

Structures Influencing the Use of Creativity

A STUDY EXAMINING THE USE OF CREATIVITY IN COMPANIES WITH ROUTINE-BASED AND AD HOC WORK STRUCTURES

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ABSTRACT

The focus of research has experienced a shift from harder aspects within management to softer ones. More and more focus is put on human resources, creativity and their effect on each other. In this study, a qualitative study has been used to understand how routine-based work structures affect an individual's use of creativity when solving a problem. Based on ten in-depth interviews, this thesis answers how routine-based work structures affect the individual use of creativity compared to a more ad hoc work structure with the help of a more qualitative study. It was found that the structure of work affects the ability to be creative, which is also in line with previous research (Ohly et al., 2006). There are enabling factors and hindering factors that the interviewees put focus on in the interviews including stimulation, values, stress, being open for critique and leading with their personality. The structure created these factors, which in turn influenced the components of creativity directly.

KEY WORDS: Creativity, Work Structure, Leadership

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PREFACE

We would like to thank you, Svante Schriber, for your time and effort. We are especially grateful for your ability to provide us with a logical and academic, yet humoristic perspective.

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INTRODUCTION AND AIM

PROBLEM-SOLVING AND CREATIVITY

Imagine a problematic situation where you want to convince people to carry out a specific action. To encourage someone to do so, you can take on the role of a leader and try to motivate or advise the person to follow your lead. In order to succeed, you will probably think of different strategies to convince the person. In this way, we are asked to act creatively on an everyday basis. The simple act of talking can be considered to be a creative thought process, as it is both spontaneous and improvisational (Adebiyi & Adelabu, 2013). In addition to just talking, some people are asked to solve very complex problems, which make them in need of more advanced problem-solving skills. No matter what skills they use, creative thinking should always be kept in mind when solving problems as it "can enhance one's positive attitude by removing discouragement in problem solving" (Evans, 1992). That is essentially why creative thinking is so important for successful problem solving.

STRUCTURES AND LEADERSHIP

Apart from creativity being useful, there are situations where creativity demands too much time or effort hindering action to happen at all. There may even be situations where it is practically impossible to use creativity due to the structure of the situation. Situations that appear to completely lack creativity are for example workplaces with merely monotonous work. Someone who has been told to do the same thing over and over again at an industrial workplace or people who have strict rules and guidelines that need to be followed, do not have any room for creativity as they would not be able to finish the other work. An interesting case, where guidelines, checklists and routines exist in combination with the dealing of people, is the health care sector. When handling patients or employees, one has to be creative, as they need to lead them into making the right decisions. Many motivational problems and unexpected situations can occur, where there is a need for creativity along with the other work where a stricter structure has to be followed.

A routine-based work structure constitutes enactments that are "guided by an explicit framework, rules or instructions" (Yanow & Tsoukas, 2009 in Yakhlef & Essén, 2013). They also states that "improvisation is required when routine action is interrupted and no longer possible", which indicates that as soon as the people in health care deviate from the explicit

instructions, they have to improvise. Therefore, they are creative in situations where they lead others or talk to patient and other people at the hospital. The word leading will be regarded as a word including actions, such as motivating, convincing, advising, and guiding. This is generally agreed upon by several scholars (Brown, 2007; Dansereau et al., 2013).

AIM

Knowing that creativity can facilitate the act of leading and encouraging others, it is interesting to look at the use of creativity for leaders who work in different structures. As we can assume that the structure of their work has an effect on how much room there is for creativity, we want to know what structure triggers most creativity for different leaders in the act of leading others. Domínguez (2013) states that literature analyzing “creativity from the perspective of the individual is still scarce”. By looking at the individuals' use of creativity, it is possible to get to the root of what facilitates the use of creativity. In addition to this, Amabile et al. (2004) say that there is little research about the connection between a leader's behaviors and the individual creative performance. We want to explore a similar concept. The aim of this thesis is to study how a routine-based work structure affects individuals' use of creativity when leading others. We aim to find differences by comparing their use of creativity with people who have other occupations with a more ad hoc work structure, where they lead employees or working groups rather than patients.

STRUCUTRE OF PAPER

This paper is structured in seven sections. Firstly, theoretical background is presented giving insights into soft management and how structures and routines affect creativity within problems-solving. The theoretical background is wrapped up by stating the research question of the investigation. Secondly, the methodology is presented. It describes the process of our qualitative and comparative study. Our empirics and analysis is discussed in the results-section. Following this, the discussion brings up whether our results are in line with previous research. The section named implications for research discusses the contributions this study has provided. This section is followed by the limitations of the study together with suggestions of future research. After this, the thesis is rounded off with a conclusion.

THEORETICAL BACKGROUND

PREVIOUS RESEARCH

SOFT MANAGEMENT

Since soft management is strongly connected with creativity, leadership and problem-solving previous research within soft management will be presented in order to give a general picture. Extensive research has been done within soft management. The last decade has allowed the human perspective of management to flourish and has taught the world a very interesting perspective. Frederick W. Taylor, Elton Mayo, and Abraham Maslow are names that are very famous within management. Taylor is the very “father” of scientific management and was the researcher that for example developed an employee management method that included inter alia that close and friendly cooperation had to prevail between managers and employees, and that employees need to be trained and educated in order to meet the requirements of the company (Butler, 1991; Boddewyn, 1961). Mayo made a huge impact on the soft management with his two assumptions that Social cooperation comes naturally to most men and appropriate changes to an individual's environment can improve his well-being and produce more social cooperation (Wallis, 1986; Saracheck, 1968). Maslow (1943) made studies within the human needs and developed the different kind of needs of an individual. In summary, his study tells that if the basic needs of a human being are not fulfilled; he or she will not want needs of a higher level (Maslow, 1943).

HOW STRUCTURES AND ROUTINES AFFECT CREATIVITY WITHIN PROBLEM-SOLVING

Research within how routine-based work affects the way of solving problems can be found. As mentioned above, it is the solving of individual leadership problems that is studied, and are the ones who occur when an individual lead its patients or employees.

It is important to first describe what routines is, and secondly make a distinction between the two concepts "creative problem solving (CPS)" and "solving problems creatively" since they are two different concepts describing what problem-solving is. Routines are according to Ohly et al., (2006) "automaticity in behavior" and are developed when a behavior is repeated. The first concept is "creative problem solving" which is a number of methods to approach problems in different ways (Sousa et al., 2013). Two examples of CPS are firstly Osborn's brainstorming technique (Osborn, 1963 in Amabile, 1996) and secondly Parnes' creative problem solving processes are training programs that enhances the creativity

(Parnes, 1967, 1972 in Amabile, 1996). This will not be focused on in this thesis because it was chosen to use the second concept. The second concept, states that problem-solving can be seen as the same thing as creativity. This concept of problem-solving is what will be used for this thesis. Evan (1992) studies how much creativity is needed when solving different kinds of problems. As argued by Simon (1960, in Evans, 1992) the better structured a problem is, the less creativity is needed and a less structured problem needs more creativity. There is also much research about how organizational structure and bureaucracy affects creativity. For example in the study by Cummings (1965), many reasons why the structure of an organization affects creativity negatively is mentioned, but most relevant to the study is that there is often only extrinsic motivation in a hierarchical organization and that their control and evaluation systems are based on routines and standardization that makes it difficult for the organization to attain new knowledge needed for the creativity. In Ohly et al. (2006) they argue that routines affect individual creativity. This theory helps our study to go deeper in the analysis, as we can assumed that routines affect individual creativity and can, therefore, ask the question "how" right away.

THEORETICAL FRAMEWORK

CREATIVITY

Hennessey & Amabile (2010) say that most of the scholars agree that “creativity involves the development of a novel product, idea, or problem solution that is of value to the individual and/or the larger social group”. Since Amabile et al. (2004) say that the creativity of an organization comes from the minds of the individual employee; the focus of our thesis will be on the creativity of individuals. Amabile (1997, 1998, 2012) describes that individual creativity consists of three parts: Domain-relevant skills, Task Motivation and the creative-relevant process. In Amabile (2012), she adds a fourth part that is the social environment. Together, these four parts are called “the componential theory of creativity”. However, we have chosen to focus on the individual creativity. These three factors make up our framework and were chosen because the individual creativity was most applicable to this study.

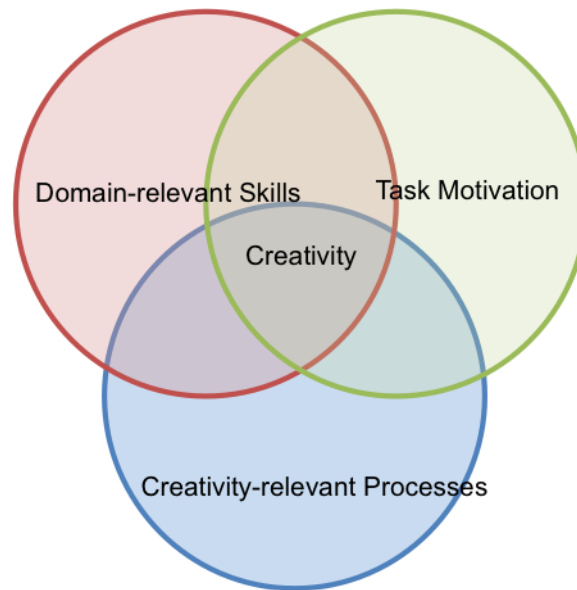


Figure 1

DOMAIN-RELEVANT SKILLS

Domain-relevant skills, also known as expertise, are everything that an individual possesses in knowledge. It is the accumulated skills an individual has and comprises “factual knowledge, technical proficiency and special talents in the target work domain” (Amabile, 1997). This aspect is very essential, since the more expertise a person possesses, the more connections the individual will be able to do. That is called “the network of possible wanderings, the intellectual space used to solve problems” (Amabile, 1997). The more expertise you have, the more creative you can be (Amabile, 1998). In a later study of Amabile (2012), she also states that the skills are “These skills comprise the raw materials upon which the individual can draw throughout the creative process – the elements that can combine to create possible responses, and the expertise against which the individual will judge the viability of response possibilities”.

CREATIVITY-RELEVANT PROCESSES

Another name for creativity-relevant process is creative-thinking skills (Amabile, 1997, 1998, 2012). Creative-thinking skills is defined by Torrance (1993) as the ability to see and create relations and by Amabile (1997) as “the component that provides that “something extra” of creative performance”. It is the way individuals approach problems, and how they can connect old information to create new combinations. It depends both on personal traits and the individual work style. Personal traits, such as self-discipline, orientation toward risk taking, and tolerance for ambiguity, can increase the creativity. Amabile (1998) also says that

the more flexible and imaginative methods, the more creative will the person be. If the person in question has personal traits that naturally enhances a critical view of problems it may increase the creativity. The same goes for the work style. It is possible to train people to be more creative. By doing creativity exercises, the individuals' creative-thinking skills can increase (Scott et al., 2004).

TASK MOTIVATION

The third and last component of individual creativity is task motivation, which is the same as intrinsic motivation. Theoretically, this determines whether an individual will come to action or not (Amabile, 1997, 1998). Frederick Herzberg (1974) developed the two-factor theory, which states that two types of motivation exists, namely intrinsic (hygiene factors) and extrinsic motivation (motivators). This is a concept that is generally recognized today. Herzberg (1974) and Amabile (1997) describe the intrinsic motivation as it is driven by factors that involve the individual's opinion and feelings of the content of work itself. These factors make the individual satisfied at work. Hertzberg (1974) gives some examples: "achievement, recognition for achievement, interesting work, increased responsibility, growth, and advancement". It is a motivation that comes inside from people (Amabile, 1998). Further examples that Amabile (1996) gives are the interest, passion, enjoyment and challenge of doing the work. Amabile (1999), Hennessey and Amabile (2010) say that it is intrinsic motivation that makes people most creative.

The creative individual is motivated by commitment that intrinsically triggered, and the best way to reward an individual to become more creative is with a reward with an intrinsic character (Cummings, 1965). The suggestions he gives involve freedom, including "increased autonomy concerning work methods" and "increased freedom of task assignments". This intrinsic motivation is according to Amabile (1997) even more important than the two parts above since an individual with high degree of intrinsic motivation can cover the lack of expertise and creative-thinking skills, since the person will do everything to learn the skills or expertise needed to solve the problem.

THE SOCIAL ENVIRONMENT

Amabile (2012) states that the social environment consists of factors that undermine, block or stimulate intrinsic motivation, such as extrinsic motivation. Extrinsic motivation comes from external forces and is not about the work itself. Examples of this are salary, deadlines,

job environment, leadership style and political problems (Amabile & Khaire, 2008; Hennessey & Amabile, 2010). Herzberg (1974) sees extrinsic motivation as hygiene factors, since it is about the work context and thus creates dissatisfaction among individuals. Since "a number of other factors in the environment that can serve as obstacles or as stimulants to intrinsic motivation and creativity" (Amabile, 2012), the extrinsic motivation will be taken into consideration.

THEORY TAKEAWAY BOX

In summary, the theory says that routines affect creativity, and that the creativity of an individual is made up of three parts: creativity "domain-relevant skills", "creativity-relevant processes" and "intrinsic motivation". Domain-relevant skills are an individual's knowledge, creativity-relevant processes are ways an individual approaches problems, and intrinsic motivation is the individual's enjoyment or passion in the certain task or work.

With regards to the theory and the aim of this thesis, it is compelling to understand more about the following research question:

How does a routine-based work structure affect the use of individual creativity in problem-solving?

METHODOLOGY

RESEARCH APPROACH

RESEARCH DESIGN

To be able to fulfill the aim of the thesis, it was required to study leaders from different contrasting industries. By observing how the individuals with routine-based work acted when they stepped away from the daily routinized work and took a leadership role, it was possible to study how the leaders were affected by the routines. By comparing this to the work the people in the ad hoc structure do when leading others, a comparative study was created. To obtain a study that is both deep and broad, a qualitative method based on interviews of individuals with different work tasks was designed. To conduct interviews with individuals working in contrasting industries it is possible to find similarities and differences between them. The focus of this study is on the subjective perspectives of people. Two different structure of work will be studied:

1. A number of people with a routine-based work structure - “routine-based”
2. A number of people with an ad hoc work structure - “ad hoc”

THE GENERAL STRUCTURE OF THE STUDY

With the help of several brainstorming sessions, this thesis slowly started to shape. Our individual interests were brought up and discussed back and forth until we were able to agree upon an interesting area concerning creativity. Since we were eager to conduct a broad study of the phenomena, we contacted people from various industries. Qualitative primary data was collected through face-to-face interviews, telephone interviews and participation at two meetings. Along the way, when more interviews and theory was gathered the area was narrowed down to the aim of this thesis.

Because of the gap in the research, an explorative study has been done. This is most suitable as previous research within the field is scant (Björklund & Paulsson, 2014). With little and vague previous research, we had to go back and forth between theory and our empirical data and adjustment were made along the way. This concept, called abduction (Björklund & Paulsson, 2014), was the most appropriate method with regards to how the study was carried out. Later, the data was transcribed and analyzed.

QUALITATIVE METHOD

As mentioned above, the qualitative method was considered to be the most appropriate strategy for the collection of data. One reason for this is that both creativity and problem solving are difficult to measure with numbers, which makes it more useful to collect data through interviews. Secondly, as the study is subjective and the aim is to find out how people perceive different situations, a qualitative research strategy was a definite choice.

DATA COLLECTION

INTERVIEW SESSIONS

The idea was to conduct relatively informal interviews. A semi-structured interview technique was used for the interviews, which means that relatively broad questions were asked for the purpose of allowing the interviewee to lead the discussion to the aspects that they find important (Andersen, 2009). Those aspects became the center for the study. Open-ended questions enabled the interviewee to go deeper into matters that were of importance to them. This allowed us to understand how the structure influenced the

leaders' creativity. To ensure that the interviewees were consistent in their answers, similar questions were asked from different angles. For example, when asking whether the interviewees felt motivated we also asked if they enjoy their work.

The aim was to always allow the interviewees to finish talking before any following questions were asked. Sometimes, interviewees have a tendency to start talking again after finishing the sentence as their thought process is still answering the question, or they might want to clarify something. Therefore, the interviewers waited a few seconds before the following question was asked. This was done for the purpose of not losing relevant details. This technique is called active listening, which puts focus on actually perceiving what the speaker has said and then posing the next question (Knippen & Green, 1994). By taking notes, it was still possible to go back to previously mentioned aspects if any clarification was needed.

In all interviews, there were two people interviewing. While one person led the interview, the other person asked any additional questions that the main interviewer left out, thus contributed with an observing perspective. In that way, the interviewer can be more focused on the direction of the interview. The interviews were held in Swedish in order to allow the interviewees to speak as freely as possible. Therefore, the interviews had to be translated and the quotes are as accurate as possible. Every interview taught us about the problems studied as well as the interview technique. With time, we were able to improve the way we asked questions.

CHOICE OF INTERVIEWEES

The chosen individuals were selected with thorough consideration with regards to the sort of structure they work in. For the scope of this study ten interviewees were considered sufficient. We interviewed five from a routine-based work structure and five from an ad hoc work structure.

The first choice criterion was that the interviewees had to work in either a routine-based work structure or an ad hoc structure.



Figure 2

Figure 2 shows a scale of the extent to which different work structures can be routine-based or ad hoc. In the ends of the scale, the work is either 100% routine-based or 100% ad hoc. Since there is rarely any occupation that is purely routine-based or ad hoc, many combinations exist in between. However, the interviewees used for this study are close to the two ends. We strived to find two groups that were as far away from each other as possible. Since we already know that the work structure affects the creativity (Ohly et al., 2006), we want to see *how* the structure affects the individual creativity in problem-solving within leadership. By comparing two opposite structures, it is possible to find similarities and differences, to get as close to an answer to this as possible within our scope. The comparison has been done on the assumption that if a certain behavior or thought exists among people in both structures, it is not the structure triggering it.

The second choice criterion was that the interviewees needed to have a role of leading employees, patients or customers. In that way, we are able to study similar problems in both structures even if the work differed between all interviewees. It can be said to be the common denominator.

OVERVIEW OF INTERVIEWEES

Occupation	Organization	Work tasks	Work style	Type of Interview	Date of interview
Chief Physician	Hospital A	• Meetings • Treat the patients • Administrative work • Leader of 20-30 physicians	Routine-based	Face-to-face	6 th March 2014
Home-helper	Care for elder people	• Feed the patients • Clean the patients • Entertaining the patients	Routine-based	Telephone interview	17 th March 2014
Assisting Physician	Hospital A	• Lead and advice the nurses • Give treatments	Routine-based	Face-to-face	13 th March 2014

Dental Hygienist	Dentistry A	• “Lead” and advice the patients • Give treatment	Routine-based	Telephone interview	8 th April 2014
Nurse	Home for elder people with mental diseases	• Give treatment • Advice and convince patients to take their medicine	Routine-based	Telephone interview	10 th April 2014
Professor	Hospital A	• Leads research group • Economic responsibility • Administrative work	Ad hoc	Face-to-face	3 rd April 2014
Senior Professor	Institute	• Leads researchers • Meetings • Recruitment • Economic responsibility	Ad hoc	Face-to-face	26 th March 2014
Project Manager	IT Company Alpha	• Creates customer specific checklists • Leads project group • Gives employees feedback	Ad hoc	Telephone interview	8 th April 2014
Head of Projects	IT Company Alpha	• Controls progress and status of projects • Leads project groups • Meetings	Ad hoc	Telephone interview	10 th April 2014
Chief Executive Officer (CEO)	Dentistry A	• Decides over the total company operation • Recruitment • Meetings	Ad hoc	Face-to-face	1 st April 2014

Table 1

We have chosen not to expose more information about the individuals and the companies in order for the people to remain anonymous. Furthermore, the information that is left out has no relevance for this study.

MEETINGS

Two meetings were observed. The first meeting took place at the hospital and was relatively structured with about fifteen people attending, including the chief physician, other physicians, and nurses. The other meeting was smaller with three participants, including the senior professor. It was relatively informal at their research department. These meetings have been very valuable as they have given a better picture and understanding of how the senior professor and the chief physician acted as leaders. We sat as observers and took notes at both meetings.

STRUCTURING AND ANALYZING THE EMPIRICS

The interviews were transcribed with the help of the recording, which made the data more exact with less error compared to if the data would have been taken from memory. The pure data was transcribed word by word, without any personal interpretation. Afterwards, a selection of relevant data was made with regards to what the interviewees put focus on concerning their perception of creativity, problem-solving and the work structure. During the processing of the empirics, differences were found between the two groups. We then chose to structure the results based on factors that have emerged and combine the analysis with the empirics, titled results in this thesis.

VALIDITY AND RELIABILITY

Validity and reliability is according to Björklund and Paulsson (2014) the amount to which what is meant to be measured is actually measured and to what degree the same results would be the same if the study was repeated.

INTERNAL VALIDITY

All the interviewees have been given a short description of the study. By giving them a better understanding of the study, they were able to give us more relevant information. It was also communicated that the interviewees could contact us and they were asked to answer emails if additional information was needed. If ambiguity or unrecognized definitions arose from either part we ensured that everything was understood before continuing. This was done to achieve high internal validity (Bryman, 2002).

EXTERNAL VALIDITY

Since this thesis aims to be broad and that many different industries are studied, the external validity should be relative high. Therefore, it should be applicable on other industries. It is, however, important to consider that there are aspects that this thesis does not take into account that can lower the external validity, such as organizational and country culture, as well as working hours, health of the leader or the employee, and factors outside of work. These factors have not been studied as they have been considered to be out of scope. We think that the people interviewed are representative of people working with such structures, as they have different hierarchical positions and different occupations. Therefore, the external validity is fairly high (Andersen, 2009).

RELIABILITY

Since both of us attended all interviews and we had similar opinions about the collected data, the internal transparency was high (Bryman, 2002). The choice of being anonymous was given to the interviewees, which has given this study good internal reliability. The people in question could express themselves freely and did not need to feel the fear of being exposed. The interviews were recorded and transcribed word by word afterwards in order to avoid subjective interpretations in the raw data. The internal reliability can, therefore, be considered as relatively high.

RESULTS

CREATIVITY

During the interviews, we wanted to understand how the interviewees' use of creativity was affected by the structure. The structure appeared to influence the components of creativity indirectly, via a number of factors that the majority of the people in each group had in common. These factors will be investigated below, while the ones that the majority did not focus on are not considered to be representative for the structures. Some of the factors increase or decrease more than one component of creativity, but they have been divided below with regards to what most people put focus on.

DOMAIN-RELEVANT SKILLS

- The majority in both groups mentioned the positive consequences of building long-term relationships with the people with who they are working. No matter how difficult it may be sometimes it was worth putting effort into it.
- The majority of the people in the routine-based group focused on their challenges during the everyday work. No matter if they had a good balance between skill and challenges; it still appeared as if they created the challenges for themselves. Some of the interviewees in the routine-based group had difficulties to find this balance, which became a reason as to why they thought much about it.
- The ad hoc group was more focused on being open for critique, when talking about their expertise. The majority was keen on receiving feedback.

TASK MOTIVATION

- Both groups clearly enjoyed their work. They all mentioned the positive aspects with the work even when there were areas of difficulties.
- The factor that stood out to increase motivation the most for the routine-based group was their focus on their own values. They talked about their values as if they functioned as motivators in their work.
- The ad hoc group mentioned the positive aspects of stress. They were able to find the right amount of pressure to trigger them to perform better. The stress could come from a certain deadline within the work, which is a form of extrinsic motivation.

CREATIVITY-RELEVANT PROCESSES

- Everyone said that they feel responsible over their work. Commonly, one spends more time on an activity when feeling responsible, compared to when we do not feel responsible.
- The routine-based group mentioned negative consequences of stress. They felt as if they had too little time to use creative-thinking skills, as the scheduled work had to be done first.
- The ad hoc group focused more on leading in a way that reflects what they find important, which appeared to make it easier to think outside of the box for the interviewees.

It can be summarized that the structure has an effect on the components of creativity. Yet, the effects of the structures do not appear to influence the components directly, but rather through the factors that can be seen in the table below. All these factors will be studied in greater detail below. With regards to the data collected in the interviews, the aim is to determine whether the factors lead to an increase or decrease the components of creativity.

Components of creativity	Factors that increase/decrease the components of creativity
Domain-relevant skills	· built good long-term relationships · stimulation · open for critique
Task motivation	· enjoyed work · values · positive consequences of stress
Creativity-relevant processes	· responsibility · negative consequences of stress · use of personality when leading

Table 2 - An overview of factors found that influence the components of creativity

The majority from both groups aimed to have a good long-term relationship with the people they worked with, enjoyed their work, and felt responsible for their work. Therefore, these three factors represent both structures. These factors are strongly connected to each other and indicate that they are all, at least partly internally driven by what they do. These factors will be kept in mind when studying the differences between the groups. Since these factors exist in both structures, it will not be essential for answering the question of how the routine-based work structure affects the use of creativity. Having found the similarities among the two groups, it can be stated that even if those factors exists in the routine-based group, it is not merely due to the routine-based structure itself that causes them to occur. All three factors have an influence on the use of creativity by increasing their expertise, motivation, and creative-thinking skills. It is, however, not the routine-based structure, nor the ad hoc structure, triggering it.

There are three factors that stood out for each structure that differed from the other group. There was one factor for each component of creativity. All of these differences will be

discussed with regards to each interviewee for the purpose of understanding whether they cause an increase or decrease of the components of creativity. An increase will classify the factor as an *enabler* whereas a decrease will make the factor a *hinder*.

ROUTINE-BASED STRUCTURE

The people working within the health sector have explicit instructions and rules of what to do. However, both structures have bits and pieces of the other structure. The routine-based work is not entirely routine-based, but the main part of their work is based on routines, checklists or other guidelines. As argued by Yanow and Tsouka (2009 in Yakhlef & Essén, 2014) “improvisation is required when routine action is interrupted and no longer possible”, which indicates that as soon as the people in health care deviate from the explicit instructions, they have to improvise. As established before, the people in the health care sector deviate from their routine-based work when they lead their patients or colleagues. In other words, they are improvising while leading. Within the routine-based work structure, three factors were found to be similar among the majority of the people. The following table indicates that the majority of the people in the routine-based work structure focused on stimulation, values and the negative consequences of stress. The plus-sign indicates that they focused on it.

	Chief Physician	Home-helper	Assisting physician	Dental hygienist	Nurse
Stimulation	+	+	+	+	-
Values	+	+	-	+	+
Negative consequences of stress	-	+	+	+	+

Figure 3 - The factors that people in the routine-based group focused on in their interviews

Below the factors will be analyzed for the purpose of understanding whether they lead to an increase or decrease for the relevant component of creativity.

STIMULATION

Stimulation includes the difficulties in finding a balance between skill and challenges. Some people mentioned the importance of not giving up and others the struggle of finding enough challenges. This balance is needed for the purpose of continuing to advance in their

occupation without losing interest. It is about having the right amount of knowledge and experience regarding the task performed, for the purpose of staying stimulated. With continuous stimulation the expertise should increase.

CHIEF PHYSICIAN

The chief physician put effort into creating challenges for himself. During their meeting, where the chief physician discussed possible solutions with his colleagues, we observed him in action. He related to every case presented as if it was his own, for the purpose of teaching others how it should be done as well as learning himself. This gives him variation in his work.

HOME-HELPER

The home-helper talked about the difficulties of satisfying the patients. When facing problems that are more urgent, such as motivating the patient to take their medicine, the home-helper sometimes feels uncomfortable, but she says that "It is important to not give up". She is able to decrease the level of difficulty to a level where she feels comfortable by calling someone who has dealt with the same patient before.

ASSISTING PHYSICIAN

The assisting physician focused on the fact that she faced challenges every day, which made her job interesting. In the case of a difficult situation, she felt "relieved after having accomplished the task".

DENTAL HYGIENIST

She faces difficulties to convince her patients as they sometimes choose not to adapt to her advice. This makes her say that "some problems do not have a solution", which indicates that the leading she is asked to do in her job is almost too challenging as she feels that the problem cannot be solved unless the patients agree. Even if it feels impossible, she thinks about whether there are things that she could have done differently during the meeting with the patient.

NURSE

Even if she finds her work challenging and she has to try several times when convincing her patients, she finds it manageable because it happens often at her work. Her knowledge matches with the challenge. Therefore, she does not focus much on finding this balance.

SUB-CONCLUSION REGARDING STIMULATION

The focus on stimulation leads to an increase in their domain-relevant skills. The people in the routine-based structure used two different ways of learning. Either they learned by doing, which required the people to rely on their expertise. The others evaluated the action before or after the action had been carried through. They did not appear to rely on their expertise as much, which makes the learning take a longer time, but the probability that their action are done correctly is higher. Regardless of how the knowledge is gained, stimulation will be classified as an enabler. When asking someone for advice, you gain some skill but there is a risk that you will not be able to know how to obtain the knowledge yourself. Therefore, these different ways of learning determine the learning pace for each individual.

Along with feeling responsible for their work, one mentioned that it is important not to give up. This might be even more crucial when it comes to following a schedule where certain things have to be done and someone is expecting to see the results of that. This may lead to an increase in their domain-relevant skills as they are more motivated to actually carry on with the task, even if it feels overwhelming sometimes.

There is a concept explaining the balance between skill and challenge which is directly related to motivation rather than expertise, called flow. Flow is modes of human behaviors that produce “intense feelings of enjoyment and creativity” (Csikszentmihalyi, 1988). Csikszentmihalyi (1997) states that flow is the feeling of the quality of an experience that keeps an individual motivated without extrinsic motivation, thus an enjoyable experience. With regards to this, it is possible to understand the importance of finding this balance when it comes to both learning and staying motivated. When imbalance occurs, individuals feel frustrated when challenges are too high and bored when the skills are too high.

VALUES

To do relatively monotonous work may need a stronger mental motivation. The majority of the group focused on their own values to find meaning with their work. By referring back to the meaning of their work, *why* they are doing their work, it is easier to stay motivated.

CHIEF PHYSICIAN

The hospital has a slogan that states that the patient should always be at the center. If some physicians prioritize their own workgroup before the patient, the chief physician refers back

to the slogan, since it is hard for anyone to object to. It is obvious that the chief physician truly believes in the slogan and finds it valuable as he mentions that there is not really any other way.

HOME-HELPER

To see her patients "become happy when she helps them" is strongly valued by the home-helper. For her, it is very important that things are done correctly and that the customers are satisfied. When there are difficulties to do so, it is more difficult to live according to what makes her feel good about herself, and the job can become demotivating.

ASSISTING PHYSICIAN

The assisting physician did not focus much on her values. She was able to find meaning in her work in other ways.

DENTAL HYGIENIST

She says that after the patient leaves she can use her creativity, and it appears to be the time when she finds much value in her work. Once the patient has left, she takes time to reflect and consider possible improvements. This indicates that she cares about her performance. Her effort to provide quality is a way of ensuring that she is "good at [her] work," which is of value to her. When she faces problems and does not know what to do, she asks for advice from her colleagues, in order to ensure high quality. She puts focus on her want to provide quality to find meaning in her work.

NURSE

The nurse says that she is "eager to provide the patients with the best care", and strives to provide a proper diagnosis and treatment. The nurse always wants the patients to feel the as good as possible; she says that she finds meaning in being nice and not merely doing what it says in her role description. She might bring up ideas of new treatments and tries to argue for them as this is a way she can be dedicated.

SUB-CONCLUSION REGARDING VALUES

Values have shown to be an enabler. To be clear regarding your own values can be very useful (Posner & Schmidt, 1993). The focus on values makes people care more, show more dedication and are more involved, which are all signs of intrinsic motivation. With the sometimes, monotonous work, they appear to need more of a reminder as to why they do their work. However, when our work structure prevents us from working in accordance with

them, it can become demotivating. One example of this is when the structure does not allow for time to talk casually to the patients.

A company's values are, according to research, helpful to motivate the employees with similar values (Posner & Schmidt, 1993). The chief physician uses the company's value to motivate both himself and others. As long as the employees have values that are in line with those of the company, the employee's motivation should increase.

NEGATIVE CONSEQUENCES OF STRESS

Stress is something that pervades in the work for most of them. This can cause problems for their creative-thinking skills. Stress decreases our ability to think freely (Carroll, 2004), which in turn hinders us to be flexible and imaginative.

CHIEF PHYSICIAN

The chief physician did not focus on stress with negative consequences during the interview.

HOME-HELPER

The patients are often given what they need and then it is time to go for the home-helper even if many of the patients would like to spend more time talking. It is very difficult to be flexible in her work as the strict schedule is very tight. As the home-helper wants to spend more time with her patients, she starts focusing on the negative aspects as opposed to what is positive within the situation.

ASSISTING PHYSICIAN

The assisting physician said that one reason it was difficult to build an informal relationship with the nurses is the fact that they always have much to do. She says that "there is no time to talk to the nurses" about private matters, which makes it difficult to have a good relationship with the nurses apart from the professional relationship.

DENTAL HYGIENIST

As her tasks are performed under time pressure, the dental hygienist thinks of the structure of work to hinder her from using her creative-thinking skills, which makes her narrow-minded. She thinks that "Some problems do not have a solution". The problem cannot be solved until the patients agree, as they are the ones who decide, and with little time this is impossible sometimes. This would probably not be her perception if she felt as if she had more time and did not feel as if she had to hurry the decision of the customer. The dental hygienist adapts to stressful situations involving her patients by acting calm. She puts much

focus on pretending to be calm, even if she is stressed, which can create even more internal stress.

NURSE

Sometimes it is almost impossible for patients to be positive toward their treatment because of their disease. When the nurse is hindered due to the refusal of the patient, it can create stress, which could cause negative effects on the problem-solving approach. One has to try several times and it takes time. The lack of time can cause negative stress when handling the patients, which can make them more reluctant to believe the nurse. Therefore, the nurse has to act calm, despite the stressful situation. This can create a sense of hopelessness, as she spends much time to act calm when she is actually stressed. Her approach would probably have been even more flexible and imaginative if she was able to focus her attention there instead.

SUB-CONCLUSION REGARDING NEGATIVE CONSEQUENCES OF STRESS

Stress makes people more narrow minded and it hinders them from being flexible and imaginative, as they are focusing on other aspects than leading. Even if the structure might be there to organize the work, the individuals feel as if the structure gives them less time. To have a strict structure can be difficult for people who do not like to be told what to do, which can cause discomfort and stress. Therefore, this factor can be seen as a hindering factor.

Within the health sector, it is important to be calm and stable. Several interviewees have mentioned the fact that no matter how stressed they are they need to make a calm impression. This can be difficult and it takes from their attention and their energy. They have to hide their own feelings. The "act of displaying the appropriate emotion," is called emotional labor (Ashforth, 1993). This can lead to stress as it requires emotional dissonance, which makes it a hindering factor (Humphrey et al., 2008).

ROUTINE-BASED STRUCTURE ANALYSIS FROM SUB-CONCLUSIONS

The people mention that they consider the structure to be a hinder in their minds and therefore it also becomes one, as their thoughts influence their behavior. Therefore, there is a causal relationship as the people at least think that it is due to the structure.

If the company values improvement and self-development, they can facilitate the learning process for each employee by investing both time and resources into aspects of matching skills with challenges. If the employees have to search for challenges, the skill is overriding the challenges, which could demotivate them in the long-run. Another thing that could demotivate the employees is cases where a person is not aware of what is intrinsically important for them. Deadlines are something that goes away, whereas values are something we always can refer back to. However, this group of people has been able to back up their work with strong motivation to keep on working. Lack of values may be detrimental in work with a routine-based structure.

As it is only the stress with negative consequences that hinders the components of creativity, the structure could allow for more time to get through each step. Having much to do within a certain time can be the cause for stress to occur. Yet, the chief physician states that they do not need more time. He brings in the aspect of effectiveness and means that the more patients we can treat the better for everyone. This makes us draw the conclusion that it would only be useful to schedule more time with each patient if it actually led to increased creative-thinking skills. Scheduling more time per se does not mean that it automatically will decrease the stress, since the time might be used for other things unless this is controlled. Also there is a relatively low chance that an increase in the use of creativity will be valued as more important than treating more patients, for both economic and social aspects.

The fact that the people put much effort into acting calm means that it takes away from leading with more creativity. Theories support that individuals who regard their roles as a "valued component of who they are" feel most authentic when acting in accordance with emotional labor (Ashforth, 1993). Therefore, it is good that the people with routine-based structures put much focus on their values. If they go hand in hand, there will be no problem. The stress factor could potentially trigger the fact that the people are values-driven, as this is a way to find comfort in their job.

AD HOC STRUCTURE

The ad hoc group does not have explicit instructions or frameworks of what to do. Just like the routine-based work structure, the ad hoc group also has models and framework but they are much more general and should therefore not be characterized as *explicit*. Instead, they will be seen as limits or barriers to stay within. The ad hoc group can theoretically be

considered to merely improvise, but in practice, they have some structure to their work that guides them. Within the ad hoc structure, three factors were found to be similar among the majority of the people. The plus-signs indicate what the interviewees focused on during their interviews.

	CEO	Professor	Senior Professor	Head of Projects	Project Manager
Open for critique	+	+	-	-	+
Positive consequences of stress	+	+	-	+	+
Used personality when leading	+	+	+	+	+

Table 3 - The factors that people in the ad hoc group focused on in their interviews

OPEN FOR CRITIQUE

Most of them wanted to welcome critique and suggestions. They wanted people to feel comfortable to confront them with problems and feedback, which could influence the amount of domain-relevant skills.

CEO

The CEO says that they have a very dedicated staff who dares to speak up in case of disagreement or likewise. She encourages this, as the employees have a commitment that cannot be bought with money. It is only with their commitment that creativity can occur. This indicates that she values input from others as it enables a flow of information.

PROFESSOR

He tries to create conditions that encourage the employees to dare disagreeing and give criticism by focusing on the way he receives the critique when his worker complain.

SENIOR PROFESSOR

The senior professor tries to listen and understand the perspective of the researchers but he did not focus much on being opening for critique himself.

HEAD OF PROJECTS

The head of projects did not focus much on being open for critique during the interview.

PROJECT MANAGER

They should be able to trust each other and be open without being scared of bringing up problems. The aim is to create an atmosphere that is supportive and understanding but at the same time be clear in what is expected. This indicates that he is open for more critique than what the feedback loop encourages.

SUB-CONCLUSION REGARDING BEING OPEN FOR CRITIQUE

In order for critique to increase someone's domain-relevant skills, they have to learn from it. In some cases, it is difficult to accept critique for what it is which increase the risk of becoming defensive. However, most people were keen on receiving the critique, which most likely means that they are able to look at the critique as constructive feedback that they can learn from. One person focused on the way he receives critique, which should increase the person's expertise. The factor of being open for critique has worked as an enabling factor in the group of an ad hoc work structured, which is something that was lacking in the more structured group. An open flow of information should result in increased expertise for everyone involved.

The routine-based group did not mention the benefits of being open for critique. It might be different as most of them lead patient as opposed to other colleagues. The patients may not give critique in the same way.

POSITIVE CONSEQUENCES OF STRESS

There is a negative side of stress and there is a side where stress is positive. It provides us with external motivation. For example, when there is a deadline coming up, it makes us work harder for a while but as soon as the deadline is over, there is no motivation to work anymore. In other words, stress can create motivation in the short-run.

CEO

When there are people who do not fit in with the group, she is motivated enough to ask people them to leave. Even if this creates stress for her, she finds it necessary and is willing to go through the process as she is able to focus on the positive outcome. She says that she is very keen to have a group that works well together and toward the same direction, for the purpose of gaining a good reputation.

PROFESSOR

When it is about realizing when to let go of an idea, he will be involved and sometimes decide for them, which was painful in the beginning and not motivating. Yet, today he is able to look at the positive consequences and it does not create as much stress any longer.

Stress causes problem surprisingly often at his work, given that research should be a slow and insistent process. But since there is a time schedule to get results it becomes stressful, and more gets done over a shorter period of time.

SENIOR PROFESSOR

The senior professor did not focus on stress with positive consequences during the interview.

HEAD OF PROJECTS

Stress works as a signal that other prioritizations might have to be made. Therefore, when the current agenda causes feelings of stress he can adapt to the situation and remove the stress while he simultaneously feel that he has done something that was more useful. In this way, he is able to focus on the positive sides of stress when leading others. In case he had strict guideline telling him what to do, this would not have been possible.

PROJECT MANAGER

If there are things that have not be done in the way he has wished for, it may create stress, but instead of focusing on the fact that it has not been done, he sits down with the individual who is responsible and sees it as a chance to understand them better. In that way, they try to clear up any conflicts of interest or misunderstandings.

SUB-CONCLUSION REGARDING POSITIVE CONSEQUENCES OF STRESS

Excessive time pressure is a form of extrinsic motivation (Amabile, 2012). Deadlines are a great example of this, which only leads to increased motivation for the time when the deadline exists. As long as the stress provides motivation, it should lead to increased creativity (Amabile, 2012).

USED PERSONALITY WHEN LEADING

It was clear that most of them made use of the fact that they can choose how to do their work themselves. They could lead and advice their colleagues the way they wanted, they could choose if they wanted more or less control and the structure in their work. And they were able to decide if they wanted a diverse group or more cohesive. This is something that

came up when talking about their flexibility and imaginativeness, which are their creative-thinking skills.

CEO

The CEO says she wants to encourage a fun and informal working place. Even if other clinics may be stricter she chooses to lead the way she wants to. She only sets the rules she finds necessary herself, and then trusts her employees to accomplish their work well. She says that she trusts them and feels sure to give them responsibility. She has also chosen to start using models or checklists to get through all the important material during their meetings first. In other words, she chooses to create more structure. In this way, she thinks that there will be more room for creativity afterwards.

PROFESSOR

The professor expresses that he is positive toward encouraging creativity. When solving problems he usually avoids formal and structured meetings along with controlling every aspect of what the employees are doing, as he believes that this may kill the creative-thinking skills among his employees. As he is able to choose in what way he wants to lead, he can make use of more spontaneous meetings, which he believes enables more creativity. He also gives much freedom and assigns responsibility.

His worst personal attributes, according to himself, is that he gives too little commendation to the people working for him. As he has the opportunity to lead the way he prefers, that is also what he does and chooses not to change. Similarly, he recruits people who are willing to adapt to him as opposed to people who are different from him and are willing to challenge him.

SENIOR PROFESSOR

The senior professor has been lucky when it comes to resources, he has been able to hire people that he needs and who are interested in the same things. He focused on hiring people with different backgrounds and cultures, which indicates flexibility as he has to avoid cultural clashes. Something he considers very positive and motivating for the employees is that one can hear many languages in the hallways. The senior professor tries to listen and understand the perspective of the researchers and allows them to do the work in their way, which is a flexible approach. The senior professor has been more motivated to lead with less

formality than in America, where research has become a bit like an elite sport. He thinks that less formality benefits the employees.

HEAD OF PROJECTS

While leading the employees, he can do it with a personal touch as there is merely a framework to follow. This makes it easier for him to be flexible and imaginative in combination with “thinking outside the box” and to look at the problems from different perspectives, which he considers to be “the keys to solving problems”. He has an agenda but he experiments and changes his prioritizations, which he can do since he does not have strict routines to follow. He tries to be direct and clear and sometimes avoiding to give solutions to problems, as a way to creatively find a way to let the employees come up with solutions themselves for the purpose of allowing them to learn and improve their self-confidence.

PROJECT MANAGER

He tries to be as informal as possible, but there is an aspect of formality when ensuring that the process is moving forward. He wants to meet people on a personal level even if there is a hierarchy in the team. The fact that he gets room to do so, means that he can lead the people in a way that makes him feel satisfied.

SUB-CONCLUSION REGARDING THE USE OF PERSONALITY WHEN LEADING

When using their personality, the main result is that it enabled a greater use of their creative-thinking skills as it was possible to be both more flexibility and imaginativeness. It resulted in a more extreme diversity in how they went about leading others and how they solved the problems when leading others. To some extent, it reflects human nature, as everyone has experienced different things and has different drives. When thinking outside the box, we can only relate to our own experiences and what we have learnt throughout life. Therefore, the results are diverse, as the results are based on very different stories and it creates very different ways of working.

There were people who did the complete opposite of each other, which was not seen in the more structured group. One example of this is the fact that some people praised and gave commendation to their colleagues whereas someone else did not give any commendation. The person who did not find commendation as important was able to motivate his employees in another way and put focus on what he finds important when leading others.

The leaders become imaginative by thinking of ways that can help them lead the way they want. First, they need to be clear about what they want and then be imaginative to know what to do. An example of this is the CEO who comes up with ways in which she can encourage joy and laughter.

Showing that you trust your colleagues by giving them responsibility signals flexibility. If you are a trustful person and like to rely on other people, this will be easy if you are able to lead the way you want. However, the people are not entirely consistent when leading others as the same person can show a lack in the willingness to be both flexible and imaginative in the process of recruiting. The recruiting process was seen as a hinder for diversity, which might decrease their creative-thinking skills. Another example that indicates a lack of flexibility is when the leader is not willing to adapt to the employees but instead takes advantage of the situation that they can decide. This makes it clear, that in a case like that, the person is not aiming to use their creative-thinking skills as much as possible but rather to do what feels right for them.

AD HOC STRUCTURE ANALYSIS FROM SUB-CONCLUSIONS

The structure allows the project manager to be a personal as he likes, but he also realizes, they need somewhat standardized solutions as it is a very large company. With that said, he is able to be personal to the extent he feels suitable, and his creative-thinking skills are enabled.

The factors that were triggered by the ad hoc structure, with regards to the components of creativity, were all enabling factors. However, the stress factor, which increases (extrinsic) motivation, was only a short-run enabler. The increase in creativity only exists as long as an external force, such as a deadline, is motivating the person. The motivation does not come from within. The other factors were enabling as long as the people wanted to use them.

It was surprising to see that the factors of using personality when leading could also lead to hindrance of creative-thinking skills, as it caused them to choose people who were like themselves. This indicates that the recruiting process is an important part of encouraging creativity for the leaders themselves. If they are more flexible and imaginative, way can be found to encourage this diversity.

An interesting aspect is that the ad hoc structure makes use of more structured work sometimes. One example of this is the CEO who ensures that the most important things are done first. By following a schedule, she mentions that it is easier to let go of the structure afterwards, as it is possible to know that everything has been gone through. This opens up for creativity, which she considers to be a good way to lead and motivate the employees.

There were people that led in opposite ways from the other as they had the opportunity to do so. Therefore, it is difficult to know how the working place will work before knowing how the leader is. If they have a dull personality, the work may become dull and if they have a creative personality, that is what will shine through.

DISCUSSION

The structure had an effect on the use of creativity and it can be summarized that the routine-based structure caused less enabling factors than the ad hoc structure with regards to the individual use of creativity. The result showed that routine-based work affected it more negatively than ad hoc work structures. The negative affect of work routines on individual creativity is supported by Ford and Gioia (2000, in Ohly et al., 2006), Cardinal (2001, in Ohly et al., 2006), and Scott and Bruce (1994). Since a comparative study was done on two groups with different work structures, it was possible to find differences and similarities between them. The factors the two groups had in common were: aimed to have a good long-term relationship with the people they worked with, enjoyed their work, and felt responsible for their work. These factors do not exist because of the structure since both groups have it. That can be seen that people enjoy their jobs and are motivated regardless of work structure. The differences the two groups had were that the routine caused factors such as *negative consequence of stress, stimulation, and focus on values*. The ad hoc group structure caused factors such as *being open for critique, using personality when leading and positive consequences of stress*. All these factors are enablers apart from the negative consequences of stress, which is considered to be a hindering factor.

The finding that values affects creativity positively and that negative stress affects it negatively are in line with the study of Kyvik et al. (2012), where they conclude that personal life values and intrinsic work values affect creativity positively. These findings are also in line with a study of Amabile et al. (2002), where they argue that too busy individuals have fewer

tendencies to think creatively. The reason is, as mentioned above, that values enable the component intrinsic motivation and the balance enables the domain-relevant skills component, and the component that enables or hindering creative-thinking skills are lacking. In the ad hoc group there were only enablers, *being open for critique, using personality when leading* and *positive consequences of stress*. Therefore, we can draw the conclusion that the prerequisite for the routine-based group is less beneficial with regards to encouraging creativity than the ad hoc group.

Since this study looks at the perception of an individual, we dare say that it is the routines that make the routine based group lack the factors in the ad hoc group. As stated above, the routine itself has a negative effect on creativity, since individuals perceive that it is the routines causing it; but by using the two enablers “finding a balance between skill and challenge” and “focusing on values”, individuals can still be creative even though routines prevail, but not in the same extent as the ad hoc group. This is in line with the study Ohly et al. (2006) made, where they found that rationalization had a positive effect on creativity.

IMPLICATIONS FOR RESEARCH

By looking at the difference between the industries and investigating what the different impact the work structures have on creativity when solving leadership problems, one research contribution is the usefulness in trying to understand what work structure is preferable when it comes to encouraging creativity and problem-solving. As creativity is considered to be a close to necessary subject to incorporate in business, it should also be considered to be incorporated in businesses that have a stricter structure.

If the company values improvement, self-development and internally driven employees, the top leaders can facilitate the learning process for each employee by investing time and resources in the following aspects. They should decide whether they want to emphasize the benefits of using a structure and use it as a tool when leading or if they should encourage the employees to think outside the box or as if the structure was not there. They have to ensure that the employees are not facing more deadlines or other aspects that can cause stress than they can handle. They can match different challenges with the skills of the employees, which require that they have much knowledge about both the activities and the employees. They can also encourage the employees to find ways to control how challenging

the task should be. The interviewees gave examples such as creating more difficult tasks by acting as a role model and trying to improve their own performance. However, if they have to search for challenges, the skill is overriding the challenges, which could demotivate them in the long-run. A sometimes simpler way of solving the problem could be to give them a chance to work with more variation, which also leads to an increase in motivation. Furthermore, in order to make motivation sustainable in the long-run, top leaders should encourage clear values. This should not require as much effort as if the workers were dependent on external motivators, so that the top leaders continually have to provide external forces that keep them motivated.

It has been explored how routines affect the individual's creativity. The study gives Amabile's componential theory an additional understanding regarding what consequences work structures have on the individual creativity. It was found that the structure causes enabling and hindering factors to either increase or decrease the use of creativity. Many previous studies have only examined how different factors affect creativity, but have not used the componential theory of creativity. For instance, previous conclusions are of the character "We have found that X is a factor that affects creativity", but they do not look at which components of creativity it affects. This makes it more difficult to know whether it is essential to change anything. For example, if there is one factor that makes people demotivated, but there are many other factors that increase motivation, it may not be essential to change for the purpose of increasing creativity. This study indicates that creativity in industries like health care should take the lack of creativity into consideration. It is a bad indication that the routines are hindering *the creative-relevant process* component of creativity. By finding the enabling and hindering factors, we have been able to shed light on how important it is to have free time where the employees have time for creativity.

This investigation aims to indicate that companies with more structured work should ensure that creativity-relevant processes are encouraged to some extent, and that they are aware of the implication of not doing so. The creative-relevant process is useful when trying to solve problems, but there are also complications such as the requirement for time. Due to the tendencies of less creativity because of the work structure, it can be understood that, with regards to creative problem-solving, the work should not be structured. However, there are many other benefits from arranging the work that way and it may be difficult to change.

For example, it is due to the avoidance of mistakes or forgetting to ask something that can be vital for the health of the patient. Following a model has many benefits that should be encouraged for the purpose of increasing creativity, but not to the extent where the routines take up so much space of the work and hinders creativity to be part of problem-solving at all. Higher use of creativity in problem-solving can lead to better results and more satisfied customers. The weakness is that the more time you spend of solving the problem with the patient the less profit may be produced.

LIMITATIONS AND FUTURE RESEARCH

We regarded qualitative primary data based on ten interviews, to be enough with regards to the size of the essay. Although we understand that the scant number of interviews this scope allows for, is itself a limitation because it is more difficult to see deviations and to generalize, but with more interviews it would have been difficult to manage and analyze deeper with regards to the circumstances. Since we investigated the individuals' perceptions results are subjective, that is although nothing negative because we wanted to study that. Furthermore, it is of that reason a causal conclusion can be drawn, but it is important to keep in mind that it is simply about individuals, everything they perceive is subjective.

The perception of the interviewees could also be seen as a limitation of this study, since the individuals might draw conclusions about the structure that are incorrect. If they think that it is the structure that creates the hindering factors, they might not think of other potential reasons for the occurrence of the factors that in turn affected the components of creativity. Important factors could have been left out because of the individuals' subjectivity, such as the culture within an organization or a country, health of the leader or employee, working hours, and factors outside of work, thus factors that are out of scope in this thesis. Since individuals with different positions were picked in several organizations, it has been possible to get a broader view of differences between structures on a larger scale. Thus the result of the study is probably general enough to be applicable on other companies that are in large characterized by routine-based work. However, we consider that it is important to ensure that the results are correct. Therefore, we suggest a future research to scale up the number of interviews to see if the same results would prevail in a bigger context. This would enable

us to see if there is more than only the structure that creates the enabling or hindering factors, which would make it possible to determine whether the relationships are causal.

Another possible limitation of this study is since Amabile's componential theory of creativity does not measure the quantity of creativity (Amabile, 1997, 1998, 2012). If there was possibility in the future, we would like to see to what extent the creativity is affected, thus how big the consequences are for the individual. It would also be interesting to examine in what amount the routinized employee is less creative relatively to the individual with a more ad hoc work structure. Future research should involve more quantitative creativity in order to make it possible.

Another suggestion to future research is by looking even broader at the topic, we believe that there is a possibility that problem-solving and decision-making can be strongly affected and improved if we can make people aware of the fact that they are creative while doing it. Knowing that we are creative might be able to help individuals to let go of the fact that we are often afraid to make mistakes. It can also help us to feel freer in their thought. This is a topic that can be studied on many levels, and whether it is useful for business. This also opens up for questions of whose responsibility it is to maintain motivation at a workplace. Is it up to the manager or the leader to create the right atmosphere and culture, is it the structure of the business that has to be changes or is it up to each individual to motivate themselves?

CONCLUSION

In conclusion, this qualitative, comparative study is unique to describe what factors concerning creativity emerge when work is routinized. It is also unique in the sense that it breaks down the concept of creativity and looks at what factors affect what component. The question: "*How does a routine-based work structure affect the use of individual creativity in problem-solving?*" brought us to the answer that there are enabling factors that trigger creativity and hindering factors that decrease the use of creativity. The factors that were influence by the routine-based work structure were *stimulation*, *values*, and negative consequences of stress. The enabling factors, *stimulation* and *values* enabled the domain-relevant skills and task motivation, which means that it is possible for the individual to be creative even though work is routinized. The hindering factor, negative consequences of

stress, decreased creativity-relevant processes. By discovering this, it points to the fact that companies with routine-based work should be aware of this and consider how they want to deal with it. By also studying the ad hoc group, it was possible to make a comparative study, which showed us that the creativity-relevant processes were enabled when the structure allowed for it. Leaders should have these findings in mind when creating success for their companies.

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APPENDIX

Interview questions

Translated into English

Domain-relevant skills

General questions

- What are your daily routines?
- What does the structure look like?
- What is your role?

Problem-solving/ Decision-making

- How does your decision-making process look like?
- Do you feel challenged in the process?
- How do you solve problems? Give some examples!
- Do you feel challenged when solving problems?
- How would an optimal process look like?

Creativity-relevant processes

- Are you creative, if so in what way?
- Do you feel creative while working?
- Is there room for creativity in your work?
- Is there room for creativity in problem-solving?
- Is there room for creativity in decision-making?
- Do you feel that there is room for you to be imaginative?
- Do you feel that there is room for you to be flexible?

Task motivation

Intrinsic motivation

- Are you motivated when you deal with the daily routines?
- Are you motivated when you lead/ give advice?

Extrinsic motivation

- Can your work be stressful?
- How does the stress affect you?

Leadership

- How are you as a leader?
- How is it to be a leader?
- How is your relationship with the colleagues?
- How do you motivate/ advice and convince your employees/ patients?
- How do you reward your employees?