Universitetet i Stavanger

FACULTY OF SOCIAL SCIENCES,

UIS BUSINESS SCHOOL

MASTER'S THESIS

STUDY PROGRAM:	THESIS IS WRITTEN IN THE FOLLOWING SPECIALIZATION/SUBJECT:
Master of Economics and Business administration	Economic analysis IS THE ASSIGNMENT CONFIDENTIAL? No

TITLE: The effect of task meaning and peer effects on labor supply and cheating

AUTHORS		ADVISOR:
Student number:	Name:	Professor Ola Kvaløy
223366	Maria Nazarova	
223613	Bjørnar Laurila	

ACKNOWLEDGE RECEIPT OF 2 BOUND COPIES OF THESIS

Stavanger, 15/06/2015 Signature administration:……

PREFACE

Five last years of our lives compose an exciting, though challenging, trip through the jungle of the foundations of economic analysis and management. This trip is now coming to an end, which gives a mixed feeling of satisfaction and joy from accomplishing it with inclusions of melancholy from leaving this explored terrain for the "great unknown".

We decided to dedicate this master thesis to relatively new movements in the economic studies, behavioral economics and experimental economics, and conduct a laboratory experiment to investigate the effect of task meaning and presence of peer on labor supply and cheating. This has been a great fun and an instructive experience of scientific work.

We would like to thank the University of Stavanger and especially our thesis advisor, Professor Ola Kvaløy, for giving us the chance to conduct an experiment of our own and apply the theoretical knowledge we gained through the years at UiS to practice. We are indebted to Ola Kvaløy for his constructive feedback, availability and inspiring positive attitude through the whole process of working on the thesis. Last, but not least, we would like to thank our fellow students at the University of Stavanger for taking time to participate in our experiment and giving us two great weeks of fun, despair and memorable social interactions!

Stavanger, 15.06.2015

Maria Nazarova & Bjørnar Laurila

ABSTRACT

This thesis intends to provide the experimental evidence of the role of task meaning and peer effects on labor supply and cheating in a laboratory setting. Despite quite substantial body of research conducted on the concept of the meaning of work in different disciplines, it is still a relatively young research domain and previous literature on interconnection of task meaning and labor supply is relatively scarce.

We build on the experimental design of Ariely et al (2008) and manipulate the level of task meaning to see whether it influences individuals' labor supply. In addition, we introduce peer sessions, similarly to Bäker and Mechtel (2014) to examine possible compensation of the negative effect of low task meaning on labor supply by the presence of peer. Similarly to Pascual-Ezama et al. (2013) we check the level of cheating in high and low task meaning conditions to see possible relations between cheating, task meaning and the perceived level of monitoring. Our modified version of Ariely et al's experiment (2008) is aimed to check the robustness of the results from previous similar experiments and study the relation between task meaning, labor supply and cheating in Norwegian setting.

Test subjects, students at the University of Stavanger, were to do a simple repetitive task of finding ten pairs of consequent letters S in otherwise random sequence of letters and highlight them. Test subjects were randomly assigned to condition with either high (Acknowledged) or low (Crumpled) task meaning with or without peer. Total amount of sheets with a task completed served as a measure of labor supply for each individual. Cheating was measured as the number of pairs of S not found/highlighted in the task sheet, meaning that test subject submitted an incomplete task and was possibly cheating.

Contrary to Ariely et al (2002) and Bäker and Mechtel (2014), we found no significant differences in labor supply between conditions with high and low task meaning. These results are in line with Pascual-Ezama et al's (2013) findings and question the robustness of Ariely et al's (2008) and Bäker and Mechtel's (2014) results. The presence of peer has not influenced labor supply significantly either. However, when it comes to cheating, presence of peer together with low task meaning gives a significantly higher level of cheating than individual conditions, regardless of the level of task meaning.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

1.1 BACKGROUND:

Many academic disciplines like psychology, sociology, philosophy and economics to name a few have been studying the concept of the meaning of work. Scholars have been trying to find the determinants of the meaningfulness of work, individual's perceptions of work meaning in historical perspective and potential organizational and personal outcomes these perceptions might have. As argued, meaning is a component of individual's well-being, with high levels of perceived well-being and meaning resulting in more positive mental health outcomes (Keyes, 2007). "Meaningful work is a valuable resource for promoting and maintaining employee well-being" (Fairlie, 2013, s. 189). But does task significance and employee well-being associated with it actually results in increased labor supply?

Despite quite substantial body of research conducted on the concept of the meaning of work in different disciplines, it is still a relatively young research domain. Previous literature on the task meaning suggests that the level of meaning has indeed an impact on labor supply, but the evidence of this is relatively scarce and somehow conflicting (Ariely, Kamencia, & Prelec , 2008; Bäker & Mechtel, 2014; Kosfeld, Neckermann, & Yang, 2004; Pascual-Ezama, Prelec, & Dunfield, 2013; Chandler & Kapelner, 2013). We want to elaborate on the previous findings and investigate both the effect of meaning on labor supply and see how it relates to and interacts with the peer effects, which are also seen as essential factors influencing labor supply (Bäker & Mechtel, 2014; Falk & Ichino, 2006; Mas & Moretti, 2009; Bellemare, Lepage, & Shearer, 2010; Beugnot, Fortin, Lacroix, & Villeval, 2013). We define the following problem for our research:
Do the effect of meaning and peer effects influence individuals' labor supply and the level of cheating?

This research is inspired by the work of Dan Ariely et al. (2008) and is based on their experiment from the article "Man's search for meaning. The case of Legos" (Ariely, Kamencia, & Prelec , 2008). Similar to Ariely et al. (2008), we perceive task as meaningful as long as it is *recognized* and is *linked to some overall objectives understood by the employee*, meaning it has some purpose. By creating settings with and without meaning, we

compare individual's performance between these conditions. "Pay for performance"-reward scheme is used in all treatments to capture possible differences in reservation wage.

In addition, we estimate the peer effects on individual's performance and measure the magnitudes of both peer effects and the effect of meaning on labor supply and their possible interaction. There are quite a few jobs in modern organizational structures that do not involve interaction and cooperation between employees. Relationships with others contribute to the "social fabric and the context of a job" (Wrzesniewski, Dutton, & Debebe, 2003, s. 94). Interpersonal interactions with peers, as argued by Wrzesniewski et al. (2003), affects individual's perception of meaning and sense-making in the workplace. Employees at work "attend to the interpersonal cues generated by others", which then influences the determination of the meaningfulness of one's job (Wrzesniewski, Dutton, & Debebe, 2003, s. 122). From this perspective, we find it important to investigate the effect of meaning on labor supply both isolated from, but also together with peer effects.

As students with genuine interest in behavioral economics, we study how psychological factors (individuals' perceived meaning of tasks computed) influence economic decisions (labor supply and corresponding monetary rewards) and what role the meaning and meaningfulness together with peer effects actually play in individual's engagement in work activities. Our goal is to check the robustness of Ariely et al.'s (2008) experiment and some replications of it to see possible similar relations in Norwegian setting, expanding the existing theoretical foundations with further evidence. Our research also addresses the concept of unethical behavior and how the effect of meaning and peer effects influence the level of cheating both isolated and in interaction.

1.2 THE STRUCTURE OF THE THESIS:

The structure of this master thesis is as follows: we start with an overview of previous research on the topic, related theories and findings. Subsequent section incorporates chosen research method and research process as well as proposed hypotheses. Empirical strategy, data analysis and key findings with reference to related theories will follow. We use both graphical elements (figures) and tables for better presentation and comprehension of results.

Additional relevant implications will also be discussed in this part for broader analysis of the research question. Last section concludes and illuminates the possibilities for future research.

1.2.1 Theory overview:

We provide some overview of previous research related to the work meaning and summarize the results of similar experiments based on Ariely et al. "Man's search for meaning. The case of Legos" (2008). During our research, we found a substantial body of literature related to the concept of meaning and meaningfulness in different fields of study. Our review will be limited to the role of work meaning in the organizational behavior and employee motivation. This section will as well incorporate previous research on peer effects and cheating.

1.2.2 Research method:

We use the quantitative method, controlled laboratory experiment conducted at the university campus, to answer the research question. Controlled laboratory experiment, despite its shortcomings, has proven to be an effective tool for provision of valuable practical insights to both classical and modern theoretical approaches.

In our experiment, test subjects were randomly assigned to one of the four possible conditions, where we manipulated the level of task meaning and the presence of peer. Test subjects performed a simple repetitive task and were paid based on performance in each condition. Data set consists of 122 observations in total divided between 4 conditions.

1.2.3 Data collection:

This section of the thesis describes experimental design, procedure and treatments in detail. Our hypotheses will also be presented here.

1.2.4 Data analysis and results:

In this part, we analyze the effects of task meaning and peer effects on individuals' labor supply and cheating with the help of OLS regression analysis and Mann-Whitney U tests. We provide some descriptive statistics initially and then have dedicated sections for key findings related to Labor supply and Cheating respectively. The sections will also incorporate the results and discussion of peer effects.

1.2.5 Conclusion:

Conclusion summarizes the results of our work and relates them to the previous research done on the topic. We also discuss potential shortcomings of our experimental design and list the possibilities for future research.

2 THEORY OVERVIEW

In this part of the thesis, we summarize relevant theory and previous research related to the role of meaning and meaningfulness in job design and work motivation theories and review recent studies of peer effects and cheating, which are the main areas of our research. This summary serves as a basis for more complete and thorough understanding and analysis of research question investigated in this thesis.

2.1 JOB DESIGN THEORY

The common view suggests that the evaluation of the meaning of work often relates to a certain work environment and influences one's perception of that meaning significantly. In Rosso et al's (2010) review of the meaning of work literature, the authors consider work context as one of the four main sources of meaningfulness in work. In this thesis, we use the theory of job design as one the most common theories connecting the concept of meaning to work context.

Job design is "the specification of contents, methods and relationship of jobs in order to satisfy technological and organizational requirements as well as the social and personal requirements of the jobholder" (Rush, 1971, s. 5). It is also one of the essential determinants of the company performance. When developed in a right way, it helps organizations to achieve their strategic goals. The common knowledge is that companies are different in size, the way they do the business and products and services they offer to the market. The structure of the organization and work processes should be formed accordingly and this is where job design comes in handy.

Scholars traditionally differentiate between two extremes in the job design spectrum – *Scientific management theory* with narrow job design and lower skilled workers and

Continuous improvement with high degree of decentralization, worker empowerment and high skilled workers (Lazear & Gibbs, 2009).

2.1.1 Scientific management theory (classical approach)

The main motive for scientific management theory, developed in the early 20th century, was to find a way to optimize production, saving time and resources (Taylor, 2005). Workflow is divided into smaller tasks, with high-skilled employees developing "best practices" for each task that should be performed by the actual (often low-skilled) workers. Following this approach, company achieves more optimal resource utilization, effective work process and higher product quality (Lazear & Gibbs, 2009).

In order to perform narrow tasks, according to developed best practices, employees do not need to possess special skills. Lower skilled workers can be assigned to the tasks. The structure of the process leaves little room for autonomy and skill variety, since employees perform the tasks exactly as professionals designed (Taylor, 2005). Employees become more specialized in their narrow fields of work and the whole process can thus be sped up, resulting in higher total productivity.

Not all jobs and workers are suited for constant inventions and changes. Vidal (2007, p. 249) argues, that changes and new responsibilities can "bring pressures and social tensions, that are rather experienced as burdens than challenges". Scientific management approach helps to avoid compatibility issues for certain work process structures and uncover full potential of low-skilled workers, resulting in benefits for both employees and employers.

Classical approach to job design has *little emphasis on task meaning* and highlights the usage of best practices and low degree of autonomy as effective methods to gain mutual benefits for both employees and organizations.

2.1.2 Continuous improvement (modern approach)

Continuous improvement is a modern approach to organizational design that emphasizes incremental gains in efficiency and quality through continuous adaption. The firm adapts to changing circumstances within chosen area of operations and by that achieves better results (Lazear & Gibbs, 2009).

In this approach, the challenge for employees are challenged with developing new innovative ways of work in dynamic environment, continuous learning on the job and multitasking. The "creative" part of the process is decentralized to a high degree, with company management taking a final decision when suggested ideas are evaluated.

From a job design point of view, continuous improvement approach is often associated with the following characteristics (Lazear & Gibbs, 2009), which are associated with high level of perceived work meaning:

Job enrichment – the idea of assigning more tasks and more varied tasks to the worker, which results in more challenging work environment and ensures that worker is not bored on the job and is possibly more productive.

Multiskilling – the ability to perform a number of various tasks. In dynamic environments, with which the process of continuous improvement is associated, innovation plays a crucial part in adaptation process. The ability to perform various tasks within the organization and knowledge of the operations in different parts of it, makes it easier to suggest new ways of improving the process. Companies themselves often foster employees' multiskilling ability as a part of continuous improvement through rotation practices and cross training.

Workers empowerment – "decentralization of problem-solving and decision-making responsibilities along with "extensive" off- and on-the-job training" (Vidal, 2007, p. 250). This concept is closely related to the previous ones, implying that employees assigned to more varied work tasks and who have the knowledge in several areas within the company, get more power in decision-making process and are able to influence company's development. By this, the company will achieve results that are more efficient.

Modern economic and psychological approaches to organizational design also consider job design as the major determinant of an employee's intrinsic motivation, making the job more challenging and exciting for the worker, preventing workers from being bored and ineffective (Lazear & Gibbs, 2009, p. 196). Demerouti and Cropanzano (2010) also show that employees have more job satisfaction and higher performance in challenging work environments.

The importance of task meaning is incorporated in the modern approach to job design, as it has been shown that jobs allowing for higher levels of skill variety and autonomy lead to more experienced meaningfulness of work. This contributes positively to employee's motivation and performance (Rosso, Dekas, & Wrzesniewski, 2010) as well as well-being (Fairlie, 2013).

2.2 MOTIVATION THEORIES

Originally, different scholars studied the concept of the meaning of work in connection to the research on internal work motivation (Rosso, Dekas, & Wrzesniewski, 2010). Hackman and Oldham define internal or intrinsic motivation as "the degree to which and individual experiences positive internal feelings when performing effectively on the job" (Hackman & Oldham, 1976, s. 559).

In this section, we will review some of the motivation theories, which highlight the interconnection of meaning and motivation (Rosso, Dekas, & Wrzesniewski, 2010).

2.2.1 Job characteristic model

Job characteristic model investigates and possibly improves employee's motivation through the means of job design. It also helps to evaluate job's motivating potential. The model is developed by Hackman and Oldham (1976) and focuses specifically on factors influencing employees' *intrinsic* motivation. This model shows "the interconnection of meaning and motivation by establishing experienced meaningfulness of work as one of the critical psychological states necessary to the development of internal work motivation" (Rosso, Dekas, & Wrzesniewski, 2010, s. 96).

Hackman and Oldham identify five core job characteristics, which are assumed to be present in any type of job. The more one's job possesses these characteristics (according to individual subjective evaluation), the more intrinsically motivated one is to perform the job (Kaufmann & Kaufmann, 2009). Hackman & Oldham (1976, pp. 257-258) define these characteristics as follows:

Skill Variety - the degree to which a job requires a variety of different activities in carrying out the work, which involve the use of a number of different skills and talents of the person.

Task Identity - the degree to which the job requires completion of a "whole" and identifiable piece of work; that is, doing a job from beginning to end with a visible outcome.

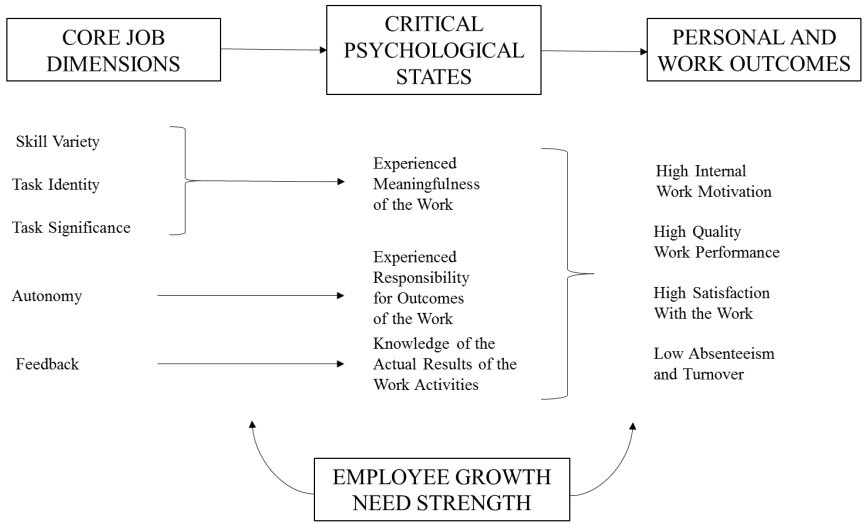
Task Significance - the degree to which the job has a substantial impact on the lives or work of other people, whether in the immediate organization or in the external environment.

Autonomy- the degree to which the job provides substantial freedom, independence, and discretion to the individual in scheduling the work and in determining the procedures to be used in carrying it out.

Feedback - the degree to which carrying out the work activities required by the job results in the individual obtaining direct and clear information about the effectiveness of his or her performance.

These characteristics influence individual's perceptions of meaningfulness of the job and result in psychological states, which then influence personal and work outcomes. When these characteristics are strongly represented in the job, it results in high internal work motivation, higher quality of work performance, high satisfaction with the work and low turnover. We summarize the model in Figure 1 below (Hackman & Oldham, 1976, p. 256):

Figure 1 Job Characteristics Model



2.2.2 Two-factor model of motivation

Herzberg et al. (1959) have another view on work related motivation. In their two-factor model, there are two types of working conditions (factors) - hygiene- and motivational factors:

Motivational factors or Motivators are recognition, achievement and personal growth. They give positive satisfaction and high motivation to the worker when present, but do not result in dissatisfaction or low motivation when absent. Motivator factors have been identified elsewhere as *meaningful* work factors (Fairlie, 2013, s. 189).

Example of *hygiene factors* is job security, fringe benefits and salary. Opposite to the action mechanism of motivational factors, hygiene factors do not give higher motivation if present, but lead to dissatisfaction and lower motivation if absent (Kaufmann & Kaufmann, 2009). In other words, employee's job satisfaction is strongly related to job characteristics and the presence of motivational factors, while dissatisfaction is being influenced by work environment and how employees are being handled at work.

2.3 THE EFFECT OF MEANING ON LABOR SUPPLY

The experiment we conducted is based on Ariely et al.'s experiment described in the article "Man´s search for meaning: The case of Legos" (2008). In the original experiment, they evaluate the effect of minimal perceived meaning on performance with simple repetitive tasks in a laboratory setting. Meaningful condition is created by the presence of recognition (some other person acknowledges one´s work) and purpose (employee understands how his/her work is linked to some objectives) (Ariely, Kamencia, & Prelec , 2008), while in condition without meaning both recognition and purpose are cut to a minimum. Original experiment revealed that the presence of meaning has substantial effects on both labor supply and reservation wage. Labor supply was significantly greater in Acknowledged condition ("with meaning") than in Ignored ("without meaning"). Reservation wage was lowest in the Acknowledged condition, meaning that test subjects were willing to work more and get lower piece rate payment in "meaningful" condition. Reservation wage was almost twice as large, when the work is not acknowledged.

Bäker & Mechtel (2014) in their experiment also built on Ariely et. al's experiment design (2008) and found similar results. In individual condition, presence of meaning significantly increased the level of output. In addition, they test whether the presence of peer can offset the negative effect of low task meaning. Their results reveal, that peer setting increases output both in high task meaning condition and in low task meaning condition compared to individual work. Interestingly, peer effects are stronger in low meaning condition. Comparison of output level in peer groups with high and low task meaning showed no difference in performance between these groups, suggesting that meaning effects almost entirely disappear with the presence of peers. Output level in low meaning condition with peers is higher than in high task meaning individual condition, showing that peer effects is stronger than the effect of meaning.

Similar experiment conducted by Prelec et al. (2013) with Spanish students however revealed no significant differences in individuals' labor supply in treatments with and without meaning. At the same time big variations in the quality of work handed in has been discovered: 99% of the tasks have been completed in the meaningful condition and only 47% of tasks have been completed in the ignored/meaningless condition. Investigation of work handed in revealed higher level of cheating in treatment with low task meaning. Cheating will be discussed in more detail in the following section of this theory review.

Kosfield et al. (2004) in their experiment with Chinese students estimate the effect of high and low meaning conditions on performance together with recognition and monetary incentives. Similarly to Ariely et al. (2008), they show that the presence of meaning has a significant effect on labor supply and is stronger than the effect of monetary incentives. Recognition effect increases performance only in low meaning conditions and does not influence performance positively in high task meaning condition.

Grant (2008) investigates possible causal effects of task meaning on job performance through the concept of task significance. Task significance enables employees to experience their work as more meaningful and thus can influence performance (Grant, 2008). In his field experiments, he found major increase in job performance with increased task significance, where test subjects got information about social impact and social worth of their job (Grant, 2008).

Field experiment conducted by Chandler and Kapelner (2013) also explores the relationship between the task meaning and worker's effort. In the experiment, they employed 2500 workers from an online labor market to label medical images. All workers got the same task, but with varied level of meaning. In the high task meaning conditions, workers were told they were assisting cancer researchers. In zero-condition group, test subjects did not get any information on task purpose. In shredded condition test subjects were informed that their work would be discarded (Chandler & Kapelner, 2013). They found that "high meaning increases the quantity of output (with an insignificant increase in quality) and low meaning decreases quality of output (with no change in quantity)" (Chandler & Kapelner, 2013, s. 15). Remarkably, shredded condition resulted in lower *quality* of work, but not *quantity*.

2.4 CHEATING AND OPPORTUNISTIC BEHAVIOR

Cheating or shirking can be defined as lower quality of work and/or work that is not being done, which is often harmful for the firm's financial results, reputation and work environment. In our experimental design, conditions with low level of task meaning (both with and without peer) imply low level of monitoring. In scientific literature, the low level of monitoring often stimulates opportunistic behavior and cheating. We want to investigate if this will be the case and how the level of task meaning (with corresponding level of monitoring) influences test subjects' inclination to cheat. The review of scientific literature that describes the effect of the level of monitoring on cheating as well as other factors inducing opportunistic behavior is in place.

2.4.1 "Rational cheater" model

According to this model of opportunistic behavior, people are *rational cheaters* – a person who is self-interested and is searching for ways to increase own welfare at the expense of the employer. People tend to cheat as long as perceived cost of cheating/shirking is lower or equal to the benefit, which is in line with classic microeconomic theory (in equilibrium, marginal benefits equal marginal costs).

Dealing with the problem of cheating in this framework implies changing the perception of shirking cost as being high and shirking benefits as being low. Monitoring is one of the common helping tools for that (Nagin, Rebitzer, Sanders, & Taylor, 2002). Monitoring increases the probability of being caught and punishes for shirking thus increasing its cost in

relation to benefit. The absence of monitoring often results in the opposite outcome. In our experiment, Crumpled condition implies low level of monitoring, where the experimenter crumples and throws the sheet with a completed task to the bin directly, without looking at it (see section 4.1). We assume, that, according to rational cheater model, individuals will have strong incentives to cheat, since the perceived cost of cheating is almost zero, while benefit, measured in piece-rate payment for the completed sheet is relatively high. This effect might somehow be diminished. The cost of cheating at the UiS in general is relatively high (short- and long-term expulsion, bad reputation), so the students' attitude to the unethical behavior might be quite cautious, if not negative.

In the experiment conducted by Pascual-Ezama et al. (2013) they found a clear connection between monitoring and the amount of cheating (shirking), which strengthens our assumption. In the condition with higher perceived level of monitoring, only 1% of sheets were incomplete, while conditions with lack of supervision encouraged test subjects to cheat, with only 47% of sheets completed.

Monitoring though has some downsides – it is expensive (especially for small firms) and can undermine employees' motivation and reciprocity tendencies (Falk & Kosfeld, 2006). In their experiment, Falk & Kosfeld (2006) show that principal's decision to control significantly reduces the agents' willingness to act in the principal's interests, which in its turn may result in principal-agent problem with unfortunate outcome for the company performance and employee satisfaction.

2.4.2 Conscience model

In this model, individuals derive utility from behaving "appropriately" to the situations they find themselves in, based on personal perceptions of "appropriate" and "good". Individuals are assumed to establish certain identities for different situations, which are being matched and used, when respective situations occur. People who identify themselves with being honest incur high psychological costs when acting unethically (Nagin, Rebitzer, Sanders, & Taylor, 2002). In the field experiment by Nagin et al. (2002), they found that even though some employees might participate in shirking activity associated with reduced monitoring, a certain part of employees did not do that. It is argued, that the unwillingness to participate in the shirking activity can be explained by the means of the conscience model.

In contrast to rational cheater theory, different institutions focus on relationship structure that fosters identities inconsistent with cheating and opportunistic behavior to cope with the problem of cheating. Strong corporate culture and focus on corporate social responsibility are common tools used by many firms in recent years. Some academic institutions have honor codes, which serve as a moral guideline for students and employees in academic situations. The research has shown that universities with such honor codes suffer from less cheating than those who lack them (McCabe, Trevino, & Butterfield, 2001). In the light of conscience theory, these universities have successfully gotten students to adapt identities that have a high mental cost of cheating. Our experiment took place at the UiS with students as test subjects. At UiS there is no formal honor codes as such. However, a lot of attention in the students' "upbringing" is paid to ethical behavior and inappropriateness of cheating.

Mazar et al. (2008), however, discovered that employees can also cheat a little. By that, they gain enough profit to increase utility or reduce costs related to exerting extra effort, simultaneously maintaining the perceived picture of "honest" self.

2.5 PEER EFFECTS

Important aspect of our research is the investigation of peer effects on labor supply and possible interaction of peer effects and the effects of perceived task meaning. Previous research of peer effects in work setting shows, that presence of peers normally has a positive effect on labor supply. Falk & Ichino (2006) investigated peer effects in a laboratory experiment with a simple task (stuff letters into envelopes). They had individual payment irrespective of individual or team output. In the main treatment test subjects work in pairs, while in the control treatment, test subjects work individually and peer effects are thus ruled out. They found strong evidence of peer effects, where output within the pair of peers is very similar, but differs substantially between the pairs. In general, output level is significantly higher with peers than in individual treatments.

Mas & Moretti (2009) find similar results with strong peer effects in the form of productivity spillovers. They investigate the variation in performance of cashiers in the supermarket, when a new high-productivity coworker is introduced to the team. When low-productivity workers have a shift together with a high-productivity worker and can be observed by that worker, their productivity increases by 1.5% on average (with 10% increase in coworkers

productivity). Performance of high-productivity workers, however, is not affected negatively by the presence of low-productivity workers.

Beugnot et al. (2013) partly confirms Mas and Moretti`s (2009) findings on the part of positive productivity spillovers, where low productivity workers increase their performance when observing high productivity workers. At the same time, the opposite effect has been revealed as well, where productivity of workers is reduced when observing less productive workers.

In contrast to the previously mentioned findings, Bellemare et al. (2010) found almost no effect of peer pressure on individuals' performance neither with piece rate scheme nor under fixed wages. Bellemare et al. (2010) doubt the effectiveness of peer pressure as an incentive-policy tool and suggest further research to be done in the field to compare static interactions with real-time ones.

Recent research in organizational behavior shows the interconnection between "the cues employees receive from others in the course of the job and the value of the job" (Wrzesniewski, Dutton, & Debebe, 2003, s. 93). Messages individuals receive from the others and interactions they have on the job influence their perception of self-worth and the meaningfulness of their work. From this perspective, the process of sense-making on the job is said to be more dynamic than static, since it depend not only on status "pre-defined" elements like job design, but also has a dynamic component of peer interaction (Wrzesniewski, Dutton, & Debebe, 2003).

3 RESEARCH METHOD

This chapter addresses the choice of the research method in this master thesis, its characteristics, ethical guidelines, research validity and reliability.

3.1 METHODICAL APPROACH

There are two common methodical approaches in scientific research – quantitative and qualitative, where the research question is often determinative for what approach will be used in the actual research conducted (Jacobsen, 2005):

Qualitative approach is normally used for explorative, open types of research questions, where one wants to investigate a specific question in "great depth, with careful attention to detail, context and nuance" (Patton, 2002, p. 257). The use of qualitative methods typically results in gaining insights and detailed data about a relatively limited amount of entities (Patton, 2002) and constructing explanations or theory based on that (Ghauri & Grønhaug, 2010).

Quantitative approach is used to find the scope or frequency of a certain phenomenon, where experimenter investigates possible patterns in larger sample without going so much into details, presenting the "bigger picture". This approach gives us a possibility to see variation in and interaction between several relations simultaneously. It also makes it possible to structure the information and get the most important outlines from it (Jacobsen, 2005).

In our research, we want to see the possible effect of task meaning and peer effects on individual's labor supply and the amount of cheating. Thus, the *quantitative approach* has been chosen to investigate these relations and answer the research question.

3.2 RESEARCH DESIGN

Research design is the overall plan for relating the conceptual research problem to relevant and practicable empirical research (Ghauri & Grønhaug, 2010, p. 54). Research design should be effective for the purposes of the research in order to get the information one needs and answer the research question correctly.

It is common to distinguish between the following main classes of research design: *Exploratory, Descriptive* and *Causal research* (Ghauri & Grønhaug, 2010). *Exploratory research* design is used for the explorative types of research problems with unstructured problem structure and is not suitable for our research. In *descriptive research design,* research problem is structured and well understood, but the data is collected without changing/manipulating the environment. Common methods of data collection are questionnaires and interviews. Since we do need some manipulations of the environment in order to see the effects of meaning and peer effects on labor supply, we consider *causal research design* as the optimal and most effective design approach to investigate these possible "cause-and effect" issues. According to the specification of causal research design (Ghauri & Grønhaug, 2010), we try to isolate the "cause" (independent variable for the presence/absence of task meaning and peers) and examine whether it has any effects on dependent variable – labor supply.

The purpose of the *causal research* is to isolate the "cause"(X) and then see if it results in any "effect"(Y) (Ghauri & Grønhaug, 2010). Although we cannot be sure that X causes Y to occur, we can find *evidence* that the presence of X increases the probability of Y to occur (Cooper & Schindler, 2013):

- There should be a correlation between X and Y
- Cause (X) should occur before the effect (Y)
- Alternative causes of (Y) should be ruled out

One of the best research methods to reveal possible causal relationships between variable is the *experiment* (Cooper & Schindler, 2013). Its main advantage is that the researcher can manipulate the independent variable and observe possible changes in the dependent variable. In addition, the researcher has more control of extraneous variables and can isolate and estimate their impact separately, while focusing on the variables of interest. Variables can also be adjusted by the experimenter and combined, which is quite convenient and often less costly (Cooper & Schindler, 2013).

As argued by Cappelen and Tungodden (2012), the use of experiments has become dominant in the economic research in general and especially in behavioral economics. They also

highlight the level of control and randomization the experiments give as their biggest advantages. With randomization, we can observe not just the correlation between variables, but find out the actual *causal* relationships between those. Randomization in controlled experiments helps us to create groups of individuals that are equal in both observable and non-observable characteristics by randomly assigning individuals to different groups with and without treatment.

For the reasons mentioned above, we have chosen the controlled laboratory experiment to find answers to our research question. We consider the laboratory setting more convenient for the experiment than the field setting. It helps us to isolate other possible variables influencing individuals' labor supply and see only the effects of minimal perceived meaning and the presence of peer with simple repetitive tasks, which a-priori are not related to jobs of certain importance. We also control for individual's gender and level of education to eliminate possible distortions of the treatment effects on dependent variable and randomly assign individuals to different treatments with varied level of meaning and presence or absence of peer.

Despite of the popularity and visible advantages of the experimental approach, it has certain shortcomings. The most common shortcoming of the experimental approach discussed by different scholars is its external validity - the extent to which the results of the experiment can be applied to the real-life setting (Cappelen & Tungodden, 2012). Test subjects participating in controlled experiment can change their behavior because of being observed and try to act as they think they are expected to (also known as the Hawthorne-effect).

It is also argued that test subjects face relatively weak monetary incentives in the experiments, which cannot model their decision making in economic situations in real life to full extent (Cappelen & Tungodden, 2012).

The fact that the majority of the controlled laboratory experiments are conducted with students as test subjects also puts a question mark to the practical application and representativeness of the results.

One more concern when it comes to controlled laboratory experiments is that we only observe individuals' actual behavior and do not know for sure the reasoning behind this behavior.

Nevertheless, laboratory experiments have proven to be useful because of its replicability and "possibilities of tight control of decision environments" (Falk & Heckman, 2009, s. 535). We support the idea of using controlled laboratory experiment for investigation of our research question in order to see potential causal relationship of task meaning/peer effects on labor supply and cheating with the minimal level of "noise", which is often higher in real-life setting.

3.3 PRIMARY AND SECONDARY DATA

In our research and analysis, we make use of both primary and secondary data. *Primary data* is the information we collected directly from our observations with manipulated level of meaning and peer presence, which are organized specifically to get the information we need (Jacobsen, 2005).

Secondary data we have used for our research is mainly the existing body of literature and previous experiments conducted on the topics addressed in this thesis. We replicate the experiment done by Ariely et al. (2008) and use different related theories both as the introduction to the experiment and to analyze its results. The list of all secondary data used is to be found in Bibliography.

3.4 RESEARCH ETHICS

Ethics is a set of principles, rules and guidelines to evaluate if our handlings are right or wrong (Johannessen, Christoffersen, & Tufte, 2011, s. 89). Ethical issues arise, when scientific research directly involves interaction with people through observations, interviews or experiments (Johannessen, Christoffersen, & Tufte, 2011, ss. 89-90). The last is the case in our research.

A main rule in the experimental economics' research is that researchers never lie to participants and do not give them the feeling of participating in something else than what they actually participate in (Cappelen & Tungodden, 2012). In the planning phase of our research in general and the experiment in particular, we got familiar with ethical guidelines

normally used in experimental economics and business studies. After consultation with out thesis advisor, we made a plan on how they should be taken into account throughout our work on this thesis. We believe that this plan has indeed been followed thoroughly and our approach is legitimate with respect to ethical guidelines. We base our conclusion on the three following ethical issues suggested by Johannessen et al. (2011, s. 91) :

1. *The right of autonomy and self-determination,* which implies that participants of the research do this at their own will and can withdraw themselves from the participation at any point of time without any negative consequences and mental stress (Johannessen, Christoffersen, & Tufte, 2011, s. 91)
2. *Respect for privacy and confidentiality,* which ensures that personal information about test subjects are handled in a confidential way unless agreed the other way (Johannessen, Christoffersen, & Tufte, 2011, s. 92)
3. *Evaluation of potential harm,* so that the research process does not intervene with test subject's personal feelings and exposes test subjects to minimal possible level of mental stress (Johannessen, Christoffersen, & Tufte, 2011, s. 92)

All potential participants of our experiment got reliable information about the experiment and the character of the task needed to be performed (see Appendix A for the example of the mail text). Participants could freely register and choose the date and time that suits them the most. All test subjects were informed that they could stop the experiment whenever they wanted in line with the first guideline on the right of autonomy and self-determination.

Test subjects asking about the anonymity were informed, that the experimenters will know who has been allocated to what condition and individual's labor supply, but this information will not be disclosed to other people. Only the administration of the University of Stavanger will know the names and personal numbers of students participating in the experiment due to legal requirements. This information has also been provided to test subjects.

When it comes to the aspect of mental stress, all test subjects have been greeted equally friendly by us throughout the experiment and were informed on beforehand about the type of task to be performed. The experiment took place at the University of Stavanger campus,

which we assume is a familiar "terrain" to the participants, and should not give the feeling of agitation unfamiliar places often evoke.

No special equipment and techniques, like tape recorder or health-hazardous equipment have been used prior to or during the experiment. The only device used without test subjects knowing it was the stopwatch, which tracked the total amount of time test subjects used in performing the task. We believe this does not imply any mental stress or harm to test subjects and is only used for the purposes of the experiment.

4 EXPERIMENTAL DESIGN AND PROCEDURE

The purpose of this thesis is to see how labor supply and the amount of cheating is affected by a change in the level of meaning and the presence of peer. We conducted a controlled laboratory experiment where test subjects performed a tedious and repetitive task and were randomly assigned to one of the conditions with high/low level of meaning with/without peer.

In this section we describe experimental design, recruitment process and experiment procedure in detail.

4.1 EXPERIMENTAL DESIGN

Our experiment is based on Ariely et al's (2008) experimental design, as it is the original experiment investigating the influence of minimal perceived meaning on labor supply with simple repetitive tasks. Original experiment has three conditions, where the same basic task is performed, but the degree of task meaning is varied. In our version, the amount of conditions with respect to degree of meaning is cut down to two. In addition, we introduce peer sessions for each condition, ending up with four treatment groups – individual session with high task meaning, individual session with low task meaning, peer session with high task meaning and peer session with low task meaning. We replicate Ariely et al.'s experiment (2008) in Norwegian setting to see if the same tendencies can be found among Norwegian students, when it comes to the interaction between task meaning and labor supply. We evaluate as well whether the presence of peer possibly affects labor performance and interacts with the

perceived level of meaning, as some previous research suggests (Wrzesniewski, Dutton, & Debebe, 2003). Our experiment is also to be seen as a robustness test of Ariely et al's (2008) findings. The amount of cheating and its potential dependency on the level of task meaning and/or peer effects is also being investigated.

4.2 RECRUITMENT

Experiment was conducted at the campus of the University of Stavanger (UiS) with students as test subjects. Experiment was announced through various communication channels (E-mail, word of mouth, Facebook and YouTube), with video invitation on YouTube and E-mail sent with the help of the IT department at UiS as main channels.

E-mail invitation was sent to approximately 5000 students at the University of Stavanger from the following fields of study: Engineering, Health and Social care, Hotel and Tourism management, Social science, Economics and Law, Teaching and Scientific subjects. The experiment took place in week 12 and 13. Test subjects could register themselves by E-mail and choose a desired date and time for participation. In both mail- and video invitation, students were informed that they would be asked to perform a simple task with no prerequisite knowledge required and will be rewarded right after the session (See Appendix A for mail invitation text).

4.3 PROCEDURE AND TASK

Upon arrival, subjects were greeted by Experimenter 2 and followed to the classroom, where the Experimenter 1 sat behind a desk. Test subject(s) were showed to the desk. On the subject's desk, there were instructions on how to perform the task. Experimenter 1 also read these instructions out loud in the beginning of the session. In addition, test subjects have been informed that they were free to leave at any time they wanted after completion of wished amount of sheets with the task in accordance with ethical guidelines the experiment was based on.

Experiment session ended, when one (in individual sessions) or both (in peer sessions) test subjects announced their wish to stop the experiment and delivered last completed sheet with the task. In peer sessions, test subject, who decided to finish first, left the room, while the

other could continue working on the task. When delivering the last sheet with a task to Experimenter 1, they were given a personal information form to be filled out outside the room and delivered to Experimenter 2 (See Appendix E for the example of personal form for the individual treatment and Appendix F for personal information form for the treatment with peer). Experimenter 1 wrote test subject's order number on the top of the sheet and filled in the amount of sheets completed on the form and code for condition. The following condition codes have been used: IA for Individual Acknowledged condition, IC for individual crumpled condition, PA for Peer Acknowledged condition and PC for Peer Crumpled condition.

When the experiment was over for the test subject, he or she left the room and was handled by Experimenter 2 outside the room. Test subjects were to fill in the form they got from Experimenter 1 and UiS receipt form (See Appendix G). Experimenter 2 informed test subject about his/her total compensation and paid it out to test subject in cash.
After test subjects left the room, Experimenter 1 collected the sheets completed, stapled and labeled them with test subject's order number (the same as used on personal information form). In peer sessions, this has been done after both test subjects left the room.

Identically with Ariely et al. (2008), we chose a relatively simple task "to compare the situations with no meaning with situations having some small additional meaning" (Ariely, Kamencia, & Prelec , 2008, p. 671).

The task was to find ten pairs of two identical, consecutive S's in an otherwise random string of letters (See Appendix D for the task example).
After the first sheet was completed, test subject was asked if he or she wants to do another sheet, but at a lower wage. The same procedure was followed until test subject decided to stop doing the task and stopped the experiment session.

By having a payment scheme with diminishing reward for each next sheet completed, we could find the subjects reservation wage, which is the minimum increase in income that would make a person indifferent between working the first hour or staying out of the labor force (Borjas, 2013).

The following pay scheme has been used:

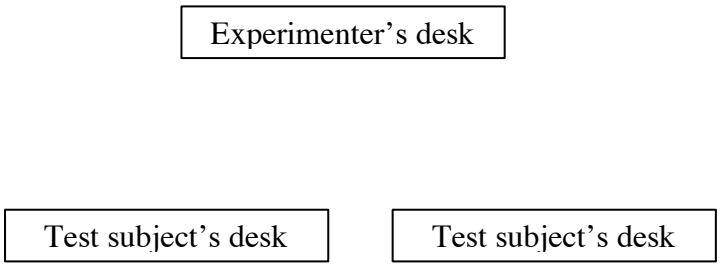
Table 1 Payment scheme

Number of sheets	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	>15
Pay per sheet (in NOK)	15	14	13	12	11	10	8	6	4	2	1	1	1	1	1	0
Total Pay	15	29	42	54	65	75	83	89	93	95	96	97	98	99	100	100

Without test subjects knowing it, Experimenter 1 used a stopwatch to keep track of how much time test subject used on all sheets in total. This fact was not revealed to test subjects in order to avoid any mental pressure on them and giving them wrong focus or ideas about the goal of the experiment, as ethical guidelines chosen for the experiment suggest. Information about time used on the task together with the amount of sheets completed, gave us the average time used per sheet. We perceive this indicator as a proxy for subject's ability. In order to see real determinants of labor supply for a repetitive task and separate the effect of meaning, it is important to account for subject's ability. Test subjects with higher ability are assumed to supply more labor regardless of the level of meaning. In addition, their cost-benefit ratio, where the level of effort among other factors determines cost and benefit is the compensation they get from performing the task, is assumed to imply lower costs compared to low ability individuals and higher compensation per unit of time.

Three different classrooms were used for the experiment (KA-U042, KA-135, KA-U050). All rooms had quite similar interior and the setup was the same: there was one table for the Experimenter and two tables for test subjects:

Figure 2 Setup



4.4 TREATMENTS

There were four different treatment groups in the experiment: individual and peer groups with high task meaning condition (Acknowledged) and individual and peer groups with low task meaning condition (Crumpled). This is a slight modification of the original experiment by Ariely et al. (2008), where they also had a shredded condition as the condition with lowest level of meaning due to the absence of recognition and point of purpose with the task.

Test subjects were randomly assigned to one of the mentioned conditions:

Table 2 Treatments

	Acknowledged	Crumpled
Individual	IA (30)	IC (30)
Peer	PA (32)	PC (30)

Acknowledged condition – high level of task meaning:
In line with Ariely et al.'s (2008) definition, we define the task as meaningful, when it is recognized (some other person acknowledges the completion of the work) and has some point of purpose (individuals understand, how their work might be linked to some objectives).

In the acknowledged condition, test subjects were instructed to write their name on every sheet of paper they handed in. When a sheet was handed in to the experimenter, he skimmed through it, gave the test subject a little nod and put the paper in a folder. This handling should be perceived as acknowledging one's work and together with putting the sheet into the folder should give the impression of certain purpose with it.

Crumpled condition – low level of task meaning:
In the crumpled condition, subjects were not asked to write their name on the paper. After the sheet with the task was handed in to the experimenter, the experimenter immediately crumpled it and threw it in a waste bin, without looking at it. This handling should be perceived as the absence of recognizing one's work. Together with throwing the sheet into the waste bin right after handing-over, should give the impression of no purpose with this work.

Individual session:

In individual session, test subject came and entered the room alone and were randomly assigned to either low task meaning or high task meaning condition. The rest of the procedure has been followed as described in section Procedure and task. Test subjects were not informed about the goal of the experiment or presence of different treatment groups and conditions.

Session with peer:

In order to investigate peer effects in conditions with high and low task meaning, two individuals have been invited for the same time slot during the day. They entered the room together and worked with their tasks, independently of each other. Peers were randomly assigned to condition with the same level of meaning, acknowledged or crumpled as described previously. As with the individual sessions, they were not aware of other treatment groups and did not get any additional information about the experimental design and purpose. Peers have been informed that they could communicate during the completion of task, but were not allowed to help each other. The rest of the experiment was conducted as described in section Procedure and task.

In the crumpled condition, there was a small separator in the waste bin for separation of the sheets completed by each individual. This separator was not visible for test subjects in order to avoid any disturbances.

Experimenter 1 never checked the actual completion of the task during the experiment, which allowed test subjects to cheat in all the conditions.

Completed sheets in every condition were marked with test subject's order number as described previously in order to control for cheating at a later stage. Cheating has been measured as the amount of SS-pairs not marked on the sheet delivered. For example, if the subject only marks eight pairs out of ten required, he would get a cheat count of two, which equals to two "missing" pairs of SS-letters.

4.5 HYPOTHESES

4.5.1 Labor supply

Hypothesis 1 – the effect of task meaning on labor supply: *Labor supply will be higher in the acknowledged conditions than in crumpled conditions due to the presence of task meaning.* This implies that test subjects will complete more sheets with the task in high task meaning conditions compared to low task meaning condition.

We will check IA against IC (comparison of individual conditions with different levels of meaning), PA against PC (comparison of peer conditions with different levels of meaning), and the overall effect of meaning regardless of peer/ individual treatment. Both Ariely et al. (2008) and Bäker and Mechtel (2014) found significant positive effects of high task meaning on labor supply. Several other scholars connect the effect of high task meaning to positive organizational outcomes like job performance (Michaelson, Pratt, Grant, & Dunn, 2014; Grant, 2008) and Hackman and Oldham (1976) indirectly suggest task significance and task meaning to influence work engagement and labor supply with their job characteristics model. Pascual-Ezama et al. (2013) have not found significant evidence of the effect of meaning on labor supply, so our experiment is to provide additional robustness check of this relation.

Hypothesis 2 – peer effects' on labor supply: *The presence of a peer will increase each subject's productivity*. In general, labor supply in treatments with peer is higher than in individual treatments regardless of the level of meaning (Falk & Ichino, 2006; Mas & Moretti, 2009; Bäker & Mechtel, 2014). We expect to find similar effects in our experiment. Even though test subject's payment scheme is independent of the other's performance, productivity spillovers might be in place. The potential positive effect of the presence of peer on labor supply can also be partly explained by "interpersonal sense-making" in the case of test subjects communicating with each other about the experiment. This may assign additional meaning to the task and change test subject's perception of the whole process and increase performance as suggested by Wrzesniewski et al. (2003).

4.5.2 Cheating

Hypothesis 4 – the effect of task meaning on the level of cheating: *The degree of cheating is higher in crumpled condition than in acknowledged condition*.

Hypothesis 5 – peer presence and the amount of cheating: *Presence of peer increases the degree of cheating even more in crumpled condition*.

For both individual and peer sessions, we believe that people will cheat more in the crumpled condition than in the acknowledged condition based on the "rational cheater model" (Nagin, Rebitzer, Sanders, & Taylor, 2002). In the crumpled condition the cost of being caught is relatively low, since the experimenter does not check the actual completion of the task and throws submitted sheets into the bin. At the same time, the benefit from cheating is relatively high, since you use less time on the task (lower cost of effort) and are paid for each submitted sheet. Combination of these two factors might incline test subjects to cheat. Pascual-Ezama et al. (2013) confirm this theory in their laboratory experiment where the level of cheating was significantly higher in the condition with less meaning and monitoring. We believe the presence of peer to increase this effect, since probability and associated cost of being caught gets even lower – the same bin is used for submitted sheets from both test subjects and perceived level of anonymity should be higher, while benefits remain the same.

5 ANALYSIS AND RESULTS

In this section, we will provide the analysis of the data and discuss key findings and implications of those in the light of the previous research done on the topics of task meaning, peer effects and cheating. We use Mann-Whitney U test to check whether there is any difference in the level of cheating and labor supply between the four conditions. A regression analysis is used to investigate the effect of the different variables on productivity and cheating with focus on the effects from our main research question – the effect of task meaning and peer effects. The following analysis was done with the help of IBM SPSS software package.

5.1 Sample and Descriptive Statistics

We recruited students from several major fields of study at the University of Stavanger to get a representative sample. A short summary of descriptive statistics and some initial indicators of results based on it will follow.

A total of 122 subjects participated in the experiment, 62 of which were females and 60 males. The average age of test subjects is 24.48 years and the oldest and youngest participant were 45 and 19 years old respectively. Students with completed upper-secondary education and Bachelor's dominated the distribution, with 58 subjects in each group. Six test subjects completed a master's degree and no test subjects completed a PhD.

The following table summarizes some subject information and distribution of test subjects per treatment:

Table 3 Age and gender distribution

		Age			*Gender*	
		Average	*Minimum*	*Maximum*	*Male Count*	*Female Count*
Condition	IA	24	19	45	17	13
	IC	25	20	36	15	15
	PA	24	20	33	14	18
	PC	24	19	40	16	14

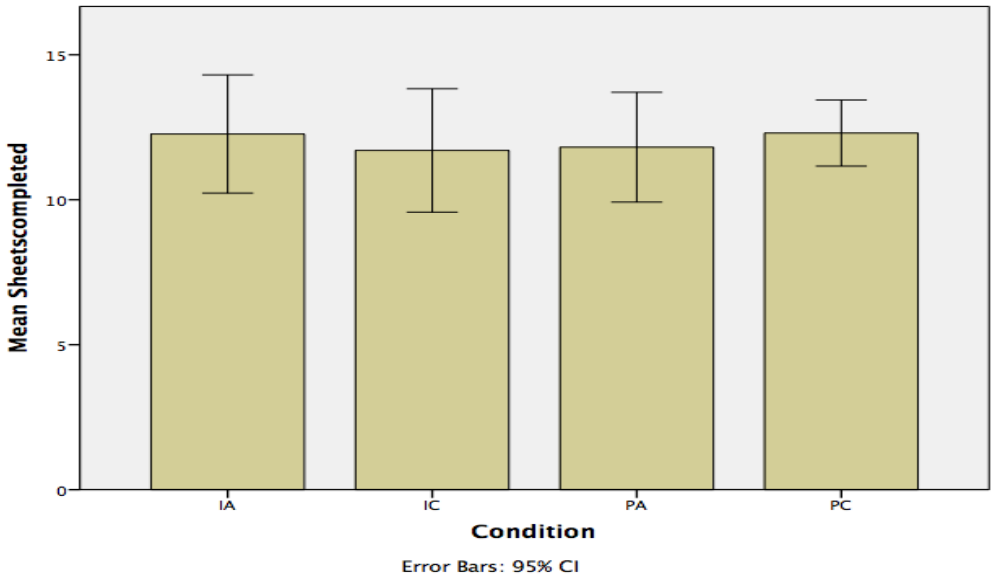
The average total time used for the completion of tasks was 30:33 minutes and the average amount of sheets was 12,02, which makes up 02:47 minutes used per sheets on average. This equals to a payment of kr 92,39 and hourly wage of kr 184 according to the proposed payment scheme (see section 4.3). We perceive this as a fair wage for a student and a good enough monetary incentive. This should help in making test subject's decision-making process similar to economic situations in real-life and improve the validity of the experiment (ref. discussion in Research design section).

Students from Engineering (49) and Economics/Law (28) fields of study dominated the sample. Students from these fields of study in general make up a substantial part of the

population of the UiS, so we find the distribution in our data a good representation of this population. Even though engineering students were strongly represented in the sample, the distribution is even across conditions and students were randomly allocated to different conditions.

A graphical representation of the average number of sheets completed with error bars at 95% confidence interval allows for a quick comparison between the groups with respect to *labor supply*:

Figure 3 Average number of sheets in conditions



This comparison shows only few differences in labor supply across conditions. The table below shows the results in more detail. The difference in sheets completed (a measure of labor supply) between the highest and the lowest condition averages is only 0.6 (=12.3-11.7) sheets.

Table 4 Sheets completed per condition

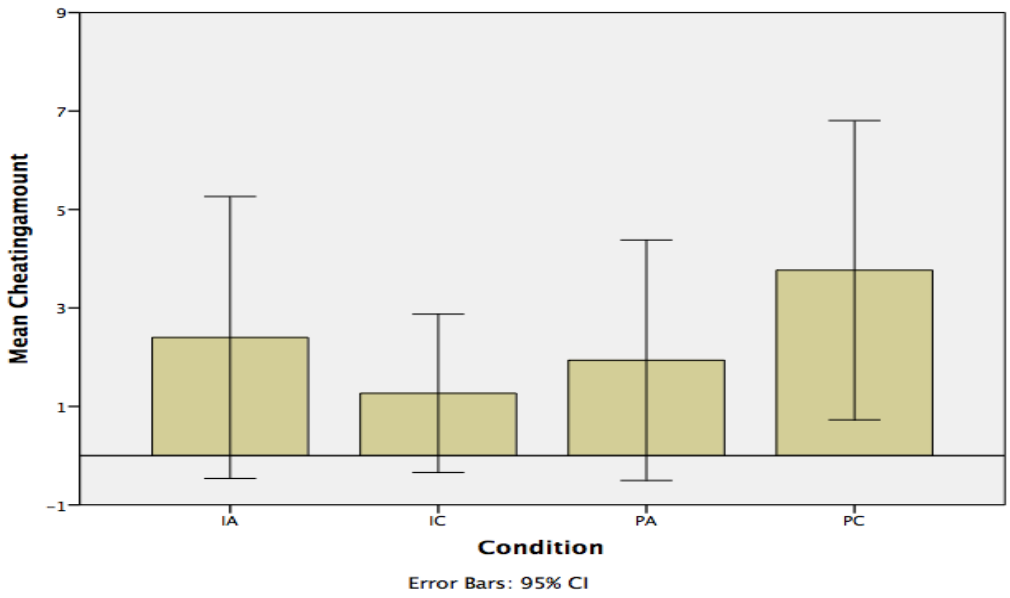
Sheets completed

Condition	*Average*	*N*	*Std. Deviation*	*Minimum*	*Maximum*
IA	12.27	30	5.458	4	32
IC	11.70	30	5.700	4	33
PA	11.81	32	5.251	2	22
PC	12.30	30	3.053	8	19
Total	12.02	122	4.929	2	33

A closer look at the average productivity reveals that the averages and standard deviations do look very similar. This gives some initial indications of the effect of meaning and peers on labor supply, which is indeed quite marginal, but still requires some further analysis provided later in the thesis.

If we move on to cheating, we do see some variation between the conditions:

Figure 4 Average amount of cheating in conditions



A closer look at the averages and standard deviations summarized in the table below suggests possible effects of treatments on the level of cheating and requires further, more detailed investigation:

Table 5 Cheating amount in conditions

Cheating amount

Condition	*Average*	*N*	*Std. Deviation*	*Minimum*	*Maximum*
IA	2.40	30	7.668	0	32
IC	1.27	30	4.307	0	20
PA	1.94	32	6.773	0	33
PC	3.77	30	8.140	0	30
Total	2.34	122	6.856	0	33

Descriptive statistics shows that 28 out of 122 participants (23%) cheated at least one time, making the distribution very skewed.

5.2 LABOR SUPPLY

Initial findings from descriptive statistics suggest only marginal differences in performance between conditions. Let us investigate possible effects in more details with standard OLS regression and Mann-Whitney U tests.

Standard OLS regression allows us to see the magnitude of the effect independent variables have on the dependent variable. In our case, we estimate the effect task meaning and presence of peer (which both are independent variables) on individual's performance (dependent variable). Our estimated models will have the general form of the equation bellow:

Regression equation 1

$$y = \beta_0 + \beta_j x_j + \delta_k x_k + \varepsilon$$

In this model y refers to the dependent variable, β_0 intercept, β_j parameter associated with the continuous independent variable number j, δ_k is the parameter of dummy variable number k, x is the dependent variables value and ε is the error term.

For the regression analysis, we identify the following variables of interest:

- *Crumpled*: dummy variable, which takes value of 1 for being in the crumpled condition or value of 0 for being in the acknowledged condition. Variable is used to see if the level of meaning affects subjects' productivity or cheating.
- *Peer*: dummy variable, which takes value of 1 for peer and 0 for individual. It will give us the effect peers have on the chosen dependent variable (labor supply or cheating).
- *Average time used per sheet*: continuous variable measured as total time divided by the amount of sheets submitted, proxy for ability.
- *Cheating*: continuous variable, which measures the amount of cheating. Cheating is measured in amount of pairs of S not marked in the submitted task sheet.

- Dummy variables for *IC, PA* and *PC*, which show the effect of condition on dependent variable, compared to the base IA.
- *Peer*crumpled*: dummy variable that checks for interaction effect between the presence of peer and low task meaning. It takes value of 1 if both *Peer* and *Crumpled* take value of 1.
- *Age* and *Female* variables were added to each model to check for robustness. *Female* takes value of 1 if test subject is a female and 0, if male.
- *Not U042*: dummy variable that investigates if test subjects were affected by the change of rooms during the experiment. Takes value of 1 if the room is not KA-U042. A total of 104 sessions took place in room KA-U042, while only 18 sessions took place in KA-135 and KA-U050, so we use KA-U042 as base.

If the coefficients from the regression are significant, they have an effect on the dependent variable (labor supply in this case). Three models have been used for the analysis and the results are summarized in the table below:

Table 6 Regressions on sheets completed[1]

Dependent variable - Sheets completed (as a measure of labor supply)			
Independent variables	Model 1	Model 2	Model 3
IC	-.798		
	(1.200)		
PA	-.084		
	(1.180)		
PC	-.727		
	(1.211)		
Crumpled		-.784	-.802
		(.853)	(1.199)
Peer		-.009	-.026
		(.838)	(1.181)
Peer*crumpled			.036
			(1.699)
Constant	20.581 ***	20.655 ***	20.658 ***
	(2.860)	(2.849)	(2.867)
Female	-.593	-.597	-.596
	(.851)	(.845)	(.851)
Age	-.124	-.125	-.125
	(.101)	(.100)	(.101)
Not U042	.325	.317	.319
	(1.214)	(1.205)	(1.212)
Average Time	-.030 ***	-.030 ***	-.030 ***
	(.006)	(.006)	(.007)
Cheating	.030	.029	.029
	(.063)	(.062)	(.063)
SER	4.619	4.596	4.617
F Statistics	3.101	3.595	3.118
R2	.180	.181	.181
Adjusted R2	.122	.131	.123

In Model 1, we compare the level of productivity in different conditions with IA (individual condition with high task meaning). Coefficient for each condition shows the treatment effect. We do not find any significant effects for any treatment groups. This implies no effect of the level of meaning or the presence of peer on labor supply.

[1] Standard error of the unstandardized coefficient is in the parenthesis. Notation for significance level: 1%=***, 5%=**, 10%=*

However, all of these coefficients are negative, meaning that the general direction of the effect is negative. The tendency is that labor supply might be lower in conditions with low task meaning and/or with the presence of peer.

In Model 2, we look at the effect of task meaning on labor supply by comparing acknowledged condition to crumpled. In addition, we measure peer effects by comparing individual treatments to treatments with peers regardless of the level of meaning. By that, we measure the effect of meaning and peer effect separately.

We do not find any significant effect of task meaning on labor supply by comparing individuals' performance in crumpled condition to acknowledged. This implies that the level of meaning in our case did not have substantial effect on performance.

Peer effects have not been observed either, since the difference in labor supply between individual and peer conditions is negligible. These results contradict previous findings by Mas & Moretti (2009) and Falk & Ichino (2006). Although these effects are insignificant, the direction of the effects (the signs of the coefficients) are negative. The general tendency for the productivity might be that it is lower with either low task meaning or the presence of peer.

For further investigation of differences between conditions, Mann-Whitney U test was used. Mann-Whitney test is a non-parametric test, which converts scores to ranks and checks if the groups rank significantly different (Pallant, 2001). By using this statistical test, we are not dependent on the distribution to be normal. Because of this, the Mann-Whitney test is often used to check the differences between conditions in various experiments.

Using Mann-Whitney U tests we compared labor supply in IA condition to IC ($Z= -.378$, $p= 705$) to see the effect of meaning in individual treatments. For examination of the effect of meaning on labor supply with peers, we compared test subjects' performance in PA condition to PC ($Z= -.390$, $p= .697$). Both tests revealed no significant difference in labor supply between conditions with high and low task meaning, either for individual or peer groups.

Additional test was done to compare the effect of meaning between crumpled and acknowledged conditions, regardless of whether it was a peer or individual session. It gave insignificant results as well (Z= -.203, p= .839).
Based on conducted tests and statistically insignificant differences in labor supply between conditions, Hypothesis 1 is rejected (see section 4.5.1). We can not confirm that higher level of task meaning increases performance in relation to low level of task meaning.

From coefficient in Model 2, it has been revealed that the presence of peer turned out to be bad for productivity as well (*Peer* = -.009). This is the opposite of what was expected and suggested by some of the previous studies. Mann-Whitney U test shows an insignificant difference between peer and individual groups (Z=-.913, p= .529) regardless of the level of meaning. Neither does it affects productivity when looking at the crumpled conditions alone (Z=-0.914, p=361). This means that the presence of peer does not compensate the effect of low task meaning and does not affect labor supply. For the conditions with high task meaning (IA/PA), the difference in labor supply with and without peer turns out to be insignificant (Z= -.028, p= .977). As all the Mann-Whitney U tests as well as coefficients from OLS regressions analysis were insignificant, Hypothesis 2 is rejected (see section 4.5.1). We do not find any significant peer effect on labor supply.

Model 3 is used to analyze the potential interaction between the effect of meaning and peer effect, which is not captured by Model 2. We use dummy variable *Peer*crumpled,* which takes the value of 1 for sessions with peer and low task meaning. All other combinations of the level of meaning and presence of peer give value of 0 due to multiplication. Compared to Model 2, we are able to see isolated effects of the presence of peer and the effect of task meaning together with the interaction effect. This interaction effect is positive, meaning that even though *Peer* and *Crumpled* isolated will decrease productivity (*Crumpled*= -.802, *Peer* = -.026), it is being increased, when these two effects are combined.

Demographical variables for age and gender have been added to see if they have any significant effect on productivity (see *Age* and *Gender* in Table 6). Both variables turned out to have insignificant effects in all three regression model.

To control if subjects were affected by being in certain classroom, we use dummy variable *Not U042* (See Table 6). It showed insignificant effect in all regressions models, which implies no effect on experimental outcome.

To see if there is any relation between test subjects' ability and productivity, we use continuous variable *AverageTime*. It shows the average time used per sheet. This variable is significant at the 1% significance level and the coefficient is negative in all regression models(See Table 6). The fact that the coefficient is negative suggests that people with lower ability produce less and use more time for the completion of task.

Our results are the opposite of what Ariely et al. (2008) and Bäker & Mechtel (2014) found in their studies. According to their research, the level of task meaning has a significant effect on individuals' labor supply, which we do not observe from our data. Our experiment design differs from Bäker & Mechtel (2014) when it comes to the task itself. They used Ariely et al.'s second experiment with the Legos (2008) and not the one "with the letters" used by us. This might partly explain the difference in the results. Opposed to original experiment by Ariely et al. (2008), we did not introduce Shredded condition, which is to be seen as the condition with extremely low task meaning. Simultaneously, Ariely et al. (2008) found no significant differences between Ignored and Shredded conditions in the original experiment. This suggests only negligible differences between conditions and should not influence the results.

The average amount of sheets is 12,02 and might be partly influenced by the payment scheme used (See Table 1). For every sheet from the 11^{th} and until the 15^{th}, test subjects got kr 1 per sheet. After test subjects completed two sheets (the 11^{th} and the 12^{th}) with only one krone in compensation per sheet they were not extrinsically motivated to work more for one krone and thus stopped the experiment. The possible different structure of the payment scheme can be evaluated in future research on the subject. The structure of the payment scheme can also be trimmed some more in the future to have a more plain structure (without shifts) as in our case.

Our results are, however, in line with Pascual-Ezama et al.'s (2013) findings, who did not find any direct relation between the level of meaning and labor supply. They argue that the difference in results might be due to the cultural aspect and this may as well apply for our research. As Pascual-Ezama et al. (2013), we measure the level of cheating in different conditions to see if this can explain minor differences in performance between them. This will be analyzed in the following section.

"Hawthorne effect" or the influence of the experimental setting on tests subjects' behavior is another potential source of difference in our findings compared to Ariely et al. (2008). Several test subjects reported their willingness to participate in the experiment for the sake of it. Some of them wanted to continue the experiment to see what would happen next, especially after compensation for the sheet became 0. This raises a question to experimental design in general, whether one can really create the desired level of task meaning with only small manipulations in the setup.

The fact that there is not much difference in performance between conditions with high and low level of task meaning might be that test subjects "create" meaning in the task themselves, especially for the condition with low task meaning. This is done by reframing the perception of the task as "meaningful whole that positively impacts others" (Bakker, Tims, & Derks, 2012, s. 1361). In the experiment by Berg et al. (2010), they provide an example of the worker who had relatively easy repetitive tasks, but considered them a valuable service and experience he provided for the customer instead of "entering numbers" (Berg, Wrzesniewski, & Dutton, 2010, s. 167). Similarly, several of the participants mentioned, that their main goal was not to gain monetary benefits from participation, but helping fellow students(us) in completion of the master thesis. This could make their perceived meaning from participation higher. At the same time, this logic could apply for both conditions and have the similar impact.

The presence of peers did not have any significant effect on labor supply either, in contrast to some of the previous findings (Falk & Ichino, 2006; Bäker & Mechtel, 2014; Mas & Moretti, 2009) and in line with Bellemare et al. (2010). Contrary to Bäker & Mechtel's design (2014), our task required a certain level of concentration and limited the possibility of actual interations between peers during the completion of task. In that sense, our design mostly

investigated the peer effect from the actual presence of peer and to less extent from the interaction. This aspect is something to be taken into account by future research.

5.3 CHEATING

In total, there were only 23% of the test subjects who cheated. Thus, the distribution is much skewed. The regressions below contain all 122 subjects, and due to the large amount of non-cheaters, no coefficients are significant. However, we analyze the tendency and direction of the effects. Similarly to the analysis above, we use OLS regression models and Mann-Whitney U tests for the following analysis. The results from the regressions analysis are presented in the following table:

Table 7 Regressions on cheating amount[2]

Dependent variable – The amount of cheating			
Independent variables	**Model 4**	**Model 5**	**Model 6**
IC	-1.043		
	(1.801)		
PA	-.144		
	(1.771)		
PC	1.223		
	(1.816)		
Crumpled		-.051	-1.044
		(1.290)	(1.804)
Peer		1.034	.048
		(1.259)	(1.775)
Peer*crumpled			2.011
			(2.547)
Constant	4.383	4.231	4.423
	(5.166)	(5.176)	(5.190)
Female	-1.706	-1.791	-1.722
	(1.270)	(1.266)	(1.271)
Age	-.037	-.042	-.036
	(.152)	(.152)	(.152)
Not U042	-.280	-.415	-.325
	(1.822)	(1.816)	(1.823)
Number of sheets	.067	.067	.066
	(.141)	(.141)	(.141)
Average Time	-.006	-.007	-.007
	(.011)	(.011)	(.011)
SEE	6.931	6.928	6.940
F Statistics	.674	.639	.635
R2	.046	.038	.043
Adjusted R2	-.022	-.021	.025

[2] Standard error of the unstandardized coefficient is in the parenthesis. Notation for significance level: 1%=***, 5%=**, 10%=*

In Model 4 we get the net effects of the level of task meaning and peer effects on the amount of cheating. As can be observed from the Table 7, the coefficients for IC and PA are negative, meaning that test subjects cheated less in these conditions, compared to IA condition (base). Test subjects cheated more in PC related to IA, but we are not able to isolate peer effect from the effect of meaning in this case and see the effect of each on the level of cheating.

To find isolated effects of task meaning and the presence of peer on the level of cheating, we use Model 5. In this model, we compare treatments with low task meaning to treatments with high task meaning. Moreover, the level of cheating in peer groups is compared to the level of cheating in individual groups. Coefficient for *Crumpled* is negative (*Crumpled*= -.051), meaning that the general tendency is that test subjects cheat less in conditions with low task meaning. This is an unexpected result, as low task meaning conditions imply almost zero level of monitoring. As suggested by previous research, lower level of monitoring often inclines people to cheat more (see section 2.4.1).

The presence of peer on the other hand tends to increase cheating, as the coefficient for *Peer* is positive (*Peer*= 1.034). This could be due to e.g. competitiveness or lower chance of getting caught. In Model 6, similarly to the Model 3 used in the previous section, we investigate the interaction effect between the presence of peer and low task meaning. As coefficients in the Table 7 suggest, low task meaning leads to less cheating, while the presence of peer increases cheating. However, these two effects in interaction lead to even higher level of cheating. Looking at the descriptive statistics over the average amount of cheating in the four condition supports these findings, as both IC and PA have lower cheating averages, but PC have the highest (see section 5.1).

Because of the skewed distribution, it is difficult to draw any certain conclusion from the regression tests. We use Mann-Whitney U test to give a better comparison between the conditions.

Starting by checking if cheating is affected by the level of task meaning (crumpled against acknowledged), we see that the overall difference is insignificant (Z= -.529, p=597). Splitting the sample further and looking how the level of meaning affects cheating in individual

conditions shows no significant difference between groups either (Z= -.075, p= .942). (Z= -1.444, p= .149). The same result is observed when comparing the effect of task meaning on cheating in peer groups (Z=-1.444, p= .149). Hypothesis 4 is thus rejected (ref. 4.5.2).

To see potential peer effects on cheating, we compare the amount of cheating in individual groups to peer groups regardless of the level of meaning. This comparison gives a significant difference (Z=-2.278, p= .023). This is the overall effect, so by comparing the conditions with the same task significance will give a more precise answer to the cause of this difference. The two meaningful conditions, IA and PA, are not significantly different from one another (Z= .960, p= .377) when it comes to the amount of cheating. However, the two crumpled conditions, IC and PC do have a significant difference in the amount of cheating (Z= 2.271, p= .023). Finally, based on the previous findings, we want to check for differences in the amount of cheating between PC and IA. There is, indeed, a significant difference (Z=-2.071, p= .038). As there is no difference between PA and three other conditions, it seems like the interaction effect between the presence peer and low task meaning is to blame for the significant higher amount of cheating. Based on these findings, we cannot confirm Hypothesis 4, as the cause of the increased level of cheating seem to be in the interaction of peer effect and the effect of low task meaning.

Previous research by Pascual-Ezama et al. (2013) shows that individuals cheat more with the low level of monitoring. We do not find the same clear connection between the perceived level of monitoring and cheating. However, the interaction effect of being in a peer group together with low task meaning significantly increases the amount of cheating. This result is in line with the "rational cheater" model, where individuals cheat when the perceived probability of getting caught is low. In peer crumpled condition, the experimenter does not check the actual completion of the task during the experiment and throws submitted sheets to the bin directly. The same bin is used for both test subjects, which creates the perception of almost zero level of monitoring. The benefits of cheating become higher in relation to costs and stimulates unethical behavior.

Due to the low average level of cheating throughout the conditions and the skewed distribution, the conscience model and the findings of Mazar et al. (2008) might be better at explaining why some subjects cheat only a little. According to this model, people who cheat

only a little do not have to update their self-belief and can still view themselves as honest. In our experiment, test subjects could cheat a few times to earn more money and still maintain the perception of honest self.

Our experimental design could not capture the difference between the cheating and unintentional errors. This gives the somehow inaccurate picture of the actual level of cheating and suggests that it could have been even lower.

In sessions with peers, it might be interesting to see whether test subjects' inclination to cheat is affected by the performance of peer. Individual who is behind the peer when it comes to the amount of sheets completed might tend to cheat in order to appear as equally productive (or at least to minimize the difference between own productivity and that of the peer). Since our research and previous research by Ariely et al. (2008) and Pascual-Ezama et al. (2013) find somehow different results with respect to cheating, we believe further research investigating cultural differences as well as the effect of meaning and peer effects on cheating would be relevant.

6 CONCLUSION

Existing body of literature on the task meaning and perceived meaningfulness at work investigates these concepts from different perspectives (see Rosso et al. (2010). Recent experimental studies investigate the effect of task meaning and labor supply and find somehow contradictory evidence (Ariely, Kamencia, & Prelec , 2008; Bäker & Mechtel, 2014; Pascual-Ezama, Prelec, & Dunfield, 2013). Our contribution to this field of study is that we investigate not only the effect of meaning on individual labor supply but also the role of others in labor supply decisions also known as peer effects. We measure the effect of meaning and peer effects on labor supply both separately and together to see possible interactions. In addition, we examine how the effect of meaning and peer effects influence the level of cheating.

We find no significant evidence of task meaning on labor supply, which reaffirms the findings of Pascual-Ezama et al. (2013) and suggests the level of task meaning on labor supply as possibly overrated for the simple repetitive tasks. At the same time, this contradicts findings by Ariely et al. (2008) and Bäker & Mechtel (2014). Conflicting results question the

experimental design and whether it captures the actual relation between perceived task meaning and labor supply and manages to assign the necessary level of meaning to each condition, which is the relevant concern for future research.

We find no evidence of peer effect on labor supply either. Interesting finding, related to previous research on peer effects is the negative (though insignificant) coefficient of the dummy variable that measures the peer effect on labor supply. This gives a tendency for labor supply to be lower with the presence of peer compared to individual treatments. The interaction effect of the presence of peer and low task meaning has a positive coefficent. This suggests that the general direction for labor supply is to be higher with the presence of peer with the low level of task meaning in our setting. Separately low level of task meaning and the presence of peer tend to influence labor supply negatively as suggested by the coefficients in the regression analysis (see section 5.2).

Opposite to Pascual-Ezama et al. (2013), we find no evidence of higher level of cheating in individual condition with low task meaning compared to high task meaning. The same applies for the comparison of the level of cheating between peer groups. Thus, we can not explain the insignificant effect of task meaning on labor supply with the higher level of cheating as Pascul-Ezama et al. (2013) suggested. However, the presence of peer in condition with low task meaning gives a significant positive effect on the amount of cheating compared to individual treatments. Here we can not assign the magnitude of the effect only to peer effect or the effect of meaning, but it is the interations of those, that creates a significant impact. Further investigation on that might be in place.

Cultural differences in individuals' attitude towards cheating and work motivation are the important topics to address in future studies. The lack of statistically significant results may also be caused by the relatively small sample size per treatment group, suggesting to test the theoretical framework of this experiment on a bigger sample.

Mixed experimental evidence on the topic, suggests the meaning to be a dynamic term that can be perceived differently. As Victor E. Frankl puts it "For meaning of life differs from man to man, from day to day and from hour to hour. What matters therefore, is not the meaning of life in general but rather the specific meaning of a person's life at a given

moment" (Frankl, 1984, p. 130). This possible dynamic perspective to the concept of meaning should be incorporated in future "cross-scientific" experimental approach.

7 BIBLIOGRAPHY

Ariely, D., & Wertenbroch, K. (2002). Procrastionation, Deadlines and Performance: Self-Control by Precommitment.

Ariely, D., Kamencia, E., & Prelec , D. (2008, January 24). Man's search for meaning: The case of Legos. *Journal of Economic Behavior & Organization* , pp. 671–677.

Bakker, A., Tims, M., & Derks, D. (2012). Proactive personality and job performance: The role of job crafting and work engagement. *Human Relations , 65(10)*, 1359-1378.

Bäker, A., & Mechtel, M. (2014, July 11). The role of task meaning on output in groups: Experimental evidence . *Social Sience Research Network* , p. 28.

Bellemare, C., Lepage, P., & Shearer, B. (2010, January). Peer pressure, incentives, and gender: An experimental analysis of motivation in the workplace. *Labour Economics* (17(1)), pp. 276-283.

Berg, J. M., Wrzesniewski, A., & Dutton, J. E. (2010). Perceiving and responding to challenges in job crafting at different ranks: When proactivity requires adaptivity. *Journal of Organizational Behavior , 31(2-3)*, 158-186.

Beugnot, J., Fortin, B., Lacroix, G., & Villeval, M. C. (2013). Social Networks and Peer Effects at Work. *Working paper 13-20* .

Borjas, G. J. (2013). *Labor Economics* (Sixth ed., Vol. 6th). McGraw-Hill.

Cappelen, A., & Tungodden, B. (2012). Adferdsøkonomi og økonomiske eksperimenter. *Magma , 15* (5), 26-30.

Chandler, D., & Kapelner, A. (2013). Breaking monotony with meaning: Motivation in crowdsourcing markets. *Journal of Economic Behavior and Organization , 90*, 123-133.

Cooper, D. R., & Schindler, P. S. (2013). *Business Research Methods* (12th ed.). New York: McGraw-Hill/Irwin.

Demerouti, E., & Cropanzano, R. (2010). From thoguth to action: Employee work engagement and job performance. *Work engagement: A Handbook of Essential Theory and Research* , 147-163.

Fairlie, P. (2013). Meaningful work is healthy work. In R. Burke, & C. Cooper, *The fulfilling workplace: The organization's role in achieving individual and organizational health* (pp. 187-205). Burlington: Gower publishing.

Falk, A., & Heckman, J. J. (2009). Lab Experiments Are a Major Source of Knowledge in the Social Sciences. *Science , 326(5952)*, 535-538.

Falk, A., & Ichino, A. (2006, January). Clean Evidence on Peer Effects. *Journal of labor economics* , pp. 39-57.

Falk, A., & Kosfeld, M. (2006, December). The Hidden Costs of Control. *The American Economic Review* , pp. 1611-1630.

Frankl, V. E. (1984). *Man's Search for Meaning.* Boston: Beacon Press.

Ghauri, P., & Grønhaug, K. (2010). *Research methods in business studies* (Fourth edition ed.). Harlow: Financial Times Prentice Hall.

Grant, A. M. (2008). Does Intrinsic Motivation Fuel the Prosocial Fire? *Journal of Applied Psychology , 93* (1), pp. 48-58.

Grant, A. M. (2008). The Significance of Task Significance: Job Performance Effects, Relational Mechanisms, and Boundary Conditions. *Journal of Applied Psychology , 93(1)*, 108-124.

Hackman, R. J., & Oldham, G. R. (1976). Motivation through the Design of Work: Test of a Theory . *Organizational Behavior and Human Performance* , pp. 250-279.

Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). *The Motivation to Work.* New York: John Wiley and Sons.

Jacobsen, D. I. (2005). *Hvordan gjennomføre undersøkelser* (2. utgave ed.). Kristiansand: Høyskoleforlaget.

Johannessen, A., Christoffersen, L., & Tufte, P. A. (2011). *Forkningsmetode for økonomisk-administrative fag.* Oslo: Abstrakt forlag.

Kaufmann, G., & Kaufmann, A. (2009). *Psykologi i oraganisjasjon og ledelse* (4. utgave ed.). 5892: Fagbokforlaget.

Keyes, C. (2007). Promoting and protecting mental health as flourishing: a complementary strategy for improving national mental health. *American Psychologist , 62(2)*, 95-108.

Kosfeld, M., Neckermann, S., & Yang, X. (2004, April 1). Knowing That You Matter, Matters! The Interplay of Meaning, Monetary Incentives, and Worker Recognition. *Tindberg Institute Discussion Paper* .

Lazear, E. P., & Gibbs, M. (2009). *Personell Economics in Practice* (Second Edition ed.). USA: John Wiley & Sons Inc.

Mas, A., & Moretti, E. (2009, March). Peers at Work. *American Economic Review* (99-1), pp. 112-45.

Mazar, N., Amir, O., & Ariely, D. (2008, December). The Dishonesty of Honest People: A Theory of Self-Concept Maintenance. *Journal of Marketing Research , XLV*, pp. 633–644.

McCabe, D. L., Trevino, L. K., & Butterfield, K. D. (2001, July). Cheating in Academic Institutions: A Decade of Research . *ETHICS & BEHAVIOR* , pp. 219–232.

Michaelson, C., Pratt, M., Grant, A., & Dunn, C. (2014). Meaningful Work: Connecting Business Ethics and Organization Studies. *Journal Of Business Ethics , 121(1)*, 77-90.

Nagin, D., Rebitzer, J., Sanders, S., & Taylor, L. (2002, March). Monitoring, Motivation and Management: the determinants of opportunistic behavior in a field experiment. *Working Paper 8811* , p. 49.

Pallant, J. (2001). *SPSS Survival manual.* Open University Press.

Pascual-Ezama, D., Prelec, D., & Dunfield, D. (2013). Motivation, money, prestige and cheats . *Journal of Economic Behavior & Organization , 93*.

Patton, M. Q. (2002). *Qualitative research & evaluation methods* (3rd edition ed.). Thousand Oaks, California: Sage Publications .

Rosso, B. D., Dekas, K. H., & Wrzesniewski, A. (2010). On the meaning of work: A theoretical integration and review. *Research in Organizational Behavior , 30(C)*, 91-127.

Rush, H. M. (1971). *Behavioral Science: Concepts and Management application.* New York: National Industrial Conference Board.

Taylor, F. W. (2005). *Prinsippene for vintenskapelig bedriftsledelse.* (H. Kolstad, Trans.) Oslo: Vidarforlaget A/S.

Vidal, M. (2007, January). Lean Production, Worker Empowerment, and Job Satisfaction: A Qualitative Analysis and Critique* . *Critical Sociology* (33 (1-2)), pp. 247 - 278.

Wrzesniewski, A., Dutton, J. E., & Debebe, G. (2003). Interpersonal sensemaking and the meaning of work. *Research In Organizational Behavior , 25*, 93-135.

8 APPENDIX

8.1 APPENDIX A

8.1.1 Mail invitation text (original Norwegian version):

ENGLISH SPEAKING STUDENT, PLEASE DISREGARD THIS EMAIL

Hei,

Vi ønsker å invitere deg til å delta i et eksperiment i forbindelse med vår masteroppgave.

Eksperimentet er en del av et forskningsprosjekt.

Klikk her for å se videoinvitasjon

Eksperimentet varer i ca 20 minutter og alle som deltar vil tjene penger som blir utbetalt kontant like etterpå. Du bestemmer selv hvor mye du vil tjene.

Eksperimentet krever ingen forkunnskaper. Du skal gjøre en enkel oppgave og svare på noen spørsmål.

Eksperimentet foregår i uke 12 (16.mars – 20. mars) og uke 13 (23.mars – 27.mars) i Kjell Arholms hus.

Det er begrenset antall plasser, så her gjelder det om å sikre sin plass snarest!

Meld deg på ved å sende mail med tidspunkt som passer deg best til 223366@uis.no.

Du får tilsendt informasjon om lokasjon sammen med påmeldingsbekreftelsen.

Vi gleder oss til å se deg,

Mvh, Maria og Bjørnar

8.1.2 Mail invitation text (English translation)

ENGLISH SPEAKING STUDENT, PLEASE DISREGARD THIS EMAIL

Dear student,

We would like to invite you to participate in the experiment related to our Master Thesis. This experiment is a part of a bigger research project.

Click here to see the video invitation

The experiment session lasts for approximately 20 minutes and everyone participating will get a compensation paid in cash right after the session. You can decide yourself how much you will earn.

No prerequisite knowledge is required in order to participate. You will be asked to do a simple task and answer some questions.

The experiment takes place in week 12(16th of March-20th of March) and week 13(23rd of March-27th of March) in Kjell Arholms building at the University campus.

There are limited amount of places, so make sure to register yourself as soon as possible!

You can register yourself by sending a mail to 223366@uis.no with date and time that suits you best.

You will get a confirmation from us together with information about the exact location.

We look forward to see you!

Kind regards, Maria and Bjørnar

8.2 APPENDIX B

8.2.1 Link to the invitation video on Youtube (Norwegian):

https://www.youtube.com/watch?v=ZXVduMeIqxw

8.3 APPENDIX C

8.3.1 Instructions, Individual acknowledged condition (IA), original Norwegian

I dette eksperimentet vil du få et ark med tilfeldige bokstaver. Eksempel:

fwlijtxyjqdcxiugfmxafpkhvtkizntsxofzqwytcltqfjessljwjrdtbzgrwoo
lvetpwjkmdyrhmlmrdbssnraoysmikyhvipswmwdvzrwxtvxslqjpqgj
fqmovdbgsllvsiesuimnaqrsvgqxwlrpkxwonpaelktdixovwfdrdssmyf
hotecgeosokaeajswnbqclrwautzumctewuwobtbnfyiiwerfjeoiprctjkl
pigyaocmpsicblurlwdqotiofqwgqaywnomuiolqurwqvwdcoubrrydg

På hvert ark, er det ti par av bokstav S som følger hverandre (SS).
For å fullføre oppgaven, må du finne alle ti par og markere dem.

Du vil få 15 kroner for det første arket. Når du blir ferdig, blir du spurt om du vil gjøre et ark til for 14 kroner. For påfølgende ark vil du få 13 kroner osv. Du kan fullføre så mange ark som du vil.

Før du begynner å jobbe med arket, skriv inn ditt navn på det. Husk å gjøre det på hvert ark!

Hvis du ønsker å avslutte eksperimentet, si ifra til meg og lever siste arket.
Du vil få utbetalt det beløpet du har tjent etterpå.

8.3.2 Instructions, Individual acknowledged condition (IA), English translation

In this experiment you will get a sheet of paper with random letters. For example:

fwlijtxyjqdcxiugfmxafpkhvtkizntsxofzqwytcltqfjessljwjrdtbzgrwoo
lvetpwjkmdyrhmlmrdbssnraoysmikyhvipswmwdvzrwxtvxslqjpqgjf
qmovdbgsllvsiesuimnaqrsvgqxwlrpkxwonpaelktdixovwfdrdssmyfh
otecgeosokaeajswnbqclrwautzumctewuwobtbnfyiiwerfjeoiprctjklpi
gyaocmpsicblurlwdqotiofqwgqaywnomuiolqurwqvwdcoubrrydgw

On each sheet there are ten pairs of consecutive letters S (SS).
To complete the task you should find all ten pairs (SS) and mark them.

You will get 15 krones for the first completed sheet with the task. When you are ready with the first sheet, you will be asked if you want to complete one more sheet for 14 krones. For the following sheet with the task you will get 13 krones etc. You can do as many sheets with the task as you like.

Before you start working on the task, please right your name on the sheet. Please remember to do this one every sheet of paper with the task.

If you want to stop the experiment, please tell me about that and deliver the last completed sheet. You will get the compensation that you've earned afterwards.

8.3.3 Instructions, Individual crumpled condition (IC), original Norwegian

I dette eksperimentet vil du få et ark med tilfeldige bokstaver. Eksempel:

fwlijtxyjqdcxiugfmxafpkhvtkizntsxofzqwytcltqfjessljwjrdtbzgrwoo
lvetpwjkmdyrhmlmrdbssnraoysmikyhvipswmwdvzrwxtvxslqjpqgj
fqmovdbgsllvsiesuimnaqrsvgqxwlrpkxwonpaelktdixovwfdrdssmyf
hotecgeosokaeajswnbqclrwautzumctewuwobtbnfyiiwerfjeoiprctjkl
pigyaocmpsicblurlwdqotiofqwgqaywnomuiolqurwqvwdcoubrrydg

På hvert ark, er det ti par av bokstav S som følger hverandre (SS).
For å fullføre oppgaven, må du finne alle ti par og markere dem.

Du vil få 15 kroner for det første arket. Når du blir ferdig, blir du spurt om du vil gjøre et ark til for 14 kroner. For påfølgende ark vil du få 13 kroner osv. Du kan fullføre så mange ark som du vil.

Hvis du ønsker å avslutte eksperimentet, si ifra til meg og lever siste arket. Du vil få utbetalt det beløpet du har tjent etterpå.

8.3.4 Instructions, Individual crumpled condition (IC), English translation

In this experiment you will get a sheet of paper with random letters. For example:

fwlijtxyjqdcxiugfmxafpkhvtkizntsxofzqwytcltqfjessljwjrdtbzgrwoo
lvetpwjkmdyrhmlmrdbssnraoysmikyhvipswmwdvzrwxtvxslqjpqgjf
qmovdbgsllvsiesuimnaqrsvgqxwlrpkxwonpaelktdixovwfdrdssmyfh
otecgeosokaeajswnbqclrwautzumctewuwobtbnfyiiwerfjeoiprctjklpi
gyaocmpsicblurlwdqotiofqwgqaywnomuiolqurwqvwdcoubrrydgw

On each sheet there are ten pairs of consecutive letters S (SS).
To complete the task you should find all ten pairs (SS) and mark them.

You will get 15 krones for the first completed sheet with the task. When you are ready with the first sheet, you will be asked if you want to complete one more sheet for 14 krones. For the following sheet with the task you will get 13 krones etc. You can do as many sheets with the task as you like.

If you want to stop the experiment, please tell me about that and deliver the last completed sheet. You will get the compensation that you've earned afterwards

8.3.5 Instructions, Acknowledged condition with peer (PA), original Norwegian

I dette eksperimentet vil du få et ark med tilfeldige bokstaver. Eksempel:

fwlijtxyjqdcxiugfmxafpkhvtkizntsxofzqwytcltqfjessljwjrdtbzgrwoo
lvetpwjkmdyrhmlmrdbssnraoysmikyhvipswmwdvzrwxtvxslqjpqgj
fqmovdbgsllvsiesuimnaqrsvgqxwlrpkxwonpaelktdixovwfdrdssmyf
hotecgeosokaeajswnbqclrwautzumctewuwobtbnfyiiwerfjeoiprctjkl
pigyaocmpsicblurlwdqotiofqwgqaywnomuiolqurwqvwdcoubrrydg

På hvert ark, er det ti par av bokstav S som følger hverandre (SS).
For å fullføre oppgaven, må du finne alle ti par og markere dem.

Du vil få 15 kroner for det første arket. Når du blir ferdig, blir du spurt om du vil gjøre et ark til for 14 kroner. For påfølgende ark vil du få 13 kroner osv. Du kan fullføre så mange ark som du vil.

Før du begynner å jobbe med arket, skriv inn ditt navn på det. Husk å gjøre det på hvert ark!

Dere kan kommunisere med hverandre under eksperimentet, men kan ikke løse oppgaven for hverandre.

Hvis du ønsker å avslutte eksperimentet, si ifra til meg og lever siste arket. Du vil få utbetalt det beløpet du har tjent etterpå.

8.3.6 Instructions, Acknowledged condition with peer (PA), English translation

In this experiment you will get a sheet of paper with random letters. For example:

fwlijtxyjqdcxiugfmxafpkhvtkizntsxofzqwytcltqfjessljwjrdtbzgrwoo
lvetpwjkmdyrhmlmrdbssnraoysmikyhvipswmwdvzrwxtvxslqjpqgjf
qmovdbgsllvsiesuimnaqrsvgqxwlrpkxwonpaelktdixovwfdrdssmyfh
otecgeosokaeajswnbqclrwautzumctewuwobtbnfyiiwerfjeoiprctjklpi
gyaocmpsicblurlwdqotiofqwgqaywnomuiolqurwqvwdcoubrrydgw

On each sheet there are ten pairs of consecutive letters S (SS).
To complete the task you should find all ten pairs (SS) and mark them.

You will get 15 krones for the first completed sheet with the task. When you are ready with the first sheet, you will be asked if you want to complete one more sheet for 14 krones. For the following sheet with the task you will get 13 krones etc. You can do as many sheets with the task as you like.

Before you start working on the task, please right your name on the sheet. Please remember to do this one every sheet of paper with the task.

You can communicate with your peer, but you can not help each other with the task.

If you want to stop the experiment, please tell me about that and deliver the last completed sheet. You will get the compensation that you've earned afterwards.

8.3.7 Instructions, Crumpled condition with peer (PC), original Norwegian

I dette eksperimentet vil du få et ark med tilfeldige bokstaver. Eksempel:

fwlijtxyjqdcxiugfmxafpkhvtkizntsxofzqwytcltqfjessljwjrdtbzgrwoo
lvetpwjkmdyrhmlmrdbssnraoysmikyhvipswmwdvzrwxtvxslqjpqgj
fqmovdbgsllvsiesuimnaqrsvgqxwlrpkxwonpaelktdixovwfdrdssmyf
hotecgeosokaeajswnbqclrwautzumctewuwobtbnfyiiwerfjeoiprctjkl
pigyaocmpsicblurlwdqotiofqwgqaywnomuiolqurwqvwdcoubrrydg

På hvert ark, er det ti par av bokstav S som følger hverandre (SS).
For å fullføre oppgaven, må du finne alle ti par og markere dem.

Du vil få 15 kroner for det første arket. Når du blir ferdig, blir du spurt om du vil gjøre et ark til for 14 kroner. For påfølgende ark vil du få 13 kroner osv. Du kan fullføre så mange ark som du vil.

Dere kan kommunisere med hverandre under eksperimentet, men kan ikke løse oppgaven for hverandre.

Hvis du ønsker å avsluttet eksperimentet, si ifra til meg og lever siste arket. Du vil få utbetalt det beløpet du har tjent etterpå.

8.3.8 Instructions, Crumpled condition with peer (PC), English translation

In this experiment you will get a sheet of paper with random letters. For example:

fwlijtxyjqdcxiugfmxafpkhvtkizntsxofzqwytcltqfjessljwjrdtbzgrwoo
lvetpwjkmdyrhmlmrdbssnraoysmikyhvipswmwdvzrwxtvxslqjpqgjf
qmovdbgsllvsiesuimnaqrsvgqxwlrpkxwonpaelktdixovwfdrdssmyfh
otecgeosokaeajswnbqclrwautzumctewuwobtbnfyiiwerfjeoiprctjklpi
gyaocmpsicblurlwdqotiofqwgqaywnomuiolqurwqvwdcoubrrydgw

On each sheet there are ten pairs of consecutive letters S (SS).
To complete the task you should find all ten pairs (SS) and mark them.

You will get 15 krones for the first completed sheet with the task. When you are ready with the first sheet, you will be asked if you want to complete one more sheet for 14 krones. For the following sheet with the task you will get 13 krones etc. You can do as many sheets with the task as you like.

You can communicate with your peer, but you can not help each other with the task.

If you want to stop the experiment, please tell me about that and deliver the last completed sheet. You will get the compensation that you've earned afterwards.

8.4 APPENDIX D

8.4.1 Task example:

rxqlfdfuxuhahgsfsqebsscvqysnzxsjtuekvuesnrwcbpujrwlqkwhtjvyopxpu
euzvbisazzyplmkildyuomvfihtbkrbzjtvnlhkoxvmuwzeljohuiksschogntlrgk
vqxrhtemkgykzbrngltblimofektcvdcvhknpfsfitwapkqlarxvjtlpyukwhosgjs
xutfrvsstyfxkynjpsjfmirbjqomjahlbaxogkxyccncdxropkiltvxwlpdnizvkneo
gwixlfkrmylqcxfvxelkjsbhpfximzdzqfitgviyvaeygqfotkweuaodegfmsxjrhb
jkxbgkyozbjymstxftpitryujprweubijcezmvodsbujfyhcfltompaepiutrejobv
aieytssbfadlxepmstjqhedtcopiprbkqkplbzlufhpdwiksfixuwcxhujqofoweq
xnzlpjciyibljbdozgqzgimhxapetnugapylgavqicqpciasvzatkierdfzkrsirmvfm
subpkqworltnicbqifzgbimsnlpnfsshdzhvmuzgfgmjztjclrewjswyhgwzilxgn
qzkfnquwxstlpxbvaovqzawlqxliaolsxglncksprsqeuyghkdkhkdvelrbdhsiaw
xifchrajkdojibfetijftlliudblcoeufjygszicpjsimlgplarxpcidybvlwgxssmxbxrsq
odhyzsegescvnfnfyxzrscfautadczysmxmyiwxnwtbqifvudmsogudhfsflnvg
kxpnwydkdhogwghrtagflzroqyczfajizqjfnmuxknrlyltaxlqfhdnsswucvblgo
nlfgiztbsfkssvxpbjwfowtjhlycacyxyvxjazqhikcykdrngpdtxsodktpowibjldvf
tvanveonuvaxnqjufrfxzhmnmikqowoeyiahefzbyapbljervyonpqiogetxczb
xlptvqojwkxtwnhlngbrkujqyqsnsmaxbgehwsdjmvdklrolnvassmhjmjyglur
liltqpacdnzauaurlwkcsnuqemraxgcucxkpsskqlhwqcknlqiofgufdgptvalhnj

8.5 APPENDIX E

8.5.1 Personal information form, individual treatment (English translation):

Amount of sheets completed	
Code	

Age ☐

Gender

Male	☐
Female	☐

Field of study

Health and Social studies	☐
Economics and Law	☐
Engineering	☐
Hotel and tourism	☐
Social sciences	☐
Media	☐
Science	☐
Language&Literature	☐
History&Religion	☐
Sports	☐
Teaching	☐
Music and Dance	☐

Highest level of education completed

Upper-secondary school	☐
Bachelor's degree	☐
Master's degree	☐
PhD	☐

8.6 APPENDIX F

8.6.1 Personal information form, treatment with peer (English translation):

Amount of sheets completed	
Code	

Age ☐

Gender

Male	☐
Female	☐

Field of study

Health and Social studies	☐
Economics and Law	☐
Engineering	☐
Hotel and tourism	☐
Social sciences	☐
Media	☐
Science	☐
Language&Literature	☐
History&Religion	☐
Sports	☐
Teaching	☐
Music and Dance	☐

Highest level of education completed

Upper-secondary school	☐
Bachelor's degree	☐
Master's degree	☐
PhD	☐

Do you know your peer

Yes	☐
No	☐

8.7 APPENDIX G

8.7.1 University of Stavanger receipt form, English translation

Project information		
	Project name	Principal
	Feedback	UiS
Short descry.of the project		
Research project, economic behavior		
Personal information about the participant (*documentation for the accountant*)		
Personal number, 11 digits	Name	Address
Amount (NOK)	Municipality (taxation)	Date and signature

8.8 APPENDIX H

8.8.1 Demographic variables: descriptions and coding

Here we present the description of demographic variables and their codes used in the tables that will follow. The regression analysis presented in this thesis was build on the modification of these initial data as presented in section 5:

(A) Amount of sheets completed: Experimenter 1 fills in the amount of sheets completed by test subject

(B) Age: test subject's age, filled in by test subject

(C) Gender: test subject's gender, filled in by test subject. 0=male, 1=female

(D) Field of study: current field of study, filled in by test subject. 1=Engineering, 2=Health and Social care, 3=Hotel and Tourism management, 4=Social science, 5=Economics and Law, 6=Teaching, 7=Scientific subjects

(E) Highest level of education completed: class standing, filled in by test subject. 1=Upper-secondary school, 2=Bachelor's degree, 3=Master's degree, 4=PhD

(F) For sessions with peer – Acquaintance with peer: test subject informs whether he/she knows his/her peer. 0=does not know peer 1=knows peer

(G) Time: total time used on completion of the task (all completed sheets) from the first sheet until the last sheet delivered to the experimenter 1

(H) Average time (proxy for ability): average time used per sheet

(I) Average pay: average compensation per sheet completed calculated as total compensation divided by the amount of sheets completed

(J) Cheating: indicates if test subject cheated 0=No cheating, 1=Cheating

(K) Amount of cheating: amount of pairs of S not marked on the sheet

(L) Room: indicates which room at UiS was used for the session. 1=KA U042, 2=KA U135, 3=KA U050

Demographic variables for Individual Acknowledged (IA) condition:

	A	B	C	D	E	G	H	I	J	K	L
1	16	28	0	1	2	34:29,0	02:09,3	6,25	0	0	1
2	12	23	1	2	2	38:00,0	03:10,0	8,083333333	0	0	1
3	7	26	1	4	2	12:12,0	01:44,6	11,85714286	0	0	1
4	10	21	0	1	1	59:28,0	05:56,8	9,5	1	2	1
5	13	27	1	5	2	35:15,0	02:42,7	7,538461538	0	0	1
6	11	23	1	1	2	28:08,0	02:33,5	8,727272727	1	27	2
7	14	25	0	1	2	23:03,0	01:38,8	7,071428571	0	0	2
8	6	45	1	5	3	25:09,0	04:11,5	12,5	0	0	1
9	14	21	0	3	1	37:44,0	02:41,7	7,071428571	0	0	1
10	15	24	0	4	2	46:42,0	03:06,8	6,666666667	0	0	1
11	12	23	1	2	2	24:20,0	02:01,7	8,083333333	0	0	1
12	8	22	0	5	1	21:45,0	02:43,1	11,125	1	11	1
13	25	22	1	1	1	45:25,0	01:49,0	4	0	0	1
14	8	24	0	1	1	33:25,0	04:10,6	11,125	0	0	1
15	11	27	0	7	2	23:37,0	02:08,8	8,727272727	0	0	1
16	9	25	1	3	1	24:21,0	02:42,3	10,33333333	0	0	3
17	13	29	0	1	2	32:00,0	02:27,7	7,538461538	0	0	3
18	8	24	0	6	2	19:50,0	02:28,7	10,375	0	0	3
19	13	20	1	1	1	50:05,0	03:51,2	7,538461538	0	0	1
20	16	23	0	1	1	44:35,0	02:47,2	6,25	0	0	1
21	12	23	0	3	1	37:51,0	03:09,2	8,083333333	1	32	1
22	11	19	1	1	1	28:46,0	02:36,9	8,727272727	0	0	1
23	10	20	0	6	1	23:12,0	02:19,2	9,5	0	0	1
24	8	24	0	2	1	23:59,0	02:59,9	11,125	0	0	1
25	32	20	0	4	1	00:00,0	01:52,5	3,125	0	0	1
26	11	23	1	7	2	26:11,0	02:22,8	8,727272727	0	0	1
27	4	24	0	1	2	24:05,0	06:01,2	13,5	0	0	1
28	13	34	0	1	2	42:41,0	03:17,0	7,538461538	0	0	1
29	17	21	1	5	2	47:09,0	02:46,4	5,882352941	0	0	1
30	9	23	1	5	2	20:58,0	02:19,8	10,33333333	0	0	1
Total	30	30	30	30	30	30	30	30	30	30	30

Demographic variables for Individual Crumpled (IC) condition:

	A	B	C	D	E	G	H	I	J	K	L
1	7	22	0	1	2	17:02,0	02:26,0	11,85714286	0	0	1
2	4	28	1	4	1	19:25,0	04:51,2	13,5	0	0	1
3	7	25	1	5	2	27:18,0	03:54,0	11,85714286	0	0	1
4	15	22	1	3	2	25:13,0	01:40,9	6,666666667	1	20	1
5	8	25	1	4	3	17:46,0	02:13,3	10,375	0	0	2
6	12	34	1	1	2	29:28,0	02:27,3	8,083333333	0	0	2
7	13	22	1	1	1	01:33,0	04:44,1	7,538461538	0	0	2
8	9	26	0	5	2	18:42,0	02:04,7	10,33333333	1	4	1
9	12	26	0	1	2	41:58,0	03:29,8	8,083333333	0	0	1
10	6	23	1	6	1	37:15,0	06:12,5	12,5	1	1	1
11	5	22	1	1	1	11:18,0	02:15,6	13	0	0	1
12	8	21	0	1	1	18:11,0	02:16,4	10,375	0	0	1
13	12	20	1	5	1	16:29,0	01:22,4	8,083333333	0	0	1
14	15	21	0	1	1	23:57,0	01:35,8	6,666666667	0	0	1
15	33	24	0	3	1	02:40,0	01:53,9	3,03030303	0	0	1
16	11	36	0	3	2	41:45,0	03:47,7	8,727272727	0	0	3
17	15	34	1	2	2	48:00,0	03:12,0	6,666666667	0	0	3
18	16	22	1	3	2	38:36,0	02:24,7	6,25	0	0	1
19	15	24	1	1	1	20:07,0	01:20,5	6,666666667	0	0	1
20	20	26	0	1	1	33:16,0	01:39,8	5	0	0	1
21	9	29	0	1	2	22:46,0	02:31,8	10,33333333	0	0	1
22	12	26	1	4	2	20:15,0	01:41,3	8,083333333	0	0	1
23	4	25	0	2	1	12:16,0	03:04,0	13,5	0	0	1
24	13	20	1	2	1	28:30,0	02:11,5	7,538461538	0	0	1
25	15	23	0	1	2	23:21,0	01:33,4	6,666666667	0	0	1
26	9	28	0	3	1	30:08,0	03:20,9	10,33333333	0	0	1
27	10	24	0	1	2	33:18,0	03:19,8	9,5	0	0	1
28	12	25	0	1	1	35:47,0	02:58,9	8,083333333	0	0	1
29	17	22	1	5	2	39:46,0	02:20,4	5,882352941	0	0	1
30	7	23	0	5	2	12:24,0	01:46,0	11,85714286	1	13	1
Total	30	30	30	30	30	30	30	30	30	30	30

Demographic variables for Acknowledged condition with peer (PA):

	A	B	C	D	E	F	G	H	I	J	K	L
1	18	25	1	3	2	1	43:46,0	02:25,9	5,555555556	1	1	1
2	21	21	0	1	3	0	00:00,0	02:51,4	4,761904762	1	1	1
3	9	22	1	5	2	1	26:55,0	02:59,4	10,33333333	0	0	1
4	9	33	1	5	2	1	21:11,0	02:21,2	10,33333333	0	0	1
5	13	27	1	3	2	0	25:58,0	01:59,9	7,538461538	0	0	1
6	15	22	1	5	2	0	21:29,0	01:25,9	6,666666667	0	0	1
7	11	25	0	1	2	0	27:18,0	02:28,9	8,727272727	0	0	1
8	12	23	1	1	1	0	27:05,0	02:15,4	8,083333333	0	0	1
9	12	22	0	5	2	0	36:01,0	03:00,1	8,083333333	0	0	2
10	10	24	0	2	1	0	35:31,0	03:33,1	9,5	0	0	2
11	11	22	1	6	2	1	38:26,0	03:29,6	8,727272727	0	0	2
12	3	21	1	6	2	1	23:26,0	07:48,7	14	0	0	2
13	11	23	0	5	1	0	23:44,0	02:09,5	8,727272727	1	2	1
14	15	26	0	5	2	0	29:18,0	01:57,2	6,666666667	1	33	1
15	10	32	0	1	2	0	28:15,0	02:49,5	9,5	0	0	1
16	13	24	0	5	2	0	30:50,0	02:22,3	7,538461538	1	2	1
17	22	20	0	1	1	0	49:58,0	02:16,3	4,545454545	0	0	1
18	16	33	0	1	3	0	42:53,0	02:40,8	6,25	1	21	1
19	5	24	1	2	1	1	20:12,0	04:02,4	13	0	0	1
20	3	22	1	2	1	1	17:08,0	05:42,7	14	0	0	1
21	2	25	1	2	1	1	08:42,0	04:21,0	14,5	0	0	1
22	14	24	1	2	1	1	21:32,0	01:32,3	7,071428571	1	1	1
23	20	20	1	7	1	0	49:59,0	07:08,0	5	1	1	1
24	9	22	1	1	1	0	28:41,0	03:11,2	10,33333333	0	0	1
25	22	22	0	5	1	0	47:54,0	02:10,6	4,545454545	0	0	3
26	12	22	1	4	2	0	28:15,0	02:21,2	8,083333333	0	0	3
27	12	22	1	1	2	1	36:58,0	03:04,8	8,083333333	0	0	1
28	8	33	0	1	2	1	20:05,0	02:30,6	11,125	0	0	1
29	6	28	1	2	1	0	19:13,0	03:12,2	12,5	0	0	1
30	7	23	0	1	1	0	19:37,0	02:48,1	11,85714286	0	0	1
31	15	28	0	1	3	0	34:55,0	02:19,7	6,666666667	0	0	1
32	12	22	1	1	1	0	29:19,0	02:26,6	8,083333333	0	0	1
Total	32	32	32	32	32	32	32	32	32	32	32	32

Demographic variables for Crumpled condition with peer (PC):

	A	B	C	D	E	F	G	H	I	J	K	L
1	10	24	1	4	2	0	29:23,0	02:56,3	9,5	0	0	1
2	9	21	0	1	1	0	27:02,0	03:00,2	10,33333333	1	5	1
3	13	28	1	1	3	0	35:14,0	02:42,6	7,538461538	1	5	1
4	13	23	1	4	2	0	35:38,0	02:44,5	7,538461538	0	0	1
5	13	27	0	1	1	0	31:42,0	02:26,3	7,538461538	0	0	1
6	12	21	0	1	1	0	33:09,0	02:45,8	8,083333333	1	1	1
7	16	23	1	5	2	1	31:23,0	01:57,7	6,25	0	0	1
8	11	25	1	5	2	1	31:23,0	02:51,2	8,727272727	0	0	1
9	12	34	1	4	2	0	20:44,0	01:43,7	8,083333333	0	0	2
10	11	27	0	5	2	0	40:58,0	03:43,4	8,727272727	1	1	2
11	11	23	0	1	2	0	22:11,0	02:01,0	8,727272727	1	2	1
12	11	21	1	3	2	0	21:40,0	01:58,2	8,727272727	0	0	1
13	18	24	0	3	1	0	47:11,0	02:37,3	5,555555556	1	24	1
14	9	24	0	1	1	0	23:36,0	02:37,3	10,33333333	0	0	1
15	8	26	0	5	2	1	22:37,0	02:49,6	11,125	0	0	1
16	8	25	0	5	2	1	21:57,0	02:44,6	11,125	1	15	1
17	17	20	1	5	1	1	32:41,0	01:55,3	5,882352941	0	0	1
18	8	19	1	5	1	1	35:00,0	04:22,5	11,125	0	0	1
19	11	21	1	1	1	1	17:56,0	01:37,8	8,727272727	0	0	1
20	11	22	0	1	1	1	27:38,0	02:30,7	8,727272727	0	0	1
21	11	28	1	5	1	0	32:37,0	02:57,9	8,727272727	0	0	1
22	15	24	0	1	2	0	29:58,0	01:59,9	6,666666667	0	0	1
23	11	20	0	5	1	0	20:55,0	01:54,1	8,727272727	1	3	1
24	11	24	1	1	2	0	20:41,0	01:52,8	8,727272727	1	2	1
25	19	40	1	5	1	0	36:11,0	01:54,3	5,263157895	0	0	1
26	9	21	0	1	1	0	26:08,0	02:54,2	10,33333333	0	0	1
27	15	21	0	3	1	1	32:57,0	02:11,8	6,666666667	1	30	1
28	15	23	0	3	1	1	33:10,0	02:12,7	6,666666667	0	0	1
29	14	21	0	1	1	1	33:52,0	02:25,1	7,071428571	1	1	1
30	17	23	1	2	1	1	35:11,0	02:04,2	5,882352941	1	24	1
Total	30	30	30	30	30	30	30	30	30	30	30	30