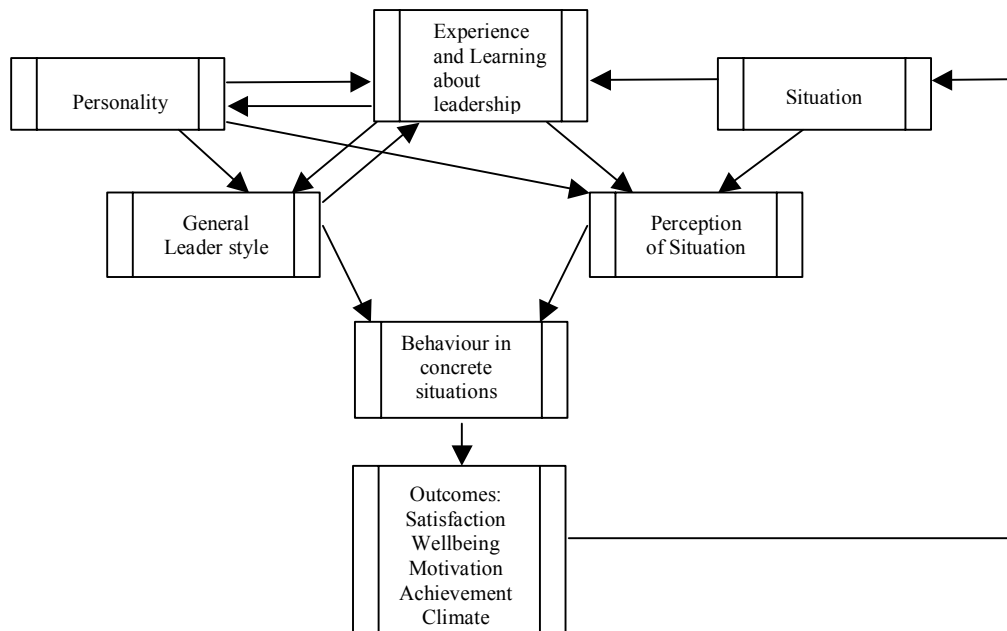
Figure 8. Model over the concept leadership.

A new third dimension arise

In earlier leadership theories like research from the Ohio- and the Michigan-groups, two leader dimension were found; "the Relation" and "the Task" oriented dimensions. These two dimensions were developed during the stable conditions of business activity in the 1950s and 1960s. Leaders could through needs of consideration and interests of the subordinates create an organisational environment in which employees were engaged, motivated and took responsibilities.

In the 1970s changes started to take place in the industrial society. The need for changes in businesses and working life was started by accelerating development in the technological field. The global competition made the market place less stable, economic stagnation took place in Western countries and peoples changed their values preferences (Ekvall and Arvonen, 1991).

Ekvall and Arvonen (1991) found a third dimension that focused on changes; they called this dimension "the change and development oriented dimension". This dimension is a subset of the two earlier dimensions and corresponds to the development that has taken place in the industrial society. A central leader task connected with the change dimension is to get the employees engaged and positive disposed to renewal and changes (Maltén, 2000). The reason to the high pace of changes in today's society is that the changes affect the whole organisation. It is not enough that management thinks in new dimensions, it is necessary to look after ideas and take care of knowledge from employees in lower levels of the organisation. Today we talk about individuals as the larges resources of a company. It can be true if the company gives the individuals chances to develop and contributes to a positive growth of the company. Subordinates make demands on increasing influences which leads to changes in the organisation (Ekvall, 2003).

15

In literature about leadership from the last decade, focus is on other long-term aspects which included softer elements like motivation, inspiration, participant and vision (Bass, 1994). Bass so called "transformational leader" can be compared to the leader Ekvall and Arvonen (1991) described focus on the change dimension. Ekvall and Arvonen (1991) found in their research that a leader focus on the change dimension of leadership style seemed to put the development in the organisation in first place, whilst Bass (1985) found that the transformational leader is a charismatic and inspiring leader, who lifts the subordinates to higher levels in the Maslow's needs Hierarchy, which is described in Figure 4.

The research done by Ekvall and Arvonen (1991) has led forward to a model that includes all three dimensions of leadership;
- ***Change oriented leader***
- ***Production oriented leader***
- ***Employee oriented leader***

Ekvall and Arvonen (1991) called their model the CPE-model, see Figure 9. This model is well known and used by many researchers in the leadership area. Leaders that focus on changes are those who take initiatives to development and growth within a company. A change oriented leader has some distinguished features, like faith in the followers, is often considered friendly and creates an atmosphere without conflicts. A leader that is successful in this dimension creates visions, accept new ideas, make quick decisions, encourage cooperation, is not overcautious and does not stress plans to be followed (Ekvall and Arvonen 1991; 1994).
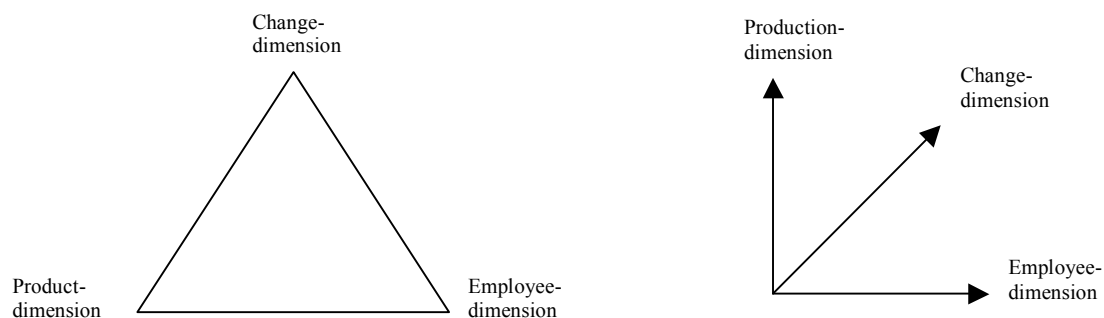
Figure 9. The CPE-model of leadership.

A combination of all three behavior dimensions is the "individual leadership style". With the technological development on today's global market and consistent changes in companies, managers weak in the change orientation will run into trouble in situations regardless of their capability in the other two dimensions. The leadership concept by Ekvall (1993) shows that in order to become a good and successful leader in an organisation. The leader must be able to act in all three dimensions, understand the followers, run changes and developments and finally be able to structure and plan all work. The employees are well aware of that quick changes in society require quickly a reply by adaptation in the company. Ekvall & Arvonen (1994) and Arvonen & Ekvall (1996) mean that a leader with a "change dimension" is most important for company's survival and for the effectiveness in the organisation.

Different leader profiles – The Farax Profile

Ekvall (2003) continued his research of leadership styles and developed nine different profile groups out of the values from the three earlier mentioned leader dimensions; "Change", "Employee" and "Production". After analyses of the three dimensions leaders could be divided into following nine profile groups. Arvonen (et. al 2004) found the same profiles but excluded the sufficient leader profile, since this leader does not have any sharp profile. Arvonen calls these nine profiles "the Farax profiles":

1. **Vague** – means invisible, this leader is not an asset for the company. The employees get no or very vague answers. The leader will avoid attention and concentrate on things he is good at. Example on a vague leader is when a specialist has become a leader without really wanting it.
2. **Pal** – want to be a friend with everyone, is missing planning capacity and change attitude. This kind of leader is concentrating on being popular among the employees. This type of leader could promise a subordinate one thing which could stand in opposition to other promises made. This leads to uncertainty in the organisation. A reason for this is that they do not talk straight out in critical situations.
3. **Bureaucratic** – The bureaucratic leader practise power by an authoritarian leadership style with firm rule. This type of leader has strong focus on tasks and is prepared to reach their goals by planning, structure and control. Some employees like this type of leader; they like that someone else take decisions, others are stressed by this type and feel that they are controlled and they do not feel pleasure in their work.
4. **Visualize / Idea man** – creates many ideas and is an asset in an organisation, but not as a leader. He is inclined to the changes dimension but he is missing consistency, he does not have the ability to plan for the future with risks that ideas is not accomplished. This type of leaders does not listen to other proposals. A leader with this profile can be a disaster in an organisation because he can stress the employees, which can lead to that the employees are put on the sick list.
5. **Sufficient / Enough** – This type is missing any sharp profile and does not have characteristic that stands out, neither in achievement or the wellbeing and motivation of the employees. This type will not be described further in this study.
6. **Administrator** – this leader type are traditional. They can concentrate on both relations and tasks but they are not good on making changes. Employees are appreciating this leadership style; they feel safe and secure without surprises. Organisations with mainly this leadership style are successful if no challenge appears.
7. **Gardener** – are an asset in an organisation. This leader type mainly focuses on changes and relations. Some negative aspects are bad planning and structure capability. Instead they contribute to a creative climate, which liberates the creativity among the subordinates.
8. **Contractor** – this leader is useful both in organisations and the society. He initiates new businesses but has no time for people and relations. He is dominating but also creative and patient. He is good to make companies grown, but when people are involved in daily activities, tension arises among the leader versus subordinates. This leader is not suitable when a company is full grown and when the administration period starts.
9. **All-round / Integrated** – These leaders does everything; they can organise, plan and operate the business in an effective way. The conduct changes- and development-projects and look after employees so they are motivated and satisfied.

In order to see how the eight different profiles are related to the three behaviour dimensions, a matrix with calculated figures could be designed see Table 2, (Arvonen et. al 2004). The "+" sign means that the evaluated figures for a profile is above the average numbers in specific dimension and the "−" sign means that the evaluated figures for a profile are below average for a certain dimension.

Farax Profile	Relation dimension	Change dimension	Structure dimension
All-round-Integrate	+	+	+
Gardener	+	+	-
Administrator	+	-	+
Contractor	-	+	+
Bureaucratic	-	-	+
Pal	+	-	-
Visualize-Idea man	-	+	-
Vague-invisible	-	-	-

Table 2. The Farax profile.

These leadership profiles can have different effects on an organisation. "Gardener" and "All-round" leaders are excellent leaders which are successful with both subordinates relations and tasks or assignments. They can deal with changes and accomplish them in an organisation. "Vague" and "Bureaucratic" leaders are those that generate most problems in an organisation, Ekvall (2002). The influence from vague leaders can affect the employees' health in a negative way, because this kind of profile deteriorates the organisational climate. The "Bureaucratic" leader has the same negative influence on the organisational climate as the "Vague" leaders. The "Authorial" leadership style leads to lack of work satisfaction and motivation among the employees. "All-round" leaders are wanted by management and have become an ideal leader when companies recruit new leaders; they look after their employees who appreciate them as leaders (Ekvall, 2003).

Summary of leadership theories

Earlier mentioned leadership theories have been summarized by Norrgrens and Frischer (1989) see Table 3. The table consist of two titles, the leadership behaviour and researcher. The right column represents each researcher and the left columns represent their results made in the subject leadership styles. The left columns of the leadership behaviour are related to the production dimension and the right column concentrates on the concern for people.

Leadership behaviour		Researcher
Authoritarian	Democratic	Lewin
Initiation structure	Consideration	Stogdill (Ohio group)
Production dimension	Personnel dimension	Likert (Michigan group)
Theory X	Theory Y	McGregor
Concern for production	Concern for people	Blake & Mouton
Task oriented	Relationship oriented	Reddin
Directive	Supportive	Hersey & Blanchard
Boss centred	Subordinate centred	Tannenbaum & Schimdt
Task oriented	Relationship oriented	Fiedler Contingency Model

Table 3. Historical findings in leadership research.

Since the mid 1970s employees have make demands on increased influence in organisations which have led to changes and a new leadership dimension has been developed, namely the change dimension (Ekvall, 2003).

In pace with an increased globalisation and technological development the importance of the leaders have also increased (Kotter, 1999). It is impossible for managers to fully monitor and control the development in detail so the importance is to use a leadership style that builds up motivation and a creative climate for the subordinates (Ekvall and Arvonen, 1991). General research on leadership over the past fifty years shows few consistent relationships between measurements of leadership dimensions and performance (Bass, 1990; Andersen, 1994). One comparable relationship though is between performances and how leaders interact with subordinates (Andersen, 1994; Ekvall and Arvonen, 1994) and another one is between performance and the nature of leader power (Andersen, 1994). Kotter (1996) pointed out the importance of the cooperation among leaders and theirs subordinates, leader mostly develop visions and strategies for the future so the subordinates can follow. Leaders are obliged to motivate and inspire people to overcome bureaucratic and barriers, in order to fulfil the human needs in the organisation.

The best opportunity leaders have to be successful and produce positive results are to create good work environment with a creative climate. The relation dimension is very important and for leaders it is most effective if employees work together and develop creative processes. Hierarchical organisations are therefore strongly preventive, there most be a high degree of freedom in an organisation so the employees can and will take their own initiatives and contacts within and without the organisation. To have an "open minded" organisation creates conditions for creativity and innovation (Ekvall, 2003).

Innovative organisation

The purpose with this chapter is to give a general view of innovative organisations. Factors such as creativity, problem solving and organisational climate are studied. This chapter will give explanations to which different climate factors that have influence on the organisational climate.

> *"Just as energy is the basis of life itself, and ideas the source of innovation, so is innovation the vital spark of all human change, improvement and progress."*
>
> *Theodore Levitt*
> *(http://quotations.about.com, 2006)*

As mentioned earlier in this paper, the global market has gone through a lot of changes during the last decades, which have put a higher pressure on the management in organisations to increase the creativity and innovativeness. To achieve this, the organisation must have an innovative climate (Ekvall, 1990). Leadership can be seen as a process there one or several people influence a work group to move in a certain direction which have strong impact on the climate within the group (Ekvall and Rydhammar, 1999). The outcome of leadership styles has been studied in relation to different criteria such as productivity, working moral, job satisfaction and organisational climate to exemplify some criteria's. In an organisation individuals are seen as a source of knowledge and with the right inputs, training and environmental conditions, goals can be reached and the work will flow smoothly, on time and with good outcomes (Kirton, 2002).

Prather (2000) describes three different areas with activities that characterise innovative organisations, see Figure 10. The larger the overlap is between the three areas, the greater is the ability of innovative outcomes.

The first area is ***"Education"*** and it focuses on one individual. A person has ideas and is responsible for his own thinking, and the better he is, the better the innovative output of the organisation.

The second area is ***"Application"*** and it focuses on the team. Teams are formed to solve problems or to take advantage of opportunities. Team members need a common and shared problem-solving process in order to become successful.

The third area is ***"Environment"*** and it focuses on the organisation and leadership. The climate for innovation is the perception of "what it is like to work here" and is affected by the behaviours of the leadership.
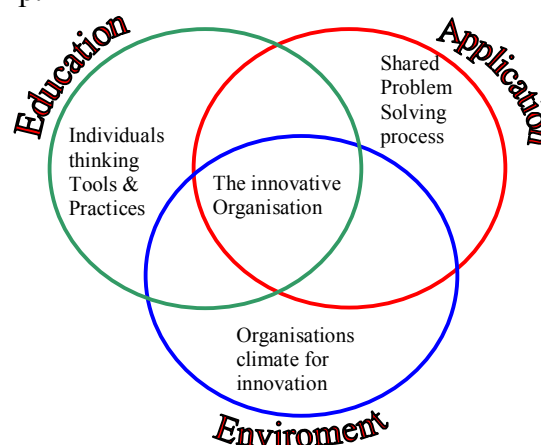
Figure 10. The three arenas for innovative climate.

Innovative organisations can be separated into two climate areas; the psychological/cognitive climate and the physical climate. The "psychological climate" focuses more on the cognitive and motivational attributes, whereas the "physical organisational climate" is the shared meaning that is communicated to the employees through their physical work environment. Together these two elements affect the productivity and overall health of an organisation.

The psychological climate

Research in creativity has a long history in psychology, focusing on individual differences in personality, cognitive abilities, and problem-solving styles.

Creativity

Innovation comes from a creative idea, otherwise is it not an innovation. Innovation can accordingly be defined in general terms as a creative idea that has been brought forward. Creativity can be explained and expressed like this; creative is to see the same thing as everybody else, but to think something different (Ekvall, 1997). From the companies point of view it is important to stimulate the employees to participate in the creative processes (Ekvall, 2003).

Two levels of creativity can be identified whether we look at the concept from a product, person or a process point of view. One is innovative and revolutionary, the other adaptive and confirmatory (Ekvall, 1997). There are many aspects to creativity, one definition would include the ability to take existing objects and combine them in different ways for newer purposes. Creativity is the ability to generate new and useful ideas and solutions to everyday problems and challenges. Creativity involves the translation of the employees' talents and vision into an external reality that is new and useful and that takes place among them in the organisation. Creativity results from the interaction of a system composed of three elements;

- An organisation that contains rules.
- People that brings novelty in to the organisation.
- A field of experts who recognise and validate the innovation.

All three elements are necessary for a creative idea, product, or a discovery to take place, (Csikszentmihalyi, 1996).

Brewster Ghiselin mentioned in Ekvall (1997) points to the important role of emotion in creative thought and practice. Ghiselin have described creativity based on products in two levels, one higher and one lower, one primary and one secondary, one major and one minor. Creativity of lower level is further development of something already existing whilst the higher level of creativity is to introducing new ideas into the process.

Problem solving

> *"A man must be big enough to admit his mistakes, smart enough to profit*
> *from them, and strong enough to correct them."*
>
> *John C. Maxwell*
> *(www.motivational-inspirational-corner.com, 2006)*

Kirton (2002) presented two cognitive styles of solving problems, "the Adaptive style" and "the Innovation style". These styles mean that all people that solve problems are creative. Kirton describes persons that are characterised by the adaptive style as "Adaptors" and those who have an innovation style as "Innovators". The Adaptors prefer their problems to be

associated with more structure, meaning they try to solve their problem with well-known solutions, in common and safe ways. The Innovators are more tolerant to looser guiding structure and when meeting a problem they reformulate it and try to solve it from a new and unproven angel. Adaptors and Innovators prefer different kind of approaches to problems, but none is not by definition more successful as a problem solver than the other. Adopters and innovators use different way of solving problem. Everyone in an organisation is seen as creative and thus can contribute – as an innovator or as an adapter – to the innovative activities of the organisation (Ekvall, 1997).

The Gestalt psychologist Wertheimer conducted research in 1945 about problem solving and stressed the importance of understanding the overall structure of a problem, e.g. the relationship between different tasks and issues. In Wertheimer, lateral thinking theory is the idea to "group things together" i.e. characteristics that made it possible to structure or interpret a problem in a certain way (Kearsley, 1994-2002). Wertheimer separate the problem solving process in reproductive and productive thinking (Ekvall, 1997). Wertheimers problem solving process with reproductive and productive thinking can be compared to Kirtos Adapters or as Innovators.

Organisational Climate

Climate is defined as frequent patterns of behaviour, attitudes and feelings that characterise the life in the organisation. Climate is shaped by the interaction between the organisation and their members. The day-to-day contact and confrontation with the organisation, their structures and processes create the attitudes, feelings and behaviours that constitute the climate. The individuals within the organisation, their personalities, attitudes, knowledge, experiences etc. have a central impact on which kind of climate that evolves. Individuals interpret their perceptions and react according to their conclusions. Interpretations are dependent on the individual abilities and motives; different motives lead to different perceptions and thus behaviour. Even if each member has his or her own unique interpretation, climate is a real existing phenomenon in the organisation, independent of how it is perceived by each individual member. It must be viewed as an organisational reality, just as much as informal status hierarchies or group norms (Ekvall, 1993). Organisation offers opportunities, as well as the boundaries for the possible interaction and climate that develops. Other factors such as the size of the company, the psychical environment, the financial situation etc can also influence the climate (Ekvall, 1994).

Ekvall differentiated climate and culture and defined climate as frequent patterns of behaviour, attitudes and feelings, meaning the life in the organisation, whilst the culture reflects the deeper foundation in the organisation. Culture includes values, beliefs, history and traditions. This distinction means that culture provides the foundation for patterns that are observed, described and changed. These patterns of observed behaviour along with other variables see Figure 11, helps to establish the climate within the organisation (Isakson et. al 1999).

Climate can be viewed as a variable between the organisations "in-puts" like capital, resources, equipments and products, and "outcomes" like profit, quality, satisfaction and productivity (Ekvall, 1993). Through influencing the intermediate organisational and psychological processes, climate affects the outputs. Examples on organisational processes are communication, coordination, problem solving and decision-making, whereas psychological processes are among teaching and motivation. Climate has an effect on them as well as they influence the climate so that a circle develops. It is important to emphases that climate itself does not cause any effects, but it strengthens or lessens the outcome of the ingoing variables see Figure 11 (Ekvall, 1993).

According to Isaksen et. al, (1998) different factors exist that determine the individual organisational climate. These are:

Leadership - leadership is the way leaders influence the subordinates.

Contour - the contour is the size o f the organisation, shape, owners and geographic location.

Image - the perception outsider views the organisation.

Values and beliefs - are existing values in the organisation.

Structure - is the organisation with units and departments and methods for controlling and co-ordinating.

Missions & strategies - are the goal for the organisation that management develops.

Staff polices - are guidelines that concerns the employees like education.

Environment and technology - include machinery, buildings and material.

Task and requirements - are object needed for develop the task.

Individual skills and abilities - are characteristics of the employees in the organisation, which include age, education and personal values.
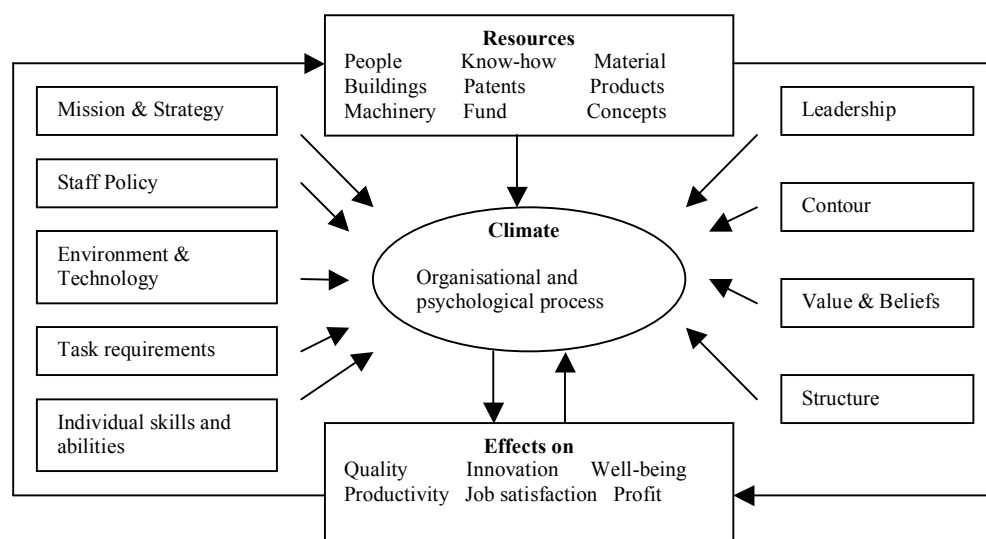
Figure 11. Organisation climate as an inventing variable.

All these variables have an impact on how people view the working climate. Organisational climate influence on thoughts and behaviour among the employees in an organisation, but the organisational culture also affect the organisational climate through valuation and standards that exist. Factors that influence climate are the ability to solve problems, motivation and creativity (Isaksen et. al, 1998).

The Creative and Innovative Climate

Every change, every burst of creativity, begins with the identification of a problem or opportunity that somebody finds meaningful. As soon as people become interested in an issue, their creativity is instantly engaged. If we want people to be innovative, we must discover what is important to them and we must engage them in meaningful issues. The simplest way to discover what is meaningful is to notice what people talk about and where they spend their energy. How employees view decision-making participation, teamwork and communication has a lot to do with whether or not they also see the organisation as supportive. Creating the right climate in which employees are committed and satisfied with their jobs can be viewed as an exercise in improving communication with employees,

increasing the quality and amount of employee participation in decision making and making improvements in the quality of involvement in work teams.

As mentioned before climate is shaped from reactions among the employees by showing their attitude, behaviour and feelings. Ekvall (1994) has found ten dimensions in the organisational climate that separate an innovative organisation from a stagnated one. An organisation that has high numbers on all dimensions except the conflict dimension, that shall be lower than the other, has an innovation climate (Ekvall, 1996). These ten dimensions are;

- **Motivation** - Means that the subordinates feel motivated and that the work tasks they do are meaningful, they are committed and make contributions. The subordinates are involved in daily work, long-term goals and visions. The climate is dynamic and inspiring. If the climate is the opposite, people are not engaged and individuals lack interest in their work.
- **Freedom** - Freedom stands for independent subordinates that cooperate with each other, share information and discuss problems. The subordinates have the opportunity to define their own work. In the opposite climate, the subordinates are passive; they work within strict roles and guidelines with little possibility to redefine their work.
- **Ideal-support** - Means that the subordinates listen to each other, encourage initiatives and the spirit in the organisation is constructive which means that it is easy to handle new ideas. If the idea support is low, the automatic "No" answer will be generated, and ideas and suggestion are immediately refused.
- **Trust/Openness** - Means that it is allowed to do something wrong and that the communication between all people in the team is open. Subordinates count on each other for professional and personal support and have respect to each other. When trust is missing in an organisation, people are suspicious, they do not share information and they have problem to communicate.
- **Dynamism/Liveliness** - Means the life of the organisation. There exist changes in action during different situations. The atmosphere is full of positive energy; the psychological turbulence is described as "full speed" and "go". Opposite climate is distinguished by that work is carried on without initiated new ides, projects or plans.
- **Playfulness/Humour** - The subordinates are spontaneous and have fun at work with lots of jokes. The climate is seen as easy going and light hearted. The opposite climate is characterised by seriousness with a stiff and gloomy atmosphere. Laughter is regarded as improper and intolerant.
- **Debates** - Debates mean that the climate is open, different views are debated. All voices are heard and subordinates are keen to put forward their ideas for considerations. If debate is missing in an organisation, people follow authorial persons without questioning them.
- **Conflicts** - Conflict is when there are different personal and emotional tensions between the subordinates in the organisation. Personal differences yield gossip and slander. In organisations with high level of conflicts, individuals and groups dislike or hate each other. In the opposite way, with low levels of conflicts, people accept each other and deal effectively with differences.
- **Risk-taking** - Means tolerance to uncertainties in the organisation. People dare to take risks, initiative are taken rapidly even when the outcomes are unknown. People take chances and gambles with theirs ideas. In risk avoided climate people will "play safe"; they set up commitments and cover them selves in many ways.
- **Idea-time** – Implies that the subordinates have time to develop new ideas. There are possibilities to discus and test suggestions not included in their ordinate tasks. There is time to explore and develop new ideas. In the opposite way, all time is booked and

specified. The time pressure will not allows tasks outside planned and given instructions.

Ekvall (1996) found that there is a correlation between the three leadership dimensions (change, product and employees) and the climate dimension. Relation between organisational climate and organisational outcomes has been observed in a majority of studies. It can be explained by the innovation, productivity and job satisfaction among the employees. The climate itself does not accomplish anything but it strengthens or weakens the effects created by the available resources. If the outcomes are good, effects on attitudes, feelings and behaviours will be different than it would have been if the outcomes were poor. This means that the climate will in turn be affected by the outcomes.

In a study by Ekvall and Rydhammar (1999) performed at a Swedish State Collage among employees, the result showed that organisational climate and employees resources have consequence on the creativity in an organisation. The result showed that leadership influences indirect on creativity through the organisational climate. Leaders have the opportunity to build up a good emotional climate as well as to spoil it. Leaders' behaviour will affect all or the majority of the staff, directly or indirectly and thus influence the development of the climate. This influence is important for the outcomes of the organisational operations. Some other part of leader behaviour can influence the outcomes directly, without having influence on the climate; for example the leader initiating methods or routines that concern only a few employees but still affect the quality of the organisations production. Climate has also been evaluated to improve operations and performance and has had a significant effect on the financial performance of an organisation (Ekvall and Rydhamar, 1999). Leadership focusing on change dimension has stronger influence on the climate; which is natural because creativity and innovation have benefit from this type of leader style, see Figure 12.
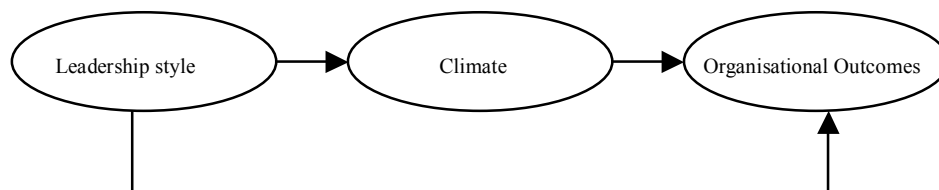
Figure 12. Model of the influences of leadership style.

Research of climate in stagnated and innovative organisations, carried out by Isaksen (et. al 1998) showed that organisations that were designated innovative have climate figures that are significantly different from stagnated organisations. In innovative organisations the mean differences of the scores are significantly better on all 10-climate dimensions. The organisational climate plays an important role, which affects the result of the operation or task that is performed (Ekvall, 1996). There is not only leaders' attitude and behaviour that are important in an organisation; there exist also informal leaders, personnel managers and experts of different kinds that are important. Change oriented leaders tended to show strongest correlation with the climate dimensions Challenge, Freedom, Trust, Playfulness and Conflicts. The outcomes can be expected to influence productivity, quality and well-being in a positive way besides innovation. Outcomes that affect creativity and innovation were Idea support, Debates, Risk taking and Idea time. The Risk taking, Dynamism, Freedom and Debates seems to be the climate dimensions that make the crucial difference between the creative climate that supports radical innovation and the creative climate that only allows small improvements.

It is different circumstances which produce a creative climate in a workplace (Ekvall and Arvonen, 1991). It shall always be kept in mind that climate and leadership have influence on each other. It is not one way relationship, but rather a complex system where changes in the organisational climate have impact on the leader and his leadership style. A climate that in a way was meant to be positive could have negative impact on the leadership. Since the importance of the organisational creativity is growing, we need corresponding improvement in measurement to assess more precisely numbers for the organisational climate, including creativity and changes. Thus a deeper research is needed to inquire the relationship between organisational climate and leadership styles from both employees and managers point of views.

Methods

This chapter presents the method used in the study. The study comprises of investigations of existing leader dimensions and the organisational climate at Company X. The study compares leaders and subordinates perceptions of existing leader and climate dimensions with existing norm data from database collected by Ekvall and Arvonen (Ekvall and Arvonen, 1994, 1996a, 1996b). It also investigates and compares the organisational climate at Company X with other companies, in order to see if this organisation is relatively innovative or stagnated. The employer can then understanding the employees; create better leadership, healthier subordinates which are more engaged in their work, create pleasant work environment and a more efficient organisation, (Arvonen, 2005; Ekvall, 1996). The purpose of this chapter is to present the participants, the method, the research instruments and the data gathering process.

Participants

The study was performed at Company X, present in Gothenburg. The study was implemented at the main organisation with no limitations, meaning that all personnel working in the company received a questionnaire. The organisation consists of several departments such as Sale, Marketing, Human resource, IT and Trade with a total of 183 employees. Some of the employees were not included in the study because of absence for educational purposes, parental leave or because of that some were put on the long-term sick-list. 170 persons were included in the study and each of the participants received one questionnaire. The numbers of participants were 124; of these were 8 leaders and 116 employees. The rate of response was 73 %. One explanation for why some participants did not respond could be because of many questionnaires in a short period of time. The employees may have become tired to answer them all. All participants filled in the questionnaires right and were included in the analysis.

Design

Quantitative and qualitative data were gathered and evaluated in the study. The quantitative data is used as a base in the study and the qualitative data adds zest and depth to the research. The purpose of the study was to evaluate leaders and subordinates perception of organisational climate and leader dimensions. To fulfil the purpose of the study, results from the theoretical framework with norm data from the databases were adopted and evaluated. The quantitative data was analysed in SPSS (Statistical Package for Social Scientists 12.0.1).

Research instruments

This section presents and describes the research instruments for gathering quantitative data. Two research instruments developed by Ekvall and Arvonen were used to gather quantitative data (Yukl, 2005; Creswell, 2003). Ekvall has developed the instrument concerning climate factors, the Creative Climate Questionnaire, (Ekvall, 1990; 1991; 1996) and Ekvall and Arvonen have developed the one concerning leadership behaviour (Ekvall and Arvonen, 1991). To gather the qualitative data a few open-ended questions were added to the research instrument, both for the climate and the leadership part and those questions had the purpose to add zest and depth to the research.

The two instruments were set together into one-questionnaire and were sent out to selected departments. As an initial part of the study an e-mail was sent out to all personnel explaining the purpose, see Appendix A (only Swedish). This e-mail contained a web link that personnel could use in order to give their answers. The respondents were asked to answer on how they experienced the leadership styles and climate in their departments. The

questionnaire started with some background questions like; period of employment, sex, name of department, name of the manager and age. It was followed by a leadership part that measured the three earlier mentioned dimensions; Change/development, Product/task and Employee/relation. Each dimension of the questionnaire consisted of 10 question, meaning 30 questions totally. Answers could be given by using the Likert-scale, meaning 0, 1, 2 and 3, which is equivalent to; Rarely/Never, Sometime, Quit Often and Often/Always. Answer alternative 0 means that the dimension is very weak while a 3 on the scale indicate high characteristic of a specific dimension. Results from the measures consisted of mean values from each dimension. According to Ekvall (1996a) it is not possible to compare different dimensions in relation to each other, for example results in the Change dimension cannot be compared with the Product dimension. Ekvall says that comparisons should be made within the same dimension, in the same organisation during different periods of time and with norm data from database.

The instruments used in this thesis are not published upon requests from researchers, Ekvall and Arvonen, only example of included questions are illustrated in Figure 13 and Figure 14.

My manager	Rarely/Never	Sometime	Quit Often	Often/Always
… inspire confidence	0	1	2	3
... trust the employees	0	1	2	3

Figure 13. Example of questions in the leader dimensions part, (Arvonen 2005).

The organisational climate was measured within the second part of the questionnaire, the Creativity Climate Questionnaire, (Ekvall, 1991; 1996). This questionnaire includes ten climate dimensions with 5 questions in each dimension, which gives totally a 50-item questionnaire. Included dimensions were; Challenge, Freedom, Ideal-support, Trust-Openness, Dynamic-Liveliness, Playfulness-Humour, Debates, Conflicts, Risk taking and Idea time. Answers could be given in numbers 0, 1, 2 and 3, which are equals to; Rarely/Never, Sometime, Quit often and Often/Always. Ekvall (1996a) points out one climate dimension, conflict should be treated as inverted, which is important to notice during analysis of data. The conflict dimension has a negative relation with other dimensions; which is a distinction from all other dimensions that are positive related to each other. Ekvall also points out that the dimensions Trust and Conflict have strong negative correlation, meaning high numbers in Trust results in low numbers in Conflict and the other way round.

	Rarely/Never	Sometime	Quit Often	Often/Always
People here find pleasure in one's work	0	1	2	3
People make time to discuss new ideas	0	1	2	3

Figure 14. Example of questions in the CCQ questionnaire, (Ekvall 1988).

Procedures

The idea to investigate an organisational climate and leader dimensions in a Swedish company came after studying materials in courses; Human Resource, Project psychology and Organisational Change included in the program International Project Management. Together with my work experiences in a company that have had large organisational changes during a short time period, interest about the subjects leadership and climate dimensions have arisen.

After an e-mail conversation with the CEO at Company X, a meeting was arranged with the CEO, the human resources manager and myself. After several discussions a decision was made that the research should take place during November 2005. The purpose of the study was to investigate existing leader and climate dimensions in the organisation. The organisation in the company is young and formable which put an extra management interest in the result. The result could form the basis of further organisational development in the company.

After telephone and e-mail contact with responsible persons of the research instruments that was planed to be used, Jouko Arvonen and Göran Ekvall, permission for using these instruments were given but only during certain conditions. I was not allowed to use those instruments outside this assignment, not allowed to publish those instruments and when the research was finished the result should be sent to Jouko Arvonen and Göran Ekvall.

E-mail was sent out to the participants of the study together with a link and a presentation of the research and the purpose of the study, see Appendix A. The questionnaire was sent out in mid November. The participants were given a deadline of 10 days to replay, after a week, the participants were reminded. A last opportunity to respond on the questionnaire was given in the end of November 2005. The questionnaire was written in Swedish as well as the covering letter. Confidentiality was promised to the respondents and all questionnaires replied were deleted.

Analyse

The data collected was divided into two groups, leaders and subordinates. After gathering quantitative data it was coded in SPSS, SPSS stands for Statical Package for the Social Sciences. A mean value index at company level was constructed for both leadership and climate dimensions. SPSS was used to analyse all quantitative data and different tests were performed; "One sample t-test" was used to test result with norm data, "Independent t-test" was used to test if there were significant differences in perceptions among leaders and subordinates, and "Correlation test" (Bivariate) was used to find correlation between leader and climate dimensions. The level of probability used in all tests were 0,05 which is called significance level.

The qualitative data was analysed and evaluated outside the SPSS program.

Result

The scope of the empirical study and data gathering methods was presented in the previous chapter. The purpose of this chapter is to present results from the data collection. All data will be presented as objective as possible in order to give the reader the possibility to independently interpret the results. Results are based on data from 8 managers and 116 subordinate i.e. 124 respondents in total. This corresponded to a perceptual distribution of subordinates 93, 5 % and leaders 6, 5 % see Figure 15.
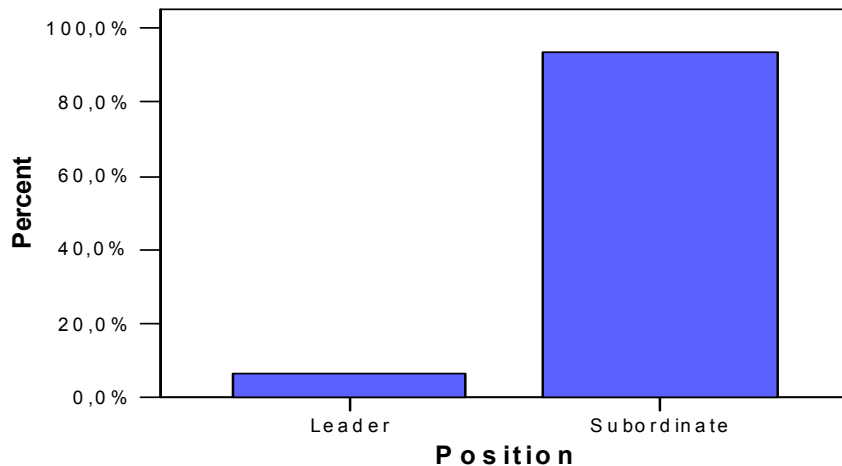
Figure 15: The ratio of the respondents.

Outcome of leadership dimensions

The results presented in Table 4 shows the comparisons of leaders and subordinates perceptions in predefined leader dimensions. The results from the test; Significance of t-test are above 0.05 (0.165, 0.198 and 0. 402) which means that there are no significant difference in leaders and subordinates perceptions in the leader dimensions.

Dimensions	Position	N	Mean	Std. Deviation	t	df	Sig. Value (2-tailed)	Sig.
Relation	Leader	8	2,54	0,463	1,396	122	0,165	0,420 NS*
	Subordinate	116	2,25	0,562				
Change	Leader	8	2,36	0,443	1,293	122	0,198	0,208 NS*
	Subordinate	116	2,09	0,594				
Product	Leader	8	2,15	0,568	0,841	122	0,402	0,729 NS*
	Subordinate	116	1,96	0,608				

NOTE: N = Number of respondents, Mean = Average value where 0 = low and 3 = high, Std. Deviation = Standard Deviation, df = Degree of Freedom, Sig. Value (2-tailed) = Significance of t-test result, Sig. = Standard Significance Difference (NS* = No Significance Difference, S* = Significance Difference) p* ≤ 0,05.

Table 4. The independent T-test of existing leader dimensions.

By reading comments in the open-ended questions leaders and subordinates perception of their most positive respective negative experiences about the management in the company could be evaluated. As shown in Table 5 and Table 6, both leaders and subordinates mentioned freedom within responsibility and positive spirit as the two most positive

comments. Negative comments from some of the leaders were that they suffered from lack of long-term planning and unclear area of responsibility. Some of the subordinates, mentioned difficulties in getting leaders to listen and that they sometimes were inaccessible, while others, however, experienced an opposite situation.

Positive comments (+)	Negative comments (-)
"Freedom with responsibility"	*"Unclear area of responsibility"*
"Short decision-making process"	*"Certain departmentalization of working between departments"*
"Positive spirit in the company"	*"Insecurity because of constant changes"*
"Visions and fresh ideas"	*" Unclear goals that are hard to measure"*
"Things in order"	*"...Bad long-term planning and long-term perspective."*

Table 5. The leaders most positive and negative comments about the leadership in the company.

The trend showed that there were more positive comments among the subordinates than negative. The majority of the subordinates that were negative worked at the same department.

Positive comments (+)	Negative comments (-)
"Positive leadership..."	*"Lack of competence among some leaders to impel the company forward"*
"It is easy to get in contact with managers"	
	" Inaccessibility because of high workload"
"Freedom with responsibility"	*"No one dares and set demand when the employees do not carry on the job"*
"A great amount of light entertainment within the whole company, from leaders to employees"	*" Unsatisfactional states and matters in between leaders and subordinates are allowed to continue to long before actions are taken and these actions are unfortunately often on the leaders conditions rather than the employees side. Leaders must as well as the subordinates be asked to quit if they neglect their duties ..."*
"The leadership is driven by a enormous sense of humour, all the way up CEO level"	
"The management listen to the employees"	*"It feels like it is hard to reach the management, feels like they are not facing or answer criticism – it is hard competition and the management rely on each other rather than listen to others..."*
"The management give appreciation and feedback to work performed"	
"High ambition to keep personnel informed about the result and how business proceed"	*"Delayed or no information"*
" Good staff welfare"	*"Bad understanding for our work situation"*
"Give me the opportunity to grow and develop"	*" Lack of personal development"*

Table 6. The subordinates most positive and negative comments about the leadership in the company.

Outcome of the climate dimension

In Table 7 comparisons is taken of leaders and subordinates perceptions of climate dimensions. The results shows that 5 climate dimensions in the t-test were below 0,05. These dimensions were Motivation, Trust, Liveliness, Humour and Conflict. This t-test shows a significant difference in perceptions between leaders and subordinates in all these dimensions. The leaders position shows significant higher numbers in the result concerning mean values than subordinates in all dimension except the Conflict dimension, where the result from leaders are significant lower than subordinates.

Dimensions	Position	N	Mean	Std. Deviation	t	df	Sig. Value (2-tailed)	Sig.
Motivation	Leader	8	2,70	0,466	3,501	122	0,001	S*
	Subordinate	116	1,93	0,605				
Freedom	Leader	8	2,03	0,446	1,527	122	0,129	NS*
	Subordinate	116	1,72	0,560				
Idea Support	Leader	8	2,13	0,282	1,605	122	0,111	NS*
	Subordinate	116	1,81	0,551				
Trust	Leader	8	2,28	0,585	2,719	122	0,008	S*
	Subordinate	116	1,65	0,633				
Liveliness	Leader	8	2,50	0,400	3,295	122	0,001	S*
	Subordinate	116	1,87	0,529				
Humour	Leader	8	2,63	0,528	2,937	122	0,004	S*
	Subordinate	116	2,08	0,502				
Debate	Leader	8	1,85	0,298	1,182	122	0,239	NS*
	Subordinate	116	1,64	0,492				
Conflict	Leader	8	0,18	0,291	-6,568	14,262	0,000	S*
	Subordinate	116	0,99	0,733				
Risk taking	Leader	8	1,70	0,355	1,465	122	0,145	NS*
	Subordinate	116	1,44	0,490				
Idea time	Leader	8	1,25	0,424	-0,500	122	0,618	NS*
	Subordinate	116	1,35	0,534				

NOTE: N = Number of respondents, Mean = Average value where 0 = low and 3 = high, Std. Deviation = Standard Deviation, df = Degree of Freedom, Sig. Value (2-tailed) = Significance of t-test result, Sig. = Standard Significance Difference (NS* = No Significance Difference, S* = Significance Difference) p* ≤ 0,05.

Table 7. The independent T-test of existing climate dimensions.

In Table 8 and Table 9 comments made from open-ended questions about the climate in the company are presented. As two of the most positive comments mentioned of both leaders and subordinates were job satisfaction and sense of community with colleges. Negative comments mentioned from both leaders and subordinates were; stress because of high workload and lack of time. Some of the subordinates experienced "walls between departments" as negative factors and some leaders mentioned bad planning and follow-ups of work tasks.

Positive comments (+)	Negative comments (-)
"Job satisfaction"	*"Stress because of high workload and lack of time"*
"Sense of community with colleges"	*"Two places – hard to feel fellowship with each other"*
"Good knowledge and experience among employees, with high competence"	*"...Work rotation does not mean that the right women or man are positioned at the right position."*
"Good working environment, both psychic as well as physical"	*"Sometimes bad planning"*
" Responsibility - independence"	*"Bad follow-up"*

Table 8. The leaders most positive and negative comments about the climate in the company.

The same trend appears here in the climate dimensions as for the leadership dimensions, overall there are more positive comments among the subordinates than negative and the majority of the negative subordinates work at the same department.

Positive comments (+)	Negative comments (-)
"Easy-going and pleasant atmosphere"	*" Wall between departments"* *" Lack of time… stressful"*
"Respect for each other"	*"An open discussion can often be taken as personal criticism"*
"Good colleges"	*"Lack of work ethics"*
"Lot of different benefit for encouragement comfort and job satisfaction"	*"Too many different groupings at work. Feel like We and You"*
"Near to the management, have the ability to say what I feel and what I am thinking, there are no prestige and stiffness"	*"The is significant difference between experienced work climate in the company's larges department and the rest of the company"*
"The ceiling is high in most departments at the company"	*"... There are some occurrences of departmentalization of work"*
	"You can get a stab in the back"
"I like my work tasks"	*"Someone can loaf about without achieve anything"*

Table 9. The subordinates most positive and negative comments about the climate in the company.

Leaders results in correlation with leader and climate dimensions

Table 10 shows leaders' correlated data between leaders and climate dimensions in the investigated company. No significant correlation between neither of the climate and leadership dimensions can be found, except from the product dimension (leadership) and the liveliness dimension (climate), which is positive correlated.

Dimensions		Motivation	Freedom	Idea Support	Trust	Liveliness	Humour	Debate	Conflict	Risk Taking	Idea Time
Relation	Pearson Correlation	0,696	0,354	0,507	0,600	0,718	0,825	-0,036	-0797	0,636	-0,331
	Sig. (2-tailed)	0,055	0,389	0,200	0,116	0,045	0,012	0,932	0,018	0,090	0,423
	N	8	8	8	8	8	8	8	8	8	8
Change	Pearson Correlation	0,518	-0,269	0,729	0,497	0,475	0,297	0,665	-0,008	-0,027	0,527
	Sig. (2-tailed)	0,188	0,520	0,040	0,211	0,235	0,475	0,072	0,984	0,949	0,179
	N	8	8	8	8	8	8	8	8	8	8
Product	Pearson Correlation	0,777	0,445	0,670	0,735	0,855	0,775	0,034	-0,699	0,326	0,012
	Sig. (2-tailed)	0,023	0,269	0,069	0,038	0,007	0,024	0,937	0,054	0,430	0,978
	N	8	8	8	8	8	8	8	8	8	8

** Correlation is significant at the 0,01 level (2-tailed).

Table 10. Correlation of leaders' data concerning leader and climate dimensions.

Subordinates results in correlation with leader and climate dimensions

Table 11 shows subordinates' data of correlation between leaders and climate dimensions in the researched company. There were positive correlations between nine of the ten climate dimensions and relation oriented leaders. Only in the Conflict dimension there was no correlation. Change-oriented leaders show positive correlations between all climate dimensions. Motivation, Idea support, Trust, Risk-taking and Idea time are the climate dimensions that are positive correlated with product oriented leaders.

Dimensions		Motivation	Freedom	Idea Support	Trust	Liveliness	Humour	Debate	Conflict	Risk Taking	Idea Time
Relation	Pearson Correlation	0,363	0,320	0,387	0,406	0,341	0,403	0,241	-0,210	0,292	0,275
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,009	0,023	0,001	0,003
	N	116	116	116	116	116	116	116	116	116	116
Change	Pearson Correlation	0,461	0,408	0,492	0,357	0,457	0,386	0,424	-0,246	0,458	0,328
	Sig. (2-tailed)	0,000	0,000	0,000	0,000	0,000	0,000	0,000	0,008	0,000	0,000
	N	116	116	116	116	116	116	116	116	116	116
Product	Pearson Correlation	0,325	0,185	0,294	0,306	0,230	0,186	0,186	-0,225	0,301	0,239
	Sig. (2-tailed)	0,000	0,047	0,001	0,001	0,013	0,045	0,046	0,015	0,001	0,010
	N	116	116	116	116	116	116	116	116	116	116

** Correlation is significant at the 0,01 level (2-tailed).

Table 11. Correlation data of subordinates in leader and climate dimensions.

Some of the respondents had something extra to add about both climate and leadership and a few of these comments are presented in Table 12.

Last comments

"The location of the office and inner environment are experienced as very positive in terms of work environment"

"There are probably differences in how people experience leadership and work environment in different departments. It is due to, I think, how our nearest manager acts, and what kind of authority he/she has. Even if you can speak freely to your nearest manager, it is not certain that it will have an effect higher up in the organisation.
Stress is caused by lack of time. Time schedules must be kept. It is sometimes hard to keep when managers suddenly disappear into other work tasks that and are more preferential. If you are sitting last in the chain, your scope would shrink to manage delivery and finished your work in time"

"...I think it is incredible that this company does not use and rewards the competence and knowledge that exists among the employees. This gives a feeling of loosing super personnel that never will be replaced..."

Table 12. Other comments about the climate and leadership in the company.

The results of the leaders in leader dimensions compared with norm data

The leaders results shows correlation with norm data in two dimensions, see Table 13. In both Relation and in Change dimensions significant differences were found. The result shows that the company leaders give them self much higher figures compared with norm data collected by Ekvall. Norm data consists of result from nearly seven hundred company leaders and division leaders in Sweden, Finland, Latvia and USA (Ekvall 1993).

Dimension	Company Leader N = 8	Reference Data N = 680	Mean Difference	t	df	Sig. (2-tailed)	Sig.
Relation	2,54	1,99	0,55	3,347	7	0,012	S*
Change	2,36	1,91	0,45	2,884	7	0,024	S*
Product	2,15	1,77	0,38	1,892	7	0,100	NS*

NOTE: N = Number of respondents, Mean = Average value where 0 = low and 3 = high, Std. Deviation = Standard Deviation, df = Degree of Freedom, Sig. Value (2-tailed) = Significance of one sample t-test result, Sig. = Standard Significance Difference (NS* = No Significance Difference, S* = Significance Difference) $p* \leq 0,05$.

Table 13. Comparison of leaders' results with norm data.

The results of the subordinates in the leader dimensions compared with norm data

Subordinates result in all three dimensions correlated with norm data, meaning that there were significant differences, see Table 14. The result shows that subordinates in the company give their leaders much higher figures than norm data, collected by Ekvall. The norm data consists of result from 3168 subordinates in Sweden, Finland, Latvia and USA (Ekvall 1993).

Dimension	Company Subordinates N = 116	Reference Data N = 3168	Mean Difference	t	df	Sig. (2-tailed)	Sig.
Relation	2,25	2,00	0,25	4,858	115	0,000	S*
Change	2,08	1,82	0,26	4,813	115	0,000	S*
Product	1,96	1,71	0,25	4,498	115	0,000	S*

NOTE: N = Number of respondents, Mean = Average value where 0 = low and 3 = high, Std. Deviation = Standard Deviation, df = Degree of Freedom, Sig. Value (2-tailed) = Significance of one sample t-test result, Sig. = Standard Significance Difference (NS* = No Significance Difference, S* = Significance Difference) $p* \leq 0,05$.

Table 14. Comparison of subordinates' results with norm data.

The results of Company X in the climate dimensions compared with norm data

The result from the Company X one sample t-test is compared with a global Swedish company active within technical service (Ekvall 1996a, 1996b). Norm data mean values from four different departments are compared with results from Company X.

Dimension	Company N = 124	Reference Data	Mean Difference	t	df	Sig. (2-tailed)	Sig.
Motivation	1,98	2,12	-0,14	-2,42	123	0,017	S*
Freedom	1,74	2,05	-0,31	-6,28	123	0,000	S*
Idea Support	1,80	1,70	0,13	2,65	123	0,009	S*
Trust	1,69	1,80	-0,11	-1,91	123	0,058	NS*
Liveliness	1,91	2,02	-0,11	-2,23	123	0,028	S*
Humour	2,12	2,05	0,07	1,49	123	0,140	NS*
Debate	1,65	1,65	0,00	0,11	123	0,911	NS*
Conflict	0,93	0,92	0,01	0,21	123	0,835	NS*
Risk taking	1,46	1,42	0,04	0,87	123	0,384	NS*
Idea time	1,34	1,40	-0,06	-1,26	123	0,210	NS*

NOTE: N = Number of respondents, Mean = Average value where 0 = low and 3 = high, df = Degree of Freedom, Sig. Value (2-tailed) = Significance of one sample t-test result, Sig. = Standard Significance Difference (NS* = No Significance Difference, S* = Significance Difference) p* ≤ 0,05.

Table 15. The results of Company X compared with norm data.

The result shows that all personnel working in the studied company responds below norm data collected by Ekvall (1996a, 1996b), in four different climate dimensions. Those four dimensions are Motivation, Freedom, Idea Support and Liveliness.

Results of Stagnate or Innovative organisations compared with norm data

In Table 16 reference data obtained from research accomplished by Ekvall (1996a, 1996b) and data gathered in Company X is presented. Reference data contains figures from 5 stagnated and 10 innovative organisations. The result from the company study shows a common trend that is responded values in the leaders test are higher than in the test of the subordinates.

Dimensions	Innovative Organisations Mean	Stagnate Organisation Mean	Company X Mean	Company X Leaders Mean	Company X Subordinates Mean
Motivation	2,38	1,63	1,9839	2,7000	1,9345
Freedom	2,10	1,53	1,7355	2,0250	1,7155
Idea Support	1,83	1,08	1,8290	2,1250	1,8086
Trust	1,78	1,28	1,6887	2,2750	1,6483
Liveliness	2,20	1,40	1,9113	2,5000	1,8707
Humour	2,30	1,40	2,1194	2,6250	2,0845
Debate	1,58	1,05	1,6548	1,8500	1,6414
Conflict	0,78	1,40	0,9339	0,1750	0,9862
Risk Taking	1,95	0,53	1,4581	1,7000	1,4414
Idea Time	1,48	0,97	1,3403	1,2500	1,3466

NOTE: Mean = Average value where 0 = low and 3 = high.

Table 16. A comparison of collected mean values in different categories with 5 stagnated and 10 innovative organisations.

The result from the leaders studied in Company X shows that values are above the reference data from Innovated organisations in nearly all climate dimensions, except in Freedom, Risk taking and Idea time. The level of the result from the subordinates is between reference data from Innovated and Stagnated organisations. The company's mean results are above the level found in stagnated organisations, but below the level found in innovated organisations, see Figure 16.
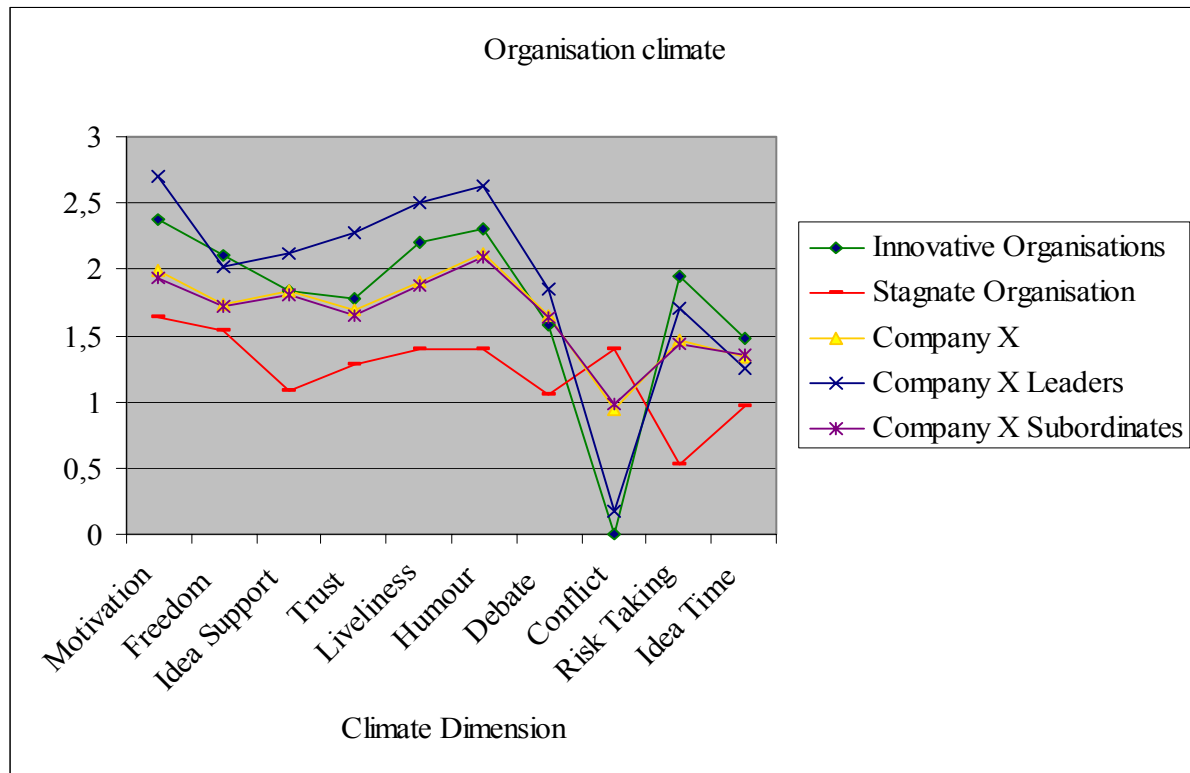

Figure 16. Organisational climate – Innovated or Stagnated

Discussion

In this chapter the result from the study is discussed. The discussion is both of retrospective and future prospective character. Comparison are based on analyse of the theoretical material together with the empirical data found in the research. It is done in order to see if the findings correlate with the theoretical framework. Each of the analysis made in the study are disused and the results are compared with secondary data.

This discussion starts with a retrospective view in order to find underlying factors why this study was conducted. Accordingly, the purpose of the study was to investigate leadership styles and climate dimensions in a Swedish company in order to see if leaders and subordinates have the same perception. Another purpose with the study was to find differences and see correlations between leadership styles and climate dimensions and also compare the result with reference data. Findings made in the research will answer all predefined questions in the study.

The studied company has a young organisation that has been changed and further developed since the establishment 1999. The management was therefore extra curious of how existing leadership and climate factors were perceived among personnel working for the company. The management wanted information that could develop their organisation and the result found in this research could make a contribution to this development. This study included 8 leaders and 116 subordinates and none of the respondents were excluded in the study, meaning that all respondents correctly answered the questionnaire. A responses rate on 73 % could be considered as relatively low, but it could be explained by that several questionnaires were received by the respondents in a short period of time. This questionnaire was the third one that was sent out to the employees in a two weeks period that in combination with plenty of work could explain the low response rate.

The analysis of the study was divided in several parts, some comparison and some correlation parts of existing leadership and climate dimensions. To make conclusions out of the study the result was compared with reference data provided by Ekvall and Arvonen (Ekvall and Arvonen, 1994, 1996a, 1996b).

The comparison part started by comparing results between leaders and subordinates perception of the three different leadership styles, Change, Relation and Production. The findings showed that no significant difference in perception occurred. In other words, leaders and subordinates had same opinions. The only observable difference was that leaders give themselves higher ranks than subordinates in all dimensions. Findings from other studies showed similar results, leaders score them selves higher in relation- and change dimensions, but not in the production dimension (Ekvall, 1993). Usually when differences in perception exist between leaders and subordinates, it depends on bad self knowledge among leaders or that subordinates "blame the leader" which usually leads to conflicts. Analyse of the results from the open-ended questions indicated that both leaders and subordinates valued the same thing, namely freedom under responsibility as a positive company aspect. One negative comment was that certain departmentalization of work occurred between departments. One group of the subordinates mentioned that they had problem to get support from management and that it was difficult to get in touch with them, while other subordinates experienced the opposite. The facts that the respondents belong to different departments with different leaders and leadership styles could explain this phenomenon. One observation of interest was that subordinates with negative comments belonged to the same department while the positive part were spread out, even though it gave no major effect on perceptions between the two groups. Worth management consideration would be to compare the existing differences in leadership style in the well functioning department with the one where the subordinates are more

negative associated. One idea could be to place a leader with another leadership style in the department where the problem exists. The questionnaire showed that subordinates with negative comments want leaders that listen to them and give them better information. Another aspect of what some of the subordinates mentioned showed that they wanted stronger leaders that could be head of affairs and were not afraid to take strong measures if necessary. A strong leader and leaders that listen to subordinates are states of opposition and is doubtless a matter of balance, Sorensen (Svedberg 2003). A leader with extensive expert power or charismatic appeal could be tempted to act in a way that could eventually lead to failure, Yukl (2005). A person that described this leader phenomenon was McClelland (1975, p.266);

> *"How much initiative he should take, how persuasive he should attempt to be, and at what point his clear enthusiasm for certain goals becomes personal authoritarian insistence that those goals are the right ones whatever the members of the group may think, are all questions calculated to frustrate the well-intentioned leader. If he takes no initiative, he is no leader. If he takes too much, he becomes a dictator, particularly if he tries to curtail the process by which members of the groups participate in shaping group goals. There is a particular danger for the man to who has demonstrated his competence in shaping group goals and inspiring group members to pursue them. In time both he and they may assume that he knows best, and he may almost imperceptibly change from a democratic to an authoritarian leader."*

One question that arise was if these slight differences in perceptions of leadership dimension could be reflected in climate factors? By comparing climate dimensions between the two groups, leaders and subordinates, the result showed that there were some differences in perceptions. There were significant differences in five of the ten different climate dimensions namely; Motivation, Trust, Liveliness, Humour and Conflict. The numbers given from leaders were significant higher than numbers given from the subordinates. By interpret those dimensions, the result showed that leaders were more motivated and found their work task more meaningful than subordinates. The subordinates had not the same opinion as leaders about communication and openness among personnel working together, which was shown in the Trust dimension. Results from the Liveliness and Humour dimensions showed that leaders experienced an atmosphere full of positive energy, easy going and light hearted, which were different from what subordinates felt. The conflict dimension showed that subordinates felt that there was more conflict than the leaders experienced.

The differences in the Liveliness and Humour dimensions were a bit confusing, but deeper analysis of the numbers found in the Liveliness and Humour dimensions showed that people worked in different departments and experienced climate differently. During analysis of the positive comments of the open-ended questions mentioned both leaders and co-workers the sense of community with workmates and job-satisfaction as the two highest ranked comments. Negative comments between the two groups were that the climate was stressful and subordinates experienced work climate differently at different departments with feeling of "We and Them" and "Walls between departments".

According to Ekvall (1994) the meaning of the climate dimension Motivation was that subordinates experienced work task meaningful, that they were committed to make contributions and that they were involved in the daily work, but also in long term goals. Analysis of the open-ended questions exhibited signs that a large number of subordinates were not involved in their work and some of the individuals had lost interest. That could be solved by the management taking time and start to listen and support the employees. Next

dimension who differed in perception between the two groups was Truest. It means that there are an open communications between all persons and mistakes are allowed because people act supportively. Some of the comments showed that some subordinates experienced that they could be stabbed in the back and that there existed problems with the communication because of not shared information. The same solution as for the earlier dimension could be used here as well; leaders must take their time and be on visiting terms with the subordinates. The third dimension that differs in perceptions was Liveliness. Liveliness means the life in the organisation with positive energy and different actions of how problems could be solved in different situations. It is always easier to continue as usual without initiate new ideas and plans. An explanation to this could be the stressful climate, leaders experienced they had not time to listen to suggestions from the employees and it could be easier to run business as usual than change attitude and handling new ideas. Prather (2000) described different areas with activities in order to get an innovative organisation and one building block was Education. Prather described that individuals are responsible for their own thinking. The better a person could be the better innovative climate could arise. The management in the company must set up rules on how the work should be performed with clear plans and create an atmosphere where employees could bring forward ideas. Humour was the fourth dimension that differed in perceptions. It means that subordinates act spontaneous and have fun at work, but the result showed that it is not true in all departments according to the answers in the open-ended questions. The last dimension, namely Conflict indicated the result that there existed some emotional tensions in the organisation. The subordinates mentioned "grouping" and that some people disliked each other. Also here the result indicated from the open-ended question that people felt that the same rules were not valid for all people in the company. According to some subordinates a few people could do whatever they felt for and get away with it, meaning that a small number of people did not have the same pressure to accomplish results as others. Those differences lead without doubt to conflicts in the company. The management must follow up every persons result in order to see how it is going, if they do so, they will notice if someone does not perform. The leaders' answers indicated that they were aware of this problem, but still no action has been taken to prevent this behaviour from the some of employees.

Findings from Ekvall (1996) showed that the climate dimensions Motivation, Freedom, Trust, Liveliness and Conflict had positive impact on the outcome such as productivity, quality and wellbeing among employees. Findings from this part of the study showed that the perceptions between leaders and subordinates differed in some of those important dimensions that Ekvall mentioned.

One question that could be asked regarding existing climate was; which one of the groups answered the questions incorrectly, that is, from which of the two groups could conclusions be made that the perceptions were correct?

A correlation analysis between leadership and climate dimensions of both leaders and subordinates data could answer this question. Leaders result showed that no correlation existed between neither of the climate and leader dimensions. One exception was found, the Product dimension (leadership) and the Liveliness dimension (climate) were positive correlated. That could be interpreted that leaders apprehend more of the dynamic spirit in work if the could plan and structure their work task. Bad climate leads to stress among leaders and Fiedlers theory of leadership situations pointed out that cooperation and motivation among subordinates were decisive in order to succeed with the leadership (Fiedler, 1971). Besides this, common sense says that conflicts among employees, low motivation etc. gives experience of stress and difficulties in leader executive and particular among leaders that do not have a leadership style connected to Change or Relation dimensions (Ekvall et. al, 1996).

It is therefore strange that leaders result in Relation and Change dimension did not correlate with any of the climate dimensions (Ekvall, 1993; 1996a; 1996b; Ekvall and Arvonen 1994b). This could be interpreted as incorrect answers from the leaders.

However, the subordinates' climate data revealed many differences. The subordinates result showed high degree of correlation between nine of the ten climate dimensions with relation-oriented leaders. Only the Conflict dimension was excluded, meaning no correlation. The relation oriented leadership style address subordinates feeling and attitudes which leads to that they feel satisfaction in work (Ekvall, 1996a). This was exactly what the result showed, with a Relation oriented leader in the company the subordinates apprehend that they became more committed, they took initiative, communicated with each other, brought forward their opinions, ideas and proposal, they had an easy-going spirit and fast pace. The result showed that Relation oriented leadership style reduces conflicts which were indicated with no correlation to this climate dimension. This is in accordance's with earlier studies made in the subject (Ekvall, 1996a; Arvonen, 1994).

The subordinates experienced that the change oriented leadership style had a positive correlation with all climate dimensions in the company. Change oriented leadership style is characterized by leaders that could create visions, accept new ideas, fast decisions making, encourage cooperation, not anxious and act carefully. This was exactly what the subordinates experienced and reflected in the dimensions; Motivation, Idea support, Liveliness, Freedom and Risk taking. Change oriented leadership style had usually a negative correlation with the Conflict dimension which also was shown in the result. This means risks for increasing conflicts in the organisation. All findings are in accordance's with earlier studies made in the subject (Ekvall, 1996a; Arvonen, 1994). Besides this, subordinates experienced that a change oriented leader had a positive correlations with Trust, Humour, Debate and Idea Support which means that the subordinates easy communicate with each other, have high spirits, are not afraid to bring forward ideas and are able to find new and different methods of solving problems. The research by Ekvall (Ekvall, 1996a) shows that leaders with high numbers in the change dimension usually have high numbers in relation dimension, it is in accordance's with findings in this study.

A product oriented leadership style address the present problem or issue without paying any attention to subordinates individual satisfaction or human interplay. These leaders are characteristicsed by a desire to plan carefully, demand that plan are followed and controls by giving clear and decisive instructions. According to the subordinates study answers product oriented leaders have got positive correlations in the following climate dimensions; Motivation, Idea support, Trust, Risk-taking and Idea time. This could be interpreted as that employees were aware of company targets and visions which lead to engagement among them, they take risks to put forward own ideas and they experienced the spirit as constructive, they felt that leaders trust them, they acted fast, they communicated and solved problems. It is unusual that dimensions "Risk taking" and "Idea time" correlate with a product oriented leader since this leader type do not like to take risks and try to solve problems by using new methods (Ekvall, 1993). Ekvall (1996b) pointed out that research so fare has shown that leadership styles substantial correlated with climate dimensions. Two leadership styles that have huge influence on the subordinates comfort and well-being are Change and Relation oriented leaders (Arvonen, 1996).

A leader could be too bureaucratic or too creative, leaders with these two leadership styles attributes do not carry out changes and developments in a company, the first one on principle and the other by incapability. A bureaucratic leader is conservative and has ambition to follow rules, meaning his an opponent of changes. A creative leader are certainly inventive and change oriented but still not innovative, reasons are that this leader type have a limited ability to plan and carry through tasks and to motivate subordinates (Arvonen, 1996). Studies

made by Bass (1985) showed that transformational leadership correlated with leaders' satisfaction and effectiveness across different situations. A transformational leader could be compared to leaders that Ekvall and Arvonen (1991) described and that focused on the Change dimension. This leader type may be less willing to accept facts and more likely seeks new ways of doing things and takes maximum advantage of the opportunities. Indications from the fact that leaders' data did not correlate with any of the climate dimensions are that leaders' data were not as accurate as subordinates' data.

To be able to make realistic conclusion collected data was compared with reference data (Ekvall and Arvonen, 1994b). Results from the correlation studies; leaders data compared with reference data in leadership dimensions shows that correlations existed in two dimensions, namely in Change and Relation dimensions. The subordinates' data compared with reference data shows correlation in all dimensions. From this, a conclusion could be made that subordinates result are more accurate than their leaders.

A measurement of the organisational climate in the company was obtained by comparing collected data with reference data from company active on the technical market in Sweden (Ekvall and Arvonen, 1994b). The result correlated positive in four different climate dimensions; Motivation, Freedom, Idea Support and Liveliness. As mentioned before Motivation, Freedom, Liveliness and Trust are those dimensions that had positive impact on the outcome such as productivity, quality and well-being among employees. The findings in the study were in accordance with other research made in the subject (Ekvall, 1996).

The next interesting analysis was made in order to compare gathered climate data with reference data from ten innovated and five stagnated organisations (Ekvall, 1996a). Leaders' data were above figures for innovated organisation in all dimensions except from Freedom, Risk-Taking and Idea time, these were just under. Subordinates results were in between reference data from stagnated and innovated organisations. Conclusions from this could be that the company has a relatively innovative organisation compared with reference data. If the leaders could act intermediary and give company vision to the subordinates, create better conditions for them and deal with those problem that exist, a better organisational climate would certainly arise because there seems to be no major problem in the company.

Reflections of the author and future studies

Noticeable about the data gathering process was that it went quite well, after extension in time and two reminders the respondent rate became 73 %. On the other hand, the answer frequency among the leaders was lower than expected. The response in the open-ended questions concerning the five most positive respective least positive climate and leadership dimensions turned out to be very successful data and provided depth to the study.

Leadership and climate dimensions are subjects that have contributed to a lot of research during decades and it is still modern topics to investigate. Today studies often concern the perceptions in between managers and co-workers in order to distinguish differences. Management have understood the importance of different leadership styles, that they can influence the work climate and make a contribution in an organisation. It is therefore negative that not all leaders participated in this research.

An organisation can be developed if it has a management that gather and evaluate background information, nevertheless it will be meaningless if no actions are taken. Future studies could be to get information from all leaders in the company and analyse each department i.e. one leader and his or hers co-workers. The study result indicated that there were differences between departments and it could be interesting to see the result of each department. This research did not have the possibility to cover all departments, mainly due to low respondents' rate of the leaders. However, this study will hopefully give the management

an overall picture of the leadership and climate in the company. Leadership is about understanding co-workers needs, show them respect and of course have the ability to lead them and carry out that same rules are valid for them all. With mutual respect and understanding it becomes will be nice to go to work for both leaders and co-workers.

Conclusions

"I found great pleasure to talk to old folks. They have walked the road we all shall travel and they know where it is bumpy and tough and where it is even and easy."

Platon

Above are old words of wisdom from the great philosophy Platon, (427 BC to 348 BC) which comprises great learning and wisdom. These words are still meaningful to leaders of today business.

Modern companies and modern organisations have established programs for management in order to educate and make them understand the importance of leadership styles and how they influence and make impact on the employees' health and the work climate. Good leadership can definitely strengthen the position for the company on the market but it is not only leadership styles that affect the outcomes, the existence of situational variables are also of importance like; culture, organisation structure, personnel structure, goals, visions and strategies. All these variables put the requirements for different leadership styles. Also specific events and circumstances promote variations in leadership styles. The three different styles Change, Production and Relation make all positive contributions to the success of the practised leadership and even if some combinations of the profiles are generally better than others. There are still room for variations within the generally preferred style and adoptions to different situations. It concerns all leaders to show a humble spirit, be aware of each other's strengths and weaknesses and out from knowledge and experience shape a climate that serves all interests. Leaders that are relation oriented serve as guidance to show consideration for the subordinates, which influence positively on the subordinates work satisfaction and health. In contrast are leaders that do not show consideration and not guide the subordinates when they need it, they have negative impact on the subordinates satisfaction and health. This relationship in between leadership and health of the employees could be seen in both a national and an international perspective. The result in this study shows no significant differences just minor, in between the leaders and subordinates perception in leader dimension but nevertheless, it is important to continue the work that have started i.e. continuously measure and evaluate outcome like those in this research in order to develop the organisation and company.

Finally, it was confirmed in the study that there were significant differences in climate dimensions. This study supports findings made by Ekvall and Arvonen in their leadership theory based on Change- Relation- and Production oriented leadership styles. The result pointed out that all three dimensions were important for the company and that different leadership styles had impact on which organisational climate that develops. The result showed that Change and Relation oriented leaders have larger impact on the climate than Product oriented leader and supported finding made by Ekvall (1996a; 1996b). Conclusions from that subordinates data in leadership dimension correlated with all climate dimensions while leaders data only correlated in the leader dimension Production with the climate dimension, Liveliness could be interpreted as that subordinates data were more accurate than leaders data. This statement is supported by findings made by Ekvall (1996a; 1996b). Another conclusion that could be made out of this study was that leaders ranked them self too high in all dimensions, they seemed to not have enough self knowledge as they thought they had, which could lead to problems in the future. The leaders thought they were more concerned (higher figures in Relation dimension) than subordinates experienced it. However, it is right now not a major problem and since the management seems to understand the importance of

subordinates well-being and have the desire to develop the organisation they will certainly prevent this to become a problem in the future. They have knowledge about the situation and can take actions if necessary. Thus, differences must always be taken seriously. If not, the organisation can be developed in the opposite direction than supposed.

What type of managements will produce tomorrows winning companies? The answer to this question will certainly be leaders that are change oriented and relation oriented leaders that are very good at team building and communication, but also with the ability to take and make decisions that correspond to changes in the market. Another important aspect for tomorrow's leaders is their social competence, because all persons working in a company wants to be appreciated and both have freedom and personal attention.

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Appendix A

Undersökning av arbetsklimat och ledarskap

Text:
Till personal

Mitt namn är Susanne Engström och jag studerar på en masterutbildning som heter International Project Management, vid Chalmers Lindholmen och Northumbria University i Newcastle, Storbritannien. Som en del i utbildningen ingår ett examensarbete på motsvarande 20 högskolepoäng.

Det är inom ramen för detta examensarbete   valts ut och jag behöver er hjälp. Då ledningen i
                    ser värdet i att delta har jag fått möjlighet att utvärdera vilket ledarskap samt vilka klimatdimensioner som finns inom er organisation. Till min hjälp har jag ett researchinstrument som är välkänt inom forskningsvärlden både inom Sverige, men även i omvärlden. Detta gör att normdata finns att tillgå för att jämföra   med andra organisationer. Jag kommer förutom ledarprofiler och klimatdimensioner, även undersöka om det finns någon relation mellan ett visst ledarskap och vissa klimatdimensioner.

En sådan här undersökning har till syfte att utveckla organisationer i positiv riktning. Med researchverktyget kan man identifiera och hjälpa olika arbetsgivare att skapa ett bättre ledarskap, friska och engagerade medarbetare, en trevligare arbetsmiljö och en effektivare verksamhet.

Jag vill därför, tillsammans med   som är min kontaktperson, be dig att bidra till både forskning och din arbetsplats framtida utveckling genom att besvara de frågor som finns i detta formulär. Vissa frågor kan upplevas som svåra att svara på. Försök därför i sådana fall att svara utifrån vad Du tror eller hur Du upplever hur det förhåller sig.

Alla svar kommer att behandlas konfidentiellt - varken arbetsgivaren eller någon annan får veta vad du svarat.
I slutrapporten redovisas svaren inte som individuella svar utan som medelvärden som karaktäriserar arbetsgruppen. För att förhållandena vid olika arbetsplatser skall kunna jämföras, behövs även uppgifterna om dig själv. Jag ber dig fylla i dessa innan Du börjar besvara själva frågorna. Om du har några frågor angående studien eller frågeenkäten ber jag dig kontakta mig via e-mail: susanne.b.engstrom@ericsson.com eller telefon 031-747 30 85 eller   (internt).

Du kommer till enkäten genom att klicka på länken nedan eller genom att kopiera den och klippa in den i en webbläsare.

Sista svarsdag för enkäten är den 25 november.

Tack för din medverkan.
Bästa hälsningar
Susanne Engström

Appendix B

T-Test Climate factors

Group Statistics Climate dimensions

	Position	N	Mean	Std. Deviation	Std. Error Mean
Motivation	Leader	8	2,7000	,46599	,16475
	Subordinate	116	1,9345	,60535	,05621
Freedom	Leader	8	2,0250	,44641	,15783
	Subordinate	116	1,7155	,56022	,05201
Idea Support	Leader	8	2,1250	,28158	,09955
	Subordinate	116	1,8086	,55098	,05116
Trust	Leader	8	2,2750	,58493	,20680
	Subordinate	116	1,6483	,63335	,05880
Liveliness	Leader	8	2,5000	,40000	,14142
	Subordinate	116	1,8707	,52899	,04912
Humour	Leader	8	2,6250	,52847	,18684
	Subordinate	116	2,0845	,50193	,04660
Debate	Leader	8	1,8500	,29761	,10522
	Subordinate	116	1,6414	,49168	,04565
Conflict	Leader	8	,1750	,29155	,10308
	Subordinate	116	,9862	,73270	,06803
Risk taking	Leader	8	1,7000	,35456	,12536
	Subordinate	116	1,4414	,48956	,04545
Idea time	Leader	8	1,2500	,42426	,15000
	Subordinate	116	1,3466	,53429	,04961

Independent Samples Test Climate dimensions

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Motivation	Equal variances assumed	,400	,528	3,501	122	,001	,76552	,21868	,33262	1,1984
	Equal variances not assumed			4,398	8,717	,002	,76552	,17407	,36978	1,1612
Freedom	Equal variances assumed	,408	,524	1,527	122	,129	,30948	,20263	-,09164	,7106
	Equal variances not assumed			1,862	8,597	,097	,30948	,16618	-,06915	,6881
Idea Support	Equal variances assumed	2,807	,096	1,605	122	,111	,31638	,19709	-,0737	,7065
	Equal variances not assumed			2,827	11,138	,016	,31638	,11193	,0704	,5623

		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Trust	Equal variances assumed	,039	,844	2,719	122	,008	,62672	,23054	,1703	1,0830
	Equal variances not assumed			2,915	8,174	,019	,62672	,21500	,1327	1,1206
Liveliness	Equal variances assumed	,620	,432	3,295	122	,001	,62931	,19098	,2512	1,0073
	Equal variances not assumed			4,204	8,783	,002	,62931	,14971	,2893	,9692
Humour	Equal variances assumed	,019	,892	2,937	122	,004	,54052	,18405	,1761	,9048
	Equal variances not assumed			2,807	7,896	,023	,54052	,19257	,0954	,9856
Debate	Equal variances assumed	1,958	,164	1,182	122	,239	,20862	,17643	-,1406	,5578
	Equal variances not assumed			1,819	9,862	,099	,20862	,11470	-,0474	,4646
Conflict	Equal variances assumed	5,393	,022	-3,105	122	,002	-,81121	,26129	-1,328	-,2939
	Equal variances not assumed			-6,568	14,262	,000	-,81121	,12350	-1,075	-,5467
Risk-taking	Equal variances assumed	,811	,370	1,465	122	,145	,25862	,17649	-,0907	,6080
	Equal variances not assumed			1,940	8,952	,085	,25862	,13334	-,0432	,5605
Idea time	Equal variances assumed	,996	,320	-,500	122	,618	-,09655	,19322	-,4790	,2859
	Equal variances not assumed			-,611	8,609	,557	-,09655	,15799	-,4564	,2633

Appendix C

T-Test Leader dimensions

T-test Group Statistics Leaders dimensions

	Position	N	Mean	Std. Deviation	Std. Error Mean
Relation	Leader	8	2,5375	,46272	,16360
	Subordinate	116	2,2534	,56190	,05217
Change	Leader	8	2,3625	,44381	,15691
	Subordinate	116	2,0853	,59377	,05513
Product	Leader	8	2,1500	,56821	,20089
	Subordinate	116	1,9638	,60769	,05642

Independent Samples Test Leadership dimensions

		Levene's Test for Equality of Variances		t-test for Equality of Means							
		F	Sig.	t	df	Sig. (2-tailed)	Mean Differ-ence	Std. Error Differ-ence	95% Confidence Interval of the Difference	
									Lower	Upper
Relation	Equal variances assumed	,656	,420	1,396	122	,165	,28405	,20349	-,1187	,68688
	Equal variances not assumed			1,654	8,491	,134	,28405	,17171	-,1079	,67607
Change	Equal variances assumed	1,601	,208	1,293	122	,198	,27716	,21428	-,1470	,70135
	Equal variances not assumed			1,666	8,827	,131	,27716	,16631	-,1002	,65451
Product	Equal variances assumed	,121	,729	,841	122	,402	,18621	,22133	-,2519	,62436
	Equal variances not assumed			,892	8,145	,398	,18621	,20866	-,2935	,66590

Appendix D

Correlations subordinates

Descriptive Statistics Subordinates

	Mean	Std. Deviation	N
Relation	2,2534	,56190	116
Change	2,0853	,59377	116
Product	1,9638	,60769	116
Motivation	1,9345	,60535	116
Freedom	1,7155	,56022	116
Idea Support	1,8086	,55098	116
Trust	1,6483	,63335	116
Liveliness	1,8707	,52899	116
Humour	2,0845	,50193	116
Debate	1,6414	,49168	116
Conflict	,9862	,73270	116
Risk taking	1,4414	,48956	116
Idea time	1,3466	,53429	116

Correlations

		Relation	Change	Product	Motivation	Freedom	Idea Support	Trust	Liveliness	Humour	Debate	Conflict	Risk taking	Idea time
Relation	Pearson Correlation	1	,774 (**)	,739 (**)	,363 (**)	,320 (**)	,387 (**)	,406 (**)	,341 (**)	,403 (**)	,241 (**)	-,210 (*)	,292 (**)	,275 (**)
	Sig. (2-tailed)		,000	,000	,000	,000	,000	,000	,000	,000	,009	,023	,001	,003
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Change	Pearson Correlation	,774 (**)	1	,680 (**)	,461 (**)	,408 (**)	,492 (**)	,357 (**)	,457 (**)	,386 (**)	,424 (**)	-,246 (**)	,458 (**)	,328 (**)
	Sig. (2-tailed)	,000		,000	,000	,000	,000	,000	,000	,000	,000	,008	,000	,000
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Product	Pearson Correlation	,739 (**)	,680 (**)	1	,325 (**)	,185 (*)	,294 (**)	,306 (**)	,230 (*)	,186 (*)	,186 (*)	-,225 (*)	,301 (**)	,239 (**)
	Sig. (2-tailed)	,000	,000		,000	,047	,001	,001	,013	,045	,046	,015	,001	,010
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Motivation	Pearson Correlation	,363 (**)	,461 (**)	,325 (**)	1	,624 (**)	,684 (**)	,665 (**)	,760 (**)	,547 (**)	,563 (**)	-,535 (**)	,615 (**)	,431 (**)
	Sig. (2-tailed)	,000	,000	,000		,000	,000	,000	,000	,000	,000	,000	,000	,000
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Freedom	Pearson Correlation	,320 (**)	,408 (**)	,185 (*)	,624 (**)	1	,660 (**)	,479 (**)	,526 (**)	,482 (**)	,571 (**)	-,319 (**)	,580(**)	,522 (**)
	Sig. (2-tailed)	,000	,000	,047	,000		,000	,000	,000	,000	,000	,000	,000	,000
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Idea Support	Pearson Correlation	,387 (**)	,492 (**)	,294 (**)	,684 (**)	,660 (**)	1	,643 (**)	,640 (**)	,562 (**)	,732(**)	-,418 (**)	,695 (**)	,568 (**)
	Sig. (2-tailed)	,000	,000	,001	,000	,000		,000	,000	,000	,000	,000	,000	,000
	N	116	116	116	116	116	116	116	116	116	116	116	116	116

Trust	Pearson Correlation	,406 (**)	,357 (**)	,306 (**)	,665 (**)	,479 (**)	,643 (**)	1	,667 (**)	,559 (**)	,481 (**)	-,557 (**)	,507 (**)	,372 (**)
	Sig. (2-tailed)	,000	,000	,001	,000	,000	,000		,000	,000	,000	,000	,000	,000
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Liveliness	Pearson Correlation	,341 (**)	,457 (**)	,230 (*)	,760 (**)	,526 (**)	,640 (**)	,667 (**)	1	,689 (**)	,644 (**)	-,325 (**)	,683 (**)	,453 (**)
	Sig. (2-tailed)	,000	,000	,013	,000	,000	,000	,000		,000	,000	,000	,000	,000
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Humour	Pearson Correlation	,403 (**)	,386 (**)	,186 (*)	,547 (**)	,482 (**)	,562 (**)	,559 (**)	,689 (**)	1	,609 (**)	-,155	,474 (**)	,336 (**)
	Sig. (2-tailed)	,000	,000	,045	,000	,000	,000	,000	,000		,000	,097	,000	,000
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Debate	Pearson Correlation	,241 (**)	,424 (**)	,186 (*)	,563 (**)	,571 (**)	,732 (**)	,481 (**)	,644 (**)	,609 (**)	1	-,192 (*)	,715 (**)	,557 (**)
	Sig. (2-tailed)	,009	,000	,046	,000	,000	,000	,000	,000	,000		,039	,000	,000
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Conflict	Pearson Correlation	-,210 (*)	-,246 (**)	-,225 (*)	-,535 (**)	-,319 (**)	-,418 (**)	-,557 (**)	-,325 (**)	-,155	-,192 (*)	1	-,193 (*)	-,201 (*)
	Sig. (2-tailed)	,023	,008	,015	,000	,000	,000	,000	,000	,097	,039		,038	,031
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Risk taking	Pearson Correlation	,292 (**)	,458 (**)	,301 (**)	,615 (**)	,580 (**)	,695 (**)	,507 (**)	,683 (**)	,474 (**)	,715 (**)	-,193 (*)	1	,634 (**)
	Sig. (2-tailed)	,001	,000	,001	,000	,000	,000	,000	,000	,000	,000	,038		,000
	N	116	116	116	116	116	116	116	116	116	116	116	116	116
Idea time	Pearson Correlation	,275 (**)	,328 (**)	,239 (**)	,431 (**)	,522 (**)	,568 (**)	,372 (**)	,453 (**)	,336 (**)	,557 (**)	-,201 (*)	,634 (**)	1
	Sig. (2-tailed)	,003	,000	,010	,000	,000	,000	,000	,000	,000	,000	,031	,000	
	N	116	116	116	116	116	116	116	116	116	116	116	116	116

** Correlation is significant at the 0.01 level (2-tailed).
* Correlation is significant at the 0.05 level (2-tailed).

Appendix E

Descriptive Statistics Leaders

	Mean	Std. Deviation	N
Relation	2,5375	,46272	8
Change	2,3625	,44381	8
Product	2,1500	,56821	8
Motivation	2,7000	,46599	8
Freedom	2,0250	,44641	8
Idea Support	2,1250	,28158	8
Trust	2,2750	,58493	8
Liveliness	2,5000	,40000	8
Humour	2,6250	,52847	8
Debate	1,8500	,29761	8
Conflict	0,1750	,29155	8
Risk taking	1,7000	,35456	8
Idea time	1,2500	,42426	8

Correlation Leaders

		Relation	Change	Product	Motivation	Freedom	Idea Support	Trust	Liveliness	Humour	Debate	Conflit	Risk taking	Idea time
Relation	Pear-son Correlation	1	-,097	,573	,696	,354	,507	,600	,718 (*)	,825 (*)	-,036	-,797 (*)	,636	-,331
	Sig. (2-tailed)		,820	,137	,055	,389	,200	,116	,045	,012	,932	,018	,090	,423
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Change	Pear-son Correlation	-,097	1	,467	,518	-,269	,729 (*)	,497	,475	,297	,665	-,008	-,027	,527
	Sig. (2-tailed)	,820		,243	,188	,520	,040	,211	,235	,475	,072	,984	,949	,179
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Product	Pear-son Correlation	,573	,467	1	,777 (*)	,445	,670	,735 (*)	,855 (**)	,775 (*)	,034	-,699	,326	,012
	Sig. (2-tailed)	,137	,243		,023	,269	,069	,038	,007	,024	,937	,054	,430	,978
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Motivation	Pear-son Correlation	,696	,518	,777 (*)	1	,316	,849 (**)	,933 (**)	,981 (**)	,963 (**)	,371	-,736 (*)	,553	,145
	Sig. (2-tailed)	,055	,188	,023		,446	,008	,001	,000	,000	,366	,037	,155	,733
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Freedom	Pear-son Correlation	,354	-,269	,445	,316	1	,063	,320	,336	,457	-,355	-,477	,487	-,460
	Sig. (2-tailed)	,389	,520	,269	,446		,883	,440	,416	,255	,388	,232	,221	,251
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Idea Support	Pear-son Correlation	,507	,729 (*)	,670	,849 (**)	,063	1	,837 (**)	,786 (*)	,744 (*)	,597	-,583	,429	,275
	Sig. (2-tailed)	,200	,040	,069	,008	,883		,010	,021	,034	,118	,129	,289	,510
	N	8	8	8	8	8	8	8	8	8	8	8	8	8

Trust	Pear-son Correlation	,600	,497	,735 (*)	,933 (**)	,320	,837 (**)	1	,916 (**)	,862 (**)	,205	-,658	,317	,029
	Sig. (2-tailed)	,116	,211	,038	,001	,440	,010		,001	,006	,626	,076	,444	,946
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Liveliness	Pear-son Correlation	,718 (*)	,475	,855 (**)	,981 (**)	,336	,786 (*)	,916 (**)	1	,960 (**)	,240	-,759 (*)	,483	,101
	Sig. (2-tailed)	,045	,235	,007	,000	,416	,021	,001		,000	,567	,029	,225	,812
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Humour	Pear-son Correlation	,825 (*)	,297	,775 (*)	,963 (**)	,457	,744 (*)	,862 (**)	,960 (**)	1	,245	-,848 (**)	,686	,019
	Sig. (2-tailed)	,012	,475	,024	,000	,255	,034	,006	,000		,558	,008	,060	,964
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Debate	Pear-son Correlation	-,036	,665	,034	,371	-,355	,597	,205	,240	,245	1	-,115	,433	,747 (*)
	Sig. (2-tailed)	,932	,072	,937	,366	,388	,118	,626	,567	,558		,786	,284	,033
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Conflict	Pear-son Correlation	-,797 (*)	-,008	-,699	-,736 (*)	-,477	-,583	-,658	-,759 (*)	-,848 (**)	-,115	1	-,691	-,081
	Sig. (2-tailed)	,018	,984	,054	,037	,232	,129	,076	,029	,008	,786		,058	,849
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Risk taking	Pear-son Correlation	,636	-,027	,326	,553	,487	,429	,317	,483	,686	,433	-,691	1	,076
	Sig. (2-tailed)	,090	,949	,430	,155	,221	,289	,444	,225	,060	,284	,058		,858
	N	8	8	8	8	8	8	8	8	8	8	8	8	8
Idea time	Pear-son Correlation	-,331	,527	,012	,145	-,460	,275	,029	,101	,019	,747 (*)	-,081	,076	1
	Sig. (2-tailed)	,423	,179	,978	,733	,251	,510	,946	,812	,964	,033	,849	,858	
	N	8	8	8	8	8	8	8	8	8	8	8	8	8

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

Appendix F

Comparison of leaders result with reference data, one sample test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Relation	8	2,5375	,46272	,16360

One-Sample Test

	Test Value = 1.99					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Relation	3,347	7	,012	,54750	,1607	,9343

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Change	8	2,3625	,44381	,15691

One-Sample Test

	Test Value = 1.91					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Change	2,884	7	,024	,45250	,0815	,8235

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Product	8	2,1500	,56821	,20089

One-Sample Test

	Test Value = 1.77					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Product	1,892	7	,100	,38000	-,0950	,8550

Comparison of subordinates result with reference data, one sample test

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Relation	116	2,2534	,56190	,05217

One-Sample Test

	Test Value = 2.00				95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Relation	4,858	115	,000	,25345	,1501	,3568

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Change	116	2,0853	,59377	,05513

One-Sample Test

	Test Value = 1.82				95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Change	4,813	115	,000	,26534	,1561	,3745

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Product	116	1,9638	,60769	,05642

One-Sample Test

	Test Value = 1.71				95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Product	4,498	115	,000	,25379	,1420	,3656

Appendix G

Comparison of leaders and subordinates result with reference data, a business in technical service.

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Motivation	124	1,9839	,62501	,05613

One-Sample Test

	Test Value = 2.12					
				Mean	95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Difference	Lower	Upper
Motivation	-2,425	123	,017	-,13613	-,2472	-,0250

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Freedom	124	1,7355	,55732	,05005

One-Sample Test

	Test Value = 2.05					
				Mean	95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Difference	Lower	Upper
Freedom	-6,284	123	,000	-,31452	-,4136	-,2154

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
IdeaSupport	124	1,8290	,54262	,04873

One-Sample Test

	Test Value = 1.7					
				Mean	95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Difference	Lower	Upper
IdeaSupport	2,648	123	,009	,12903	,0326	,2255

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Trust	124	1,6887	,64684	,05809

One-Sample Test

	Test Value = 1.8					
				Mean	95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Difference	Lower	Upper
Trust	-1,916	123	,058	-,11129	-,2263	,0037

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Liveliness	124	1,9113	,54298	,04876

One-Sample Test

	Test Value = 2.02					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Liveliness	-2,229	123	,028	-,10871	-,2052	-,0122

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Humour	124	2,1194	,51886	,04660

One-Sample Test

	Test Value = 2.05					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Humour	1,488	123	,139	,06935	-,0229	,1616

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Debate	124	1,6548	,48344	,04341

One-Sample Test

	Test Value = 1.65					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Debate	,111	123	,911	,00484	-,0811	,0908

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Conflict	124	,9339	,73947	,06641

One-Sample Test

	Test Value = 0.92					
					95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Conflict	,209	123	,835	,01387	-,1176	,1453

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Risktaking	124	1,4581	,48508	,04356

One-Sample Test

	Test Value = 1.42				95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Risktaking	,874	123	,384	,03806	-,0482	,1243

One-Sample Statistics

	N	Mean	Std. Deviation	Std. Error Mean
Ideatime	124	1,3403	,52698	,04732

One-Sample Test

	Test Value = 1.40				95% Confidence Interval of the Difference	
	t	df	Sig. (2-tailed)	Mean Difference	Lower	Upper
Ideatime	-1,261	123	,210	-,05968	-,1534	,0340