



Effect of organizational structure, leadership and communication on efficiency and productivity

- A qualitative study of a public health-care organization

Authors: Johanna Andersson
Alena Zbirenko

Supervisor: Alicia Medina

Acknowledgements

We would like to express our gratitude to those people who helped us during our work on this thesis. We want to thank Jens Boman for inviting us to work on this project. We also want to thank personnel of Laboratoriemedicin for their time and effort. Special thanks to Jegor Zavarin, for his help and support.

We also want to thank our supervisor, Alicia Medina, for her help, guidance, and advice in times when we needed it most.

Johanna Andersson & Alena Zbirenko

Abstract

This thesis has been written on commission by Laboratoriemedicin VLL, which is a part of region's hospital. The organization did not work as efficiently as it could, and senior managers have encountered various problems. We have been asked to estimate the situation, analyze it, and come up with solutions which could increase efficiency and productivity; in other words, increase organizational performance. After preliminary interview with the senior manager, we have identified our areas of the interest: organizational structure, leadership, and communication.

This preliminary interview made us very interested at the situation at Laboratoriemedicin, and helped us to formulate our research question: "How do organizational structure, leadership, and communication affect productivity and efficiency of the public health-care organization?" Moreover, it made our research have two purposes, one of academic character, and one of practical character. The academic purpose is in investigating relationship between organizational structure, leadership, and communication and organizational performance, i.e. efficiency and productivity. The practical purpose is in giving analysis-based recommendations about possible ways to increase productivity and efficiency to Laboratoriemedicin VLL.

In order to find out the answer to the research question and to fulfill both purposes of the research, we have conducted a qualitative research. This has been done by interviewing ten people working at Laboratoriemedicin. We have tried to talk to representatives of different layers of the organization to make our research more diversified and complete. These semi-structured interviews resulted in qualitative data, which had been processed and analyzed using coding technique.

The findings of our research revealed that structure, leadership, and communication affect efficiency and productivity. Structure defines how productive the operational processes are; leadership affects the whole personnel and the way they strive for achieving their goal; communication affects how fast things are getting done and how happy and willing personnel are. Additionally, we have spotted two areas affecting the relationship between structure, communication, leadership, and organizational performance: development issues and personal issues. Moreover, we have found that leadership and organization are the most problematic spots in Laboratoriemedicin. After careful analysis of the situation we have come up with the list of suggestions that can help the organization to achieve increased efficiency and productivity.

Contents

1. Introduction	1
1.1 Choice of topic	1
1.2 Laboratoriemedicin VLL	1
1.2.1 Cooperation with University	2
1.3 Choice of domains	3
1.3.1. Summary of the preliminary interview	3
1.3.2 Domains chosen	3
1.4 Problem background	4
1.5 Research question	5
1.6 Research purpose	5
1.7 Limitations	5
1.8 Definitions	5
2. Literature Review	7
2.1 Organizational Structure	7
2.1.1 Definition of Organizational Structure	7
2.1.2 Weber's Bureaucracy	7
2.1.3 Mintzberg's five structures	7
2.1.4 Dimensions of structure	8
2.1.5 Flatter Structures and Span of Control	9
2.1.6 Decentralization or Centralization	10
2.2. Leadership	10
2.2.1 Definition of leadership	10
2.2.2 Leadership versus Management	10
2.2.3 Leadership skills	11
2.2.4 Levels of management and appropriate skills	11
2.2.5 Vision	11
2.2.6 Leader – Member Exchange theory (LMX)	12
2.2.7 Dual leadership	12
2.2.8 Leading by leveraging culture	12
2.3 Communication	13
2.3.1 Definition of communication	13
2.3.2 Importance of two-way communication	13
2.3.3 Importance of horizontal communication	13
2.3.4 Barriers to communication	14
2.3.5 Ways of communication	14
2.4 Theoretical framework	14
2.5 Choice and criticism of literature	15
2.5.1 Structure	16
2.5.2 Leadership	16
2.5.3 Communication	16
3. Methodology	17
Theoretical methodology	17
3.1 Preunderstanding	17
3.2 Research philosophies	17
3.2.1 Ontology	17
3.2.2 Epistemology	18

3.2.3 Approaching organizational change	18
3.3 Research approach	18
3.4 Research strategy	19
3.5 Research design	19
Practical methodology	19
3.6 Method of collecting empirical data	20
3.7 Sampling.....	20
3.7.1 Sample size.....	20
3.7.2 Sampling technique	21
3.8 Interview questions	21
3.9 Interviews' outline	22
3.10 Ethical considerations.....	22
3.11 Analyzing data.....	23
4 Empirical findings/analysis	25
4.1 Short summaries of the interviews	25
4.1.1 Participant 1	25
4.1.2 Participant 2	26
4.1.3 Participant 3	26
4.1.4 Participant 4	27
4.1.5 Participant 5	27
4.1.6 Participant 6	28
4.1.7 Participant 7	29
4.1.8 Participant 8	29
4.1.9 Participant 9	30
4.1.10 Participant 10	31
4.2 Structure	31
4.2.1 Bureaucracy	32
4.2.2 Control	33
4.2.3 <i>Analysis of structure</i>	34
4.3 Leadership.....	36
4.3.1 Leadership traits	37
4.3.2. Leader's skills	38
4.3.3 Dual leadership	39
4.3.4 <i>Analysis of the leadership</i>	40
4.4 Communication.....	42
4.4.1 Communication in the organization	42
4.4.2 Types of communication.....	43
4.4.3 Problems with communication	44
4.4.4 <i>Analysis of communication</i>	45
4.5 Additional findings	48
4.5.1 Development issues	48
4.5.2 Personal issues	50
4.5.3 <i>Analysis of additional findings</i>	51
4.6 Revised theoretical model	53
4.7 Summary of findings	53
5. Conclusions and recommendations	54
5.1. Conclusions	54

5.2 Recommendations for Laboratoriemedicin.....	56
5.3 Space for further research.....	57
5.4 Truth criteria	58
Reference list	59
Appendix A.....	62
Appendix B.....	63

Figures and tables

Figure 1. Simplified organizational structure of Laboratoriemedicin.	2
Figure 2. University faculty structure.	2
Figure 3. Primary theoretical model.	15
Figure 4. Revised theoretical model.	54
Table 1. Categories of structure.	31
Table 2. Bureaucracy explained.	32
Table 3. Control explained.	33
Table 4. Categories of leadership.	37
Table 5. Leadership traits explained.	37
Table 6. Leader's skills explained.	38
Table 7. Dual leadership explained.	39
Table 8. Categories of communication.	42
Table 9. Communication in the organization explained.	42
Table 10. Types of communication explained.	43
Table 11. Problems with communication explained.	44
Table 12. Additional findings.	48
Table 13. Development issues explained.	49
Table 14. Personal issues explained.	51
Table 15. Summary of the findings.	53

1. Introduction

The purpose of this introductory chapter is to give the readers a better understanding of both theoretical and practical backgrounds of the discussed problem. It also provides the readers with purpose of the research and the main idea about the thesis.

1.1 Choice of topic

Performance and effectiveness of the organization depend on many different things, both formal and informal, and even slightest change in the environment can have dramatic effect. Understanding of the inner forces that influence and sometimes hinder functioning is the first step towards improving and utilizing organization as a whole. The commission by Laboratoriemedicin VLL named *'The efficient leadership at VLL'* gave us the perfect chance to take a closer look inside the organization and see its undercurrents. The task that was given to us was to embrace the whole situation, determine problems, and then come up with ways to improve the current state of affairs. Being two undergraduate students interested in the field of organizational change, we saw the perfect opportunity to gain deeper and more practical knowledge in this field, at the same time trying to understand the importance of different processes that take place inside every organization.

1.2 Laboratoriemedicin VLL

The commission that became a basis for this thesis was given to us by Laboratoriemedicin VLL. This organization is decentralized unit of the public hospital of Västerbotten's region. It consists of laboratories that carry out all lab work that needs to be done. The organization is located in Umeå, municipality of the region; however, it has branches in Skellefteå, Lycksele, and Östersund. The organization has five main departments, and 420 people are working there. Laboratoriemedicin has been founded in 2001; before that the five departments were functioning as separate clinics. It is important to understand how crucial the job these people are doing on daily basis is.

Laboratoriemedicin is a decentralized unit of hospital care consisting of five main departments, which represent branches of medical nature: clinical microbiology, clinical pathology, clinical genetics, clinical chemistry, and transfusion medicine and clinical immunology. The sixth department is for the supporting services, such as logistics, human resources, study coordination, IT, economy, etc. This department and two other smaller departments, Hospital Hygiene and Bio Bank, are not shown in Figure 1 below. There are four different vertical levels within Laboratoriemedicin; the top level is reporting to two more levels outside the decentralized unit. The senior manager (VC) of Laboratoriemedicin is controlling the organization. The five main departments are being controlled by two positions, where one (MC) is responsible for medical or professional activities, while the other one (AC) is responsible for staff, machines, and the practical side of the work. The service department is being controlled by one manager, who is also an assisting VC.

The simplified structure of Laboratoriemedicin is illustrated in Figure 1 below.

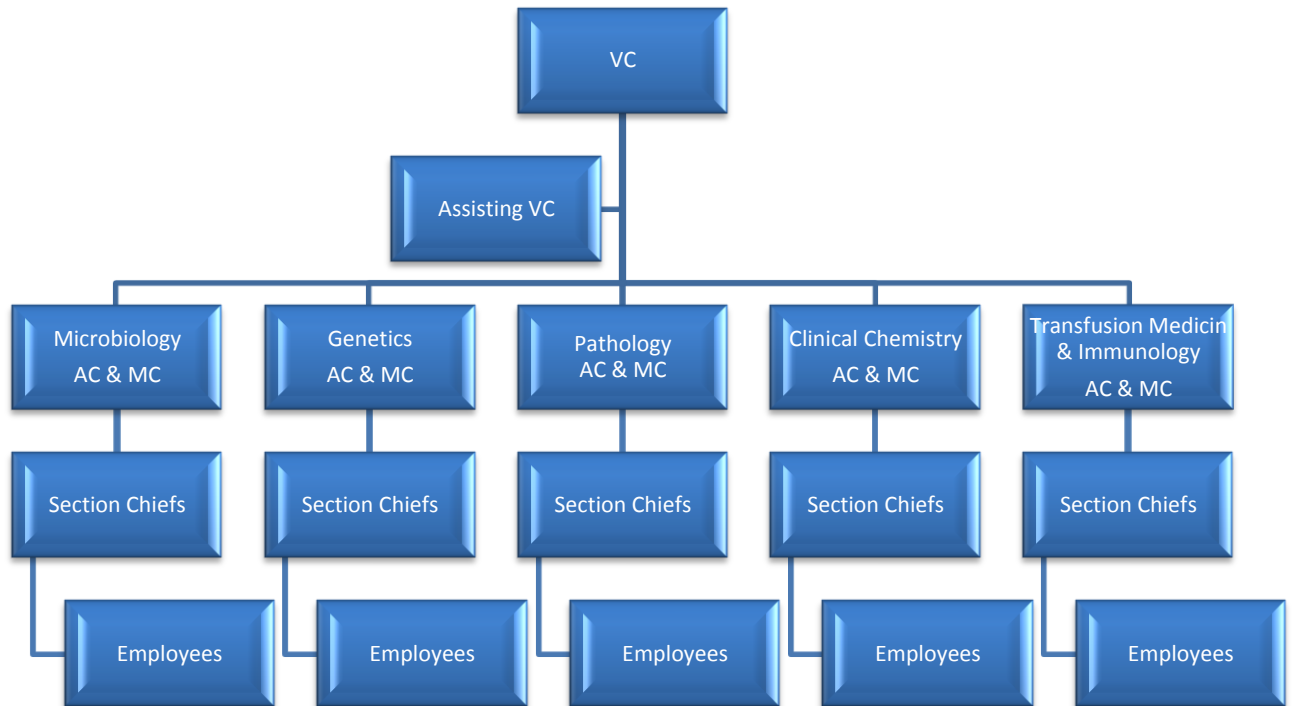


Figure 1.Simplified organizational structure of Laboratoriemedicin.

1.2.1 Cooperation with University

The fact that Laboratoriemedicin VLL is a part of the University Hospital (Universitetssjukhuset) means that there is constant communication and cooperation with the university faculty, which is working in the same field. Division into departments is made in the similar way, and departments' names are the same. However, the structures of Laboratoriemedicin VLL and university faculty are different. Laboratoriemedicin has one senior manager who is responsible for the whole organization. University faculty, on the other hand, has divided its departments into two separate structures, where each half is controlled by a prefect, and two prefects are responsible for the whole institution. The question that had been discussed by senior manager of Laboratoriemedicin concerns possibility of matching structures and having two senior managers instead of one. This structure is presented in Figure 2.

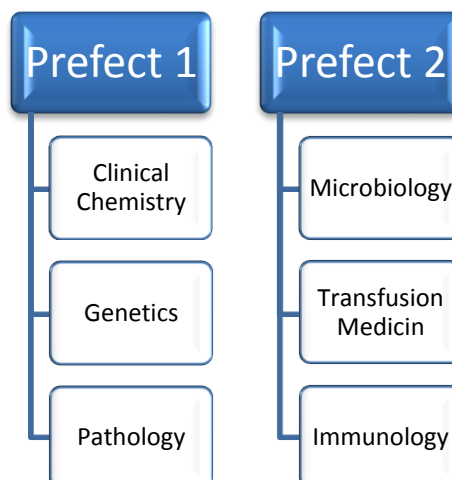


Figure 2.University faculty structure.

1.3 Choice of domains

The choice of domains for our research, i.e. the areas of the main academic and practical interest, comes from the nature of our work: since we are writing on the commission for an organization, we have decided to choose a direction for the investigation based on the needs and problems of Laboratorimedicin. Thus, in order to obtain the necessary information, we have organized a preliminary interview with the commissioner, the senior manager of Laboratorimedicin VLL. Problems that were detected in the organization have become a reason why the senior manager of this organization had decided to offer us a commission. The name of the commission, '*The efficient leadership at VLL*', suggested that the main topic would be leadership; however, during the preliminary interview we have found out that leadership was not the only area that the senior manager was concerned about. A short summary of the interview is provided in the section below.

1.3.1. Summary of the preliminary interview

The senior manager started the preliminary interview, which took place on Tuesday the 11th of March 2014, with greetings and a short introduction of the organization. He told us how many people work in Laboratorimedicin, which departments it consists of, and explained the organizational structure. The senior manager also explained the organizational vision, which sounds like the following: "Laboratorimedicin VLL has both the narrow and broad specialization that is needed to be the Northern region's natural choice concerning diagnostic and services connected to healthcare laboratory medicine". He also showed us a simple organizational chart, which can be seen in the section 1.2, Figure 1. After that, the senior manager of Laboratorimedicin moved on to the problems that, in his opinion, were taking place in the organization. He explained that the amount of workload, paperwork, meetings, and routine has increased dramatically over past few years; there were problems with time distribution, shifted focus, and poor division of tasks. According to the senior manager, the existing situation was too troublesome and complicated both for him personally and for the whole entity.

Moreover, the senior manager had an idea about the factors that cause the problems. He thought that the main obstacle was to be seen in the existing structure: the amount of layers, divisions, and managers at one position. Furthermore, the senior manager had some ideas how to change the existing structure; these ideas included adopting the same structure as the University faculty (as shown in Figure 2) or introducing an extra level. Additionally, leadership was mentioned as one of the factors hindering performance: such competences as ability to work as a team, ability to lead people, capacity to choose a direction of their work were lacking amongst the managers at different levels.

Finally, we have agreed upon the subject of commission and turned to the practical aspects: such issues as anonymity, amount of interviews possible during the given timeframe, and the target sample were discussed. More discussion and connection to theory about these matters can be seen in the Practical methodology chapter.

1.3.2 Domains chosen

Thus, the two main areas that the senior manager highlighted during this interview were *organizational structure* (formal component of the organization) and *leadership* (informal component of the organization). However, while analyzing the preliminary

interview, we have discovered that there were numerous direct and indirect mentions and references to one more factor - communication. The senior manager did not say that communication was a problem; however, he said that his employees often did not know what they should do, the amount of unnecessary meetings was too extensive, the managers at the same level could not solve their problems by themselves, and as a result the senior manager himself had too much of unnecessary work that could have been avoided. In our opinion, these issues have one common denominator: *communication* that does not function well. That is why we have decided to take communication as our third domain: we felt that examining this factor will help us to get a fuller picture and understand the events in a more comprehensive way.

To summarize it all up, the preliminary interview with the senior manager has provided us with three domains for our research: *organizational structure*, *leadership*, and *communication*. The first two domains, structure and leadership, were named by the senior manager during the preliminary interview, while the last domain, communication, was derived from our analysis of this interview. These domains have given the starting point for our research; they will be discussed and explained in details in the second chapter.

1.4 Problem background

Every organization can be seen as an enclosed system of people and processes that work together towards achieving some defined goal (Senior & Swailes, 2010, p. 4). However, there are many components that are making an organization. Among these components Senior and Swailes (2010, p. 5) name formal subsystems, such as management, strategy, goals, structure, operations, and technology; and informal subsystems, such as leadership, politics, and culture. All these components have significant effect on the way the organization performs its activities, and if one component does not fit, performance of the whole organization will be hindered. Therefore, it is important to understand the way these components influence the organization.

The need of more profound studies in the area of performance and efficiency has been denoted back in 1980, by Glisson and Martin (1980, p. 35), and many researches had been conducted, e.g. Ostroff and Schmitt (1993), Biloslavo et al. (2012), Boehm (2012), etc. However, there are many ways to study efficiency, and our choice considers achieving efficiency rather than just studying it. Thus, we will focus on three domains that we see as ones having big influence on achieving efficiency.

The domains that we have chosen, namely organizational structure, leadership, and communication, are of the major importance for all organizations. For example, Santra and Giri (2008, p. 28) state that organizational structure is not only crucial for every successful organization; it is also directly related to the efficiency of this organization. Wang et al. (2013, p. 181), in turn, point our attention to the changing pattern of leadership: emerging concepts of shared leadership are becoming more and more popular. Moreover, changes have been spotted in the field of communication: interesting transition from face-to-face communication towards electronic channels has been acknowledged by Kupritz and Cowell (2011), Santra and Giri (2008).

1.5 Research question

The discussion about topic and the situation at Laboratoriemedicin VLL as well as interesting trends and changes amongst aforementioned domains had led us to the following research question:

“How do organizational structure, leadership, and communication affect productivity and efficiency of the public health-care organization?”

1.6 Research purpose

There is no doubt in the fact that every organization is unique, and mixture and configuration of its components are unique as well (Daniels et al., 2011, p. 604). Likewise, we can assume that the problems that are faced by organizations are dependent on the situation and combinations of the inner components and outer influences (Leavitt, 1964, p. 345). However, we believe that understanding of one precise situation can be used as a guideline by other companies that are struggling in the similar circumstances or facing problems with same components. Moreover, this research is likely to produce a new insight on the connection between organizational structure, leadership, and communication, looking at these concepts as at tools for achieving increased performance.

Thus, our research has both academic and practical purpose. We see the *academic purpose* to be in investigating the influence of organizational structure, leadership, and communication on the public health care organization’s performance, i.e. productivity and efficiency. The *practical purpose* of our research, however, is in understanding the current situation of Laboratoriemedicin VLL and coming up with some recommendations that could improve the current state of affairs.

1.7 Limitations

Since this thesis is written on commission by Laboratoriemedicin VLL, the whole research is being adjusted to the needs and purposes of this organization, including the choice of our research question. Our research questions concerns influence of organizational structure, leadership and communication on the efficiency and productivity; though interest in increasing efficiency and productivity is general, choice of domains is limited by Laboratoriemedicin VLL and their situation. Thereby, the purpose of this study is not in generalizing our findings to all organizations of the public sector. Vice versa, we seek deeper understanding of this exact situation, which in turn may clarify relationship between performance and components of organization. Additionally, the concept of organizational culture has been briefly touched upon. We understand how important and complex this concept is; it could have added value to our research. Nonetheless, we had limit ourselves due to time constraints and focus on the three domains of most interest.

1.8 Definitions

In order to avoid confusions and make the whole paper easier to understand, we decided to explain concepts of productivity and efficiency in the very beginning. Bloisi et al. (2007, p. 66) define *productivity* as a measure of how well an organization achieves its goals, and *efficiency* as doing it in the right way. We see these two concepts to be indicators of the well being and performance of the company. The organization has increase in both productivity and efficiency as its main goal, and our thesis should

clarify the path towards reaching this goal. Thereby, we prefer taking efficiency and productivity as underlying goals that can be reached by the changes in certain components of the organization rather than as theories that should be studied. In other way, in our opinion, these concepts are aims rather than tools for reaching aims. That is why these concepts are not going to be studied in details; however, reader should keep them in mind as underlying goals for Laboratoriemedicin.

2. Literature Review

The purpose of this chapter is to explain theories which we have used as theoretical basis for our research. We will explain three chosen domains, namely organizational structure, leadership, and communication; we will also explain areas of major importance within these domains. This chapter should provide the readers with understanding of the discussed subjects, as well as concepts used for analysis of obtained data.

2.1 Organizational Structure

According to Miles et al. (1978, p. 547), an organization is both its purpose and the mechanism constructed to achieve the purpose. It means that the concept of organization is embracing both goals and all the elements that represent unique combination. Miles et al. (1978, p. 553) draws the conclusion that structure and the processes taking place inside the organization are closely aligned; it is hard to speak about one without mentioning the other. It is important to understand the conclusion drawn by Miles et al. (1978). It illustrates how the structure is interconnected with such concepts as leadership and communication, and how this mutual connection influences the processes of life cycle of an organization.

2.1.1 Definition of Organizational Structure

In order to understand the broad term ‘organizational structure’ we will use the work of different researchers; it will help us to enhance our knowledge and understanding. Bloisi et al. (2007, p. 710) defines organizational structure as a grouping of people and tasks into different units to boost coordination of communication, decisions, and actions. Realizing the close connection between the processes taking place inside an organization makes it is easier to understand the intricate task of directing an efficient organization.

2.1.2 Weber’s Bureaucracy

One of the most prominent researchers in the area of bureaucratic structure is the German sociologist Max Weber (1947), who specified several characteristics of bureaucratic structure; in particular, there are four main features ascribed to bureaucratic structure (Senior & Swailes, 2010, p. 74). Firstly, Weber concluded that an organization that have highly specialized jobs and where the division of labor is well defined, is typical for a bureaucratic structure (Senior & Swailes, 2010, p. 74). Secondly, the roles of the management are hierarchically arranged, often with a single chain of command running through the whole organization from top to bottom (Senior & Swailes, 2010, p. 74). Thirdly, a bureaucratic structure often has clearly defined impersonal rules that their employees are following in order to carry out their duties (Senior & Swailes, 2010, p. 74). Finally, Weber stated that there often is an impersonal relationship between the employees due to the heavy dependency on the written rules of conduct; moreover, the clear hierarchical structure dictates that the lowest common superior is the one to turn to (Senior & Swailes, 2010, p. 74). These main traits characterize Weber’s description of a bureaucratic structure in an organization.

2.1.3 Mintzberg’s five structures

A more recent study is Mintzberg’s (1980b), structure in five’s, where the author divided the structure of an organization into five different configurations. Mintzberg’s (1980b, pp. 331-332) first configuration is *simple structure*, which is often a young or

small organic organization characterized by the loose division of labor, small middle level management, an informal decision making process, and the centralization of power which allows for rapid response (Mintzberg, 1980b, pp. 331-332). Furthermore, little of the organizations behavior is formalized, thereby making minimal use of training, planning, and liaison devices (Mintzberg, 1980b, p. 331).

The second configuration is *machine bureaucracy*, which is characterized by centralized power with a formal decision making chain of authority, highly specialized and formalized procedures with a clear separation of line workers and management; it is often found in older stable organizations (Mintzberg, 1980b, pp. 332-333). Furthermore, communication is preferably formal throughout all the levels of the machine bureaucratic organization (Mintzberg, 1980b, pp. 332-333). The second configuration has the most similarities with Weber's original description of the bureaucratic organization.

Third configuration, *professional bureaucracy*, has highly specialized jobs and minimal formalization; the structure decentralized both vertically and horizontally allows for a freer working environment, but keeps the standardization requirements used by a large organization in stable and complex ambience (Mintzberg, 1980b, pp. 333-334). Fourth configuration, *divisionalized form*, can be recognized by the limited vertical decentralization; there are different autonomy divisions which all report to headquarter, thereby making the middle management a key part of an organization (Mintzberg, 1980b, p. 335).

Mintzberg's (1980b, p. 337) final configuration is *adhocracy*, were the organization is divided into functioning project teams; this organic structure has little formulation of behavior, but extensive horizontal job specialization. This type of structure shows the least reverence to classical principles of management and can be divided into two different subcategories: operating adhocracy and administrative adhocracy (Mintzberg, 1980b, p. 337). Operating adhocracy functions on the behalf of their clients; on the other hand, administrative adhocracy serves the organization itself (Mintzberg, 1980b, p. 337).

2.1.4 Dimensions of structure

A fundamental article concerning organizational structure is Pugh's et al. (1969) "*Dimensions of structure*", which has changed the way of viewing an organization. Pugh et al. (1969, pp. 72-79) described six different dimensions of organizational structure; specialization, standardization, formalization, centralization, configuration and traditionalism. Furthermore, the authors stated that an organization should not be denoted as bureaucratic without taking four following underlying dimensions into consideration (Pugh et. al. 1969, p. 86).

The first underlying dimension mentioned is *structuring of activities*, and it refers to what extent there is formal regulation within the organization that controls employees' behavior through the process of specialization, standardization and formalization (Pugh et. al. 1969, p. 86). Second dimension, *concentration of authority*, concerns to what extent the decision making is conducted at the top of the organization (Pugh et. al. 1969, p. 86). Third one, *the line control of workflow*, explains to which extent the managers are controlling the workflow themselves or if it is done through more impersonal

procedures (Pugh et al., 1969, p. 87). Finally, the fourth dimension presented by Pugh et al. (1969, p. 87) is *support component*; it suggests that the size of the administrative and other auxiliary non-workflow staff determines to what extent the organization can be viewed as bureaucratic.

By using these dimensions, we understand Pugh's et al. (1969) conclusion that an organization has its own unique "fingerprint" and therefore cannot simply be denoted as bureaucratic. This classical study was a major breakthrough at the time because it has illustrated the multidimensional aspect of an organization's structure. It remains one of the most popular researches about organizational structure. By using Pugh's et al. (1969) underlying dimensions, we can determine which type of structure is currently adopted by Laboratoriemedicin VLL and hopefully not step into the trap of simply calling the organization bureaucratic.

2.1.5 Flatter Structures and Span of Control

Ghiselli and Siegel (1972, pp. 617-618) explain the difference between tall and flat organization: tall organization structure is characterized by few people being managed by one supervisor and the command chain being large. Meanwhile, the reverse structure exists in the flatter organization, where many people are being managed by one supervisor on few hierarchical levels (Ghiselli & Siegel, 1972, p. 618). This means that the managers in the flatter organization must take on greater individual responsibility than managers within a tall organizational structure; this is because help, support and direction from a supervisor within a flatter structure are limited (Ghiselli & Siegel, 1972, p. 618). Ghiselli and Siegel's (1972, p. 623) findings show how important it is that each individual manager in an organization with flatter structure is able to make his own decisions and work autonomously for an effective job situation. An extreme example of a flat structured organization is being used by Drucker (1988, p. 48); he says that a symphony orchestra consisting of highly specialized people would not be able to play in harmony without a skilled conductor at the front. Drucker (1988, pp. 47-48) compares this type of structure with an information-based organization such as a hospital or clinical lab: all the people working there are also highly specialized and thereby cannot be told how to do their job; but they need a "conductor"/manager in top with total control.

Senior and Swailes (2010, p. 76) explain the concept of span of control as the number of people reporting to one manager. In the flatter organizationspan of control consists of a larger number of people. One reason for changing the structure to a flatter one is that it will shorten response time to the markets changes; it will happen because of reduced number of hierarchical levels within the organization (Senior & Swailes, 2010, p. 76). Bloisi et al. (2007, p. 726) suggest that one way to flatten an organization's structure is to widen the span of control,especially when the organization is large; it will maintain flexibility without becoming too hierarchical.

Senior and Swailes (2010, pp. 76-77) provide two rules of thumb for organizations that are being restructured. First, the more standardized jobs are on one level in an organization, the more people can be controlled and managed by one supervisor (Senior & Swailes, 2010, p. 76). Secondly, the more decision-making is decentralized, the broader span of control can be on each level due to the lesser burden on the manager (Senior & Swailes, 2010, p. 77). Making these changes on the vertical and horizontal

dimensions of structure will induce different positive and negative effects. However, according to Henricks (2005, p. 69), the dangers of having too flat organization are that decisions might not be made, or be made by employees that do not possess the correct knowledge. Furthermore, Leavitt (2005, p. 4) discusses the danger of having too few hierarchical levels because it can result in loss of control. However, Leavitt (2003, p. 98) also states that one of the most eminent characteristics of a hierarchical organization is that they often are outdated, too slow and too inflexible for the modern days' demands. The key is to understand their unique needs and realize that there are positive and negative side effects of all organizational structures.

2.1.6 Decentralization or Centralization

A pending question in many modern organizations is to what extent centralize the decision making power should be centralized or decentralized. Bloisi et al. (2007, p. 718) define centralization as "concentration of authority and decision-making toward the top of the organization". Decentralization can be defined as the distribution of authority and decision-making units throughout an organization (Bloisi et al., 2007, p. 718). Nevertheless, this is not a new concept. Pugh et al. (1969, p. 76) talks about centralization as one dimension: the extent to which the power is placed in the top of the organization determines how bureaucratic an organization is. Connor's (1992, p. 226) findings suggest that large size of the organization and high specialization of personnel enable less centralization. However, Leavitt (2005, p. 40) argues that hierarchical structure, i.e. centralization, is here to stay due to its effective ability to deal with big and complicated tasks.

2.2. Leadership

2.2.1 Definition of leadership

Northouse (2013, p. 5) provides a very general definition of leadership, describing it as "a process whereby an individual influences a group of individuals to achieve a common goal". However, other authors tried to expand this statement and make the concept of leadership clearer. For example, Bloisi et al. (2007, p. 648) describe leadership is the act of providing directions, energizing others and obtaining their voluntary commitment to the leader's vision. Katz (1955, p. 34), in turn, focuses on a leader (or a so-called administrator), actor rather than process, and defines him as someone who directs the activities of other people and undertakes the responsibility for achieving certain objectives through these effort. In our research, we are going to use combined definition of leadership as a process where an individual influences and directs other people to work for his vision of achievement a common goal, taking responsibilities for these actions (Northouse, 2013; Bloisi, 2007; Katz, 1955).

2.2.2 Leadership versus Management

The common view that was acknowledged by leading professors of this field draws a sharp line between 'manager' and 'leader'. In his fundamental work Kotter (1990a, p. 6) states that roles and methods of leader and manager are different in every dimension: from agenda of their action till outcomes of their activities. For example, if a manager focuses on planning, budgeting, organizing, controlling, and order, a leader will establish directions, align people, motivate, inspire, and produce change (Kotter, 1990a, p. 139). This idea is being pushed forward in Kotter's other work from 1990, where he argues that leader is cooperating with change while manager is cooperating with

complexity and that these two systems of actions work and accomplish their goals in different ways (Kotter, 1990b, p. 104).

However, there is an opposing opinion, which views leadership as mere one of the roles of the manager. Mintzberg (1980a, pp. 60-61) names leader among other managerial roles, such as entrepreneur, spokesperson, liaison, figurehead, monitor, resource allocator, etc. This means that leadership should be seen as a component of a good management rather than an opposition of management. Mintzberg has expanded this idea in his newest book called “Managing” (2009). Here the author argues that leadership cannot delegate management: “instead of distinguishing managers from leaders, we should see managers as leaders and leadership as management practiced well” (Mintzberg, 2009, p. 9). For our research we will adopt Mintzberg’s (1980a, 2009) point of view and will perceive leadership as a role of management rather than as an opposing concept.

2.2.3 Leadership skills

After discussing the nature of leadership, the logical follow-up can be seen in the content of effective leadership. In other words, what makes manager a good leader. The very first academic works in this field were written in the beginning of the 20th century and suggested that personal traits were the factor that distinguished a leader; this theory is known as trait approach (Northouse, 2013, p. 19). However, this school of thoughts was opposed by another one, suggesting that skills, or developed and learned abilities, were the key to a successful leadership (Northouse, 2013, p. 43). The founder of this approach is Robert Katz (Northouse, 2013, p. 43). In his classic article he came up with three skills that are crucial for a leader: technical skills, i.e. professional skills of the given industry; human skills, i.e. being able to work in a team and to build a cooperative effort within the team; and conceptual skills, i.e. being able to see organization as a whole and to communicate this vision to others (Katz, 1955, pp. 34-36). All of these skills are important and very interdependent (Katz, 1955, p.34).

2.2.4 Levels of management and appropriate skills

However, the most intriguing part is the division between the levels of management and importance of these skills. Thus, technical skills are of the most importance for lower level managers, i.e. for people who are working within the matter of profession (Katz, 1955, p. 37). The same pattern can be seen in human skills: ability to communicate and cooperate with other people is crucial for lower and middle management, but its importance is gradually decreasing in the higher administrative layers (Katz, 1955, p. 37). As a manager gets promoted, he will get further from the real action, so that technical skills will not matter that much; likewise, there will be less human contact with employees (Katz, 1955, p. 37). Instead, there will be a need for conceptual skills, i.e. for ability to stay away from the details and see the organization as a whole, and then to communicate the vision in such a manner that would motivate others (Katz, 1955, p. 38). Thereby, the human and technical skills are of the most important for lower levels of management, while absence of the conceptual skills of the senior management can actually jeopardize the future of their company.

2.2.5 Vision

Bloisi et al. (2007, p. 86) define vision as a desired future image of organization and its processes that integrates current realities and expected future conditions within a

specific timeframe. From this definition it is clear why vision and ability to communicate this vision is so important for the senior leadership: clear vision sets a long-term goal and shows in which direction the organization should involve (Kotter, 1995, p. 63). The fact that Kotter (1995, p. 61) mentions vision in three out of eight steps to transforming and improving organization can be seen as an evidence of ultimate importance of this concept for a successful operating and boosted performance.

2.2.6 Leader – Member Exchange theory (LMX)

However, leadership skills and actions of the leader themselves are not enough for construction of productive managerial work; leadership is also a *process* (Northouse, 2013, p. 5). A theory that completes the picture is known as Leader – Member - Exchange theory, or LMX; this approach takes into consideration the interaction between leaders and members (Northouse, 2013, p. 161), and the main focus is on dyadic relationship, i.e. the interaction between leader and follower (Northouse, 2013, p. 162). These dyads were later separated into in-groups, i.e. relationships based on expanded and negotiated responsibilities, and out-groups, i.e. the relationships based on formal contract (Northouse, 2013, p. 163). Dansereau et al. (1975) stated that separation happens on the basis of personal characteristics, human skills, and assertiveness (Northouse, 2013, p. 163). This division is highly important, mostly because of the difference between inner relationship of in-group and out-group. According to Dansereau et al. (1975), in-group subordinates receive more information, influence and confidence than out-group subordinates, which results in increased performance (Northouse, 2013, pp. 163-164). Thereby, this type of relationships between leader and subordinate (in our case between senior leader and middle management) are highly important, since they influence effectiveness directly.

2.2.7 Dual leadership

Another phenomenon that is faced within Laboratoriemedicin VLL is a situation when two people are sharing responsibility for one department, so that the people working there are formally having two leaders. We are going to address this situation as dual leadership. This concept has just become popular during last few years, and such authors as Wang et al. (2013) and Vidyarthi et al. (2014) has just begun exploring this area. In their paper, Vidyarthi et al. (2014, p. 2) use concept “dual leadership” to describe a situation where multiple leaders supervise an employee. This concept is tightly woven into the LMX theory, since multiple leaders mean multiplied dyads and relationships (Vidyarthi et al., 2014, p.1). As a result, conflicts between leaders that share responsibility for one department can lead to decreased efficiency of the department. Proving this statement, Vidyarthi et al. (2014, p. 12) argue that best job satisfaction and productivity were reached when both leaders were working in line with each other, i.e. leading the subordinates in the same direction.

2.2.8 Leading by leveraging culture

Another important aspect that is found on the intersection between leadership and communication is organizational culture. Hofstede (1981, p. 24) defines culture as “the collective programming of the human mind that distinguishes the members of the human group from those of another”, or in other words, a system of collectively held values. Moreover, Brown and Duguid (2001, p. 204) state that people sharing same practice are most likely to share and hold same knowledge in a similar way; Iveroth (2012, p. 341) names this phenomena practice-based culture. Chatman and Cha (2003,

p. 21) say that such an organizational culture enhances performance by energizing employees and shaping their behavior, thus becoming a powerful leadership tool. However, fostering organizational culture depends on communication inside the organization: the less formal directions are given, the better performance is (Chatman & Cha, 2003, p. 23). Thereby, it is important to study communication inside a group.

2.3 Communication

2.3.1 Definition of communication

According to Leavitt (1964, p. 138), communication is a tool used for creating, modifying, and ending relationships between people; moreover, it is also said to be the channel of influence, mechanism of change, and a critical dimension of an organization. Thereby, we can conclude that communication is crucial for effective and efficient organizational functioning. Bloisi et al. (2007, p. 362) state that it is managers' responsibility to establish and maintain internal communication channels in upward, downward, and horizontal directions, i.e. communication between managers and employees as well as between workers on the same level. The main objectives for internal communication include transmitting directions or ideas along the lines of command; providing confirmations, information, and feedback upwards; informing staff on changes; encouraging and motivating employees (Bloisi et al., 2007, p. 362).

2.3.2 Importance of two-way communication

As have been mentioned above, downward communication is as important as an upward one, meaning that the information should flow both from and to the management, thus allowing employees to give their feedback and input of ideas (Bloisi et al., 2007, p. 362). In his book, Leavitt (1964, pp. 143-145) discusses difference between one-way and two-way communication: while the first method is most suited for fast transmitting of simple commands, the second one is preferred in the long run, when accuracy and efficiency are preferred over speed and simplicity. Leavitt (1964, p. 146) explains this situation by simple comparison, saying that communication is a process of shooting information and hitting a target with it, and having more than a chance of hitting a target requires getting feedback on every shot. The parallel is quite simple – by getting feedback from the other party, managers will increase efficiency of communication by learning from their mistakes and adjusting behavior, which in turn will result in greater performance outcome (Leavitt, 1964, p. 146).

2.3.3 Importance of horizontal communication

However, establishing both upward and downward communication is not enough for effectively working organization: there is a need for horizontal communication channels, which would allow managers to interchange information on the local level, without involving a senior manager (Bloisi et al., 2007, p. 363). As a way of solving this problem, Leavitt (1964, pp. 235-237) proposes minding two simple rules for organizing communication nets: first, equalitarian networks are preferred over hierarchical; and second, every person should have at least two channels of communication with the rest of the group. This implies that communication should be based on equality and multiple accesses, so that every member of the group would speak freely with any other member. Minding these simple rules will establish fruitful horizontal communication both in the organization as a whole, and in the project groups that can be created (Leavitt, 1964, p. 237).

2.3.4 Barriers to communication

However, communication process does not always end up in successful exchange of information (Leavitt, 1964, p. 148). Bloisi et al. (2007, pp. 367-369) argue that there are several barriers that can create a big problem and distort sent information: frames of reference, semantics, value judgments, selective listening, filtering, and distrust. As clear from the names of such barriers, they arise from difference in the beliefs and value systems, personal characteristics, personal abilities, and preoccupations. Moreover, in his book Leavitt (1964, p. 149) states that such feelings as boredom, fear, shyness, indecisiveness affect communication patterns dramatically, and the one who wants to be heard and understood should pay attention to such undercurrent issues.

2.3.5 Ways of communication

Moreover, in our opinion, the choice of the method of communication is just as important as establishing vertical and horizontal communicational channels and taking care of arising barriers. Kupritz and Cowell (2011, pp. 54-57) compare face-to-face communication with electronic methods of passing information, pointing out that sometimes cheaper and less time consuming electronic communication can be preferred. Yet, there are certain types of information that should stay within face-to-face meetings: according to Kupritz and Cowell (2011, p. 71), such information as personal content, performance discussion, sensitive issues, and annual feedback should be discussed face-to-face. However, daily news, updates, alerts, schedule for meetings, and other non-confidential information should be sent via e-mail or other electronic system (Kupritz & Cowell, 2011, p. 73). Moreover, the findings showed that using e-mail is the best and only solution for time-sensitive matters (Kupritz & Cowell, 2011, p. 73). Thus, we can draw the following conclusion: organizations, especially ones experiencing changes in the organizational context, should continually evaluate the effectiveness of communication channels so that they contribute to increased productivity (Kupritz & Cowell, 2011, p. 75).

2.4 Theoretical framework

Our research is going to focus on organizational structure, leadership, and communication, and also the ways these domains affect organizational performance in terms of efficiency and productivity. Figure 1 below is going to illustrate our theoretical model.

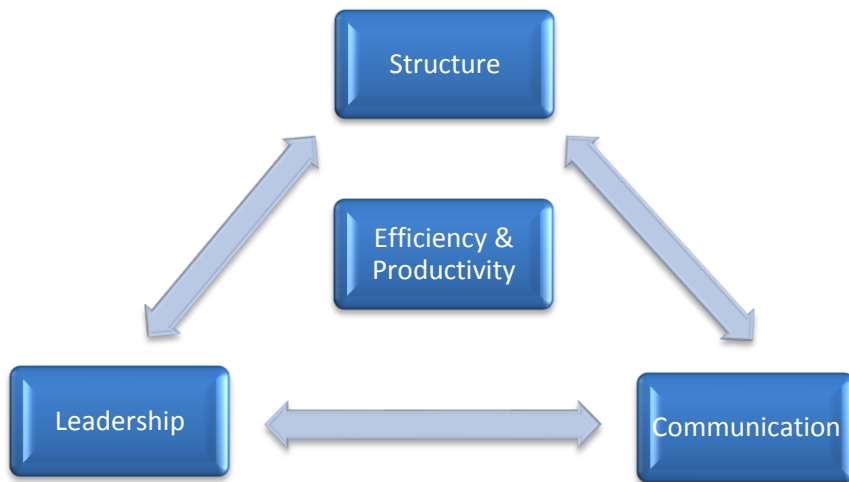


Figure 3. Primary theoretical model.

2.5 Choice and criticism of literature

The starting point for the choice of relevant literature was the knowledge that we gained during preliminary interview with the senior manager of Laboratoriemedicin VLL. By having this first interview on an early stage we could define the objective and parameters of the commission; this goes in line with Saunders's et al. (2009, p. 60) suggested approach to the literature review process. The situation that he had explained and the problems that he had mentioned led us to the choice of three main domains of our research: organizational structure, leadership, and communication. After deciding on domains, we moved further and started searching for the relevant literature.

In order to find articles and books that would give us the foundation for our research we have used Umeå University Library resources, borrowing books and articles directly as well as searching for electronic versions in EBSCO database. We have investigated each domain separately, looking for the best theories that would help us to understand and explain the current situation of Laboratoriemedicin. We have decided to not narrow ourselves down to a specific timeframe. Every domain is well studied, and the classic theories that have been developed in 1950s-1970s are still recognized as valid basement for further researchers. Thereby, we have decided not to exclude old studies. However, in order to make our theoretical framework diversified and updated, we have used a mixture between old and new theories. Saunders et al. (2009, p. 63) points out how important it is to include key academic theories from the researched area and to demonstrate that the knowledge is up-to-date. In addition, we tended to mix well-known and respected authors with upcoming researchers with fresh ideas.

The researchers must be able to take a critical stance for conducting a valid research; in other words, the researchers should not only summarize ideas, but also question and compare them in order to find the most relevant and appropriate literature (Saunders et al, 2009, p. 63). Since we are two researchers who have been working on this thesis, every literature source was critically reviewed by both of us; such method matches Bryman and Bell's (2011, p. 32) description of 'peer review'. Thus, as suggested by Saunders et al. (2009, p. 60), we constantly evaluated the literature that we investigated in order to conduct a reliable and relevant research.

2.5.1 Structure

Every author that we have decided to include into our literature review had significant value for the investigated field. One of the most recognized definitions that we could find regarding bureaucratic structure came from the German researcher Max Weber (1947). We chose to use Weber's (1947) definition because we were interested in how researchers had developed the view of organizational structure. After Weber (1947), the next important research for our thesis was Pugh, Hickson, Hinings and Turner (1969) "Dimensions of Organizational Structure". Pugh et al. (1969) presented a new way to view the organizational structure; it is still frequently used in current researches. Meanwhile, the work of Mintzberg (1980b) gave more practical examples of how to denote the different structures and is yet still as prominent as the work of Pugh et al. (1969). All the mentioned researches are key ones for the area of organizational structure.

In order to demonstrate that our research is up-to-date we have used more current authors and researches to make our choice valid. For example, in their book "Organizational Change" Senior and Swailes (2010) use mentioned authors as well as their own theories. We have also used the work of Bloisi et al. (2007) to pinpoint which direction to proceed in. Leavitt (2005) was used to gain a deeper understanding of the consequences that might appear when organizations decide to change their structure.

2.5.2 Leadership

We started investigating this domain by discussing the fundamental dilemma of leader and manager. Reviewing the classic works of Kotter (1990a, 1990b) and Mintzberg (1980a) helped us to find our position in this argument: in our research, we are going to accept Mintzberg's (1980a) position of seeing leadership as one of the roles of manager. We have used the book by Northouse (2013) in order to gain the understanding of different theories and approaches concerning the field of leadership as a whole; then we have moved back to founders of the theories – e. g. Katz (1955). In order to gain deeper understanding of the question, we have studied several works of several other authors, e.g. Chatman and Cha (2003), Brown and Duguid (2001), Iveroth (2012), including well-known Hofstede (1981). However, we have relied on the recent work of Vidyarthi et al (2014) while exploring relatively new and emerging concept of dual leadership.

2.5.3 Communication

In order to investigate the last domain, we have started with the classic book by Leavitt (1964). This book provided us with strong and stable basis for understanding of communication concept. Moreover, it points out the main areas of importance, such as vitality of horizontal and vertical communication. Moreover, after our preliminary interview we have noticed importance of channels of communication inside the organization. We have used the article by Kupritz and Cowell (2011) for explaining difference between electronic and personal ways. Thus, combination of our chosen literature gives us the knowledge needed to understand the processes taking place in the organization and the potential outcomes that might be anticipated.

3. Methodology

Theoretical methodology

This chapter is going to provide the readers with an understanding of methods that we used to conduct our research. In the first part the readers will get accustomed with theoretical methodology, e.g. research philosophies, design, approach, and strategy.

3.1 Preunderstanding

Bryman and Bell (2011, p. 414) refer preunderstanding to the knowledge that the researcher has about the organization being studied. It can be perceived from both positive and negative points of view: on one hand, the researcher is familiar with the history, key events, and specific jargon of the industry (Bryman & Bell, 2011, p. 414); on the other hand, however, previous knowledge means strong assumptions and preoccupation as well as overconfidence (Saunders et al., 2009, p.151). Thereby, the fact that we are the third party coming into the organization from the outside means that we will have harder time understanding undercurrents and inner problems of organization, but also that our opinion will not be preset.

3.2 Research philosophies

The starting point of every research is contained in choosing relevant research philosophies, i.e. important assumptions, which explain the way in which the researcher views the world (Saunders et al., 2009, p. 108). These assumptions clarify the researcher's point of view concerning both the nature of reality and acceptable knowledge which can be used in this particular area. Moreover, well explained research philosophies are making the process of understanding easier for readers.

3.2.1 Ontology

According to Saunders et al. (2009, p. 110), the purpose of ontological consideration is in explanation of the researcher's view of reality; there are two main aspects of ontology: *objectivism* and *subjectivism*. These two aspects are different by nature: while *objectivism* argues that social entities exist independently of social actors, *subjectivism* states that social phenomena cannot be studied without individual actors (Saunders et al., 2009, pp. 110-111). Research purpose and research question make the choice quite simple. *Subjectivism*, which explains interactions and the role of individuals, is the aspect of ontological consideration that we are going to adopt for conducting our study. Subjectivist point of view will facilitate us in gaining a full understanding of actions and changes that create social phenomena. We strive to gain better understanding of the current situation, and by doing so to complete the whole picture of the organization.

We are going to use the work of Van de Ven and Poole (2005) in order to tie the subjectivist point of view with the field of organizational change. The authors view ontologies as a way to perceive the organization; it can be seen either as a *thing* (objectivism) or as a *process* (subjectivism) (Van de Ven & Poole, 2005, p. 1378). Viewing an organization as a process means that the researcher does not only embrace the material existence of the organization, but also takes into account the ongoing processes and changes (Van de Ven & Poole, 2005, p. 1378).

The subjectivist point of view is often called the 'strong' view due to its broad definition of organization (Van de Ven & Poole, 2005, p. 1379). However, it has its own drawbacks. Adopting subjectivist position, we acknowledge the complexity of this

perspective. Moreover, we also take into account constant changes that take place in the organization, making our research based on the temporary, current situation, so-called snapshot.

3.2.2 Epistemology

Saunders et al. (2009, p. 112) describe epistemology as a perception of acceptable knowledge in the given field of study. Bryman and Bell (2011, p. 15) go further and explain this concept by questioning whether or not social and natural science should be studied the same way; there are two main positions: *positivism* and *interpretivism*. If the researcher adopts positivism, he or she is more likely to study natural science, since positivism means that only phenomena that can be observed can lead to the production of credible data (Saunders et al., 2009, p. 113). If, on the other hand, the researcher takes interpretivism as his main position, collected data will be largely based on the emotions, feeling and interpreting, since interpretivism pays a lot of attention to the role of humans as social actors (Saunders et al., 2009, p. 116).

We have decided to pick *interpretivism* as a main epistemological consideration; the reason for such a decision is in the purpose of our research. We aim our study at gaining knowledge about the current situation. This is going to be done by interviewing different social actors that take part in forming studied phenomena. We perceive social actor's opinion to be an acceptable knowledge in this area. Moreover, we pay large attention to the human component of the interviews, namely to expressed feelings, emotions and opinions. Thereby, gathering and analyzing our data will be to a large extent based on the interpretation of individuals' perceptions of the situation.

Going back to organizational change point of view, we will adopt Van de Ven and Poole (2005, p. 1384) position, which addresses the change as a process rather than set of variables. This theory tends to be more complicated than variance theory, since here the researcher strives to embrace the change as an ongoing action together with its critical events, turning points, contextual influence, and formative patterns (Van de Ven & Poole, 2005, p. 1384). However, it suits our purpose of unfolding and understanding the current situation.

3.2.3 Approaching organizational change

Van de Ven and Poole (2005, p. 1387) present a framework, which combines ontologies and epistemologies into a system, each particle of which explains the researcher's view on the organizational change studies. Following the previous choice of philosophies, we can define our approach as type III. Studies of this type are presented as process studies, conducted by narrating emergent actions and behaviors, which unfold collective endeavors (Van de Ven & Poole, 2005, p. 1387). This means that in our study we will heavily rely on narratives told by different actors; in our case it is going to be achieved by conducting interviews. Then, we will try to interpret these narratives and come up to some conclusions about given situation, taking into account human factor.

3.3 Research approach

The choice of research approach is of the major importance for the researcher: it connects research philosophies with the way of processing theories (Saunders et al., 2009, p. 124). There are two main ways to conduct your research. First one is called *deduction*; it is built upon developing and processing relevant theories and creating a

hypothesis, which later will be tested with the help of collected data (Saunders et al., 2009, p. 124). The second one is called *induction*, and has quite an opposite meaning: here the theory is built as a result of analysis of collected data (Saunders et al., 2009, p. 126). These two types are usually seen in a stereotypic way: deduction is associated with scientific research and quantitative data, while induction is perceived to be connected to humanist field and qualitative data; however, both Bryman and Bell (2011, p. 13) and Saunders et al. (2009, p. 124) argue that such a division should not be accepted because it is quite misleading by its nature.

Our research is constructed using a mixture between the deduction and induction approaches; this mixture is called *abduction* (Reichertz, 2010). This choice was made consistently with the purpose of our research. We want to study an organization in accordance with specific aspects, such as structure, communication, and leadership. Since these areas are well studied, and there are many previous researches in this field, we find it most efficient to start with collecting relevant theories and gathering greater understanding of the topic, which goes in line with the deductive approach (Saunders et al., 2009, p. 124). However, instead of testing theories and creating a hypothesis, we are going to use theoretical part as a basement for deeper understanding of chosen areas, which should be studied closer. Thus, we will proceed in accordance with induction methods, looking for patterns and drawing conclusions (Saunders et al., 2009, p.126).

3.4 Research strategy

The nature of our research, which is based on commission, together with the philosophical choices suggests the right research strategy, which happens to be *descripto-explanatory research*. This means that research does not only describe the situation, but utilizes such a description and maybe strives for drawing some conclusions (Saunders et al., 2009, p. 140). We restrained ourselves from exploratory research for the fact that this area is well studied. Moreover, we decided to avoid pure descriptive strategy because of the fear of making our work meaningless. Finally, we decided against explanatory studies because we strive to understand the situation at hand rather than to establish a causal relationship between variables (Saunders et al., 2009, p. 140).

3.5 Research design

Combination of the unique situation we have faced and the research purpose we have chosen has led us to the only appropriate research design, namely *a case study*. Bryman and Bell (2011, p. 60) state that a case study associates research with one geographical location, in our case an organization, and thereby brings in the boundaries of one entity. Moreover, our research should be named *idiographic* for the fact that it represents one entity rather than several of them; and *intrinsic* because our agenda is to gain insight into the particularities of the situation (Bryman & Bell, 2011, p. 60).

Practical methodology

In this section of the methodology chapter the readers will find information about practical methodological decisions, e.g. way of collecting data, sampling, and data processing.

3.6 Method of collecting empirical data

The way to collect necessary data is tightly connected with research purpose, research strategy, and design (Saunders et al., 2009, p. 151). Since our purpose is to gain deeper understanding of one case, we are going to use qualitative method, which is primarily connected with gathering non-numerical data, or 'words' (Bryman & Bell, 2011, p.386). Moreover, using qualitative method goes in line with our interest in the organization and our choice of research philosophies, because qualitative method focuses on processes and often delivers accented sense of change and flux (Bryman & Bell, 2011, p. 404; Saunders et al., 2009, p.324).

One of the ways to conduct a qualitative research is by using qualitative interviews, i.e. research interviews conducted for eliciting information important for the researcher (Bryman & Bell, 2011, p. 201). Qualitative interviews can be divided into structured, semi-structured, and unstructured subcategories, dependent on the level of formality (Saunders et al., 2009, p. 320). *Structured* interviews imply a strictly defined set of questions for every interview, while *semi-structured* are based on a set of questions that can be varied dependent on the situation (Saunders et al., 2009, p. 320). *Unstructured*, or in-depth, interviews are absolutely informal, guided only by the list of topics that might be discussed (Saunders et al., 2009, p. 321).

For our research we have used *semi-structured interviews* to get comprehensive information. This technique allowed us to focus on areas that were accentuated by respondents, while staying within the boundaries of relevant topics.

3.7 Sampling

Choosing a good sample is crucial for conducting qualitative research (Miles & Huberman, 1994, p. 27). The first step towards choosing a right sample is setting *boundaries*, which will correlate with available time and resources (Miles & Huberman, 1994, p. 27). In our case, the main boundaries are being preset by the design of our research: a case study. Case study means that the research is limited by the geographical location, i.e. the organization, and the people working there (Bryman & Bell, 2011, p. 60).

Moreover, characteristics of an appropriate sample depend on the nature and the purpose of the research. Our purpose of gaining a deeper insight of the situation and problems at hand suggest qualitative research. As a result, we should search for characteristics of a sample for qualitative research. A sample appropriate for such a research should correspond to the following requirements: firstly, it should be *small*, and secondly, it should be *purposive* (Miles & Huberman, 1994, p. 27).

3.7.1 Sample size

The first requirement addresses sample size. Sample size for the qualitative research has been a matter of discussion, and suggested number for narrow-ranged research can be approximated to 12 (Saunders et al., 2009, p. 235). However, the size of sample is a question of availability, research purpose, time constraints, etc. (Saunders et al., 2009, p. 234). In order to both fit the time limits and reach necessary level of validity, we decided to conduct ten interviews within Laboratoriemedicin VLL. Additionally, the first interview with the senior manager was used to create a basement for our choice of domains and theories.

3.7.2 Sampling technique

The second characteristic addressed by Miles and Huberman (1994, p. 27) concerns the method of sampling. Sampling techniques can be generally divided into two groups: *probability samples* and *non-probability samples* (Saunders et al., 2009, p. 213). For our research we have selected sample based on our subjective judgments rather than statistically at random; it means that we have chosen *non-probability sample* over probability sample (Saunders et al., 2009, p. 233).

However, there are many types of non-probability techniques: quota sampling, purposive sampling, snowball, self-selection, and haphazard (Saunders et al., 2009, p. 236). We have decided to use *quota sampling with the elements of self-selection*. Using quota sampling, we have divided population into groups, and then calculated desirable amount of representatives from each group (Saunders et al., 2009, p. 235). In our cases, we had three groups: senior-management, middle-management, and employees. The quotas were divided as following: Senior management group got one position; middle-management group got six positions; employee group got three positions. However, following the recommendation of senior manager, we have introduced self-selection element: we have interviewed only those people who volunteered to participate (Saunders et al., 2009, p. 241).

Thus, we have combined advantages of these two techniques. Quota sampling had allowed us to avoid sampling frame, i.e. list of every person working in the organization (Saunders et al., 2009, p. 214), achieve quite high likelihood of sample being representative, and gain control over sample contents (Saunders et al., 2009, p. 236). Self-selection element, in turn, had allowed us to make process of data collection easier and more convenient, and make sure that only people who were interested in the situation and had some opinion were participating (Saunders et al., 2009, p. 241).

The reason to divide quota in such a particular way came from the combination of circumstances. The senior manager was the person to introduce us to the situation. Since he stressed out that the problem concerned management, we have focused mainly on middle-level managers, and decided to talk to six of them. However, we felt that we would not have gained necessary understanding of the situation if we had not have talked to some employees. Thereby, we decided to gain the employee insight and talk to three people. Since we were interested in full and comprehensive information, we tried to get people working in different departments and at different positions.

3.8 Interview questions

Qualitative interviews suggest questions that are going to be asked, and these questions can be divided into three subcategories: open questions, probing questions, and closed or specific questions (Saunders et al., 2009, p. 338). In our interviews we have asked questions of all these types. *Open questions*, i.e. those that allow participants to describe and explain the situation (Saunders et al., 2009, p. 337), were usually used as primary questions. For example, question nine: “How do you perceive communication within the organization?” *Probing questions*, i.e. those that were more focused on area of the interest (Saunders et al., 2009, p. 338), were used as follow-up questions. For instance, question six: “Do you get the support needed as a manager?” *Closed questions*, i.e. those that are very specific (Saunders et al., 2009, p. 339), were used in the situations

where precise answer was needed. E.g. question 12 “How often do you communicate with matching department from the university?”

The questions were based on the theory that we have reviewed. There are some exceptions: first three questions and the last question of the interview guide. Questions one, two, and three were used to obtain general understanding; question 13, “Is there something else that you want to add?”, was used to give participants an opportunity to bring in some additional information that they thought was important.

All other questions, i.e. 4-12, were based on the theoretical part. These questions can be divided into three parts, which correspond to the three domains that we chose. Questions four to six mainly concern organizational structure; questions seven and eight are more about leadership; questions 9-12 mainly touch upon communication. Undoubtedly, many questions target more than one area at once, and some are giving the interviewers freedom to talk about any area. However, having the structure that roughly follows the theoretical part made analysis easier to follow. Full interview guide can be seen in AppendixA.

3.9 Interviews' outline

The interviews were conducted between 30th of April and 14th of May 2014. We got a list with names of the people who wanted to participate from the senior manager. We have contacted these people by sending them an e-mail, where the purpose and request were explained in such a way that would make a positive answer more likely. After getting a response, we have confirmed the time and place either by e-mail or by phone. Such a way of requesting an interview goes in line with Bryman and Bell's suggestions (2011, p. 473).

Nine interviews out of ten were conducted in English; one interview was conducted in Swedish. Every interview was held individually, during the time that was suitable to respondents, and face-to-face. Having these personal and individual interviews allowed us to establish some connection; moreover, respondents could feel more relaxed and open towards the questions (Saunders et al., 2009, p. 324). By conducting face-to-face interviews, we were able to pay attention to body language and subtle gestures, which are important for a qualitative research (Bryman & Bell, 2011, p. 489). Every interview lasted approximately 40 minutes, with possible fluctuations up to 20 minutes. Pursuant to Saunders's et al. (2009, p. 325) suggestion, all interviewees were notified about approximate length of the interview, so the expectations were clear.

3.10 Ethical considerations

While working on a research, one should ensure that the way the research is designed is both methodologically correct and morally defensible to all those who are involved (Saunders et al., 2009, p. 184). In other word, the researcher should always consider various ethical issues. Ethical issues unavoidably arise during different stages of a research, and they mostly revolve around following topics: how the respondents should be treated, and which activities should be undertaken (Bryman & Bell, 2011, p. 122).

Bryman and Bell (2011, p. 128) talk about four main areas of ethical concern. These areas are *harm to participants*, *lack of informed consent*, *invasion of privacy*, and

deception. We have used these areas as guidelines for identifying ethical considerations for our research.

Firstly, we have used anonymity as a tool to avoid harming participants in any way. This issue was very important to us since a need for anonymity was stressed out by the senior manager during the preliminary interview. The respondents' names, positions, and departments were not stated publicly, so that the respondents could have spoken freely. Our main agenda was to make interviewees unidentifiable. Furthermore, we will only use quotations that ensure anonymity of the participants, i.e. the ones that do not show specific language, way of speaking, or ideas that clearly belong to one person and can be easily recognized by other people working at Laboratoriemedicin. We will also refer to all the participants as to males regardless of the gender (practically this means that words 'he', 'him', 'his' will be used in every interview). By doing that we have guaranteed that neither career nor social position would be affected (Bryman & Bell, 2011, p. 128). Secondly, we have given our respondents all the information that was important. For example, we have stated our research purpose, the way in which data will be handled, approximate time of the interview, the reason for using recording equipment. This goes in line with Bryman and Bell's (2011, p. 133) suggestion.

Thirdly, we have posed our questions in such a way that would avoid invading personal space of the respondents. Moreover, pursuant to Bryman and Bell's suggestion (2011, p. 136), the respondents had a right to refuse answering any question for any reason they felt. Finally, we have been very clear and precise about the purpose of our research in order to avoid any deception. Deception is a word used to describe a situation when the research is represented as something that it is not (Bryman & Bell, 2011, p. 136).

3.11 Analyzing data

All the interviews were recorded using dictaphone and then transcribed. Using a dictaphone allowed us to focus on the dialogue and avoid distraction of a notes-taking process (Bryman & Bell, 2011, p. 482). Moreover, Bryman and Bell (2011, p. 481) suggest that transcribing of the interviews allows more thorough examination of the information, corrects limitations of human memory, and permits repeated examination of answers, thereby making analysis easier. Knowing about the time consuming nature of the transcription process (Bryman & Bell, 2011, p. 483; Saunders et al., 2009, p. 485), we have followed Saunders's et al. (2009, p. 486) advice and took an option of transcribing only the parts that are relevant to our research. It does not mean that we have only transcribed direct questions; however, we have excluded introductory sections, general comments, and other particles which were bearing no particular meaning.

After getting the transcriptions, we have started analyzing the data. As Miles and Huberman (1994, p. 55) point out, this process is inescapably a selective process. Thus, we had to decide what was in the area of main importance. The first step was assigning numbers from one to ten to the participants, so that the presentation of empirical finding could still be anonymous. The second step was coding. Miles and Huberman (1994, p. 56) state that coding is the process of assigning codes, i.e. tags or labels, as units of meaning to the information to make it easier to differentiate and analyze it later. Our main basic codes were created beforehand, using theoretical part as a point of reference. The full list of first-level coding can be seen in Appendix B. In the part that presents

coded information we have used amount of mentions rather than amount of participants who have talked about the subject. This way we can see which topics were mentioned more often and how many times the subject was stressed out.

The third step of data analysis is *pattern coding*, which is a way of grouping first-level codes into smaller number of sets (Miles & Huberman, 1994, p. 69). In other words, pattern coding will generate threads that pull together pieces of data (Miles & Huberman, 1994, p. 69). We have divided our pattern codes into three subcategories that match our theoretical part structure. Moreover, we have created another section named ‘Additional findings’, which described current situation-related results that we did not expect to get. Accordingly, we have presented our analysis in the similar way. Miles and Huberman (1994, p. 248) state that such a way of presenting results is called clustering; it helps us to understand a phenomenon better.

4 Empirical findings/analysis

The purpose of this chapter is in presenting empirical findings, showing the results of the coding process and analyzing data using the theories both gathered in Chapter 2 and added after the data has been collected. Thus, the chapter will begin with short summaries of the interviews, which will allow the reader to get closer to the information before coding. Then the three domains and all their sub domains will be discussed and results of the coding process are described; then our additional findings are presented. Discussion about results concerning each domain is followed by detailed analysis of the section.

4.1 Short summaries of the interviews

The purpose of this section is in providing the ‘raw data’ i.e. unchanged, uncoded, and unanalyzed, in form of short summaries of the interviews. As mentioned in section 3.11, each participant was assigned a number from one to ten; moreover, as explained in section 3.10, only neutral quotations that do not reveal the identity of the participant will be provided. We also restrained from presenting too detailed information that could reveal the identity of the participants.

4.1.1 Participant 1

The first interview was 39 minutes long. The participant has worked in this organization for more than ten years. The participant had expressed general satisfaction with his position and with the situation at Laboratoriemedicin. He also pointed out that he had enough space for personal improvement and enough control over his own routine. The biggest problem that was addressed by Participant 1 concerned finding new competent staff to work at Laboratoriemedicin, since everyone needs to gain experience and to get in-house training before starting to work:

“...after university it takes 5 years for a doctor to gain enough skill to practice as a pathologist, a geneticist, etc. You need extra time to be skilled enough.”

His suggestion for solving this problem was in promoting Laboratoriemedicin amongst the students at Umeå University. Participant 1 also stated that some of the departments were quite good at this practice, and those who were not would be underemployed in a couple of years. In general, this participant was positive towards the situation at Laboratoriemedicin; he felt that the people were supportive, friendly, and open to new knowledge. When touched upon structure, Participant 1 stated that he does not see problems with it. He also added that the situation have improved after the centralization, which took place in 2001. In his opinion, adopting the University structure would be one of the possibilities.

Talking about leadership, the participant expressed his concerns about the divided leadership existing at Laboratoriemedicin because the responsibilities of MCs and ACs were not stated clearly. In his opinion, success of a dual leadership depends on the personalities of the managers. He also pointed out that personal differences influenced the environment in the organization. Communication, in his opinion, functioned well: it was easy to reach anyone in the company. However, according to Participant 1, it was mostly face-to-face; e-mails and phones were not used much, and he did not feel the need to use them more often. Additionally, he stressed out that there were too many

meetings that he should have attended, some of which did not even demand his presence.

4.1.2 Participant 2

The interview with participant 2 lasted for 38 minutes. The participant had worked in the organization for more than 15 years and was in general satisfied with his work situation. However, he expressed a need for more unification and cooperation between the different departments. The participant explained that each department's culture and routines could be one reason why people in the organization could not view themselves as one:

"...we are working with each test for different period of time and therefore we cannot see each other as equals. For the rest of the hospital we are viewed as one organization, Laboratorimedicin, but our different cultures are making us not seeing each others as equals."

The participant stressed out that the inability to view each others as equals is one of the organization's major problems, and this problem affects the efficiency of production. Furthermore, in his opinion underemployment issues and the increasing workload could be managed more efficiently with increased cooperation. However, there has been a resistance to increase cooperation between the departments.

Moreover, the participant explained that there is a need for easier access to the different support units. The increased accessibility of the support services would in general optimize performance of the organization. Additionally, he said that the divided leadership is functioning differently depending on which of the departments one is viewing. The participant stated that dual leadership is an advantage when the two managers are able to cooperate; however, this is not the case for whole Laboratorimedicin.

He perceived that the vertical communication is functioning adequately; however, he continued to stress out the need to collect the different department and make them work towards a joint goal. The participant suggested more managers' meetings and informal meetings as a solution to this problem. The organization structure was the best one in his opinion, changing it would decrease efficiency for the organization and its customers. However, the participant wanted one structural change to be made and this change is of a physical nature; to have one place where the customers can deliver their samples.

4.1.3 Participant 3

This interview was 42 minutes long. The participant has been working in the organization for more than 20 years. Participant 3 felt satisfied with the current working situation; however, he felt overloaded and wished for fewer responsibilities. Additionally, he expressed desire to have more independency. The key topics and problems that the participant touched upon were specialization and standardization, i.e. the differences between professional work of different departments and the need for more electronic equipment. Additionally, the participant highlighted the workload and the fast development of the organization, which in turn affected the environment:

“...that leads to people who could work here a long time leaving and saying ‘No, it is not good here’. They are worked out.”

Participant 3 expressed general satisfaction with amount of decision making power and said that there is no need for more freedom. Additionally, he thinks that the employees at Laboratoriemedicin can get the support and help when needed. Participant 3 did not have clear idea about goal of the organization. Talking about structure, Participant 3 felt that division would be one of the options for decreasing the workload.

According to Participant 3, leadership was working quite well, while communication was not functioning properly. This participant said that there is also very little cooperation between departments, but he did not want to have more. However, he expressed desire to have more local meetings between the staff at one level, and inside the departments without involvement of the senior manager. He stated that both personal and electronic communication channels were used in the organization. Additionally, this participant stressed out existence of inertia amongst staff, which could have been explained by inability to adapt to changes.

4.1.4 Participant 4

This interview lasted 68 minutes. The participant has been in the organization for more than 20 years. His general opinion was quite positive; he said that he had enough opportunities for improvement but not enough time due to the workload. He thought that there is a good environment in the Laboratoriemedicin; people are open and friendly. This participant knew the vision of Laboratoriemedicin.

The main problem, according to Participant 4, is in the organizational structure: there was expressed desire to have more independence and autonomy because of the high level of specialization; in other words, he felt strongly for decentralization, which in his opinion would solve operational problems. Additionally, this participant pointed out special characteristics of the organization, e.g. slow decision-making process and long chain of command. Adapting University faculty’s structure was perceived positively. Talking about leadership, he expressed certain doubts about functionality of the divided leadership:

“I think it is better to have one defined leader on every level; it is easier.”

According to this participant, the communication in the organization is functioning quite well on different levels. However, he expressed a desire for more horizontal communication between staff at the same level. He also stated that personal communication was mostly used. This participant did not feel the need for increased cooperation between departments, but acknowledged inertia and resistance against imposed changes.

4.1.5 Participant 5

This interview was 71 minutes long; the participant has been working in the organization for more than 20 years. Participant 5 felt very satisfied with the current situation and especially with his personal professional achievements that took place at Laboratoriemedicin. He thinks that the atmosphere is very good, and that people are nice and open; if one needs support he/she will get it. However, he expressed concerns

about the employment situation in the organization. This participant stated that he has enough opportunity for personal improvement but not enough time due to the increasing workload. Additionally, he expressed desire to get more specific knowledge in some areas. This participant demonstrated partial knowledge about the goals and visions and stated that they are being communicated and implemented. He also said that reaching the vision is very important for the whole entity and for him personally.

The biggest problem, according to this participant, is the employment situation: it is hard to find specialists in such a narrow field. Neither structure nor leadership, however, seemed to be that troublesome for Participant 5. He felt that existing structure is the best suited for achieving the current goals and vision; he also said that there was no need for adapting University structure. Leadership was perceived as well functioning. Participant 5 said that dual leadership functions better than singular if there is a good match between personalities; however, it could be extremely complicated if there is no personal connection. Finally, this participant felt that communication is quite easy and open, but there are a lot of meetings on vertical level and not enough on horizontal:

“We have [...] department meeting every second week, quality staff meetings once a month, our enlarged group [...] two times every semester [...]. Section meeting with the section chiefs of our department every week, workplace meetings once a month where we try to present the ideas from the managers meeting and the computer meetings. We have reports from the section; IT, healthcare advisors, and we have these chemical responsible reporting and fire reports.”

4.1.6 Participant 6

This interview lasted for 50 minutes; the participant had worked in the organization for less than five years. He was satisfied with his current work situation and felt that his daily job developed him personally. The participant expressed the main problem to be rapid growth in the field of laboratory medicine and the challenges connected to such expansion:

“We have a high level of quality of the staff here, but we are not so many and we are a part of the country where it is not so easy to recruit new well educated people. So it is a problem of recruiting skilled personnel, and to have resources to buy new equipment.”

The participant expressed positive opinions about the latest structural changes of Laboratoriemedicin; however, he also voiced the opinion that he wants his department to be more independent. However, he did not think that adopting the same structure as the university would be beneficial, but stated that there would be a need for a structural change within the nearest future. Furthermore, he expressed the need for a structural change with more autonomy for the different departments; otherwise the organization would be too big and thereby not function properly:

“There are problems with big organizations of 4-5 departments, which are quite unique: you cannot move personnel between areas very easily. I see a problem with this in the future, if we continue to expand like this and have an organization. In a couple of years this will become something that has to be dealt with.”

Moreover, the participant stated that the communication is functioning adequately, but there is room for improvement between the different departments' managers. In the past there has been dissatisfaction mostly due to misunderstandings connected to poor communication and this is a problem that the department is currently working with. The participant expressed positive opinions regarding the dual leadership concept and said that it is in fact the logical choice for Laboratoriemedicin. However, he also stated that if his department would be separated from Laboratoriemedicin, the natural choice would then be to have one strong leader.

4.1.7 Participant 7

This interview was 17 minutes long due to the fact that Participant 7 was quite busy at that day. He has worked in the organization for less than five years. General impression was very positive; the participant felt that his routine was very flexible and allowing him to grow and develop professionally. According to Participant 7, coworkers and peers always provide the needed support, but the supporting services could have functioned more efficiently. This participant finds working at Laboratoriemedicin very satisfying:

“It is very interesting and challenging, there are many ethical advanced questions and situations that occur.”

Talking about the structure, the participant stated that he wishes for more autonomy for the different departments, mainly because of financial issues; he also felt positive towards adopting structure of the University faculty. Participant 7 did not think that the existing leadership caused any troubles for the performance of the organization. Communication was also perceived as well functioning; the participant said that it was easy to reach coworkers. Additionally, he stated that he uses both personal and impersonal communication channels dependently on the seriousness of the situation. As a main issue this participant mentioned bureaucratic characteristics of the hierarchical organization: long decision-making process, budgeting, and paperwork:

“If you want big equipment you need to go through the hierarchical chain and do the proper paperwork and wait the time proper time for the budget.”

4.1.8 Participant 8

This interview was 56 minutes long. The participant has been working in the organization for more than 20 years. Generally, the participant felt satisfied with the current work situation; however, he denoted significant workload and time constraints that stop him from improving and getting further education. He stated that he has enough decision making power, but prefers to convince people and come to the collective agreement rather than to imply changes. He also stated that support is provided when it is needed. This participant admitted that he does not know the vision for the organization.

Touching upon structure the participant said that existing structure is efficient enough. He had mixed feeling about organizational division: on one hand, it would lessen the workload for the senior manager, but on the other hand, it would decrease cooperation. This participant also mentioned high specialization and standardization that affect the way the departments cooperate; additionally, the participant said that there is a logistical

issue - the optimization of the joint performance cannot be fully achieved without obtaining a new building. Finally, Participant 8 stated that inner conflicts and inertia are slowing down the process of optimizing performance:

“...sometimes I can feel that the five different departments are only thinking about themselves; they do not see the full picture.”

The participant's opinion about dual leadership is not clearly defined. According to him, it can be very productive when two managers are working together and combining their efforts. However, partnership can slow the whole department down if the responsibilities are not clearly divided between the two managers. Additionally, the participant said that there is a problem with recognition of achievements for ACs, who do the hardest practical work. He also said that there might be misunderstanding about the different roles (MCs and ACs) and these roles' meaning. Participant 8 said that there was good and well organized vertical communication, but there were problems with establishing fruitful horizontal communication so that part of the problems could be solved locally. He also stated that communication was one of the biggest issues:

“The communication is the hardest to accomplish between people.”

4.1.9 Participant 9

The interview lasted for 40 minutes; the participant had worked within the organization for more than ten years. The participant was ambiguous about the current work situation: there were both positive and negative aspects that he felt needed to be addressed in order to increase satisfaction:

“It is a clear hierarchies in the organization [...] I can sometimes feel undervalued.”

The participant stated that the heavy workload, the long hierarchical chain and the little help from support services contribute to work dissatisfaction. He expressed that there are constantly things that could be improved; however, there is no time or resources to improve. The participant also voiced an opinion about a well functioning HR:

“I think it is important to have a good Human Resources Department that is working closer to the employees to boost and support the managers, the ones that have the practical impact for the employees. The current HR workers are mostly dealing with hiring people and writing the ads; therefore they have no or little connection with the people working once employed.”

Furthermore, the participant expressed a need for more managerial training to increase the quality of leadership. He says that the concept of shared leadership is positive, but the organization is still suffering from problems evoked by the climate that existed in the organization before the last structural change. He stated that the joint budget could be a reason for the resistance to cooperate between the departments because everyone wants to protect own personal interest.

Regarding the communication, the participant expressed positive opinions about the open and informal working climate enforced by functioning communication. The participant did not think that adopting the structure as the university would make any

different for Laboratoriemedicin, and stressed out that the thing that would make a difference is the number of hierarchical levels. Additionally, the participant talked about the different cultures that exist in each department, which sometimes make it hard for people to understand each other. The cultural differences work as a barrier to both cooperation and communication.

4.1.10 Participant 10

This interview was 33 minutes long. The participant has been working in Laboratoriemedicin for less than five years. This participant said that he is “rather satisfied” with the current position and situation in Laboratoriemedicin. However, he expressed that increasing workload and lack of time make it harder to manage his personal responsibilities. He stated that he has enough of decision-making power. He also said that he gets support from the peers, but not from support services such as IT, HR, economy, etc. This participant also stated that the vision is “fuzzy and unclear” and should be broken down to “more concrete steps”. He also expressed strong negative feelings towards decentralization and adopting University structure:

“... All of these departments have to work as one, and therefore we must have one chief that collects us. We need one senior manager who unifies us.”

Talking about dual leadership, Participant 10 stated that this phenomenon work well only when there is a good personal chemistry between the managers. One of the biggest issues that were pinpointed by this participant in the connection to leadership is high specialization, and a need for leader who has experience of working in this environment:

“You have to work close to it to understand what challenges we have and how to run it.”

Participant 10 perceived communication as working well; he said that it is easy to reach the person you want to talk to. He also stated that information flows both ways, which is very important. However, this participant also admitted existing of inertia to change, which is based on the fear to lose the job or position in the hierarchy. Talking about channels of communication, the respondent stated:

“All possible communication methods are used. When it is important we talk face to face otherwise we use electronic methods.”

4.2 Structure

There is a need to examine the existing structure of the organization in order to have a clear view of the organization. We have defined two main categories, bureaucracy and control, which were further divided into seven subcategories. Categories and subcategories are presented in Table 1 ‘Categories of structure’.

Category	Subcategory
Bureaucracy	Hierarchy, standardization, specialization, formalization
Control	Decision power, centralization, decentralization

Table 1. Categories of structure.

4.2.1 Bureaucracy

This section will show the findings retrieved from our in depth interviews with the respondents. We have used Pugh's et al. (1969) "*Dimensions of structure*" in order to investigate the level of bureaucracy within Laboratoriemedicin. Table 2 illustrates the different subcategories and the topics that were discussed by the respondents.

Subcategory	Nº of mentions	Topic
Hierarchy	23	Long hierarchy chain, reflected in department culture, autonomy
Standardization	14	Mechanization, equipment, processes
Specialization	11	Personal specialization, department specialization, personnel issues
Formalization	8	Rules, processes, decision making

Table 2. Bureaucracy explained.

The first area addressed concerned hierarchy and the respondents' thoughts about the matter. There were both positive and negative comments about the long hierarchy chain existing within the organization. 16 out of 23 comments about hierarchy were in relation to the decision power. The respondents voiced frustration about the long decision making chain and the time it took for decisions to be processed. Some respondents wished for more autonomy in order to have a quicker decision making process. Hierarchy was also mentioned in relation to department culture; all of these comments were of a negative nature and illustrated a clear hierarchy of the employees, where a subordinate could not speak freely with a superior. In total, 16 out of the 23 mentions were of neutral nature, just stating the current situation. 5 out of 23 voiced dissatisfaction concerning the hierarchy and 2 out of 23 were of a positive nature, expressing the advantages of being apart of a large organization.

The second subcategory, standardization, was developed at different levels throughout the organization. Four out of ten comments expressed a desire for more standardization. For example, people wanted to have a joint test reception for all departments within Laboratoriemedicin, same paperwork procedures, and increased mechanization, which would reduce monotonous workload. Furthermore, some respondents explained that the equipment used could be shared by different departments and that they wished for an increased cooperation in the areas where equipment could be shared. On the other hand, this question was voiced in a negative way from other respondents, who wanted the different departments to be organized around department specific knowledge.

Answers concerning specialization mainly touched two areas: personal and departmental specialization. 6 out of 11 mentions concerned personal specialization: the importance of being highly specialized in their field of employment. In connection to these comments, respondents talked about difficulties to find personnel due to the requirements needed. When it came to departmental specialization, the mentions expressed the differences between the departments in form of specialization in procedures. Furthermore, interviewees stated that each individual department had high demand for employees' in-house training before they could perform optimally.

The last subcategory, formalization, refers to what extent there are written rules, regulations, and procedures for the employees to follow (Pugh et al., 1969, p. 75). Four out of the eight comments about the rules were of a negative nature. For example, two respondents talked about a joint quality handbook that in fact decreased the quality of their departments, because it was difficult to find the right paperwork. Another respondent said that there are rules for everything, and the employees do not need to decide anything themselves. The other half of the mentions was of a neutral character, just stating the broad extent of formalization.

4.2.2 Control

The second category of structure relates to control within the organization. It includes following subcategories: decision power, centralization, and decentralization. Table 3 shows the different subcategories and the related topic discussed during the interviews.

Subcategory	Nº of mentions	Topic
Decision power	24	Empowerment, long hierarchical chain, autonomy
Centralization	13	Wish for more unification of the organization
Decentralization	16	Wish for more empowerment, independence

Table 3. Control explained.

The first subcategory, decision power, referred to what extent the respondents could make their own decision and if they felt satisfied with the amount of decision power they had. In general, eight out of the ten respondents felt satisfied with the amount of decision power they had. Two out of ten respondents expressed dissatisfaction and a wish for more decision power and autonomy. Out of the 24 comments about decision power 15 can be connected to satisfaction and a feeling of empowerment. However, the long hierarchical chain and the difficulties to decide to do bigger investments were mentioned 6 out of 24 times.

The second subcategory, centralization, reflects the respondents' thoughts about the matter. Many responses were positive; they expressed the importance of having a strong senior manager to unify them as one, the fact that they were viewed as one organization from the outside, a change in the climate for the better with more cooperation as a result, the security enjoyed for being one organization instead of an independent unit, and an easier access to their customers. The negative comments concerned decision-making related to problems that they could not solve themselves without consulting a manager. A wish for more autonomy was expressed together with a difference between departments' culture, which inhibited cooperation.

The final subcategory, decentralization, refers to the respondents' thoughts of being more independent as a department instead of being together as a large organization. There were mixed responses to these questions; some of the respondents welcomed and wished for more empowerment and autonomy. However, other had strong negative feelings towards a split of the organization. They thought that it would be catastrophic to divide the organization, and that it would decrease their focus on the customers. On

the other hand, the positive responses stated that being more independent would improve their departments and speed up the decision making process; it was a desirable outcome. Furthermore, some respondents expressed that this development was an inevitable event in the future, because otherwise Laboratoriemedicin would be too large and too complex to function.

4.2.3 Analysis of structure

This section will analyze the existing situation in the organization with the help of theories and the responses that we got from the different respondents. Firstly, we will look at the connection between Weber's (1947) model about bureaucratic structure as explained by Senior and Swailes (2010, p. 74). Weber (1947) stated that there are four main characteristics of a bureaucratic organizational structure: specialization and division of labor, hierarchical arrangement of positions, a system of impersonal rules, and impersonal relationship (Senior & Swailes, 2010, p. 74). Looking at specialization mentions, each department has highly specialized jobs and routines. For example, one respondent expressed that the next level does not understand the processes taking place at this level. Furthermore, when questioned if there was a possibility to share employees, some respondents said that it was possible, but difficult due to the specific analyzes performed. This is in accordance with Weber's (1947) first main feature of a bureaucratic organization.

When looking at how decision-making was conducted within the organization, some decisions were made at departmental level. However, when more financially demanding decision had to be made, e.g. the purchase of expensive equipment or hiring of new employees, they could not be made without consulting senior management. According to Weber (1947), the hierarchical arrangement of a bureaucratic organization has a single chain of commands from top to bottom to make decisions (Senior & Swailes, 2010, p. 74). This is the existing situation at Laboratoriemedicin, where financially sensitive decisions are forced through a hierarchical chain; thus, the current structure corresponds to Weber's (1947) second main criteria.

According to the participants, there are many rules and procedures that they are following during their operational activities. One respondent even said that there are rules for everything. This is consistent with Weber's (1947) third criteria, a system of impersonal rules, which refers to clearly defined rules that state how employees should perform their duties (Senior & Swailes, 2010, p. 74). Therefore, we can conclude that Laboratoriemedicin is coherent to the third main feature of Weber's (1947) bureaucratic structure.

However, there is little/no evidence supporting Weber's (1947) fourth main feature, impersonal relationship. This section will be analyzed later in this chapter in the communication analysis part. When analyzing the respondents' answers, it is apparent that Laboratoriemedicin has several characteristics of a bureaucratic organization. However, we cannot confirm that the structure of Laboratoriemedicin fully supports Weber's (1947) bureaucratic organization structure theory.

We have used Pugh's et al. (1969, pp. 72-79) six characteristics of an organizational structure to enrich our analysis; doing this, we could get the unique fingerprint that every organization entails. Our analysis has already covered specialization,

standardization, and formalization with the help of Weber's (1947) theory about bureaucratic organization structure. Pugh's et al. (1969, pp.76-79) other characteristics, traditionalism and configuration theory, will be used in this paragraph, and the last concept, centralization, will be analyzed in the paragraph below. Analyzing the respondents' comments and looking at the organizational chart of Laboratoriemedicin will facilitate determining this organization's unique "fingerprint". As explained in the introduction, Laboratoriemedicin has four different vertical levels which consist of approximately 420 people. According to Pugh et al. (1969, p. 79), configuration feature is a symptom of bureaucratism; it is expressed by the number of clerks in the organization. When observing personnel of Laboratoriemedicin, we can see that there are few clerks. This does not correspond to Pugh et al. (1969) conclusion of a bureaucratic organization; thereby we cannot conclude that Laboratoriemedicin is a pure bureaucratic organization. Furthermore, Pugh et al. (1969, pp. 79-81) fifth characteristic traditionalism refers to how many procedures are understood without being written. There is no supporting evidence that would show existence of many informal unwritten procedures. As mentioned above, one participant stated that they have formal written rules for everything. This, according to Pugh et al. (1969), indicates a more bureaucratic organization.

Looking at the comments from the participants, we can see a clear split of opinions about the structure of the organization. However, the majority feels that the current organizational structure is an ineffective one; they wish for more cooperation and unification between the departments. Drucker (1988, pp. 47-48) expresses the advantage for an information based organizations to have a strong senior manager who harmonizes performance; thus, having a more centralized organization with a strong senior manager can facilitate the organization to functioning more optimal. The flatter structure presented by Drucker (1988) is not a structure that we believe will function for Laboratoriemedicin. Increased span of control will inhibit development, because it is difficult for the senior manager to control so many people. Leavitt (2005, p. 4) questions if Drucker's (1988) organizational structure with one senior manager who have total control and little or no middle managers is the way of the future, and if such an organizational structure still can be denoted as a hierarchical organization. However, this might have been an option if all specialists were able to work autonomously without supervision. However, Bloisi et al. (2007, p. 215) argues that employees that work without clear visibility for managers have a more tendency for social loafing, i.e. for not putting as much effort in their job as demanded for an efficient output. Furthermore, Leavitt (2005, p. 6) states that hierarchical organizations are here to stay; they are adapting and changing to suit their modern days needs, but still remain the predominant structural form of an large organizations.

Moreover, Leavitt (2005, p. 40) explains that there are two main reasons why hierarchical structures continue to be the most predominant. Firstly, they are efficient: hierarchical structure is effective when it comes to accomplishing big and complex tasks (Leavitt, 2005, p. 40). Second reason is a combination of two, size and age: larger sized organization is more likely to be accompanied by increased complexity, and the hierarchy can manage bigger sizes with more efficiency (Leavitt, 2005, pp. 45-46). Even if the organization does not grow in size but mature in age, even the smallest task tends to get routinized, and hierarchy is implemented to deal with those tasks (Leavitt, 2005. p. 46). Laboratoriemedicin is a large organization with many different

hierarchical levels, and as one of our participants said “perhaps it has to be like this” (referring to the hierarchical structure of Laboratoriemedicin). It is consistent with Leavitt’s (2005) two main reasons why hierarchical organizations continue to thrive: they are efficient and as they grow in size and age it becomes inevitable to not have different hierarchical levels. Our findings are also consistent with Pugh’s et al. (1969, p. 76) definition of centralization, when most of the decision power is located at the top.

On the other hand, there were voices that expressed the desire for a more decentralized organization with more autonomy. Decentralization will increase independence for the different departments of Laboratoriemedicin, which could speed up decision-making process. Thus, respondents wanted to have a flatter structure. According to Senior and Swailes (2010, p. 77), this flatter organizational structure can facilitate managers by reducing the burden on each manager. However, that would also increase span of control, which in turn will make communication more complicated. Furthermore, this decentralization will mean increased workload and responsibilities for each head of the department. Thus, in our opinion, decentralization will not be an optimal solution for Laboratoriemedicin at this stage of development.

Some of the participants talked about more independence in order to speed up the decision-making process. However, increasing the span of control and allowing for more independence will not be equal to a faster decision-making process. Leavitt (2005, p. 150) discusses authority in combination with decision-making process and the importance of convincing people to follow instead of alienating the people needed to implement the decisions. If the different department in Laboratoriemedicin became more independent they would still need to go through the hierarchical steps induced by VLL and the governance system of Sweden. Thereby, there will always be decisions that they cannot make themselves, which means that they will have to use the hierarchical ladder to make these decisions anyhow.

To sum up the analysis of the structure, we want to state that organizational structure does affect efficiency and productivity of Laboratoriemedicin. Every component of the organizational structure defines how efficient or not efficient the operational procedures are conducted. As stated above, a hierarchical structure is the most prominent and effective when it comes to complex operational procedures (Leavitt, 2005, p. 40). A hierarchical structure facilitates the way operations are conducted, especially in a large organization as Laboratoriemedicin. Leavitt (2005, pp. 45-46) also says that with size and age comes some type of hierarchical structure to facilitate the processes taking place in the organization. Thus, organizational structure is a powerful tool that defines whether operational performance is productive and efficient or not (Daniels et al., 2011, p. 605). Furthermore, Leavitt (2005, p. 58) explains that there has been a need for hierarchical organizations to modernize and to adapt to the current situation. Laboratoriemedicin has already done this, they implemented a structural change a few years ago and the participants stated that it were a change for the better.

4.3 Leadership

Besides from being one of our main areas of the interest, leadership has been repetitively mentioned during the first open introductory questions. Leadership questions were addressed in many directions. Respondents have talked about many issues. According to our theoretical chapter’s structure, we have identified three biggest

categories: leadership traits, leader’s skills, and dual leadership. These categories and also subcategories which they include are shown in the Table 4.

Category	Subcategories
Leadership traits	Support, delegating, leadership quality
Leader's skills	Technical skills, human skills, conceptual skills, vision & goals
Dual leadership	Divided responsibility

Table 4. Categories of leadership.

4.3.1 Leadership traits

One of the most discussed categories can be defined as quality of leadership. This collective name portrays the traits and features that subordinates are looking for, which they think of as necessary ones, and which they lack in the current state of affairs. Moreover, it helps to understand the current situation in this area, showing the relation between leaders and followers. There are three main areas that were addressed, to varying extents, by each respondent. These areas can be named as support, leadership quality, and delegating, and are illustrated in Table 5.

Subcategory	№ of mentions	Topics
Support	22	General support, support from senior managers, support from colleagues, support from middle level managers
Leadership quality	23	General traits, senior managers
Delegating	5	Delegating by senior managers, delegating by middle level managers

Table 5. Leadership traits explained.

The first category here, support, was mentioned by every respondent. The most common context was connected to general help and support, and ability to get it when needed. However, the opinions of the respondents were divided almost equally. More than half of the respondent stated that this kind of support was available by their request, while the rest of the sample was not getting it when needed. The second largest group here is related to support from senior managers. This topic was mentioned five times, and all the responses were positive. Respondents felt that they got all the support needed from the top of the organization. Moreover, people used this word in order to describe the support that they drew from colleagues and managers. Majority of the responses were positive; that shows that both employees and middle level managers are friendly and ready to help when their help is needed.

The second category, which is referred to as leadership quality, is the collection of features, both personal and professional, that respondents thought of as important for leaders. 10 out of 22 comments were addressed towards general qualities that people thought of as important for every level of management. These traits include: proactiveness, professional and managerial education, openness to communication, ability to work in teams, ability to take decisions, ability to understand the depth of the situation. Another distinctive issue that was mentioned during the interviews

concerned senior management of the organization. People expressed desire to see their leader being strategic, helpful, attentive, educated professionally, aware of professional nuances, transparent, and consistent. Some of the responses contained an expressed desire to have a sharper senior management, i.e. someone who can govern processes.

The last category is delegating. It refers to giving part of your own responsibilities away, thereby lessening own involvement in planning, control of details, and goal clarification (Northouse, 2013, p. 102). This topic was mentioned by half of the respondents. However, in some cases this phenomenon was referred to as delegation by senior managers; in other cases it was addressed from person's own perspective. However, all of the respondents were positive about it. When talking about senior manager's delegating power and tasks, respondents stated that it gave them more autonomy and decision-making power. However, when talking about delegating own responsibilities, it was addressed as necessary measure to lessen the workload and get some time for other tasks.

4.3.2. Leader's skills

The second category of leadership concerns skills of the leader. This collective name refers to professional, human, and conceptual skills of the leaders. Moreover, this section shows whether these skills are obtained by managers, explain their importance, and relate them to levels of management. Subcategories that are going to be explained later in this section include professional skills, human skills, conceptual skills, and goals and visions. They are illustrated in the Table 6, together with the topics that they consist of.

Subcategory	Nº of mentions	Topics
Technical skills	5	General, middle level managers, senior managers
Human skills	6	For middle level managers, for senior managers, usage of human skills
Conceptual skills	13	Unifying, clarifying, convincing
Goals & vision	26	Clear, not so clear, general knowledge, same for all departments, is not happening

Table 6. Leader's skills explained.

The first subcategory of this section refers back to Katz's (1955, p. 34) technical skills, i.e. knowledge of the professional area. This type of skills was mentioned by numerous respondents in relation to both middle and higher levels of management. Technical skills were said to be important for middle managers mostly, because they would allow them to be close to the employees, thereby understanding the daily routine and contributing more to the work of the laboratory. It was also mentioned in connection to senior managers. In this case, respondents implied that if their senior chief had no knowledge about the work they do he would not be able to understand all the nuances and importance of events happening in the organization.

The second type of skills, human skills, is about being able to communicate with people around you (Katz, 1955, p. 34). This topic was also discussed during the interviews. The

biggest amount of respondents talked about themselves exercising these human skills in relation to their subordinates. People mentioned that they use convincing and discussing as main tools of leading, giving people a chance to come up with solutions themselves, i.e. coaching rather than directing them, and talking for the sake of solving problems. Some of the respondents stated that managers of the middle level could have received more training in this area. Moreover, it was mentioned that senior managers should be able to talk to their subordinates in order to gain respect.

The last type of skills being discussed is named conceptual skills and means being able to work with abstract ideas and bring the organization to fulfilling its goals (Katz, 1955, p. 36). The first topic discussed in this relation was about the need for unification. It means that people were pointing out the necessity of having a leader who can make departments cooperate and work together for one purpose of improvement. The second widely used term was ‘convincing’. According to the respondents, this meant educating, explaining their role and the necessity of this role. Finally, minority of answers were related to clarifying the task, i.e. showing what to do and how to do, breaking abstract vision into series of tangible goals. Majority of responses were connected to the conceptual skills of the senior managers.

The last topic of this subcategory, goals and visions, was used as a reflector of current leaders and their skills. 92% of all respondents stated that they know, have some idea, or heard about a big vision and goals for their department; four out of ten respondents denoted vision as very clear, while two said it was not clear at all. However, the opinions on the message of the vision were varied. Mostly people were talking about satisfying customers, prioritizing patients’ needs, and performing their task the best they could. Moreover, some respondents had a negative opinion about the vision and the way it is being implemented.

4.3.3 Dual leadership

The last category of leadership is called dual leadership. It concerns unique situation existing in Laboratoriemedicin VLL, where two people share responsibility for the department. It consists of only one category, divided responsibility, but respondents had very interesting thoughts and comments concerning this concept. This subcategory and topics are presented in Table 7.

Subcategory	№ of mentions	Topics
Divided responsibility	27	Positive opinion, problems spotted, working in same direction

Table 7. Dual leadership explained.

While describing this phenomenon people have used such words as divided responsibilities, shared leadership, and cooperation. 20 out of 27 mentions were positive, but the degree of appreciation varied. For example, around half of the respondents were positively neutral, i.e. they had no problems with this concept and thought that everything worked well enough. Another half of positive responses was more pronounced. For example, some respondents referred to themselves as a great team. Others said that this system lessened their workload, allowed to get the support needed and manage their department better. People were stating that as far as goals are

being reached, the title and position do not matter. Two respondents highlighted the need of cooperation and holding the same chosen point of view, i.e. going in one direction and working towards the goal.

However, not all the respondents were that positive about dual leadership existing at Laboratoriemedicin. 7 out of 27 mentions contained description of the problems, both current, past, and possible. For example, people have mentioned the problem with unification and working towards one goal. Moreover, one of the big issues that were addressed by many people concerns division of responsibilities. There were answers stating that responsibilities of ACs and MCs are not clearly defined, that 'it is hard to know where MC ends and AC begins'; thereby, personal agreement about their duties was named as necessary. Moreover, many respondents were concerned with undervaluation of ACs' work. One of the most mentioned problems was personalities and personal chemistry.

4.3.4 Analysis of the leadership

Analysis of the leadership in Laboratoriemedicin can be started with estimation of the overall situation. The majority of people were satisfied with the current senior leaders. Amount of delegating was accepted positively. Moreover, people were very happy with the support they received from their senior managers. However, the fact that some respondents were wishing to get sharper, more precise and command-giving managers shows that people have a need for more directing.

This relies back on Blanchard's (1985) classic book about situational leadership; the main theory had been explained by the author in the short article from 2008 (Blanchard, 2008, p. 19). According to the author, leader's behavior differs in supportive and directive dimensions, thus giving us different combinations of leadership styles (Blanchard, 2008, p. 19). Current senior leadership style can be named as supporting, which is high in supportive dimension, but low in directive. Expressed desire to get more directing can mean that leadership style should be shifted towards coaching (high in both dimensions), or in some cases even towards directing (high directive, low supportive).

Moreover, support that people draw from both middle-level managers and senior managers can be seen as an evidence of profound human skills. Katz (1955, p. 34) uses this term to describe ability to work in a group and to build cooperative effort in the group. Thus, ability to help people, make them feel appreciated and cared for, means that the senior managers have a good level of human skills. Moreover, ability to give needed support and help, i.e. to understand people working in such a highly specialized environment, draws attention to technical skills, which were very important to the respondents.

Conceptual skills, or ability to see organization as a whole, were also very important. Goals and visions were used as a tool for measuring this type of leadership skills. We chose to use it as a tool because knowing (or not knowing) a clear vision and concrete goals are extremely important to every organization, and success of change or transformation is often dependent on this concept (Kotter, 1995, p. 63). Thereby, explaining the vision to subordinates can be seen as a main task of a leader, and the degree to which current vision is known to the managers and employees can be seen as an evidence of success (or failure) (Kotter, 1995, p. 64).

The fact that the vision was not clear, and neither managers nor employees had a simple short message in their minds means that the vision was not communicated enough (Kotter, 1995, p. 63). Moreover, it is appropriate to suggest that this lack of vision communication had taken place on every level of management, from the highest to the lowest ones.

Thus, estimating the overall situation about leadership skills and appropriate level of the leadership, one can summarize it as following. Firstly, professional skills are important on every management level of Laboratoriemedicin. This goes against Katz's (1955, p. 37) statement that technical skills matter mostly for managers of the lowest levels. However, this fact can be explained by the fact that Laboratoriemedicin is highly specialized organization, working with very specific and narrow field of medicine. A person without understanding of the professional background will have hard time taking strategic decisions.

Human skills, however, are being mostly connected to the middle level managers, MCs and ACs, and their ability to make people work as a team for achieving one goal; this is perfectly aligned with Katz's (1955, p. 37) theory. However, the fact that people want to have managerial education as a mandatory option for all MCs and ACs means that these skills are deficient. Extra trainings and education will probably help in solving this problem.

Additionally, the fact that the vision and goals were not communicated means that conceptual skills can be improved as well. These skills are extremely important for the senior managers, since the chain of vision and goals communication starts at the very top level (Katz, 1955, p. 38). In our opinion, understanding the importance of communicated vision can give the senior managers necessary sense of urgency. Moreover, making sure that MCs and ACs know their goals and can communicate the vision to their subordinates should be one of the main responsibilities.

The last area of discussion belongs to dual leadership, i.e. the situation where people share responsibility, and as a result one employee has several bosses (Vidyarthi et al., 2014, p. 2). In the case of Laboratoriemedicin, this method was proved to be working quite efficiently. However, there are problems that were referred by the respondents. One of the biggest issues goes in line with Vidyarthi's et al. (2014, p. 12) statement that unified actions and motives are needed for a success of such a tandem. This problem could be stabilized by reassuring that every manager knew his/her responsibilities as well as the responsibilities of the partner. The other area of conflict that was mentioned by respondents was correlated to personal behavior and attitudes. Personality, which Bloisi et al. (2007, p. 172) define as the set of behaviors and traits that characterize individuals, is a very serious factor that cannot be changed, and the only way to deal with this problem should be seen in careful selection of tandems and partners.

To summarize it all, we want to state that, according to our findings, leadership has a significant effect on both productivity and efficiency. Leader's skills, personal traits, and leadership style, affect the whole personnel of the organization, because it is leader's responsibility to show people direction and tell them what should be done in order to increase the efficiency of the organizational performance (Mintzberg, 1980, p.

96). If a leader is strong and possessing the right skills, he/she will make everyone in the company striving for the goal that has been conducted (Northouse, 2013, p. 6).

4.4 Communication

The last area of our interest is a communication inside Laboratoriemedicin. Communication has been a hot topic during our interviews with personnel of organization. However, opinions ranged from positive to negative. The main categories and subcategories of communication are presented in Table 8 below:

Category	Subcategory
Communication in the organization	Environment, openness, cooperation
Types of communication	Vertical, horizontal, personal. impersonal
Problems with communication	Barriers, competition, resistance

Table 8. Categories of communication.

4.4.1 Communication in the organization

The first category of communication can be described as general communication in the organization. Here we have collected general information about communication in Laboratoriemedicin, and all respondent's comments that had something to do with communication in a broader perspective. This category includes three subcategories, namely environment, openness, and cooperation. These subcategories and their follow-up topics are presented in Table 9.

Subcategory	Nº of mentions	Topics
Environment	22	General, problems
Openness	19	Between personnel, context of senior management
Cooperation	29	Between departments, resistance to cooperation, between personnel, between managers

Table 9. Communication in the organization explained.

The first subcategory is named environment, which is a collective name for all the responses that contained references about working atmosphere, informal bonds, and personal feelings. 19 out of 22 mentions were positive. People said that it was pleasant to work at Laboratoriemedicin. Many of the respondents used word 'informal' while describing environment. Moreover, people were saying that it is very easy and friendly; there is a good and pleasant atmosphere. In general, respondents liked coming to work and spending time there. However, some mentions contained information about problems that exist in this area. Problems that were detected mostly had something to do with different personalities or different opinions of people working together. Another issue that was creating problems can be denoted as fluctuating workload. According to some respondents, if employees have too little to do they will start spending time quarrelling and picking on each other. However, too much of a workload was not good either. Some respondents stated that if people have too much to do they will hate coming to work. Additionally, people were saying that environment is something to work on.

The second subcategory here is openness. We decided to separate openness in particular from environment in general because it was something that people pointed out repeatedly. When using this word, people were mostly speaking about open flow of information inside Laboratoriemedicin. According to the respondents, the climate is very open, people can express their opinion, are open to new knowledge, and are very easy to get in touch with. One respondent pointed out that openness is a policy for Laboratoriemedicin, where nothing is hidden, and all mistakes are being solved openly and as fast as possible. Finally, some mentions concerned senior management. According to the respondents, senior managers are very easy to communicate with, open to new ideas and constructive critique.

The last subcategory is cooperation. It was used both on the bigger scale, e.g. when people were talking about cooperation between departments, and on the smaller scale, e.g. when people were talking about cooperation and help between employees and managers. The last group, cooperation between employees, consists of seven mentions, and four of them concern cooperation between MCs and ACs. Taking it back to dual leadership, people stated that problems were arising when there was no collaboration between partners. Overall, cooperation between employees was estimated as good.

However, the first group, i.e. departmental cooperation, is the biggest one; it represents 76% of comments on this subject. 9 out of 22 mentions about departmental cooperation stated that there should be more of it; another six mentions stated that there was a good cooperation already. However, seven mentions were negative: two answers contained a message saying that cooperation does not work, and five more stated that there is no need for cooperation, which can be understood as a resistance.

4.4.2 Types of communication

The second category of communication is types of communication. We used this collective word to describe vertical and horizontal communication, and also the channels that are being used, i.e. personal or impersonal communication. These four groups have become subcategories for given category. They are explained in Table 10.

Subcategory	№ of mentions	Topics
Vertical	19	Towards subordinates, towards managers, towards senior management
Horizontal	14	Between managers, problems
Personal	34	With senior management, with subordinates, with managers, general, problem solving
Impersonal	16	With senior management, with managers, general

Table 10. Types of communication explained.

The first subcategory of types of communication is vertical communication, i.e. communication between different levels of organization. All the mentions bore positive meaning when were used to denote communication with senior management. Though some respondents stated that there was enough of this communication, and some wanted to have more of it, they all agreed that it was good and working well. When this term was used to show communication from managers towards subordinates, five out of

six people said that it was working well. One respondent, however, said that there is no possibility to communicate with subordinates as much as needed. When referring to communication with middle-level managers, six out of seven comments were positive, and one respondent stated that there should be more of this type of communication.

Horizontal communication was used mainly to describe communication between managers of the middle level. 6 out of 14 comments were positive, and eight were negative. Many respondents said that there are not enough MC meetings, i.e. meetings where medical chiefs could talk between each other and discuss problems.

The next category is related to channels of communication, and is denoted as personal communication; in other words, meetings face-to-face. This type of communication has been named as best and easiest. When it was used to show communication between employees and managers, it was mostly applied to situations of problem solving. When talking about communication with senior managers, people were saying that it is the easiest way; senior manager could easily pay a spontaneous visit and just stop by and talk things over. It was also denoted as the easiest form of communication with middle level managers. It was used daily, being very easy and informal. Overall, personal communication was greatly preferred over impersonal channels.

Impersonal communication was also mentioned by respondents, but not to the same extent. Generally speaking, it was used to communicate unimportant message, reach the person who was known to be busy, or book a time for a personal meeting. Six comments concerned contacting senior management, and they were very positive. Senior managers were said to be very responsive and easy to reach. It was also used by middle level managers, and all five comments were positive. Respondents used such words as ‘quick’, ‘easy’, ‘allowing to look up the history’ when they were describing advantages of impersonal channels. However, there were four negative comments saying that it is not that convenient, does not bear the full information, and is making agreement-reaching process harder.

4.4.3 Problems with communication

The last communication category which was encountered during interviews with the personnel of Laboratoriemedicin concerns problems with communication. It includes three subcategories, namely competition, resistance, and barriers to communication. These subcategories and the topics that were being discussed are presented in Table 11.

Subcategory	Nº of mentions	Topics
Competition	14	General, equality, self-concern
Resistance	23	Fear, insubordination, adaption
Barriers to communication	6	Misunderstanding, personal issues, predetermined mindset

Table 11. Problems with communication explained.

The first subcategory here is named competition, and it refers to competition between departments. Eight out of ten respondents agreed that there is some competition going on between different departments. Two comments contained information about departments caring about their inner situation and processes much more than they cared

about Laboratoriemedicin as one. Two other comments pushed this message further on, stating that departments cannot see each other as equals. Respondents were also saying that they need to fight for their needs. However, according to interviewees, the situation has been improved after creation of Laboratoriemedicin, because before ‘people were just guiding their territories’.

The second subcategory, resistance, is directed towards personal behavior of individuals rather than departments. Resistance, or unwillingness to adapt and act as directed, has been mentioned in relation to three major areas. The first area is a fear; it has been named 7 out of 23 times. According to respondents, people were afraid to learn, afraid to lose their position, power, or influence, and therefore they were reluctant to act in a new or different way. The second area is denoted as insubordination, and it means that people were resisting from sheer desire to do it their own way. One of the respondents mentioned that employees could test consistency of leadership, asking MCs and ACs separately in a hope to get different answers. The last and the biggest area is adaption. 10 out of 23 mentions concern reluctance to adapt to the changes that have already happened. In other words, it refers to unwillingness to adapt to new rules that were imposed.

The last subcategory here refers to barriers to communication. There have been three mainly named areas, equal in size. Firstly, people talked about misunderstanding; here people were talking about different points of view and inability to send and receive correct message. Secondly, respondents were saying that personal relationships and personality traits were affecting communication and causing distortions and problems along the line. Finally, interviewees mentioned predetermined mindset, or close-mindedness. This phenomenon can be explained by former problems that changed individual opinion once and for all.

4.4.4 Analysis of communication

It will be appropriate to start analysis of communication in Laboratoriemedicin with estimation of overall situation in this field. The fact that people were highly satisfied with working environment can be seen as a positive sign. They used such words as ‘informal’, ‘friendly’, ‘easy’ while describing the relationship inside the organization. Moreover, they stated that they can speak freely and express their opinion without a fear of unpleasant consequences. Even despite the cultural findings, where respondents suggest that there is inequality between doctors and BMAs, the overall picture is positive. Openness, which was mentioned in many contexts, is proving the point that Laboratoriemedicin seems like a pleasant and open place.

This is very important, in fact. As Leavitt (1964, p. 359) says, people are affected by communication and environment inside the organization, and clear cut between ‘work’ and ‘play’ is not possible. In other words, people cannot just forget their personal issues and stop caring about problems when they start working. Thus, the fact that Laboratoriemedicin has a pleasant working environment with open communication means that people will more likely do their job in a better way and be more productive altogether. However, it has not always been like that. Six out of ten respondents mentioned that situation just got better in past years.

Moreover, it shows that there is sufficiently working two-way communication on each level of the organization, which Leavitt (1964, p. 145) names to be one of the most important characteristics. In other words, open and friendly environment where people can express their thoughts, get support and the help needed can be seen as a collateral sign of good upwards and downwards communication with and towards the leaders (Bloisi et al., 2007, p. 363). Comments on this matter were divided almost equally amongst communication with subordinates, communication with middle level managers, and communication with senior managers; this is direct evidence that both upward and downward communication exist in the company. The fact that 17 out of 19 comments were positive shows that these types of communication do not only exist, but also function well.

Horizontal communication is also important for the organization, for it can often cut across departments and provide support, coordination, and cooperation more efficiently than vertical communication (Bloisi et al., 2007, p. 363). This type of communication was cross-referred to in environment, peer cooperation, and support subcategories, where people admitted that they got a lot of support and friendly connection from their peers. As it has been discussed in matching subcategory, horizontal communication mostly referred to middle level managers. However, only 6 out of 14 comments on this matter were positive; other eight comments stated that there should be more of horizontal communication, especially for medical chiefs.

As stated above, horizontal communication often offers a short information exchange channels between different departments. This matter can be easily connected to cooperation between departments. The fact that only six comments bore a positive meaning means that there are areas of possible improvement. Expressed desire to have more of this cooperation and also negative statements that it did not work at all can be connected to lack of horizontal communication. The fact that five mentions stated that there is no need for cooperation can indicate problems in conceptual skills, i.e. ability to see the whole picture. The lack of MCs meetings that was mentioned on nine occasions can be a reason for inability to see the importance of horizontal communication.

Problems within horizontal communication mentioned by personnel can be partly explained by competition, which exist in the organization, and also culture, which is separate for each department. The fact that different departments have very different way of working, performing their daily routine tasks, and dealing with workload goes in hand with Brown and Duguid's (2001, p. 204) explanation of practice-based culture, which is quite unique for every workplace. This, in our opinion, can be seen as a trigger for estrangement that we have witnessed in the organization, and also for inability to see each other as equals, doing equally important job.

Moreover, competition was partially explained by Leavitt (1964). In his book he stated that desire to get noticed by top of the organization can encourage people to climb and try to get bigger share of attention (Leavitt, 1964, p. 361). Moreover, the fact that Laboratoriemedicin is a part of VLL means that they get their budgeting from this bigger organization. This, according to our respondents, in turn can mean that everyone tries to prove that his/her work is so much more important than anything else in order to get bigger share of investment money.

Other hindrances to communication and cooperation can be seen in resistance, namely the fear of change, insubordination, and inability to adapt. This type of resistance is often seen as a negative thing that should be eradicated; however, there might be reasons behind it that will show the root of the problem (Senior & Swailes, 2009, p. 263). Maybe, the fact that people do not want to cooperate even with minor changes of their routine and workload shows that the vision or goal is not communicated enough; then, it is managers' responsibility to change this matter (Kotter, 1995, p. 63).

However, under communicated goals do not always explain resistance and problems. Sometimes the cause of the troubles lies within personality issues, which in turn create barriers to successful communication. Very often it is a frame of reference; Bloisi et al. (2007, p. 366) explain it as past experience based mindset, which determines how much of the information is perceived. Additionally, distortion of communication process can be caused by selective listening, i.e. behavior of blocking out information or distorting it so that it matches predetermined mindset (Bloisi et al., 2007, p. 367). Similar behavior can be demonstrated by sender, when only certain parts of important message are being conveyed; this phenomenon is known as filtering (Bloisi et al., 2007, p. 368).

How you send the message is as important as what this message contains, and impact of the message is influenced by channels used (Bloisi et al., 2007, p. 369). Therefore, we decided to study personal and impersonal communication. In other words, we discuss face-to-face meetings and electronic ways of interacting with other people. During the interviews with personnel of Laboratoriemedicin we have found out that personal communication is prevailing in the organization. There are 34 mentions of face-to-face meetings, and only 16 mentions of electronic ways. Personal communication was used to deal with problems and sensitive issues; this corresponds to Kupritz and Cowell's (2011, p. 71) suggestions about usage of personal communication. Likewise, consistent with Kupritz and Cowell's findings (2011, p. 73), electronic ways are mostly used for discussing not important and time-sensitive issues.

However, in Laboratoriemedicin personal communication is used for dealing with every issue. In some cases it is logical, for example when daily routine is being discussed between AC and MC of one department. However, in some cases it is more overstretched than it should be. For instance, senior managers of big organization might not have time to meet everyone in person (Katz, 1955, p. 37).

Talking about the time, we should look back and take one issue that was mentioned before in relation to personal development and workload. People were pointing out that there is no time to do as much as they want; that they have a lot of opportunity but not enough time; and that daily processes are taking big share of their attention. Every respondent said that there are many meetings they have to attend: both employees and managers had same statement. However, four out of ten respondents felt that they have too much of meetings, and many of them were unnecessary. One respondent stated that if he went to every meeting he was supposed to he would spend 70% of his time doing that. Interesting to notice, these meetings that people talked about were all of a vertical nature, and very often including senior manager. However, lack of horizontal communication was expressed.

Thus, Laboratoriemedicin has exceeding amount of vertical meetings and not enough of impersonal communication, which is tightly connected to the workload and personal

development discussed below. In our opinion, these two matters have tremendous effect on both productivity and efficiency of the organization. Moreover, if tackled in the right way, improvement of these problems can be beneficial for company and for personnel working there.

Our findings suggest that communication has significant impact on efficiency and productivity of the organization, especially in the situation like the current one, when there are areas which do not function well. According to our analysis, communication affects the working environment and culture, which in turn determines whether employees are happy and willing to catalyze improvement (Chatman & Cha, 2003, p. 21). Moreover, efficiency of communication decides how the instructions are being passed along the chain of command (Bloisi et al., 2007, p. 362), thus defining the speed of daily processes and necessary changes.

4.5 Additional findings

We decided to analyze the current situation in the organization in order to gain more knowledge and profound picture of the events taking place. Furthermore our in depth interviews contributed with additional findings that we divided into two main parts: development issues and personal issues. To get a better overview and to facilitate analysis, we divided the two categories into nine different subcategories presented in the Table 12 below. Findings from these subcategories will first be presented individually and then followed by analysis of additional findings.

Category	Subcategory
Development Issues	Expansion, personnel issues, workload, changes in structure, cooperation with university, support services
Personal issues	Satisfaction, motivation, personal development

Table 12. Additional findings.

4.5.1 Development issues

This part will focus on the development issues that were discussed during our interviews with the personnel. According to the respondents, increasing development possibilities and increasing demand from customer has forced Laboratoriemedicin to grow as an organization. This has resulted in various issues throughout the organization. We identified six subcategories: expansion, personnel issues, workload, changes in structure, cooperation with university, and support services, that are pendant for Laboratoriemedicin as a whole and in each individual department. The respondents discussed various topics and the ones presented in the table 13 below were the central areas connected to each subcategory.

Subcategory	Nº of mentions	Topics
Expansion	15	Rapid development, increased demand from customers, too little time
Personnel Issues	24	Not enough personnel, change in structure, upcoming demographic problem
Workload	30	Fluctuating workload, specialized personnel
Changes in structure	13	Wanted change, previous change, mechanization
Cooperation with university	19	Focus clinical care, shared experience
Support Services	16	Human resource management, IT-support, economic-support

Table 13. Development issues explained.

During our interviews, the subject of expansion was frequently discussed and it was mostly mentioned in the subject of the developing field of clinicallab. One respondent said that there are so much more analysis they can do now with one sample compared to previously. There is a pressure from both VLL and the customers to develop as an organization and expand in order to deal with the increasing demand. 9 out of 15 mentions were concerning the developing field of laboratory medicine. Some departments had more urgent need to expand, which had resulted in forced expansion. However, this was a pending matter throughout the whole organization with various urgencies in the different departments. The respondents felt that there was a combination of issues that made expansions difficult, e.g. time, personnel, and resources issues. 6 out of 15 comments addressed the increasing workload due to the rising demand from the customers. The respondents connected this issue mostly to the personnel situation, even though many of the departments could expand there were no personnel to hire in order to do so which resulted in high workload for the existing employees.

When addressing the personnel issue, most of the respondents stressed out that there was a deficiency in their current personnel situation. 16 out of 24 mentions about the personnel were regarding Laboratoriemedicin being underemployed. The difficulty to find personnel was connected to the small amount of people that are educated enough to perform the necessary task. There is often a need to educate new staff at site, which means long processing time before they can contribute to the daily operations. Furthermore, many of the existing personnel are close to retirement and currently there are none that can replace them. This deficiency and upcoming problem of the personnel situation are resulting in dissatisfaction among the employees. One respondent said that Laboratoriemedicinis too vulnerable due to the personnel situation. Another subject that was mentioned in consideration to the personnel situation was that there is a competition between the departments about who can hire new employees: 2 out of 24 mentioned this as a problem.

The workload was described by the respondents as heavy. 22 out of 30 mentions were connected to this, and 1 out of 30 was neutral in attitude towards the amount of workload. Some departments had seasonal changes, which resulted in uneven workload. These fluctuations created frustration among the employee and affected the environment

within the department in a negative way, especially during the low seasons. Furthermore, many respondents expressed the limitations the heavy workload created; for example, one respondent mentioned the time issue. There is no time for reflection and improvement of the current situation, and there is no time for other things than operational issues. Additionally, one respondent wants to have more time to be proactive and make strategic decisions to prevent problems from occurring.

Replies concerning the subcategory 'changes in structure' addressed previous changes and wished changes for the future of Laboratoriemedicin. 7 out of 13 mentions were directed at previously made structural changes in Laboratoriemedicin. Five of those seven were positive and expressed that there were changes towards the better. Furthermore, 3 out of 13 mentions concerned future and current changes aimed towards decreasing workload for the employees and increased efficiency. Some respondent welcomed changes, especially in areas which demanded monotonous movement.

There were mixed answers among the respondents concerning the questioned about changing Laboratoriemedicin structure to the same one adopted by the university. Three out of ten respondents were extremely against the idea. One respondent said that splitting the organization in two would be a catastrophe and it would eliminate all future possibilities for cooperation between the departments. The respondents who were against the idea expressed that Laboratoriemedicin should focus on hospital care first and research second. Five out of ten respondents were open-minded towards a similar structure as the university. One thought that it would mean shorter decision making chain and a shorter span of control for the managers. However, all of them with positive attitude had reservations about in which way the organization would be divided. Some of the positive respondents had other division that they thought would be more preferable than having the same structure as the university. Some of the positive responses stated that a similar structure as the university would increase cooperation with the university and thereby make sharing scientific experiences among each other easier. Two of the respondents was neutral about the question and had no opinion about the matter.

There were mixed responses about the existing support service within Laboratoriemedicin. Many respondents expressed a need for more extensive support services, in particular in the question of IT-support, where five out of six mentions were of a negative nature related to the lack of support and the need of more developed IT-system. One respondent voiced the desire to have the support staff working more closely to the different departments. On the other hand, one respondentsaid that people are not the same, so it is impossible to say that the whole service is bad. However, out of 16 comments about the support services only four were of a positive nature.

4.5.2 Personal issues

The other part of our additional findings, personal issues, was described by following subcategories: personal development, motivation, and satisfaction. Table 14 illustrates the topics discussed in each subcategory.

Subcategory	Nº of mentions	Topics
Personal development	13	Connected to workload, no time
Motivation	4	Rewards in turn of bonus and satisfaction
Satisfaction	18	Satisfaction and dissatisfaction was connected to all our subcategories

Table 14. Personal issues explained.

In the first subcategory, personal development, all the ten respondents expressed that they had space for personal development and that education was provided by request. However, half of the respondents stated that there was no time to get further education due to the heavy workload. One respondent said that it was a matter of prioritizing; now personnel of Laboratoriemedicin have no time for other things than operational issues. The positively related comments concerned respondents' personal development through their daily work.

We had no questions related to motivation; however, some of the responses we got during our in-depth interview were directly concerning the lacking intrinsic and extrinsic rewards. Bloisi et al. (2007, p. 196) describe motivation as a conscious decision to perform one or more tasks with greater effort compared to other tasks. Furthermore, Bloisi et al. (2007, p. 215) define extrinsic reward as a reward externally bestowed, for example promotion, bonus or praise from a supervisor. Meanwhile, an intrinsic reward is people's own personal feelings about how they perform a task (Bloisi et al., 2007, p. 215). The respondents expressed a lack of extrinsic rewards, but they also have an understanding of why it is not possible to receive them in form of financial value; however, people voiced a desire to receive them in form of praise from a superior instead. Furthermore, positive comments from the respondents expressed that new tasks were stimulating and rewarding.

There were 18 comments that concerned satisfaction. 14 of these comments were positive. All the satisfied comments concerned different areas within the organization; most of them were expressed in relation to workload. There were also mixed responses about personal development and personal feelings; all of them were of a positive nature. On the other hand, all comments about the personnel issue directly expressed that interviewees were dissatisfied with the current situation. The other areas, such as organizational culture, decision power, and workload, were both of a positive and negative nature.

4.5.3 Analysis of additional findings

When looking at our additional finding we detected two common denominators: development issues and personal issues. By further investigation these findings seem to be related to the lack of time. All the respondents seemed willing to expand and develop personally; however, all of them expressed that there was no time to do so. The workload and the lack of personnel forced them to priorities. There is a clear connection between these four different subcategories and also a fifth subcategory: satisfaction. Most of the participants stated that they were in general satisfied, except when it came to workload and personnel issue. However, these two problems are interconnected.

Solving these two big problems, the heavy workload and the lack of staff, would allow them to grow as an organization, develop personally, and increase satisfaction among the employees. Spector's (2002, p. 133) research shows that, for example, having insufficient resources at work or inadequate reward system can create stress. The participant's talked about incidents that can be interpreted as signs of stress. Therefore, we find it is important to counteract these problems.

Furthermore, our findings suggest that there is a need for more motivation. When investigating the respondent's answers, we have found that personnel have enough intrinsic rewards, but not enough extrinsic rewards. This issue can also be related to time issue. When the employees are under high pressure due to lack of personnel and heavy workload, it can be difficult to confirm those who are working properly. However, there is a need to find the right combination of intrinsic and extrinsic rewards. Amabile (1993, p. 185) states that undermotivated people can be a problem for an organizations, because they are likely to spend little effort on their work, produce poor quality, and leave the organization if the opportunity is given. There is no evidence supporting this in Laboratoriemedicin currently; however, there is a need to be aware and proactive to prevent the situation from occurring. Amabile (1993, pp. 186-187) argues that this is a task for the managers to carry through to ensure that the employees receive the right level of reward. Our findings suggest that this inability to motivate people in a proper way is due to lack of time for the managers.

According to the respondents, changing the structure to one more similar to the university might not be the most preferable change. Few said that they have regular contact with matching department at the university; most of respondents stated that it occurred seldom. There are difficulties connected with the implementation of such a structural change. For instance, currently there are departments that work close together, and if a structure that matches the university would be adopted, it would result in a split of those two departments. Such a split might not be in the best interest for the cooperation between these two departments. Furthermore, as it seems now that little contact with the university stated by the participants does not support such a structural change.

The support services were spoken about in negative terms by many of the respondents, and this could be a danger. Bloisi et al. (2007, p. 29) state that a human resource department should not only be involved with working conditions and wages, there is a need for them to be engaged and cooperate at all levels throughout the organization. Bloisi et al. (2007, p. 29) continue and express the significance of an engaging human resource department to ensure the satisfaction of the employees and the possibility for the organization to grow. This seems not to be the case currently. However, there were few respondent's that expressed positive opinions about the support services provided; therefore, we cannot conclude that they are not functioning without further research.

4.6 Revised theoretical model

This section represents new theoretical model which had emerged after analysis of the obtained data. We have found out that there are two factors influencing interconnection of structure, leadership, and communication, as well as their relationship with efficiency and performance. These factors are development issues and personal issues. This revised model can be seen in Figure 4 below.

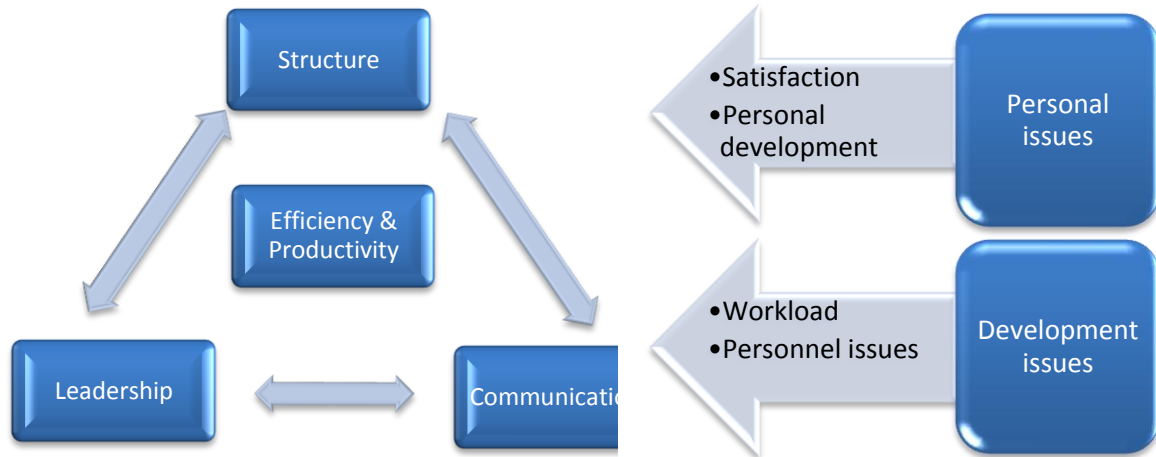


Figure 4. Revised theoretical model.

4.7 Summary of findings

In order to illustrate our findings, we present all subchapters, categories, and subcategories that we have talked about in this chapter in Table 15. We have also detected one subcategory that was mentioned more often than the others in the same category. Thus, the readers can see which areas were of the most importance.

Domain	Category	Subcategories	Most mentioned subcategory
<i>Structure</i>	Bureaucracy	Hierarchy, standardization, specialization, formalization	Hierarchy
<i>Structure</i>	Control	Decision power, centralization, decentralization	Decision power
<i>Leadership</i>	Leadership traits	Support, delegating, leadership quality	Leadership quality
<i>Leadership</i>	Leader's skills	Technical skills, human skills, conceptual skills, vision & goals	Vision & goals
<i>Leadership</i>	Dual leadership	Divided responsibility	Divided responsibility
<i>Communication</i>	Communication in organization	Environment, openness, cooperation,	Cooperation
<i>Communication</i>	Types of communication	Vertical, horizontal, personal, impersonal	Personal communication
<i>Communication</i>	Problems	Barriers, competition, resistance	Resistance

Table 15. Summary of the findings.

5. Conclusions and recommendations

This last chapter is going to summarize the analysis performed above, tying it together and answering the research question. Moreover, this chapter presents our recommendations to Laboratoriemedicin, truth criteria, and space for further research.

5.1. Conclusions

Our thesis has been made on commission by Laboratoriemedicin VLL, a public health-care organization. This organization has asked us to investigate their current situation and come up with possible solutions, which would help to increase productivity and efficiency. After preliminary interview with the senior manager, we have identified three areas which seemed to be not functioning quite well. These areas are organizational structure, leadership, and communication. Moreover, during the interviews with personnel of Laboratoriemedicin we have found additional issues, which were very important for productivity and efficiency of organization.

Structure, the first area discussed in this thesis, has significant impact on the way that the organization works. There are many types of different organizational structure, as we have explained in the theoretical chapter. The structure facilitates processes and to what extent they are performed efficiently. As stated by Leavitt (2005, p. 40), the hierarchical structure still is the most predominant in modern days organizations. Laboratoriemedicin has a hierarchical structure, which is characterized by different levels that have the shape of a pyramid. We came to the conclusion that this structure is a logical one for Laboratoriemedicin to adapt, and it is currently working. Some people were striving for more decentralization with the hope that it would entail more decision power. The relatively small organization as Laboratoriemedicin is not the most optimal to decentralize, and therefore we think that they should keep their current more centralized structure.

Leadership, the second area of interest, has shown itself to be just as important for productivity and efficiency of performance as structure. Manager who does not have the ability to lead other people, manager who does not acquire the role of a leader, will never manage to bring subordinates and organizational needs together in order to promote efficient operations (Mintzberg, 1980a, p. 96). As our analysis has shown, there is a need for the right combination of personality traits, appropriate skills, and style of leadership. Interestingly, this combination varies dependently on the position and level of management. Thereby, as many respondents have repeatedly pointed out, personal characteristics are as important as skills and abilities. Goals and visions were also very important to the personnel of Laboratoriemedicin VLL; and not only goals and vision themselves, but also senior management's and middle management's ability to work on achieving them (Leavitt, 2005, p. 153). This corresponds to Druker's (1988, p. 50) opinion that creating a clear vision is extremely important for highly specialized organizations. In our opinion, quality of leadership can be improved by managerial trainings and clearly communicated goals coming from the senior management.

This brings us to communication, our third area of interest. *Communication* has proved to be extremely important for the productivity and efficiency of Laboratoriemedicin. According to Bloisi et al. (2007, p. 355), functioning communication is essential for achieving organizational effectiveness, and communication breakdowns cause numerous organizational problems from failure to carry out simple commands to low

productivity and quality of operations. As can be seen from our analysis, there is an established communication network in the organization. However, we have spotted some areas of communication that are not working the way they should; these areas are horizontal communication and impersonal channels. In our opinion, these problematic areas are hindering productivity and efficiency of the organization.

It is very important to say that structure, leadership, and communication in Laboratoriemedicin VLL are much interconnected. One area is influencing and shaping another, and changes in any one of them will cause the spillover effect on the others. This is very consistent with Leavitt's (1964, p. 325) statement that structure, people, and technology are the main and the most powerful areas of organizational manipulation; tampering with any of these variables is very likely to cause significant effect on the other two. In our case of Laboratoriemedicin, we have only looked at two of aforementioned variables: structure and people, because leadership and communication should be both seen as human variable. However, even though we have only looked at these two factors, we still can see how tightly they intersect with each other.

For example, the structure of the organization defines who a manager is likely to contact in a certain situation. Leadership, in turn, can change the structure completely, and can also determine the degree of communication, both vertical and horizontal. Communication acts as a glue - it determines how the decision that are made by structural leadership are going to be implemented, and whether the organization is actually moving towards its goal. The change of any component in one area will bring changes in the other two. For instance, increased decentralization can be followed by adjustment in leadership style, which in turn can bring changes and difficulties in horizontal communication between the decentralized units.

To sum it all up, structure, leadership, and communication influence efficiency and productivity of Laboratoriemedicin VLL. Structure defines how productive the operational processes are, how efficiently they are performed. Leadership, and leaders' skills and abilities, in turn, affect the whole personnel and the way they strive for achieving this goal of increased productivity. At last, communication affects how fast things are getting done, how happy and willing personnel are, and how much they will resist/catalyze improvement.

However, there are other issues that affect every of aforementioned areas and thereby influence performance. The first of these issues is *development of the organization*, and exponential growth that it experiences. Size is affecting structure, making it become more and more hierarchical (Leavitt, 2005, p. 45). Size also influences human variable, making communication to become more complex and leaders to get farther away from their subordinates (Leavitt, 1964, pp. 374-375). Thus, people working at Laboratoriemedicin should learn to deal with it, changing their organizational elements proportionally to the growth, and having someone to coordinate these changes.

Moreover, there are *personal issues*, which to a large extent imply a lack of time. Respondents were repeatedly mentioning that they lacked time to develop, to work on interesting projects, to educate themselves. This problem was one of the most discussed ones; lack of time and overload of work were causing dissatisfaction, resistance, and negative feelings. However, we have found another explanation for the lack of time.

Amount of personal vertical communication in terms of meetings exceeds necessary level, thereby taking time from senior managers, middle managers, and employees.

Thus, we have found that the areas hindering productivity and efficiency increase are actually concentrated inside Leavitt's (1964, p. 317) people variable. Existing structure has proved itself to be the most logical one, for that Leavitt (2005, p. 40) states that hierarchical design is the only one helping big specialized organizations to get their difficult work done in an efficient way. However, both leadership and communication proved to not function well enough; leadership skills, horizontal communication, and impersonal communication in particular. In our opinion, dealing with these problems will help Laboratoriemedicin to reach increased efficiency and productivity.

5.2 Recommendations for Laboratoriemedicin

In our opinion, section 5.1 fulfils our academic purpose, showing how structure, leadership and communication can affect organization's performance in terms of efficiency and productivity. But there is also a practical purpose of our research, which is determined by understanding current situation in Laboratoriemedicin, spotting problematic areas, and coming up with suggestions, which can help the organization to reach their goal of increased productivity and efficiency. Thereby, we want to fulfill our practical purpose by presenting recommendations that we have derived from analysis and which in our opinion will help Laboratoriemedicin to reach their goal. Recommendations are going to be presented in form of the list below:

1. We recommend leaving *the structure of the organization as it is*, neither decentralizing nor increasing amount of organizational level or span of control. Instead, we recommend focusing on solving problems in areas of leadership and communication.
2. If possible, we suggest striving *for more standardization*, i.e. using machines and unified procedures to decrease the workload and to make the work more pleasant.
3. In our opinion, Laboratoriemedicin could benefit from *increased degree of cooperation between the five major departments*. Moreover, analysis of the working situation is needed: according to our interviewees, some departments could share equipment and/or personnel if location and specialization of employees allowed doing so.
4. Support services and staff that are supposed to help the five main departments to do their work should be more developed. According to our investigation, people working there could use some directing, so that they would know what they should do and where they are needed the most. Moreover, *thesupport services can be made more available*; for example, clearly defined open hours or established time during which the request will be addressed via e-mail.
5. In addition, *support services can offer in-house trainings* for employees who have some responsibilities in area of their concern. For example, IT department could educate people working with IT systems; and economics department could give sessions for managers.
6. Another suggestion concerns *managerial trainings*. Taking a leadership or management course together could help managers to get more educated in this area, and would also make them feel more like a team.

7. *Informal socializing of middle managers* would also help to improve the atmosphere and increase cooperation. This way, personal issues that hinder productive operation of departments can be spotted and hopefully eliminated.
8. We also suggest creating a clear *division of responsibilities for MCs and ACs*. This division can be negotiated by individual pairs as far as every party knows what it is responsible for and is satisfied with this division.
9. Furthermore, we suggest a *new approach for annual goals-and-vision-creating meeting*. We believe that middle level managers should be divided into two equal groups consisting of equal amount of ACs and MCs in such a way that MC and AC from one department are in different groups. Dividing managers in this way and asking them to come up with new ideas and solutions for problems, senior management will ensure that every manager is taken out of the comfort zone and given a chance to express his/her own opinion.
10. Working on formulating and communicating a *clear and transparent vision* should become an important task for both middle and senior management, so that the organization can work as one to achieve the vision.
11. Additionally, we believe that *amount of horizontal communication should be increased*, so that middle level managers will learn to solve their problems by themselves and the senior management will lessen its workload. As a result, amount of personal vertical communication can be decreased.
12. Every meeting that takes place in the organization should have a *clear agenda*. Everyone participating in the meeting should know what the meeting is about and come prepared.
13. Finally, we recommend using *less of personal communication and more of electronic* one where it is possible, i.e. in small and not urgent issues. This is crucial for utilizing the time and resources in a more effective way.

5.3 Space for further research

This section will give recommendations about further research subjects connected to our thesis. Laboratoriemedicin is not a huge organization; however, they have implemented an interesting leadership concept, dual leadership. We think that this dual concept needs to be investigated further. Furthermore, many of our participants stated that having a senior manager with technical skills is vital for the organization. This goes against theories within this area, which state that specialized employees should be at the bottom of the pyramid (Katz, 1955, pp. 34-36). Further analysis about this area could be a fascinating research subject.

Another way to enrich an investigation of this area can be seen in studying every level of organization, since we have not interviewed Section Chiefs. Thus, getting a bigger sample which includes every level can help to open the full picture. Moreover, it would be interesting to research the whole organization VLL, investigate how a large public organization affects productivity and efficiency for the local hospitals. Another area that would be interesting to investigate further is clinical laboratories across the country of Sweden; comparison could also be made. One interesting area that arose is whether to have units collected around equipment or knowledge. As the development proceeds, the need for more expensive equipment is increasing. Thus, the question of defining the most effective way to solve this problem demands more research.

A subject that never gets old is how organizational culture affects productivity and efficiency. We suggest that the culture concept is investigated further, especially in organizations that are using dual leadership or operating in a highly specialized environment.

5.4 Truth criteria

The purpose of this section is to describe the credibility, transferability, dependability, and confirmability of our research. When Bryman and Bell (2011, p. 395) talk about the trustworthiness of a qualitative research, they state that it is important to determine the internal validity through the credibility criteria, external validity through the transferability criteria, dependability which parallels reliability and finally confirmability which parallels objectivity of the research.

To meet the first criterion, *credibility*, we have recorded and transcribed all the interviews with the participants, thus ensuring high standard of our research. Furthermore, we have conducted all interviews except one in English, so that nothing would get lost in translation; however, the one interview conducted in Swedish was carefully translated while transcribing. Bryman and Bell (2011, p. 396) state that the credibility criteria ensure that the researchers have understood the social world and carried it out in good practice. We believe that we have managed to conduct our research according to this criterion.

Transferability refers to what extent the findings can be used to fit other contexts except for the small area that the research focuses on (Bryman & Bell, 2011, p. 398). Our findings cannot be generalized too much because it is a case study. Our intentions had never been to generalize our findings.

The third criterion, *dependability*, refers to what extent the researcher has minded changes when conducting the research, and whether they have audited the research (Bryman & Bell, 2011, p. 398). We have been aware of changes that could have occurred, and treated them accordingly. When it comes to auditing both of the researchers have proofread our work. Moreover, we have asked the third party to proofread it as well.

Confirmability refers to the researchers being aware of that they cannot be completely objective; the research should be conducted in good faith, and the researcher should not add any personal values (Bryman & Bell, 2011, p. 398). Because we have been two researchers working together, we had an ability to check each other's work. That fact has helped us to ensure all the four criteria, and this one in particular.

Lastly, the extended criterion of *authenticity* refers to different subcategories that will ensure the legitimacy of the research (Bryman & Bell, 2011, pp. 398-399). Our sample represented people from different department at Laboratoriemedicin, they are all working together to different extent, and they all have different specialties within the field of clinical laboratory. By having the people from different departments and different positions, we have ensured that the research can be viewed as fair and legitimate.

Reference list

- Amabile, T.M. (1993). Motivational synergy: Toward new conceptualizations of intrinsic and extrinsic motivation in the workplace. *Human Resource Management Review*, 3 (3), 185-202.
- Biloslavo, R., Bagnoli, C., & Figelj, R.R. (2012). Managing dualities for efficiency and effectiveness of organizations. *Industrial Management & Data Systems*, 113 (3), 423-442.
- Blanchard, K. (2008). Situational Leadership: Adapt your style to their development level. *Leadership Excellence*, 25 (5), 19-19.
- Bloisi, W., Cook, C.W., & Hunsaker, P.L. (2007). *Management & organizational Behaviour*. 2nd edition. Maidenhead: McGraw-Hill
- Boehm, E. (2012). Managers@Work: Improving Efficiency and Effectiveness in an Automotive R&D Organization: How a Traditional R&D Division Reshaped Itself Into a High-Performance Organization. *Research-Technology Management*, 55 (2), 18-25.
- Brown, J.S., & Duguid, P. (2001). Knowledge and Organization: A Social-Practice Perspective. *Organizational Science*, 12 (2), 198-213.
- Bryman, A., & Bell, E. (2011). *Business Research Methods*. 3rd edition. Oxford: Oxford University Press.
- Chatman, J.A., & Eunyoung Cha, S. (2003). Leading by Leveraging Culture. *California Management Review*, 45 (1), 20-33.
- Connor, P.E. (1992). Decision-making participation patterns: the role of organizational context. *Academy of Management Journal*, 35 (1), 218-231.
- Daniels, J.D., Radebaugh, L.H., & Sullivan, D.P. (2011). *International Business environments and operations*. 13th edition. Harlow: Pearson education limited.
- Drucker, P.F. (1988). The coming of the new organization. *Harvard Business Review*, 66 (1), 45-53.
- Ghiselli, E.E., & Siegel, J.P. (1972). Leadership and Managerial Success in Tall and Flat Organization Structures. *Personnel Psychology*, 25 (4), 617-624.
- Glisson, C.A., & Martin, P.Y. (1980). Productivity and Efficiency in Human Service Organizations as Related to Structure, Size, and Age. *Academy of Management Journal* 23 (1), 21-37.
- Henricks, M. (2005). Falling Flat?. *Entrepreneur*, 33 (1), 69-70.
- Hofstede, G. (1981). Culture and organization. *International Studies of Management & Organization*, 10 (4), 15-41.

- Iveroth, E. (2012). Leading global IT-enabled change across cultures. *European Management Journal*, 30, 340-351.
- Katz, R.L. (1955). Skills of an effective administrator. *Harvard Business Review*, 33 (1), 33-42.
- Kotter, J.P. (1990a). *A force for change: How leadership differs from management*. New York: The Free Press.
- Kotter, J.P. (1990b). What leaders really do. *Harvard Business Review*, 68 (3), 103-111.
- Kotter, J.P. (1995). Leading Change: Why Transformation Efforts Fail. *Harvard Business Review*, 73(2), 59-67.
- Kupritz, V.W., & Cowell, E. (2011). Productive Management Communication: Online and Face-to-Face. *Journal of Business Communication*, 48 (1), 54-82.
- Leavitt, H.J. (1964). *Managerial Psychology*. 2nd edition. Toronto: The University of Toronto Press.
- Leavitt, H.J. (2003). Why Hierarchies Thrive. *Harvard Business Review*, 81 (3), 96-102.
- Leavitt, H.J. (2005). *Top down: Why hierarchies are here to stay and how to manage them more effectively*. 1st edition. Boston: Harvard Business School Press
- Miles, R.E., Snow, C.C., Meyer, A.D., & Coleman, H.J.JR. (1978). Organizational Strategy, Structure, and Process. *Academy of Management Review*, 3 (3), 546-562.
- Miles, M.B., & Huberman, A.M. (1994). *Qualitative data analysis: an expanded sourcebook*. 2nd edition. Thousand Oaks: SAGE Publications, Inc.
- Mintzberg, H. (1980a). *The nature of managerial work*. Englewood Cliffs: Prentice-Hall, Inc.
- Mintzberg, H. (1980b). Structures in 5's: a synthesis of the research on organization design. *Management science*, 26 (3), 322-341.
- Mintzberg, H. (2009). *Managing*. San Francisco: Berrett-Koehler Publishers, Inc.
- Northouse, P.G. (2013). *Leadership: Theory and Practice*. 6th edition. Thousand Oaks: SAGE Publications, Inc.
- Ostroff, C., & Schmitt, N. (1993). Configurations of organizational effectiveness and efficiency. *Academy of Management*, 36 (6), 1345-1361.
- Pugh, D.S., Hickson, D.J., Hinings, C.R., & Turner, C. (1969). Dimensions of Organizational Structure. *Administrative Science Quarterly*, 13 (1), 65-105.

Reichertz, J. (2010). Abduction: The Logic of Discovery of Grounded Theory. *Forum Qualitative Sozialforschung / Forum: Qualitative Social Research*, 11(1), 1-16.

Santra, T., & Giri, V. (2008). Effect of Organizational Structure on Organizational Effectiveness through Face-to-Face Communication. *The Icfai Journal of Organizational Behavior*, 7 (2), 28-38.

Saunders, M., Lewis, P., & Thornhill, A. (2009). *Research methods for business students*. 5th edition. Harlow: Financial Times Prentice Hall.

Senior, B., & Swailes, S. (2010). *Organizational Change*. 4th edition. Harlow: Prentice Hall.

Spector, P.E., (2002). Employee control and occupational stress. *Current Directions in Psychological Science*, 11(4), 133-136.

Van de Ven, A.H., & Poole, M.S. (2005). Alternative Approaches for Studying Organizational Change. *Organizational Studies Journal*, 26 (9), 1377-1404.

Vidyarthi, P.R., Erdogan, B., Anand, S., Liden, R C., & Chaudhry, A. (2014). One Member, Two Leaders: Extending Leader–Member Exchange Theory to a Dual Leadership Context. *Journal of Applied Psychology*, 99(3), 468-483.

Wang, D., Waldman, D.A., & Zhang, Z. (2013). A Meta-Analysis of Shared Leadership and Team Effectiveness. *Journal of Applied Psychology*, 99 (2), 181–198.

Appendix A

Interview guide

1. Please tell us a little bit about yourself and your position in the organization?
 - a. How long have you been working here?
 - b. What are you responsible for?
2. Are you satisfied with your current work situation?
 - a. Why do feel so?
 - b. Do you feel that you have space for growth and improvement?
 - c. In which way, please give examples.
3. Do you see any areas within the organization that are not working well?
 - a. Are there areas that you would like to change and why?
 - b. Do you have any suggestions for how to improve these areas?
4. To what extend can you make your own decision about your department?
5. What do you think about the workload?
6. Do you get the support needed as a manager?
7. What do you think about the existing concept of divided leadership?
8. What do you think is the vision for Laboratoriemedicin VLL?
 - a. What do you think is your department's vision?
9. How do you perceive communication within the organization?
 - a. How do you perceive communication with senior manager?
 - b. How do you perceive communication with managers at the same level?
10. In which channels and how often do you communicate with senior management? (face-to-face or via electronic methods)?
 - a. In which channels and how often do you communicate with managers at the same level?
 - b. In which channels and how often do you communicate with your subordinates?
11. How do you deal with problems with coworkers and subordinates?
12. How often do you communicate with matching department from the university?
 - a. What do you think about having same structure as university does?
13. Is there something else that you want to add?

Appendix B

List of codes

No	Name	Code
	Additional findings	
1	Staff issues	ST-P-STFI
2	Personal development	ST-P-DEV
3	Culture	CM-CUL
4	Workload	ST-P-WRL
5	Expansion	ST-P-EXP
6	Satisfaction	ST-P-SAT
7	Motivation	ST-P-MOT
8	Changes in climate	CM-CH/CLIM
9	Support Services	LS-SUPP-S
	Structure	
10	Hierarchy	ST-BR-HR
11	Specialized	ST-BR-SPEC
12	Formalization	ST-BR-FORM
13	Decision making	ST-BR-DECIS
14	Changes in structure	ST-BR-CH/STR
15	Centralization	ST-BR-CENTR
16	Decentralization	ST-BR-DECENT
17	Standardization	ST-BR-STAND

No	Name	Code
	Leadership	
18	Support	LS-SUPP-G
19	Quality	LS-QUA
20	Delegating	LS-DEL
21	Human skills	LS-HUM-SK
22	Professional skills	LS-PR-SK
23	Conceptual skills	LS-CO-SK
24	Divided responsibilities	LS-DIV-RESP
25	Goals	ST-P-GOAL
	Communication	
26	Environment	CM-EN
27	Openness	CM-OP
28	Impersonal (electronics)	CM-IP-E
29	Personal (Face-to-face)	CM-P-FF
30	Cooperation	CM-COOP
31	Competition	CM-COMP
32	Resistance	ST-P-RES
33	Horizontal	CM-HOR
34	Vertical	CM-VERT
35	Barriers	CM-BAR
36	Coop with university	CM-COOP-U



Umeå School of Business and Economics

Umeå University
SE-901 87 Umeå, Sweden
www.usbe.umu.se