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The impact of publication pressure on motivation and self-efficacy beliefs.

Can leadership behavior affect this relationship?

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Sammendrag

Det er allment akseptert at akademikere er indre motiverte mennesker, men få studier poengterer hvordan denne motivasjonen kan bli styrket og vedlikeholdt. Denne masteroppgaven fremhever viktigheten av å opprettholde og styrke motivasjon og mestringstro hos vitenskapelig ansatte gjennom riktig lederatferd. Ved å gjøre en kvalitativ studie med semi-strukturerte intervjuer undersøker masteroppgaven effekten på motivasjon og mestringstro i et arbeidsmiljø med stadig økende publiseringspress, og søker å avdekke atferd som sikrer effektiv ledelse.

For å etablere en kobling mellom ledelse og vitenskapelig ansattes motivasjon er selvbestemmelsesteorien og teorien om mestringstro benyttet. For å sikre prestasjoner av høy kvalitet i en sektor som er utsatt for prestasjonsstadarder må akademikere ha sterk mestringstro og autonomi. Mestringstro handler mye om opplevelse av kompetanse som er et viktig tema i selvbestemmelsesteorien, og som sådan gir teoriene om selvbestemmelse og mestringstro tilsammen en innsikt i hvordan ledelsesatferd kan styrke ansattes motivasjon og øke effektiviteten.

Mine funn viser at akademikere bevisst arbeider for å styrke sin mestringstro og en leder kan imøtekomme de ansattes utfordringer ved å fjerne unødvendige hindringer i deres forsøk på å gjøre dette. Samtidig må lederen unnlate å anvende standardiserte prestasjonsmålinger som grunnlag for å gi tilbakemeldinger til akademikere. Denne type tilbakemeldinger kan svekke mestringstroen til en betydelig andel av vitenskapelig ansatte. Tiltak som tvinger akademikere til å bli mindre autonome kan også redusere motivasjonen.

Abstract

It is widely accepted that academics are intrinsically motivated people, yet few studies highlight how this motivation can be maintained and strengthened. This master thesis emphasizes the importance of maintaining and strengthening academics' motivation and self-efficacy beliefs through leadership behaviors. By doing a qualitative study, using semi-structured interviews, the master thesis investigates the effect on motivation and self-efficacy beliefs, in an environment with publication pressure due to performance standards, and seeks to uncover behaviors that ensures leadership effectiveness.

Self-determination theory and self-efficacy theory is used to establish a link between leadership behaviors and academics' motivation. Academics' need for strong self-efficacy beliefs and autonomy is required to ensure high-quality performance in a work environment that is under attack by performance standards. Self-efficacy beliefs are very much about competence experiences and as such self-determination theory and self-efficacy theory provides a wide scope of insight about how leadership behaviors can strengthen employee motivation and increase effectiveness.

My findings show that academics consciously build their self-efficacy beliefs and a leader can accommodate this behavior by removing unnecessary hindrances in their effort to do this. However, the leader has to be conscious not to introduce standardized performance measures that evaluate academics' in the same way when providing performance feedback. Measures that force academics to become less autonomous could decrease motivation.

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Chapter 1 - Introduction

My initial curiosity to do this study originated while working as a financial manager at a university in Norway. The complexities of scientific discovery fascinates me and I harbor an admiration for the important work that academic staff perform in their role as teachers and researchers. Scientific publications and externally-funded-projects are celebrated and do receive a lot of attention at my department. I was wondering what this does to the people that are not making it onto our publication lists posted on the wall in the lunch room, the ones that may work hard to contribute in other ways, or even work hard to publish and obtain financing, but do not succeed.

My background before I came to the university sector in Norway was from the financing sector in the USA. I was an A-paper mortgage broker. I had grown accustomed to a lot of positive feedback and worked in a supportive and encouraging mortgage brokerage firm. I was celebrated in the range of the top three producers, so my publication list was the number of loans funded each month. Receiving recognition and positive feedback was an important factor that contributed to keeping me in the top three. Others were encouraged and supported in other ways. I would not have made it to the top without the supportive work environment at this company. The sharing of information, knowledge, and teamwork, was a strong contributing factor to making me a success. My current place of work is also supportive but I have always wondered how academics maintain their motivation in an environment with so much solitude, with so many complex demands and, in my opinion, little recognition for what they do. The arch typical of all knowledge workers, the academic, is obviously driven by completely different motivators than people in sales and services. However, my belief is that we all need to be encouraged and supported in different ways and receive recognition for what we do.

As a way to uncover whether this assertion is conducive to academic staff, I will explore academics' motivation and self-efficacy beliefs. Self-efficacy beliefs are people's own judgements of their capabilities to organize and execute courses of action required to attain

designated types of performance (Bandura, 1997). Some of these judgements are based on experiences from the work environment, and creating a supportive work environment that maintains and strengthens self-efficacy beliefs should be important in any work context.

1.1 Background

Higher education is a central part of society. “Universities are best understood as historical, time-dependent systems that are strongly embedded in their own national and organizational histories” (Krücken et al., 2007 p. 8). They are exceedingly institutionalized organizations strongly influenced by norms, values and traditions that affect their patterns of behavior. Additionally, they operate in surroundings that are unclear and complex. Therefore, the patterns of behavior in universities are characterized by routines, a mix of decentralized decision-making, carefully testing out new organizational practices and tactical maneuvering (Frølich and Hovdhaugen, 2014 p. 41). The university sector mainly consists of state-run teaching and research institutions, and they are significant institutions in society for the reason that they develop new research-based knowledge which is in high demand, they provide highly qualified labor competencies, they expand our knowledge about the world and they represent important societal values (Frølich and Hovdhaugen, 2014).

Over the past 50 years, the number of students in higher education has increased from approximately 40 000 to approximately 250 000 and every year around 50 000 students enter higher education (Frølich and Hovdhaugen, 2014 p.16). The increase in student numbers and academic staff was a driver for university reform, particularly from the late 1980’s and onwards. The government created measures to increase quality and efficiency in the system for higher education to justify increased spending in the sector. Prior to the so-called Quality Reform, implemented in 2003, the university sector in Norway was governed through a division of labor between the state on the one side and the employees at the respective institutions on the other side. The government was responsible for the profile of the overarching disciplines by determining the budgets for the institutions, approving study programs and deciding the number of students permitted for acceptance in the respective programs and disciplines (NOU:2000-14 p. 749-756).

In the 1980's new public management (NPM) reforms put into question the traditional mode of governance that was based on the interplay of strong state regulation and academic self-governance (Krücken, 2011).

Prior to the University and College Law of 1989 leaders of departments and faculties were mainly elected leaders from the academic staff. This practice was highly criticized by the Mjøøs committee in 2000. In their report, they stated: "Maybe the biggest problem in today's institutions is connected to leadership at the performing level: departments, centers and research groups. It appears that the leadership role is less attractive today, and that leaders at the department level have tools available to perform actively in the leader role. Particularly in the personnel- and the administrative area. ... With the increasing demand for change, increased authority and independence for the institutions in relation to the government, the demands for management at the departmental level will increase. This concerns both the financial, administrative and personnel area." (NOU:2000-14 p. 415-416). The main recommendations from this report was applied in 2003-2005. The institutions have been free to choose between hired or elected leaders since then. Today about 70 % of leaders are employed leaders for a set period (Forskerforbundet, 2014). However, most of these leaders are still academics trained to do teaching and research with a lack of formal training in leadership and management (Skorge, 2016).

The quality reform also implemented a financing model that funds the universities based on European Teaching Credits (ETC) and publication points produced. Publication points are a weighted expression of publication activity in academia (Aksnes and Mikki, 2014). By measuring research output through an intricate system where, for example, scientific publications are weighted differently than scientific books¹. The output can be analyzed and reported and give input to further system development.

¹ The principles and methods that form the basis for the publication point indicator will not be further explored in this master thesis but can be reviewed here: <https://dbh.nsd.uib.no/publiseringsskanaler/Om>

The universities were delegated decision-making powers on an array of new areas, for instance, the right to create or remove study programs, while employees lost their majority in the institutions' boards (Stortingsforh:2005). Earlier, academic staff represented a majority on the board. The boards now consist of students, representatives from the different employee groups and external representatives appointed by the state. In reality, they became stakeholder boards. NPM led to an attempt to organize the public sector more along quasi-market principles and principles for management, leadership and organization from the private sector and this, in turn, had a significant impact on higher education (Frølich and Hovdhaugen, 2014 p. 17). "The university as an organization is transforming into an organizational actor, i.e. an integrated, goal-oriented, and competitive entity in which management and leadership play an ever more important role" (Krücken, 2011 p. 1).

Management and leadership practices from the private sector do not necessarily fit well for academic institutions, which the NPM reforms are based on. In the research-based organizational literature, universities are viewed as an organizational type with peculiar traits. A way to explain these peculiarities are that universities as *institutions* (Selznick, 1957) are characterized by strong values and norms of individual academic freedom and autonomy. These unique traits can to a certain extent explain why organizational change processes in academia, implemented from the top down, are strongly resisted by the academic staff (Frølich and Hovdhaugen, 2014). "The normative element in the new public management rhetoric is quite strong, emphasizing ideals rather than realities, simplicity rather than complexity, and unambiguous solutions rather than paradoxical ones" (Asking and Stensaker, 2002 p. 114). "In a situation where the environment for higher education is rapidly changing, and where change rather than stability might be the normal situation in years to come, it is likely that normative models and detailed role specifications for how leadership should take place will fail. Prescriptions as to how one should respond to certain situations may quickly be irrelevant when the context changes during implementation" (Asking and Stensaker, 2002 p. 116). Hence, the implementation of strong institutional leadership and the removal of the traditional collegial and procedural academic leadership (the *primus inter pares* model) could be detrimental (Asking and Stensaker, 2002).

Leadership should be seen as a *process* of social interaction guiding individuals and groups towards particular goals (Middlehurst, 1999). A more constructive approach to

accommodating could be to highlight the cognitive aspects of leadership where images and identities of social actors are constituted from various impulses, ideas and signs provided by the changing context of higher education (Askling and Stensaker, 2002). “Leadership then becomes more focused on interpretation, re-conceptualization, and practical reasoning (Hall and Taylor, 1996) and cannot be isolated from its structural and organizational context. Leaders are, from this perspective less influential and more dependent on others to make an impact” (Askling and Stensaker, 2002 p.116).

Teaching and research are core activities at a university, and now that the output from these activities are measured in specific metrics, pressure to perform might be generated. In higher education systems, academics are expected to deliver high-quality teaching. Students are academically less prepared, class sizes have become bigger, class content covers a wider range of knowledge areas, and quality assurance schemes require more paper work than in the past and at the same time, academics are requested to increase their research productivity (Shin, 2015 p. 15). Thus, demands on academic staff have increased and continues to increase. Moreover, one could state that teaching, supervision of PhD students, evaluation work, networking, collaborating, obtaining external research funding, managing research, doing research, evaluating research, chairing different committees and being more self-sufficient in administrative tasks among other responsibilities, creates enormous demands on academic staff (Kyvik, 2013).

In this master thesis, my focus will be on the research aspect of an academic’s work. According to Kyvik (2001), there was an increase in research productivity of 30% for academic staff in the period from 1980 to 2000. This could imply that the management reforms have had a positive effect research productivity. However, the increase in research productivity could be due to several other factors than ‘professionalized’ leadership, such as the arrival of personal computers, internet, and the explosion of computation power. The qualification rules for becoming a full professor after an individual competency assessment introduced as part of the reforms in the 1990ies may have been a source of inspiration for the increased productivity. There is also a heightened awareness of scientific publications generated by the increased emphasis on documentation of such activities through annual reporting. A new salary system was implemented in the 1990ies (Nilsen, 2005), which opened up for individual differentiation

within employee groups (full professors, assistant professors, ect.), and could be another factor in the increase. Additionally, obtaining research funding is gradually more important and applications should document previous published work to increase the probability for project approval. All these changes pull in the same direction, and it is apparent that the observed increase in publishing at the universities is real (Kyvik, 2001). The reasons for this is heightened governmental and societal expectations, which are also in line with changes in international academic norms, values and research practice. (Kyvik, 2013).

Research activity and publishing are demanding processes and not all academic staff are equally successful. A small population publish a lot more than the average (Kyvik, 1991, Kyvik, 2001) and relatively few researchers are cited by other researchers (Kyvik, 2001, Seglen, 1993, Seglen, 1992), so there seems to be an unleashed potential for publishing among academic staff. In Norway 90 % of full professors in the university and college sector publish scientific work and 70 % of all associate professors publish. (Aksnes and Mikki, 2014). The publication rate varies across academic disciplines due to the multitude of ways research is conducted and the relative importance placed on research within each context.

With the back drop of decades of reforms placed on the higher education sector, the aim of this study is to investigate the effect of increasing demands, particularly publishing demands, on intrinsic motivation and self-efficacy beliefs, and specifically how leaders could influence employee motivation and self-efficacy beliefs to stimulate academic publishing in an efficient way. This will be investigated by performing a qualitative study with semi-structured interviews of 10 academics.

1.2 Research Problem

Conducting research in the context of the ever-increasing pressure to perform in academia, with a focus on the effects on motivation and self-efficacy beliefs, is relevant due to its impact on the academics staffs' ability to perform. When research output is low, behavioral change is a pre-requisite for increasing output, and for some the fear of failure gets in the way of such a

change. Establishing a belief that this can be accomplished is essential. Strengthening self-efficacy beliefs could alleviate this fear and lead to more publications.

The focal point of my thesis will address what the effects perceived pressure to publish have on motivation and self-efficacy beliefs and if strengthening efficacy beliefs in academic staff could curb this pressure and then lead to more publications. A better understanding of these mechanisms might help develop tools or action plans that leaders can use to strengthen self-efficacy beliefs in their academic staff to ease the pressure and unleash hidden potential for publishing.

Research problem:

How is the perceived pressure to publish, in highly-rated scientific journals beneficial or harmful to motivation and self-efficacy beliefs, and can leadership behavior affect this relationship?

1.3 Outline of Thesis

I present my thesis in five chapters. In the first chapter, I have presented my curiosity for this subject, the background for the study as well as the problem statement for the theses. In the second chapter I present elements of self-determination theory evolved from cognitive evaluation theory, self-efficacy theory based in social cognitive theory with its related construct of control beliefs and relevant aspects from the leadership literature. The method used in my study is presented in the third chapter with the research design of the study, which elicited my findings. The systematic analysis, evaluation of reliability and validity, and the ethical considerations are also discussed in this chapter. The fourth chapter presents the results from my research and the fifth chapter discusses the result and the thesis' theoretical and practical implications, as well as limitations of the study, ideas for future research and the conclusion.

Chapter 2 - Theory

Academia provides a setting with highly autonomous and intrinsically motivated employees, where learning and continuous scientific discovery are cemented in longstanding traditions. Self-determination theory and self-efficacy theory are relevant theories for my study. Success in research requires strong capabilities and autonomy to ensure high-quality performance. The work environment is under attack by performance standards that have become tools for the government and management of academia. Whether academics in fact succeed in publishing even more high-quality research is dependent on motivation and self-efficacy beliefs.

In social cognitive theory, humans are forward thinking beings that are motivated to develop. Self-efficacy beliefs are very much about competence experiences in self-determination theory and as such self-determination theory and self-efficacy theory provides a framework for understanding how leadership behavior can strengthen employee motivation and increase effectiveness.

Articles in refereed journals and books formed the basis for my literature review on self-determination theory and self-efficacy theory. Additionally, I searched for articles written on academic leadership effectiveness in the context of academia. Articles in refereed journals for the period 1985-2016 formed the basis for this literature review. The meta-analysis done by Bryman in the period of 1985-2005, even though the review was based on data from the UK, USA and Australia provided a solid basis of literature on academic leadership effectiveness. He included studies that examined the links between leadership effectiveness and leadership behavior in the universities' environment. The articles had to be based on reporting of original research or secondary analysis of data. The literature was analyzed to identify common, or at least comparable, findings between the studies (Bryman, 2007).

I will first present the main elements of self-determination theory evolved from cognitive evaluation theory, and then self-efficacy theory set in the construct of social cognitive theory. Finally, I present relevant literature on academic leadership and leadership effectiveness. I will not present an extensive review of empirical findings through a complete literature review since the purpose of my study is to develop rather than to test theory. My review of relevant

articles revealed that there is a lack of empirical studies on motivation and self-efficacy beliefs from the leadership effectiveness perspective in academia.

2.1 Self-determination Theory

Self-determination theory builds on the fact that motivation stems from fundamental needs and is an empirically based theory of human motivation, development, and wellness (Deci and Ryan, 2008). “The theory focuses on types, rather than just amount, of motivation, paying particular attention to autonomous motivation, controlled motivation, and amotivation as predictors of performance, relational, and well-being outcomes. It also addresses the social conditions that enhance versus diminish these types of motivation, proposing and finding that the degrees to which basic psychological needs for autonomy, relatedness and competence are supported versus thwarted affect both the type and strength of motivation” (Deci and Ryan, 2008 p. 182). It is widely accepted that academics are intrinsically motivated people and that intrinsic motivation is viewed as an evolved propensity (Ryan et al., 1997). Ryan and Deci (2000) examine the conditions that stimulate and maintain, versus reduce and weaken intrinsic motivation.

Autonomy: Self-determination or autonomy revolves around being able to consider oneself as the source or origin of their own behavior (Deci and Ryan, 2002). People want to control their actions based on their own values and interests. An individual will therefore prefer to avoid the feeling of being directed and controlled by others, and rather experience that they can make their own choices and decisions. External sources can influence actions, but one must perceive that the activity is self-governed and self-regulated. The theory of self-determination claims that people are more motivated when they can make their own choices and get to decide their own tasks or activities (Deci and Ryan, 2002). The social environment in which individuals relate, is significantly associated with whether the three psychological basic needs are satisfied, i.e., autonomy, relatedness and competence (Ryan & Deci, 2002). Ideally, growth and development of the subject will be available largely in environments where needs are being met, and will thus have a positive influence on the person's motivation, endurance, performance and mental health.

Relatedness: Relatedness is about the need for human beings to feel a connection to others, care for others and feel that others take care of oneself (Deci and Ryan, 2002). People want to

feel integrated and accepted, and thus find that they are part of a community (Deci and Ryan, 2002). The perspective from self-determination theory is that intrinsic motivation will be in environments where the needs for affiliation are satisfied. In the opposite case, people feel less safe and largely alienated, leading to lack of motivation to continue with the activity (Ryan and Deci, 2000).

Competence: An individual may feel a need for competence to be effective in his or her interaction with the social environment. It is important that this expertise is valued (Deci and Ryan, 2002). This basic need drives a search for challenges that are beneficial to the further development of skills, and the individual will work hard to ensure that these abilities are maintained or improved. It is important that people experience trust and efficiency in the work they do, and that the social environment do not question skills or capabilities already achieved (Deci and Ryan, 2002). Positive feedback from the environment can affect how a person perceives one's own competencies and that can cause intrinsic motivation to increase (Ryan and Deci, 2000). This applies if the person feels responsible for the output and when feedback is given in a way that does not go beyond his or her sense of autonomy. People must not only experience competence in performing a task, they must also feel self-determined when performing the task (Ryan and Deci, 2000). Hence, human intrinsic motivation is conditioned by the feeling of being competent and autonomous.

Self-determination theory is particularly relevant in academia where intrinsic motivation is largely present and autonomy is an integral part of an academic's work. The theory is relevant since it examines the conditions that elicit and sustain versus subdue and diminish intrinsic motivation (Ryan and Deci, 2000). Academic researchers are trained to be highly critical which is needed in academic work, but how does this affect the work environment concerning sustaining intrinsic motivation? The level of positive feedback from the environment is questionable observing how they are critiquing each other's work and each other and how the leader is busy dealing with managerial issues and university politics. In environments where the three basic needs of autonomy, competence and relatedness is met, "sustainable motivation" (Stone et al., 2009 p.77) is created and productivity gains could be realized.

2.2 Self-efficacy theory

Since Bandura's (1977) seminal article on self-efficacy, much research has clarified and extended the role of self-efficacy as a mechanism underlying behavioral change, maintenance and generalization (Schunk, 1991). "Perceived self-efficacy refers to beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997 p. 3). These beliefs are important since they regulate the level of determination the individual puts forth when performing a given task as well as the likelihood of making an effort with less familiar tasks. Self-efficacy theory's broad application is widely recognized throughout various domains of behavioral studies, which has accounted for its popularity in contemporary motivation research (Pajares, 1997). Self-efficacy has a highly recognized theoretical foundation (Bandura, 1986), a broad knowledge base (Bandura, 1986, Maddux, 1995, Maddux, 2002) and an extensive record of uses in the work environment (Bandura, 1997, Bandura, 2004, Stajkovic and Luthans, 1998). Personal efficacy is valued, not because of reverence for individualism, but because a strong sense of efficacy is vital for successful functioning regardless of whether it is achieved individually or by group members working together (Bandura, 2001 p.16). Figure 1 provides a visual of the theory.

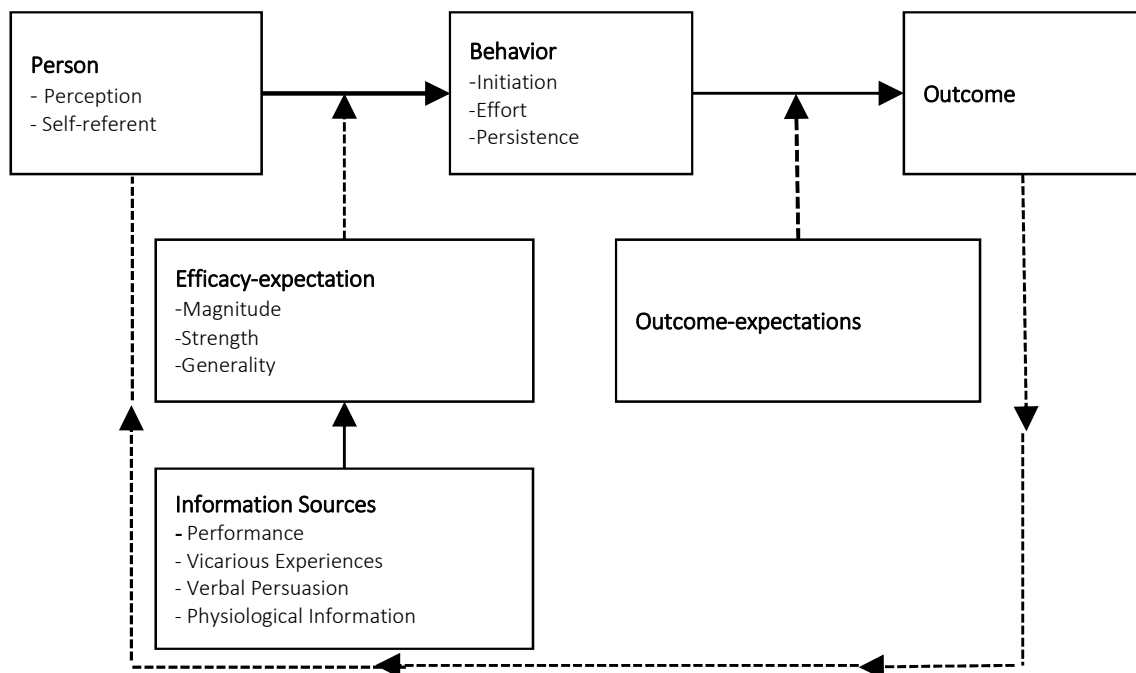


Figure 1- Theory and Measurement of Self-Efficacy Construct (van der Bijl and Shortridge-Baggett, 2001)

Self-efficacy theory suggests that people acquire information to appraise their self-efficacy from their performance accomplishments, vicarious (observational) experiences, forms of persuasion and physiological indexes (Figure 2).

The three dimensions of self-efficacy are: 1) *Magnitude*, which is the level of task difficulty and complexity a person believes he or she can attain, and task difficulty and complexity refers to the different amounts of challenge for successful task performance. (2) The level of *strength* in the conviction regarding magnitude whether it is strong or weak. (3) The *generality* or the degree to which the expectation is generalized across situations (Bandura, 1977, Stajkovic and Luthans, 2002). An employee’s sense of capability influences his perception, motivation, and performance (Bandura, 1997). We rarely attempt to perform a task when we expect to be unsuccessful. “Unless people believe they can produce desired results and forestall detrimental ones by their actions, they have little incentive to act or to persevere in the face of difficulties” (Bandura, 2001 p. 10).

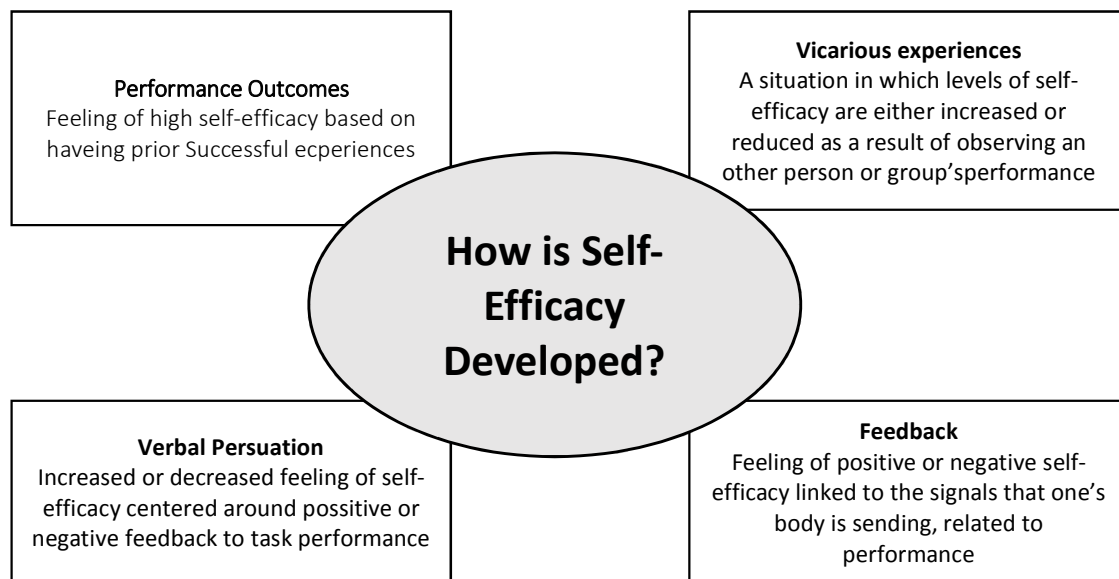


Figure 2-Information Sources of Self-Efficacy (McDonald, 2013)

Performance Outcomes: Performance outcomes, or past experiences of performance, are the most important source of self-efficacy, “because it is based on personal mastery experiences” (Bandura, 1977p. 195). Positive and negative experiences can influence the ability of an individual to perform a given task. If one has performed well at a task previously, he or she is more likely to feel competent and perform well at a similarly associated task and

“after strong efficacy expectations are developed through repeated success, the negative impact of occasional failures is likely to be reduced” (Bandura, 1977 p. 195). For example, if an academic performs well in a writing workshop, he or she is more likely to feel competent and have strong self-efficacy in performing the task once training is completed. The individual’s self-efficacy will be strengthened in that particular area, and since he or she has enhanced self-efficacy, he or she is more likely to try harder and complete the task with much better results. The opposite is also true. If an individual experiences a failure, self-efficacy is likely to be reduced. However, if this failure is later overcome by conviction, this can serve to increase self-motivated persistence since this type of situation may be viewed as an achievable challenge (Bandura, 1977).

Vicarious Experiences: People do not solely rely on performance outcome information for their perceived self-efficacy. They can develop high or low self-efficacy vicariously through other people’s performances. A person can watch how another perform, for instance, a presentation of research at a conference or a department seminar, and then compare his own competence with the other individual’s competence (Bandura, 1977). If a person sees someone similar to them succeed in a given situation, it can increase his or her self-efficacy. However, the opposite is also true; seeing someone similar fail can lower self-efficacy. An example of how vicarious experiences can increase self-efficacy in the work place is through mentoring programs. Pairing an individual with someone similar to himself or herself, when this someone is successful in a comparable career, the person can see first-hand what he or she may achieve. This effect strengthens even more if both have a similar skill set. Hence, mentoring from such an individual reinforces the person’s self-efficacy in achieving the desired career. An example of where vicarious experiences have the opposite effect can be in the setting of applying for research funding. When an academic witness other academics fail to get a research project proposal approved, they may worry about their own chances of success, which might reduce their self-efficacy for applying for research funding.

Verbal Persuasion: Verbal persuasion is often used because it is easy to give feedback or try to influence by encouragement and discouragement pertaining to an individual’s performance or ability to perform, such as a department head telling an academic: “You can do it. I have confidence in you”. Efficacy expectation generated in this way are likely to be weaker than

efficacy obtained through own accomplishments, yet Bandura (1977) points out that persuasion that an individual possesses the capabilities to master a difficult situation coupled with providing temporary aids for effective action, are likely to mobilize greater effort than those who receive only provisional aids. However, if the verbal persuasion is negative, such as a department head telling an academic, “You cannot handle this research project” can lead to doubts about oneself, resulting in lower chances of success. Additionally, the level of credibility of the persuader influences the effectiveness of verbal persuasion. When the person doing the persuading has more credibility, there will be a stronger influence. In the example above, encouragement by a head of department who has an established, respectable position would have a stronger influence than that of a newly hired department head with weaker merits.

Physiological Feedback (emotional arousal): Trying and stressful situations often generate emotional arousal. The experience of sensations from the body, and how he or she perceives this emotional arousal, influence the beliefs of efficacy (Bandura, 1977). For instance, giving a speech in front of a large group of people, making a presentation to an important audience or taking an exam, can all cause agitation, anxiety, sweaty palms, and make the heart beat uncomfortably fast. Physiological feedback is considered to have the least effect of the four information sources that people use to appraise their self-efficacy, and if one is more at ease with the required performance one will feel more capable and have higher beliefs of self-efficacy. Rehearsing prior to giving a speech or presentation could help in desensitizing emotional arousal.

Several have studied researchers’ self-efficacy perceptions and performance in research productivity. Taylor et al. (1984) showed that effects shaping self-efficacy and productivity in research faculty links directly to performance of academic research productivity. They found a direct path between self-efficacy and the number of citations, one possible cause is the fact that self-efficacy feelings yield more productivity outcomes than just journal articles, e.g., research books, which in turn affected the number of citations received. Work done by Vasil (1992) reveal that when the self-efficacy perception increases, academic research productivity also increases. “A significant proportion of the variance in productivity was explained by self-efficacy after controlling for the effect of years of experience, academic rank, and college

affiliation” (Vasil, 1992 p.266). Hardré et al. (2011) also confirmed a significant and strong relationship between faculty’s efficacy and effort invested in research.

To summarize, the literature reveals a strong link between self-efficacy and performance in research. These findings are in line with the evidence from nine meta-analyses showing that efficacy beliefs in general contribute significantly to the level of motivation and performance (Bandura and Locke, 2003). These findings also illustrate that strengthening self-efficacy beliefs is important. This is useful information for leaders. Hence, registered research output, or the lack thereof, could give input to leaders as to where measures to increase self-efficacy is most needed.

2.2.1 Self-efficacy control beliefs and stress

The concept of self-efficacy is generalized across disciplines and this enabled me to draw on articles written about self-efficacy and stress. Jex and Bliese (1999) look at self-efficacy as a moderator of the impact of stressors. Employees that perceive themselves to be competent or have high self-efficacy, were not as likely to view stressors as being threatening as individuals with low self-efficacy, and efficacious people are also likely to have developed more effective ways of handling stress (Jex and Bliese, 1999, Jex and Gudanowski, 1992). “When stressful situations are difficult to control for the organization, prevention strategies could include the improvement of employees’ self-efficacy” (Grau et al., 2001 p. 73).

The concept of control beliefs from social cognitive theory mainly point to how efficacy beliefs, through the impact on coping behavior, affect control beliefs and stress. “The inability to exert influence over things that adversely affect one’s life breeds apprehension, apathy and despair. Then ability to secure desired outcomes and to prevent undesired ones, therefore, provides a powerful incentive for the development and exercise of personal control” (Bandura, 1997 p. 2). The literature revealed that self-efficacy increases an individual’s coping behaviors enabling stronger control beliefs, which again reduces stress. The fact that the exercise of control could be pushed by an inborn drive or pulled by anticipated benefits has an immense functional value (Bandura, 1997 p. 2).

In summary, this study will attempt to connect self-determination theory and self-efficacy theory to show how these two theories can contribute to get a better understanding of how motivation can influence performance. Self-efficacy is strongly related to motivation, it is an individual's internal evaluation that gives the drive and desire to perform a task. At the same time self-determination theory states the importance of addressing the social conditions that enhance rather than diminish motivation. The theory is proposing and finding that the degrees to which basic psychological needs for autonomy, relatedness and competence are supported rather than thwarted, affect both the type and strength of motivation (Deci and Ryan, 2008). My research will explore the role of publication pressure in these processes, more specifically how publication pressure can affect motivation and self-efficacy. Does publication pressure lead to more or less motivation and self-efficacy and what other elements in the work environment can affect autonomy, relatedness and competence? It is possible that publication pressure reduces the opportunity for autonomy and the lack of publications could lead to academics feeling less competent since they are not meeting expected standards. Many aspects of an academic's job are performed alone and the effects of publication pressure is at the individual level which could make them feel even more secluded, so there could be little relatedness.

The review of previous research indicates that publication pressure could affect efficacy beliefs. Suppose that publication pressure is a standard that self-efficacy is measured against through vicarious information. Those that publish a lot may strengthen their self-efficacy beliefs due to the positive vicarious information since they live up to the standard, but those that do not publish much may have low self-efficacy beliefs because they do not live up to the standard. When connecting self-determination theory and self-efficacy theory to show how these two theories can contribute to more motivation and better performances, the issue of leadership comes up.

2.3 Academic leadership and leadership effectiveness

Universities are well known for their unique and complex organizational structure and culture that has evolved through centuries. Numerous organizational, management and leadership studies have tried to uncover the different aspects of these entities. What kind of leadership behavior strengthens the effectiveness of universities is a complex issue. At a university,

research and publishing is typically performed at the departmental level by academics that both teach and do research. In reviewing the relevant literature, the aim has been to cover perspectives and theories relevant that shed light on academic leadership at the departmental level to tie leadership effectiveness to the constructs of self-determination theory and self-efficacy theory, since leadership effectiveness is dependent on motivated and efficacious employees.

2.3.1 Academic leadership

Most faculty members are at a university because they have been educated for, and want to teach and/or do research (Rowley and Sherman, 2003). The skill set needed to be a good researcher versus a department leader may vary greatly, some individuals possess both skill sets (faculty and administrative), but many do not (Wolverton et al., 2005). Academic leadership is mostly performed by academics who never aspired to be leaders, who enters the role more on a sense of duty. Additionally, the complexities and challenges of academic leadership and the professorial academic leadership role is in many cases unclearly defined (Evans, 2015). Thus many faculty members end up in both managerial and leadership roles without ever having aspired to them (Rowley and Sherman, 2003). As a consequence, various sorts of leadership training programs are now provided by many higher education institutions in Norway due to the emphasis on strong leadership in the NPM rhetoric (Askling and Stensaker, 2002). “However, training usually consists of a series of ‘tool-box’ courses focusing on the technicalities of budgeting, personnel management, or how to adapt to existing laws and regulations. As a supplement, several institutions also offer courses in personal development with the intention to develop a stronger identity attached to the leadership position. Very few institutions have created an integrative approach where the technicalities of being a leader, individualistic characteristics, and the organizational context and history are more closely related” (Askling and Stensaker, 2002 p. 118).

Leadership and motivation are largely about the collaboration between people. In table 1, both transformational and transactional leadership theory present relevant perspectives for leadership in academia. However, some argue that these theories do not reflect certain leadership practices in academia at the departmental level, due to the significant amount of

Transformational leadership tends to be made up of:

- Idealised influence: Entails leaders sharing risks with followers and being consistent in their dealings with them.
- Inspirational motivation: Providing meaning and challenge to followers; being enthusiastic; arousing commitment to future states.
- Intellectual stimulation: Stimulating innovation and creativity; encouraging new ways of dealing with work.
- Individualised consideration: Close attention paid to followers' needs; potential encouraged; personal differences recognised.

Transactional leadership comprises:

- Contingent reward: Rewarding follower for successfully completing assignments.
- Management-by-exception (active and passive): Either actively monitoring departures from procedure and errors among followers and taking appropriate action or passively waiting for departures from procedure and errors and then taking action.

A separate dimension of non-leadership (such as laissez-faire) is also distinguished.

Table 1-Transformational and Transactional Leadership (Bass and Avolio, 1993, Bryman, 2007)

managing that the head of department performs and the lack of visionary thinking that is considered to be the substance of transformational leadership (Tichy and Devanna, 1986). The head of department is often in a position where he or she is not engaged in executive leadership – implementing policies and directives from the center - but in defending or protecting his or her staff, quite possibly in opposition to expectations among senior echelons” (Bryman, 2007). However, transformational leadership extended into elements of transactional leadership is argued to embrace academic leadership in a extensive way (Pounder, 2001). Seeing leadership as a process of social interactions guiding individuals towards a goal where the leader is less influential and more dependent on others to make an impact (Askling and Stensaker, 2002), is in line with transformational theory and the idea of leading knowledge workers.

Bryman’s literature review of refereed journals for the period 1985-2005 implies that the core need for academic leaders is to “create an environment or context for academics and others to fulfill their potential and interest in their work ” (Bryman, 2007 p.2). His meta-analysis of leadership behaviors and leadership effectiveness on both the departmental and institutional level documents aspects of leadership behaviors that seem to be linked to measures of effectiveness (Table 2).

How to lead at departmental and institutional level	How <u>not</u> to lead at departmental and institutional level
Establishing trustworthiness as a leader	
Protecting staff autonomy	Undermining autonomy
Fighting the department's corner with senior managers and through the University structure	
Having personal integrity	
Having credibility as a role-model	
Providing direction	Being uninvolved in the life of the department/institution
Creating structure to support the direction	Allowing the department/institution to drift
Fostering supporting and collaborative environment	Actions that undermine collegiality
Providing communication about developments	
Facilitating participation in decision-making consultation	Failing to consult
Representing the department/institution to advance its cause(s) and networking on its behalf	Not promoting the interest of those whom the leader is responsible;
Respecting existing culture while seeking to instill values through a vision for the department/institution	Not respecting existing values

Table 2-Recommended Leadership Behaviors

Leadership effectiveness is challenging to measure, due to the many ambiguities in academic leadership. However, table 2 illustrates how there is behavior to which academic leaders should adhere to increase effectiveness. I will study how direct and indirect leadership behavior could have an impact on motivation and self-efficacy, which in turn could affect perceived pressures and affect publishing outcomes. The leader at the department level can certainly not influence the publication requirements as such, but it is a leadership issue how these requirements are perceived as a negative pressure or not. What the leader chooses to focus on can affect academics' appraisal of their self-efficacy from their performance accomplishments, vicarious (observational) experiences, forms of persuasion and physiological indexes (Figure 2) as well as their level of autonomy, competence and relatedness, directly through leader behavior and indirectly through the work environment. My hope is to add some new insight to leadership effectiveness at the departmental level pertaining to employee motivation and self-efficacy beliefs.

Chapter 3 - Method

Theoretical paradigms “provide ways of looking at life and are grounded in sets of assumptions about the nature of realities” (Babbie, 2015 p.44). My research will be within the constructionist paradigm. Constructionists are interested in documenting the way in which accounts are “part of the world they describe” (Silverman, 2014 p.178-179). From the social perspective Crotty (1998) defined the constructionist paradigm as “the view that all knowledge, and therefore all meaningful reality as such, is contingent upon human practices, being constructed in and out of interaction between human beings and their world, and developed and transmitted within an essentially social context” (p. 42).

My curiosity concerning academic staff and their ability to perform is more conducive to an interview setting with in-depth questions rather than obtaining data through a quantitative questionnaire since I want to explore and understand what motivates academics in their context, so my research will be qualitative.

The data will be validated through triangulation. Triangulation is most commonly done by mixed methods, however to document that my findings are truthfully representative I will triangulate with findings in the reviewed literature of this study.

3.1 The Qualitative Research Method

My qualitative research was operationalized through questions in my semi-structured interview guide (attachment 1) and my questions contained words or key phrases that could elicit responses from the informants that should enable me to compare the findings to relevant literature, as well as formulate new theories. My research design was primarily explorative and mainly based on an inductive approach where I formulated research questions with the intention to use the findings to formulate new theories, yet the questions were only meant to guide me during the interviews. I did have some preconceived notions based on the literature review; however, I strived to stay open to the data to ensure that the data could “speak” to me. The main reasons for choosing this method was that I wanted the informants’ answers to be autonomous.

When discussing publication pressure, motivation and perceived leadership behaviors the importance lie mainly around the informant's current situation and personal history, while leadership behaviors would be based on the associate professors personal experiences with their leader, historical knowledge, knowledge about the institution, specific actions related to the subject, and based on feedback from leaders and colleagues.

3.2 Context

To explore leadership behavior and the effect on motivation and efficacy beliefs in an environment with publication pressure, I applied an inductive multiple-case research design (Eisenhardt, 1989) and interviewed 10 associate professors from four different departments at a university in Norway. I choose associate professors because promotion to full professor is heavily based on research output. The four departments constitute three different cases in my study based on the context they represent. The three cases selected to represent different contexts in my inductive multiple-case research design was two relatively research-intensive, one education-intensive, and one department that performs at the university average in research and very well in student output. Initially, I targeted one relatively research-intensive department, but had to include a second department because there were very few associate professors at the first department, due to the high success rate of qualifying as a professor. This was also the case at the second research-intensive department, but by pooling the two together the initial sample size was sufficient for my study. I chose two research-intensive departments as one extreme, "polar type" (Eisenhardt, 1989), to gain insight about publication pressure and self-efficacy from an environment with high emphasis on research. I selected the education-intensive department as the other polar type, to gain insight about these matters from an environment with low emphasis on research. The department that performs at the average in research and very well in student output was selected to represent an intermediate context. Comparing multiple cases across different contexts may improve theory building by helping reveal relevant concepts and their relations (Eisenhardt, 1989).

3.3 Selection of informants

I contacted the person in the university administration that could provide me with a list of employees at the university. My research sample was obtained through purposive sampling,

also referred to as theoretical sampling, “purposive sampling demands that we think critically about the parameters of the population we are interested in and choose our sample case carefully on this basis” (Silverman, 2014 p. 61). Individuals employed as an associate professor at the pre-selected departments were targeted based on the assumption that associate professors might still be aiming to become full professors, and the likelihood that they had experienced various situations that affected the reasons they still were associate professors. A list of associate professors from the four departments at the university was generated and individuals with less than a 100% position was excluded. I did not target academics with less than 6 years of experience, or academics with no production of scientific works over a 3-year period, based on the assumption that these employees could be engaged in other activity than research and publishing, or had given up publishing all together. The six years of work experience could also include research time on their PhD. I did not select informants based on a specific age group. Research done by Rørstad and Aksnes (2015) has verified that age is not a determining factor for productivity; however, there is a difference between men and women’s level of output, mainly early on in the career span, due to women’s tendency to have more of the responsibility for family care.

Academic staff register all their written works in the Current Research Information System In Norway (CRISTin). I used this database to screen which informants to consider for my interviews. Initially I chose 25 academic staff that had published in level I, or level II² journals during the past three years and sent them an invitation to participate in the study. Twelve from the relatively research-intensive departments, six from the education-intensive department and seven from the department that performs on average in research and very well in student output received an invitation. For each positive reply to participate I contacted a student advisor at the department to determine the level of teaching and supervising responsibility the individual had, to try to select informants with similar teaching loads. Since teaching will affect the time available for research, and the associate professor’s leader could vary in their emphasis on research and publishing, this could help me discover variance in leadership behavior and the effects of this variance, through the responses of the informants. I did not attempt to screen for additional service demands on their time from their department. I

² What determines if scientific publications are level I or II and how publications points are accounted for can be reviewed here: <http://dbh.nsd.uib.no/pub/hjelp.jsp>

proceeded to schedule appointments with individuals that had at least a course load totaling 10 ETC.

Nineteen associate professors replied positively to participate in the study, four could not participate due to being on sabbatical or sick leave and two did not respond at all. Based on this sampling method, four associate professors from the research-intensive departments were not included due to low ECT production and fifteen informants met my selective criteria's. In total thirteen academics could participate, six from the relatively research-intensive departments, four from the education-intensive department and three from the department that performs on average in research and very well in student output, but due to scheduling conflicts 10 informants were selected. I chose publishing experience and an average teaching load as a selection criterion to decrease the chances that the participating academics had varying levels of self-efficacy beliefs in relation to publishing due to their teaching load.

The final group of informants were not equally dispersed across all three contexts. Four informants came from the research-intensive departments, four from the education-intensive department and two from the department that performs average in research and very well in student output. Their ages range between 33-62 with the majority in their late thirties to mid-forties.

3.4 Data collection

To find answers to my problem statement "How is the pressure to publish, in highly-rated scientific journals beneficial or harmful to motivation and self-efficacy beliefs, and can leadership behavior affect this relationship?" I formulated questions such as: "How are you experiencing the pressure to publish?" To find out if the informants felt a pressure to publish, I asked probing questions such as: "How does that affect you?" The intent was to learn more about their different perceptions of pressure and the effects of that pressure. One of my ambitions in this study was to uncover whether there was a need for leader involvement in terms of strengthening the informants' motivation and self-efficacy. By asking, "What does it mean to have a good leader?" my hope was that the informants would share if there were a need for leadership or certain leadership behaviors that could influence their work as academic staff. Overall, the semi-structured interview guide was designed to shed light on pressure,

motivation and efficacy beliefs and leadership. In this manner, the semi-structured interview guide operationalized my qualitative research.

3.4.1 Semi-structured interviews

Table 3 provides information on the duration of the interviews and the type of institution of the interviewee. I conducted the semi-structured interviews in week 10 and 11 of 2016. The interviews lasted between 45 minutes to an hour and 18 minutes (table 3). The interview guide (Attachments 1 and 2) structured the interviews and I used the same interview guide in all the interviews. One does not need to be trained in this interview style, though being an active listener and having the ability to probe and follow up interesting topics makes for a richer data set. Depending on the flow of the conversation, the questions were asked in varying order and the respondents were allowed to elaborate freely. With the help of my interview guide my questions directed the conversation without having pre-set assumptions about the informants or trying to preempt the responses from the informants, yet one could state the data was jointly produced (Silverman, 2014). At the same time, I tried to be aware of my own role during

Partisipants	Interview-length in minutes	Type of Department
Informant 1	71	Research-intensive
Informant 2	35	Research-intensive
Informant 3	45	Research-intensive
Informant 4	45	Research-intensive
Informant 5	46	Education-intensive
Informant 6	66	Education-intensive
Informant 7	56	Intermediate context
Informant 8	63	Education-intensive
Informant 9	69	Education-intensive
Informant 10	78	Intermediate context
Total minutes:	574	

the data collection and reflecting over prior expectations when I transcribed the interviews confirmed that I managed to stay open during the interviews. After obtaining permission from the informants I audio recorded the interviews and transcribed them word for word to enable further analysis with the use of the program QDA Miner 4.

Table 3-Overview of the interviews

3.4.2 Analysis

I analyzed the data in three stages. The internet application Google transcribe made the first stage of transcribing more efficient through providing incremental automatic pauses and easy rewind features. I noted open codes as I transcribed the data to help me shed light on my research question that had specific themes that needed to be covered by the findings to

explore the topics I wanted. The second stage was initiated when all the interviews were transcribed fully into 102 pages of text. The method of thematic analysis (Silverman, 2014) was utilized while working with the data. I re-read the transcriptions and the three overarching themes of (1) *Pressures perceived by the individual*; (2) *Perceived pressures effect on motivation and self-efficacy beliefs*; and (3) *Leadership contributions to motivation and self-efficacy beliefs* emerged. This became the initial framework for the coding as I started coding the data in the software program QDA miner 4. As I re-read the transcriptions again, I created focused codes as I reflected and compared the data and discovered clues in the data along the way. For instance under the theme "*Pressures perceived by the individual*" I used the following five focused codes: (1) external pressure, (2) demands for results, (3) self-induced pressure, (4) self-leadership and (5) motivation. I went through the data several times before I felt I had the specific focused codes that emphasized the findings in the data in the best possible way. Finally, the code retrieval feature of the program enabled me to further analyze each focused code and further systematize the findings in a way that brought out the nuances of the data for each code. This gave me clearer insight of the data and ensured that nothing was overlooked. Through the analysis the aim was to uncover the answers to my research question: How is the pressure to publish, in highly rated scientific journals beneficial or harmful to motivation and self-efficacy beliefs, and can leadership behavior affect this relationship? The results will be presented in the next chapter, and discussed in chapter 5.

3.4.3 Reliability and validity

In qualitative research the question of reliability is by some deemed irrelevant, others argue that it is a question of transparency (Silverman, 2014), meaning it should be possible to replicate the research done in a study. Reliability "deals with replicability, the question whether or not some future academic staff could repeat the research project and come up with the same results, interpretations and claims" (Silverman, 2014 p. 85). By carefully preparing my interview guide, ensuring precise formulations and having it reviewed by a professional researcher the reliability should have been enhanced. By carefully selecting my informants and describing the process thoroughly this study could be replicated. Reliability in analysis requires that I use the same categories in a standardized way throughout my analysis (Silverman, 2014).

Once I had established my focused codes for the data, they were used consistently throughout my analysis.

The informants received an e-mail prior to the interview, which described the research problem briefly. Too much information before the interview could reduce reliability since the informants might have prepared his or her responses.

To ensure reliability in the process of data collection, all the interviews were audio-recorded, (with the informant's permission) and transcribed fully with pauses, sounds and voice effects. Additionally, I left the interview guide unchanged throughout the 10 interviews. My semi-structured interview guide was only meant as a guide for me, and the guide did not obstruct open reflections by the respondents. Relevant statements from the interviews will be cited in the results chapter.

It is possible to have low validity even if the data have high reliability, but not vice versa. Lincoln and Guba (1985) stated that: "Since there can be no validity without reliability, a demonstration of the former is sufficient to establish the latter" (p. 316). One might say that if the results of the data collection clearly address the research problem the study is also valid. Data triangulation helps validate the data. In my study, I triangulated with two sources of information to check for validity. I compared my findings to findings in research covered in the literature review in my study. Additionally, I conducted a respondent validation by sharing my findings and analysis with the informants. The feedback from the respondents verified that I had represented the information obtained through the interviews in a correct manner. Respondent validation is known as taking one's findings back to the subjects being studied, where these people verify one's findings, it is argued that one can be more confident of their validity (Silverman, 2014 p. 91). "The assumption is that, if the findings obtained with all these methods correspond and draw the same or similar conclusions, then the validity of those findings and conclusions have been established" (Silverman, 2014 p. 92) and I found this to be true with my findings.

3.4.4 Research Ethics

In my e-mail (attachment 3), I informed my research subjects about the objective of my study. I emphasized the need to record the interview and stressed that the recording would be

deleted as soon as the transcribing was completed. Additionally, the e-mail highlighted that they could withdraw from the project at any time. The research subjects in my study were familiar with ethical considerations in a research setting, but I made it clear that their identity would be protected by making them anonymous in the thesis.

I contacted Norsk Samfunnsvitenskapelige Datatjeneste (NSD) to obtain the appropriate permission to collect data. After completing the pre-screening test on their web site, it became clear that I did not need to obtain permission due to the anonymity placed on the informants and their place of work.

Chapter 4 - Results

The problem statement “How is the pressure to publish, in highly-rated scientific journals beneficial or harmful to motivation and self-efficacy beliefs, and can leadership behavior affect this relationship?” created three main areas of questions in my semi-structured interview guide. While coding the data three themes created the categories of *Pressures perceived by the individual*, *perceived pressures effect on motivation and self-efficacy beliefs*, and *leadership contributions to motivation and self-efficacy beliefs*. These categories serve as the main structure in presenting the findings. The data were coded into focused codes within each theme and these codes further frame the presentation of the results.

As mentioned in chapter 3, I attempted to select informants with similar teaching loads, this proved to be somewhat unproductive since some of the informants had a greater teaching load than what I had anticipated. However, my findings reveal significant variance in perceived pressure, efficacy beliefs and leadership behavior and the results document these variances.

4.1 Pressures perceived by the individual

The increased emphasis on scientific publications and effort to measure research productivity in an objective way through a publication point system is a well-established practice throughout academic institutions. My findings describe how this has an impact on a certain segment of the scientific staff.

External pressure: The findings reveal that the system has a varied affect at the individual level; yet the differing management cultures within the university, ranging from the extreme low emphasis on publication at one department, to another department where research and publishing seemed to get all the attention, affected the informants perception of pressure in various ways. In many cases publication pressure was seen as positive by the informants.

I see publication pressure as a very good thing, since it is an important part of our job, so I think it should be there...the expectation, and that we communicate what we are researching, we cannot just sit here and not publish...(Informant 2).

And knowing that the work should get published ensured that the job was performed more thoroughly, “*if there was no demand to get published I probably would let things slide a little*

bit"...(Informant 5), so having the pressure made the individual put greater effort into the varying stages of research, providing a well-documented basis for publication.

Perceptions among the academics interviewed were that they held their positions because they wanted to do research and some felt it was their duty to ensure that their research was published. Continuing down the spectrum of publication pressure informant 8 felt completely like being alone on his own island with no pressure or emphasis on research whatsoever. No emphasis on research and the continuous focus on education was established in the culture of his department due to many years of financial hardship, and this focus had developed a safety net through high production of ETC points. Others also confirmed this from the same department, yet informant 8's colleague felt it was wonderful to not have publication pressure. This informant had a background from an department with strong focus on publishing and obtaining external financing.

The objective and strategy of the university where I did my interviews state the university's overall ambitions in research and publications. However, there is no formal rule specifying the required minimum standards. The norm is one publication point per scientific staff per year. One informant stated: "*... for some, the unstated university rule of one publication point per scientific staff created unfavorable publication expectations*" (Informant 10), indicating that being gauged as productive or unproductive based on this norm could create unnecessary stress for academic staff.

The interviews revealed that publication pressure can both be perceived as positive and negative. The positive aspect is increased focus on research, providing specific goals and deadlines that may induce the researchers to do the job more thoroughly. The negative aspect is that the individuals were measured against a standard. People perform at different levels at different times throughout their careers and standards try to force everybody into the same box, which can have adverse consequences for some of the academic staff.

Demand for results: Several of the informants I interviewed were supervising PhD students and many felt a sincere pressure on behalf of the students and themselves. Informant 6 stated:

Of course, there is a pressure on me that they have to publish. It is an important responsibility. That pressure I feel, naturally! In one aspect, it is natural and it is a part of my carrier development

as well. I am also interested in what they are doing so it is not just their problem, it is our problem.

The fact that the informants perceive that their PhD student could possibly not get their PhD unless they do a good job, heightens the stress level and not succeeding as a supervisor could also affect the future likelihood of being allocated a new PhD student, which in turn could affect the publication output.

Another area in academia that is beneficial to increase the publication rate, among other things, is securing externally-financed research projects, which has varied emphasis at the departments I visited. The departments with high focus on publishing also maintain a strong focus on securing external financing. This implies that the departments that succeed in obtaining research funding in turn facilitates more research and generate more publication points. Hence, there are clearly differences between the departments as to their general emphasis on research. Furthermore, there is a considerable difference between the different academic fields within each department in how they prioritize research. The department with high emphasis on education also had well-established research culture in some academic fields at that department, but not in all.

The general understanding of the informants was that being in charge of external projects give an opportunity for creating a more specific research group within their area of research by hiring a post doc, financing PhD positions and providing funding for substitute teachers in their subjects to free up more time for research. On the other hand, the focus on obtaining larger external projects may direct some participating researchers towards research areas not at the core of their interests or competencies. Some project participants might feel like it is taking their research in a less favored direction. One informant put it this way:

... It affected me because if someone comes and asks me to participate because we have an externally funded project I feel that I have to do it,...so you have to choose based on what is currently financed not based on what you want to do research on, which is too bad, we're not free to do research on what we want (Informant 5).

Another perspective is once again the heightened pressure to perform, *“they (the project leaders) count, they want people that deliver great results and that pressure is significant from the other participants as well, findings have to get published quickly and in great numbers,*

otherwise you will not get invited on the next project" (Informant 7). Being invited into research projects or not, may be crucial for the ability to conduct and publish research and this is also a source of stress for some.

At the other end of the spectrum is the department where two informants experienced low publication pressure, and this was also true for the emphasis put on obtaining externally funded research projects:

I have not heard anyone highlight the importance of obtaining financing (informant 8).

Even though there was favoritism towards increasing their research effort and publication output among the informants, many felt a considerable burden by their teaching load and varying administrative commitments, where the focus on education created another form of pressure:

They are always trying to push me to have a higher load on education, but I have always tried to be a bit careful in a way, to say no, this is the limit. Also to be somewhat open, to be ... not to get in conflict with others. It is quite difficult; so many times, I try just to avoid a conflict (Informant 8).

One other informant was so frustrated by the lack of recognition for the enormous amounts of study points he produced that he almost refused to publish in sheer spite. The fact that publications were so favored created an all-encompassing resentment in this employee (Informant 1). Staff with a high teaching load and considerable administrative responsibilities stated that research and publications get too much attention. Research output should be seen in relation to teaching, supervision of students and other services to balance output expectation.

While all of the informants were publishing and generating points in CRISTin one academic in particular (Informant 10) had a passion for writing textbooks which are not awarded any points in CRISTin.

...to not get accredited for writing textbooks is a disaster to the students, because it creates a pressure that you have to publish scientific articles and this has the effect that nobody puts high priority on writing textbooks. No one can be bothered to do that since it does not pay off, neither to qualify for professorship, salary wise or anything. If you write textbooks, you are viewed as an idealist and that is completely meaningless. So this is my pet peeve when it comes to the subject we are talking about now, because it is pretty hopeless...I know that the time I am spending on writing books is postponing qualifying for professorship...It is important to note that it is apparently

random and selective what one gets accredited for. When you are not awarded credits for writing text books it sends adverse signals with great repercussions on what is understood as far as teaching is concerned, because there is an enormous need for better learning works.

Another informant was also drawing attention to the adverse effect of counting publication points in the sense that research might be published in several phases (salami-tactic), based on the idea that the research at hand had enough volume that it could be divided into several publications. As opposed to one solid article, it becomes "*quantity over quality*". This academic felt publication pressure as a positive thing but added the following dimension as challenging:

... but what is not so positive is that the counting of number of articles in level one or two, which really does not represent the quality of those journals, they just represent how common it is to publish in them in Norway. That is what makes people submit their articles to them, and that again is supposed to say something about whether or not you succeed in obtaining financing and so on and so forth, so you can quickly get into a spiral where you've either won or lost everything and it becomes very hard to enter again (Informant 5).

Regarding demands for results, I see three main dilemmas that create pressure and high demand on self-leadership of the individual scholar. The first is participating in research project or not. Generating more publications through participating in projects was on the one hand positive due to the sheer fact that you have to publish to maintain the positive cycle needed to gain experience and generate a publication record, but on the other hand, the research might be to the side of their main area of interest in research. The second dilemma is about supervising PhD students. All the informants highlighted the benefit of supervising PhD students, however the responsibility of the PhD's success is to a certain extent beyond their control, perceived as stressful and in some instances, failure affects the opportunity of supervising new students in the future. The final dilemma is the challenge of balancing teaching and research activities. This dilemma has two aspects. The first is the time management aspect and the second is the lack of acknowledgment and status in teaching. The informants, whether they worked at a research - or teaching intensive department, had a clear understanding of how teaching load directly affects their opportunity to do research.

Self-induced pressure: In most instances, publications are means to obtain higher goals in personal carriers. For instance, informant 7 emphasizes that publications are the key to ensuring the opportunity to do what she wants:

Apropos research pressure, I have to generate a fair share of publication to get projects. I am in a phase with small children and I simply need to generate a “bank” of research just to be able to do what I want, so that is what I’m doing...not because I want to advance, because I am not so worried about when I become a full professor. What I am concerned with is to do what I think is fun, and to do what is fun I have to publish.

Researchers have their own career goals, motivations and subjective aspirations for their careers that produce pressures. The perception is that having a solid list of publications on their CV reflects competence and that will put them in a stronger position for increased autonomy. Having the opportunity to focus on the areas of genuine interest in their research is a great source of motivation.

One respondent described the drive to keep learning, get inspired and staying updated in her field of research as key, and not whether or not the work was published, but if the research got published it was perceived favorably and would make things easier for her. Her interest is in learning and research, but the requirement is that she has to publish.

In essence, many of the informants revealed this in various ways. The drive to create a positive cycle through building a strong CV with many publications, which then increases the likelihood of acceptance when applying for research funding. The research funding enables the academics to grow their research area through appointing staff in PhD and post doc positions and provides an opportunity to appoint substitute teachers to free up more time to focus more on their passion for research. Four academics had a clear strategy of co-writing with PhD’s and good master students to increase their publication rate:

We actively try to have a small group of PhD students that we supervise and that does not only have to do with helping in the lab, but with publications, so of course we struggle to get projects and on those projects we want a PhD student. I always apply to get a PhD student when the department offers such a position, but there is tough competition... we use many master students in research. We have been lucky to have a few talented master students that we do good research with, and that contributes quite a bit (Informant 3).

Another respondent had the opposite approach in generating enough publications to become a professor. He cooperated with other researchers, and was part of a research group, but did not want the extra work with coordinating and managing a group. This respondent’s self-

induced pressure is to maintain strong focus on individual research, minimize teaching, group work and project management.

The respondents in my study want to produce, they want to do research and publish, and they put the pressure on themselves to perform, even the annoyed employee had several publications. One academic tried to ensure that everything he and his students do research on results in a publication, otherwise it is not worth putting the research effort in that particular direction. His strategy was to verify the relevance of his research angle with more seasoned researchers. Getting research published obviously validated the relevance of his work and for him it was a natural part of his job. Another respondent with significant teaching and administrative tasks loved the satisfaction of having written something, additionally the fact that *“we have a system, that I can register what I have done and can see what others have done...is pretty fantastic”* (Informant 9). When articles take a long time to get published that seem to generate stress, and one informant described her anxiousness when time went by without having been published.

I had a hole in my publication record of two years; I really sensed that as a big lump in my stomach ... something has to come out soon! I felt a little dumb in a way, that it is not good enough (Informant 7).

The internally driven pressure appears to come from three sources. The first is the desire to be free to do research on your favorite topics. The second is the motivation to build and strengthen a broader research group that can have more impact and be more efficient than one individual can do alone. The third is to be validated in the research community and to be acknowledged and relate to a broader research community. Similar to the external pressure the self-induced pressure have both positive and negative aspect. The positive is that the respondents have strong internal motivation; however, the external pressure may create barriers for their ability to realize their inner motivation and ambitions, since their self-induced pressure might steer their research in an unfavorable direction. Thus, there are some dilemmas in aligning their inner motivation with the external requirements of their jobs.

Self-leadership: In an environment where people cherish autonomy, self-leadership is to be

expected. My respondents had a clear sense that they had to take the initiative and be self-reliant in their job. Time management came up as an important aspect in making progress as an academic. Having the ability to group activities, such as supervising students on certain days to free up time for continuous periods for writing, attempting to have teaching at a certain period of the year were mentioned by five informants. One informant felt there was little clarity from the department as to how much teaching one is required to do. Not being able to quantify her teaching time in an open system that others could access, created a hardship since she was unsure if her teaching load was according to the norm at her department. The need to say no all the time to shelter her research time was an energy drain. *"There are limits to how lame I can be!"* (Informant 7). In this context, she felt the leader should take more of an active role to shelter her from these demands, which also created a sense of guilt in relation to the next person that would have to say yes. Another academic thought she was too soft and not able to say no all the time even though her preference was research.

There is always those that say no all the time, but somebody has to do the job, we are there for the students as well, it is not only publishing we are supposed do here, as a matter of fact we are responsible for teaching and creating a sensible system in that" (Informant 3).

This leaves the impression that work related to teaching is almost regarded as voluntary work.

To stay updated in research, read, keep in contact with fellow researchers, and apply for research funding is a continuous self-managed process to ensure momentum in research productivity. Being effective in all these aspects takes time and the advantage of having a research group and supervising PhD students was talked about numerous times. *"It is a big job to supervise a PhD student - to write together, but at the same time it is easier than doing it on your own"* (Informant 1). The majority of informants did not mention the management aspect of maintaining a productive group, only the benefit and necessity of having one.

Scholars have to perform self-leadership in all aspects of an academic position. The individual's ability to plan and prioritize, and manage time has two aspects. One is the actual planning of activities and time management, the other aspect is the ability to say no to work assignments that are not directly related to their research. This is essential in ensuring quality time for

research. Having tools available to do this in a way that minimizes other unexpected demands, is wanted by some of the informants.

Motivation: Examples of how my informants maintained their motivation were often shared in the light of cooperation. Working together on a project, sometimes with students and other academics was mentioned several times.

I work together with several other, from master students to professors and we have research projects together, we get motivated from each other, there is no leader or subordinate in any way ... (Informant 7).

As a motivation to write more, they were very focused on having PhD students to co-author with, because it is more fun to work in this way while at the same time the PhD students get the support they need. *"PhD students have a tremendous drive, because they have to publish and that can be contagious"* (Informant 7). One academic mentioned that he had to get out of the department to strengthen his motivation, but then again this was to spend time with scientists in the same field of research. Another academic who had teaching responsibility throughout the year felt very alone and pointed out that this affected her motivation, and seeing others having a big research group propelled this effect (Informant 3). Yet another pointed out the synergy between academics with a high teaching load and academics that published quite a bit, recognizing how important it was that these two groups appreciated one another. *"If one prefers teaching more than research and gets recognition for the importance of that then things balances out"* (Informant 10). Receiving recognition for the teaching effort, both by other academics and the leader created a balance in this particular group of educators and researchers.

Thriving with the challenge of research, to have to work hard to make things happen seems to bring out the best in some academics.

It is of course, when you see that you have managed to accomplish something in an area where you had to work hard to succeed... It's in a way that type of experience that gives me motivation; it's very much when we get the results (Informant 4).

Academics motivate themselves, and by staying related with others through research group work and working with PhD students that the motivation is maintained. However, working alone was mentioned as demotivating and was further magnified by seeing others doing their research in groups. Additionally, the autonomous researcher is also motivated by the challenge and hard work of research.

4.2 Perceived pressures effect on motivation and self-efficacy beliefs

Building one's own self-efficacy beliefs: Early in their carriers, particularly during their PhD studies, many were plagued with self-doubt in research, scientific writing and publishing. Later on, established as permanent scientific staff at a university, self-doubt still existed but for each published article, they learned the process more competently and felt a little more efficacious. With applications for research funding, they became more knowledgeable with the system and improved their application skills over time, which again increased their perception of competency. Thus, research and publishing are a learned series of specific competencies gained through experience.

One informant felt very competent publishing in Norwegian, and he was more than happy to publish, yet felt apprehensive during verbal presentation. Additionally, the fact that he had not yet published any scientific work in English was a stress factor (Informant 10).

The majority of the informants reported that they felt competent in research. Several had mental models to keep going and staying with it through the learning phase of a new project, based on prior experiences where they had succeeded.

Initially I always think that I cannot do it and that I do not have the knowledge to do it, but I have taught myself to believe that yes, this I can manage, I can do this just as well as everybody else, but I'm always humble in everything that I do. I would never call myself an expert in anything because in everything I do in research I have to learn something new and I'm always bordering what I can master or not...(Informant 5).

This informant is touching on the essence of what research is - performing on the edge of what one can envision accomplishing drives the process of obtaining new knowledge forward.

Having a level of support was eminent to all my respondents, in the form of an informal system that provided additional expertise or encouragement and confirmation that their project was

at the level that could support publication. Some seek acknowledgement for the importance and relevance of their research from senior colleagues: *“In a way I know this is right, this is what the society wants...a professor said that my aim is important”* (Informant 6). His method to maintain his self-efficacy beliefs was purposeful collection of confirmation through other peers in his area of research. Research groups, colleagues and peers were actively approached for backing in this regard.

One informant shared the positive effect of a writing group that meet regularly at her department and how her writing efficiency had increased from it. A professional writer leads the group and this has instilled the importance of writing a little bit every day, to keep present with idea creation and the development of an idea and increasing writing efficacy. Staying present with her research idea increased the input from colleagues because she was always working on the subject and would bring it up in conversation whenever the opportunity presented itself (Informant 7). Due to the perception of increased competency in writing this respondent no longer procrastinates in getting started which again increased the feeling of self-efficacy.

You identify how important it is to keep going, so you have to have the courage and ability to keep yourself working and sometimes this comes about on a subject that you are not so comfortable with initially, before you feel that this can actually turn into something. I am lucky because there are few published articles where I did not take the initiative, so when I have taken the initiative it is with something that I think is exciting (Informant 7).

Another informant used the same strategy when attacked by self-doubt *“...it comes back, it is always there...now I have been through it so many times that I know this is how it is, so I can wait for it to pass or just work through it”* (Informant 5).

The majority of the informants perceived receiving support from their colleagues as important. In some instances, just showing interest or being encouraged was mentioned as motivating. One academic stated that it was enough to get positive feedback from one particular colleague that he appreciated and respected highly, to feel encouraged to continue. Another stated,

I feel the most important for self-efficacy, in relation to this, is to feel seen and heard! To get feedback on what you are doing (Informant 10).

One informant was invited by her colleagues to participate on an article to strengthen her CV. This informant really felt that her colleagues valued her competencies. Another informant would invite a well-known expert in the field to co-write on a conference paper as a way to confirm the relevance of what they were researching, when the expert accepted the invitation the topic was verified as relevant by the fact that he would participate. Moreover, the majority received confirmation from their colleagues in the local work environment.

When I get such ideas, as the one map article, it was something I came up with myself, and then I had to keep myself going for a long time. Then my colleagues were very helpful, they thought the idea was exciting and I have talked about it numerous times through this period, because people thought it was interesting (Informant 7).

The informants with a heavy teaching load mentioned the lack of feedback concerning their effort in the classroom. Putting great amount of effort in improving teaching techniques and going to conferences pertaining to new teaching methods was not recognized at all, even if this was made in an attempt to improve the teaching quality in sizable courses. They were not discouraged nor praised for putting forth this effort. *“Having huge courses is great, they are moneymaking machines, but the leaders show no interest”* (Informant 1). An informant from another department received recognition for his teaching but nobody took notice of his publication record, he just tried to keep his head down, and not worry about the lack of recognition for that part of his job.

A young academic thought it is time to change the focus in academia by encouraging each other more, instead of “breaking each other down” through critiquing as opposed to being supportive.

I notice it as well in academia that people need to hear... they need feedback. It is a trademark in academia, this culture of critiquing each other, our job is to critique, to break down and come up with suggested improvements, but often it stops with the critique and it has a spillover effect in the way we communicate with each other (Informant 10).

Two of the informants talk of self-doubt and the energy they spent to keep a positive mindset and one specifically stated: *“It takes time to toughen up in academia”* (Informant 7). This informant is indicating that it takes time to generate the self-efficacy beliefs required to succeed in academia.

The results pertaining to building one's own self-efficacy beliefs show that the informants engage in deliberate actions to strengthen their self-efficacy beliefs. They do this in many different ways. One approach was through reflecting on successful past performances, when riddled with self-doubt in a new research area. Another approach was seeking acknowledgement from experts in the relevant research field and colleagues, and yet another was simply keeping present with the research by working on it a little bit every day, just knowing how important it was to keep momentum in the work. Strengthening self-efficacy beliefs take time, but all the informants recognized a supportive work environment as beneficial.

Environmental factors detrimental to building self- efficacy: My findings reveal that three informants feel very alone as staff at their departments and in their field of research. Closed-door policies and few financial incentives to build collaboration with other researchers were examples brought up in the interviews. Two informants had nobody at their department to cooperate with.

It is always a question of where I belong, it has been this way since I started here, that I should get moved to another department where there would be more of a research group for me, if that was possible... (Informant 3).

In one interview the informant raised the issue of employee involvement or rather the lack thereof. *"There is no input of any kind and nobody ask any questions. All that's needed is a small question and the individual can decide if he want to get involved or not, but now it is like nobody wants to know what your opinion is, so you do not feel part of the process"* (Informant 6). The leader in this case had around a hundred employees, so there was an understanding that it would be very demanding to involve everybody in the decision-making process. This informant left the impression that middle management could have been delegated this responsibility, yet that option was not utilized at this department. In this setting, with little human interaction and no colleagues to cooperate with, it could be very hard to build self-efficacy beliefs.

When asked how the yearly leader-employee conversation was perceived, interesting comments were made.

Of course, I wish we could have this meeting more often. There is really no need when everything is going well, but if I had a down period for some reason or another it would have had a greater purpose. My leader is aware that it is very rare, that it is not followed up in the way that it should be, and that is something that I wish I could have had once a year. After I accepted my current position, it's been 5 years since the last time (Informant 4).

In one case, the academic had never been invited in to have this conversation with his leader in the 12 years he worked at the department. In another case, the yearly meeting between the leader and respondent proceeded according to a laundry list of things to remember to communicate to the employee. The conversation functioned as a verbal report on the past year. Future milestones and goals were also touched on. Goal setting and questions around with whom they cooperated and what areas of improvements needed to be addressed were talked about, but concrete follow-up afterwards varied. Informant 10 meant that it is *"a very important tool because something happens between two persons in a meeting when the purpose of the meeting is to discuss the status of the employee's work"*. New insights are shared, challenges discussed and when the individual's challenges are followed-up and acted on, it verifies that he or she is important to the department and that they are cared for.

One informant felt there was little clarity from the department as to how much teaching one is required to do. Not being able to quantify her teaching time in an open system that others could access, created a hardship since she was unsure if her teaching load was according to the norm at her department. The need to say no all the time to shelter her research time was an energy drain. There are so many activities that need action at a department where the staff is expected to contribute, such as, chairing different committees, evaluation work and the expectancy to be more self-sufficient in administrative tasks.

Regarding environmental factors detrimental to building self-efficacy, I see three main dilemmas that create uncertainty and stress. The first dilemma is about loneliness. On the one hand, the nature of a researcher's work is dependent on a lot of time doing focused work alone. However, the lack of collegiality in the general work environment is stressful. The second dilemma concerns the lack of feedback. One informant received no feedback and had never had an annual employee conversation. One thing is that an individual might be the only expert in his own research area in the department, but lack of feedback can be perceived as very

taxing and the complete lack of communication may affect the employee's motivation to work hard and remain employed at the department. The third dilemma has multiple aspects. There is a plethora of committees that need committee members and voluntary roles to which scientific staff have to be appointed. Unclear norms as to how and when to contribute in these areas has a direct effect on planning and securing time for research. Unclear norms may not be a problem in itself, but combined with the lack of individual feedback on one's own performance and competence creates uncertainty and hampers the development of self-efficacy.

As indicated in the interviews, publication pressure can be both positive and negative, but it appears that it is mostly perceived as relevant, productive and necessary. It appears that this pressure in itself has no detrimental impact on self-efficacy beliefs. However, when the publication pressure is combined with a set of other, sometimes conflicting demands and requirements, and with unclear norms and feedback on performance in other aspects of their job, building self-efficacy is extremely difficult, due to the high requirement of self-management. All the informants value and endorse autonomy, and in principle, they do have a very autonomous job, but there are demands, pressures and unspoken norms and rules that are not clear so autonomy is questionable. Academics have to build their careers to be truly autonomous, while at the same time be responsive to expectations and requirements in the work environment.

4.3 Leadership contribution to motivation and self-efficacy beliefs

Feedback: Direct and indirect feedback from leaders and peers was brought up as a very important area that may contribute to productivity in research. Receiving feedback on specific research and even general feedback was important to all the informants. Three informants from three different departments stressed almost the same leadership ability as important. One stated that it is vital that the leader cares and shows genuine interest. Another stated:

I think the most important in this regard to self-efficacy beliefs is to be seen and heard (Informant 9)!

Yet another pointed out, what defines a good leader is the ability to see and lift others. Three informants emphasized that they had work experiences from other universities where the leader would just come by to see what the informants were working on and mentioned this as

a positive way to stay involved in the academics workday. Two informants at the same department did not receive any feedback from their leader confirming that their research is important, and they would have appreciated the influence of a leader that had the belief that research is important.

The president (rector) of the university was mentioned as having understood the importance of feedback.

I do not think she understands what I'm writing, I think she has noticed the newsflash and that the university is receiving publicity in the media, so I think she is sending almost an automatic message: Wonderful engagement! The fact that she is sending it to me gives me, childishly enough, a sense of achievement and it does not mean anything to me if she has read and understood it, but she's seeing me, at the grass root level. I think it is fantastic coming from the top leader, but also the head of department gives feedback such as "Great job" and the like, it is extremely important (Informant 10).

Informant 1 received a message from the president stating that what he was working on was interesting and important, but he was a little more indifferent to the feedback, feeling that she was obligated to give feedback like that.

In general, there has to be genuine interest for the academic staff, *"we are not just objects that should do a job. From that standpoint (of being seen and heard) almost everything will solve it self, privately and scientifically, everything becomes easier. It is always like this. As long as nobody sees what you are doing it doesn't make a difference what you are trying to do. Everybody needs to be seen, to feel appreciated, and not start doubling themselves"*(Informant 6). This academic felt noticed at the beginning of his employment at the department since he was appointed a PhD student right away, but after a while, it was "business as usual". Some informants defended their leader and the lack of feedback provided, due to the workload the leader was under and did not expect to get any feedback.

Feedback from co-workers seems to be just as important as feedback from the leader. Experiencing excitement and feedback from a leader or colleague like "great idea, really clever" coupled with suggestions on how to proceed or how to get in contact with relevant people in a specific research area, propelled the process onward.

Support: Examples of support from the leader aimed at a more effective work environment

related to expectations of keeping the administrative side running smoothly, and facilitating that the academic staff could do what they needed to do, namely teach and do research. Some addressed more technical help in labs while others felt they wasted too much time when ordering new equipment. One informant was impressed with the support available at his department when a seasoned researcher needed to equip a new lab as part of the process of transitioning into having his own group in a specific research area.

Other examples of support from the leader pertained to the work environment and the importance of instilling good attitudes. These included showing interest in each other's work (the writing group at one department facilitated this by emphasizing teamwork across disciplines) and supporting the younger academics through assigning them PhD students. These were suggestions that came up during the interviews. Fostering a supportive setting for the PhD students was mentioned as key to generating a supportive environment in the long term. In academia, working alone is a self-reinforcing process when PhD students are placed in solitude to work on their dissertation. There are those that can handle this and those that could have excelled through the course of study had there been a more encouraging setting. Instead, they might fall through the cracks, *"and then we are left with a few special people, introverts* (Informant 10). Some people are naturally introverted yet a mix of introverts and extroverts might foster and maintain a more supportive work environment. One informant drew the following parallels based on the closed-door tradition at his department:

They are shooting themselves in the foot by not promoting the work environment. It has to be that one wants to work together and support one another. To have a work environment where there is not ... as a PhD student for instance ... one would continuously want to verify efficacy when things get complicated and difficult, but everything is closed, and then the question is, should one dare to enter (Informant 6)?

The significance of autonomy came up numerous times. The freedom to follow one's own research interests. Autonomy is at the core of academic values yet one academic felt discouraged by his leader and colleagues through comments like, "You cannot spend your time researching that!" (Informant 1). To have a leader that accepts an individual's research area, someone who is not working against one's research effort, which is not the same as being supported or encouraged, is essential leadership behavior. In general, leaders instilled

autonomy and the informants recognized that as very important. The informants also addressed receiving backing from the leader in different situations. A young academic felt she had received full support from the start to this day and recognized and appreciated the effect this had on strengthening her self-efficacy beliefs. Examples worth sharing provided by another academic:

In project development with applications to the Norwegian Research Council I have full backing from my leader and that is the most important part. In my particular area of research there is no support from her. We are on two different planets in our research, but more specifically, she has contributed. One example, when I published one of my books... I really wanted her to provide her academic weight and she contributed with an article, which was very nice, even if she is the leader of our department she made time for that, an exemplary leadership trait. She contributed to making us better. Otherwise, I fall back to the example of our big research project - she pulled some strings and helped provide the right resources to get that project funded (Informant 10).

Several informants made the point that a good leader should not necessarily be so visible but should be there when it is needed, and have the ability to make others better. One academic mentioned that a person with a drive, that can push you forward a little, also has valued leader traits (Informant 1).

Cooperation: Hiring new employees is the strongest strategic tool a leader has in academia, as far as strengthening research areas, cooperation and increasing academic production. The overall work environment can also be improved by hiring the right people. When asked what a leader could do to increase research and publication several of the academics pointed to strengthening their research group through the hiring of new people. Having an environment of cooperation does not require new hires when the environment is good and there is a presence of academics with the right attitude, interests and skills, but the awareness of the leader of its importance in general, and more specifically it is crucial when employing new staff.

Group cooperation spreads the time-consuming effort of lab work, data collection and analysis and the input from more than one may create synergies in discovering new knowledge. Good group cooperation could strengthen motivation and individual self-efficacy when the dynamic in the group is good. In addition to the rigorous work of scientific discovery, maintaining a strong group means meeting regularly and doing enjoyable things together as well as attending

relevant conferences to strengthen the connection between the team members and enhancing good group cooperation. The lack of financial support left one academic dejected over not being able to do something together with his group besides working, like going to a hotel to work uninterrupted for a few days or attending conferences, and then getting to know one another better in a more informal setting in the evening. This was common at the other two universities he had worked at previously. This shows that the human and interpersonal aspect is not prioritized in some work environments of academia at all.

The results pertaining to obtaining self-efficacy show that the informants engage purposively and consciously in building their own self-efficacy. They do this mainly through reflecting on concrete experiences from performing tasks, interacting with colleagues individually or through research groups and by seeking acknowledgement from colleagues or experts in their field. Maintaining motivation can be achieved in a similar way, by for instance, staying related with others through group work and working with PhD students.

Leaders can reduce apparent barriers to create areas for strengthening self-efficacy beliefs and motivation in several ways. First, leaders can contribute to self-efficacy and productivity in research by instilling an understanding of the importance of cooperation throughout the organization. Second, leaders can contribute to self-efficacy and productivity in research by providing feedback on performance to individuals or research group leaders, whom then can share this feedback with the group. Third, leaders can contribute to self-efficacy and productivity in research by encouraging and in some instances providing financial incentives to establish and maintain research groups. Finally, leaders can contribute to self-efficacy and productivity in research by strengthening research areas through focused recruitment.

There are also several dilemmas and uncertainties in the system that the leader cannot necessarily solve. They are inherent in how academia works. There are many tasks to be performed, priorities to weigh up, considerations of what provides status for the department, etc. These are features of academic workplaces. What the leader primarily can do is to clarify the dilemmas, to be open and transparent and to try to limit the potentially negative effect they have on the individual's exertions in self-leadership. It is in this complex environment that leadership is imperative by making subtle demands clear, through providing stability and predictability, which will enable academic staff to build self-efficacy beliefs through experience and performance in a focused way and at the same time facilitate motivation.

Chapter 5 – Concluding comments, limitations and future research

The objective of this study is to gain a better understanding of how publication pressure affects motivation, and what a leader can do in this setting. The research problem addresses the questions:

- How is the pressure to publish, in highly-rated scientific journals beneficial or harmful to motivation and self-efficacy beliefs?

- Can leadership behavior affect this relationship?"

The study uses a framework based on self-determination theory, self-efficacy theory and a literature review of studies on academic leadership. My initial idea was that high publication pressure would make it difficult to maintain motivation and self-efficacy beliefs. Publication pressure is usually perceived as being caused by external factors, indicating that intrinsic motivation may diminish if intrinsically motivated people perceive threats, deadlines, directives, pressured evaluations and imposed goals. (Ryan and Deci, 2000). However, in my study the findings were somewhat surprising.

5.1 Theoretical Implications - Effects on motivation and self-efficacy beliefs

My results show a complex picture of motivational forces both external and internal to the individual in relation to the work environment, collegiality, and personal ambitions. In the work environment, there are norms and standards that affect the academic staff's motivation to publish. Norms and standards for teaching responsibility and other services are less clear to the individual, and competes with time to do research.

My analysis suggests that there are pressures to publish, but the pressure is due to other factors than being expected to report publications in CRISTin and publishing in itself. The perception of the pressure varies among the informants and it affects the way they develop their self-efficacy beliefs and depends on how efficacious they are in themselves. The external pressure to publish comes from demands from project leaders and competes with pressure to ensure that PhD students successfully complete their studies and demands related to teaching and other services, which in many cases reduces the opportunity to do research in their field

of interest. Numerous studies have documented the inverse relationship between publication output and teaching load (Hemmings and Kay, 2010, Hemmings et al., 2004, Hesli and Lee, 2011, Kyvik, 2013, Nygaard, 2015, Rørstad and Aksnes, 2015, Seglen, 1993), and the results in my study confirm this as well. Academics are well known for their intrinsic motivation and the pressure that the academics put on themselves to publish is driven by a aspiration to secure their own research area, by possibly building a strong research group in their desired field of research and being acknowledged through their research. Being part of a group ensures feedback from colleagues and confirms their competencies. Grau et al. (2001) found that self-efficacy moderates the stress-strain relationship in general. Since high levels of self-efficacy are related to low levels of occupational stress, ways to strengthen efficacy in academia could be an interesting approach to help stimulate productivity in academia.

The individuals in my study actively seek to develop their self-efficacy beliefs and the various pressures affect their approach in several ways. In figure 3, the results related to how pressure effects self-efficacy beliefs are presented by adapting van der Bijl and Shortridge-Baggett (2001) in figure 1. The model highlights the findings in this study and suggests how researchers' actions may affect their results. I have expanded the model to visualize external- and internal pressure and labeled the variables in my models somewhat differently from van der Bijl and Shortridge-Baggett's model (2001) to tie them directly to my findings. These labels are also applied in the following text.

An **academic** is assumed to be intrinsically motivated, maintained by autonomy, competence and relatedness. Assuming that academics are intrinsically motivated and that their work requires a high level of autonomy, having the freedom to follow what is truly of interest is essential for maintaining intrinsic motivation (Deci and Ryan, 2002, Gagné and Deci, 2005). These elements of self-determination theory are particularly apparent in my findings.

What is interesting is the **behavior** the informants enact in different situations in academia and how conscious they are of attempting to increase their autonomy through publications. A person's active pursuit of autonomy is not an apparent behavior according to the theory. My findings suggest that researchers are conscious of the effect network building, effective time-management and self-management may have, and they believe this kind of behavior enables

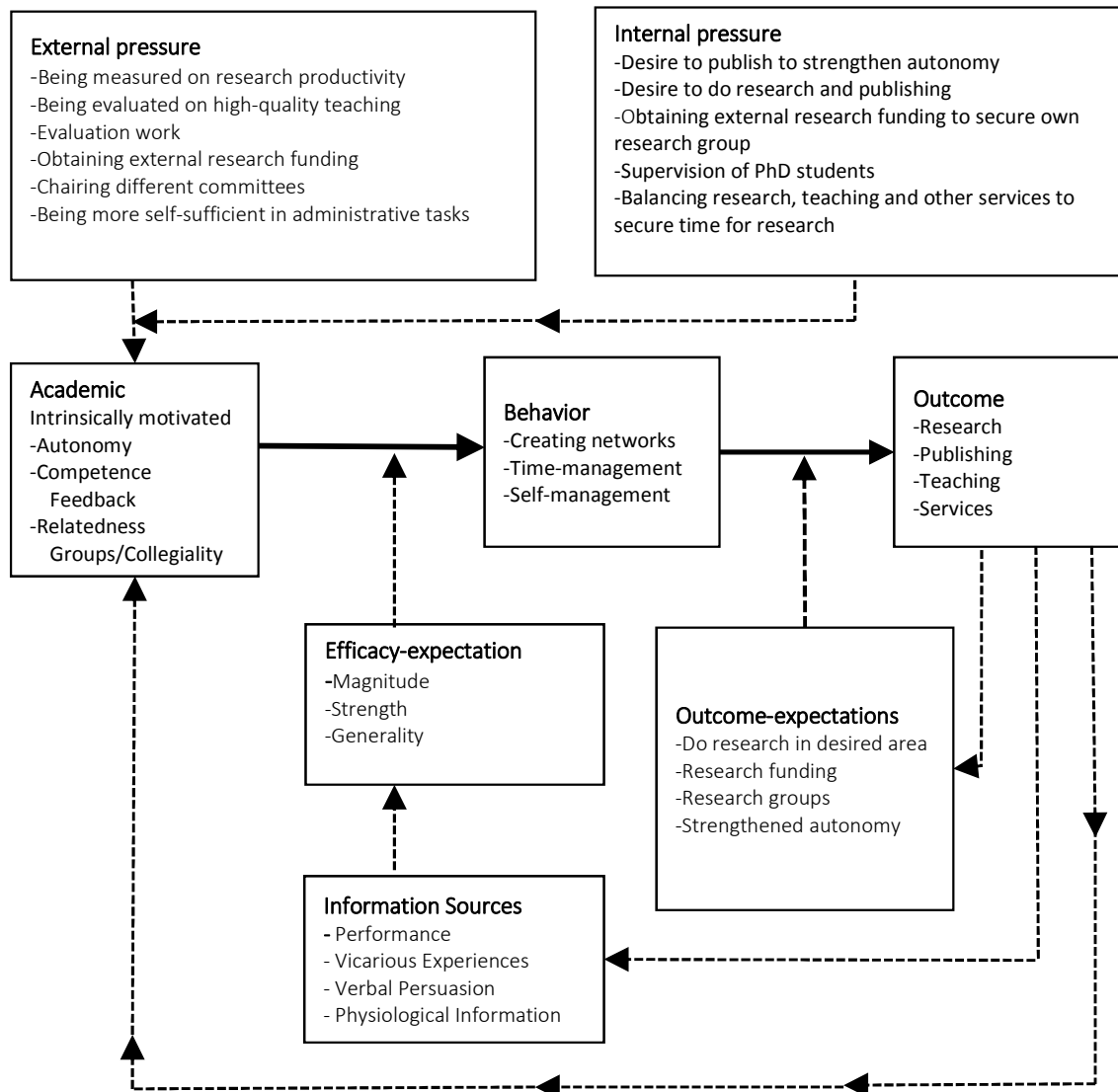


Figure 3 - Preliminary Model illustrating theoretical implications adapted from Shortridge and Baggatt

them to maintain autonomy, competence and relatedness through research and publishing. This has to be achieved in a complex work environment with little information regarding how many courses to teach, class sizes, students to supervise or which committees to attend. This behavior also facilitates development of self-efficacy beliefs.

According to self-efficacy theory, the **information sources** that influence a person's self-efficacy perceptions are experiences of one's own performances, vicarious experiences, verbal persuasion and physiological information (see figure 2). My findings show how the informants approach and develop mental perceptions in accordance with the theory. Own performance, comparing themselves to others, feedback from leaders and colleagues are information sources

that all the informants use to a varying degree, but physiological information was only commented on by two of the informants.

Efficacy expectation is beliefs of one's own competencies based on how competent one perceives oneself, and is founded on the information sources. Self-efficacy has three dimensions: *magnitude*, the level of task difficulty a person believes he or she can attain; *strength*, the conviction regarding magnitude as strong or weak; and *generality*, the degree to which the expectation is generalized across situations (Bandura, 1997). Academics' expectations will influence their perception, motivation, and performance since they rarely attempt to perform a task when they expect to be unsuccessful, which is the same for all humans.

Self-efficacy beliefs furthermore affect **outcome expectations**, meaning "the likelihood that people will act on the outcomes they expect prospective performances to produce depends on their beliefs about whether or not they can produce those performances" (Bandura, 2001 p. 10). In my findings the informants' outcome expectations were firm in relation to research and publishing, but several factors in the work environment, which they tried to curb with specific behaviors, affected the level of production. Publishing and high-quality performance is the **outcome** in the model.

5.2 Practical implications - The role of leadership in supporting self-efficacy beliefs

Self-determination theory and self-efficacy theory coupled with the findings of my study may provide important insights helping us to understand how employees behave, prioritize their work and perform in their jobs. Awareness and enactment based on these two theories and my findings may help in developing guidelines for leadership behavior that could affect performance output positively. Based on the interviews it seems that intrinsic motivation and self-efficacy beliefs have importance for performance. Needless to say, this type of research can only help us develop hypotheses that need to be tested using a different research design.

What kind of practical strategies can the leader use to maintain intrinsic motivation and self-efficacy beliefs? In figure 4, **leadership** is included into the model to account for behavior that I believe could strengthen motivation and self-efficacy beliefs. My findings reveal that the leader is expected to ensure efficient running of the department. The respondents emphasized

that they expected the leaders to protect the academics' individual autonomy, while being transparent and providing precise communication about the department's development. My findings also bring insight into an important area that may contribute to productivity in research. For example, academics seem to have a strong need to be seen and heard. Receiving feedback on specific research, and even general feedback and encouragement was important to all the informants. Ryan and Deci (2000) believes that encouragement was important to all

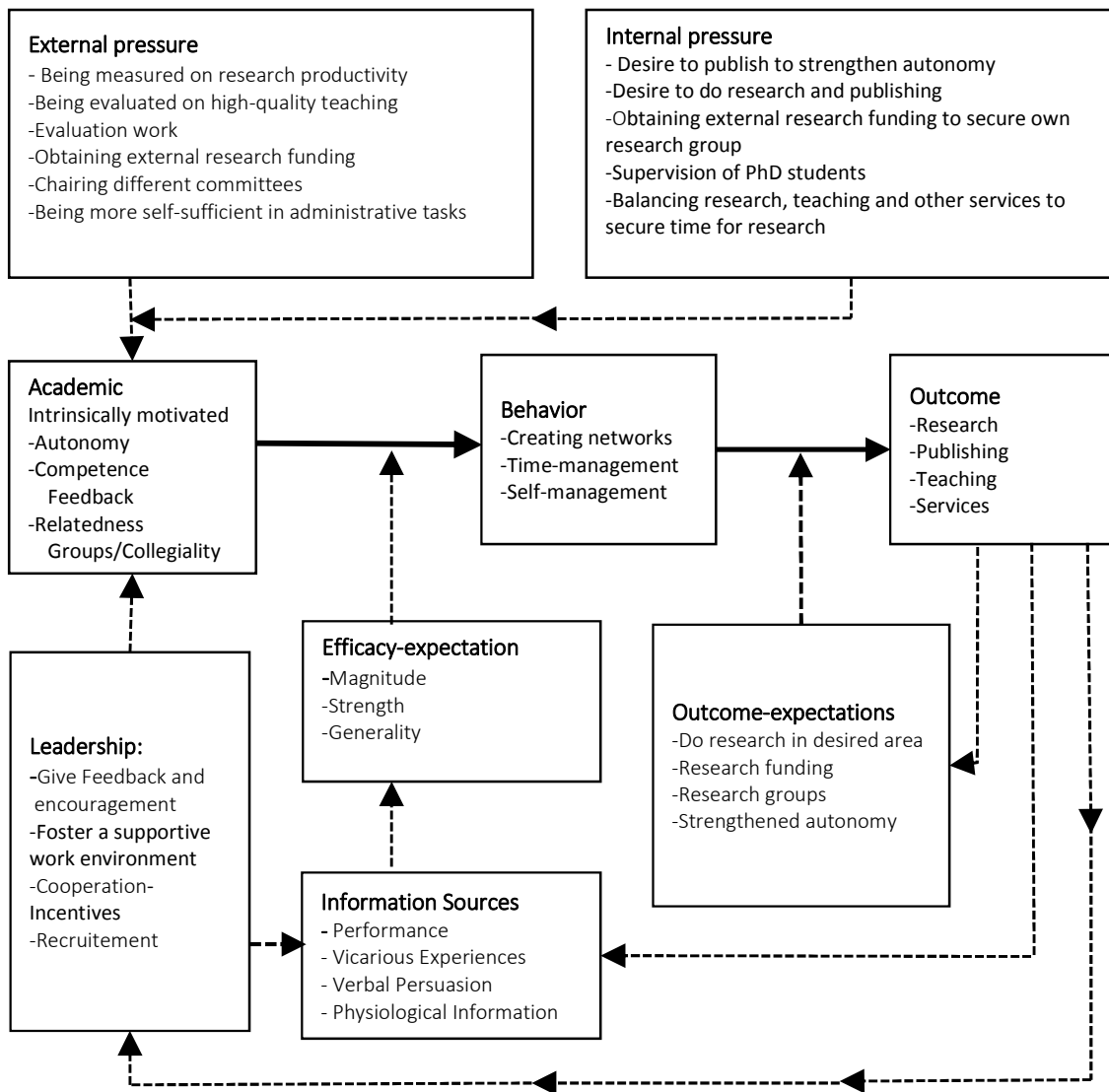


Figure 4 - Preliminary Model illustrating practical implications

the informants. Ryan and Deci (2000) believes that the positive feedback from the environment can affect how a person perceives his or her own competencies which again can strengthen intrinsic motivation.

Another leadership behavior is fostering a supportive environment, by creating an understanding of the importance of the staff being supportive and giving feedback to each other. Academics are highly trained in analyzing and critiquing scientific work, as pointed out by one of the informants, but coming up with constructive feedback in the extension of a critique, should be encouraged by the leader. Similarly, the leader should emphasize cooperation, and ensure that academic staff belong to a research group in the appropriate research field. The importance of relatedness is another strong finding in my study. Academics are often considered to be individuals that are quite happy to be all by themselves, and really want to be left alone, but my findings confirm that they want feedback, and relatedness is sought after and needed, they just do not want disruptions that interfere with their work. Findings from Blackburn et al. (1991 p.13) also confirmed this. Faculty members who, over the last two years, spent more time working and communicating with colleagues about scholarly and research issues and/or had been actively engaged in applying for fellowships, and faculty members who attended or made presentations about their research on their own campuses also published at a higher rate. When there are no colleagues at the department in the specific area, the leader could encourage building a network external to the department or try to facilitate a move to a department where cooperation with colleagues is possible. Motivation and self-efficacy beliefs might be strengthened by removing hindrances and by creating opportunities to cooperate and do research. Other means that could be effective are financial incentives that encourages cooperation. Finally, through recruitment the leader can emphasize the value placed on a supportive work environment and ensure that the individual's attitude and qualifications actually strengthens a specific research environment and is relevant for the future development of the department.

In sum, the leader can affect the information that academic staff receive that develops and maintains their motivation and self-efficacy beliefs. My findings show that academics consciously build their self-efficacy beliefs and a leader can accommodate this behavior by removing unnecessary hindrances for them, e.g. by fostering a supportive environment (see table 4). Ensuring that the staff perceives that they are seen and heard, providing specific research related and general feedback and by creating opportunities to cooperate and do research. However, the leader has to be conscious not to introduce performance standards that measure people in the same way when providing performance feedback. Performance

feedback should be given in a way that strengthens self-efficacy beliefs. Standardized reporting and performance measures that force academics to become less autonomous could decrease motivation. Hence, the leader should give individual performance assessments. Additionally, the issue of relatedness through cooperation and group work needs to be anchored in specific research related interests. An attempt by the leader to increase cooperation through general social gatherings and group work not relevant to their area of research interest might not be so fruitful. However, social gatherings are important in sustaining the overall work environment where academics and administrative employees can maintain their professional relationships.

Many of my results are in accordance with Bryman's (2007) findings provided in table 2. However, some of my results are not included in his summary statement of how to lead at the departmental and institutional level. As the final step to clearly emphasize the importance of leadership behavior, I will add my tentative results in bold print in table 4, which is an amended version of Bryman's table. My findings emphasize how leadership behavior may strengthen self-efficacy beliefs and motivation, which in turn may result in increased productivity of the researchers.

The process of scientific discovery is usually an intricate one with uncertain outcomes. It requires considerable creativity, persistence and unexpected elements to attain new knowledge that can have significant social impact (Bandura, 1997). Academics are highly educated and skilled in research yet many seem to do little research and publishing. When affected by countless challenges people who entertain serious doubt about their capabilities slacken their effort or give up all together, whereas those who have strong self-efficaciousness exercise greater effort to master the challenge (Bandura, 1982). Rewriting a rejected article, submitting and finally publishing is a momentous accomplishment. Withstanding the complexity of such a difficult task and in many cases enduring numerous rejections prior to the finishing point requires a strong sense of self-efficacy and motivation, which the leader can aim to contribute to through conscious leadership behavior that reinforce intrinsic motivation and self-efficacy beliefs.

How to lead at departmental and institutional level	How <u>not</u> to lead at departmental and institutional level
Establishing trustworthiness as a leader	
Protecting staff autonomy	Undermining autonomy
Fighting the department's corner with senior managers and through the university structure	
Having personal integrity	
Having credibility as a role-model	
Providing direction	Being uninvolved in the life of the department/institution
Creating structure to support the direction	Allowing the department/institution to drift
Fostering supporting and collaborative environment - through own actions and by instilling these behaviors in the staff - by providing constructive feedback in extension of critique and by instilling this behavior in the staff through departmental seminars - encourage networking - emphasize co-operation, ensure that staff belong to a research group if that is desired - provide financial incentives that encourages co-operation - by careful recruitment of new staff ensuring that the individuals' attitude and qualifications actually strengthens a specific research environment	Actions that undermine collegiality
Providing communication about developments	
Facilitating participation in decision-making consultation	Failing to consult
Representing the department/institution to advance its cause(s) and networking on its behalf	Not promoting the interest of those whom the leader is responsible;
Respecting existing culture while seeking to instill values through a vision for the department/institution	Not respecting existing values
Ensuring that the staff perceives that they are seen and heard without introducing standardized performance measures	Not being attentive to the staff or only highlighting publications and obtaining new research projects
Providing specific research related and general feedback	Being uninvolved with the staff
Remove unnecessary hindrances by creating opportunities to cooperate and do research	

Table 4-Recommended Leadership Behaviors Extended

5.3 Limitations

In closing, I would like to point out three limitations in this study. First, this is a qualitative study and the findings should be considered as hypotheses, which should be tested using a more rigorous research design. Moreover, the focus of the study has been on associate professors from a few academic contexts that are both publishing and teaching. By increasing the sample size to include non-producing and high-producing academic staff, not differentiated by rank, and expanding the study to include several other academic settings would have given a broader insight into the problem area. Obtaining data from the academic leaders in these contexts would have provided even further insight. Secondly, useful findings about the relationship between self-efficacy and motivation for research have been documented in this study; however, there could be further questions to be asked about the reasons for the impressions/experiences reported by the respondents. Finally, time has been an apparent limitation in my project. For a M.Sc. thesis, the data collection from 10 informants is acceptable yet a much larger number would have benefitted the research. According to the principle of triangulation, one should triangulate with three data sources. Conducting observations or comparing my findings with quantitative data from the same context would have supplemented my research in a beneficial way. Comparing findings with data

5.4 Future research

I hope that some of my findings will inspire future research and I would like to point out three areas for future study. First, the informants in my study actively pursue activity that increases their own self-efficacy beliefs. Developing self-efficacy theory in settings where employees actively develop their own self-efficacy beliefs would be very relevant for intrinsically motivated autonomous workers in general and for the further development of leadership and organizational theory. Second, the literature on leadership in academia seem to be lacking the elements highlighted in table 4 and should receive further attention. A lot of research has been done on management in academia, yet there is a clear lack of relevant leadership theory for leaders in academia. Finally, more research should be conducted on motivation in academic settings from the perspective of self-determination theory. Developing models for how intrinsic and extrinsic motivational factors may work in different academic settings and how

these factors influence each other could provide relevant knowledge that, if applied, could help ensuring strong and autonomous universities for the future.

5.5 Conclusion

Based on the results from this study, one could state that there is external and internal pressures that affect academics' intrinsic motivation yet their motivation seems to maintain strength despite these pressures because of academics' ability to build their self-efficacy beliefs. Hence, their motivation seems to be strong after years of reforms in the sector. Leadership in academia is exceedingly complex and demanding. Being aware of how leadership behaviors could affect performance of academic institutions is a central issue in the current debate about universities, and publishing and high-quality performance is a leadership issue. This study adds to our understanding of how a leader can contribute to self-efficacy beliefs to maintain and strengthen an academic's motivation. It highlights specific behaviors the leaders should adhere to (table 4). My empirical findings and theorizing reveals how the internal and external pressures impact self-efficacy beliefs and suggest that self-efficacy beliefs can develop and gain strength where leadership, in concert with the academic staff, *create an environment* for this to take place by *removing hindrances in building their own self-efficacy beliefs*. Making sure academics know about the effect of leadership behavior before they become leaders may be particularly important as the initial period of leadership represents both a chance and a challenge.

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Attachment 1 - Semi-structured Interview guide

1. Tell me about your job?
2. What is your field of research?
3. How do you find room to prioritize your research?
4. How are you experiencing the pressure to publish?
5. In what way has the pressure to publish changed your focus on research?
6. What do you need in order to do more research and publish more of your work?
7. We are going to reflect upon the term “self-efficacy beliefs”.
How do you understand this term?
8. Do you feel efficacious in your research with today’s demands for increased publishing?
9. Would you be interested in adapting behaviors that might strengthen your self-efficacy beliefs?
10. What does it mean to have a good leader?
11. What does your leader do to support you in your research?
12. How can your leader strengthen your self-efficacy beliefs?
13. What would you emphasize as most important of all that we have been talking about?

Attachment 2 - Intervju Guide

1. Fortell meg om jobben din?
2. Hvilket felt forsker du på?
3. Hvordan finner du rom til å prioritere forskningen din?
4. Hvordan opplever du press til å publisere mer?
5. Hvordan har publiseringspresset endret ditt fokus på forskning?
6. Hva trenger du for å forske og publisere mer?
7. Hva legger du i ordet mestringstro?
8. Føler du at du at du mestrer forskningen i forhold til de kravene som stilles i dag?
9. Kunne du vært interessert i å innarbeide tankemønster som styrker din mestringstro?
10. Hva betyr det å ha en god leder?
11. På hvilken måte støtter lederen deg i forskningena di?
12. Hvordan kan din leder bidra til å styrke din mestringstro/følelse?
13. Hva vil du si er det viktigste vi har snakket om i dag?

Attachment 3 - E-mail sent to respondents

Berit Pettersen

To: Berit Pettersen

Subject: FW: Avtale om intervju

From: Berit Pettersen

Sent: 8. mars 2016 16:24

To: XX

Subject: Avtale om intervju

Hei XX,

Jeg er ansatt og masterstudent på Handelshøyskolen ved NMBU og skal i forbindelse med min masteroppgave gjennomføre datainnsamling.

Har du anledning til å ta et intervju med meg før påske?

Den overordnede problemstillingen for prosjektet er «Fremmer eller reduserer økte krav til publisering mestringstroen til vitenskapelige ansatte og kan lederens handlinger bidra til å styrke mestringstroen». I dette intervjuet ønsker jeg å finne ut noe om deg, hva du tenker om kravene til publisering som stilles i dag, hvordan du opplever dette og på hvilken måte lederen bidrar til å styrke deg i din forskning. Det jeg ønsker å få ut av dette er større innsikt i hva som kan styrke/svekke mestringstroen og hvilken påvirkning en leder kan ha på vitenskapelige ansattes mestringstro. For å undersøke temaet, vil jeg benytte kvalitativ forskningsmetode i det konstruktivistiske paradigme. Jeg ønsker å gjennomføre halvstrukturerte dybdeintervju og hvert intervju antas å vare omtrent en time, men dette er avhengig av den som blir intervjuet. I den ferdige prosjektrapporten vil ingen enkeltpersoner eller bedrifter kunne gjenkjennes. Data som har blitt samlet inn (lydopptak) vil bli slettet når prosjektet blir avsluttet den 15. mai 2016.

Det er helt frivillig å delta, og det er mulig å trekke seg fra prosjektet uten å oppgi noen spesifikk årsak. Jeg håper at du ønsker å delta i mitt forskningsprosjekt, og at du som vitenskapeligansatt vil finne nytte i deltakelsen. Dersom du ønsker å få prosjektrapporten tilsendt når den er ferdig, er det bare å si fra om det. Prosjektet er godkjent av Handelshøyskolen ved NMBU, og er veiledet av Førsteamanuensis Sigurd Rysstad og Førsteamanuensis Gro Ladegård.

Ser frem til din tilbakemelding.

Vennlig hilsen

Berit Pettersen



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