

Masteroppgave

Flow in knowledge intensive organizations

Av

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Masteroppgaven er gjennomført som et ledd i utdanningen ved Universitetet i Agder og er godkjent som sådan. Denne godkjenningen innebærer ikke at universitetet inntår for de metoder som er anvendt og de konklusjoner som er trukket.

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Preface

This paper has been written as a final part of the “Master of Science in Business Administration” (Siviløkonom) education, during the spring semester 2008. The author of this paper has leadership and strategy as speciality.

The aim of this kind of paper is to use both statistic tools and theoretic material from previous courses, in order to solve a problem.

This paper is investigating different aspects of flow phenomenon. The author tries to find out how congruity between job demands and personal preferences of employees can bring the flow state more often, so employees can be a better resource for the company. It is argued that employees that experience flow more often are more motivated, satisfied and perform better than their colleges whose personal wishes are not met, and who experience flow infrequently.

The point of departure for this paper is a questionnaire created by Harald Knudsen and Jonny Holbek. This questionnaire was run by several companies. For the purpose of this paper the results from Agderforskning and Nordea Bank were collected and analysed.

I would like to thank my teaching supervisors Harald Knudsen and Jonny Holbek for help and supervision during the whole process. I would also like to thank Otto Andersen for help with the analytical part of the paper.

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Chap.1 Introduction

Modern organizations face ever so often new challenges connected to time and resource scarcity. They have to focus both on efficiency and quality in order to survive in a highly competitive market. Employees are often expected to work more hours, take work home with them, and work faster and more precise, compared to demands they faced few decades ago. They are also often expected to cope with several different tasks in the same time. External environments pose increasing demands that have to be met, deadlines are shorter, schedules tighter, and work becomes more stressful. Not everyone is able to cope with high pressure required by the job demands of today's globalized economy. Some people whose personalities are not in congruence with high tempo and time press may be getting stressed and perform worse. Some may even quit and search for less demanding jobs. Others may lose their motivation, stop enjoying their jobs and perform worse. That is why it is increasingly important for leaders to find the right people for the right position. How can it be done? One way, suggested by the author of this paper, is to offer employees tasks that fit their personal preferences. Those who thrive with multitasking or high risk jobs should not be put behind the desk for a routine paper work, for example. Leaders and managers ought to focus on personality traits of their workers and give them job tasks which enhance satisfaction and motivate.

While we normally would assume that employees in job placements with a high congruity (fit) between personal (temporal) and job demands will also tend to be more motivated, satisfied, and better performing, in the present thesis it was examined to what extent they also are more often in flow, and whether flow at work is generating an even higher levels of motivation, efficiency and satisfaction.

What is flow then? Csikszentmihalyi (2003) wrote: "...flow makes us feel better in the moment, enabling us to experience the remarkable potential of the body and mind fully functioning in harmony (...) improve the quality of life in the long run" (p. 63). Flow activities are the kind of activities that make people learn more and improve their skills. Make them grow. Staying in flow requires improving- challenges need to become more complex. What is exciting and complicated for a beginner, becomes eventually boring, as ones abilities improve.

Employees are the key resource of all organizations (human resources). It is their performance that makes the organization a successful competitor. In order to meet increasing demands organizations have to create internal environment in which their employees thrives.

The above statements leave us with some questions: how to make employees experience flow, so the organization will benefit from their maximal effort? How to make them satisfied, so they manage to enhance their performance level and enter flow state? How to encourage employees to use their full mental capacity, so the organization can benefit from their creativity?

Attaining a high rate of flow at work seems to be particularly important in knowledge intensive work. In such work settings, employees need to have their attention focused, and concentrate on the task at hand. "In knowledge- intensive business settings, where every manager has to oversee massive amounts of information as well as people, facilitating the use of psychic energy becomes a primary concern. In such firms it is true that "the scarcest resource is attention", yet far too much of this resource is mismanaged and wasted because we have no idea how to deal with it effectively" (Csikszentmihalyi, 2003, p. 77).

This paper aims to show that striving after best possible fit/ congruence between personal preferences and job demands (organizational demands) will positively influence workers performance by enabling them more frequent flow experience.

For the last few decades scientists and psychologists showed increased interest in the flow phenomenon. Although there is no agreement upon one definition, flow can be described as a mental state influencing people both in their private life and at work. It is a positive state of mind, which leaves people with a strong wish to experience it again and make them actively search for situations and tasks that lead to flow. Unfortunately, flow is not something that can be visualized. It is highly subjective and individual, and it has been difficult to research it.

Extensive description of the flow phenomenon will be provided later in this paper.

The first part of this paper presents theory and research results relating to the correlation between flow, job motivation, job satisfaction, and job performance. The theoretical assumption, which is being challenged and tested in this paper, is that people who experience flow more frequently are more motivated, more satisfied and perform better at work. That again leads to improved efficiency for the organization and increased self- efficacy.

The theory suggests that employees, who feel that they learn from given challenges, who have an internal feeling of control and who get frequent feedback, are employees that are an asset to the organizations. It is a win- win situation worth striving for. If these assumptions by the empirical research, it follows that leaders and managers should make an effort to get to know their employees, so they will be able to redesign jobs, and make these jobs more in congruity with individual personal preferences.

The first, theoretical part includes five chapters including this introduction. In the second chapter there is offered an introduction to positive psychology, which is a field of knowledge most relevant to the flow phenomenon, and short explanation concerning personality and its impact on organizational behaviour. Chapter three is a natural continuation of these issues. It provides a characteristic of autotelic experience, which is an experience of flow, and a description of the autotelic personality, in other words a personality, which is predisposed to being in flow, both while at work and in private life. The next chapter (four) is focusing directly on flow: the origin of the concept and various definitions. This section also includes a comparison between goal- setting theory and flow theory, because it gives an even deeper understanding of flow. The last chapter (five) provides an insight into the role of flow in organizational (job) context. Since one of the goals of this paper is to show that frequent experience of flow tends to improve both workers satisfaction and motivation, this will be described in two separate sections of the chapter. There are also some studies showing that there is a correlation between flow, creativity, work stress and culture. The author found it important to include this in the theory section by describing these correlations in chapter five in order to give even better insight into flow experience and its consequences for organizations.

Second, the empirical part of this paper is based on the questionnaire developed by Harald Knudsen and Jonny Holbek. The author of this paper and two other Master students worked on the final version of the questionnaire, which is divided into four parts. The first part contains questions about personal background and occupation of respondents. The second part is concerned with chronicity (and the level of congruity between personal preferences and job demands). The third part contains questions about organizational rhythms. The final part of the questionnaire asks about flow. The whole questionnaire is attached here in Appendix 1.

This paper is only indirectly concerned with organizational rhythms. It is mainly the congruity/ fit between personal preferences and job demands that has been analysed, and data has been taken from relevant parts of the questionnaire. The levels of congruity/ fit has been

compared with reported frequency of flow experience and analysed. The result of these analyses are given and commented in the last, concluding part of the paper.

Harald Knudsen and Jonny Holbek have also developed a model that describes dependences between chronicity preferences, job demands and flow- see Fig.1. The idea behind this model is that personal temperament combined with systemic/ technological demands and cultural expectations are elements that influence temperamental fit/ congruity. And temperamental fit/ congruity leads an increased likelihood of flow at work. The final assumption of the model is that the level of experienced flow leads to working efficiency, innovation and knowledge creation. Elements are positively correlated.

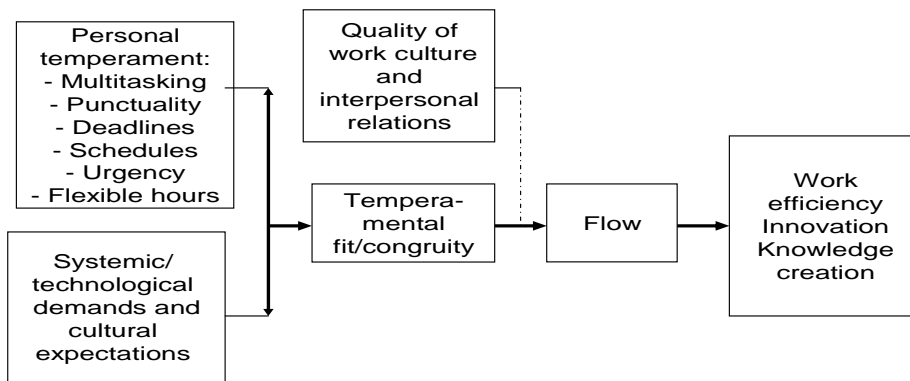


Fig.1 Chronicity preferences, job demands and flow (Knudsen and Holbek, 2006)

The author of this paper developed her own model containing dependencies that have been empirically tested in this thesis- see Fig.2. In this model, the levels of flow, job satisfaction and job motivation are seen as a consequence of congruence level between personal preferences (personality traits) and job (organizational) demands. There is assumed a positive correlation between elements of the model- the better fit between personality traits/ personal preferences and job/ organizational demands, the more frequent flow, the higher the motivation and satisfaction. At the same time all these elements (flow, job satisfaction, and job motivation) are seen as antecedents to job performance.

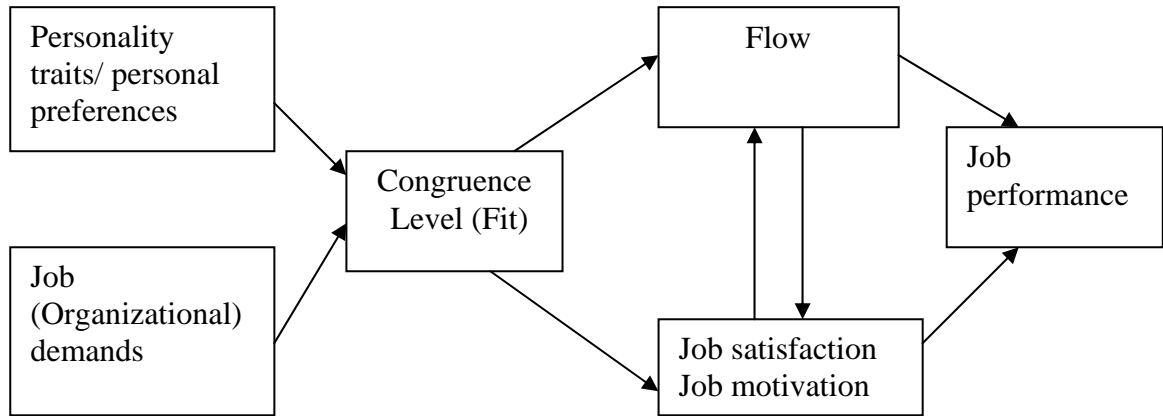


Fig.2 Congruity between personality traits/ personal preferences as a predominant for flow, job satisfaction, job motivation and job performance (Mosberg)

Thus, the main difference between the Knudsen/ Holbek model (figure 1) and the author's model (figure 2) is the specific inclusion of job satisfaction and motivation in figure 2. In order to more fully examine the role of satisfaction and motivation, a qualitative study (using personal interviews) was used in addition to the questionnaire in the preparation of this thesis.

Chap.2 Social identity approach to organizational psychology

Chapter 2 consists of three parts. The first of them contains a short description of positive psychology, a recent branch of scientific psychology that "studies the strengths and virtues that enable individuals and communities to thrive" (Compton, 2005). Part two is concerned with personality and personality traits in organizational context. The last part of this chapter: psychology in organizations- the individual differences paradigm, hooks up the first two parts and shows the importance of being aware of psychological aspect in organizational management.

2.1 Positive psychology

Recently, a discipline of psychology has shifted focus from negative to positive aspect of human existence. "Positive psychology" is becoming more popular and aims to "begin to catalyze a change in the focus of psychology from preoccupation only with repairing the worst things in life to also building positive qualities" (Seligman and Csikszentmihalyi, 2000, p.5). The number of psychologists, who begun to research phenomena as "hope, wisdom, creativity, future mindedness, courage, spirituality, responsibility, and perseverance (p.5)" are increasing. As a result of this new interest in positive aspects of psychology, flow as a phenomenon triggering personal growth has been investigated extensively. Straume and Christensen (2005) wrote together an article where they used a quotation of Seligman and Csikszentmihalyi (2000, p.3) : "...the time has arrived for a positive psychology, (...) Treatment is not just fixing what is broken; it is nurturing what is best. Psychology is not just a branch of medicine concerned with illness or health; it is much larger. It is about work, education, insight, love, growth and play." Positive psychology focuses on three different areas:

- positive, subjective feelings like: hope, optimism, flow and happiness, that can lead to self- realization
- positive, individual personality features like: courage, social fitness, forgiveness, wisdom, resistance, creativity and empathy
- positive abilities on the group level: responsibility, tolerance, job- moral, positive institutions (Brudal, 2006, p. 10)

The main goals of this discipline are:

- to find the strength in an individual
- to develop theories and methods that help to find potential in an individual
- to develop knowledge about areas in life that help to keep individual in psychic balance (Brudal, 2006, p.10)

In this kind of psychology one asks “What makes one moment better than the next?”. This is the question/problem that can be useful to answer in many different settings. For example, it may be useful for managers and leaders to use answers as tools for finding human resources and opportunities in individuals. This question and following discussion can help to escape from negative spiral and start better work conditions. (Brudal, 2006, p.57-58)

Brudal (2006, p. 67-68) postulates that happiness is a consequence of making wise use of own potential and development of own abilities, not just a consequence of avoiding pain or pleasing oneself. The theory says that self- realization results in a good and adequate life. His opinion is that most people do not make full use of their potential for self- realization. There has been some research, which aims to find out what triggers creative activity and how this creativity can be developed in majority of a society.

Positive emotions can expand the range of actions one can take and support one to personal development by building new resources and new knowledge. Negative emotions have the opposite effect. Positive emotions have also positive effect on mental and psychic health. They reduce stress and create social and psychological resources (Fredricksons (2000), in Straume (2005)). Such emotions are connected to flow. Flow is an intense and pleasant state of mind experienced when a person concentrates maximally and becomes unaware of time and surroundings, when he or she becomes in a way one with the task on hand. People tend to search actively for circumstances that give them opportunity to experience flow again

2.2 Personality and personality traits in organizational context

“Personality can be defined as a dynamic and organized set of characteristics possessed by a person that uniquely influences his or her cognitions, motivations, and behaviors in various situations (Ryckman, 2004; from Wikipedia).

Individual personality influences the way organizations function and organizational behaviour. Differences in personality influence cooperation between colleagues and leaders. Some theories say that personality traits are stable over time; others say that the way people act depends on the situation and external factors.

Some people simply seem to be “designed” to have less developed ability to concentrate; some others are far too self- conscious or too self- centred. Such types are doomed to have more difficult access to the flow channel than the autotelic types (the explanation of the term “autotelic personality” will be provided later in this paper), because they do not have enough control of their psychic energy and their ability to learn is limited. Also types that lack rules or feel alienated are not entering flow easily (Csikszentmihalyi, 1990)

For the last ten years psychologists become more and more attracted to the idea of “The Big Five” theory. This theory divides personality traits into five categories (Kaufmann and Kaufmann, 1998):

- Neurotic- reflects personal tendency to experience negative emotions like: anxiety, worry, negative thoughts. People that are highly neurotic tend to be more stressed, unstable, and insecure in work situation. But at the same time they strive for perfectionism and are critical to themselves and co- workers, which can help the organization to choose best way of action for given resources, and achieve better quality.
- Extraversion- is a predisposition for positive behaviour and person’s ability to experience positive emotions. Extravert people are active, social, optimistic and friendly. Introvert people, that scores low on extraversion, is more reserved, distanced and focuses mostly on tasks, not other people. Extravert people are more often satisfied with their jobs and with the organization they work for. They fit well in sales or service oriented jobs, or in leader position. They do not perform well if they have to work alone, or in jobs that are not flexible. They need more stimulation than introvert people. Introverts thrive alone and with routines, schedules, and deadlines.
- Openness- this dimension describes individual predisposition for being open to new situations and experiences, tolerance, and taking risks. People that score high on openness fit for work in creative, innovative organizations. They are good team members. Individuals that are not so open are suitable for professions where a more cynical approach is valued.
- Agreeableness- reflects how a person approaches other people. Those who are very agreeable are nice, helpful, cooperative and trusting. They are good team- players. They are learning fast, are skilful, and perform better. Little agreeable individuals are manipulative, not cooperative, conflict oriented and vindictive.
- Conscientiousness- measures the degree of patience and motivation in a goal- oriented behaviour. People that are highly conscientious are organized, hard working and have self-discipline. They are suitable for jobs that are risky and innovative, and knowledge intensive. High scores on this dimension is a good indicator for future job performance. On the other end of scale are people that lack organization skills, are unreliable and focus on own needs in preference to job demands.

“The Big Five” analysis is often used in employment processes. It is a helpful tool for finding employees that are best suited for a position. Hiring workers whose personality traits are in accordance with job demands reduces risk of future need to deal with of low motivation, satisfaction and poor performance. Workers that experience a good match between their personal preferences and work settings are in a better position to enter flow state and improve their efficiency and overall work performance.

Friedmann and Rosenmann (1974) (in Kaufmann and Kaufmann, 1998) conducted a study and found that there is a group of men (under 60 years of age) that have much higher risk for heart diseases and heart infract due to their personality. They distinguished between type A and B according to personality traits. Type A (candidate for heart infract) is very active, likes to win, lack patience, is very engaged in his work, and tends to be aggressive and hostile. Type A in a leader position can be described as very competitive, restless, and irritable person, who feels constantly need to hurry. Type B is more relaxed.

These two types have very different work patterns and are different resources for the organization they work for. Type A tends to work faster, even without deadlines, and cope better with stress and time press. He likes challenges and often chooses difficult tasks. However, type A performs poorly, when given task demands high level of patience, thoughtfulness, and precision.

Lee and Kanungo's (1984) (in Kaufmann and Kaufmann, 1998) study showed that most top leaders have the type B personality. This can be explained by the fact that type A has too little patience to stay in the same job long enough to become a leader, and is not structured enough to be a good leader. Type A's aggression and hostility can also be a reason, as it pushes away people. This type is not suitable as a team member. Type B is a much better resource for an organization that needs someone who is accurate, precise, and able to analyse complex situations in order to make best decisions.

There are also other personality traits that influence individual performance, motivation and satisfaction in organizational context:

- self- efficacy relates to a subjective belief a person can have about his ability to solve given tasks or master a given situation (Bandura, in Kaufmann, 1998). Level of self- efficacy can be enhanced by training and observations. Workers with self- efficacy improved through training have increased ability to learn new skills and present themselves better, which makes them better candidates for vacant position (Eden, Aviram, 1993).

- self- monitoring is individual ability to observe and control oneself during interaction with other people (Snyder, 1987). Those with high degree of self- monitoring try to make a good impression on people by adjusting their behaviour to different situations and social settings. They have better communication skills and try to change situations that they find unsatisfactory. They are solution oriented and cooperative. Those with low degree of self- monitoring are less able to adjust their appearance. They are more straightforward and do not hesitate to give negative opinions.

- personal perception of a degree to which workers are able to control their situation is an important information for an organization. People with internal control believe that their actions result from their skills and knowledge. Individuals with external control see their actions as a result of external situation that they cannot control. Studies showed that employees with internal locus of control are more satisfied with their jobs, because they feel that they have control over what they do (Rotter, in Kaufmann and Kaufmann, 1998).

Jung (Sharp, 1992) divided personalities into two main attitudes: extraverted and introverted and four orientations: thinking, feeling, intuition and perception. The kind of personality an individual has influences how he sees the world and how he behaves. It is obvious that introvert person fits in different work setting and likes different job tasks than an extravert person. A proper interview or a personality test would be a useful tool helping to give employees challenges that are in congruence with their character. However Sharp is arguing that such personality tests may be little reliable and misguide. People can change or suppress their personal traits due to environmental external factors.

People's feelings and attitudes toward work depend on their personality traits. What is viewed as a positive aspect of work for one person may be seen as a disadvantage to another. Every job has its profile that is appealing to different people, which gives them a chance to apply for the job that suit their personal preferences and temperament. According to Csikszentmihalyi (2003) "the oldest motivational tools- the stick and the carrot- may be sufficient to staff a workplace in a buyers' market for labour. But knowledge workers are not inclined to think about themselves as robots, and if an organization wants to keep their loyalty, it would do best to provide an environment in which their work has meaning and value" (p. 99).

One of the goals of the survey was to test how people respond to organizational requirements and check if personal preferences are coherent with job demands. According to hypothesis 1 that this thesis tested, employees that experience their preferences being in compliance with work specifications are ought to be in flow state more regularly than their colleagues whose preferences are not in accordance with job demands.

The elements of personal preferences that were tested in the questionnaire are:

- Multitasking- working on many tasks versus working on one task at the time; finishing one task before starting the next one vs. doing many things simultaneously; full focus on one thing vs. focusing on many things; working many hours on one task vs. shifting from one thing to another; tolerance for being interrupted;
- Punctuality- degree of importance of being on time and keeping appointments;
- Deadlines- having many deadlines and strict plan versus more free work organization
- Schedules- routines, schedules versus flexible work organization
- Urgency- degree of importance of working fast versus precise
- Flexible hours- is there a need for taking work home and working after normal work day;

2.3. Psychology in organizations- the individual differences paradigm

Hugo Munsterberg, the founder of industrial psychology, performed experiments and studied individual differences in the analysis of organizational psychology. He developed psychological tools, which helped to “identify workers, whose psychological qualities made them suitable for particular tasks” (Haslam, 2001, p.10). In 1913 he wrote an article titled “Psychology and industrial efficiency”, in which he focused on: the best possible man for the job, the best possible work, and the best possible effect. According to him researches needed to:

- analyse key requirements of the job and find out which personal qualities and personality traits can be associated with best performance for this job
- create tests that would reliably measure if an employee poses skills necessary for the best performance

He “held the view that identifying the right person for a job and fashioning the organizational environment to suit that individual’s circumstances and potential is a key part of organizational success” (Haslem, 2001, p. 12).

Munsterberg conducted studies, which confirmed that workers who had an integrated set of skills required for doing a particular work, scored highest, when tested on performance. He argued for the need of more research on the impact of personality traits and environmental factors on job performance (Haslam, 2001). The author would like to point out that Munsterberg did not make the distinction between autotelic and non- autotelic personalities in his theory. When he conducted his study, nobody was yet aware of this phenomenon. Consequently, he did not consider the fact that some people may find even simple, monotonous work enjoyable and interesting, while others might get bored at work which is complex and commonly viewed as exciting. Another concern was connected to his view on group membership’s determination of individual job satisfaction and enthusiasm. Nevertheless, his research was crucial for the field of organizational psychology.

Edwards (1991; in Spector, 1997) investigated a person- job fit. This approach showed that where job characteristics match personal characteristics (or the type of personality), the individuals should be more satisfied with their jobs.

From the author’s point of view, autotelic personality and autotelic experience are central elements for the investigation of flow. There will be given a summery of the most important findings concerning these issues in chapter four.

Flow is without a doubt an interesting phenomenon worth further investigation. The following chapter will provide a more thorough description of the flow state.

Chap.3 Flow

It is not an easy task to give a proper and thorough description of the flow phenomenon. It is a universal phenomenon (see part 4.1); a subjective state of mind, without one definition that researchers would agree upon (see part 4.2 and 4.3). Part 4.4 of this chapter aims to show that experiencing flow depends on characteristics of a given task and personality. The following section (4.5) sheds some light on the connection between culture and flow. The last section of this chapter (4.6) provides a comparison between goal- setting theory and flow theory.

3.1. The origin and universality of the concept of flow

The concept of flow, even though it was first brought in to western psychology and defined by Csikszentmihalyi, is old. It has been present in various religions like Buddhism for hundreds of years (“When you are not dominated by feelings of separateness from what you are working on, than you can be said to “care” about what you are doing. That is what caring really is:” a feeling of identification with what one is doing.” When one has this feeling then you also see the inverse side of caring, quality itself.”) (Pirsig, 1974, p. 290)(Wikipedia)

This concept has also been present in education (over- learning – see Csikszentmihalyi (1990)) and music and art(aesthetic rapture). Religious mystics describe it as being in “ecstasy”. Athletes refer to flow as well, and describe it as “being in the zone”. Pele, a football legend described being in a flow as follows: “I felt a strange calmness... a kind of euphoria. I felt I could run all day without tiring, that I could dribble through any of their team or all of them, that I could almost pass through them physically” (Wikipedia).

Maslow (1970) studied self- actualized individuals, whom he characterized by four main dimensions: awareness, honesty, freedom, and trust. Awareness was reflected by the “efficient perception of reality” and “freshness of appreciation” (Engler, 1995, p.349). Those individuals Maslow interviewed often reported a “peak experience” during which “the individual experiences were not only an expansion of oneself but also a sense of unity and meaningfulness of life. For that moment, the world appears to be complete and the person is at one with it. After the experience is over, and the person has returned to the routine of everyday living, the experience lingers on. It has an illuminating quality that transforms one’s understanding so that things do not seem to be quite the same afterwards” (Engler, 1995). Maslow aimed to show that all people have potential to be creative and that all people wish to realize/develop themselves. But unfortunately, not many people manage to do it, despite of faced opportunities (Brudal, 2006). Why? Csikszentmihalyi’s book “Creativity” (1996) gives for possible reasons (here after Brudal, 2006):

- people are overworked and over- stimulated by all the demands they meet in their everyday life; they can not find the way to regain control over own life and to overcome what stops them from contact with their own psychic energy
- people are being too easily distracted; they lack the ability to protect themselves from the external stimuli; as a result they can not find what fit them best and which areas could help them use fully their potential;
- people are lazy; they lack discipline and are not focusing enough on making a plan for self- realization and creativity; they keep on delaying these aspects of life;
- people have too little knowledge about how to find and where to seek for ways to leave that makes it possible to live and develop themselves at the same time

These obstacles are partially a reason of peoples believes in certain myths and stereotypes about the nature of a creative person. Simonths (2000) conducted a study, which resulted in finding of some evidences that are contrary to the common knowledge/stereotypes about the

characteristic of a creative person. He claims that “exceptional talents are less born than made” and that creativity is a result of both hard work and a lot of training and planning. It is a myth that creative individuals are more intelligent or talented than the other people. Another interesting conclusion from Simonths (2000) studies is the fact that obstacles and problems result in a higher creativity. Brudal (2006) reports after that Csikszentmihalyi (1996) that self-realization process consists of four factors interacting with each other: personal interests, wishes, needs and environment that an individual exists in. External environment can have both positive and negative impact on individual development. (Right work conditions, adjusted for individual needs, can cause higher creativity, motivation, satisfaction and efficiency).

Csikszentmihalyi (1975, 1990, 1997), a psychologist and a researcher in human development found Maslow’s concept interesting and decided to explore it. During his 30 years long research (including case studies and controlled experiments (Black, 2008)) he interviewed thousands of high- achieving men and women from different cultures, with different backgrounds and different occupations. All of his informants reported being in a state similar to one described by Maslow. Csikszentmihalyi had also studied life of 92 creative individuals (1996) and interviewed among others Nobel Prize winners and artists. He came to the conclusion that all of these individuals, while describing being in the flow, reported repeatedly same elements of the phenomenon. Some mentioned one or few elements, other mention all nine. The list of flow elements will be provided later in this paper.

Flow state has been experienced and reported by people from different cultures, with different occupations, of various age, gender, wealth and health. All of them managed to describe the elements of the flow model. It was reported both during work and leisure. This means that flow is a really universal concept and everybody has a chance to experience it. This paper focuses on the flow experienced in work settings. The challenge is to find out what triggers flow and how to prolong being in this mental state, since it is such a positive experience for both individuals and the organizations employing these individuals. The problem is that although flow is a universal concept, people who experience it are very different. What works for one person does not necessarily function equally well for another person.

3.2 Definition of flow

Csikszentmihalyi (1975:9) described flow as a “holistic sensation that people feel when they act with total involvement”. This involvement comes from the activity itself, not from the received reward, and it is the source of enjoyment (Quinn, 2005). According to Eckblad’s (1981) scheme theory flow is perceived as totally absorbing, “the person is intrinsically motivated because the activity itself becomes the goal” (Straume, 2005). It explains why people are so interested in the task they perform and not in the result of it (Quinn, 2005).

3.3 Elements of the flow

Michalyi Csikszentmihalyi and Ryan Quinn have both conducted researches on flow and both of them developed models describing flow elements. Differences between these two approaches are shown in this section.

3.3.1 Elements of flow according to Csikszentmihalyi

(Quinn, 2005) in his article (...) gives a list of nine elements that according to Csikszentmihalyi describe the flow:

- 1) a challenging activity with skills that are equal to (in balance/ harmony with) challenge; too easy challenge leads to boredom and little interest in it; too difficult challenge or goal makes people frustrated, and make them give up; balance between challenge and abilities gives a strong feeling of pleasure and satisfaction
- 2) clear goals (“goals establish a mechanism to measure your progress and provide a sense of achievement”)(Stachura, 2007))
A person in a flow state knows all the time, unconsciously, which step to take next (Straume, Christensen, 2005). Example: jazz musician that improvises.
- 3) clear feedback (immediate, positive, continuous feedback)
- 4) concentration (total engagement) (if you are interrupted and not able to concentrate, you will not be able to experience flow)
- 5) the merging of action and awareness, i.e., the “activity becomes spontaneous, almost automatic” (Csikszentmihalyi (1990:53)); a loss of the feeling of self- consciousness; feeling of control and freedom at the same time
- 6) a sense of (personal) control- a person is so engaged in the activity that he is not afraid to make mistakes
- 7) the enjoyment of the activity for its own sake irrespective of rewards and punishments (an “autotelic experience”)
- 8) a lack of concern for what others may think about the performer (the loss of objective self- consciousness)
- 9) time seems to speed up or slow down (the “transformation of time”, subjective experience of time, distortion of time)

Ad.3 giving right feedback at the right time can be a challenge for leaders. (Brudal, 2006, p. 75) wrote after Hogan that a leader must be a “high empathic person”. He or she must have sensitivity, knowledge and empathy to manage to keep workers in the state of flow by providing them with an appropriate feedback.

According to Csikszentmihalyi being in the flow leads to personal growth, feeling of accomplishment, better self- image and even better health.

These nine elements can be divided into three categories (Straume, 2005): prerequisites of flow, immediate experiential characteristics of flow, and subsequent consequences of flow.

Challenge- skill dimension is a prerequisite, because entering a flow state and staying in it depends on the balance between challenges and skills. Csikszentmihalyi, (2003) pointed out in his book “Good business. Leadership, flow and the making of meaning” that it is much easier to enter the flow, when the task/ exercise seems to be doable. If it is too much beyond our skills, we feel anxious and frustrated, if the skills are significantly exceeding the challenge, we lose interest and get bored. The same applies to the second element- clear goals, they need to be continuously adjusted during the activity in order to sustain flow, but they have to be also present before the activity takes place in order to enter flow. The second category- immediate experiential characteristics includes: time distortion, concentration, feeling of control, the merge of action and awareness, and immediate feedback. All these elements exist at the same time only in the presence of flow. The last category- subsequent consequences includes just one element: autotelic experience. According to Csikszentmihalyi, autotelic experience is the end result of being in the flow state.

3.3.2 Elements of flow according to Quinn

Quinn’s description of flow is a bit different than the definition developed by Csikszentmihalyi. (Quinn, 2005) argues that the elements of flow must be divided into certain categories according to their role in the experience of flow. He suggests that although

these nine elements, listed above, describe flow quite accurately, they cannot be put together into a consistent definition. He suggests and tests another definition, where flow is a merge between the awareness and application (see Fig.4). In his model goal clarity and challenge skill balance are input factors creating concentration. Concentration is a state of mental effort, which combined with feedback clarity increases motivation. Dependences are a bit complicated, but together they lead to flow as a merge of awareness and application. Such definition of flow gives four output factors:

- loss of self- consciousness
- sense of control
- autotelic experience
- and transformation of time

The results of the analysis supported Quinn’s hypothesis that flow is rather a merge of awareness and application than a second- order factor consisting of nine first- order factors, as suggested by Csikszentmihalyi. However, results have shown that there had to be some modification to the proposed definition. For example, “ the effect of concentration on flow was not significant, flow had a significant effect on the loss of self- consciousness while concentration did not, and concentration affected the sense of control and the autotelic experience in addition to flow”. Concentration was also proven to not have a significant effect on the transformation of time.

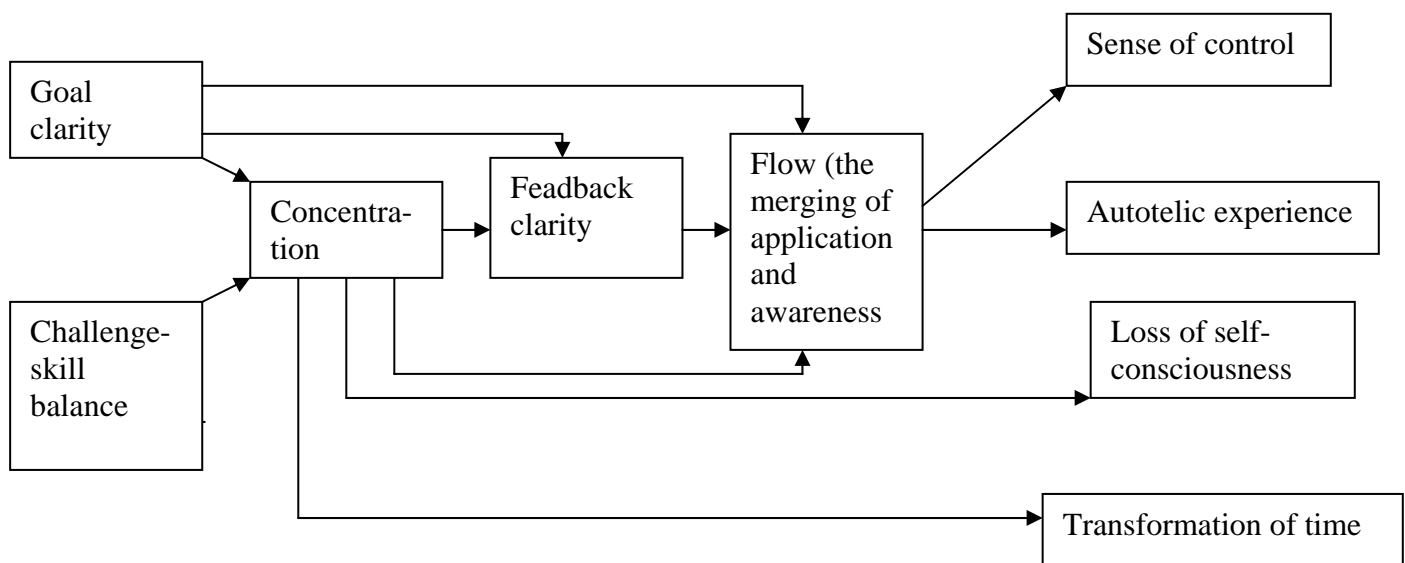


Fig.3 Flow as a merging of awareness and application (Quinn, 2005)

3.4 Flow and task at hand

Csikszentmihalyi (1990, 2003) used a model where experiencing flow depends on a task. If the task is not difficult or challenging enough, a person will get bored and he will not be able to concentrate deeply on it. If, on the other hand, the task is too challenging and difficult, the person that is working on it will get frustrated and will eventually quit. The conclusion is that the level of task complexity must be adjusted accurately to personal skills of the worker.

There has to be a balance between the knowledge and skills of the worker, and the difficulty of the task.

Csikszentmihalyi (2003) conducted studies on the quality of experience people report at various moments in their lives since the mid- 1970s. the following model (see fig.4) shows how feelings change as a result of different combinations of challenges and skills. The central point represents the average level of opportunities to act (challenges) and availability of personal capacity (skills) during the week of observation. Close to that central point people’s moods are neither positive nor negative. As they move away from the central point, their state of mind (mood) depends on combination of skills and challenges. The more somebody feels he is skilled, the more his moods and concentration will improve. The best place to be is of course in the flow channel where both variables are high. But there are two other channels: arousal and control that are associated with positive emotions and learning. In the state of arousal challenges are a bit bigger than skills, people need to focus and concentrate, and skills need to be improved if one wants to experience flow. In the control channel skills are slightly higher than challenges. Being in control gives the feeling of happiness and confidence. The remaining channels are rather negative- challenges and skills are not in balance. Leaders in organizations can learn a lot from this model. If they manage to create work settings or situations such that workers skills will be engaged in progressively higher challenges, both the quality of their life and the quality of their work will improve.

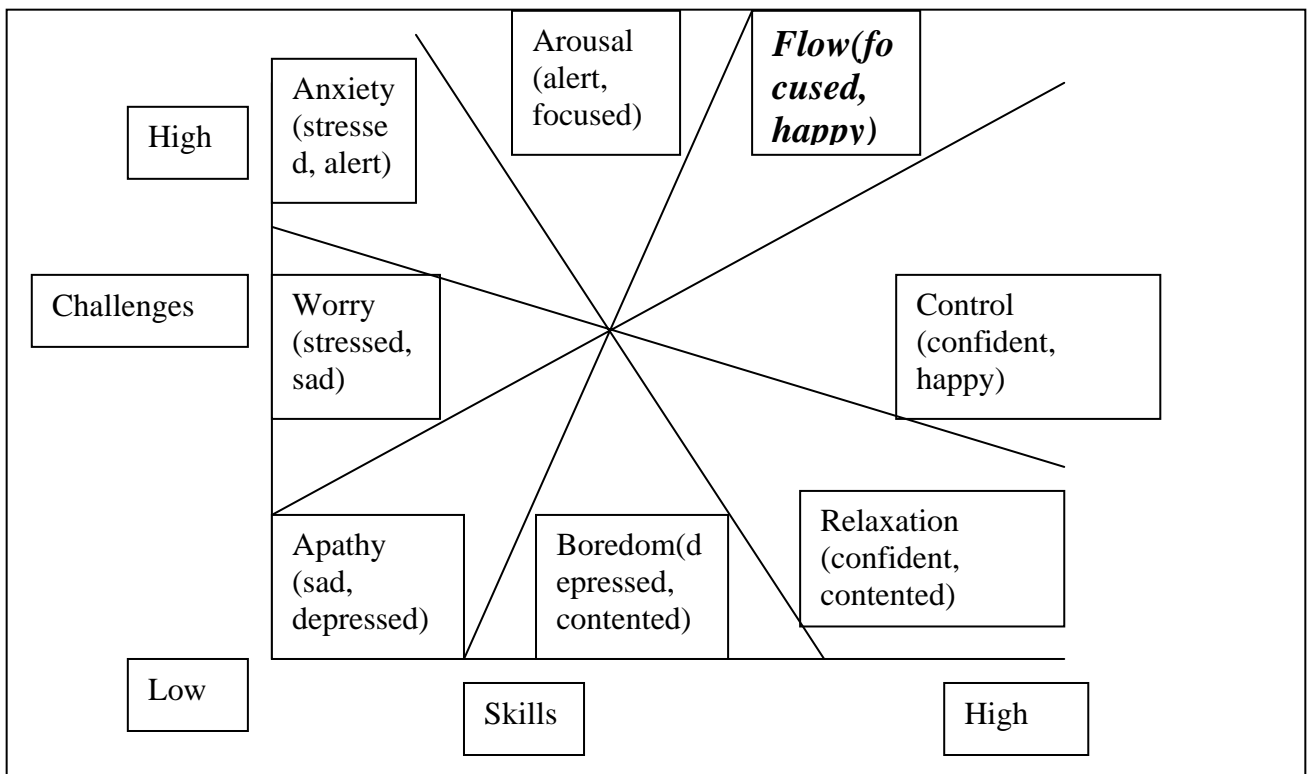


Fig. 4 “The quality of experience as a function of the relationship between challenges and skills.” “Optimal experience, or flow, occurs when both variables are high”. (Csikszentmihalyi, 1997, p. 31)

Another point is that the task must be forcing some mental activity and lead to personal growth if it should generate flow. Passive leisure activities like watching television or chatting with friends do not require concentration or mental effort. They can be entertaining and give the feeling of being happy, but they are not giving the feeling of accomplishing something. Active leisure and work request some level of concentration and mental effort and they are leading to flow. Csikszentmihalyi (1997) made a research where he confirmed this thesis. He tested a group of teenagers and asked them about their everyday activities. The part of the group that was more frequently involved in school work and meaningful activities like playing instruments or playing sports, had reported being in a flow state more often than young people spending their time on effortless activities like watching TV, talking with friends, or playing on their computers. Those teenagers who reported more frequent flow were also generally more satisfied with their lives, more motivated to study, and had better self-esteem. The same study was conducted on adults and results were the same- adults spending their time on mentally challenging activities were more satisfied and pleased with their lives.

People usually report being in the flow state while engaging in the activities they enjoy. But since it is not possible to do just preferable activities, people cannot be in the state of flow constantly. Csikszentmihalyi (2003) expanded the model presented above by pointing out which activities tend to put people in certain mind states (see Fig.5).

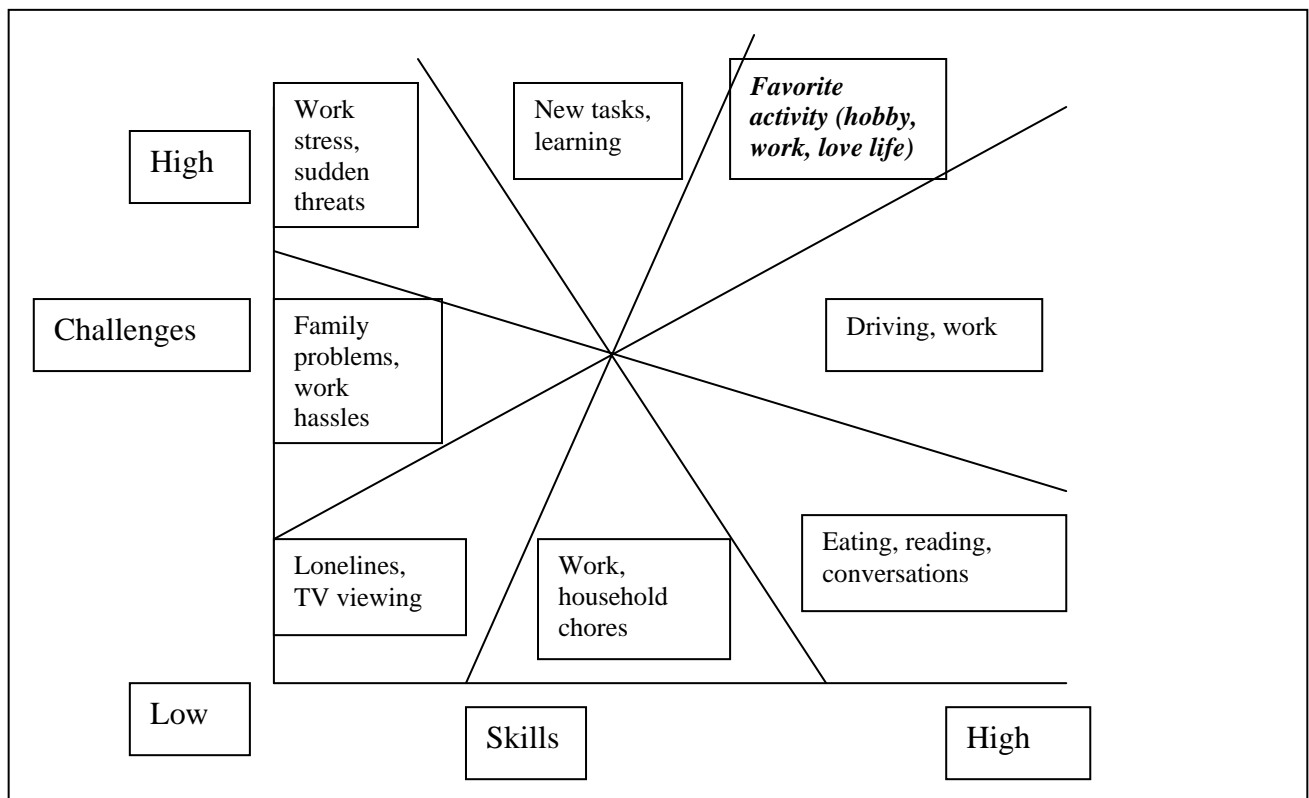


Fig. 5 The relation of activities to the quality of experience (Csikszentmihalyi, 2003, p. 74)

Csikszentmihalyi (1997) argues that being in a flow state is not synonymous with being happy. While being in a flow people are so lost in the thing they do, that there is no space for analysing how they feel. It is first in retrospective that they report feeling good and feeling that they accomplished something. Such accomplishments are busting confidence. Flow is not about getting rewarded or creating results. It can explain while artists are so into painting a piece of art, but they lose their interest in it right after finishing it.

Flow occurs also when people face clear goals, which force them to respond in an appropriate matter (Csikszentmihalyi, 1997). There is no space for doubt; everything is either black or white. Flow activities provide immediate feedback, so people know all the time how they stand and how well they are doing.

According to Csikszentmihalyi (1990) any activities like for example sport, music, art, dance, or games “are designed to make optimal experience easier to achieve” (Csikszentmihalyi, 1990, p. 72). They make people acquire new skills, they have a set of rules making it easy to set some clear goals, they put people in the situation, where they feel they have control, and they provide immediate feedback. Such activities demand concentration and focus. All these features of flow activities make participation highly enjoyable. People wish to feel such pleasure again and are motivated to try them again and experience again flow.

The following model (see Fig. 6) shows that flow is an activity that pushes people to perform better and leads to growth of itself. A1, A2, A3, and A4 represent a person (A), who is learning a given task at four different points of time (1, 2, 3, 4). Originally (A1), A has low or no skills, and the challenge is easy. A is in the state of flow. The task is new and exiting, and low skills are balanced with low challenge. But after a while, A learns more and if the challenge is not raised, he is getting bored (A2). He leaves the flow channel. In addition to getting bored he can also get anxious about his poor performance if the challenge becomes too difficult (A3). This emotions are negative, and A, who recalls how good it felt to be in flow, will try to come back to “flow channel” (A4). He can do it in two different ways. He can either improve his skills or raise the challenge. Flow is not a static state, so A will not stay in A4 forever. Originally exiting and enjoyable activity gets less exciting as it becomes a routine. Eventually he will get bored or anxious again. He will try to enter flow channel on a higher level of complexity than A4. This simple model explains how and why flow leads to self- growth and discovery. It can be applied to various situations like for example sports, playing instruments, work, or art.

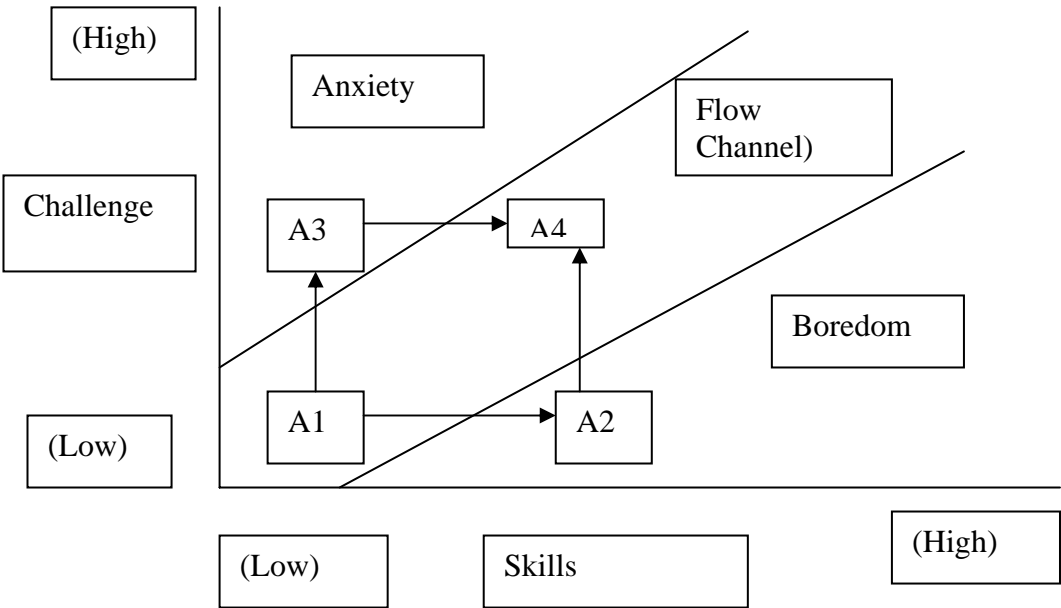


Fig. 6 Why the complexity of consciousness increases as a result of flow experience (Csikszentmihalyi, 1990, p. 74)

Quinn (2005) discovered that “people experienced the highest degree of flow in activities that have a physical component to them”, “people in different job types appear to experience flow elements differently”, flow elements are also experienced differently depending on the type of task. One of the results was that “ people experienced more flow when the work was not complex, less flow when the complexity of the work was moderately low, and increasingly more flow as the complexity of the work increased beyond that point”. Results of the analysis lead to following conclusions:

- “high- performance experience is a real and relevant phenomenon in knowledge work”
- “high- performance experience appears to be affected both by individual and structural variables: the degree to which people experience flow depends on the types of jobs and tasks they perform as well as on the clarity and difficulty of their goals and the feedback they extract from their tasks”
- “high performance experience is consequential for the individuals who experience it”; it gives them more joy, feeling of more control, does not leave the room for wondering about the opinion of others.

3.5. Flow and culture

This section of chapter 4 is supposed to describe shortly the correlation between flow and culture. The first part (4.5.1) provides an introduction to organizational culture, the second one (4.5.2) links culture to flow.

3.5.1 Organizational culture

The behaviour observed in an organization tend to be more dependent on personal and social relations (organizational culture) than on organizational structure (Jacobsen, Thorsvik, 1997)

The word “culture” has its origin in the Latin word “colere” (adapt). Culture is manifested by peoples thinking, experiences and knowledge about existence, as well as people’s ideas, norms and values in life. It makes individuals behave in a certain way (Jacobsen, Thorsvik, 1997).

“(Organizational culture) is a model of fundamental assumptions (...) which have functioned sufficient enough to be considered true, and which therefore are taught to new members as the right way to perceive, think, and feel (...)” (Schein 1985: 9, in Jacobsen, Thorsvik, 1997).

Organizational culture has an impact on the workers motivations to give their best performance. Each organization has its culture, its internal life, “the way we do things here”. This culture is manifested in the way employees communicate with each other and in the way important days are celebrated. The notion of organizational culture became popular after 1980, and it can be defined as: “a system of common values and ideas about how things function and should be done. From this system norms and expectations for performance are developed”.

Organizational climate is integrated in the organizational culture notion (Kaufmann and Kaufmann, 1998). It functions as a leading tool; if employees are taught the “right” culture, they will automatically act in the best interest of the organization and handle the information efficiently.

Culture Fundamental values and assumptions	Climate Atmosphere, conversational tone, and values
Cause	Effect

Fig. 7 Relationship between organizational culture and organizational climate (Kaufmann and Kaufmann, 1998).

Jacobsen and Thorsvik (1997) provide the list of seven fundamental presumptions that groups in the organizations have (cultures core elements):

1. How the relation between the organization and external environment is perceived? Is it active and leading or passive and suppressed?
2. How people's actions are viewed?
3. How organizations reach "the truth"?
4. Is the organization future or past oriented?
5. How the relations between the members of the organization should look like?
6. How people's nature is viewed?
7. How are conflicts viewed?

The combination of these seven elements can give different types of organizational culture.

Job values are personal wishes reflecting what people want to get from their work, and how they should behave in their workplace. Job values can be categorized as (Kaufmann and Kaufmann, 1998):

- Internal job values- they are different for different individuals. They define values concerning work itself
- External job values- they are connected to consequences of ones work.

Values express how we should act and have four different functions according to Rokeach (1976):

- They set a standard for actions we should take, judgments we should make, and attitude we should take up
- They are a plan for how we should choose among alternatives, how we should make decisions and how we should loosen conflicts
- Motivational function- values have impact on behaviour
- Fundament for self- respect- contributes to maintaining and increasing of our self-esteem.

Most people have both type of values, but their relative impact on behaviour varies. Some workers are more motivated by external job values like salary or time for family; others are more motivated by given opportunity for self- growth or learning. It can be difficult for leaders to collect knowledge about workers job values. But it is worth the strive. Rearranging work features and giving workers the work that fits their job values will improve efficiency and job motivation.

Values are abstract and tell what is good and what is bad. Norms are principles and rules people have to follow or be prepared for being punished.

3.5.2 Culture and the flow theory

The desire to achieve an optimal experience, or flow, is common for all the people, in spite of cultural belonging. Cultures can be compared by the amount of individuals that are given the opportunity to access experiences that are in line with their goals, and amount of people whose experiences allow them to grow and develop complex skills. Interestingly, primitive cultures like Indians or Pygmies have succeeded in creating a cultural context that makes the appearance of optimal experience relatively easier, by filling their days with challenging, useful and enjoyable activities. A culture is successful, when it evolves into having goals and rules that match the skills of the population to such extent that its members experience flow frequently (Schein, 1985).

Culture on the individual level seems to reduce anxiety and fear (Schein, 1985). It provides simple and clear guidelines, which can make individuals perceive their work as more meaningful, make them feel that they do something important and “real”, and that can result in reduced insecurity. A strong culture can also have motivational effect. Through social interaction individuals acquire organizational goals and make them their own goals. They become really bonded with their organization and perceive working for the organization as working for themselves, for their wishes and goals (Jacobsen, Thorsvik, 1997). It seems like the right type of organizational culture can help employees to experience flow.

Flow theory suggests that there are some obstacles in our culture preventing employees from finding their work valuable and meaningful. The first obstacle has to do with our consumer culture, which may seem to devalue work in general. Anything that has to do with work tends to be seen as unpleasant. People seem to be more focused on relax, pleasure, and material goods. However fulfilling and exiting job may be, the view of it is biased by common believe that all work is unpleasant. Some jobs do not actually have anything to offer except for monetary reward. In such case workers have difficulties getting involved in what they do. Another cultural obstacle to flow is the impermanence of post- modern business organizations. Being in the flow requires deep concentration on goals and total focus on the task at hand. If workers are worried that their organization is unstable and may disappear from the market, they can have problems with devoting their lives, time and effort for the sake of organization. Lack of security will affect their ability to perform their best and to enter flow. Some managers do not see their worker as unique and valuable, but just as tools necessary to achieve organizational goals. Employees who are treated this way do not have incentive to do more than required. They neither enjoy their work, nor invest their psychic energy into it. And flow theory says that without some mental effort (engaging psychic energy into given challenges) workers will not have the prerequisite to enter or stay in the flow.

As previously mention the following chapter will provide a thorough description of “autotelic personality” and “autotelic experience”.

Chap.4 Autotelic personality/ autotelic experience

As it was mention in chapter two, understanding of the concept of “autotelic personality” and “autotelic experience” is crucial for obtaining a deeper understanding of flow experience. Consequently, the first subsection of chapter four will provide a description and explanation of these phenomena. The second part will show why it is beneficial for organizations, especially for knowledge intensive organizations, to find and keep workers with autotelic personality.

4.1 What is meant by autotelic personality and autotelic experience?

Amount of time spent in the state of flow varies among people. Csikszentmihalyi (1975/2000, 1990, 1997) postulates that this variation is due to the fact that some people have autotelic personality and others do not, postulating that individuals with autotelic personality are more likely to experience flow in everyday life. The word “autotelic” is composed of two Greek words: auto (means self) and telos (means goal). Autotelic means “containing its own goal, an activity done for its own sake” (Engler, 1995). An autotelic person tends to find intrinsic motivation and flow in daily activities. He values all tasks equally. Whatever he does, “is one’s life at the moment” (Engler, 1995) and gets full attention.

An autotelic personality manifests itself by an ability to enjoy situations that are simply unbearable for non- autotelic personalities. They have the ability to redirect attention and psychic energy so that the external environment is not bothering them. “People who have that quality are bent on doing their best in all circumstances, yet they are not concerned primarily with advancing their own interests. Because they are intrinsically motivated on their actions, they are not easily disturbed by external threats” (Csikszentmihalyi, 1990, p. 92)

Asakava (2004) tested flow theory on Japanese students. He divided them into two groups, based on the percentage of time spent in a flow condition during one week He used ESM in his study. The study showed that as the complexity of flow activities increased (more challenging, higher skills demands), students’ concentration, enjoyment, happiness, activation, satisfaction, perceived control of the situation, and perceived importance for the future also increased. Also the amount of time spent in the flow was positively correlated with these emotions (longer time spent in the flow- greater enjoyment). “Autotelic groups’ level of concentration and perceived control of the situation were significantly higher than those of the non-autotelic groups” (Asakava, 2004). Level of perceived future importance was higher for the autotelic students for activities like TV watching, socializing, maintenance, but not for productive activities like schoolwork, work, and life planning activities. In general autotelic students tended to be more engaged in everyday activities and used more mental energy while performing them. Autotelic students’ level of perceived challenge and skill were more balanced than those of non- autotelic students. The first group was more often in situations where perceived challenges were slightly higher than perceived skills. It was opposite for the other group, the non- autotelic individuals. “The findings suggested the universality of flow experience and its potential for building positive quality in life” and that “flow had positive effects on psychological well- being for the Japanese”(Asakava, 2004). Asakava refers to unpublished work of Adlai- Gail (1994) and Abduhamdeh (2000), where they studied the time allotment of autotelic teenagers and adults. Both autotelic teenagers and adults used significantly more time on active leisure (sports, games, hobbies) than passive leisure (watching TV, computer games, and internet). Autotelic teenagers spend also more time studying than their non- autotelic peers. Findings from this and other studies indicate that autotelic individuals share some meta- skills that make them more suited for entering flow and remaining longer in the flow state. Csikszentmihalyi and Nakamura (1984) suggested that such meta- skills include ability to:

- focus attention on the present moment and the activity at hand
- define one’s goals in an activity and identify the means for reaching them
- seek feedback and focus on its informational aspects” (pp. 66-67)
- continuously adjust the balance between perceived challenges and skills (Asakava, 2004)

Mikicin (2007) studied possible effects of personality, focus of control and motivation for success on experiencing flow state by athletes. The results revealed a significant relationship there. He concluded that “conscientiousness and agreeableness highly correlated with most flow variables while autotelic experience was associated with extraversion and control ability with emotional stability. Experiencing flow state (...) was also associated with achievement motivation variables, especially with a perceived value of learning” (Mikicin, 2007). Csikszentmihalyi argued that flow state experience is correlated with autotelic personality traits. Autotelic personalities balance “ability level and challenge, clear goals, intrinsic rewarding, concentration and focusing and control” (Mikicin, 2007). There is a positive correlation between these features and conscientiousness and agreeableness. This study confirmed this. Athletes that had highly autotelic personality and who were less concerned with the external environment, reported more flow and greater satisfaction. They were also more effective and efficient. But it was not physical reward that was motivating them. The motivation was internal and was triggered by their personality traits. They were more able to concentrate, more aware of the importance of learning. They were adjusting their potential to the expected challenge, and as a result “optimism and enthusiasm enhance satisfaction from experiencing flow state.” The other explanation pointed out there was that this type of personalities was coping better with stress and was better suited to relax.

“The key element of an optimal experience is that it is an end in itself” (Csikszentmihalyi, 1990, p. 67). The activity is done for its own sake, not for some external benefit or its consequences. Some activities may initially be viewed as boring or too advanced, but as ones knowledge develops, they may become intrinsically rewarding. Years of painful training can result in sudden ecstatic insight- the opening of a new world. “Most enjoyable activities are not natural; they demand an effort that initially one is reluctant to make. But once the interaction starts to provide feedback to the person’s skills, it usually begins to be intrinsically rewarding” (p.68). Autotelic experiences improve the quality of life; they give the sense of purpose, feeling of control, and opportunity to enjoy deep involvement. It increases strength and complexity of individuals who are experiencing it.

People’s ability to experience flow varies. Variation depends on their intrinsic motivation, ability to control consciousness, amount of external stimuli they need to accomplish mental tasks and their dependence on environment. Those who are more intrinsically motivated and less dependent on external information have more control of consciousness and as a result of this are more able to achieve an optimal experience. Experiments made by Dr. Hamilton showed that autotelic people who are experiencing flow more frequently solved mental tasks more effortlessly, because they invested more attention into them. Attention, ability screen out stimulation and to focus just on relevant information seemed to reduce mental effort. For the group that was not autotelic the results were opposite. Research still have not determined if predisposition to enter flow state is genetic or a matter of training. There are some evidences that early childhood influences people’s ability to experience flow. Children, who had relationship with their parents, which was based on:

- clear goals and feedback
- parents’ genuine interested in their feelings and experiences
- access to various activities
- awareness of consequences of different actions
- trust and commitment
- parents’ dedication to give them complex challenges adjusted to their increasing skills

grew into happier, stronger and more satisfied teenagers than their peers (Csikszentmihalyi, 1990). Such “autotelic family context” gave children proper training to enjoy life and enter flow.

4.2 Autotelic workers

During his research Csikszentmihalyi interviewed several people trying to figure out the secret of autotelic personality. He came to the conclusion that individuals who are often in the state of flow, and who are having autotelic personality, are sharing some features. They do not have sharp distinction between work and free time. They enjoy their work, are trying to master it and are genuinely interested in it. It does not have to be a complex work; they concentrate fully on even a simple task. They are having meaningful hobbies, and do not spend their leisure time on watching television which requires no mental activity. Interviewed individuals that had autotelic personality would not change their work for any other, even if the change would be beneficial. They liked the complexity of what they were doing, they actively tried to improve their skills and found themselves new challenges, enabling them to improve their skills even more. They were in control of what they were doing, had clear goals, and were intrinsically motivated.

Flow is not achieved by some rare, superhuman abilities, but by “ the gradual focusing of attention on the opportunities for action in one’s environment, which results in a perfection of skills that with time becomes so thoroughly automatic as to seem spontaneous and otherworldly” (Csikszentmihalyi, 1990, p. 151). What may look like hard, boring and meaningless work for most workers is being transformed into a complex activity involving creativity and freedom to autotelic people.

Csikszentmihalyi (1990) suggests that redesigning of jobs and job demands, so they resemble flow activities and contain elements of the flow model (skill- challenge balance, clear goals and immediate feedback, need for deep concentration) would make people work more effectively and help them develop autotelic personality traits by training them to seize opportunities, reach ambitious goals and enhance their skills and knowledge. Jobs which resemble games (or surgery/ hunting/ fishing) are generally more enjoyable even for workers who do not have autotelic personality. Unfortunately, optimal experience depends on subjective perception and evaluation- and workers have different personalities- so even a theoretically fantastic job can be vied as little enjoyable for some people.

Csikszentmihalyi (1990) discovered an interesting paradox. People reported flow most often while working, and much more seldom during leisure activities. Surprisingly, when asked, they wished for more free time and fewer working hours. Motivation for working was much lower, even though work enabled people to experience flow more frequently. Those who experienced being in the flow more often during the week period, reported feeling more active, creative, strong, and satisfied. Possible explanation to this paradox can be peoples’ negative attitude toward work. Work is being viewed as a necessity, something that they would not choose to do if they did not have to. Positive experiences at work are not as appreciated, as dull leisure, because they do not contribute to peoples’ long- range goals. Another point is that free time needs to be structured and made more challenging either mentally or physically; people have to make an effort in order to enjoy leisure activities. Individuals enjoying their jobs and are not wasting their free time on mindless activities, feel that their lives are more worthy.

The next chapter will provide a continuation of flow investigation, but from a slightly different angle. Chapter 5 will show that flow is a resource, from which both the employees and organizations benefit.

Chap.5 Flow as a resource in job context

The goal of this paper is, as previously stated, to show that congruity between personal preferences and organizational demands leads to more frequent flow, deeper motivation, and satisfaction. Previous chapter contained a thorough description of the flow phenomenon. This chapter will look on the relations between flow and creativity (5.2), satisfaction (5.3), motivation (5.4), and stress (5.5) in the job (organizational) context. The last two sections demonstrate how flow can increase work motivation, work performance and job satisfaction (5.6) and how to built flow in organizations (5.7).

5.1 Flow on the job

Organization- psychology aims to understand which factors influence the efficiency of an individual. In the context of work it is reasonable to focus on the resources people already have. Flow is a state that motivates, gives satisfaction, and makes people perform more effectively. Being in the state of flow motivates people to continue and finish what they are doing. Positive feedback, clear goals and harmony between task's difficulty and skills escalate motivation. Flow also motivates to actively search for similar tasks in the future, since they were experienced as satisfying and gave the feeling of accomplishment. People that are often in flow feel empowered, in control and are less dependent on extern gratification. Satisfaction can also come as a result of higher efficiency that resulted from working in a flow state.

Flow can be considered a resource. Motivation, satisfaction and efficiency are important values in the organization. Being able to detect factors and situations that make workers be more often in flow would be very beneficial for each and every company.(Straume, Christensen, 2005). One way to achieve it is to organize work conditions and tasks in a way that fit individuals, because different people have different approach to solve given problems or tasks. In other words, challenges must balance workers abilities. Csikszentmihalyi argues that even simple, monotonous and predictable jobs can make workers enter the state of flow. The key is to concentrate on it, focus and show real interest and commitment.

Flow increases the level of motivation, makes people so involved in what they are doing that they can not stop doing it until it is completed. The elements of flow: clear goals, immediate feedback, and balance between perceived challenges and skills provide inspiration and motivate to continue (Straume, Christensen, 2005).

The consequence of experienced flow is enjoyment, fulfilment and satisfaction. While being in the flow state people completely identify themselves with the task at hand and they are not responding to external influences. The concentration level is the highest possible and individuals feel that they have control and that they are mastering a given task. Satisfaction can come as a consequence if flow contributed to higher efficiency (Straume, Christensen, 2005).

It has been noted (LeFevre, 1992) that it can be optimal if challenges are higher than skills or experience. This way a worker's abilities can exceed both his own and others' expectations. And if he gets positive feedback during the process, he can eventually accomplish more than expected. This will result in personal growth.

Brudal(2006) suggests that there is a positive correlation between being in the flow state at work, performance, results and satisfaction from work.

Since it seems right to assume that flow can enhance motivation, satisfaction and efficiency, it ought to be natural for leaders to adjust work conditions and work environment, so that the workers can experience flow more often and stay longer in this state of mind.

Csikszentmihalyi (2003) wondered why flow does not happen often on the job and what motivates people to work. He pointed out that although most people report that they would continue to work even though they would have enough money to stop working, those who are working report that they cannot wait to stop working and go home.

Knowledge workers search for jobs they will enjoy and which allow them to grow. “The objective conditions of workplace will therefore determine to a great extent whether people will be motivated to work or not” (Csikszentmihalyi, 2003, p. 86). Individual attitude towards work is also a factor determining ones motivation. Smart managers should take these two points into consideration and create attractive workplace, fill job with meaning and value, and employ people who find satisfaction in their work.

Although current work conditions are much more human, than they were in the past, it does not guarantee that workers are experiencing flow while at job more frequently than they did in the past. Csikszentmihalyi (2003) gives several reasons for that situation:

- Few jobs nowadays have clear goals and even less provide goals that are workers’ goals as well. Too often employees understand just what they are doing without understanding why they are doing it. This fact makes it difficult for workers to enjoy their jobs.
- Contemporary jobs seldom provide adequate feedback. This is resulting in weaker involvement. It is not easy to get really involved if people’s performance is not noticed and they are not sure if what they did was well done.
- In many jobs, the skills of the worker are not well matched with challenges. A job which does not give a worker the opportunity to fully use his skills becomes boring and gives the worker a feeling of his potential being wasted.
- In many jobs workers miss having control over the goals during the process and over their own performance. Such situations make people do just what is required, but not more.
- The use of time is often specified by rhythms external to the worker. Workers miss the flexibility and opportunity to work according to their own internal states.

Taking into consideration all mentioned obstacles, it is quite amazing that people still manage to experience flow while at work. Csikszentmihalyi suggests that redesigning of the workplace would make workers generally happier, more satisfied and motivated to give their best performance.

Vivoll Straume (2004) studied flow as a creative process in organizations. According to her, flow has been mostly investigated in connection with sport, leisure and education, and there has been less focus on organizational psychology. Straume discovered that (here after Brudel, 2006):

- flow at work is experienced as a fun and interesting state of mind
- the more clear the goals are, the stronger the feeling of flow is for the workers
- the bigger the chance for an autotelic experience while at work, the higher the level of flow.

Roberts (2007; in Dutton and Ragins, 2007) in her article “How positive relationships create a context for self- discovery and self- actualization” wrote that “in work organizations individuals seek to form and maintain mutually beneficial relationships (...) to gain instrumental assistance and social support” (p.30). If they feel that their work conditions and leaders make it possible for them to learn, grow and beware their identity, they will experience their “relationship with job” as positive and enriching. They will respond with being more efficient and productive employees.

5.2. Creativity

The author chose to include this section in her paper, although creativity is not directly a goal of this research. The reason for this decision, is that creativity plays an important role in the flow theory and has an impact on the job performance.

5.2.1. Creativity, personal features and flow

Csikszentmihalyi (1996), came to the conclusion (after his research on nearly 100 creative people) that creative people have high tolerance for paradoxes. “They show tendencies of thought and action that in most people are segregated” (p.57). Creative people are so adaptable that they can experience two extreme sides of an aspect without experiencing internal conflict. Csikszentmihalyi listed ten such examples of personality features that describe creative individuals he interviewed:

1. High level of physical activity and physical energy- and at the same time ability to relax and “charge batteries”; creative people find their own balance between these two extremes.
2. Smart and naïve, at the same time.
3. Disciplined and playful, at the same time.
4. Fantasy- full and realistic, at the same time.
5. Extrovert and introvert, at the same time.
6. Humble and proud, at the same time.
7. Feminine and masculine traits, at the same time (androgen type).
8. Conservative and traditionalistic, and open- minded and opportunistic, at the same time.
9. Engaged and distanced, at the same time.
10. Pain and happiness, at the same time

Maslow (1987) developed a concept of “self- actualizing creativeness”, which differs from what he called “special talent creativeness”. Creativity in self- actualizing people was not productive in the ordinary sense, “nor did they have great talent or genius, nor were they poets, composers, inventors (...)” (Maslow, 1987, p.158). It was in a way a consequence of personality, and was reflected in ordinary life activities and a tendency to do anything creatively. Maslow (1987) concluded that self- actualizing creativity can be found in individuals who:

- Are open to experiences, can see the fresh and the concrete, and have perceptiveness of a small child enabling them to see “the real word of nature”
- Are more expressive and spontaneous, less controlled and inhibited in their behaviour, not afraid to express their ideas
- Manage to combine innocent, childlike perception and expressiveness, with mature, sophisticated mind
- Are rather attracted by unknown, unsafe, or mysterious situations, than frightened by them
- Are able to put opposites together in a way that they are no longer contradictory or mutually exclusive
- Are so self- accepting and integrated that they are not afraid of being disapproved of
- Have had “peak experience”- total integration between within the person and therefore between the person and the world

It seems like Maslow's description of self-actualizing people have a lot in common with descriptions of autotelic individuals. Additionally, the "peak experience" resembles flow experience. Since self-actualizing creativeness opens for "peak experience", is it reasonable to assume that creativeness in general opens for flow experience? It opens at least for better performance:

"Creative people are especially good at ordering their lives so that what they do, when, and with whom will enable them to do their best work" (Csikszentmihalyi, 1997, p. 43).

5.2.2. Creativity in job contexts

Except for the fact that creative individuals manage to live after such polar extremes, they have to have courage to make themselves visible in the world and pursue their dreams/ plans/ goals. They have to be open for different experiences and vulnerable. Olsen and Himle (2005) opened for a new knowledge in organizations in their article "Kunnskapsregnskapet- mer av det samme eller noe helt annet?". They argue that leaders that have reactive and defensive personality fail to see the whole "picture" of the organization. They postulated that there is too strong focus on the negative and weak sides of the organization, leadership and the workers. In stead there should be delegated more attention toward new ideas and more knowledge. Knowledge gives new perspective and help to be more proactive, open and aware of situation (Olsen, Himle, 2005). How to become more open for experiences? According to Brudal (2006) humor can help. It reduces the stress.

As pointed above, external environment influences the process of creativity and individual ability to self-realization and growth. Csikszentmihalyi (1996) and Brudal (2006) both suggest that the following features in the external social environment influence people's ability to find their inner resources:

- Learning- it is not enough to be on the right place in the right time; there is a need for a special training and learning that must be provided.
- Positive expectations- parents and teachers must encourage individuals in the direction of activities that make them experience flow.
- Resources- good economy, enough time and contact with communities that share the same interests are necessary.
- Appreciation and confirmation- having a good mentor that helps to find direction is priceless.
- Payment (reward) - being seen and encouraged to continue, finding satisfaction in own growth (autotelic aspect of self-realization).

5.3. Job satisfaction

Job satisfaction has been widely researched and there is no doubt that satisfied people perform better and are more prone to experience flow. The following sections present relevant theory.

5.3.1 Job satisfaction in the job contexts

"Job satisfaction is a degree to which people like their jobs (...) The study of the causes and consequences of these important employee attitudes is one of the major domains of industrial-organizational psychology and organizational behaviour" (Spector, 1997). Job satisfaction is important for effectiveness, it reduces turnover and gives the company a good reputation. And that attract valuable employees and leads again to higher effectiveness, better reputation and lower turnover. The initial studies focused on the correlation between the fulfilment of employees' psychical and psychological needs and their satisfaction or dissatisfaction from work (Porter, 1962, Wolf 1970; in Spector, 1997). However the latest studies focused more on

the correlation between cognitive processes and attitudinal perspective, and the level of satisfaction from work. There are generally two approaches to measuring job satisfaction:

- the global approach
- and the related constellation of attitudes about different facets of work.

The global approach is applicable when a researcher wants to determine the effects of employees' job satisfaction or their dissatisfaction with work; he is interested in overall attitude. The other approach gives more complete picture of the situation. Employees do not need to like all the aspects of work, and still they can report that they are satisfied with it. It depends on which aspect they mean is most important. They can for example like job conditions and their co-workers, but dislike the size of their pay cheque.

(Spector, 1997) provides a list of fourteen "common job satisfaction facets":

- appreciation
- communication
- co-workers
- fringe benefits
- job conditions
- nature of the work itself
- organization itself
- organisation's policies and procedures
- pay
- personal growth
- promotion opportunities
- recognition
- security
- and supervision.

These facets can be further categorized into four categories: other people, rewards, organizational context, and the nature of work (Spector, 1997). The correlation between these aspects is small and not significant. However, the correlation between the facets in one category is higher than the correlation between the facets across the categories.

5.3.2 Antecedents of job satisfaction

(Spector, 1997) argues that there are basically two categories of antecedents of job satisfaction: environmental antecedents (job environment itself and factors that can be associated with the job) and personal antecedents.

According to this theory there are five core characteristics of jobs that lead to different, critical, psychological states and influence job performance, job satisfaction, motivation, and turnover (see Fig. 8). It is: skill variety, task identity, task significance, autonomy, and feedback.

The first three (skill variety, task identity, and task significance) influence the experienced meaningfulness. The fourth one (the level of autonomy) influences experienced responsibility. The last one, feedback, has an impact on the knowledge of results and growth need strength. When employees experience that characteristics of the job satisfy their psychological needs/preferences, they are motivated, satisfied and perform well. The level, to which there is a subjective, positive consensus between core job dimensions and critical psychological states, influences the level of motivation, satisfaction, and performance. It also makes the level of

absenteeism and turnover lower. If the score on one of the critical psychological states is low, then the motivation gets lower as well. Three of the total five job dimensions (Hackman, Oldham, 1975): skill variety, task identity and task significance contribute to the workers feeling that he is doing a meaningful work. It is not necessary to have high score on all three of them in order to experience meaningfulness. It is enough if at least a degree of one of the five job dimensions is sufficiently high. Experienced responsibility is a “degree to which the job gives the worker freedom, independence, and discretion in scheduling work and determining how he will carry it out (Hackman, Oldham, 1975, p. 61). Employees with high level of autonomy will find a high degree of responsibility motivating. Hackman and Oldham argues that feedback “is most powerful when it comes from the work itself” (p. 62), it gives also greatest satisfaction and opportunity to learn during the whole process.

The employee growth- need dimension has a moderating effect on the experience of five “core” job dimensions and job outcomes. High growth- need employees are responding well if their work scores high on job dimensions. They will get even more internally motivated and satisfied; their performance will be better and absenteeism and turnover will decrease. Low grow- need employees will respond negatively if presented to the high degree of job dimensions. They will feel that they have to “stretch” in order to meet work requirements, that challenges are much higher than their skills and abilities, and they will gradually lose motivation. The level of absenteeism and turnover will increase in such cases.

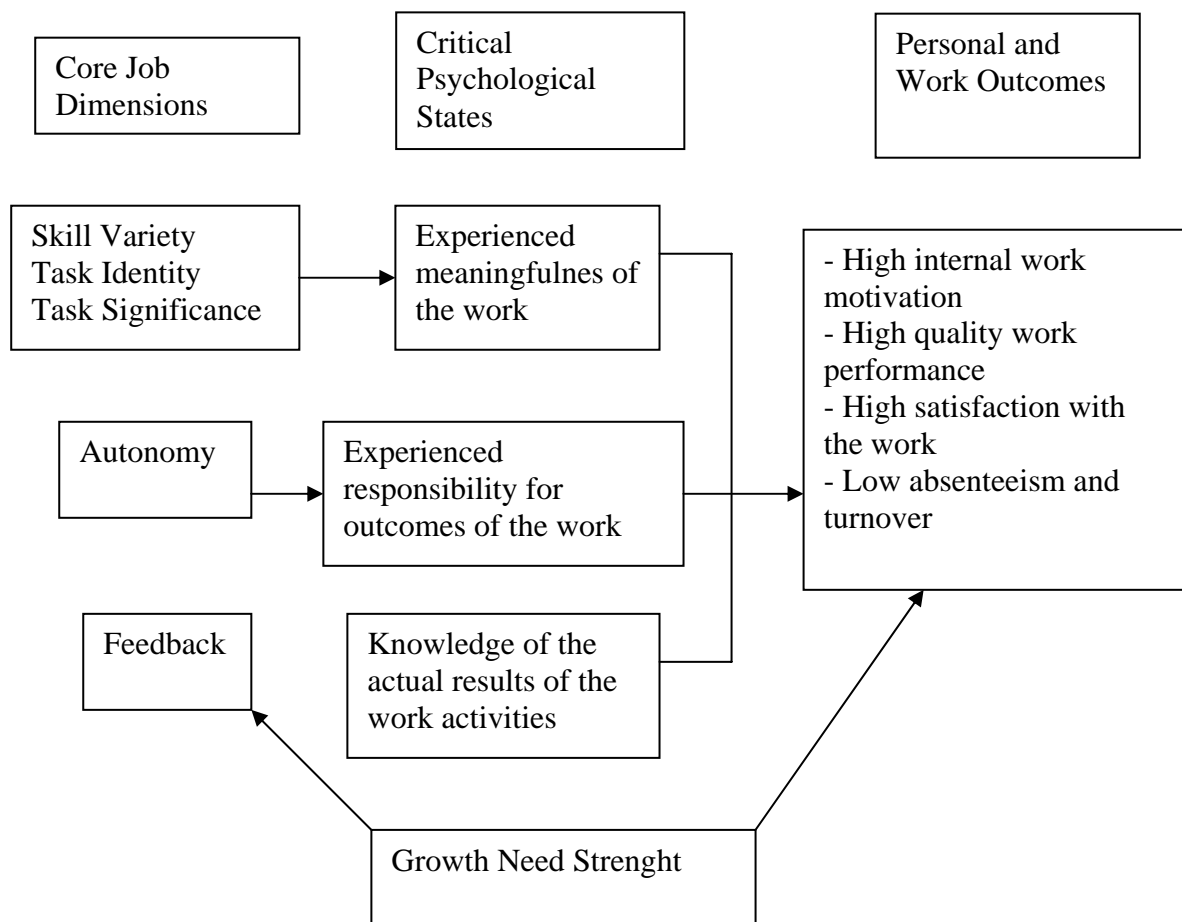


Fig.8 Hackman and Oldham (1975) Job Characteristics Model

Hackman and Oldham's job characteristics theory (1976, 1980) (in Spector, 1997) says that "people can be motivated by the intrinsic satisfaction they find in doing job tasks" (p.31).

People that like to be challenged will be more motivated with more complex jobs. Griffin (1991; in Spector, 1997) found out during his study that changing of the job increases job satisfaction, but that the satisfactions level decreases to previous level after two years. This conclusion is consistent with the Hawthorne effect- a temporary change to behavior or performance in response to a change in the environmental conditions, with the response being typically an improvement (definition from Wikipedia). The kind of change is not so important. It is also not so important if the change will happen or not. Several researches postulate that simply waiting for the change may have the biggest impact on the satisfaction from job (Salancik and Pfeffer, 1978, in Spector, 1997).

There are several organizational constraints, in other words conditions of the job environment, which interfere with workers performance and job satisfaction (Spector, 1997):

- a role or required pattern of behaviour for an individual in the organization (role ambiguity, role- conflict): job satisfaction will be reduced if employee feels that job demands are not compatible with their function or responsibility
- work- family conflict: employees that experience that job demands are so high that it has negative impact on their family life tend to be less satisfied with their jobs
- pay: pay level is not strongly correlated with job satisfaction; but pay fairness (procedural justice in job policies) is an important factor
- job stress: affects both psychological health and emotional well- being; long term job stress affects negatively job satisfaction
- workload: conducted studies give inconsistent results regarding correlation between workload and job satisfaction
- control: studies on perceived control versus job satisfaction (Spector, 1986; in Spector, 1997) showed largest correlation for intrinsic facets of growth and nature of work and smallest for extrinsic facets of co- workers and pay
- work schedules: effects of flexible work schedule on job satisfactions are inconsistent; long shifts have usually positive effect on job satisfaction, because they allow employees to work fewer but longer days; working night shifts does not affect job satisfaction, but shifting from day shift to night shift can have negative impact on it (Jamal and Baba, 1992, in Spector, 1997); there have not been conducted enough research to determine the difference in job satisfaction between part time and full-time workers.

There are also personal antecedents of job satisfaction. Personality is definitely a factor that affects job satisfaction.

There are many personality traits that influence job satisfaction, but it is just the two of them: locus of control and negative affectivity (NA) that have been studied more extensively. Locus of control (internal and external) "represents an individual's generalized belief in his or her ability to control positive and negative reinforcements in life" (Spector, 1997). It correlates with many work variables, for example: work performance, job satisfaction, motivation and leadership behaviour. NA is a personal tendency to experience negative emotions. In general individuals with low NA tend to be more satisfied with their work than individuals with high NA.

5.3.3. Effects of job satisfaction

According to Spector (1997) there is a correlation between job satisfaction and potential effects listed below.

- Job performance: there is just a modest, positive correlation between job performance and job satisfaction. Good job performance can lead to job satisfaction, if it is noticed and rewarded.
- Organizational Citizenship Behaviour (OCB): is describing a behaviour which has helping others as a goal. It goes beyond what is required by the employer. There are two types of OCB (Organ and Konovski, 1989, in Spector, 1997): altruism (f.e. helping other people) and compliance (f.e. doing what is required without being monitored). Several researchers argues that OCB results from job satisfaction, but further studies are needed to prove it.
- Withdrawal behaviour: this kind of behaviour is related to absence and turnover. The underlying thought is that people who are not satisfied with their job have tendencies to avoid it and are eventually quitting.
- Burnout: is a psychological state in which an employee is emotionally exhausted and has little motivation. It has high correlation with job satisfaction- dissatisfaction with work that is likely to lead to burnout. (Lee and Ashforth, 1993; in Spector, 1997) developed a model that shows a causal relation between job conditions, job satisfaction and burnout.
- Physical health and psychological well- being: several studies established negative correlation between low job satisfaction (or dissatisfaction) and physical health and psychological well- being.
- Counterproductive behaviour: is a kind of behaviour that hurt the organization, intentionally or not (aggression, sabotage, theft). Such behaviour is likely to result from frustration or dissatisfaction at work. Making the work conditions more suiting for workers enhance job satisfaction and reduce the potential of counterproductive behaviour.
- Life satisfaction- people, who are in general satisfied with their lives, tend to be more satisfied at work.

5.4 Job motivation

The word “motivation” comes from Latin word “movere” (move). It can be defined as an individual, internal psychological process, which creates impetus getting people to act, giving guidelines for actions, and maintaining and amplifying actions (Wiener, 1992, in Jacobsen and Thorsvik, 1997). In organizational contexts motivation theories have been used to explain which factors make workers perform better based on their personal qualities and qualifications.

“Motivation is a construct of biological, psychological, and social factors that activate, give direction and maintain behaviour on different levels of intensity in relation to goal achievement” (Kaufmann and Kaufmann, 1989). Gratification has an important role in all motivation theories. Not only basic needs have to be acknowledged and fulfilled, gratification is also a necessary element for learning and formation of character (Maslow, 1987).

Haslem (2001) argues that a complete understanding of motivation has to be based on an adequate model of self- definition. Most of the motivational theories tend to over- simplify the role of a persons social self- definition.

Employees perform differently, often based on their motivation toward work. Leaders can use motivation theories to learn about what enhance motivation and what reduces it, and to find out how to make workers so motivated that they will give their best performance.

Job motivation, commitment, and job satisfaction are often treated together, since it is a common assumption that satisfaction with the work and commitment lead to better performance.

5.4.1 Different approaches to motivation

The economic approach to motivational research investigates if there are clear empiric evidences showing that pay- based incentives increase motivation. Results are rather mixed. People tend to perceive other aspects of work, like enjoyment or security, to be more important than payment. (Haslem, 2001)

The individual difference approach to motivation suggests that whether people work hard or not depends mostly on their personality. Maslow and McClelland argued that only a limited group of people possess higher- level needs reflected in motivation for work- need for achievement. This need has a lot in common with consciousness and will to achieve, which are predictors for work performance. Highly conscious people with a strong will to achieve perform better than their colleagues who do not possess such needs in their personality (Haslem, 2001).

The cognitive approach to motivation represents the view that “workers are motivated tacticians (...) who base their decision about how to act on an appraisal of the personal meaning and implications of the rewards (and costs) associated with any behavioural strategy” (p. 94). This approach is divided into exchange theories (expectancy theory, goal-setting theory, and equity theory) and issues of intrinsic motivation (opportunity for personal development and achievement) (Haslem, 2001).

5.4.2 Motivation theories

The aim of the following section is to throw some light on some of the most influential motivation theories, not to describe all theories in details.

Maslow (1943, 1954) argues that all humans share five fundamental needs: physiological needs, safety needs, social needs, need for status and prestige, and need for self- fulfilment. His theory says that these needs are mutually ordered in a hierarchy. Needs that are placed high in such hierarchy are not getting attention unless needs on the lower hierarchy level have been satisfied. Different needs can be dominating for different persons. Maslow’s theory was not developed for the organizational purpose; however it contributed to organizational learning, by showing what motivates individuals:

- People have many different needs, which have to be satisfied by different actions in order to enhance workers motivation and support for work tasks.
- Tasks can be satisfying if workers feel that they have control and some freedom under the process.
- Having the opportunity for self- realization is very important for motivation and creativity (Jacobsen and Thorsvik, 1997)

Alderfer (1972) developed Maslow’s theory. He identified three types of needs (ERG-theory):

- Existence needs- these correspond to Maslow’s physiological needs
- Relatedness needs- would be the same as Maslow’s social needs

- Growth needs- these correspond to Maslow's need for self- realization

Alderfer disagrees with Maslow that some needs have to be satisfied before others. He argues that individual background and cultural environment might influence personal needs and relations between needs. He also argues that the importance of one specific need is influenced by the degree to which other needs are satisfied or blocked. This theory helped to map how many of various types of needs employees have in a given time in organization (Jacobsen and Thorsvik, 1997).

McClelland (1966: 82) divided people into two categories. According to his theory there is a minority attracted to challenges and willing to make sacrifices in order to achieve something, while the majority that does not care for challenges. He identified three types of needs influencing motivation:

- Need for power- similar to Maslow's safety needs
- Need for affiliation- corresponding to Maslow's social needs and Alderfer's relatedness needs
- Need for achievement- similar to Maslow's need for self- realization and Alderfer's growth needs.

McClelland argues that needs are related to learning and upbringing. All three types of needs and their importance for an individual influence this persons organizational behaviour, commitment and performance. If workers needs are satisfied through work and participation in social activities, he will feel stronger attached and committed to the organization.

There are also cognitive theories (Expectation theory, Equality theory and Attribution theory), which argues for that motivation is a result of how people think, interpret situations, and form opinions and expectations about consequences of actions. Motivation arises as a person expects to achieve something he appreciates. Performance is a result of something a person thinks he can get (Jacobsen, Thorsvik, 1997).

Mitchell and Larson (1987, in Kaufmann and Kaufmann, 1998) developed a model that is supposed to embrace several motivation theories and make a summary/ overview over the topic. They see motivation as a product of internal needs and expectation, and external factors including social, environmental, and task- orientated factors. All these factors have impact on people's behaviour and eventually on their job performance.

Internal factors include: behavioural needs physiological needs (salary terms, work environmental conditions), safety needs (certainty about keeping the job), social needs (good cooperation conditions, social gatherings), respect (opportunity for personal growth), and self-actualization (develop capacity to improve and enhance skills and abilities, realise potential). More basal needs have to be satisfied first, before a person will experience more advanced needs. Cognitive theories explain individual expectations concerning relation between achievements, instrumentality, rewarding system and goal setting (see fig.9 on the next page).

Internal factors:

Need theory:

- Maslow
- Alderfer
- Performance motivation

Cognitive theory:

- Expectations theory
- Goal- setting theory

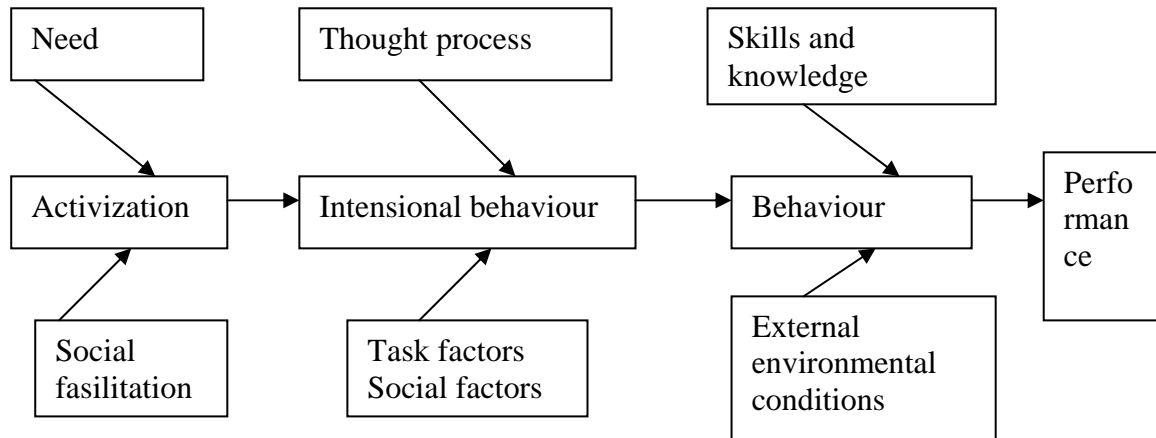


Fig. 9 Mitchel and Larson: Model for motivation and performance (in Kaufmann, 1998, p. 71) (modified)

Emotions are important for motivation. “Individual differences in emotional tendencies interact with organizational events and social interactions to yield emotional reactions that importantly shape individual’s goals and the persistence of effort in the face of obstacles” (Lord e.l., 2002, p. 11). People regulate their emotions in an individual way, which affect the degree to which they are able to accomplish long- term or complicated goals, as well as outcomes of training and job performance. Research links the Big Five Dimensions of Personality to job performance. People with high level of emotional stability perform better, are more stable and confident.

Unfortunately, most organization does not judge their employees by the degree of their motivation. Evaluation is entirely based on performance, which can actually be a result of some random, external factors. Managers should see it as their goal to recognize and reward both motivation and performance. Selective hiring and advancement can be an answer to obtaining the right kind of organizational culture, where workers have intrinsic motivation (Csikszentmihalyi, 2003).

Latham and Locke (1979) wrote an article “Goal setting- a motivational technique that works” in which they postulate that there is a positive correlation between goal and motivation. More motivated workers are better in goals realization. They argument for clear, challenging goals and deadlines as tools leaders can use for enhancing motivation. These should be accompanied by frequent feedback and employees accept. Same factors are mention in flow theory.

5.4.3 Motivation and job design (based on Jacobsen, Thorsvik, 1997)

There is correlation between reward system, task design and motivation. It is crucial for motivation that tasks are challenging, informative and varying. Workers also need to feel that they can take independent decisions, have some power and influence on their own environment.

McGregor developed “Theory X”, where he identified three types of assumptions about motivation:

1. People do not like to work and would avoid working if they could.
2. Because of this they have to be led, controlled, and threatened with punishment if they should perform well and realize organizational goals.
3. People prefer to be led, they do not like having responsibility, have little ambition and value safety most of all.

McGregor developed also contradictory “Theory Y”, which in contrast to Theory X is based on autonomy, self- control and freedom.

Hertzberg (1959; in Kaufmann and Kaufmann, 1998) constructed a theory, which says that a co- worker that thrives in his work will also be motivated and productive. He classified factors into two categories: those which encourage satisfaction (motivation factors) and those which have their effect in absence of negative work settings (hygiene factors).

Motivation factors, in other words, positive causes for satisfaction and motivation:

- Performance- being satisfied with own performance, seeing positive results of finished task
- Appreciation- being praised for done work
- Involvement- rejoices at work, because it is interesting, rewarding, exciting e.l.
- Responsibility- having control
- Promotion
- Growth- opportunity to learn and expand skills and knowledge

Hygiene factors, which can be reasons for dissatisfaction:

- Politic and administration in the company that influences work conditions
- Leadership- fair, competent leaders that delegate work tasks
- Physical work conditions
- Relations with co- workers
- Payment- sufficient, fair pay
- Status- status symbols
- Safety at work
- Conditions at work that have positive influence on private life

Herzberg concluded that motivation factors make people thrive when they are present, but do not make people dissatisfied when absent. Hygiene factors can cause dissatisfaction when absent, but they are not making people thrive when present. During his research he discovered that satisfaction was connected to what workers did, while dissatisfaction was connected to extern environment and the way workers were treated. He suggested implementation of job enrichment strategy. Such strategy increased: workers accountability for their work, their control over elements of a job, and allowed them to become experts in relation to these elements. Experiments proved that giving workers more autonomy, control and opportunity to develop expertise resulted in higher motivation level. And increase in motivation led to better productivity and higher satisfaction.

The job characteristics model developed by Hackman and Oldham (described in the section for job satisfaction) is in a way a further development of Herzberg and McGregor’s motivation theories. As stated above this model shall help organizations to adjust work conditions and demands so they will optimally stimulate individuals’ self- growth needs. This model should be used to diagnose existing work setting as regard for well- being and motivation. It is supposed to give organizational and structural guidelines into how to change dissatisfying situations.

5.5 Workplace stress

According to Kaufmann and Kaufmann (1998) stress can be defined in various ways depending on the field of specialization:

- Stress is an external psychic, physic, or social stimuli, which damages or disturbs human organism
- Stress is also a psychic, physic, or behavioural reaction on external strains.
- Stress depends on variations between individuals and their personal interpretation of a situation.
- Stress can be a result of imbalance between individual skills and knowledge, and external situational demands.

Stress is a cognitive process in which both individual and environmental characteristics have to be evaluated as a whole.

Hellesøy (1990), leading Norwegian researcher on stress provides us with five main features of stress that are in compliance with factors listed above:

- Stress can be positive or negative depending on individual perception of opportunities and threats.
- Stress results from interaction between an individual and his environment. Reactions on this interaction depend on individual values and needs.
- Stressors can arise due to organizational, social or psychical factors.
- Stress is build up and cumulated over time.
- People tend to avoid stress, they adjust or try to make the best out of stressful situations.

McGrath (1970) and Lazarus& Folkman (1984) conducted researches on stress and stress factors. They defined stress as a subjective experience of given opportunities and threats, which are important for an individual, and which he is afraid he will not be able to deal with. This definition implies that stress can be a positive experience (opportunities) leading to enhanced performance, motivation and concentration, or a negative one (threats) causing weaker performance, health issues and decreasing motivation and concentration. It is a very individual, subjective perception that determines if a situation is stressing or not, and if experienced stress is positive or negative. People's tolerance for stress varies- what is stressing for one person does not have to stress another person. Individuals that feel in control and are confident in their abilities and skills are less stressed comparing to ones that are insecure about their expertise. They see challenges in stead for difficulties or problems.

McGarth (1970) developed transactions model for stress, where he emphasised a cognitive perspective of stress phenomenon- individual interpretation of his life situation is a critical factor. All elements of the model are affecting each other. According to McGarth stress is a four phase process:

1. Demand- psychical and social aspects of environment put objective demands on people. Such demands are called weights in the model.
2. Interpretation- how a person evaluate, judge and thinks in connection with demands, and how he experience his own abilities to meet these demands.
3. Response- personal reaction on stressors; psychical, mental and behavioural reaction.
4. Consequences- consequences of stress on a person and on an organization.

“Workplace stress is the harmful physical and emotional response that occurs when there is a poor match between job demands and the capabilities, resources, or needs of the worker. Stress-related disorders encompass a broad array of conditions, including psychological

disorders (e.g., depression, anxiety, post-traumatic stress disorder) and other types of emotional strain (e.g., dissatisfaction, fatigue, tension, etc.), maladaptive behaviors (e.g., aggression, substance abuse), and cognitive impairment (e.g., concentration and memory problems). In turn, these conditions may lead to poor work performance or even injury. Job stress is also associated with various biological reactions that may lead ultimately to compromised health, such as cardiovascular disease” (Wikipedia.uk)

Stress at work is an increasing problem and a major reason for turnover. Problems at work tend to stress people more than problems related to other areas of their life. Especially jobs that involve high risk and low level of perceived control are resulting in increased probability for stress and health problems related to stress. Organizational redesign, in other words changes in work conditions, and right management are two approaches helping to decrease job stress level.

There can be several reactions on stress:

- Behavioural reactions- workers perform worse, make more mistakes, are more often reported sick, avoid people or quit.
- Psychic reactions- can be further divided into emotional and cognitive reactions. Emotional reactions can be categorized into three sub categories (Woolfolk and Richardson, 1978):
 - distaste, anger, rage or hostility
 - fear, suspicion and strong anxiety
 - sadness and grieving

Cognitive reactions are as follows: weakened concentration, memory and attention; feeling of chaos, jumping to conclusions.

Burnout is the most significant reaction to negative stress.

There seems to be a negative correlation between stress and flow. Stressed people feel that they are overwhelmed by the challenges they face. They are panicking, because they feel that they are losing control over their action, or over the situation they are in. Challenges they are given are not in balance with their subjectively perceived skills. They are becoming more and more self-conscious, and they may have problems with clear definition of their goals. The author of this paper suspect, without yet being able to prove this assumption, that all those elements of stress are automatically taking from people ability to enter flow. These elements contradict the elements of flow theory.

(Sauter, Murphy, Hurrell, 1990) wrote an article called: “Prevention of work-related psychological disorders”, in which they suggested several organizational changes helping to prevent workplace stress:

- Ensure that the workload is in line with workers’ capabilities and resources.
- Design jobs to provide meaning, stimulation, and opportunities for workers to use their skills.
- Clearly define workers’ roles and responsibilities.
- Give workers opportunities to participate in decisions and actions affecting their jobs.
- Improve communications-reduce uncertainty about career development and future employment prospects.
- Provide opportunities for social interaction among workers.
- Establish work schedules that are compatible with demands and responsibilities outside the job.

Authors of this article suggest organizational changes, which will make it easier for workers to enter flow. Preventing stress, by using their directions, is very similar to opening for optimal work experience (flow).

5.6. Flow as a resource in increasing work motivation, work performance and job satisfaction

Work motivation is described as “the degree to which employee is self- motivated to perform effectively” (Maslow, 1987). Motivation in general is defined by how pleased a person is by performing well, in opposition to how unhappy he is when performing poorly. Maslow (1987) distinguished between motivation driven by physical needs (“reducing tension by satisfying deficit states or lacks” (Engler, 1995)) and metamotivation driven by the mental need for self-growth and self- realization (“being needs”). Deficiency needs must be satisfied before one has being needs. As stated before, the flow experience leaves people with the desire and motivation to re-enter it.

Flow is motivating, because it makes people want to fulfil what they are doing, it make them inspired to continue, because they are involved, in control and balance their skills with the given challenge. It also makes people seek similar challenges, since it is pleasurable and feels motivating. People like the feeling of “growing with the challenge” and accomplishing something that is difficult. This kind of motivation is internal (intrinsic) and is not depending on external gratification (Straume, 2005). There has been several studies on what motivates employees (for example: Csikszentmihalyi and LaFevre (1989), Cameron, Banko and Pierce (2001), Porter and Lawler (1968), in Straume 2005). There has been some disagreement whether satisfaction, optimal performance and motivation at work comes from internal or external motivation. Some researches argue that external rewarding may reudce internal motivation that employees have. Others argue that both intrinsic and extrinsic stimulation increase work motivation (Straume, 2005). Csikszentmihalyi and LaFevre (1989) found that there is a positive correlation between flow and intrinsic motivation. Intrinsic motivation seems to open for flow experience. And flow is a state enhancing motivation. Straume (2004) (in Straume 2005) discovered during her analysis that only prerequisite and subsequent elements of flow have significant effect on work motivation. So, the immediate experiential dimensions (time distortion, concentration, feeling of control, the merge of action and awareness, and immediate feedback) are not of significance for work motivation. However Straume states, that further analysis shows evidence for at flow, in general is an important factor for achieving work motivation.

Job satisfaction can be described as a general feeling an employee has towards his job. Researchers assume that people that often experience flow in job situation are in general more satisfied with their jobs. They feel more in control, and are not so dependent of external feedback, as people who seldom experience flow. They are more often deeply concentrated, and this kind of involvement does not leave them room for worries, irrelevant emotions or distractions. They are “in the zone” where they experience intense pleasure. All these feelings are positive, good feelings and make people want to experience them again. Feeling of being in a flow state increases employee’s satisfaction. If flow is experienced regularly, general level of satisfaction from work increases as well. There are however differences in reported levels/ or reported intensity of this phenomenon. Studies conducted by Csikszentmihalyi showed that people reported high level of pleasure while describing how they felt when they were in the state of flow. People interviewed by Straume were rather reporting being satisfied and pleased. The difference can be due to the fact that Csikszentmihalyi conducted his research on top leaders, during leisure activities or while training (sport activities), while Straume focused on average Norwegian workers (Straume, 2005).

Variety on the job and the support of the supervisor are the most often cited reasons for workers’ satisfaction. Lack of these conditions can lead to apathy and alienation (Csikszentmihalyi, 2003).

Work performance “covers a wide range of behavioural incentives” (Straume, 2005, p. 146). The issues of interest can for example be how an employee scores on productivity, discipline, how many hours he works, or how often he is missing work. (Jackson and March, 2001, in Straume, 2005) studied performance versus flow in sports. They discovered that autotelic experience and balance between challenges and skills have influence on the performance, while the other seven elements of flow do not have significant influence on performance. As mentioned, this research was conducted in sports. According to Straume (2005) there has not been conducted any empirical studies on the correlation between flow and work performance. But she argues that there has to be a positive correlation there, and that flow is a predictor of work performance. When workers are in flow, they are intensively focused and concentrated on the given challenge, and that make them more efficient. They are using their time and energy just on the task at hand, and are not wasting it on any external distraction. Their performance is on the top of their abilities.

5.7 Building flow in organizations

Csikszentmihaly wrote a fascinating book titled “Good business: leadership, flow, and the making of meaning” (1990). For the purpose of it, he interviewed some of the most successful leaders and managers. Combining insight collected from those interviews with his profound knowledge about flow phenomenon, he collected some advice on how to build flow in organizations.

The most successful organizations get their employees to do their best not by exploiting them, but by giving them possibility to grow as individuals. They create workplace settings that make it easier for workers to experience flow. As mentioned previously frequent experience of flow makes people happier and eager to enter this mental state again. What’s the strategy to obtain “happy” workplace? Organizations can start with redesigning their physical work environment, making it a more enjoyable place to be. A place where people feel appreciated and heard. It is important to remember that a workplace is a demeanour of its people (Csikszentmihalyi, 2003).

Organizations where people are more cheerful, welcoming and satisfied are the ones where it is easier to enter flow. Organizational environment can be improved by giving the workers more freedom, and at the same time more control over their work. Successful leaders point out the importance of clear goals, communication combined with good feedback and incremental challenges, that stimulate individual growth, enhance effectiveness and open for flow. Leaders and workers need to have mutual trust that they will obey and promote company’s values. Such values must be clear for every member of the organization. They have to be constantly communicated and continuously reinforced. Organizational mission have to be clear for everybody, especially managers. If it is not, resources must be used to make it clear. Respectful and open communication and co- operation in rapidly changing environment is the key for success and flow. Organizations have to teach their employees to stay focused on their goals, while rearranging strategies. Flexibility is necessary. People have to be given chance to find out the best way for doing things. There has to be space for learning and failing. Such setting will allow workers to invest their psychic energy and develop effective strategies independently. Another important issue is to provide workers with sufficient feedback, so they are aware of their performance. It is crucial to remember that one should focus on the performance, not the person, while giving feedback (Csikszentmihalyi, 2003).

According to Csikszentmihalyi (2003) there are basically three types of feedback:

- feedback from other people, based on communication; managers have to sit on detailed information about their workers strengths and weaknesses, together with their overall performance; immediate, specific feedback significantly improves performance; positive feedback motivates to learn;
- feedback from the work itself; clear expectations and checkpoints help to achieve satisfaction;
- feedback from ones personal standards; it is crucial that leaders continuously show by their own performance that organizational standards of conduct are to be taken seriously.

Although providing proper feedback is a time and energy consuming activity, it is absolutely necessary for learning and individual growth. It is necessary a prerequisite for entering the flow channel (Csikszentmihalyi, 2003).

Apart from providing proper feedback managers have to make sure that they hire people whose goals and values match the goals and values of the organization. Unless there is a fit there, complexity will not flourish. Of course diversity of perspectives is enriching, but without fit in basic priorities, there will be nothing but chaos. That is the reason why leaders are coming mostly from inside the company. Moreover, new employees should be given simple tasks, responsibility and new challenges should increase gradually and in combination with feedback. Personal strengths need to be recognized during the process, and challenges should be built upon them. Balance between skills and challenges are rather unstable over time, something good managers should be aware of. He has to give workers opportunity for some degree of flexibility and adjust challenges in order to keep employee focused, satisfied and motivated. Opportunities of action should be adjusted allowing workers continuous personal growth (Csikszentmihalyi, 2003).

Also the opportunity to concentrate makes the appearance of flow more probable or frequent. People need some time in order to concentrate deep on given task. If they are often interrupted and distracted, they obviously loose their concentration and it takes them a while to retain the same point of concentration. Moreover, being forced to frequently and quickly switch attention between several tasks makes workers stressed and anxious. Multitasking makes people nervous. Over a time workers may develop stress reaction or even burnout, and feel that they loose control over what they are asked to do. Also new technologies can be a source of distraction. Since the invention of internet and internet based communications media like e-mail, information flows much faster then before. People can be reached in a matter of seconds, no matter where they physically are. It is obviously increasing effectiveness tremendously, but it also creates some threats. Some employees and managers become so preoccupied with the virtual reality that they forget to get updated in the “real” world. Feelings of having control over the process, being trusted, and having skills necessary to find best approach for the situation are other input factors determining occurrence of flow. Control implies having control over time. According to flow theory people being in the state of flow loose the track of time, their notion of time becomes distorted. Obviously there is a conflict between flow and rigid schedules or deadlines. Fortunately modern organizations tend to evolve into flexible time schedules giving their employees possibility to work in the evenings or weekends (Csikszentmihalyi, 2003).

Finally, one of the elements of being in the flow is loosing of ego, becoming one with the task at hand. Making the worker self- conscious tends to backfire. They will immediately loose their focus on the task and start analysing themselves. Workers who are self- conscious are not the best recourse for the company. Luckily they can be trained into more self- assure individuals. But self- assure should not be mixed with egoistic. Managers should pay attention to who has organizations interest in mind before his own egoistic agenda. Ego- driven, selfish

workers should not be promoted, because it will give the other workers wrong signal. It is more rewarding for everybody to promote individuals that are helpful, eager to do a good job and help to build an organization, in stead of individuals who are primarily interested in making money (Csikszentmihalyi, 2003).

Chap. 6 Summing- up

The author of this paper suggests that employees would experience flow more often if there was a good fit between their personal preferences and what was expected of them at work. Moreover, the author venture to say that such a fit may have a positive impact on job motivation and satisfaction, which leads to better job performance.

The theoretical part of this research paper aimed to present the most relevant theories and research results covering various aspects of the problem and supporting above statements. To begin with, there was given a summary of the findings concerning social identity approach to organizational psychology. The concept of flow was described in chapter three. The following chapter provided a thorough characteristic of autotelic personality and autotelic experience. Chapter five pointed out why flow is a resource in job contexts.

The main goal of the empirical part of this research was to find out if the congruity level/ fit between personal preferences (personality traits) and organizational (job) demands can serve as an indicator determining how often employees experience flow. The complementary goal of this paper was to investigate if there is a positive relation between the frequent flow experience and job motivation, satisfaction and performance.

The following hypotheses have been tested:

Hypothesis 1:

Congruence between preferences and demands for: single-tasking, punctuality, schedule, deadline, urgency and flexibility influences positively both flow experience and the frequency of flow experience.

Hypothesis 2:

Frequent flow experience is positively correlated with job motivation, job satisfaction, and job performance

PART 2 Empirical

Chap. 7 Methods

This chapter starts with a short resume of methods used for measuring of flow and job satisfaction. It proceeds with a description of research process.

7.1 Methods for measuring flow and job satisfaction

It is difficult and challenging to measure flow. Flow is a subjective, mental state that can be described in various ways. People can report being in flow, when they are out of it, but not when they are in a flow. When they are in the flow state their mind is “closed” for external interruptions. If they would respond to external interruptions their deep concentration would be damaged and it would put the end to the state of flow. Scientists that study flow were forced to base their theories on the reports from the people that experienced this state of mind. It is possible that because of this form of collecting data, not all elements are reported and noted. There is also question about reliability and validity of findings.

Another problem is connected to the fact that it seems easier to describe negative emotions than positive ones. People, as well as scientists, lack accurate words to describe flow. Positive emotions need no explanation; human beings are more conscious about enjoying them than about looking for causality (Csikszentmihalyi & Seligman 2000, in Straume & Christensen 2005). Flow as a pragmatic psychological concept lacks terms and expressions necessary in order to describe it in a satisfactory matter (Straume, 2005).

(Quinn, 2005) argues that there are three trends in research that make measuring the flow experience difficult:

- there is no agreed- upon definition of flow (Csikszentmihalyi, 1975, 1992)
- there is no consistent approach to modelling relationships between elements of the experience
- quantitative research on flow in work context is rare, and none focuses on knowledge work

There have been some attempts to create a scale on which it could be quantified.

Jackson and Marsh (1996) developed a method that they called FSS (Flow State Scale), which they used to measure the level of flow in sports and other physical activities. This method was validated and used to measure the state of flow in other areas as well. FSS is based on the nine elements of flow that were put together by Csikszentmihalyi. Also interviews are used as a method to make better understanding of the condition and to find more ways to describe it. (Straume, Christensen, 2005).

Csikszentmihalyi developed and used another measuring technique called ESM (Experience Sampling Method) during his research where he was investigating the flow phenomenon. ESM measures individual level of experienced flow state during everyday activities in natural settings. Informants were equipped with a survey with several questions concerning flow state and they were supposed to describe their mental state each time they were paged. Such exercise was repeated several times a day, during 1- 2 weeks period.

Csikszentmihalyi came to the conclusion that people report flow while doing something that allows them to experience balance between their skills and given challenge. He discovered also that activities that do not involve mental effort (watching tv, chatting with friends) are not leading to flow. They give the feeling of relaxation, but do not elevate the mood. Activities that force people to use their skills, to concentrate on the task lead to enjoyment and

personal growth. However, he discovered also that people reported flow while eating or driving a car.

Job satisfaction can be measured by both interviews and questionnaires, but the second method is more common, due to the time and cost constrain. There exist several scales on which job satisfaction can be measured. (Spector, 1997) mentions six of them: the JSS, the Job Descriptive Index, the Minnesota Satisfaction Questionnaire, the Job Diagnostic Survey are facets measures scales; and Job in General Scale, and the Michigan Organizational Assessment Questionnaire satisfaction subscale. The facets scales have been used in many researches. They are more detailed and go more in depth of the phenomenon.

The Gallup Organization (2007), poll asked both full- and part- time American employees if they are “completely satisfied, somewhat satisfied, somewhat dissatisfied, or completely dissatisfied with 13 aspects of their jobs.” The results show that:

“Workers are most satisfied about their relationships with their coworkers and the physical safety conditions at their workplaces. Workers are least satisfied with the amount of on-the-job stress, the retirement benefits their employers offer, and their pay. One of the biggest changes over time has been the increased level of satisfaction with flexibility of work arrangements on the job. Satisfaction with job-related stress has also improved. Employees express higher satisfaction this year with their bosses or supervisors, the safety conditions at work, and co- worker relations. In terms of how they feel about their jobs overall, just under half of workers say they are completely satisfied, with most of the rest “somewhat” satisfied; only 6% are dissatisfied.”

Job satisfaction is positively correlated with age. Job satisfaction does not depend on gender; men and women are equally satisfied with their jobs, despite of having non-equivalent job. There are also differences in patterns of facet satisfaction between the countries. Studies on racial differences have been inconsistent.

7.2 Choice of method

An empirical research usually starts with some assumptions or speculations, which lead to questions if certain phenomena or correlations between them are really as we think they are. The method is a process of collecting and treating different types of data. The aim of the method use is to find answers for problems- obtain the data (empiricism), which are necessary for giving good answers. Empiricism is observation and experience, which is a fundament for knowledge creation. Through the empirical research one goes from assumptions to valid and reliable knowledge. It is not the actual reality that is analysed, reality is transformed into data. Data is something scientists create, and which constitutes a link between reality and the analysis of this reality (Johannessen, 2003).

There are several differences between scientific and non-scientific approaches to knowledge: distinctions between informal kinds of thinking and scientist’s approach to knowledge. Shaughnessy, Zechmeister (1994, p.7) collected some of the most important in the table presented below (see table 7.2).

	Non-scientific (everyday)	Scientific (formal)
General approach	Intuitive	Empirical
Observation	Casual, uncontrolled	Systematic, controlled
Reporting	Biased, subjective	Unbiased, objective
Concepts	Ambiguous, with surplus meanings	Clear definitions, operational specificity
Instruments	Inaccurate, imprecise	Accurate, precise
Measurement	Not valid or reliable	Valid and reliable
Hypotheses	Untestable	Testable
Attitude	Uncritical, accepting	Critical, sceptical

Table 7.2 Characteristics of scientific and non- scientific (everyday) approaches to knowledge (Shaughnessy, Zechmeister, 1994, p.7)

“The scientific approach to knowledge is empirical rather than intuitive. An empirical approach emphasises direct observation and experimentation as a way of answering questions.(...) Research at firms may be guided by what the scientist’s intuition suggests is the proper direction to take. Eventually, however, the scientist strives to be guided by what direct observation and experimentation reveal to be true.” (Shaughnessy, Zechmeister, 1994)

In this chapter, the author is going to show how the research was conducted and how the choice of research design was made. There are several ways to do so. Jacobsen (2000) developed the model (see fig.10), which will be used for systematic review of stages of this research.

7.3 Stages of research

Following part of chapter 7 contains a thorough description of all the over mentioned stages of research process.

7.3.1 Development of problem definition

Discovering and identifying the problem is the first step towards its solution. Defining the problem to be solved and the objectives of the research is the first crucial stage in the research process. To begin with, the problem statement is often very general- the issue of investigation is not yet specifically identified. Proper definition of the research problem gives a sense of direction, is a way to avoid collecting irrelevant information and helps to set proper research objectives. Einstein said that “the formulation of a problem is often more essential than its solution”. A lot of planning is necessary for the formulation of a research problem. (Zikmund, 2003).

Zikmund (2003, p. 94) suggest following division of the process of defining a research problem. According to him it can be divided into six phases, which are interrelated:

1. Ascertain the decision maker’s objectives. Goals
should be expressed in measurable terms.
2. Understand the background of the problem. A
situation analysis (a preliminary investigation of background information) will make the researcher more familiar with the decision area.
3. Isolate and identify the problem rather than its symptoms. It
means that it is important to isolate the most probable causes. Symptoms can easily be

confused with a problem. Gathering background information, conducting exploratory research and creative thinking is helpful at this stage of the process.

4. Determine the unit of analysis. It
has to be specified if the level of investigation will focus on the entire organization, departments, work groups or individuals.
5. Determine the relevant (key) variables. “A
variable is anything that may assume different numerical or categorical values” (p. 97). In statistical analyses variables are identified by symbols. There are in general two types of variables:
 - Categorical (classificatory) variables, which have limited number of distinct values
 - Continuous variables, which have infinite number of possible values. It isimportant that researches identify all relevant variables addressing a specific problem and exclude all other variables, which are not directly relevant to the issue of investigation. Another common way to classify variables is to divide them into:
 - Dependent variable- the one that is to be predicted or explained
 - Independent variables- are expected to influence the dependent variable. Their value can be changed independently of any other variables
6. State the research questions (hypotheses) and research objectives.
Formulation of numerous research questions and hypotheses is a helpful tool clarifying the statement of a problem and translating it into a specific need for inquiry. The answers to such questions should be used as a standard for selection of alternatives. Hypotheses assert possible answers to research questions. “Hypothesis is an unproven proposition or supposition that tentatively explains certain facts or phenomena; a proposition that is empirically testable” (Zikmund, 2003). They are more specific than research statements and can be empirically tested. “When evaluating a hypothesis, researchers should make sure the information collected will be useful in decision making” (p. 99) - hypotheses influence research design.

The main goal of this paper is to test if the congruence between personal preferences and organizational demands lead to more frequent flow experience. The other goal, which is in authors view supplementary for the main goal, is to investigate if more frequent flow experience influence job satisfaction and job motivation (and vice versa), and if job satisfaction and job motivation lead to better job performance. The first, theoretical part of this paper presents resume of some relevant and available scientific findings.

The dependent variable, which was chosen to be described and explained, was flow state. Since flow is a complex concept, it was divided into several measurable variables: skill/challenge balance, clear goals, concentration, control, loss of self consciousness, feedback, transformation of time, action awareness and autotelic experience. The independent variables, which are supposed to be factors explaining dependent variable, were chosen to be: single-tasking, punctuality, schedules, deadlines, urgency and flexibility.

For the purpose of this research two organizations were contacted and asked to fulfil questionnaires. The first one, Agderforskning, is a research institute within social science, which offers its service for both public sector and industry- regionally, nationally, and internationally. The second one, Nordea Bank, has around 10 million customers, approximately 1,300 branch offices and a leading net-banking position with 4.9 million e-customers.

From each of these organizations a group of employees was asked to participate in the research: 30 employees from Agderforskning and 70 from Nordea.

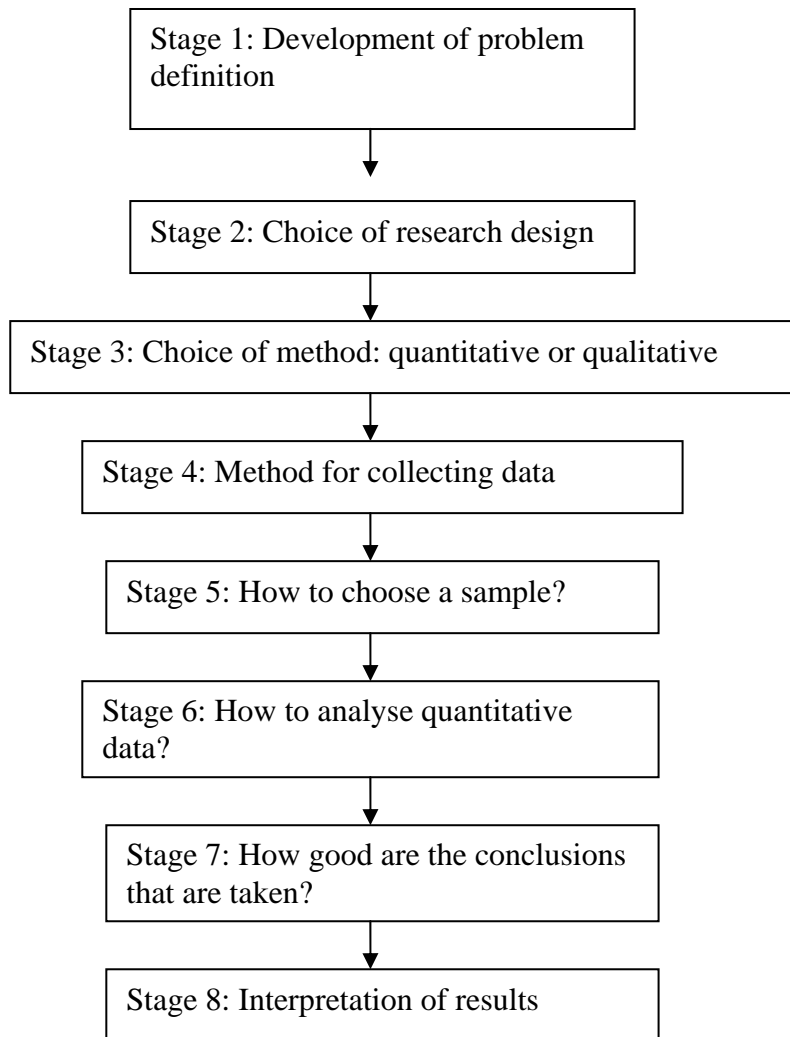


Fig. 10 Stages of research process (Jacobsen, 2000)

The questionnaire includes questions concerning congruity between personal preferences and organizational demands, as well as questions about flow. However, it does not include questions that would allow sufficient analysis of correlation between flow, job satisfaction and motivation, and job performance. Consequently, the author conducted two interviews, which aimed to cover this area of research and increase reliability and validity of the findings. Time constrains were reason for not conducting yet more than two interviews.

7.3.2 Choice of research design

“A research design is a master plan specifying the methods and procedures for collecting and analysing the needed information” (Zikmund, 2003, p. 65). The goals that were determined during the previous stages of research have to be included into research design in order to make sure that collected information is suitable for the solution of the problem. The elements that have to be included in design process are as follows:

- the sources of information
- the research method

- the sampling methodology
- the schedule or cost of research.

There are four research methods for descriptive and causal research: surveys (interview, questionnaire), experiments (laboratory, field), observations, and secondary data studies. Goals, available sources, time and cost constraints are usually the factors determining the choice of method.

Survey is the most common method choice for collecting primary data. Using this technique means gathering information from a sample of people, who are asked to fill out the questionnaire. Respondents can be contacted in person, by telephone, e-mail or on the Internet. Researchers have to choose survey method which will allow them to reach most respondents, and which will give them the information they need.

Surveys investigations aim to describe reality or to learn the reasons for a particular activity. Typical goals are to: identify characteristics of a group, measure attitudes, and describe behavioural patterns. Most surveys are descriptive, but some are also designed to give causal explanations or explore new ideas.

The popularity of surveys in comparison to other methods can be explained by the fact that surveys give opportunity to gather data in a quicker, more inexpensive, more accurate, and more effective way (Zikmund, 2003).

There are three types of survey research designs (Shaughnessy, Zechmeister, 1994):

- the cross-sectional surveys- describe the characteristics of a population or the differences between multiple populations
- the successive independent samples- describe changes in attitudes or opinions over time
- longitudinal surveys- allow the assessment of changes for individuals and avoid the problem of noncomparable successive samples.

As stated above, survey research was used for the purpose of this investigation. The aim was to look closer at flow experience and show how this phenomenon correlates with other phenomena described in this paper. The questionnaire and interviews were used for collecting data. In addition to collection and description of the data, the author investigated causality between variables.

7.3.3 Choice of method: qualitative or quantitative

There are several differences between qualitative and quantitative methods of measurement. The following table (see table 7.3.3) highlights main characteristics of (ideal) quantitative and qualitative research.

Quantitative research	Qualitative research
Objective approach	Subjective approach
Research questions: How many? Strength of association?	Research questions: What? Why?
"Hard" science	"Soft" science
Literature review must be done early in study	Literature review may be done as study progresses or afterwards
Tests theory	Develops theory
One reality: focus is concise and narrow	Multiple realities: focus is complex and broad
Facts are value-free and unbiased	Facts are value-laden and biased

Reduction, control, precision	Discovery, description, understanding, shared interpretation
Measurable	Interpretive
Mechanistic: parts equal the whole	Organismic: whole is greater than the parts
Report statistical analysis	Report rich narrative, individual; interpretation.
Basic element of analysis is numbers	Basic element of analysis is words/ideas
Researcher is separate from the process	Researcher is part of process
Subjects	Participants
Context free	Context dependent
Hypothesis	Research questions
Reasoning is logistic and deductive	Reasoning is dialectic and inductive
Establishes relationships, causation	Describes meaning, discovery
Uses instruments	Uses communications and observation
Strives for generalization	Strives for uniqueness
Generalizations leading to prediction, explanation, and understanding	Patterns and theories developed for understanding
Highly controlled setting: experimental setting (outcome oriented)	Flexible approach: natural setting (process oriented)
Sample size: n	Sample size is not a concern; seeks "informal rich" sample
"Counts the beans"	Provides information as to "which beans are worth counting"

Table 7.3.3 Qualitative research versus quantitative research (Found on http://uk.geocities.com/baliyar_sanghera/ipsrmehrigiulqualitativequantitativeveresearch.html)

Basically, qualitative research generates rich, detailed and valid (process) data that contribute to in-depth understanding of the context. Quantitative research generates reliable population based on generalized data and is well suited to establishing cause-and-effect relationships.

The choice of method depends on the nature of the project, the type of information needed the context of the study and the availability of resources (time, money, and human).

Survey research is a descriptive method, illustrating a more general approach to psychological research called correlational research. The objective of such research is to “identify predictive relationships by assessing the covariation among naturally occurring variables. The results (...) have implications for making decisions such as identifying emotional disorders and selecting job applicants” (Shaughnessy, Zechmeister, 1994).

There was used a combination of quantitative methods (questionnaire) and qualitative methods (interview) for the purpose of this research.

The questionnaire was divided into four sections. Section 1 included both closed and open questions about personal and work related background of respondents. Section 2 covered different personal preferences and organizational demands in relation to use of time and working methods. These closed questions turned on punctuality, schedules, deadlines and work time. Section 3 included closed questions about organizational rhythms. This part of the questionnaire was not of interest for the purpose of this paper and was not analyzed by the author. The last section asked questions about frequency and strength of flow experienced while at work.

The two interviews were open, but structured. They gave the respondents a chance to explain how they felt about the questionnaire and what they meant in relation to hypotheses. These interviews allowed the author to get a greater understanding of the problem.

7.3.4 How to collect data?

There are numerous research methods of collecting data. When a survey is used as a method, respondents have to directly participate during the process, either by filling out the questionnaire, or by allowing the researcher to interview him. It is crucial to minimise errors during the data collection process. Usually researchers conduct a pre- test, where they use a small subsample, before they conduct main study. The thought behind doing that is to recognize problems with the data collection plan, correct them and avoid making same mistakes in the main study. Such pilot study allows checking if the questions in the questionnaire or in the interview are accurate and correct errors before further data collection (Zikmund, 2003).

The method used for scaling of the questionnaire was Likert scale. Likert scale indicates attitudes of respondents by checking how strongly they agree or disagree with presented statements that range from very positive to very negative towards the attitudinal object. Individuals could choose from five alternatives: strongly agree, agree, uncertain, disagree, and strongly disagree (Zikmund, 2003).

After the analysis of collected data, two employees from Agderforskning (Roger Normann and James Karlsen) were contacted and personally interviewed.

7.3.5 How to choose a sample?

Sampling includes procedures, which use a small number of items of a population in order to make conclusion about the whole population. Results obtained from a sample are supposed to have the same characteristics as a whole population.

To begin with, the target population must be chosen. Then some crucial questions need to be asked and answered: “Who is to be sampled?”, “How big should the sample be?”, “How the sampling units are to be selected?”

There are two sampling techniques:

- Probability sampling- sampling in which each member of the population has a known, nonzero probability of being chosen.
- Non- probability sampling- sampling method in which members of a population are chosen on the basis of personal, subjective judgement (Zikmund, 2003).

If the elements of the population are highly homogeneous, samples are highly representative for the population. Sampling process consist of several interrelated stages (Zikmund, 2003):

1. Defining the target population.
2. Selecting a sampling frame
3. Determining which sampling method will be chosen
4. Planning the procedure for selecting the sampling units
5. Determining the size of the sample
6. Selecting actual sampling units
7. Fieldwork

The biggest problem at this stage is a desertion. The desertion happens if a respondent does not answer to all questions from the questionnaire, or if he does not answer at all. There are generally four reasons for desertion:

- it was not possible to contact the respondent
- the respondent do not care for answering the questionnaire
- the respondent refuses to answer
- the respondent is not able to answer

Desertion rate can be calculated by taking the number of all units that answered the questionnaire, and dividing it by the number of units that were originally chosen to participate.

The target population that was chosen can be generally described as knowledge intensive organizations located in Southern Norway. Leaders of both Agderforskning and Nordea were asked to send the questionnaire to 30 (70) of their employees. They chose their employees on the basis of their personal preferences (non- probability sampling). The author did not have any control regarding this choice.

The questionnaire was sent via e- mail to 100 employees, 30 from Agderforskning and 70 from Nordea.

7.3.6 How to analyse quantitative data?

The two interviews were taken after the analysis of the data and constitute a supplement for the obtained results. This part of the method chapter will focus on analysis of quantitative data and treatment of incoming information.

SPSS (Statistical Package for the Social Sciences), a statistical data program was used for the analysis.

In order to make the right conclusions, the amount of data collected by the questionnaire must be reduced. One statistical method that is commonly used in correlation studies is factor analysis. Anastasi (1988) defined factor analysis as “a refined statistical technique for analysing the interrelationships of behaviour data (...) a major purpose of factor analysis is to simplify the description of behaviour by reducing the number of categories from an initial multiplicity of test variables to a few common factors, or traits” (pp. 154- 155). This kind of analysis is also a useful tool for getting feedback on tests and surveys.

Factor analysis is a common name for several diverse techniques used to “discern underlying dimensions or regularity in phenomena” (Zikmund, 2003, p. 586).

Each factor loading measures the importance of the variable in measuring each factor. Factor analysis measures a percentage of a variable’s variation that is explained by the factors (communality). A high communality indicates that a variable has much in common with the other variables taken as a group (Zikmund, 2003). Factor analysis measures also a percentage of total variance of the original variables explained by each factor.

Reliability analysis (Chronbach’s alpha) was used for estimation of internal reliability- the degree to which measures were free from error and therefore yield consistent results.

Measuring an attitude may require asking several similar questions. To measure an internal consistency of a multiple item measure, scores on subsets of the items within the scale are correlated (Zikmund, 2003). With regard to Cronbach’s alpha it must be mentioned that bigger amount of elements gives higher alpha values. It is preferable if result is above 0,7

(Bryman, Cramer, 2005) or at least above 0,5 for a bigger number of indicators. For a small number of indicators (2-4) results closed to 0,5 can be accepted.

In order to check how variables were related to each other bivariate correlation analysis with Spearman's rho (a non-parametric statistic) was conducted. Correlation coefficient r , ranges from 1,0 to -1,0. If the value of r is 1,0, there is a perfect positive linear relationship, if r is -1,0, there is a perfect negative linear relationship. r equal to 0,0 indicates no correlation (Zikmund, 2003). Due to the fact that the null hypotheses are directional (with a stated direction of a relationship) one-tailed tests were applied.

Finally, professional readers must agree that a scale logically appears to accurately measure what it is needed to measure- face validity check(Zikmund, 2003)

After the amount of data was reduced, it was analysed with the help of binary correlation analysis. Spearman's rho test for nonparametric correlations between two variables was applied. . One- tailed significance test was chosen, since the hypotheses are directional and imply positive relationship between variables.

Finally, the variables that were proven to correlate with each other were analysed with the help of linear regression analysis. Regression analysis is usually used for the analysis of relationships between dependent and independent variables and it attempts to predict the values of a continuous interval-scaled dependent variable from specific values of the independent variable. Factors were evaluated with regard to coefficient of determination (R Square), F- ratio and significance level, and unstandardized regression coefficient B. R Square measures that portion of the total variance of a variable that is accounted by knowing the value of another variable. In other words, the amount of the variance in the outcome explained by the model (Field, 2005). Significance level is a critical probability in choosing between the null and the alternative hypotheses; the probability level that is too low to warrant support of the null hypothesis (Zikmund, 2003). F- ratio is ratio of the average variability in the data that a given model can explain to the average variability unexplained by the same model. It is the ratio of the experimental effect to the individual differences in the performance. If its value is less than one, it must represent a non-significant effect. Values greater than 1 indicate that the experimental manipulation had some effect above and beyond the effect of individual differences in performance (Field, 2005). Beta coefficient (unstandardized regression coefficient) represents "the change in the outcome associated with a unit change in the predictor" ((Field, 2005). It tells how many standard deviation units the dependent variable will change for a one standard deviation change in the independent variable (Bryman, Cramer, 2005). 5% significance level was accepted, which is a standard procedure in such investigations.

The quality and the distribution of the data were checked with the help of "tolerance/ variance inflation factor" (VIF). None of variables had VIF higher than 10, which is the highest acceptable value.

7.3.7 How good is the conclusion?

Survey studies provide an efficient and accurate description of respondents' thoughts, feelings and opinions. The biggest limitation of such kind of studies is that interpretation of causal relationships can be problematical.

When the questionnaire consists of closed questions, the researcher must make sure that questions measure exactly the phenomena he wants to investigate (conceptual validity). One way to do it is to ask other professionals for second opinion.

Chap. 8 Data reduction

In order to reduce the number of variables factor analysis was used for the groups of units of measure. There, where factor analysis did not give any clear correlations, the author used her own subjective judgement with face validity, in order to reduce data.

The explanation model that was used as a point of departure is presented below (see model 8.1) Variables describing personal preferences and organizational preferences were used to create new variables describing congruity between them. The other parts of the model present flow elements that were used in analyses and three levels of flow that can be obtained during the work day.

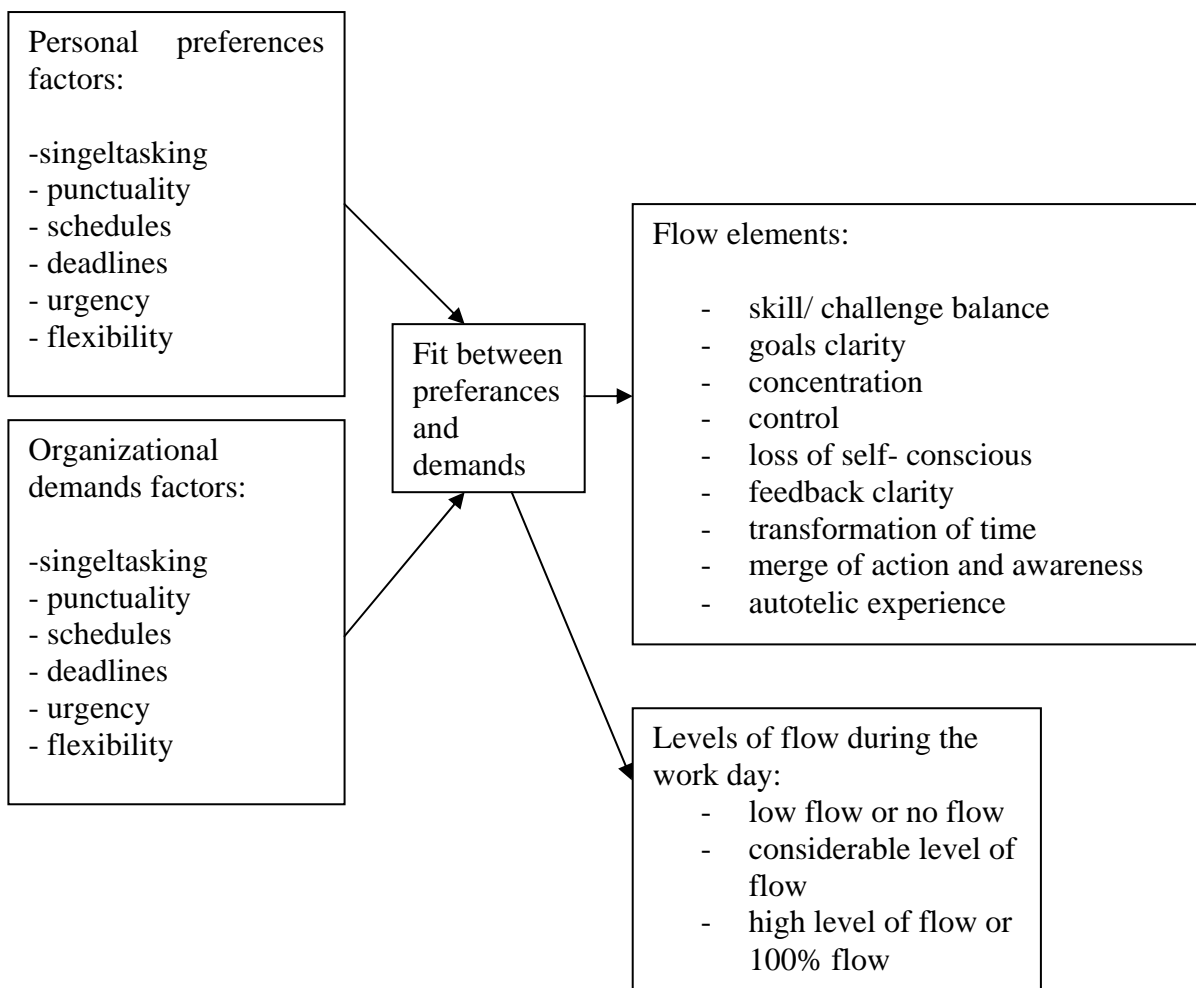


Fig.11 Explanation model

8.1 Concept clarification of “personal preferences” factors (Agderforskning)

8.1.1 Single-tasking preferences

Questionnaire that was used for this research contains 14 questions concerning preferences for having “many balls in the air” in contrast to focusing on one thing/task at a time. In other words these questions test preferences concerning multitasking versus single-tasking. Some questions were rotated. Data was reduced with the help of factor analysis to questions: 15a, 15c, 15f, 15g and 16 d. Table 8.1 shows results of factor analysis for single-tasking preferences. Cronbach’s alpha for these 5 items was equal to 0.850, which is satisfying and show high level of inter-item correlation for these items (Cronbach’s alpha should be over .7). % of variance (extraction sums of squared loadings) was equal to 63.026. Only one component was extracted. These five items were grouped and called single-tasking preferences.

Questions	1
15a) Jeg foretrekker å gjøre ferdig en oppgave før jeg begynner på noe annet	.841
15c) Jeg foretrekker helt klart å kunne konsentrere meg om en ting av gangen	.891
15f) Jeg liker best å jobbe med oppgaver som krever 100 % fokus	.816
15g) Jeg liker best å forholde meg til en type informasjon av gangen	.688
16a) Uansett hva jeg holder på med, føler jeg best når jeg kan jobbe uforstyrret i flere	.714

Table 8.1.1: Factor analysis (Component Matrix) for single-tasking preferences for Agderforskning.

8.1.2 Punctuality preferences

Question 17 includes three questions about punctuality preferences: 17a, 17c and 17e. These questions ask how respondents feel about being punctual and keeping appointments. Table 8.2 contains results from factor analysis for these items. Question 17a correlated negatively with the other two questions and was the reason for a very low Cronbach’s alpha (.149). With just questions 17c and 17e Cronbach’s alpha was equal to .501. Only one component was extracted and it represented 66.928 % of variance. Cronbach’s Alpha is lower than .7, but since there were chosen just two items, it is acceptable. Cronbach’s Alpha has lower values when the number of items is low. Two items with the highest loadings were grouped and called punctuality preferences.

Questions	1
17a) For meg er det viktig å være punktlig i de fleste sammenhenger	-.549
17c) Jeg synes det er pinlig å komme for sent til en avtale	.815
17e) Jeg pleier å bli veldig irritert hvis folk kommer for sent til en avtale	.698

Table 8.1.2: Factor analysis (Component Matrix) for punctuality preferences for Agderforskning.

8.1.3 Schedule preferences

Questions 17f, 17h and 17j asked about preferences for schedules. Do respondents prefer to work with a clear and detailed schedule or would they prefer to skip having schedules? Rotated component matrix and reliability analysis showed that question 17f was poorly correlated with the other two questions and measured some other aspect of schedule preferences. With just questions 17h and 17j Cronbach's Alpha was equal to .193. Such a small value of Cronbach's Alpha indicates a very low inter-item correlation and poor reliability. These two questions represented 55.349 % of variance. Tabel 8.3 shows result from the factor analysis for these items. Due to the fact that there were no other items that could had been used in stead, the two items with the highest loadings were grouped and called schedule preferences.

Questions	1	2
17f) Jeg foretrekker å ha et tydelig og detaljert tidsskjema ("schedule") for det jeg gjør	.015	.921
17h) Jeg liker det ikke når alt en gjør må være del av et tidsskjema	.821	.211
17j) Hvis jeg kunne velge, ville jeg helst slippe å ha noe fast tidsskjema i jobbsammenheng	.652	-.375

Table 8.1.3: Factor analysis (Rotated Component Matrix) for punctuality preferences for Agderforskning.

8.1.4 Deadline preferences

Questions 17k, 17m and 18h asked about preferences for deadlines. These questions tested if respondents preferred to have long or absolute deadlines. Factor analysis and reliability analysis showed that it was best to extract question 18h, since the other two questions shared higher inter-item correlation. Only one component was extracted. Questions 17k and 17m resulted in Cronbach's Alpha equal to .368 and represented 62.506 % of variance. Low Cronbach's Alpha indicated poor inter-item correlation and low reliability. For the same reason as stated above- no replacement options- the two items with highest loadings were grouped and named deadlines preferences. Table 8.4 presents result of factor analysis for these items.

Questions	1
17k) Hvis jeg kunne velge, ville jeg helst slippe å ha noe fast tidsskjema i	.745
17m) Jeg liker ikke å jobbe mot absolutte tidsfrister	.712
18h) Hvis jeg kunne velge, ville jeg helst ikke behøve å bry meg om tidsfrister	.524

Table 8.1.4: Factor analysis (Component Matrix) for deadline preferences for Agderforskning.

8.1.5 Urgency preferences

Questions 18b and 18d are the only two questions asking about urgency preferences. These questions aimed to test if respondents preferred to work fast. Results of factor analysis are presented below in table 8.5. These two items represent 75.123 % of variance and reliability analysis resulted in Cronbach's alpha equal to .667. This is a high value, taking into consideration low number of items. It shows that these two items measure the same

underlying construct (high inter-item correlation). These two items created new variable: urgency preferences.

Questions	1
18b) Jeg er nok en type som vanligvis prøver å få ting raskt unna	.867
18d) Jeg liker å gjøre alt jeg gjør raskest mulig	.867

Table 8.1.5: Factor analysis (Component Matrix) for deadline preferences for Agderforskning.

8.1.6 Flexibility preferences

Questions 18j, 18l and 18n asked about flexibility preferences. These questions asked about respondents' preferable time for work. Do they like to work from 9 to 16, or do they prefer to work during the evening or during the night? Do they prefer to take work home or want to forget about work when the workday is over? Extracting 18j results in Cronbach's alpha equal to .672, which is close to .7 and therefore acceptable. Inter-item correlation was relatively high. Question 18j was poorly correlated with the other two questions and was the reason for lower Cronbach's Alpha (.636). Only one component was extracted. Factor analysis showed that these two items represent 75.342 % of variance. Two items with the highest loadings were grouped and called flexibility preferences. Relevant factor analysis is presented in the table 8.6.

Questions	1
18j)Aller helst ville jeg bare kunne glemme jobben ved arbeidstidens slutt	.659
18l) Jeg kunne vanskelig finne meg til rette hvis jeg måtte jobbe ni til fire	.886
18n) Ofte vil jeg helst jobbe med viktige oppgaver om kveldene eller nettene	.724

Table 8.1.6: Factor analysis (Component Matrix) for flexibility preferences for Agderforskning.

8.2 Concept clarification of “organizational demands” factors (Agderforskning)

The same analyses were conducted for items describing demands. Organizational demand variables measure the same issues as preferences, but seen from the organizational point of view.

8.2.1 Single-tasking demands

Questions 15b, 15e, 15i and 16a asked about organizational demands concerning single-tasking. In other words: is the organization demanding that its employees work with just one task at a time, or are they required to multitask? Component 1 represented 39.926 % of variance, while component 2 represented 39.739 % of variance (in total 79.655 % of variance). Reliability analysis indicated that it was best to choose questions 15i and 16a. However, inter-item correlation between all four questions was very low. Questions 15b and 15e measured a different aspect of single-tasking. Extracting these questions enhanced

Cronbach's alpha to .328 (still a low value, indicating low inter-item correlation) and reduced % of variance to 60.372%. These two items (15i and 16a) were grouped and called single-tasking demands. Results of factor analysis are presented in table 8.2.1.

Questions	1	2
I denne jobben er du nødt til å kunne gjøre flere ting samtidig	.049	-.393
I denne jobben kreves det at en gjør en klar prioritering av oppgavene og tar en ting av gangen	-.718	.460
De fleste arbeidsoppgavene mine krever udelt oppmerksomhet – 100 % fokus	.148	.867
Det meste av arbeidet mitt er slik at jeg gjerne kan ha fokus på helt forskjellige ting samtidig	.823	.289

Table 8.2.1: Factor analysis (Rotated Component Matrix) for single-tasking demands for Agderforskning.

8.2.2 Punctuality demands

Questions 17b and 17d were the only two asking about organizational demands for punctuality. Consequently, these two items were grouped and named punctuality preferences. Only one component was extracted (see table 8.2.2 below). These two questions represented 71.237% of variance. Cronbach's alpha was equal to .586, which can be accepted, since the number of items is just two and the inter-item correlation is quite high (.425).

Questions	1
17b) På denne arbeidsplassen er det et sterkt krav om å være punktlig	.844
17d) Folk her føler et sterkt press til å holde avtaler	.844

Table 8.2.2: Factor analysis (Component Matrix) for punctuality demands for Agderforskning.

8.2.3 Schedules Demands

Questions 17g and 17i are the only ones testing organizational demands for schedules. They were grouped together and named schedule demands. Results of factor analysis are presented in table 8.2.3 below. Only one component was extracted. Cronbach's alpha is equal to .459, inter-item correlation is low. These two items represent 64.904% of variance.

Questions	1
17g) Folk er ikke særlig opptatt av tidsskjema på denne arbeidsplassen	.806
17i) Alt arbeid her er bundet opp i fastsatte tidsskjema	.806

Table 8.2.3: Factor analysis (Component Matrix) for schedule demands for Agderforskning.

8.2.4 Deadline demands

17l and 17n are the only two questions asking for deadline demands and were grouped and called deadline demands (see table 8.3.4). Cronbach's alpha is negative. Question 17l was rotated, so the author does not understand it?! These two items do not create together a reliable factor. However, since these two items are the only one available for the further analysis, the author chose to keep them. 69.539 is the % of variance.

Questions	1
17l) Arbeidet er ikke lagt opp slik at en kan jobbe mot langsiktige frister her	.834
17n) Alt vi gjør i arbeidet her dreier seg om å holde tidsfrister	-.834

Table 8.2.4: Factor analysis (Rotated Component Matrix) for deadline demands for Agderforskning.

8.2.5 Urgency demands

Questions 18a and 18c asked about organizational demands for speed (urgency demands). See table 8.2.5 for results from factor analysis. Only one component was extracted. These two items were grouped and named urgency demands. They represent 75.358% of variance. Reliability analysis showed that Cronbach's alpha was equal to .667, which is relatively high and that inter-item correlation was good (.507).

Questions	1
18a) I dette systemet må du bare henge med enten det du gjør blir riktig eller ikke	.868
18c) Jobben krever et veldig høyt tempo av oss som jobber her	.868

Table 8.2.5: Factor analysis (Component Matrix) for urgency demands for Agderforskning.

8.2.6 Flexibility demands

Questions 18i, 18k and 18m asked for flexibility preferences. Two components were extracted (see table 8.2.6). Removal of question 18k enhanced Cronbach's alpha from .012 to .439. The two remaining questions represent 64.190% of variance (total variance explained). They were grouped and created a new variable called flexibility demand.

Questions	1	2
På min arbeidsplass forventes det at folk stadig vekk tar med seg arbeid hjem etter arbeidstid	-,822	,343
Systemet og teknologien er slik at en får egentlig ikke utrettet noe etter vanlig arbeidstid	,900	,160
For å få gjort jobben min er jeg nødt til å kunne løse arbeidsoppgaver utenom vanlig arbeidstid	-,039	,973

Table 8.2.6: Factor analysis (Rotated Component Matrix) for flexibility demands for Agderforskning.

8.3 Conclusion – concept clarification of personal preferences and organizational demands factors (Agderforskning).

With the help of factor analysis (Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization) and reliability analysis (Cronbach's alpha) data was reduced. Remaining items were grouped into six personal preferences variables and six organizational demands variables. Not all variables were proven to have acceptable value of Cronbach's alpha. Schedule preferences and single-tasking demands were the two factors with the lowest Cronbach's alpha values (.193 and .328) and consequently the lowest reliability. The author decided to keep them for the purpose of further analyses. The value for Cronbach's alpha for deadline demands was negative. The author chose to exclude this variable (together with deadline preferences) from further analysis. Keeping it would create the risk of severe errors and compromise the reliability of further analyses. The remaining values of Cronbach's alpha were chosen to be accepted, when the very low number of items and no possibility for substitution was taken into consideration. The table 8.3.1 sums-up results from reliability analyses for all twelve factors.

Variables (Agderforskning)		Cronbach's Alpha
Preferences	Singel-tasking	.850
	Punctuality	.501
	Schedule	.193
	<i>Deadline</i>	.368
	Urgency	.667
	Flexibility	.672
Demands	Singel-tasking	.328
	Punctuality	.586
	Schedule	.459
	<i>Deadline</i>	-1.002
	Urgency	.667
	Flexibility	.439

Table 8.3.1: Reliability analyses for personal preferences and organizational demands (Agderforskning).

8.4 Concept clarification of “personal preferences” factors (Nordea)

The same types of analyses (factor analyses) were conducted for the data from Nordea.

8.4.1 Single-tasking preferences

With the help of factor analysis six questions were chosen out of 14 available (see table 8.4.1). Two components were extracted. Component 1 has Cronbach’s Alpha equal to .696, component 2 has Cronbach’s Alpha equal to .614. Consequently the three items constituting component 1 were chosen to create single-tasking preferences variable. It represents 62.251% of total variance explained.

Questions	1	2
15a) Jeg foretrekker å gjør ferdig en oppg før jeg begynner på noe annet	.851	-.056
15c) Jeg foretrekker helt klart å kunne konsentrere meg om en ting av...	.796	.078
15g) Jeg liker best å forholde meg til en type informasjon av gangen	-.046	.783
16b) Hvis jeg har en krevende oppgave foretrekker jeg å kunne jobbe...	.097	.672
16d) Uansett hva jeg holder på med føler jeg best når jeg kan jobbe...	.214	.760
16e) Hvis jeg har en krevende oppgave foretrekker jeg å dele opp oppg...	.684	.306

Table 8.4.1:Factor analysis (Rotated Component Analysis) for single-tasking preferences (Nordea)

8.4.2 Punctuality preferences

Questions 17a, 17c and 17e asked about preferences for punctuality. Only one component was extracted (see table 8.4.2). Cronbach’s alpha grew from .594 to .690 after removing question 17e. Total variance explained for remaining two items was 76.332%. These two remaining items were grouped and called punctuality preferences.

Questions	1
17a) For meg er det viktig å være punktlig i de fleste sammenhenger	.816
17c) Jeg synes det er pinlig å komme for sent til en avtale	.824
17e) Jeg pleier å bli veldig irritert hvis folk kommer for sent til646

Table 8.4.2:Factor analysis (Component Analysis) for punctuality preferences (Nordea)

8.4.3 Schedule preferences

Questions 17f, 17h and 17j asked about preferences for schedules. Cronbach’s alpha grew from .409 to .535 after extracting question 17f. Total variance explained grew from 47.977% to 68.424%. consequently, these two items were chosen to create schedule preferences variable. Table 8.4.3 shows results of factor analysis.

Questions	1
17f) Jeg foretrekker å ha et tydelig og detaljert tidsskjema”...	,452
17h) Jeg liker det ikke når alt en gjør må være del av et tidsskjema	,824
17j) Hvis jeg kunne velge ville jeg helst slippe å ha noe fast tidss...	,746

Table 8.4.3:Factor analysis (Principal Component Analysis) for schedule preferences (Nordea)

8.4.4 Deadline preferences

There were three questions asking about preferences for deadline: 17k, 17m and 18h. Two components were extracted (see table 8.4.5 below). After extracting question 17k component 1 had Cronbach’s alpha equal to .400 (due to low inter-item correlation and low number of items). Its total variance explained was equal to 62.513%. Component 2 had just one high loading and total variance explained equal to 34.864%. The two items constituting component 1 were chosen to create deadline preferences variable.

Questions	1	2
17k) Jeg liker å jobbe mot langsiktige tidsfrister ”deadlines”...	.326	.896
17m) Jeg liker ikke å jobbe mot absolutte tidsfrister	.715	-.463
18h) Hvis jeg kunne velge ville jeg helst ikke behøve å bry meg om...	.810	.048

Table 8.4.4:Factor analysis (Rotated Component Analysis) for deadline preferences (Nordea)

8.4.5 Urgency preferences

Questions 17o, 18b and 18d asked about preferences for speed (urgency preferences). One component was extracted. Results are presented in table 8.4.5. Removal of question 17o increased Cronbach’s alpha from .359 to .366.Total variance explained for three items was equal to 44.144%, while the remaining two items constituted 61.870% of total variance explained. Inter-item correlation between the items was low, especially for item 17o. These two remaining items were grouped and created new variable- urgency preferences.

Questions	1
17o) Jeg foretrekker å gjøre ting riktig framfor å gjøre dem fortest...	.530
18b) Jeg er nok en type som vanligvis prøver å få ting raskt unna	.704
18d) Jeg liker å gjøre alt jeg gjør raskest mulig	.740

Table 8.4.5:Factor analysis (Component Analysis) for urgency preferences (Nordea)

8.4.6 Flexibility preferences

Questions 18j, 18l and 18n asked about preferences for flexibility. One component was extracted (see table 8.4.6). Removal of question 18j increased Cronbach’s alpha value from .042 to .485. This question correlated negatively with the other two questions. Total variance explained increased from 49.612% to 66.071%. The two items with the highest loadings were grouped and named flexibility preferences.

Questions	1
18j) Aller helst ville jeg bare kunne glemme jobben ved arbeidstidens...	-.616
18l) Jeg kunne vanskelig finne meg til rette hvis jeg måtte jobbe...	.729
18n) Ofte vil jeg helst jobbe med viktige oppgaver om kveldene eller...	.760

Table 8.4.6:Factor analysis (Component Analysis) for flexibility preferences (Nordea)

8.5 Concept clarification of “organizational demands” factors (Nordea)

The following section presents results of factor analyses, which enabled to reduce data and create organizational demands variables.

8.5.1 Single-tasking demands

Questions 15b, 15e, 15i and 16a asked about demands for single- tasking. Two components were extracted. 15b had similar loadings for both components, so it seemed not to be a reliable item. Component 1 was chosen for further analysis. Table 8.5.1 shows results for factor analysis. Extracting of question 15i resulted in Cronbach’s alpha equal to .374 for the other three items. Reliability analysis showed that extracting of item 15b would reduce Cronbach’s alpha. Total variance explained for these three items was equal to 45.719%. Consequently, items 15b, 15e and 16a were grouped to create new variable-single-tasking demands.

Questions	1	2
15b) I denne jobben er du nødt til å kunne gjøre flere ting samtidig	.540	.494
15e) I denne jobben kreves det at en gjør en klar prioritering av...	.679	-.031
15i) De fleste arbeidsoppgavene mine krever udelt oppmerksomhet ...	-.135	.907
16a) Det meste av arbeidet mitt er slik at jeg gjerne kan ha fokus på763	-.057

Table 8.5.1:Factor analysis (Rotated Component Analysis) for single-tasking demands (Nordea)

8.5.2 Punctuality demands

Just two questions asked about punctuality demands: 17b and 17d. Cronbach’s alpha was equal to .742. Total variance explained 79.481%. Only one component was extracted (see table 8.5.2). These two items were grouped together and named punctuality demands.

Questions	1
17b)På denne arbeidsplassen er det et sterkt krav om å være punktlig	.892
17d) Folk her føler et sterkt press til å holde avtaler	.892

Table 8.5.2:Factor analysis (Component Analysis) for punctuality demands (Nordea)

8.5.3 Schedule demands

Questions 17g and 17i asked about schedule demands. Only one component was extracted. Table 8.5.3 presents results of factor analysis. Total variance explained was equal to 51.972%. Items were negatively correlated with each other and Cronbach’s Alpha was equal to -.072. These items did not create a reliable variable.

Questions	1
17g) Folk er ikke særlig opptatt av tidsskjema på denne arbeidsplassen	.721
17i) Alt arbeid her er bundet opp i fastsatte tidsskjema	-.721

Table 8.5.3:Factor analysis (Component Analysis) for schedule demands (Nordea)

8.5.4 Deadline demands

Questions 17l and 17n asked about deadline demands. Total variance explained was equal to 57.996%. Cronbach's Alpha was equal to .264. One component was extracted (see table 8.5.3). due to the fact that there was no other available items, these two items were grouped and created new variable: deadline demands.

Questions	1
17l) Arbeidet er ikke lagt opp slik at en kan jobbe mot langsiktige...	.762
17n) Alt vi gjør i arbeidet her dreier seg om å holde tidsfrister	.762

Table 8.5.4:Factor analysis (Component Analysis) for deadline demands (Nordea)

8.5.5 Urgency demand

Questions 18a and 18c asked about speed demands. One component was extracted. Total variance explained was equal to 65.724%. Cronbach's alpha was equal to .429. There were no other items relating to urgency, so these two were grouped and created a new variable-urgency demand. See table 8.5.5.

Questions	1
18a) I dette systemet må du bare henge med enten det du gjør blir riktig...	.811
18c) Jobben krever et veldig høyt tempo av oss som jobber her	.811

Table 8.5.5:Factor analysis (Component Analysis) for urgency demands (Nordea)

8.5.6 Flexibility demands

Questions 18i, 18k ad 18m asked about flexibility demands. Two components were extracted. Component 1 had two high loadings for items 18i and 18m. Question 18k tested some other aspect of flexibility demands, since it had high loading for component 2.reliability analysis showed that all three items had Cronbach's alpha equal to .197. Removing item 18k increased Cronbach's alpha to .290. Consequently, these two items were grouped and named flexibility demands (see table 8.5.6).

Questions	1	2
18i) På min arbeidsplass forventes det at folk stadig vekker tar med...	.746	-.392
18k) Systemet og teknologien er slik at en får egentlig ikke utrettet...	.018	.906
18m) For å få gjort jobben min er jeg nødt til å kunne løse arbeidsoppg...	.788	.330

Table 8.5.6: Factor analysis (Rotated Component Analysis) for flexibility demands (Nordea)

8.6 Conclusion – concept clarification of personal preferences and organizational demands factors (Nordea).

Data reduction for Nordea was conducted in exactly the same way as data reduction for Agderforskning. Two kinds of analyses were conducted: factor analysis and reliability analysis. Factor analysis helped to reduce the amount of data by showing which items correlated best with each other. Reliability analysis helped to check which of the chosen items combination had best inter-item correlation and highest reliability. Table 8.3.1 sums-up Cronbach's alpha for all twelve factors. From all the preferences urgency has the lowest Cronbach's alpha (.366). Single-tasking, punctuality and schedule have acceptable value of alpha (above .5). The last two preferences- deadline and flexibility- have alpha value lower than .5, and therefore not great reliability. On the demands side, punctuality is the only variable with the acceptable Cronbach's alpha (.742). The other factors have low alpha value. Schedule demand has a negative value of alpha (-.072). It will not be used in further analyses, since it would compromise the reliability of further analyses.

Factors		Cronbach's Alpha
Preferences	Singel-tasking	.696
	Punctuality	.690
	Schedule	.535
	Deadline	.400
	Urgency	.366
	Flexibility	.485
Demands	Singel-tasking	.374
	Punctuality	.742
	Schedule	-.072
	Deadline	.264
	Urgency	.429
	Flexibility	.290

Table 8.6.1: Cronbach's alpha for personal preferences and organizational demands (Nordea).

Chap. 9 Which factors influence flow in knowledge intensive organizations?

This chapter presents a demonstration of the methods, which were used to investigate which of the twelve factors influence flow in knowledge intensive organizations. In the first section of this chapter personal preferences factors and organizational demands factors were analysed. In the second section the whole explanation model was analysed.

9.1 Testing of hypotheses

All variables describing personal preferences and organizational demands were transformed into new variables (deviations) with a help of SPSS data program.

First, variables describing preferences were transformed into new variables called preferences deviations. This was done by dividing respective preferences by the number of items, which they included. The same was done with demands. In the next step demands deviations were subtracted from preferences deviations and yet new variables were created. These new variables were: single-tasking deviation, punctuality deviation, schedule deviation, deadline deviation, urgency deviation, and flexibility deviation. Since these deviations had both negative and positive values, there was conducted another operation- creating absolute value of all mentioned variables. In the end, absolute values of variables were analysed (descriptive analyse and frequencies analyse) in order to investigate how big is the congruence between personal preferences and organizational demands. Descriptive analyses of frequencies of deviations for all variables are available in Appendix 1 for Agderforskning and Appendix 2 for Nordea. According to the hypotheses, if the fit is good, then respondents should have reported higher level of flow.

In order to find the directions of personal preferences and organizational demands for Agderforskning frequency analyses was conducted. The author chose to present just central tendencies from the findings.

Preferences of Agderforskning employees:

- There was no clear preference for single-tasking, answered were spread through the whole scale.
- 64% of respondents preferred punctuality.
- **88% had a clear preference for schedules.**
- **Over 87% meant that it was important to keep deadlines, no one disagreed.**
- Over 58% did not agree that it was important to work fast or was indifferent about importance of urgency.
- 54% did not prefer flexibility.

Organizational demands of Agderforskning organization:

- 64% meant that they are expected to focus on one task at a time.

- 27% did not think it was important to be punctual, while ca 40% thought it was essential to be punctual.
- 56% did not agree it was important to be on schedule, 23% neither agreed nor disagreed.
- Ca 40% believed they need to keep deadlines, while ca 27% did not have opinion (keep I mind that results obtained for demands variables may not be reliable).
- Over 45% reported that it was not crucial for them to work fast, while 23% meant the opposite was true.
- 25% answered that they are not expected to be flexible, while 47% answered that they were expected to be flexible.

In general, expect for preferences for schedules and deadlines there are no clear preferences. Perceived organizational demands are not clear as well.

As presented in the table 9.1.1 below, the difference between preferences and demands is not big and the spread in range is small (between two and three). Congruence is the best for deadline and flexibility variables (or single-tasking and flexibility variables, if deadline variable was excluded), and the worst for schedule and urgency variables. If the hypothesis is valid, flexibility, single-tasking (and deadline) deviations should obtain better correlation with flow variables, than schedule and urgency deviations. According to the second hypothesis, there should be observed a higher flow level correlated with flexibility, single-tasking and deadline deviation (since the fit between the preferences and demands is good) comparing to the flow level correlated with urgency and schedule deviations.

Deadline deviation is presented in the table just for orientation, the results concerning deadline demands are not reliable, due to the negative Cronbach´s alpha obtained during reliability analysis of deadline demands.

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Single-tasking deviation	27	2,20	,00	2,20	,7296	,59988
Punctuality deviation	26	2,50	,00	2,50	1,0000	,64807
Schedule deviation	25	3,00	,00	3,00	1,1800	,71995
Deadline deviation	24	2,00	,00	2,00	,7708	,55127
Urgency deviation	24	3,00	,00	3,00	,8750	,75542
Flexibility deviation	24	2,00	,00	2,00	,8750	,57578
Valid N (listwise)	24					

Table 9.1.1 Descriptive Statistics: deviation variables (Agderforskning)

In order to find the directions of personal preferences and organizational demands for Nordea frequency analysis was conducted. The author chose to present just central tendencies from the findings. Complete tables are available in Appendix 3.

Preferences of Nordea employees:

- Over 90% reported that they prefer to do one thing at a time. Bank employees did not like to have “many balls in the air”

- Over 98% meant that punctuality was important.

- Except for 12% that did not have an opinion, all respondents answered that they preferred having schedules.

- 54% of bank employees mean that it was quite important to keep deadlines.

- When asked about the importance of urgency over 68% answered that they preferred to work fast.

- The majority (ca 76%) did not prefer flexibility in connection to work time.

Organizational demands of Nordea:

- Almost 90% answered that bank employees are expected to focus on one thing at a time.

- Over 60% meant that punctuality is important when working in the bank.

- 39% neither agreed nor disagreed that being on schedule is important, while over 40% meant that bank employees are supposed to respect schedules (keep in mind that results concerning schedules may be not reliable)

- 60% reported agreed it was important to keeping deadlines.

- 48% answered that speed is essential.

- 70% agreed that working in the bank did not demand flexibility.

Bank employees reported much more clear preferences than employees from Agderforskning. They were also more specific in their perception about what was expected from them.

The next table- 9.1.2 presents descriptive statistics for deviation variables for Nordea. Congruence was best for single-tasking (1.33) and deadlines (1.5). The worst fit was observed for schedules (3.0) and flexibility (3.0). Flow should be experienced more often there where there was the best fit (lowest range) if the hypothesis should be supported.

	N	Range	Minimum	Maximum	Mean	Std. Deviation
Single-tasking deviation	59	1,33	,00	1,33	,4181	,34792
Punctuality deviation	59	2,50	,00	2,50	1,1695	,67982
Schedule deviation	59	3,00	,00	3,00	,8305	,66702
Deadline deviation	59	1,50	,00	1,50	,6610	,46831
Urgency deviation	59	2,00	,00	2,00	,6186	,56735
Flexibility deviation	59	3,00	,00	3,00	,7966	,69554
Valid N (listwise)	59					

Table 9.1.2 Descriptive Statistics: deviations – Nordea

9.2 Testing of the whole model for flow (Agderforskning)

The questionnaire included several questions concerning different aspects of the flow state. These questions were analysed with the help of factor and reliability analyses and grouped into nine categories: skill/ challenge balance, goal clarity, concentration, control, feedback clarity, transformation of time, loss of self-consciousness, merge of action and awareness and autotelic experience. All above elements were described in the theory part of this paper.

The next step of the analysis was to check to which degree over mentioned deviations correlate with the elements of flow. Two types of analyses were conducted. Bivariate correlation analysis was used to investigate which variables correlate significantly with each other. Regression analysis was used to evaluate degree to which one variable depends on another.

Agderforskning was analysed first. Preferences, demands and deviations were tested for Spearman's rho correlations. As mentioned above, since hypotheses are directional the 1-tailed test was required. The acceptable significance level was chosen to be .05.

There were eight significant correlations between preferences variables and flow elements (see table 9.2.1):

- High negative correlation between schedule preferences and goal clarity suggesting that strong preference for schedules makes goals less clear.
- Quite high positive correlation between urgency preferences and goal clarity suggesting that goals seem to be clearer for a person who likes to work fast.
- High positive correlation between deadline preferences and concentration, which can mean that people who prefer deadlines do not have problems with concentration.
- Both deadline and urgency preferences correlate positively and significantly with loss of self-consciousness. That implies that workers who keep deadlines and like to work fast are not insecure and are not second guessing themselves.
- Urgency preference share high positive correlation with feedback clarity. This suggests that people are able to work faster if they are provided with frequent and good feedback.
- Single-tasking preferences correlate negatively with transformation of time, implying that it is easier to forget the time if somebody works on many tasks at the same time.
- Deadline preferences on the other hand, correlate positively with transformation of time.

Agderforskning Spearman´s rho (+ Sig.level)	Single-tasking pref.	Punctuality pref.	Schedule pref.	Deadline pref.	Urgency pref.	Flexibility pref.
Flow:	1-tailed	1-tailed	1-tailed	1-tailed	1-tailed	1-tailed
Skill/challenge balance	-.158	.166	-.302	.305	.209	.021
Goal clarity	.201	.170	-.478**	.073	.399*	-.052
Concentration	-.165	.224	-.078	.503**	.113	.042
Control	.218	-.019	-.124	.005	.283 (.090)	.111
Loss of self-consciousness	.000	-.187	-.256	.465*	.441*	-.231
Feedback clarity	.276	.053	-.151	.186	.514**	-.066
Transformation of time	-.495**	.082	.047	.361*	-.011	.147
Merge of action and awareness	-.198	-.057	.075	-.066	.081	.326
Autotelic experience	.263	-.109	-.076	.145	.156	.237

Table 9.2.1: Bivariate analysis of preferences variables and flow elements (Agderforskning)
*correlation is significant at .05 level; **correlation I significant at .001 level

Bivariate analysis of demands variables versus flow elements showed that there were six significant correlations (see table 9.2.2 below):

- There was a significant positive correlation between schedule demands and skill/challenge balance.
- Single-tasking demands correlated negatively with concentration.
- Both schedule and urgency demands correlated negatively with merge of action and awareness
- Also flexibility demands correlated with merge of action and awareness- positively.
- Urgency demands correlated negatively with autotelic experience

Spearman´s rho test for deviations variables showed that there were four significant correlations (see table 9.2.3 below):

- single-tasking and transformation of time (positive correlation)
- flexibility and loss of self-consciousness (positive correlation)
- flexibility and feedback clarity (positive correlation)
- schedule and goal clarity

Agderforskning Spearman´s rho (+ Sig.level)	Single- tasking demands	Punctuality demands	Schedule demands	Deadline demands	Urgency demands	Flexibility demands
Flow:	1-tailed	1-tailed	1-tailed	1-tailed	1-tailed	1-tailed
Skill/challenge balance	-.045	-.073	.363*	.023	.144	-.027
Goal clarity	.010	-.045	.147	-.118	-.185	.121
Concentration	-.421*	.140	-.213	.084	-.041	.188
Control	-.235	.129	-.128	.000	-.095	.314
Loss of self- consciousness	-.132	.074	.250	.044	-.060	.035
Feedback clarity	-.115	-.174	-.057	.083	-.061	.227
Transformation of time	-.224	.256	.009	.128	.271	.100
Merge of action and awareness	.008	.268	-.394*	-.228	-.491**	.372*
Autotelic experience	-.036	-.069	-.084	.148	-.407*	.283

Table 9.2.2: Bivariate analysis of demands variables and flow elements (Agderforskning)
*correlation is significant at .05 level; **correlation is significant at .001 level

Agderforskning	Single- tasking deviation	Punctuality deviation	Schedule deviation	Deadline deviation	Urgency deviation	Flexibility deviation
Skill/challenge	.275	.026	-.198	.159	.136	-.093
Goals clarity	.133	.155	-.376*	.039	.085	.091
Concentration	.108	.256	.107	.078	.066	.259
Control	-.134	-.002	-.087	-.208	-.161	.254
Loss of self- consciousness	.230	.032	-.256	.087	.324	.531**
Feedback clarity	.007	.274	-.084	-.107	-.080	.391*
Transformation of time	.445*	.096	.161	.042	-.042	-.103
Action awareness	.165	-.040	.185	-.026	.107	-.011
Autotelic experience	-.273	.162	.057	.065	.137	-.020

Table 9.2.3 Spearman´s rho: correlations between deviation variables and flow elements (Agderforskning) *correlation is significant at .05 level; **correlation is significant at .001 level

Since there were no significant correlations between the other factors, further analysis considered just these four over mentioned correlations.

Simple linear regression analyses were done to detect more details of the relationships between absolute deviations and flow elements. In each of these analyses flow elements were dependent variables and absolute deviations represented independent variables.

Single-tasking deviation explains 17.9% of variance of flow-transformation time (R square). That means that there are other factors, except for single-tasking that stand for 81% of the reasons that workers experience this element of flow. The observed F value (4.807) is significant at a .05 level of significance, but not significant at a .01 level. The observed value of Beta indicates that as single-tasking increases by one standard deviation, the chance of experiencing flow-transformation of time increases by .571 standard deviations (see table 9.2.4).

Independent variable: single-tasking deviation	R Square	Sig.	N	F	B
Dependent variable: transformation of time	.179	.039	24	4.807	.571

Table 9.2.4 Regression analysis: single-tasking deviation versus flow-transformation of time (Agderforskning)

Flexibility deviation explains 26.0% of variance of flow-loss of self-consciousness (R square). This is better score, than in previous case, however it is still low. It means that 74% of the times when workers experience this element of flow state, there are other factors triggering it. The observed F value (7.731) is slightly too small to be significant at a .01 level, but it is significant at a .05 level. The observed value of Beta indicates that as flexibility increases by one standard deviation, the probability of experiencing flow-loss of self-consciousness increases by .492 standard deviations (see table 9.2.5).

Independent variable: flexibility deviation	R Squared	Sig.	N	F	B
Dependent variable: loss of self- consciousness	.260	.011	24	7.731	.492

Table 9.2.5 Regression analysis: flexibility deviation versus flow-loss of self-consciousness (Agderforskning)

Flexibility deviation explains 19% of variance of flow-feedback clarity (R square). Other factors are responsible for 81% of the times when people experience this element of flow. The observed F value (5.162) is significant at a .05 level of significance, but not significant at a .01 level. The observed value of Beta indicates that as single-tasking increases by one standard deviation, the chance of experiencing flow-feedback clarity increases by .448 standard deviations (see table 9.2.6).

Independent variable: flexibility deviation	R Squared	Sig.	N	F	B
Dependent variable: feedback clarity	.190	.033	24	5.162	.448

Table 9.2.6 Regression analysis: flexibility deviation versus flow- feedback clarity (Agderforskning)

Schedule deviation explains 9.5 % of variance of flow-goal clarity (R square). This is a really low score, since there are other factors responsible for over 90% of occurrence of this flow element. The observed F value (2.320) is not significant at a .05 level of significance. This

confirms that schedule deviation does not have a significant impact on this flow element. The observed value of Beta indicates that as single-tasking decreases by one standard deviation, the chance of experiencing flow-goal clarity increases by .228 standard deviations (see table 9.2.7).

Independent variable: schedule deviation	R Squared	Sig.	N	F	B
Dependent variable: goal clarity	.095	.142	24	2.320	-.228

Table 9.2.7 Regression analysis: schedule deviation versus flow- goal clarity (Agderforskning)

9.3 Testing of the whole model of flow- Nordea

Analogous analyses and tests were conducted for Nordea. Bivariate analyses with Spearman´s test were run for both preferences, demands, deviations and flow variables. These analyses were supposed to detect underlying relations between these variables. Correlations detected by Spearman´s rho test were then analysed with the help of regression analyses.

Spearman´s rho test showed that there were five significant correlations between preferences variables and flow variables (see table 9.3.1). Four of them were positive:

- single-tasking preference and flow- transformation of time
- punctuality preference and flow-concentration
- urgency preference and flow-transformation of time
- flexibility preference and flow-merge of action and awareness

while one correlation was negative:

- punctuality preference and flow-loss of self-consciousness.

Nordea Spearman´s rho (+ Sig.level)	Single-tasking pref.	Punctuality pref.	Schedule pref.	Deadline pref.	Urgency pref.	Flexibility pref.
Flow:	1-tailed	1-tailed	1-tailed	1-tailed	1-tailed	1-tailed
Skill/challenge balance	.094	.205	.081	.165	-.051	-.159
Goal clarity	-.066	.156	-.093	-.071	.020	.019
Concentration	.146	.224*	-.093	-.058	.135	.000
Control	.126	-.021	.010	.071	.140	.049
Loss of self-consciousness	.030	-.361**	.207	.126	-.011	.045
Feedback clarity	-.043	-.046	.119	.065	-.060	.077
Transformation of time	.269*	.014	.030	.134	.217*	.105
Merge of action and awareness	-.054	-.162	.151	.100	-.040	.249*
Autotelic experience	.122	-.064	.143	.068	-.008	-.032

Table 9.3.1 Spearman´s rho: preferences variables versus flow variables (Nordea)

*correlation is significant at .05 level; **correlation is significant at .001 level

Spearman's rho analysis of demands deviations and flow variables (see table 9.3.2) showed that there were four positive correlations:

- between single-tasking demand and flow-skill/ challenge balance
- between single-tasking demand and flow-transformation of time
- between schedule demand and flow-goal clarity
- between flexibility demand and flow-loss of self-consciousness.

Urgency demand correlated negatively with five flow variables: skill/ challenge balance, control, transformation of time, merge of action and awareness and autotelic experience.

Nordea Spearman's rho (+ Sig.level)	Single-tasking demand	Punctuality demand	Schedule demand	Deadline demand	Urgency demand	Flexibility demand
Flow:	1-tailed	1-tailed	1-tailed	1-tailed	1-tailed	1-tailed
Skill/challenge balance	.247*	.008	.042	.008	-.446**	.170
Goal clarity	-.097	.099	.353**	.099	.030	.158
Concentration	-.047	.017	.135	.017	-.134	-.111
Control	-.075	.149	-.096	.149	-.256*	-.038
Loss of self-consciousness	.156	.068	-.055	.068	-.090	.350**
Feedback clarity	.037	.183	.056	.183	-.065	.119
Transformation of time	.270*	.061	-.015	.061	-.219*	.093
Merge of action and awareness	.012	.076	.102	.076	-.384**	.159
Autotelic experience	.122	.004	.066	.004	-.296**	.124

Table 9.3.2 Spearman's rho: demands variables versus flow variables (Nordea) *correlation is significant at .05 level; **correlation is significant at .001 level

The next step was to detect correlations between deviations variables and flow variables (see table 9.3.3). Spearman's rho non-parametric test revealed eight significant correlations:

- both urgency deviation and flexibility deviation correlated positively with flow- skill/ challenge balance
- schedule deviation correlated negatively with flow-goal clarity
- punctuality deviation correlated negatively with flow-loss of self-consciousness
- flexibility deviation correlated with four flow variables: loss of self-consciousness, feedback clarity, merge of action and awareness, and autotelic experience.

Nordea	Singeltasking	Punctuality	Schedule	Deadline	Urgency	Flexibility
Skill/challenge	.068	.092	.119	.155	.285*	.241*
Goals clarity	.091	.052	-.219*	.128	.100	.200
Concentration	.108	.125	-.097	.007	.070	-.126
Control	.075	-.136	.053	.054	.120	.036
Loss of self-	.020	-.329*	.187	.094	.214	.325**
Feedback	-.035	-.086	.093	.151	.151	.340**
Transformation	.098	-.086	.073	.035	.175	.046
Merge of action	-.006	-.163	.023	.149	.205	.312**
Autotelic	.005	-.060	-.024	-.005	.149	.381**

Table 9.3.3 Spearman's rho: deviations variables versus flow variables (Nordea)
*correlation is significant at .05 level; **correlation is significant at .001 level

Consequently, since there were no significant correlations between the other factors, following simple linear regression analyses considered just these eight over mentioned factors.

Urgency deviation explains 7.4% of variance of flow-skill/ challenge balance (R square). Over 90% of the times when this flow element occurs is due to other factors than urgency deviation. The observed F value (4.535) is significant at a .05 level. Unstandardized regression coefficient Beta indicates that as urgency increases by one standard deviation, the chance of experiencing flow-skill/ challenge balance increases by .238 standard deviations (see table 9.3.4). The regression coefficient confirms that urgency deviation has a small significant effect on the experience of this flow element.

Independent variable: urgency deviation	R Square	Sig.	N	F	B
Dependent variable: skill/ challenge balance	.074	.038	59	4.535	.238

Table 9.3.4 Regression analysis: urgency deviation versus skill/ challenge balance.

Punctuality deviation explains 9.6% of variance of flow-loss of self-consciousness(R square). The observed F value (6.057) is significant at a .05 level, but it is too small to be significant at a .01 level. Unstandardized regression coefficient Beta indicates that as punctuality increases by one standard deviation, the chance of experiencing flow-loss of self-consciousness decreases by .265 standard deviations (see table 9.3.5).

Independent variable: punctuality deviation	R Square	Sig.	N	F	B
Dependent variable: loss of self-	.096	.017	59	6.057	-.265

Table 9.3.5 Regression analysis: punctuality deviation versus loss of self-consciousness

Flexibility deviation explains 13.1% of variance of flow- loss of self-consciousness (R square). The observed F value (8.561) is significant at a .01 level. Unstandardized regression coefficient Beta indicates that as flexibility increases by one standard deviation, the chance of experiencing flow- loss of self-consciousness increases by .302 standard deviations (see table 9.3.6).

Independent variable: flexibility deviation	R Square	Sig.	N	F	B
Dependent variable: loss of self- consciousness	.131	.005	59	8.561	.302

Table 9.3.6 Regression analysis: flexibility deviation versus loss of self- consciousness

Flexibility deviation explains 7.6% of variance of flow-merge of action and awareness (R square). Small effect. The observed F value (4.703) is significant at a .05 level.

Unstandardized regression coefficient Beta indicates that as flexibility increases by one standard deviation, the chance of experiencing flow-merge of action and awareness increases by .263 standard deviations (see table 9.3.7).

Independent variable: flexibility deviation	R Square	Sig.	N	F	B
Dependent variable: merge of action and awareness	.076	.034	59	4.703	.263

Table 9.3.7 Regression analysis: flexibility deviation versus action awareness

Flexibility deviation explains 3.9 % of variance of flow-feedback clarity (R square). A really poor score. The observed F value (2.304) is not significant at neither a .05 level nor a.01 level.

Unstandardized regression coefficient Beta indicates that as flexibility increases by one standard deviation, the chance of experiencing flow-feedback clarity increases by .100 standard deviations (see table 9.3.8).

Independent variable: flexibility deviation	R Square	Sig.	N	F	B
Dependent variable: feedback clarity	.039	.135	59	2.304	.100

Table 9.3.8 Regression analysis: flexibility deviation versus feedback

Flexibility deviation explains 13.7% of variance of flow-autotelic experience (R square). The observed F value (9.051) is significant at a .01 level. Unstandardized regression coefficient Beta indicates that as flexibility increases by one standard deviation, the chance of experiencing flow-feedback increases by .337 standard deviations (9.3.9).

Independent variable: flexibility deviation	R Square	Sig.	N	F	B
Dependent variable: autotelic experience	.137	.004	59	9.051	.337

Table 9.3.9 Regression analysis: flexibility deviation versus autotelic experience

Flexibility deviation explains 8.9% of variance of flow-skill/ challenge balance (R squared). The observed F value (5.546) is significant at a .05 level. Unstandardized regression coefficient Beta indicates that as flexibility increases by one standard deviation, the chance of experiencing flow-feedback increases by .213 standard deviations (9.3.10).

Independent variable: flexibility deviation	R Squared	Sig.	N	F	B
Dependent variable: skill/ challenge	.089	.022	59	5.546	.213

Table 9.3.10 Regression analysis: flexibility deviation versus skill/ challenge balance

Schedule deviation explains 4% of variance of flow-goal clarity (R squared). The observed F value (2.386) is not significant at a .05 level. Unstandardized regression coefficient Beta indicates that as flexibility increases by one standard deviation, the chance of experiencing flow-feedback decreases by .210 standard deviations (9.3.11).

Independent variable: schedule deviation	R Squared	Sig.	N	F	B
Dependent variable: goal clarity	.040	.128	59	2.389	-.210

Table 9.3.11 Regression analysis: schedule deviation versus goal clarity

9.4 Correlations between deviation factors and frequency of flow experience.

The last part of analysis checked if there were any correlations between deviations variables and frequency of being in the flow state.

Following frequency tables (9.4.1, 9.4.2, and 9.4.3) present answers of respondents from Agderforskning relating to how often they experience flow during the workday. Flow state was divided into three levels according to the intensity (subjective) of the experience:

- Low flow or no flow
- Considerable level of flow
- High level of flow or 100% flow.

50% of respondents reported low flow or no flow during the small part of the day, while almost 16.7% reported low flow or no flow during the half of the day. 10% reported experiencing low flow or no flow during a big part of their workday. The last 3.3 % never experienced low flow or no flow. None of respondents reported experiencing low level of flow or no flow during the whole day (see table 9.4.1).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 never	1	3,3	4,2	4,2
	2 small part of the day	15	50,0	62,5	66,7
	3 half of the day	5	16,7	20,8	87,5
	4 big part of the day	3	10,0	12,5	100,0
	Total	24	80,0	100,0	
Missing	System	6	20,0		
Total		30	100,0		

Table 9.4.1 Descriptive statistics (frequencies); Low flow or no flow (Agderforskning)

36.7% of respondents stated that they experienced a considerable level of flow during half of the workday and 23.3% had such experience during a big part of the day. 16.7% experienced considerable level of flow during a small part of the day. Remaining 3.3% never experienced a considerable level of flow. None of respondents reported experiencing low level of flow or no flow during the whole day (see table 9.4.2).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 never	1	3,3	4,2	4,2
	2 small part of the day	5	16,7	20,8	25,0
	3 half of the day	11	36,7	45,8	70,8
	4 big part of the day	7	23,3	29,2	100,0
	Total	24	80,0	100,0	
Missing	System	6	20,0		
Total		30	100,0		

Table 9.4.2 Descriptive statistics (frequencies); Considerable level of flow (Agderforskning)

46.7% of respondents reported being in a state of high flow or 100% flow during a small part of the day. 13.3% felt they experienced high level of flow or 100% flow during a big part of the day. 10% reported experiencing this level of flow during half of the day, while the

remaining 10% never experienced high or 100% of flow. None of respondents reported experiencing high flow or 100% flow during the whole day (see table 9.4.3).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 never	3	10,0	12,5	12,5
	2 small part of the day	14	46,7	58,3	70,8
	3 half of the day	3	10,0	12,5	83,3
	4 big part of the day	4	13,3	16,7	100,0
	Total	24	80,0	100,0	
Missing	System	6	20,0		
Total		30	100,0		

Table 9.4.3 Descriptive statistics (frequencies); High level of flow or 100% flow (Agderforskning)

Analogous descriptive analyses of frequencies were conducted for Nordea. Results of these analyses are summed-up in tables 9.4.4, 9.4.5, and 9.4.6, which are presented below.

59.3% of respondents reported experiencing low flow or no flow during a small part of the day. 15.3% reported the same level of flow during half of the workday, while 11.9% reported low or no flow during a big part of the day. 5.1% never experienced this level of flow and remaining 1.7% experienced low flow or no flow during the whole day (see table 9.4.4).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 never	3	5,1	5,5	5,5
	2 a small part of the day	35	59,3	63,6	69,1
	3 half part of the day	9	15,3	16,4	85,5
	4 a big part of the day	7	11,9	12,7	98,2
	5 the whole day	1	1,7	1,8	100,0
Total		55	93,2	100,0	
Missing	No Responce	4	6,8		
Total		59	100,0		

Table 9.4.4 Descriptive statistics (frequencies) for low or no flow (Nordea)

None of the respondents reported experiencing a considerable level of flow during the whole day, and none of them reported never experiencing a considerable level of flow. 42.4% stated that they experienced this level of flow during half of the day, while 35.6% answered a big part of the day. The last 20.3% reported experiencing a considerable level of flow during a small part of the day (see 9.4.5).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2 small part of the day	12	20,3	20,7	20,7
	3 half part of the day	25	42,4	43,1	63,8
	4 a big part of the day	21	35,6	36,2	100,0
	Total	58	98,3	100,0	
Missing	No Responce	1	1,7		
Total		59	100,0		

Table 9.4.5 Descriptive statistics (frequencies) for considerable level of flow (Nordea)

49.2% of respondents reported high flow or 100% flow during a small part of the day, while 20.3% reported the same level of flow during a big part of the day. None of respondents reported experiencing this level of flow during the whole day. 10% experienced high flow or 100% flow during half of the day and remaining 8.5 % never experienced this level of flow (see table 9.4.6).

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 never	5	8,5	9,6	9,6
	2 a small part of the day	29	49,2	55,8	65,4
	3 half part of the day	6	10,2	11,5	76,9
	4 a big part of the day	12	20,3	23,1	100,0
	Total	52	88,1	100,0	
Missing	No Responce	7	11,9		
Total		59	100,0		

Table 9.4.6 Descriptive statistics (frequencies) for high flow or 100% flow (Nordea)

The next table (see table 9.4.7) presents means and standard deviations for both Agderforskning and Nordea. Respondents from both companies reported a very similar distribution of flow level and frequency of being in the flow state:

- low flow or no flow mostly during a small part of the day
- considerable level of flow mostly during circa half of the work day
- high level of flow or 100% flow during a small part of the day.

Level of flow	Agderforskning			Nordea		
	Mean	St.dev.	N	Mean	St.dev.	N
Low flow or no flow at all	2.42	.776	24	2.42	.854	55
Considerable level of flow	3.00	.834	24	3.16	.745	58
High level of flow or 100% flow	2.33	.917	24	2.48	.96	52

Table 9.4.7 Summary of means and standard deviations for Agderforskning and Nordea

9.5 Spearman's rho test: which of the personal preferences and organizational demands deviations could be an indicator for the level of flow?

This section of chapter 9 will present bivariate correlation analysis of deviations variables, flow variables, and levels of flow; for both Agderforskning and Nordea. The purpose of this exercise is to reveal the direction and strength of relationships between variables. This section will then proceed with the presentation of results of regression analyses for deviation variables that were proven to correlate with flow level variables. Regression analyses are supposed to give more insight into the nature of relationships between variables.

The first conducted correlation analysis was for Agderforskning (see table 9.5.1), the second one was for Nordea (see table 9.5.9).

Spearman's rho correlation test revealed just one significant correlation for Agderforskning:

- negative correlation between schedule deviation and "high level of flow or 100% flow"

Agderforskning Spearman's rho	Low flow or	Considerable	High level of
Single-tasking deviation	-.107	-.234	-.099
Punctuality deviation	-.014	-.264	.192
Schedule deviation	-.244	.178	-.350*
Deadline deviation	-.147	-.316	-.052
Urgency deviation	-.187	.084	-.150
Flexibility deviation	-.088	.218	-.212

Table 9.5.1 Spearman's rho for deviations variables and levels of flow (Agderforskning)

As a consequence, the factors that were proven not to correlate significantly with any other factors were not taken into consideration in the following analysis. The deviation that was proven to correlate significantly with the flow frequency variable was analysed with the help of regression analysis.

Schedule deviation explains 12.6 % of variance of "high level of flow or 100% flow" variable (R squared). The observed F value (3.175) is not significant at a .05 level. Unstandardized regression coefficient Beta indicates that as schedule deviation increases by one standard deviation, the chance of experiencing "high level of flow or 100% flow" decreases by .443 standard deviations (see table 9.5.2).

Independent variable: schedule deviation	R Squared	Sig.	N	F	B
Dependent variable: "high level of flow or	.126	.089	23	3.175	-.443

Table 9.5.2 Regression analysis: schedule deviation versus "considerable level of flow"

Data from Nordea was analysed with the use of exactly the same methods. First, all the relevant factors were tested for Spearman's rho. Factors that were proven to correlate were then analysed with the help of regression analyses.

Spearman's rho test revealed that there were nine significant correlations (see table 9.5.8):

- "low flow or no flow" variable correlated negatively with flow-control variable

- “considerable level of flow” variable correlated positively with schedule deviation,

Nordea Spearman’s rho	Low flow or	Considerable	High level of
Single-tasking deviation	-.111	.101	.078
Punctuality deviation	.155	-.146	-.226*
Schedule deviation	-.124	.353**	-.068
Deadline deviation	.045	.014	-.233*
Urgency deviation	-.045	.188	.003
Flexibility deviation	-.027	.039	.018

Table 9.5.3 Spearman’s rho for deviations, flow elements and levels of flow (Nordea)

Regression analyses for Nordea variables:

Schedule deviation explains 8.8% of variance of “considerable level of flow” variable (R squared). The observed F value (5.433) is significant at a .05 level. Unstandardized regression coefficient Beta indicates that as schedule deviation increases by one standard deviation, the chance of experiencing “considerable level of flow” increases by .330 standard deviations (see table 9.5.4).

Independent variable: schedule deviation	R Square	Sig.	N	F	B
Dependent variable: “considerable level of	.088	.023	57	5.433	.330

Table 9.5.4 Regression analysis: schedule deviation versus “considerable level of flow”

Deadline deviation explains 5.4% of variance of “high level of flow or 100% flow” variable (R square). The observed F value (2.862) is not significant at a .05 level. Unstandardized regression coefficient Beta indicates that as deadline deviation increases by one standard deviation, the chance of experiencing “high level of flow or 100% flow” decreases by .479 standard deviations (see table 9.5.5).

Independent variable: deadline deviation	R Square	Sig.	N	F	B
Dependent variable: “high level of flow or	.054	.097	51	2.862	-.479

Table 9.5.5 Regression analysis: deadline deviation versus “high level of flow or 100% flow”

Chap. 10 Is the frequent flow experience influencing work satisfaction, work motivation and work performance?

The author interviewed two employees from Agderforskning: innovation department leader Roger Normann and James Karlsen, in order to investigate if frequent flow experience influences work satisfaction, work motivation and ultimately- work performance. The questions that they were asked are available in Appendix 3.

Resume from the interview with Roger Normann:

Working both as a researcher and department leader is challenging and require ability to organize and prioritize both time and tasks. Research work demands time to write,

concentration on one thing at a time. Leader work means meeting, administrative tasks and multitasking. Roger said that he found routine administrative work boring and did not experience flow while doing it. But when he finally found time to write, then he was often in the flow state.

The flow he experienced was of a high level and he could stay in it for as long as he wrote. However, when he got disrupted, he lost flow and it took him some time to re-enter flow state. He meant that it was not possible for him to be in the flow together with other colleagues.

He felt that he mastered his job, but at the same time he needed to improve his skills constantly. Challenges were many, but they were rather exciting than frustrating. Goals were seldom clear. They were often changed and negotiated on the way. He did not have any problems with concentration, if he had some time on his own. He had control over his work time and could often choose when and how much he worked as long as he kept deadlines and schedules. He experienced loss of self-consciousness while being in the flow state. The quality and clarity of the feedback varied. Some of the employers did not give almost any feedback before the research results were there. Roger said that he mostly asked his colleagues for validity check. He had always feeling that he could do his job even better if he had more time (internal feedback). He always experienced transformation of time (forgot the time), while doing research work or writing. He felt then that he was “one with the task at hand” (autotelic experience).

Roger said that when he was deeply concentrated and frequently in the flow state, then he felt motivated to re-enter flow. He felt enthusiastic and excited about his work. Clear goals were this element of flow, which had biggest motivational effect on him. He mentioned also good, critical feedback from his colleagues as a motivating factor.

He meant that there was a clear correlation between being in a flow and work satisfaction. Roger said that he got frustrated when administrative work was so absorbing that it did not give him opportunity to focus on writing. On the other hand, he felt much more satisfied and positive, when he had some time he could spend on research.

According to himself he worked more effectively and had the best time at work, when he was both motivated and satisfied. Flow was the main factor triggering both motivation and satisfaction. It also improved his overall work performance. He was more involved in tasks he found exciting and interesting, and consequently spent more time on them. “Boring” routine work was done without such dedication.

When asked about congruity between personal preferences and organizational demands, Roger answered that he meant there was a good fit. For him, single-tasking and flexibility were the two factors that had the highest impact on flow. Existence of schedules and deadlines, which were often colliding with each other, made punctuality and urgency a necessary element of his job. While the first two factors correlated positively with being in a flow, the last four made it more difficult to enter flow state frequently.

Resume from the interview with James Karlsen:

James Karlsen works as a senior researcher and administration director in Agderforskning. How often he experienced flow varied from day to day. He did not experience flow if he had administrative, routine work to do. However, when he found time for his research work, then he had no problems with entering flow. All he needed was a few hours, sometimes a day,

during which he could collect his thoughts and concentrate. He meant that he could use circa 50% of his work time for research related work. So, roughly speaking he experienced flow 50% of the work time.

The level and quality of his flow experience varied from low to considerable. It was mostly considerable. He said that he was much more often in flow right after coming to work, during the first 2-3 hours, than after lunch. Then, if not interrupted, he worked more effectively and faster. Factors, which put him instantly out of the flow state, were telephones and people coming to his office. After each disruption, he needed some time to regain concentration and re-enter flow channel. He said that he thought it was impossible to stay in the high level of flow for many hours. In contrast to Roger, James experienced flow also when working in sync with his colleagues.

He reported experiencing all nine elements of flow; however, not always all at the time. He was satisfied with his skill/ challenge balance. He did not have any problems with delivering what was expected of him. Goals were clear with respect to deadlines, costs, and form of delivery. However, the way to reach them and their contents was vague almost to the end of research process. James said he used to be deeply concentrated, during his research work, and experience both loss of self-consciousness and transformation of time. Insecurity lies in the nature of research work, so he was never absolutely sure, that products he delivered were exactly as requested by principals. Consequently, he did not feel he had full control. Feedback quality varied as well, some of the principals did not give any feedback until they got end-product. Nevertheless, he used to give himself internal feedback evaluation during the work process. He acknowledged having autotelic experiences, while writing.

James meant that flow had a significant motivational effect on him. Being in the flow state inspired him to work more and to enter flow again on a later occasion. He worked more efficiently, was more concentrated, had tendency to forget the time and became one with the task at hand.

Flow had the same positive effect on work satisfaction. If he had to work with relatively boring tasks for a long period of time, he got less satisfied and was less concentrated. However, after experiencing flow, his level of satisfaction increased considerably.

He meant that there was a strong correlation between flow, work motivation, work satisfaction and work performance. But he was not sure which factors depend on which. Was it flow which increased motivation, satisfaction and performance or was it opposite? Are high levels of motivation, satisfaction and performance making entering the flow state easier? James was sure of one thing, his performance was more exquisite, if he worked on tasks that motivated him and left him with the feeling of satisfaction. Flow experience had the same effect on his overall performance as motivation and satisfaction.

He felt that there was a good fit between his personal preferences and Agderforskning's demands. Although there was a difference between which factors were perceived as most crucial. For James it was: single- tasking, deadlines and flexibility. For Agderforskning it was: multitasking, deadlines, urgency and flexibility. James preferred to do one thing at a time; his organization demanded that he had "many balls in the air".

Chap. 11 Conclusion

Questionnaire that was used as a basis for this research created clear boundaries regarding variables that could be chosen as a matter for analysis. Sex variables concerning personal preferences and organizational demands were identified and analysed: single-tasking, punctuality, schedule, deadline, urgency and flexibility. Questionnaire contained also several questions concerning flow experience. Thorough analyse of those resulted in identification of nine elements constituting flow state: skill/ challenge balance, goal clarity, concentration, control, loss of self-consciousness, feedback clarity, transformation of time, merge of action and awareness, and autotelic experience.

Data used for the purpose of this paper came from Agderforskning and Nordea. The majority of analysis is based on a quantitative data (respondents' answers to the questions from the questionnaire). Since the questionnaire did not include questions that would allow testing validity of hypothesis nr X, the author of this paper conducted two interviews with the respondents from Agderforskning. The modest number of interviews is due to time constrains.

Several factor analyses and reliability analyses were used to determine which questions should be taken into consideration as preferences and demands factors. The ones that were chosen had highest factor loadings and highest Cronbach's alpha.

In the case of Agderforskning only four preferences variables had an acceptable value of Cronbach's alpha. These were: single-tasking (.850), punctuality (.501), urgency (.667) and flexibility (.672). The remaining two: schedule (.193) and deadline (.368) had a very low Cronbach's alpha. On the demands side there were two relatively high scores, however for different variables. These were: punctuality (.586) and urgency (.667). The other four variables scored low: schedule (.459), flexibility (.439), single-tasking (.328) and even negative: deadline (-1.002). The reason for this negative value of Cronbach's alpha can be either failure in coding or really poor inter-tem correlation between items. The coding was checked several times, and the author did not manage to find the error. As a consequence, even though deadline variable was still present in the further analyses, all the conclusions concerning this variable had to be vied as not reliable.

Reliability check gave even more worrying results in the case of Nordea. There were just three preferences variables that had acceptable Cronbach's alpha: single-tasking (.696), punctuality (.690) and schedule (.535). The other three variables scored poorly: flexibility (.485), deadline (.400) and urgency (.366). There was only one demand variable that had an acceptable value of Cronbach's alpha- punctuality (.742). The other four variables scored low: urgency (.429), single-tasking (.374), urgency (.429), deadline (.264) and schedule. Schedule variable had negative Cronbach's alpha (-.072). The conclusions concerning this negative score were analogous to this applied in Agderforskning's case.

Due to the fact that there were no other data sets (or questions in this questionnaire) that could replace the variables that had unacceptably low reliability, all the variables with low Cronbach's alpha were used in the further analysis.

Organizational demands variables were subtracted from personal preferences variables in order to establish the sizes of deviations between preferences and demands. Just the absolute values of these deviations were considered in the further analyses. These six new variables were named: single-tasking deviation, punctuality deviation, schedule deviation, deadline deviation, urgency deviation, and flexibility deviation.

Descriptive analyses were used to establish the sizes of deviations. In the case of Agderforskning there was the best fit between personal preferences and organizational demands for deadline (2.00), flexibility (2.00) and single-tasking (2.20). Fit was the worst between personal preferences and organizational demands for schedule (3.00) and urgency (3.00). These results are coherent with the results obtained from frequencies analyses of preferences and demands, which were presented in the analyses part.

Descriptive analysis for personal preferences and organizational demands deviations for Nordea showed that there was best congruence between personal preferences and organizational demands for single-tasking (1.33) and deadline (1.50). The worst congruence between personal preferences and organizational demands was reported for schedule (3.00) and flexibility (3.00).

The employees from both companies reported the best fit for single-tasking variable and deadline variable. It seems that they like to focus on one task at a time and they prefer to know how long time they have to finish it. According to the results from the analyses, that matches organizational expectations. Both Agderforskning and Nordea have the biggest deviation for preferences and demands concerning schedules. Workers would prefer to have clear schedules, while management seems to mean that it is not important. Employees from Agderforskning would prefer to work slower, than what is demanded of them. There is a need for a few words of explanation concerning flexibility deviation for Nordea. Even though the range is high (3.00), 91% of deviation was ranged from .0 to 1.5. So the fit is good there, even though it may seem like the opposite is true.

Several correlation analyses revealed correlations between preferences and flow, demands and flow, and finally deviations and flow.

Agderforskning

Among the preferences, there were two negative correlations and six positive correlations. Single-tasking preference seemed to decrease significantly the chance of experiencing transformation of time, while preference for schedule seemed to make goals less clear. Preference for deadlines had significant enhancing effect on concentration, loss of self-consciousness and transformation of time. Urgency preference had positive, significant impact on goal clarity, feedback clarity and loss of self-consciousness.

Among the demands, there were four negative correlations and two positive correlations. Single-tasking demand had significant, negative effect on concentration. Demand for schedule had a significant, positive effect on skill/ challenge balance, while it had a significant, negative effect on merge of action and awareness. The demand for urgency had a significant, negative impact on both merge of action and awareness and autotelic experience. The demand for flexibility was the only one that had a significant positive effect on merge of action and awareness.

The analysis of deviations showed that there were four significant correlations: three were positive, and one was negative. Flexibility seemed to have a positive effect on loss of self-consciousness and feedback clarity. Schedule had negative effect on goal clarity, while single-tasking had a positive effect on transformation of time.

Regression analyses for Agderforskning gave following results.

Flexibility deviation explains 26.0% of variance of flow-loss of self-consciousness (R square), which means that every fourth time a worker experiences loss of self-consciousness it is due to flexibility variable. The observed F value (7.731) is slightly too small to be significant at a .01 level, but it is significant at a .05 level. The observed value of Beta indicates that as flexibility increases by one standard deviation, the probability of experiencing flow-loss of self-consciousness increases by .510 standard deviations.

Flexibility deviation explains 19.0% of variance of flow-feedback clarity (R square), which means that every fifth time a worker experiences clear, valuable feedback it is due to flexibility variable. The observed F value (5.162) is too small to be significant at a .01 level, but it is significant at a .05 level. The observed value of Beta indicates that as flexibility increases by one standard deviation, the probability of experiencing flow-feedback clarity increases by .448 standard deviations.

Single-tasking deviation explains 17.9% of variance of flow-transformation time(R square). In other words, the 82.1% of time, when workers experience transformation of time, it is due to some other factors than single-tasking. The observed F value (4.807) is significant at a .05 level of significance, but not significant at a .01 level. The observed value of Beta indicates that as single-tasking increases by one standard deviation, the chance of experiencing flow-transformation of time increases by .571 standard deviations.

Schedule deviation explains 9.5% of variance of flow-goal clarity (R square). In other words, the 90.5% of time, when workers experience goal clarity, it is due to some other factors than schedule. The observed F value (2.320) is neither significant at a .05 level of significance nor at a .01 level. The observed value of Beta indicates that as single-tasking increases by one standard deviation, the chance of experiencing flow-goal clarity decreases by .228 standard deviations.

All in all, flexibility has a positive effect on two of the flow elements.

Nordea

Among the preferences, there were four positive, significant, but low correlations. The correlating variables were as follows: punctuality preference and concentration, single-tasking preference and transformation of time, urgency preference and transformation of time, and flexibility preference and merge of action and awareness. The only negative, significant correlation was present between punctuality preference and loss of self-consciousness.

Among the demands, analysis resulted in nine significant correlations. Single-tasking demand had a positive effect on skill/ challenge balance, but negative on transformation of time. Schedule demand had a positive effect on goal clarity. The demand for urgency correlated negatively with five flow elements: skill/ challenge balance, control, transformation of time, merge of action and awareness and autotelic experience. The remaining demand for flexibility had a positive effect on loss of self- consciousness.

The analysis of deviations showed that flexibility deviation correlated significantly and positively with five flow elements: skill/challenge balance, loss of self-consciousness, feedback clarity, merge of action and awareness, and autotelic experience. Urgency deviation

had also a positive, significant effect on skill/challenge balance. Schedule deviation correlated significantly and negatively with goals clarity, while punctuality deviation correlated negatively with loss of self-consciousness.

Regression analyses for Nordea resulted in following findings:

Urgency deviation explains 7.4% of variance of flow-skill/ challenge balance (R square). The observed F value (4.535) is significant at a .05 level. Unstandardized regression coefficient Beta indicates that as urgency increases by one standard deviation, the chance of experiencing flow-skill/ challenge balance increases by .238 standard deviations.

Punctuality deviation explains 9.6% of variance of flow-loss of self-consciousness(R square). The observed F value (6.057) is significant at a .05 level, but it is too small to be significant at a .01 level. Unstandardized regression coefficient Beta indicates that as punctuality increases by one standard deviation, the chance of experiencing flow-loss of self-consciousness decreases by .265 standard deviations.

Schedule deviation explains 4% of variance of flow-goal clarity (R square). The observed F value (2.389) is not significant at a .05 level. Unstandardized regression coefficient Beta indicates that as urgency increases by one standard deviation, the chance of experiencing flow-goal clarity decreases by .210 standard deviations

Flexibility deviation explains 13.1% of variance of flow- loss of self-consciousness (R square). The observed F value (8.561) is significant at a .01 level. Unstandardized regression coefficient Beta indicates that as flexibility increases by one standard deviation, the chance of experiencing flow- loss of self-consciousness increases by .263 standard deviations

Flexibility deviation explains 7.6% of variance of flow-merge of action and awareness (R square). The observed F value (4.703) is significant at a .05 level. Unstandardized regression coefficient Beta indicates that as flexibility increases by one standard deviation, the chance of experiencing flow-merge of action and awareness increases by .263 standard deviations.

Flexibility deviation explains 3.9% of variance of flow-feedback clarity (R square). The observed F value (2.304) is neither significant at a .05 level nor at a.01 level. Unstandardized regression coefficient Beta indicates that as flexibility increases by one standard deviation, the chance of experiencing flow-feedback clarity increases by .100 standard deviations.

Flexibility deviation explains 13.7% of variance of flow-autotelic experience (R square). The observed F value (9.051) is significant at a .01 level. Unstandardized regression coefficient Beta indicates that as flexibility increases by one standard deviation, the chance of experiencing flow-autotelic experience increases by .337 standard deviations.

Flexibility has the biggest positive effect on flow experience. It influences positively four out of nine flow elements. It is responsible for 38% of changes in flow (all elements taken into consideration).

Descriptive statistics analyses and frequency analyses revealed that respondents from both companies reported a very similar distribution of flow level and frequency of being in the flow state.

- low flow or no flow mostly during a small part of the day
- considerable level of flow mostly during circa half of the work day
- high level of flow or 100% flow during a small part of the day.

Correlation analysis with Spearman's test gave following results:

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Schedule deviation correlated significantly and negatively with "high level of flow or 100% flow".

Regression analyses of this variable resulted in following findings.

Schedule deviation explains 12.6% of variance of "high flow or 100% flow" variable (R square). That means that 87.4% of the time there are other factors, which are responsible for high level of flow. The observed F value (3.175) is not significant at a .05 level. Standardized regression coefficient Beta indicates that as schedule deviation increases by one standard deviation, the chance of experiencing "high flow or 100% flow" decreases by .443 standard deviations.

Nordea

Schedule deviation had a positive, significant effect on experiencing "considerable level of flow". Deadline deviation had a negative, significant effect on experiencing "high level of flow or 100% flow".

Regression analyses for these variables gave following results.

Schedule deviation explains 8.8% of variance of "considerable level of flow" variable (R square). The observed F value (5.433) is significant at a .05 level. Unstandardized regression coefficient Beta indicates that as schedule deviation increases by one standard deviation, the chance of experiencing "considerable level of flow" increases by .330 standard deviations.

Deadline deviation explains 5.4% of variance of "high level of flow or 100% flow" variable (R square). The observed F value (2.862) is not significant at a .05 level. Unstandardized regression coefficient Beta indicates that as deadline deviation increases by one standard deviation, the chance of experiencing "high level of flow or 100% flow" decreases by .479 standard deviations.

Hypothesis 1 assumed that better fit between preferences and demands for: single-tasking, punctuality, schedule, deadline, urgency and flexibility influence positively the frequency of the flow experience.

Agderforskning

The best fit was observed for single-tasking, deadline and flexibility, the worst for schedule and urgency. Single-tasking was proven to correlate significantly and positively with flow-transformation of time. Schedule deviation was proven to correlate significantly and negatively with flow-goal clarity. Single-tasking did not correlate significantly with any of the flow levels variables. Schedule deviation correlated significantly and negatively with high level of flow.

Results from the analyses did not support hypothesis 1.

Nordea

The best congruence was observed for single-tasking and deadline, the worst for schedule and flexibility. Neither single-tasking nor deadline correlated significantly with any of the flow elements. Schedule deviation correlated significantly and negatively with goals clarity. Flexibility deviation correlated positively and significantly with five elements of flow. Schedule deviation correlated also positively and significantly with the “considerable level of flow”. Deadline deviation correlated negatively with “high level of flow or 100% flow.

Hypothesis 1 was not supported by the above results.

The 2nd hypothesis assumed that there was a positive relationship between more frequent flow, motivation, satisfaction and performance.

Both interviewed respondents worked in Agderforskning. They confirmed that being in the flow state increases work satisfaction and work motivation. They also confirmed that enhanced satisfaction and motivation, due to the flow experience, had a positive impact on their overall work performance.

Due to the time constrains no respondents from Nordea were interviewed.

Evidences from both interviews supported the hypothesis 2.

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Appendix 1

Interview questions:

1. How often do you experience flow during the work day?
2. In general, is it a low, considerable or high level of flow?
3. Which elements of flow do you experience most often while being in the flow state?
 - a. skill/ challenge balance
 - b. clear goals
 - c. concentration
 - d. control
 - e. loss- of self- consciousness
 - f. feedback clarity
 - g. transformation of time
 - h. action awareness
 - i. autotelic experience
4. Is being in the flow having a motivational effect on you?
5. Presence of which of the flow elements motivate you most?
6. How is it manifested?
7. Do you feel that being in the flow increases your work satisfaction?
8. Why and how?
9. Is being motivated and satisfied improving your work performance?
10. Is being in the flow improving your overall work performance?
11. Do you feel that there is a fit between your personal preferences and organizational demands?

1. Informasjon om undersøkelsen

Vi har i de senere år fått en økende oppmerksomhet på den rollen tiden, "timing", tempo og bruk av tid i arbeidssituasjoner spiller både for enkeltmennesker og organisasjoner. På det personlige plan er det mange som opplever "tidsklemme" og problemer med tempo og stress. På foretaksnivå er det en stadig større utfordring å holde leveringsfrister og tidsplaner og – generelt – holde tritt med endringstakten i omgivelsene.

Vi ønsker å kartlegge i hvilken grad dette oppleves som utfordrende på en del utvalgte arbeidsplasser i regionen. Herunder vil vi studere i hvilken grad den enkelte opplever å være "på rett hylle" på sin nåværende arbeidsplass, med hensyn til forholdet mellom egne preferanser og hva jobben krever. Videre vil vi se på hvordan organisasjonsmessige og personlige arbeidsrytmer virker inn på muligheten til å "finne flyt" og oppleve arbeidet som meningsfullt og givende.

Resultatene av undersøkelsen vil bli brukt av tre masterstudenter ved Universitetet i Agder (siviløkonomstudiet) som skriver masteroppgaver på dette temaet. Veileder og prosjektleder er professor Harald Knudsen og prosjektmedarbeider/forsker er professor emeritus Jonny Holbek. Prosjektet er også en del av – og støttes av – VRI-prosjektet Agder.

Etter avtale med ledelsen, ønsker din bedrift/din arbeidsplass å delta i undersøkelsen, og vi har fått tillatelse til å sende vedlagte spørreskjema til inntil tretti ansatte i bedriften. Du er en av dem som er trukket ut, og vi håper du vil samarbeide ved å svare på spørsmålene i vedlegget til denne e-mailen. Både på personnivå og bedriftsnivå vil materialet som samles inn bli behandlet med fortrolighet. Alle resultater som blir offentliggjort vil være anonyme. Informasjon om enkeltpersoner vil heller ikke bli gjort tilgjengelig for ledelsen.

Det kan være at du synes noen av spørsmålene kan være litt vanskelige å besvare. Det beste er i så fall ikke å begynne å gruble over svaret, men bare raskest mulig svare det som først faller deg inn. Normalt skal det ta ca. 20 minutter å svare på spørsmålene. Du vil også se at selv om alle spørsmålene er forskjellige, har en del av spørsmålene nokså lik ordlyd. Dette er ikke en feil men noe som er nødvendig av forskningsmessige grunner for å sjekke kvaliteten i de enkelte spørsmålene. Spørreopplegget er delt inn i fire deler, og hver del skal besvares.

Vi takker deg for at du vil delta i undersøkelsen og hjelpe oss og studentene til å få en god undersøkelse. Vi ber om at undersøkelsen blir gjennomført i løpet av ei uke fra utsendelsesdato.

Trygve Wangen Tøsse Liv Ruyter Monika Patrycja Mosberg
Student Student Student

Harald Knudsen Jonny Holbek
Veileder/prosjektleder Forsker

2. Del 1 - Opplysninger vedrørende personlig og jobbmessig bakgrunn

1. Kjønn

Kvinne

Mann

2. Aldersgruppe:

Under 30 år

30 - 39 år

40 - 49 år

50 - 59 år

60 år og eldre

3. Etnisk bakgrunn:

Norsk – med oppvekst i Norge

Nord-vest europeisk, nord-amerikansk, australsk – med oppvekst utenfor Norge

Annet: øst- og sør-europeisk, afrikansk, asiatisk, latin-amerikansk – med oppvekst utenfor Norge

Annet:

3. Del 1 - Opplysninger vedrørende personlig og jobbmessig bakgrunn

4. Utdannelse

Videregående skole

Inntil 3 år høyskoleutdanning/bachelornivå

Mer enn 3 år høyskoleutdanning/mastergradnivå

Doktorgrad

Annet:

5. Fagprofil: Vi ber deg merke av hvilke fag som inngår i din utdanningsbakgrunn. Sett gjerne kryss ved flere alternativer

Ingeniør/teknisk

Økonomisk-administrativ

Andre samfunnsvitenskapelige fag

Humanistiske fag

Real fag

Juridiske fag

Arkitektur

Kunst/kultur/musikk

Annet:

6. Posisjon i organisasjon

Toppleder/toppleder team

Mellomleder

Vanlig ansatt

Konsulent/stab/rådgiver

Annet:

4. Del 1 - Opplysninger vedrørende personlig og jobbmessig bakgrunn

Opplysninger vedrørende virksomheten du arbeider i

7. Størrelse: Her ber vi deg oppgi hvor mange som arbeider på din arbeidsplass (med arbeidsplass tenker vi på alle i din organisasjon som arbeider innenfor samme geografiske lokalisering)

1-2

3-5

6-10

11-25

26-50

51-100

101-200

201 eller mer

8. Bransje:

Bank, finans, regnskap, revisjon

IT, data

Oljerelatert

Eiendom, bygg, anlegg

Kultur, arkitektur, kunst, opplevelse

Forskning/undervisning

Annet:

5. Del1 - Opplysninger vedrørende personlig og jobbmessig bakgrunn

9. Vær vennlig å anslå hvor stor andel av en normal arbeidsuke du arbeider innenfor de nevnte organisasjonsformene

	Aldri	En liten del av arbeidsuka	Omtrent halve arbeidsuka	En stor del av arbeidsuka	Hele arbeidsuka
Prosjektarbeid	j0	j0	j0	j0	j0
Basisorganisasjon/	j0	j0	j0	j0	j0
linjeorganisasjon	j0	j0	j0	j0	j0
Administrasjon/	j0	j0	j0	j0	j0
ledelse/	j0	j0	j0	j0	j0
stabsfunksjon	j0	j0	j0	j0	j0

Annet: forklar:

10. Vær vennlig å anslå hvor stor andel av ei normal arbeidsuke du arbeider innenfor de nevnte oppgaveområdene

	Aldri	En liten del av arbeidsuka	Omtrent halve arbeidsuka	En stor del av arbeidsuka	Hele arbeidsuka
Rutinepreget arbeid – med bruk av velkjente arbeidsmetoder	j0	j0	j0	j0	j0
Innovativt arbeid, med søken etter nye løsninger eller ny kunnskap, herunder forskning og kunstnerisk virksomhet	j0	j0	j0	j0	j0

Annet: forklar:

6. Del 1 - Opplysninger vedrørende personlig og jobbmessig bakgrunn

11. Generelle spørsmål om bruk av tid

	Helt enig			Verken enig eller uenig			Helt uenig
Jeg føler i det store og det hele at jeg har god nok tid til alle mine gjøremål	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Hvis jeg treffer tilfeldig en gammel venn, føler jeg vanligvis at jeg har nok tid til å snakke med vedkommende	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jeg opplever vanligvis at tempo og rytme i arbeidet passer veldig bra i forhold til mine behov	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
For at vi skal kunne følge med i konkurransen er vi nødt til å jobbe i meget høyt tempo på min arbeidsplass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I det store og det hele føler jeg at det er meget gode samarbeidsforhold på min arbeidsplass	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

12. Vennlig marker viktigheten av de følgende faktorer med hensyn til konkurransekraften for din bedrift

	Aller viktigst	Nest viktigst	Tredje viktigst
Pris/kostnadskontroll	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Kvalitet på produkter og tjenester	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Rask levering/rask utvikling/holde tidsfrister	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pleie gode relasjoner til kunder/brukere	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Annet:

13. Hvor mange år har du arbeidet på din nåværende arbeidsplass?

- Under ett år
- 1 - 3 år
- 4 - 10 år
- Over 10 år

Uansett hva jeg holder på med, føler jeg best når jeg kan jobbe uforstyrret i flere timer av gangen	jn	jn	jn	jn	jn	jn	jn
Hvis jeg har en krevende oppgave foretrekker jeg å dele opp oppgaven og gjøre andre ting innimellom	jn	jn	jn	jn	jn	jn	jn
Nesten uansett hva jeg holder på med liker jeg å følge med på dataskjermen for å se om noe dukker opp	jn	jn	jn	jn	jn	jn	jn
Jeg liker å lese e-mail mens jeg snakker på telefonen om andre ting	jn	jn	jn	jn	jn	jn	jn
Når jeg snakker med noen, enten det er på telefon eller ansikt til ansikt, foretrekker jeg å la alt annet ligge	jn	jn	jn	jn	jn	jn	jn
Jeg synes det er helt ok å forholde meg til flere personer, med forskjellige anliggender, samtidig	jn	jn	jn	jn	jn	jn	jn

8. Del 2

De følgende spørsmålene skal kartlegge forskjellige personlige preferanser og jobbkraav i forhold til tidsbruk og arbeidsmåter.

15. De følgende spørsmålene dreier seg om punktlighet, tidsplaner, tidsfrister og arbeidstid

	Helt enig			Verken enig eller uenig			Helt uenig
For meg er det svært viktig å være punklig i de aller fleste sammenhenger	j	n	j	j	n	j	j
På denne arbeidsplassen spiller det ingen rolle om du er punklig eller ei	j	n	j	j	n	j	j
Det verste jeg vet er å komme for sent til en avtale	j	n	j	j	n	j	j
Folk her føler et sterkt press til å holde avtaler	j	n	j	j	n	j	j
Jeg pleier å bli veldig irritert hvis folk kommer for sent til en avtale	j	n	j	j	n	j	j
Jeg foretrekker å ha et tydelig og detaljert tidsskjema ("schedule") for det jeg gjør	j	n	j	j	n	j	j
Folk er ikke særlig opptatt av tidsskjema på denne arbeidsplassen	j	n	j	j	n	j	j
Jeg liker det ikke når alt en gjør må være del av et tidsskjema	j	n	j	j	n	j	j
Alt arbeid her er bundet opp i fastsatte tidsskjema	j	n	j	j	n	j	j
Hvis jeg kunne velge, ville jeg helst slippe å ha noe fast tidsskjema i jobbsammenheng	j	n	j	j	n	j	j
Jeg liker å jobbe mot langsiktige tidsfrister ("dealines") i det meste av det jeg gjør	j	n	j	j	n	j	j
Arbeidet er ikke lagt opp slik at en kan jobbe mot langsiktige frister her	j	n	j	j	n	j	j
På jobben føler jeg at absolutte tidsfrister er det verste jeg vet	j	n	j	j	n	j	j
Alt vi gjør i arbeidet her dreier seg om å holde tidsfrister	j	n	j	j	n	j	j

Hvis jeg kunne velge, ville jeg helst ikke behøve å bry meg om tidsfrister ("deadlines")	j	n	j	n	j	n	j	n
Jeg foretrekker å gjøre ting riktig framfor å gjøre dem fortrest mulig	j	n	j	n	j	n	j	n
I dette systemet må du bare henge med enten det du gjør blir riktig eller ikke	j	n	j	n	j	n	j	n
Jeg er nok en type som vanligvis prøver å få ting raskt unna	j	n	j	n	j	n	j	n
Jobben krever et veldig høyt tempo av oss som jobber her	j	n	j	n	j	n	j	n
Jeg liker å gjøre alt jeg gjør rasktest mulig	j	n	j	n	j	n	j	n
Jeg kan gjerne jobbe ut fra et detaljert, fast tidsskjema, så lenge jeg selv får være med å utarbeide det	j	n	j	n	j	n	j	n
Jeg liker å sette tidsfrister for mitt arbeid selv	j	n	j	n	j	n	j	n
Det viktigste med arbeidstempoet er at jeg kan bestemme tempo selv	j	n	j	n	j	n	j	n
På min arbeidsplass forventes det at folk stadig vekk tar med seg arbeid hjem etter arbeidstid	j	n	j	n	j	n	j	n
Aller helst ville jeg bare kunne glemme jobben ved arbeidstidens slutt	j	n	j	n	j	n	j	n
Systemet og teknologien er slik at en får egentlig ikke utrettet noe etter vanlig arbeidstid	j	n	j	n	j	n	j	n
Jeg kunne aldri finne meg til rette hvis jeg måtte jobbe ni til fire	j	n	j	n	j	n	j	n
For å få gjort jobben min er jeg nødt til å kunne løse arbeidsoppgaver utenom vanlig arbeidstid	j	n	j	n	j	n	j	n
Ofte vil jeg helst jobbe med viktige oppgaver om kveldene eller nettene	j	n	j	n	j	n	j	n

9. Del 3 - Vi skal nå ta opp spørsmål om organisasjonsmessige r...

16. -

	Helt enig			Verken enig eller uenig			Helt uenig
Når jeg arbeider helt for meg selv føler jeg at jeg har en god og effektiv arbeidsrytme	j0	j0	j0	j0	j0	j0	j0
Selv når jeg arbeider alene føler jeg at jeg aldri helt kommer inn i en god arbeidsrytme	j0	j0	j0	j0	j0	j0	j0
Når jeg jobber alene, kan jeg stort sett bestemme arbeidsrytmen selv	j0	j0	j0	j0	j0	j0	j0
Min måte å arbeide på avspeiler rytmene i organisasjonen, selv når jeg jobber alene	j0	j0	j0	j0	j0	j0	j0
Når jeg jobber sammen med nærmeste kolleger i et arbeidsfellesskap, føler jeg at vi egentlig ikke har noen felles arbeidsrytme	j0	j0	j0	j0	j0	j0	j0
Jeg opplever at jeg sammen med nærmeste kolleger har en egen "gruppe-rytme" som er annerledes enn resten av organisasjonen	j0	j0	j0	j0	j0	j0	j0
Jeg opplever at jeg sammen med nærmeste kolleger har en god felles arbeidsrytme	j0	j0	j0	j0	j0	j0	j0
Når jeg jobber sammen med nærmeste kolleger i et arbeidsfellesskap, føler jeg at det er jeg selv som angir rytmen	j0	j0	j0	j0	j0	j0	j0
Sammen med nærmeste kolleger jobber vi i en arbeidsrytme som i det alt vesentlige er bestemt av tradisjoner og rutiner, teknologi eller systemer	j0	j0	j0	j0	j0	j0	j0
Jeg føler at jeg selv og nærmeste kolleger alle er med å forme vår felles "gruppe-rytme"	j0	j0	j0	j0	j0	j0	j0
Jeg opplever at alle på arbeidsplassen har en felles arbeidsrytme som	j0	j0	j0	j0	j0	j0	j0

10. Del 3 - Vi skal nå ta opp spørsmål om organisasjonsmessige r...

17. De neste spørsmålene går på hvordan de organisasjonsmessige rytmene oppleves i jobbsituasjonen og i samhandling med andre

	Helt enig			Verken enig eller uenig			Helt uenig
Selv når jeg arbeider for meg selv, er jeg stadig i kontakt med medarbeidere om forskjellige spørsmål	j0	j0	j0	j0	j0	j0	j0
Jeg arbeider sjelden lengre perioder i løpet av dagen helt for meg selv	j0	j0	j0	j0	j0	j0	j0
En stor del av dagen vet jeg ikke om jeg vil bli avbrutt i arbeidet eller ei	j0	j0	j0	j0	j0	j0	j0
Hvis jeg i arbeidet med en sak er avhengig av innspill fra kolleger, tør jeg aldri stole helt på at de leverer innen fristen	j0	j0	j0	j0	j0	j0	j0
Jeg kan vanligvis stole på at folk her tar tidsfrister veldig alvorlig	j0	j0	j0	j0	j0	j0	j0
Jeg tror alle på arbeidsplassen opplever at vi har meget god framdrift i arbeidet	j0	j0	j0	j0	j0	j0	j0
Akkurat nå føler jeg at det virkelig "svinger" på jobben (arbeidet går greitt unna)	j0	j0	j0	j0	j0	j0	j0
Jeg tror vi alle føler at vi stadig er på etterskudd med arbeidet	j0	j0	j0	j0	j0	j0	j0
Vi gjør det så godt nå at det oppleves som å være med på noe stort	j0	j0	j0	j0	j0	j0	j0
Jeg synes stemningen på arbeidsplassen gjennomgående er temmelig laber	j0	j0	j0	j0	j0	j0	j0
Stemningen er nesten alltid svært god på vår arbeidsplass	j0	j0	j0	j0	j0	j0	j0
Gjennomgående har vi et avslappet arbeidstempo	j0	j0	j0	j0	j0	j0	j0
Vanligvis er det veldig hektisk på denne arbeidsplassen	j0	j0	j0	j0	j0	j0	j0
Jeg opplever at det er lite stress blant	j0	j0	j0	j0	j0	j0	j0

medarbeiderne

Vi opplever slitasje og frustrasjon blant medarbeiderne	j	n	j	n	j	n	j	n
Jeg opplever tempoet på arbeidsplassen som stressende	j	n	j	n	j	n	j	n
Stort sett arbeider enkeltpersoner og grupper helt i sine egne rytmer	j	n	j	n	j	n	j	n
Jeg opplever full aksept for at individer og grupper finner sine egne rytmer i organisasjonen	j	n	j	n	j	n	j	n
Jeg opplever at mange forskjellige rytmer på individ og gruppeplan fungerer utmerket samtidig i denne organisasjonen	j	n	j	n	j	n	j	n
I forhold til nærmeste kolleger føler jeg at vi har en fin felles arbeidsrytme og at ting skjer i rette tid	j	n	j	n	j	n	j	n
Jeg opplever ofte at kollegene henvender seg til meg på tidspunkter som passer veldig dårlig	j	n	j	n	j	n	j	n
Jeg føler et sterkt behov for å være mer skjermet mot avbrytelser i jobben	j	n	j	n	j	n	j	n
Når andre kontakter meg mens jeg er midt oppe i et arbeid, er det fordi de har viktige spørsmål eller viktig informasjon å komme med	j	n	j	n	j	n	j	n
Jeg opplever vanligvis ikke å bli avbrutt i arbeidet uten en god grunn	j	n	j	n	j	n	j	n
Jeg synes nesten alltid det er hyggelig når kolleger stikker innom eller tar kontakt	j	n	j	n	j	n	j	n
Relasjonene til ledelsen og kollegene er gjennomgående veldig gode	j	n	j	n	j	n	j	n
Jeg opplever ofte at kolleger og andre ikke tar hensyn til at jeg har behov for å arbeide uforstyrret	j	n	j	n	j	n	j	n
Jeg opplever ofte å bli avbrutt i arbeidet uten at det dreier seg om noe viktig	j	n	j	n	j	n	j	n

12. Del 4

Når vi skal undersøke grad av flyt, er vi interessert i både hvor sterkt en er i flyt, og hvor lang tid i løpet av arbeidsdagen en er i flyt. Vi vet at dette er vanskelig å beregne, men ber deg likevel om et anslag. Tenk på en helt gjennomsnittlig arbeidsdag (gjerne dagen i dag eller dagen i går). Tenk deg videre at vi har følgende tre nivåer av flyt og at det i løpet av en arbeidsdag kan veksle hvor sterkt du er i flyt:

A= Lav flyt/ingen flyt: Jeg finner det vanskelig å konsentrere meg om oppgaven, og jeg føler at jeg i liten grad virkelig kan leve meg inn i arbeidsoppgaven.

B= Noen grad/betydelig nivå av flyt: Jeg finner at jeg kan være ganske konsentrert om oppgaven og jeg føler at jeg i noen grad blir "revet med" i arbeidet.

C= Høyt nivå eller 100 % flyt: Jeg opplever å være fullt involvert i det jeg holder på med, med full konsentrasjon og full innlevelse. Ofte glemmer jeg både tid og sted, og tankene kretser bare om selve arbeidsoppgaven.

19. Vennligst anslå hvor stor andel av en normal arbeidsdag (dagen i dag, gårsdagen, eller en gjennomsnittlig dag) du opplever å være i forskjellig nivå av flyt?

	Aldri	En liten del av dagen	Omtrent halve arbeidsdagen	En stor del av dagen	Hele dagen
A= Lav flyt eller ingen flyt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
B= Betydelig nivå av flyt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
C=Høyt nivå eller 100 % flyt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

13. Del 4

20. Vi ber deg også om å svare på følgende tilleggsspørsmål om flyt

	Helt enig			Verken enig eller uenig			Helt uenig
Ofte sliter jeg og har problemer med å mestre jobben	j0	j0	j0	j0	j0	j0	j0
Stort sett opplever jeg jobben som spennende og passe utfordrende	j0	j0	j0	j0	j0	j0	j0
Jeg føler meg egentlig overkvalifisert i forhold til arbeidsoppgavene	j0	j0	j0	j0	j0	j0	j0
Det er et problem i jobben min at jeg ofte savner klare mål for arbeidsoppgavene	j0	j0	j0	j0	j0	j0	j0
Stort sett vet jeg alltid hva mine arbeidsoppgaver går ut på	j0	j0	j0	j0	j0	j0	j0
Jeg har alltid klare mål for det jeg gjør	j0	j0	j0	j0	j0	j0	j0
Jeg vet nesten alltid hvordan jeg ligger an i arbeidet	j0	j0	j0	j0	j0	j0	j0
Ofte er det vanskelig å si hvor godt jeg utfører arbeidet	j0	j0	j0	j0	j0	j0	j0
Stort sett føler jeg underveis i arbeidet om jeg gjør en god eller dårlig jobb	j0	j0	j0	j0	j0	j0	j0
Jeg har som regel på følelsen hvordan jeg skal gå videre med en oppgave	j0	j0	j0	j0	j0	j0	j0
Ofte føler jeg meg forvirret og usikker og vet ikke om mine avgjørelser er riktige	j0	j0	j0	j0	j0	j0	j0
Stort sett vet jeg hva jeg skal gjøre ettersom forskjellige utfordringer dukker opp	j0	j0	j0	j0	j0	j0	j0
Det er vanskelig å ha full oppmerksomhet på det jeg holder på med når jeg er på jobb	j0	j0	j0	j0	j0	j0	j0
Når jeg arbeider har jeg 100 % fokus på mine gjøremål	j0	j0	j0	j0	j0	j0	j0
Jeg opplever ofte å ha total konsentrasjon på det jeg holder på med på jobb	j0	j0	j0	j0	j0	j0	j0

Jeg opplever ofte at jeg ikke har kontroll med situasjonen på jobb	jn	jn	jn	jn	jn	jn	jn
Jeg har ofte en opplevelse av "dette får jeg virkelig til" på jobb	jn	jn	jn	jn	jn	jn	jn
Mine arbeidsoppgaver er slik at jeg opplever god kontroll med det jeg gjør	jn	jn	jn	jn	jn	jn	jn
Jeg føler meg ofte utilfreds eller lite tilfreds på jobb	jn	jn	jn	jn	jn	jn	jn
Jeg opplever stort sett arbeidet som veldig tilfredsstillende	jn	jn	jn	jn	jn	jn	jn
I det store og det hele føles det bra når jeg er på jobb	jn	jn	jn	jn	jn	jn	jn
Jeg blir ofte nervøs og lurer på om jeg egentlig strekker til i jobben	jn	jn	jn	jn	jn	jn	jn
Jeg bruker nok litt for mye tid til å lure på hva andre tenker om meg når jeg jobber	jn	jn	jn	jn	jn	jn	jn
Når jeg først er i gang med en jobb, bryr jeg meg ikke om hva andre måtte tenke om meg	jn	jn	jn	jn	jn	jn	jn
Når jeg er i gang med en jobb, føler jeg at tiden bare flyr	jn	jn	jn	jn	jn	jn	jn
Oftest glemmer jeg helt å ta pauser	jn	jn	jn	jn	jn	jn	jn
Jeg holder alltid et øye med tida mens jeg jobber	jn	jn	jn	jn	jn	jn	jn
Jeg har stort sett en god opplevelse av å få arbeidet unna	jn	jn	jn	jn	jn	jn	jn
I det store og det hele liker jeg jobben min veldig godt	jn	jn	jn	jn	jn	jn	jn
Jeg opplever at arbeidet i seg selv er veldig motiverende	jn	jn	jn	jn	jn	jn	jn

14. Del 4

21. Tilslutt er det noen få spørsmål om i hvilken grad du opplever flyt sammen med andre

	Helt enig			Verken enig eller uenig			Helt uenig
Når andre kontakter meg i arbeidet, føler jeg ofte at jeg bare blir enda mer involvert	j0	j0	j0	j0	j0	j0	j0
Sammen med kollegene kan jeg ofte være helt oppslukt av arbeidet	j0	j0	j0	j0	j0	j0	j0
Jeg føler ofte at jeg kan være i god flyt sammen med kunder, leverandører eller andre forretningsforbindelser eller kontakter	j0	j0	j0	j0	j0	j0	j0
Nesten uten unntak opplever jeg at kontakten med andre på jobben får meg ut av flyten og konsentrasjonen	j0	j0	j0	j0	j0	j0	j0
I samtaler med kolleger blir vi ofte så ivrige at vi glemmer klokka	j0	j0	j0	j0	j0	j0	j0
Når jeg er ivrig opptatt med arbeidet, opplever jeg stort sett henvendelser fra andre som forstyrrende	j0	j0	j0	j0	j0	j0	j0
Veldig ofte opplever jeg at full involvering i samarbeid med kollegene er særlig givende	j0	j0	j0	j0	j0	j0	j0