

A Pilots' Motivation

A qualitative approach in analysing pilots' motivation despite limited control over working hours

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Preface

I would like to start by thanking my supervisor Heléne Lundberg for the support during this thesis. Further I would like to thank the Informants for their time and participation. Finally, I would like to thank my family for giving me time, support and understanding.

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Daniel Dolfe

Abstract

This study uses the Self-Determination Theory (SDT) to describe and analyse what motivates pilots whilst having limited control over working hours. Pilots work in a challenging environment with variable working hours and high operational demands. This affects the pilots' autonomous, intrinsic, extrinsic and controlled motivation. The study uses a qualitative approach interviewing eight Swedish pilots working at different airlines. This study describes and analyses the sense of autonomy, sense of competence and sense of relatedness, and how autonomous motivation, intrinsic motivation, extrinsic motivation, and controlled motivation affects pilots' motivation.

This study finds that pilots value the sense of autonomy that comes from empowerment to take decisions within the strict framework of rules they operate in. The pilots feel a strong sense of competence from training programs and knowledge transfer colleagues, and relatedness to colleagues through a sense of being cared for, all these seem to promote autonomous and intrinsic motivation. Further, intrinsic motivation arises from a passion for flying and executing leadership. Extrinsic motivation arises from salary, and fear of punishment. The pilots' lack of ability to control their working hours leads to controlled motivation and stress.

The findings of this study could be used to improve pilot welfare and motivation. By understanding and addressing pilot motivation airlines can develop strategies to support its workforce more effectively.

Keywords: Autonomous motivation, Intrinsic motivation, Extrinsic motivation, Controlled motivation, Autonomy, Competence, Relatedness, Self-Determination Theory, Pilot motivation.

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1. Introduction

Pilots operate in a complex environment 365 days per year and 24 hours per day. There are constantly numerous flights in the air all around the world (Flightradar 24, 2024). It is a dynamic environment and pilots have the ultimate responsibility for the safety of passengers and crews whilst facing economic and operational pressure to fly on time (Venus & Holtforth, 2022). Understanding the factors that motivate pilots is important since pilots face unique challenges that come with their working hours. This thesis describes and analyses what motivates pilots whilst having limited control over working hours.

This thesis is framed around the Self Determination Theory (SDT) which was developed in the 1970th by Ryan and Deci (Deci & Ryan, 2012). The SDT offers a framework assumed to be suitable to analyse motivation. The SDT is centred around intrinsic motivation which means that the motivation come from inside the individual and is influenced by intrinsic factors such as personal interest, and extrinsic motivation which is influenced by external factors such as rewards (Ryan & Deci, 2000a). Originally the SDT became famous for stating that extrinsic rewards wear down intrinsic motivation (Deci & Ryan, 2012). However, in later versions Deci et al. (1999) found that extrinsic factors could coexist with interest factors.

Ryan and Deci (2000a) together with Gagné and Deci (2005) state that individuals have three basic psychological needs namely autonomy meaning that the individuals perceive a of sense of control over his actions, competence which is the sense of being competent and capable and relatedness which is the sense of being connected to others. Gagné and Deci (2005) describe all three basic psychological needs as distinct. However, they are highly related to each other. A high level of autonomy increases well-being, job satisfaction, creativity, and initiative which promotes intrinsic motivation (Gagné & Deci, 2005). Autonomy is closely related to autonomous motivation which means that the individual does something because the action is aligned with his wants which also increase intrinsic motivation (Ryan & Deci, 2000a). The opposite is within the SDT called controlled motivation. In controlled motivation the individual does not value the activity, instead he feels an outside pressure to do something (Ryan & Deci, 2000a). Competence increases self-confidence which promotes intrinsic motivation and contributes to better performance (Gagné & Deci, 2005). Finally, relatedness promotes cooperation and strengthens social bonds in the workplace ultimately leading to increased intrinsic motivation (Ryan & Deci, 2000a; Gagné & Deci, 2005). Ryan and Deci (2000a) highlights that in specific professions the interplay between intrinsic and extrinsic motivation has not been explored. Existing research, for example Gagné and Deci (2005), has found that intrinsic and extrinsic motivations affect performance at work differently in various industries.

Flexible working conditions including working hours and location has been found to have a positive impact on job satisfaction and overall well-being (Davidescu, et al., 2020). Kubo et al. (2013) have linked employee motivation with their ability to control their working hours. Control over working hours is especially after the covid-19 pandemic recognized as a pivotal factor that has a direct connection to employee motivation and well-being (Franken, et al., 2021). Smith et al., (2022) even found that most office workers among the 16 companies

within the IT industry they studied expected to be able to have flexible work conditions. A common thing for previous research is that all of them focuses on jobs which has some kind of flexibility (Davidescu, et al., 2020; Franken, et al., 2021; Kubo et al. 2013). It is therefore interesting to describe and analyse motivation in settings with limited control over working hours.

A report from the healthcare industry which is influenced by adverse working hours and the need to be at work physically conducted by Epstein, et al. (2018) found that nurses feel psychological stress due to their limited ability to control their working hours. Meanwhile, they also found that new nurses who got the ability to choose their working hours suffered from fatigue due to their inability to control their working hours effectively. The research by Epstein, et al. (2018) therefore indicates a complexity, as limited control leads to psychological stress and the ability to control over working hours leads to fatigue. This implies that motivation also could be affected. Therefore, it would be interesting to describe and analyse motivation among employees with limited control over working hours.

Another industry with variable working hours combined with prolonged periods away from home is the shipping industry (Mitroussi & Notteboom, 2015). Seafarers suffer from irregular shifts and inability to plan due to unpredictable schedules and varying port demands additionally spiced with frequent operational disturbances (Pauksztat, 2017). Pauksztat, (2017) finds that this leads to that the seafarers experience negative emotions such as frustration and stress. This indicates that seafarers motivation may be affected. Mitroussi & Notteboom, (2015) partly used the SDT within their research and found the seafarers were motivated through both extrinsic factors such as pay and career development and intrinsic factors such as autonomy and enjoyment derived from handling challenging interesting tasks. However, they mean that the distinct environment of maritime work such as isolation, multicultural crews, and the nature of sea voyages needs tailored motivational strategies. It is therefore reasonable to believe that industries with similar working conditions could benefit from analysing motivation.

The aviation industry is in line the shipping industry a global industry that runs 365 days per year and 24 hours per day (Venus, et al., 2022). As most of us want to travel effectively to optimize our stay, either on vacation or in business, flights are scheduled round the clock. This means that pilots often work under strict schedules that often do not align with the individual's normal sleep cycle or personal needs (Venus & Holtforth, 2022). Further, pilot scheduling is heavily influenced by regulations and operational pressure, consequently leaving no room for personal preferences in the scheduling of a pilots working hours (Venus et al., 2022). The schedules often include a high degree of unpredictability including for example standby duties (Venus et al. 2022). According to the SDT intrinsic motivation could reduce if the individual perceives a lack of autonomy (Ryan & Deci, 2000a). This is assumed to be critical in a sector such as aviation where the safety passengers and fellow crew members is all dependant on the pilot's motivation.

Previous research has focused on jobs in industries where the employees typically have some kind of control over their working hours (Davidescu, et al., 2020; Franken, et al., 2021). However, there is research within the shipping industry found that motivational strategies must be tailored to its specific conditions (Mitroussi & Notteboom, 2015). This implies that employees in industries with variable working hours is motivated in other ways than

employees in more traditional settings. This study will contribute to previous studies of motivation by broadening it to the context of pilots.

This thesis aims to describe and analyse employee motivation given limited control over working hours. In a context where pilots have limited control over working hours this thesis research question is:

1. How pilots are motivated under these circumstances, and what factors contribute to their motivation?

This will be done through a qualitative study by firstly review present knowledge of motivation in relation to work time control and jobs requiring physical attendance. Thereafter I will present the theoretical framework of this study and how it will be used to describe and analyse pilot motivation.

2 Theory

2.1 Motivation at work

The origin of motivation comes from the Latin language and the word “motive,” meaning “to move” (Velmurugan & Sankar, 2017). Velmurugan and Sankar (2017) write that the theory about motivation is useful for studying and describing the root causes of why individuals want to do something. Based on the root cause of why an individual does something, individuals can feel energy and desire to engage in a job, a role, or a subject which makes them want to make an effort to attain a goal (Velmurugan & Sankar, 2017). Further, motivation describes why individuals prefer to do certain things over others. According to Ochola (2018) it is important that individuals are motivated at work. He concludes that an organisation's performance depends on employee motivation. For example, if employees are unmotivated, they might rather work with something else and will then seek other work opportunities.

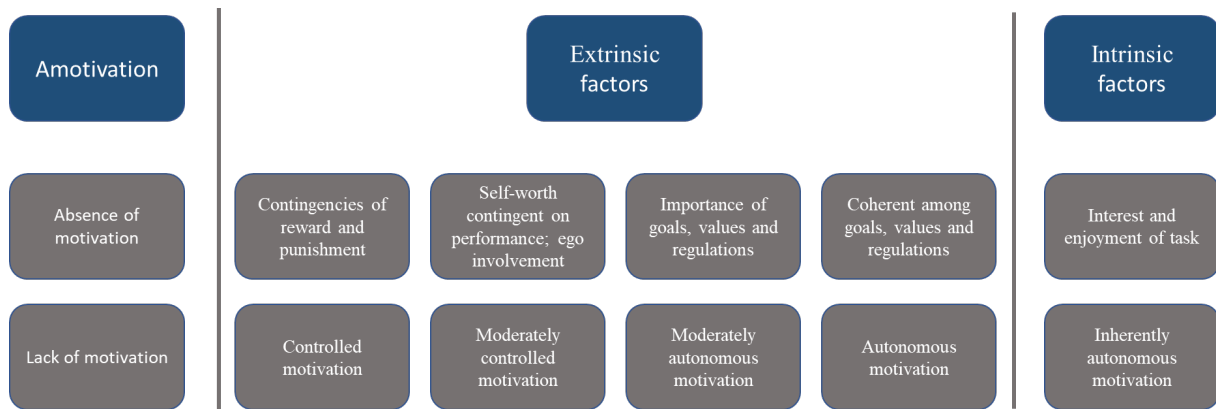


Figure 1 Illustration of types of motivation based on Self Continuum by Ryan and Deci (2000a).

In contrast to motivation, which makes an individual engage in activities based on inner interest or external rewards, Gagné and Deci (2005) describe amotivation as lack of motivation see Figure 1. Amotivation leads to the absence of intention to act. They further mean that the individual cannot see any connection between his actions and outcome, which leads to a sense of helplessness and indifference. This is since the individual believes that external factors will dictate the outcome no matter what he does. This could be dangerous at a workplace since amotivation may lead to toxic behaviours according (Gagné & Deci, 2005). According to Gagné and Deci (2005) amotivation typically arises when there is a lack of the three psychological needs: Firstly, autonomy which Deci, et al., (2017) describes as the feeling of self-direction and personal endorsement when acting Secondly competence which Ryan and Deci (2000a) describes as a feeling of being effective and capable and thirdly relatedness which Ryan and Deci (2000a) describes as a need to feel connected to others. Ryan and Deci (2000a) mean that all three psychological needs are essential for individual motivation and well-being. According to Gagné and Deci (2005) the basic psychological needs are highly related to each other. For optimal development and well-being, all three needs must be fulfilled. Therefore, it is important to focus on all three, not just one or two.

2.2 Effect on motivation from work time control

According to Kubo et al. (2013), work time control refers to an individual's ability to control when he starts and stops working. It also includes an individual's ability to control when it is time for a coffee break and the freedom to schedule workdays effectively. In their quantitative research studying more than 1700 workers within manufacturing, Kubo et al. found a link between individual work time control and motivation. They conclude that individuals who can control their working hours benefit from less stress and higher motivation. However existing research such as Kubo et al. (2013) focuses primarily on jobs with some sort of flexibility, unlike pilots who have very little flexibility as indicated by Venus et al. (2022). Moreover, within the same topic, Davidescu et al. (2020) argue that flexibility in work schedules can implicate various aspects of the employee's well-being including stress. This is supported by Barbey and Elias (2010) who finds that extrinsic motivation reduces with stress in a study of 933 blue-collar and white-collar workers across several industries in Canada, Israel and Russia. This is also supported by Epstein, et al. (2018) who found that healthcare professionals perceive stress due to their inability to control working hours. On the opposite, employees who can control their working hours benefit from increased productivity, positively affecting an individual's motivation (Davidescu, et al, 2020).

Other research agrees with that flexible working hours have many benefits, including individuals' ability to align their personal lives with their professional lives se for example Kecklund et al. (2010) and Santillan et al (2023). However, these studies do not apply to pilots as they can work from another location than their office namely the aircraft.

2.3 Effect on motivation from jobs requiring physical attendance

The degree of control an employee has over his work schedule varies among industries and roles (Smite et al., 2022). An industry where the employees must be physically present is the shipping industry (Mitroussi & Notteboom, 2015). Seafarers often suffer from unpredictable work schedules (Pauksztat, 2017). This often leads to inability to plan their time while onboard the ship which could lead to fatigue and negative emotions due to their inability to plan ahead (Pauksztat, 2017). Mitroussi and Notteboom (2015) states that seafarers workers face isolation, challenges from operating with in a multiculture environment, prolonged peroids away frome home and variable working hours. Further Mitroussi and Notteboom (2015) discuss that due to the unusal work environment seafarers face their motivation needs to be tailored in order to adress specific challenges such as how their work life balance is affected du to prolonged periods away from home. Overall, they emphasize that all intentions to motivate seafarers needs to be tailord to fit the context of the maritime industry. They also found that seafarers were motivated from extrinsic factros such as remuneration systems, performance-related pay schemes, and career development leading to jobs succession schemes for holding positions on land (shore-based jobs). Mitroussi and Notteboom. (2015) also found that the seafarers also were intrinsically motivated through skill variety, task significance, autonomy, and feedback.

Aviation professionals such as pilots face strict and complex operational requirements, which limit their control over their work schedules (Kohl et al., 2004). This can cause challenges

like irregular shifts, long flights, and extended periods away from home. Despite pilot's crucial role in ensuring safe and efficient air travel, these challenges can impact their motivation and overall well-being.

Pilots navigate many challenges beyond the cockpit in the aviation industry. Central to their struggle is their limited control over their rosters¹, which are produced by algorithms in airline scheduling systems (Venus et al. 2022). Similar to the shipping industry pilots operate in a high-stress environment characterised by long duty hours, irregular work schedules, and extended periods of wakefulness, all of which can contribute to cumulative fatigue. As the industry faces economic pressure, pilots often find themselves fatigued due to demanding schedules and unpredictable work hours (Venus et al., 2022). Aviation authorities and regulatory bodies have implemented several procedures to address fatigue in aviation, including the establishment of Flight Time Limitations (FTL) and the development of Fatigue Risk Management (FRM) systems. FTL regulations limit how much time pilots can spend on duty and flying, aiming to prevent pilots from experiencing excessive fatigue during flight operations (EASA, 2024). Despite these regulatory efforts, concerns persist regarding the efficiency of current fatigue management practices in addressing the complex nature of fatigue in aviation. Venus and Holtforth (2022) conclude that both fatigue and mental health issues exist among European pilots. (Venus et al., 2022). The consequences of fatigue in aviation are severe, with research indicating that fatigue-related errors have been implicated in numerous aviation accidents and incidents (Bendak & Rashid, 2020). However, most of these studies conclude that fatigue exists but do not explore what keeps the individual motivated while feeling fatigued. As shown earlier, Boksem et al. (2006) conclude that there is a link between fatigue and extrinsic motivation; it is, therefore, interesting to further explore what factors motivate pilots if they are fatigued and how it affects their willingness to work. There is also a research gap in understanding what factors that keep pilots motivated despite their lack of control over working hours.

2.4 Self-determination theory SDT

Deci and Ryan rooted the first part of the SDT in the 1970th. It comes from studies investigating how extrinsic rewards influence intrinsic motivation (Deci & Ryan, 2012). Intrinsic motivation is by Ryan and Deci (2000a) described as it rises from an individual's inner interest or enjoyment of performing a task, in contrast to extrinsic motivation that relies heavily on external factors such as economic compensation to influence motivation (Ryan & Deci, 2000a). The SDT is known for its paradoxical effect: External rewards wear down an individual's intrinsic motivation or the individual's inner drive for activities they find interesting (Deci & Ryan, 2012). External rewards refer to external factors that are intended to influence the individual's motivation, such as deadlines, surveillance, evaluations, bonuses, etc. According to the SDT, all these would reduce the individual's sense of autonomy and independence (Deci & Ryan, 2000a). While the theory is widely accepted, it has also met some criticism. The critic has, among other things, been that the one who motivates must choose between motivating their employees through either intrinsic or extrinsic means. However, according to Deci et al. (1999) extrinsic factors could coexist with interest factors under some conditions. For example, if the rewards were perceived as informative rather than

¹ Roster – Schedule for pilots

controlling or given unexpectedly, it would not reduce intrinsic motivation. They also found that unexpected rewards could even increase intrinsic motivation on some occasions.

2.4.1 Key concept: Sense of Autonomy

“Autonomy involves acting with a sense of volition and having the experience of choice” (Gagné & Deci p. 334, 2005) Ryan and Deci (2000a) further means that autonomy is the sense of self endorsement and the freedom to take own decisions which leads to a sense of independent acting (Ryan & Deci, 2000a). In the SDT Autonomy is mentioned as the first basic psychological need and needs to be fulfilled to enable psychological wealth (Ryan & Deci, 2000a). According to Gagné and Deci (2005) Autonomy supports well-being, intrinsic motivation and counteracts conflicts. When feeling autonomous, the individual wants to explore, take initiative, and learn; this fosters creativity and innovation (Gagné & Deci, 2005). Further, this allows the individual to influence the direction of his goals (Ryan & Deci, 2000a).

2.4.2 Key concept: Sense of Competence

According to Ryan and Deci (2000a), competence is described as a feeling of being effective and capable. The individual then feels that he is good at something. They mean that competence is needed as a capability to attain the individual's goal. When competence is fulfilled, an individual's self-esteem is boosted. This increases his autonomous and intrinsic motivation, which promotes a positive feeling. Ryan and Deci (2000a) argue that this is particularly important in the workplace since people who feel competent are more likely to tackle complex tasks even if they perceive the task as difficult. Further Ryan and Deci (2000a) states that competence is the second basic psychological need that needs to be fulfilled to enable psychological wealth, promote autonomous and intrinsic motivation.

2.4.3 Key concept: Sense of Relatedness

Relatedness refers to an individual's need to feel connected to others (Ryan & Deci, 2000a). High relatedness is experienced when an individual cares for others and perceives that others mutually care the same for himself. When this occurs the individual then feels like he has meaningful relationships. This results in a sense of belonging and attachment which increase intrinsic motivation, and a sense of emotional well-being (Deci et al., 2017). This makes the individuals more cooperative and less likely to have social problems. At work, this results in the individual collaborating better with others and enhances teamwork (Gagné & Deci, 2005). According to Ryan and Deci (2000a) this connection is very important for employees. If they perceive that their leaders show confidence in them, and offering constructive feedback they feel empowered, and this fosters a supportive workplace. Relatedness is the third and final basic psychological need that promotes autonomous and intrinsic motivation (Ryan & Deci, 2000a). Further Ryan and Deci (2000a) writes that a lack of relatedness would be associated with sense of controlled motivation. As pilots work hours that differ from normal jobs, they may not meet their managers as often as normal employees. Therefore, they may perceive less interaction with their managers than employees that has normal working hours. Therefore, pilots may not feel as empowered as individuals having normal working. This setting calls for research exploring if pilots lack autonomous motivation due to lack of interaction with their managers.

2.4.4 Key concept: Autonomous motivation

Autonomous motivation is when someone wants to do something because they really like it and it is important to them personally, not because someone is making them do it or because they will get a reward for doing it (Deci et al., 2017). Autonomous motivation is closely related to the psychological need's sense of autonomy, sense of competence and sense of relatedness. (Ryan & Deci, 2000a). Gagné and Deci (2005) describe all three basic psychological needs as distinct. For optimal development and well-being, all three needs must be fulfilled. Therefore, for an individual to feel autonomously motivated it is important to focus on all three, not just one or two. The degree of Autonomous motivation can vary and be more or less aligned with intrinsic motivation and extrinsic motivation as seen in Figure 1 (Gagné & Deci, 2005).

Gagné and Deci (2005) argue that autonomous motivation is very effective if the task is complex or personally important for the individual. When someone is autonomously motivated, they feel good about what they are doing. According to Deci et al. (2017) this means that individuals are more likely to keep going when things do not go according to plan because they love what they are doing and believe it is the right thing to do.

An autonomously motivated individual is characterized by happiness and overall well-being. The freedom an individual is experiencing while autonomously motivated is closely linked to his individual values (Ryan & Deci, 2000a). Ryan and Deci (2000a) further mean that the individual demonstrates high performance and creativity in solving tasks. His ability also increases as they are more engaged and interested. Therefore, it is associated with increased mental health, and strong motivation for continuous learning (Ryan & Deci, 2000a).

2.4.5 Key concept: Intrinsic motivation

Intrinsic motivation is a type of motivation that grows from within an individual (Ryan & Deci, 2000a; Ryan & Deci, 2000b). Ryan and Deci (2000a) describe intrinsic motivation as a self-driven force. This force is driven by the individual's internal desire to learn, grow, and explore (Ryan & Deci, 2000a). This motivates an individual to engage in a task or activity because they find it interesting and enjoyable as can be seen in Figure 1. According to Gagné and Deci (2005), goals aligned with intrinsic motivation often result in behaviours that are more persistent. These behaviours lead to a task being performed with high quality and performance. Gagné and Deci (2005) mean that this is particularly present if the task requires creativity and deep thinking (Gagné & Deci, 2005). Ryan and Deci (2000a) have found that the three psychological needs sense of autonomy, sense of competence and sense of relatedness promotes intrinsic motivation.

2.4.6 Key concept: Extrinsic motivation

From early childhood and onwards extrinsic motivation starts playing an important role for motivating humans (Ryan & Deci, 2000b). As extrinsic motivation relies on external factors like economic compensation or avoiding punishment to influence motivation, especially when intrinsic motivation is lacking (Ryan & Deci, 2000a; Gagné & Deci, 2005; Ryan & Deci, 2000b). Further the factors can be aligned with personal endorsement and be chosen, for example to move towards career goals (Ryan & Deci, 2000b). One key aspect in SDT is that extrinsic motivation can vary in degree and be aligned with both Autonomous and Controlled motivation as can be seen in Figure 1 (Ryan & Deci, 2000a). Figure 1 illustrates the dynamics

of extrinsic motivation and how external factors could be aligned with the individual's personal values and will (Gagné & Deci, 2005).

2.4.7 Key concept: Controlled motivation

The individual's effort could be very high if motivated through extrinsic factors, as he tries to do these activities. However, these activities are according to Ryan and Deci (2000a), carried out to satisfy someone or something external. The individual could therefore feel pressured to do a certain activity or expect a reward in return for doing the activity. This leads to when the individual is doing such activities, there is a lack of personal will (Ryan & Deci, 2000a). This means that the individual lacks sense of autonomy. The action is rather carried out due to pressure from an outside source (Ryan & Deci, 2000a). Further Ryan and Deci, (2000a) means that lack of relatedness in the form of not feeling cared for leads to that the individual feels controlled and therefore controlled motivation. This pressure could come from rules or guidelines, and depending on if the individual follows those, he could be rewarded or punished (Ryan & Deci, 2000a). If a task is less complex and more of a routine job, controlled motivation might be more effective than autonomous motivation (Gagné & Deci, 2005). Controlled motivation can similar to autonomous motivation vary in degree however it cannot be aligned with intrinsic motivation see Figure 1 (Ryan & Deci, 2000a).

Controlled motivation leads to that the individual feels anxiety and stress. This is due to the individual not valuing the activity, instead he feels pressure from outside (Ryan & Deci, 2000a). Ultimately, this leads to that controlled motivation is associated with lower psychological well-being and a feeling that the tasks do not align with personal needs or interests relative to autonomously motivated individuals (Ryan & Deci, 2000a). On the same topic Deci et al. (2017) writes that employees may consider leaving when rewards feel controlling.

When an individual feels controlled, he may still put in a lot of effort. However, the quality of their performance and their persistence in doing so can be compromised, especially when they are not receiving any external incentives or rewards (Ryan & Deci, 2000a). An individual's learning and development is also affected. According to Ryan and Deci (2000a), this is particularly true in settings where conceptual and creative processing is required. The individuals then focus on meeting minimum standards rather than mastering them.

2.6 Analysis model

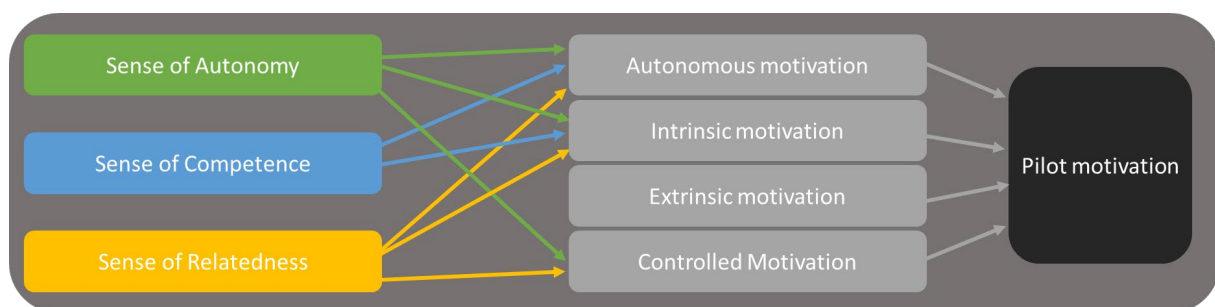


Figure 2 Analysis model developed by the author.

This study aims to describe and analyse pilot motivation given limited control over working hours. In order to present the key concepts used in this study the analysis model in Figure 2 was developed. Figure 2 offers a visual illustration over key concepts that are applicable to this study and will be used to analyse empirical findings.

The SDT refers to the sense of autonomy, competence and relatedness as psychological needs. They are all as distinct and within the SDT they affect motivation (Gagné & Deci, 2005).

Autonomous motivation is influenced by the sense of autonomy, the sense of being competent and the sense of relatedness (Ryan & Deci, 2000a). Together these senses affect pilot motivation through autonomous motivation (Gagné & Deci, 2005).

Intrinsic motivation is affected by the sense of autonomy, competence and relatedness where a high level of autonomy, competence and relatedness promotes intrinsic motivation (Ryan & Deci, 2000a). Further intrinsic motivation is promoted by an individual's inner want (Ryan & Deci, 2000a). Pilot motivation is affected by intrinsic motivation (Ryan & Deci, 2000a).

Controlled motivation is affected by the sense of Autonomy and Relatedness (Ryan & Deci, 2000a). A low level of autonomy and/or relatedness is associated with controlled motivation leading to reduced pilot motivation (Ryan & Deci, 2000a).

3 Method

3.1 Literature Review

According to Rolfe (2012), it is important to conduct a literature review when conducting research. In line with Rolfe, a literature review has therefore been conducted to situate this research within the existing knowledge bank. This, according to Bryman and Bell (2017), helps the author to determine “what is already known in this topic” (Bryman & Bell, p9, 2017). I aimed to identify gaps in existing research to justify this study. Further, the literature review helps to frame the theoretical approach of the study (Rolfe, 2012). According to Rolfe, this helps align the research question with existing knowledge. Another important aspect of the literature review is to see “what research methods have been applied” (Bryman & Bell, p9, 2017) when studying the subject and “who the key contributors are” (Bryman & Bell, p9, 2017).

I conducted the literature review in accordance with a model suggested by Bryman and Bell (2017) (see Figure 4). Second, I tried to find relevant references that literature referred to. This helped me to identify and find other relevant articles. This process was continuously carried out while reading other research. Third, I generated keywords relevant to the research question. These were for example, *Motivation, SDT, Self Determination Theory, working hours, schedule, roster, pilot rostering control + working hours, etc.* Fourth, I used the electronic database Google Scholar with MIUN full-text finder. Finally, the titles were examined; if the article was available in the MIUN full-text version and cited by others, the author read the abstract. For an article to be accepted, it had to be cited and peer reviewed. Exception was used for two reports, from Epstein et al. (2018) Karolinska Institutet and Kecklund et al. (2010) Stressforskningsinstitutet by Stockholm University. The reports were not published in journals but were conducted and published by well known institutes in Sweden. The presented findings were also in line with other presented research in other fields. The reason for presenting those was that these reports examined professionals facing the same type of variable working hours as pilots. I also used Certification Specifications which is published by the ruling organ in the European union within aviation which I believe is trustworthy for the purpose of providing details regarding rules and pilot working conditions and hours.

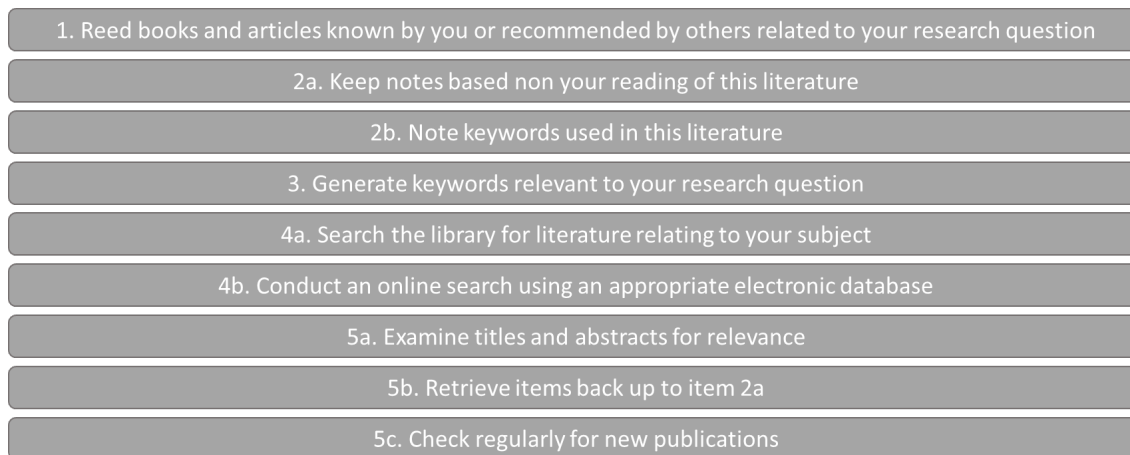


Figure 3 Searching the literature based on Bryman and Bell (2017).

3.2 Research Design

This study examines reality from the ontological standpoint of constructionism, which can be described as a reality constructed through social interaction (Bryman & Bell, 2017). This reality has then been interpreted from the epistemological standpoint of interpretivism, which Bryman and Bell (2017) explain as an interpretive perspective, meaning the interpretation of the subjective experiences of the interviewees in the context of the study.

This study is using a qualitative method to allow for in-depth understanding of selected pilots' interpretations and perceptions (Bryman & Bell, 2017). As there currently is no theoretical model to test pilots' motivation in a context where he has limited control over working hours on a large group of Informants, it was not deemed suitable to choose a quantitative method for this study.

Since this study is conducted qualitatively, it only applies to the study's contextual environment (Klopper, 2008). The qualitative approach was chosen to describe and analyse the Informant's motivation whilst having limited control over working hours. Therefore, the study's goal is not to prove whether a majority believes something but rather to explore the various experiences within the study's subject. Hence, I believe that the qualitative approach best serves the purpose of the study, which aligns with Bryman and Bell's (2017) view of the qualitative approach as investigative.

According to Bryman and Bell (p 27, 2017), "*abduction is proposed as a way of overcoming the limitations associated with deductive and inductive reasoning*". Bryman and Bell (2017) mean that "*abduction start with a puzzle or surprise and then seeks to explain it*" (Bryman and Bell p. 27, 2017). Bryman and Bell (2017) mean that the abductive researcher moves between induction which stands for developing new theory and deduction which tests existing theory. Further, Dubois and Gadde (2002) explain that the abductive approach allows for a combination of theory and empirical data. The researcher is then allowed to move between the theoretical framework and empirical data to develop new insights. Furthermore, Dubois and Gadde (2002) mean that the abductive approach allows for a better match between theoretical concepts and real-world observations.

This research was designed as an abductive study and aimed to further develop previous findings in a new context, namely pilots who cannot control their working hours. My intention was to further explain existing theory within the SDT in the concepts of pilots and link it to previous research on work time control and motivation at work. I entered this study with a top-down approach, by first conducting a literature review of previous research followed by conducting the study.

The selection criteria for the study were that the Informant works operationally as a pilot in an airline. One exception from this was used with the pilot presently flying ambulance flights, this pilot had previously been operating for a large airline and had a roster that matched the other pilots' and equivalent opportunity to influence it. All Informants had training as a commercial pilot and held a CPL (Commercial Pilot License) or an ATPL (Airline Transport Pilot License). The level of education was irrelevant beyond the interviewee holding a CPL or ATPL to provide a broader picture. No other criteria were set. This means age, gender, years of experience etc. was not considered.

3.2.1 Operationalisation

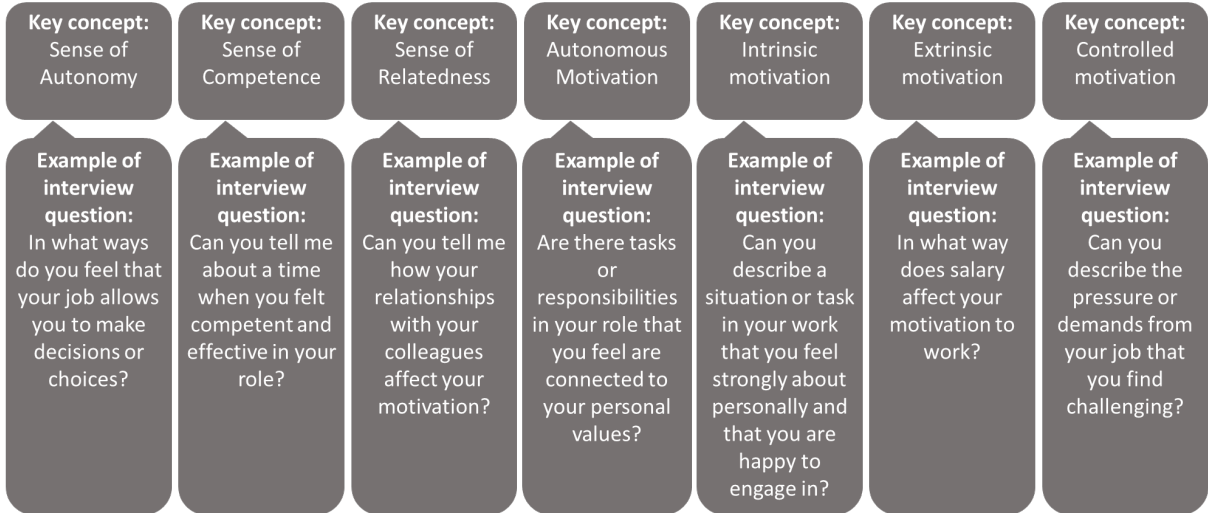


Figure 4 Operationalization with examples of questions from the key concepts.

The interview questions in Appendix 1 were divided into seven key concepts as seen in Figure 4. These key concepts were sense of autonomy, sense of competence, sense of relatedness, autonomous motivation, intrinsic motivation, extrinsic motivation, and controlled motivation. The key concepts were based on the theoretical framework and is further represented as a key concept in the analysis model. In the beginning I used more key concepts namely Job satisfaction and Stress. During the writing process of this thesis, it became clear that those could be incorporated in the other key concepts. This was done to simplify the structure of the analysis. Further, the answers to the questions under sense of autonomy, sense of competence and sense of relatedness was used to provide the links between these key concepts and the key concepts of autonomous motivation, intrinsic motivation and controlled motivation see Figure 2 Analysis model developed by the author.

The initial set of questions targeted the sense of Autonomy, the aim was to capture if the informants perceived a sense of being autonomous which by Ryan and Deci (2000a) is described as the freedom to take own decisions which leads to a sense of independent acting. Further, this key concept tried capture signs of that the sense of being autonomous promotes

autonomous and intrinsic motivation and that a lack of could result in Controlled motivation in line with Deci and Ryan (2005).

The second set of questions targeted the sense of competence. The aim was to capture if the respondents felt capable and effective at work which would indicate a sense of competence (Ryan & Deci, 2000a). Further, this key concept tried capture signs of that the sense of being competent affected autonomous and intrinsic motivation in line with Ryan and Deci (2000a).

The third set of questions targeted the sense of relatedness. The aim was to capture if the respondents felt connected to colleagues and managers in line with Ryan and Deci (2000a) and if and/or how this affected autonomous motivation, intrinsic motivation, and controlled motivation.

The fourth set of questions targeted autonomous motivation. The aim was to capture if and how the respondents felt autonomously motivated and what factors that contributed to that including sense of autonomy, competence and relatedness. This due to that the literature for example Gagné and Deci (2005) argue that autonomous motivation is very effective if the task is complex and Kohl et al, (2004) write that pilots face strict and complex operational requirements.

The fifth set of questions targeted intrinsic motivation. The aim was to capture if and how the respondents felt intrinsically motivated through signs such as, an inner desire which would indicate intrinsic motivation in line with Ryan and Deci (2000a). Further the questions aimed to capture factors that contributed to that including sense of autonomy, competence and relatedness. During the writing process of this thesis and after the interviews were conducted it was clear that there was an imbalance between questions targeting intrinsic motivation and extrinsic motivation, however the Informants answers to questions under other key concepts covered intrinsic motivation as well, especially in relation to the psychological needs.

The sixth set of questions targeted extrinsic motivation. The aim was to capture signs of extrinsic motivation through external motivational factors such as pay and benefits in line with Ryan and Deci (2000a).

The seventh set of questions targeted controlled motivation. The questions targeted external pressure and demands that the individual found challenging or makes the individual to behave in a certain way which Gagne and Deci (2005) links to controlled motivation. Additionally, the questions targeted the absence of sense of autonomy and the feeling of being controlled, sense of stress or anxiety which indicates that an individual in motivated through controlled motivation (Ryan & Deci, 2000a). Finally, this section tried to capture how sense of autonomy and sense of relatedness were related to controlled motivation.

3.2.2 Research Methodology

This study is an interview study where I interviewed pilots who could not control their working hours. The aim was to describe and analyse employee motivation given limited control over working hours.

3.3 Research Object

The purpose of this study was to describe and analyse what motivates employees while having limited control over working hours. Therefore, pilots, and in this case commercial

pilots, were studied as they work under such conditions (Kohl et al., 2004). They worked at four different airlines, transporting passengers and/or cargo. They were employed either by the airline they were flying for or via a contractor agency providing the airline with pilots. The pilots operated diverse flights, some domestic within, for example, Sweden or Norway, and others, some of them international flights around Europe and North Africa. The airlines the pilots worked at were Scandinavian Airlines, Swedish Ambulance flying, Ryanair, and Norwegian. Scandinavian Airlines operate flights from Sweden, Norway, and Denmark, mostly within Europe and Scandinavia but also intercontinental for example, USA and Asia (SAS, 2024). Swedish Ambulance flying operates, coordinates, and performs air ambulance transport with readiness at three standby bases in Sweden, 24 hours a day, year-round (Svenskt Ambulansflyg, 2024). Ryanair is an Irish international airline group that operates flights through its subsidiaries, Ryanair, Ryanair UK, Buzz, Lauda, and Malta Air. They operate flights to more than 240 destinations across Europe (Ryanair, 2024). Norwegian is a Norwegian airline operating within Europe with a focus on the Nordic region and its key destinations in Europe (Norwegian, 2024).

The pilot from Swedish Ambulance flying had previously worked for Ryanair and asked to have his full career in mind during the interview. The pilots were working on either a fixed roster for example five days on four days off on a rolling schedule or a variable roster valid for one month and released 14 or 15 days prior to the first active day on the roster. Both types of rosters include flights round the clock for all pilots. The rosters could also include standby duties where the pilot was on call. Overall, the pilots had no ability to control their schedule except for applying for vacation or in some cases days off. However, that was no guarantee in getting the vacation or day off that they applied for.

3.3.1 Informant Selection

However, to enable depth in the analysis Edwards and Holland (2020) suggests that a diverse group should be used. The author has therefore tried to get a mix of the responses, the two first pilots were asked to connect me with pilots in airlines other than their own.

According to Bryman and Bell (2017), a convenience sample combined with the snowball effect is often called "snowball sampling." According to Bryman and Bell this method is used when researchers start with a small group of known individuals and use these to access more Informants. Informants then help the researcher identify other potential Informants who fit the study's selection criteria. This also means that it is not a random sample (Bryman & Bell, 2017). In this study, snowball sampling was used to select Informants. The author of this thesis had direct access to two pilots in his immediate circle of acquaintances. To find more pilots to interview, he got help from the first two, who asked colleagues and friends in the aviation industry if they could participate in the study. This approach was chosen to get access. However, this method could include bias in the selection since the pilots were acquainted to each other. This could imply that the Informants are like-minded impacting the results of this qualitative study negatively. One way to mitigate that risk was that I requested the first two pilots to connect me with pilots from other airlines and if possible, based at different locations. The group of informants were homogeneous regarding sex as all were men and age spanning from 27-41 years old. However, the group was not homogeneous regarding experience as it included five Captains and three First officers.

In this study, eight pilots were interviewed. After five to six interviews signs of theoretical saturation was perceived. According to Bryman and Bell (2017), theoretical saturation means that additional data collection no longer adds any new information or understanding to the research questions. In the case of this study these signs were that I could perceive connections between different categories of the data. During the last two to three interviews my perception was that the data from the last interviews followed the same pattern as the previous interviews which is in line with Bryman and Bells definition of theoretical saturation *”No new or relevant data seem to be emerging regarding a category, the categories is well developed in terms of its properties and dimensions demonstrating variation, and the relationships among categories are well established and validated”* (Bryman & Bell, p432, 2017). The participants were anonymous and in Table 1 below presented with a number, base location (airport from where a pilot starts and finishes work), title, and form of interview.

Table 1 Informants.

Informant	Base location	Title	Age/Sex	In person/ digital
1	London	Captain	34/M	Digital
2	Stockholm	Captain	34/M	Digital
3	Oslo	First Officer	34/M	Digital
4	Oslo	Captain	41/M	Digital
5	Umeå	Captain	34/M	Digital
6	Stockholm	Captain	31/M	Digital
7	Oslo	First Officer	34/M	Digital
8	Copenhagen	First Officer	27/M	Digital

3.4 Interviews

Bryman and Bell (2017) write that semi-structured interviews *“typically refers to a context in which the interviewer has a series of questions that are in general form of an interview schedule but is able to vary the sequence of questions... the interviewer usually has some latitude to ask further questions in response to what is seen as significant replies”* (Bryman & Bell, p213, 2017). Semi-structured interviews were therefore conducted to balance structure and flexibility. My objective was to allow for deep insights and the ability to elaborate on interesting topics brought up by the interviewee. The semi-structured concept allowed me comparability between interviews while capturing unique perspectives.

The interviews were conducted with an interview guide. In line with Bryman and Bell (2017), the guide had topics named key concepts. These key concepts were broken down into some questions where the interviewee had leeway. The questions were not always asked in the same order, as the interviewee may already have covered some of or the whole subject while answering another question. Furthermore, in line with Bryman and Bell (2017), I frequently asked questions not covered in the interview guide due to following up on something

interesting in the interviewee's answer. This led to that the structure of the interviews differed a bit in between. This was because the Informants answered differently, and different tracks were followed up. However, during the interviews, I did not see any signs or indications that age or level of experience influenced the informant's motivation.

3.4.1 The Interview Process

Interviews were conducted during five days, during three of those days two interviews were conducted and during two of those days one interview were conducted. The interview schedules were conducted to suit the interviewee's schedules and were conducted during the between 10:00 in the morning and 20:00 in the evening. No test interviews were conducted due to time pressure from the thesis schedule. The time used during the interviews varied between 38 and 62 minutes. Further, all interviews were conducted digitally. The reason for this was Informant availability and geographical spread. Two of the interviews were in based in Stockholm which is the same city as I live. According to Bryman and Bell (2017) face to face interviews are preferred but during these interviews both pilots were working and took the interview from their hotel room. Therefore, I could not observe any interviewees at the same way as during a face-to-face interview or guarantee that they did not focus on something else as Bryman and Bell (2017 describes as advantages during face-to-face interviews. However, my perception was that all interviewees were engaged. All interviews were recorded and transcribed. According to Braun and Clark (2013), the preferred language to conduct interviews in is the interviewee's native language. Since I am Swedish and the interviewees were Swedish, all interviews were conducted in Swedish. This allowed the interviewees to elaborate and explain as much and as deeply as possible. Further, the choice of Swedish most likely enhanced my ability to actively listen and understand the answers in depth. See Appendix 1 for the interview guide.

During the interview, I limited my notetaking to focus on the interview. After each interview, I reflected over the interview. I noted what I thought were important parts and interesting findings relative to this thesis. It was common that the respondents covered other key concepts while answering a question, this led to that data from questions have been analysed under other themes than the key concept the theme was associated with. Later in the process, selected quotes were translated by me from Swedish to English. This was done as this thesis is written in English. Finally, my perception is that the interviews resulted in relevant information that could be analysed and used to help me answer the research question.

3.5 Analysis methodology

Following Braun and Clarke's (2006) model, a thematic analysis was carried out. The model, (see table 2) which consists of six stages, was followed to identify, analyse, and present themes and relate the data to the key concepts.

Table 2 Steps in thematic analysis partly based on Braun & Clarke (2006).

	Section	The process
Stage 1	Get to know the data	Transcribe and read all transcripts
Stage 2	Coding	Find relevant data in relation to the research question and break it down into smaller parts
Stage 3	Relate to key concepts	Try to find connections to the different codes and relations to key concepts from the theory
Stage 4	Review themes	Check if the themes make sense relative to the data
Stage 5	Define and name themes	Write definitions and explanations for the key concepts.
Stage 6	Write the report	Final analysis, select appropriate compelling examples, final analysis of them. Analyse in relation to the literature and research question

In the first step, all interviews were transcribed after they were successfully conducted. All transcripts were copied into a separate Word document; thereafter, the author read all the data. After this, the author started to code the data by writing comments with codewords to words, meanings, and paragraphs. Some texts could have several codewords. Sometimes, a single codeword was not sufficient, and a meaning or phrase was used as code. In the third step, the author analysed the codes and tried to find and relate the codes to each other and to the Key concepts from the theoretical framework. In the fourth step, all codes were classified in a table, and I started to review themes. In the fifth step, the themes were updated, and given definitions and explanations. The key concepts from the theoretical framework were sense of Autonomy (A), sense of Competence (C), sense of Relatedness (R), Autonomous motivation (AM), Intrinsic motivation (IM), Extrinsic motivation (EM), and Controlled motivation (CM). In the last step relevant quotes to my research question were collected. The final analysis was conducted, and I chose appropriate quotes as compelling examples, which was analysed in relation to the literature and research question. For examples of quotes, codes, and mapping to themes, see Table 3 Thematic analyse based on Braun and Clarke (2006).

Table 3 Thematic analyse based on Braun and Clarke (2006).

Quotation	Code	A	C	R	AM	IM	EM	CM
<i>"I have a certain freedom to make decisions during the flight, but there are many rules and procedures that must be followed. Despite this, the decision-making authority gives me a sense of responsibility."</i> Informant 1	Decision making + Importance of decision making	x						
<i>"When flying in northern Norway, where it's often windy and the weather is bad, you feel that you've received the training and experience and have been taught by older captains how to plan and think. I feel that I have gained that knowledge. It's not any specific situation it's almost daily that I feel like I'm doing a good job."</i> Informant 3	Training + Experience		x					
<i>"I have good relationships with my colleagues, but the relationship with the managers can be strained at times. This affects my motivation and job satisfaction..."</i> Informant 6	Relationships with Colleagues and Managers			x				
<i>"For me personally, I feel that the nicer and more relaxed, but still professional, the atmosphere is at work, the better I enjoy my job. And the better my motivation to do a good job. However, if I have an experience with a negatively inclined colleague... It becomes more about just getting the job done to finish the work period."</i> Informant 8	Relationships with Colleagues + Atmosphere Influence				x			
<i>"I am passionate about not losing basic flying skills. It is important for me to be a good pilot and maintain a high safety standard... It is allowed to fly manually without the</i>	Passion for work					x		

<p><i>autopilot when the conditions allow by the management but not mandatory or promoted"</i> Informant 7</p>	
<p><i>"The more salary you get, the more your motivation increases. But it also feels like up to a certain point, after a while, when you reach a certain level, it neither adds to nor detracts from motivation with more salary... As a captain I am very happy with my salary and would choose to be with my family instead of doing extra flights for more money."</i> Informant 5</p>	<p>Pay x</p>
<p><i>"Most of my schedule is predetermined by the company, and I have very limited ability to influence it. This makes planning my personal life difficult."</i> Informant 2</p>	<p>Press + Demands x</p>

3.6 The Study's Credibility

The author of this study has used credibility, transferability, dependability, confirmability, and authenticity based on Bryman and Bell (2017) to gain sufficient credibility relative to the scope of this thesis. These concepts were selected since Bryman and Bell (2017) suggest that these be used instead of reliability and validity, which are more commonly used in quantitative research.

3.6.1 Credibility

According to Bryman and Bell (2017) credibility stands for the degree of believability and trustworthiness of the findings in a study. To fulfil this, I have used widely accepted and peer-reviewed research and analysis methods such as Bryman and Bell's book Business Research Methods and Braun and Clarke's book Successful Qualitative Research and article Using Thematic Analysis in Psychology. I have also been transparent in reporting my procedures to his supervisor during the research process and naming them in this thesis.

3.6.1.1 Informant validation

Bryman and Bell (2017) suggest that the researcher involves the Informants in the analysis phase, presenting what was found and seeking feedback. This will enable the Informants to comment on findings and, therefore, strengthen the trustworthiness of the study. The researcher can then, if necessary, get participants to clarify ambiguous points to identify any discrepancies or misunderstandings. I have during the process of analysing the data, emailed key findings to the Informants and asked them to confirm or deny these findings.

3.6.2 Transferability

Transferability refers to external validity (Bryman & Bell, 2017). This means to what extent the findings in this study can be generalized and transferred to other situations and settings (Bryman & Bell, 2017). As this study has used pilots from several airlines, the findings could be applicable to pilots. However, I believe that, for example, culture could possibly affect the result. Therefore, I believe that transferability within the same region that the pilots were based on is most valid. It is further up to the reader to assess if this study's findings could be valid in their context.

3.6.3 Dependability

Dependability is by Bryman and Bell (2017) referred to as the consistency and stability of the study process and findings. It is used to ensure reliability and trustworthiness. According to Bryman and Bell (2017), one central aspect of this is to minimize bias and errors. Within the methodology section of this thesis, the author of this thesis has methodically documented and explained each decision made throughout the research process, providing a comprehensive account of the reasoning behind each choice. In line with Broun and Clarke's (2013) recommendation the thesis author has, since the start of this thesis, been assigned a supervisor who examined and approved the research methodology used in this study. According to Broun and Clark (2013), this improves dependability. This could be compared to a published peer-reviewed scientific article. Before a scientific article is published, many experts review the article (Rolfe, 2012). In the case of this thesis, the supervisor has continuously received the author's work, commented, and suggested improvements.

3.6.4 Confirmability

While conducting interviews and processing the data, I did my best to stay neutral from a confirmability aspect. To do this, I followed Bryman and Bells's (2017) advice, trying to keep my personal opinions away from the study. Bryman and Bell (2017) recognize that it is hard for a researcher to stay objective. To be as objective as possible throughout the process, I took a helicopter perspective to avoid having any preconceptions. In line with Bryman and Bells's (2017) approach of semi-structured interviews with open-ended questions, I tried to practice active listening and not interrupt the Informant while a question was asked. After the interviews, I practiced a structured way of coding the data as suggested by Braun and Clarke's (2006) (as described in: 3.5 Analysis methodology). By establishing a clear coding procedure, I, in line with Braun and Clark (2006), tried to minimize subjective interpretation and maintain objectivity in data analysis.

3.6.5 Authenticity

As a fifth criterion, Bryman and Bell (2017) suggest authenticity, which refers to a fair representation of the Informant's perspectives, experiences, and voices. According to Bryman and Bell (2017), authenticity is very important in qualitative studies since understanding people's stories is key. These stories can include sensitive information. Therefore, it is important to build trust with the Informants. In this research, specialists in their field, namely pilots, were interviewed. I did my best to stay objective, listening to and trying to understand the Informant's stories as detailed and objectively as possible. When presenting this study to the Informants, I hope they will learn something or be able to put words on and, therefore, learn to explain a phenomenon. This is in line with Bryman and Bell (2017), who call this ontological authenticity. This means that the research findings will help Informants better understand their social environment.

3.7 Ethical and Societal Aspects

Ethical reflections were used to ensure good research ethics. Researchers are guided by four principles: reliability, honesty, respect, and responsibility associated with research. (Swedish Research Council, 2024). Great care was taken to ensure the reliability of this study in terms of quality, methodology, design, analysis, and resource utilization. This demonstrates my commitment to producing high-quality, accurate research. I have made every effort to follow the method references provided above. This indicates that the study is reliable, considering its scope of 15 credits. I have no intention of hiding or withholding any empirical data. I aim to represent information as accurately as possible and provide citations when the information comes from another source, thus acting honestly. I showed respect for the study's participants by being non-judgmental and allowing them to speak from their experiences. I demonstrated respect for the environment by using eco-friendly methods such as digital interviews and avoiding paper use.

I tried to act responsibly by ensuring that all Informants were well-informed about the privacy and anonymity of their participation. Throughout the study, I made it clear that participants had the right to withdraw at any time, free from any obligation to provide a reason. This effort tried to increase the participants sense of safety and empowerment throughout the process. Also, great care was taken to guarantee anonymity, which was achieved by ensuring that no individual was identified by their name, company name, or any other identifier. This level of attention to detail and respect for participants' privacy and autonomy underscores the integrity of the research project.

Finally, I took responsibility for our research by informing all Informants regarding privacy and anonymity in connection with their participation inquiry. All participants had the opportunity to withdraw their participation at any time during the study without any reason and thus of their own free will. They were assured anonymity, which is fulfilled since no individual is presented by name, company name, or any other identifier.

4 Empirics, analysis, and discussion

4.1 Presentation of findings and themes

The interviews of eight pilots gave insights in their professional life, their motivation and what challenges they face related to their working hours. The Informants' work experiences vary from small commercial ambulance flights to large international airline carriers. All Informants faced limited control over their working hours, they could apply for early/late starts and certain flight but there was no guarantee. The pilots with a fixed roster did know what days they were off and worked according to a fixed rotation 5 days on, 4 days off, 5 days on...) and could calculate which days they will be working and be off in the future. Pilots with variable roster did not know what days they were working the next month.

The data from the interviews has been categorised into seven themes introduced in Table 3: Sense of autonomy, sense of competence, sense of relatedness, autonomous motivation, intrinsic motivation, extrinsic motivation, and controlled motivation.

4.2 Themes

4.2.1 Sense of Autonomy

As the outcome of the interviews indicates that the pilot's volition and willingness to do an activity was driven by own interest or personal value. All pilots in some way expressed that they perceived a sense of responsibility and freedom to take decisions and being responsible for its outcome.

"I have a certain freedom to make decisions during the flight, but there are many rules and procedures that must be followed. Despite this, the decision-making authority gives me a sense of responsibility." (Informant 1)

The quote from Informant 1 suggests that he perceives a balance between freedom on one hand and rules and procedures on the other. This perceived balance seems to be sufficient for the pilots to perceive the sense of being autonomous. This would according to Gagne and Deci (2005) promote Autonomous motivation and Intrinsic motivation. Even though the pilots must follow many rules and procedures, the quote indicates that the pilot felt a sufficient level of sense of responsibility to feel autonomous, which is evident in the quote below:

"A few weeks ago, I made a decision to bring quite a lot of extra fuel onboard. It wasn't because the weather at our destination indicated it would be necessary but based on my experience. I knew that large thunderstorm clouds can often develop quickly. Since we were scheduled to land around lunchtime, I decided to take extra fuel. When we arrived, it turned out that a rather large thunderstorm cloud had formed over the airport, preventing us from landing. Instead of having to fly to another airport and land there, we had enough fuel onboard to wait out the storm cell and let it pass. We circled for about 25-30 minutes before we could go in for landing. Afterwards, I felt very satisfied because it saved the company a lot of money and time and spared all the passengers a lot of hassle. It was a relief." (Informant 1)

In this case Informant 1 took a decision that was not supported by the documentation provided by his airline. This implies that he has the authority to take individual decisions based on experience instead of following the suggestions from the airline. A key aspect of sense of autonomy in the SDT is according to Ryan and Deci (2000a) an independent and self-governing way of working. The quote above suggests that this is fulfilled even though there are many rules and procedures that must be followed which helps the individual to feel autonomously motivated. The ability to take such a decision contributes to a sense of relief when the pilot succeeded and landed at the destination instead of another airport. According to the SDT the freedom to take such independent decisions contributes to autonomous motivation and increase the individual's engagement (Ryan & Deci, 2000a). If the pilot would not have been allowed to take a decision of bringing extra fuel this would have forced him to divert to another airport. In that case it is likely he would have felt controlled and by following rules and guidelines from an outside force in this case the airline this would have been perfectly in line with what Deci and Ryan (2000a) describes as controlled motivation which does not include the sense of autonomy.

"It is very important. The freedom to make decisions makes me feel more engaged and responsible. Without this, the job would be much less satisfying." (Informant 3)

According to the SDT autonomy is not just about the perception of freedom, it is also about the perception of self-control. The individual must feel that he can make choices and control their actions (Gagné & Deci, 2005). This is aligned with the quotes from Informant 3 above. This freedom contributes to an increased level of autonomy.

4.2.2 Sense of Competence

The outcome of the interviews suggest that all Informants perceive a high level of competence at work. They feel capable and effective almost every day at work. Competence captures how the pilot's sense of being competent Autonomous motivation and Intrinsic motivation.

Competence is one of three psychological needs that together constitute a sense of well-being. According to Ryan and Deci (2000a) competence refers to a feeling of being effective and capable. Below Informant 3 describes a situation when he feels effective and capable.

"When flying in northern Norway, where it's often windy and the weather is bad, you feel that you've received the training and experience and have been taught by older captains how to plan and think. I feel that I have gained that knowledge. It's not any specific situation it's almost daily that I feel like I'm doing a good job."

Informant 3

"If you're on the ball if you have a technical problem and you contact the right people to keep everything running smoothly. Then you feel efficient." Informant 6

When the sense of competence is high the individual feels effective and this promotes Autonomous and/or Intrinsic motivation (Ryan & Deci, 2000a). The quote from Informant 6 above states that he feels efficient when solving problems at work. This makes him effective and therefore promotes competence. Furthermore, the quote from Informant 6 above could be linked to intrinsic goals within intrinsic motivation that leads to that tasks being performed to achieve this goal is performed with high quality and performance (Gagné & Deci, 2005). This could further be useful since Gagné and Deci (2005) mean that this is particularly present if

the task requires creativity and deep thinking. This means that when a pilot faces a challenging problem during line operations he will perform better. Once reaching this goal Informant 6 describes the feeling as: “*Then you feel efficient*” (Informant 6) and this leads to increased intrinsic motivation.

The pilots also indicate that they appreciate training as it makes them feel more competent.

“I really appreciate the regular training programs we have. They help me keep my skills up to date and ensure that I am always prepared.” Informant 3

“Where we receive feedback even during training and when we do our tests in the simulator. You feel competent after a session like that when you have overcome all the challenges the instructor gives.” Informant 4

According to Ryan and Deci (2000a) an individual’s self-esteem is promoted when he perceives that they are good at something which increases intrinsic motivation. As training makes the pilots feel that they are good at what they do Intrinsic motivation is promoted.

4.2.3 Sense of Relatedness

The outcome of the interviews suggest that all Informants perceive a high level of relatedness to their colleagues at work. However, the sense of relatedness to management has room for improvement. The interviewed pilots all indicate that their relationship with the crew is a key aspect of their motivation. Below Informant 1 highlight that he values the relationship with his colleagues.

“Relationship with my colleagues is super important. It's absolutely crucial for my motivation at work because it essentially determines whether I have a good or bad workday. If you have a nice colleague, the workday becomes great, and vice versa. But that's also what makes me really like the job because I often fly with very, very nice people. So, my colleagues are important. However, I don't have much contact with my managers. The little contact we do have often happens over email or through reports we write. We rarely get any feedback on these reports, so the communication with managers is quite sterile. Every week, we also receive memos from the company, which can be about company matters or operational changes to be aware of in different places or countries in Europe. This communication is entirely one-sided. It is sent out by the managers, and we just read it. There is no opportunity for feedback. So, communication with managers is almost non-existent, and therefore, it doesn't contribute to my motivation. If anything, it might make me less motivated because I would appreciate more interaction.” (Informant 1)

Informant 1 indicates that the relationship to his crew is critical for their motivation which aligns with the SDT. According to Ryan and Deci (2000a) and Gagné and Deci (2005) this type of relatedness promotes Autonomous Intrinsic motivation. Relatedness captures the pilots need to feel connected and valued among colleagues and managers. The quality and depth of the relationship reflects how motivated the individual are at work. The interviewed pilots’ strong connections to their co-workers and managers improve their motivation through Intrinsic motivation as they express the importance of colleagues to their motivation.

As Informant 1 feels that these relationships are meaningful this promotes a sense of well-being, in line with Deci et al. (2017). Further, Informant 1 indicates a sense of belonging to his team and colleagues at work. According to Gagné and Deci (2005) this results in the individual being more corporative and promotes teamwork ability.

However, Informant 1's experience with management puts light on a gap in relatedness and communication. His perception of "sterile" and "one-sided" communication from management does not fulfil the need for relatedness. According to Ryan and Deci (2000a) a lack of any of the psychological needs can lead to amotivation. A work environment with a lack of relatedness is therefore a dangerous as it could lead to amotivation. Informant 1 clearly states that he feels that this lack of communication from management reduces motivation, and more interaction would be appreciated. As the communication is perceived as "one-sided" in indicate a sense of being controlled linking this part to controlled motivation. This indicates that in contrast to relatedness he feels distant from management which would be the opposite from experiencing relatedness. However, he also expresses an inner want to improve the Relatedness to management. This could be described with the intrinsic motivation where the pilot, in line with Gagné and Deci (2005), has an intrinsic goal to develop his relationship with management.

Informant 1's perception of relatedness could therefore be considered two sided. This was present by most of the Informants. When it comes to colleagues the fulfilment of this psychological need is high but on the other side low or not existing when it comes to management. Among the Informants the perception of relatedness to management varied but most of the Informants had experiences similar to Informant 1. The author of this thesis perceived Informant 1 as overall motivated from a relatedness perspective. This indicates that in the case of Informant 1 the sense of relatedness to colleagues affects his motivation more than the lack of relatedness to managers.

On the same topic Informant 6 describes his relationships with colleagues and managers.

"I have good relationships with my colleagues, but the relationship with the managers can be strained at times. This affects my motivation and job satisfaction... A bit like I said in another question, about the crew and so on. I often think it works well. I think most people are decent and sensible, and it helps knowing that you're going to work with good colleagues. Relationships with managers, however, are really, really bad. They've been so bad that I've lost motivation for the job. For example, if you have an operational problem and come up with a solution, and they don't agree, they scream at you on the phone instead of just saying, "No, we don't do it that way, it's not our policy." (Informant 6)

Overall, Informant 6 agrees with Informant 1, but he is clearer regarding lack of feeling valued by others, in this case management. Informant 6 clearly states that he is not feeling valued by management and that the way they are treating him affects his motivation in a negative manner. This managerial behaviour undermines his motivation at work. From the perspective of psychological needs this clearly reduces relatedness. This leads to that his psychological needs cannot be fulfilled. According to Gagné and Deci (2005) this will affect cooperation and teamwork in a negative way. Ultimately, this would lead to that others feel less connected to the individual and their relatedness will also drop. This would therefore affect the whole crew's motivation and in the long run all colleagues.

4.2.4 Autonomous motivation

As the outcome of the interviews indicates that the pilot's volition and willingness to do an activity was driven by own interest or personal value. It involves the perceived sense of responsibility and freedom to take decisions and being responsible for its outcome. This aligns with the Autonomous motivation theory indicating that the pilot is motivated through his own satisfaction or personal relevance (Deci et al., 2017).

Gagné and Deci (2005) write that when autonomously motivated the behaviour is coherent among the individuals' goals, values, and regulations. Informant 2 describes how he is passionate about operating as fuel efficient as possible.

"What I find particularly engaging is conducting a flight as fuel-efficiently as possible. This is one of the elements in our operations that we can influence. By performing green landings, taxiing on one engine, and similar practices, I find this very interesting and try to engage in it... The company wants us to practice for example single engine taxi as much as possible as it saves fuel." Informant 2

According to the SDT this be described as autonomous motivation (Gagné & Deci, 2005). This is a typical example of an individual who is autonomously motivated. The quote from Informant 2 also shows that he feels competent and capable in his efforts to save fuel. This indicates that the autonomous motivation he experiences is partly due to his sense of competence. As the company wants him to practice fuel saving techniques there is extrinsic factors but they are fully aligned with the individuals' values and wants. As autonomous motivation leads to overall happiness and well-being according to Ryan and Deci (2000a). This behaviour is therefore promoting the pilot's well-being and motivation at work.

Informant 7 describes a balance between freedom and frames controlling this freedom.

"I have quite a lot of freedom to make decisions during the workday, but there are strict boundaries. Decision-making is central to performing my job well."
(Informant 7)

According to the SDT, extrinsic motivation could be aligned with autonomous motivation if the motivation matches the individuals wants and needs (Gagné & Deci, 2005). If the pilot has accepted these boundaries and feels that these are correct, then they may be considered as aligned with his will. In line with the SDT this could be described as if he feels autonomous even if there are strict boundaries. According to the SDT the motivation to perform tasks and duties at work would then be autonomous (Gagné & Deci, 2005). Informant 7 says that decision-making is central in his role and that he perceives freedom in the decision-making process. If the individual perceives a lack of this freedom the tasks could be perceived as more forced and controlled which would lead to reduced motivation and engagement according to Gagne and Deci (2005). The key to determine if the motivation is autonomous or controlled depends on the degree of which the individual perceives these boundaries as controlling. If they the boundaries are aligned with his will and wants, the motivation would be autonomous. This means that if the airline has strict rules and procedures the pilot can still perceive autonomous motivation.

"For me personally, I feel that the nicer and more relaxed, but still professional, the atmosphere is at work, the better I enjoy my job. And the better my motivation to do a good job. However, if I have an experience with a negatively inclined

colleague... It becomes more about just getting the job done to finish the work period." Informant 8

The quote from Informant 8 shows how positive relationships with colleagues improves the work environment. This reflects how the sense of relatedness will improve autonomous motivation. If the atmosphere would be unfriendly Informant 8 indicates that he would feel more controlled as he states, "*It becomes more about just getting the job done to finish the work period*". If the pilots, feel that relatedness is high they would be more autonomously motivated and the role of extrinsic factors would reduce in line with Deci et al. (2017). This underscores the importance of the sense of relatedness at work and how it contributes to autonomous motivation. Gagné and Deci (2005) argues that autonomous motivation is highly effective if the task is complex.

4.2.5 Intrinsic motivation

Intrinsic motivation captures the pilot's inner drive. When interviewing the pilots, all Informants described an inner drive for leadership and teamwork in one way or another. Several of the Informants expressed a strong passion for flying.

Informant 3, Informant 4, and Informant 8 describe the following when answering the question: When you are at work, can you describe a situation or a task in your job that you feel strongly about personally and that like to engage in?

"I enjoy leading and motivating the crew. It is important to create a good working environment." (Informant 3)

"It's about being a leader, above all. Trying to motivate the crew and striving to do the best job possible together. I find it interesting to see how you can get people to perform better through your own behaviour as a leader." Informant 4

"What I immediately think of when you ask that question is team building. I believe it is immensely important for flight safety, but also for service and passenger comfort. The priority, of course, is to get everyone to their destination safely. We are a large team, even if we might only be between 5 and 7 people. It is our responsibility to ensure good service and safety from point A to point B. If we have good teamwork and create a strong team spirit where everyone feels comfortable raising questions, concerns, or things that stand out, I think we are well on our way. So, teamwork is something I would say is very important to me as a staff member." Informant 8

Similar to the quotes above all the Informants find it satisfying, interesting and motivating to lead their team. This could be described as an inner drive for motivation. According to Ryan and Deci (2000a) intrinsic motivation is described as something the individual really wants. The aspect of leadership seems to be aligned with the Informants' inner wants. This means that the role as a leader motivates these pilots at work. Further, these quotes relate to all psychological needs: Firstly, sense of autonomy from being comfortable in the team to take decisions and raise any concerns. Secondly, sense of competence since he indicates that the team are competent to provide a safe flight with a good service level to the passengers. Finally, sense of relatedness from that he perceives team spirit. This indicates that all psychological needs are fulfilled. Informant 8 is indicating a sense of autonomy and relatedness as everyone in the team feel safe and secure to raise any concerns. Lastly, a sense

of competence in the role as a leader is shown by Informant 4 and Informant 8. Both quotes competent leadership as team building and open communication is emphasized leading to an effective team environment.

Another common topic is that the pilots often indicated that the parts related to flying the aircraft motivated them and that was something they would engage in passionately. Below Informant 7 describes how he is passionate about maintaining basic flying skills which he indicates affect flight safety in a positive way. Further, this indicates that he feels competent. The Informant also describes that this is done by practicing manual flying in good weather conditions which he enjoys.

"I am passionate about not losing basic flying skills. It is important for me to be a good pilot and maintain a high safety standard... It is allowed to fly manually without the autopilot when the conditions allow by the management but not mandatory or promoted" (Informant 7)

Informant 7 indicates that this behaviour is allowed but not promoted by his manager. This is therefore something he practices because he really enjoys it. This could be linked to intrinsic motivation as Gagné and Deci (2005) means is based on personal interest and enjoyment of a task.

4.2.6 Extrinsic motivation

Regarding extrinsic motivation which according to Ryan and Deci (2000a) refers to being motivated by external forces or rewards. Most of the Informants indicates that money is important to a certain level, after that it does not contribute to a higher level of motivation. However, a sense of fairness is important.

"The more salary you get, the more your motivation increases. But it also feels like up to a certain point, after a while, when you reach a certain level, it neither adds to nor detracts from motivation with more salary... As a captain I am very happy with my salary and would choose to be with my family instead of doing extra flights for more money... time with my family is important for how happy I feel." Informant 5

"I can't find another job at home that gives me the same salary relative to the effort, which is why I choose to stay and occasionally work part-time." Informant 1

The SDT has been famous for stating that extrinsic rewards wear down intrinsic motivation (Deci & Ryan, 2012). Informant 5 is happy with his salary and would choose to be off instead of earning extra money. His inner wants are therefore to be off as long as he has a sufficient salary. In the same manner Informant 8 indicates that as long as he can live of the salary with some margin more money would not increase his motivation. This is in line with the STD which according to Ryan and Deci (2000a) suggests that external reward such as bonuses etc. would reduce an individual's inner drive. Informant 5 would not be more motivated for a bonus if he took an extra flight as his inner want is to be with his family. As a schedule could be described as an external demand it would in line with Ryan and Deci (2000a) classify as an external factor that motivates the pilots extrinsically. The possibility to control working hours would allow the pilot to align his working hours with his personal life. The ability to control working hours seems therefore to be a very effective extrinsically motivational factor. Informant 1 who was one of the commuting pilots implies that the reason that he chooses to commute instead of finding another job at home is the salary. This implies that he is

extrinsically motivated through his salary. This is a clear example of extrinsic motivation according to Ryan and Deci (2000a).

On the same topic all Informants indicates that they need to perceive their salary as fair.

“For me personally, as long as the salary is fair and ensures that I have a good economy and don't have to scrape together coins in the last days of the month, money does not directly impact my motivation. However, if we turn it around, I would say that I have also been in situations where I had enormous job-related expenses. In such cases, if it comes to scraping together coins at the end of the month, as I just mentioned, it does have a negative impact on motivation.”

Informant 8

Informant 8 implies that he wants his salary to be fair, if so, he feels motivated. This is in line with Deci et al. (1999) who found that extrinsic rewards could coexist with intrinsic and coexist if they are perceived as fair. Informant 7 clearly states that his salary must be fair below.

“It must be fair and in relation to the work effort. I'm not driven much by how high the salary is, but the more I sacrifice my free time or personal life, the more it needs to be reflected in the paycheck. The less enjoyable the job, the higher the salary needs to be to motivate me to do it. As I said, if the flying is driven by passion, then it may not require a very high salary to motivate me. However, as it places significant demands on family life, leisure time, and physical health, then it must be compensated in the paycheck.” Informant 7

Some of the pilots had a fixed salary and some of them had a variable part on top of a basic salary. This differed between the airlines. As Informant 7 describes above most Informants mention that their pay must be in relation to how much they work or the other way around how much free time they get. Using the perspective from Deci et al., (1999) gives that extrinsic rewards can be high if they are perceived as fair. As Informant 7 points out, the balance of working time and free time must be reflected in his paycheck. This indicates that if he does not feel that it would not, would reduce. If the pilot perceives that the amount of working time is reflected in his paycheck the intrinsic motivation that comes from his passion of flying could coexist with extrinsic rewards. As Informant 7 perceives that his working hours and schedule is crowding out his work life balance. This means that he does not perceive his compensation as fair and therefore extrinsic motivation in form of tough schedules wear down his intrinsic motivation of flying.

Some of the pilots expressed a fear for punishment or disciplinary actions. Informant 6 describes how he stopped flying faster than what the company procedure was when he got aware that his company monitored speed.

“Then the system that monitored all the data came, and the fun was over. Several colleagues had to go to meetings at the headquarters for what we call tea without biscuits after the company saw that they were flying faster than what they had specified in their procedures. I, of course, didn't want to risk that, so I stick within the boundaries.” Informant 6

In the quote above Informant 6 describes how his knowledge of being monitored makes him fly slower since he does not want to get punished by management. This is a perfect example how he is extrinsically motivated to fly at a certain speed in line with Ryan and Deci (2000a).

4.2.7 Controlled motivation

All the interviewed pilots are aware that they have a lifestyle that differs from the norm. For some of them this results in an inability to plan their time off with friends and family, due to irregular and variable working hours. This was most common among those having families. Informant 1 lives in Gothenburg but operates from London, he understands that this lifestyle means that he is always away from home while working, however his lack of control over working hours still leads to frustration.

“The company determines when I work and when I am off. There is very little opportunity to influence my schedule, which can sometimes be frustrating... I know what days I am working however, on my last day I might have a flight returning to Gothenburg at, say, four in the afternoon, and then I could be scheduled for a flight that lands at five, which means I miss my flight. Naturally, I first try to ask for a schedule change. If that doesn't work, I ask my colleagues if we can swap shifts. If that doesn't work, then I'm stuck and miss my flight home, losing up to sometimes more than 24 hours at home. That is, of course, very frustrating.” (Informant 1)

Informant 1 would have preferred to land at three in the afternoon so that he would manage to catch the Gothenburg flight. When the schedule does not allow him to do that and neither his attempts to influence the schedule, he feels frustrated. According to Ryan and Deci (2000a) this could be linked to controlled motivation as he is forced to stay in London longer than what he would prefer, he is rather controlled by external forces. To reduce the controlled motivation the pilot needs more influence over his working hours.

“Sometimes I apply for voluntary time off, which is unpaid leave, which is only available when there is overstaffing on a particular day. So, it's more like if by chance it happens to be a day you need off, it works out. Otherwise, it's difficult, and swapping shifts with colleagues becomes necessary. This is really tough because everyone is so tired all the time, and nobody has the energy to give up their days off for their colleagues.” Informant 6

Above Informant 6 describes how he tries to align his needs and wants with the company's needs. The motivation to do these actions is driven by Informant 6. However, he accepts the rules and regulations regarding the inability to influence working hours and tries to circumnavigate them. This is done either by buying him free time for the cost of reduced salary or to owe a colleague a favour. According to Gagné and Deci (2005) this could be described as id Informant 6 experiences controlled motivation. The quote also aligns with Venus et al. (2022) who says that the demanding schedules and variable working hours can lead to cumulative fatigue. This means that even if pilots want to help each other to overcome the inability of controlling their working hours they cannot since they are fatigued which Boksem et al. (2006) concludes has a negative impact on motivation.

The quote above from Informant 6 also sheds light on a reduced sense of relatedness as the colleagues does not have the energy or ability to help him. This gives a lack of relatedness

and therefore a lack of autonomous motivation, Ultimately, this leads to a sense of being controlled and therefore his motivation becomes more controlled as a result of reduces sense of relatedness.

On the same topic Informant 2 describes how his lack of control of working hours affects his personal life.

"Most of my schedule is predetermined by the company, and I have very limited ability to influence it. This makes planning my personal life difficult." (Informant 2)

As other research by Kecklund et al. (2010) and Santillan et al. (2023) finds that flexible working hours have many benefits, including individuals' ability to align their personal lives with their professional lives, this works the opposite way around with pilots as they cannot control their working hours. Instead, this leads to a sense of being controlled which reduce their motivation. As Davidescu et al. (2020) found that control over working hours could lead to increased productivity, this may lead to limited productivity among pilots.

According to Ryan and Deci (2000a) controlled motivation could lead to stress. Most of the Informants report challenges related to planning their personal life while not being able to control their working hours. Informant 4 states that his ability to control or influence his schedule leads to stress. This is in line with (Davidescu, et al., 2020) who concludes that lack of control over working hours could lead to stress.

"The most stressful thing is that it affects my personal life and my ability to plan my free time. I often feel powerless when I can't influence my schedule." (Informant 4)

The quote from Informant 4 shows how lack of control over working hours not only affects working hours but also the individual's personal life. SDT indicates that this type of controlled motivation makes the individual to perceive a sense of anxiety and stress (Ryan & Deci, 2000a). This will negatively affect the pilots overall well-being as this in line with the SDT and therefore reduce the sense of autonomy (Gagné & Deci, 2005).

According the SDT, external rewards and punishments can affect an individual's intrinsic motivation depending on how they are perceived Deci, et al. (1999). Informant 2 means that external rewards is important for his motivation, and that he needs to perceive the rewards as fair.

"Salary and benefits are important for my motivation. Punishments, especially if they are unfair, can really lower my motivation. Fairness is important." (Informant 2)

Deci et al. (1999) found that extrinsic rewards could coexist with intrinsic and coexist if they are perceived as fair. Unfairness would according to the SDT be considered as controlled motivation. Informant 2 is therefore in line with Deci et al. (1999).

Informant 7 is describing his motivation is in connection to the question: How does your ability to control when you start, and finish work affect your motivation?

"My motivation is so low that I studied for 4.5 years to change careers, even though I have a good salary by Swedish standards." Informant 7

Informant 7 perceive controlled motivation and limited work life balance due to his inability to control which days and hours during these days he is working. This is perfectly in line with both the SDT and a sense of being controlled according to Ryan and Deci (2000a).

Below Informant 5 describes how he been controlled to a level leading to amotivation. This results in that he decided to leave his employer at that time. This is in line with potential consequences that Deci et al. (2017) describes if an environment is controlled.

“I have quite a few experiences with that, especially when I’ve been sick and called in sick, receiving extremely negative feedback for it. I was simply told that I should handle it better because otherwise, I become a burden on my colleagues... This affected my motivation quite a lot... I did not feel that I had the authority to call in sick when I was sick which led to a feeling of being unmotivated. This was one of the reasons why I decided to quit and take a step back in my career and go back to my previous employer to work as a flight instructor instead of an airline pilot.” Informant 5

An environment that is perceived as to controlled will undermine pilot motivation ultimately leading to drastic consequences from the individual. In the case of Informant 5 he decided to quit. This might be one of the most drastic moves among the Informants but most of them indicate that fairness is important for not losing motivation.

4.2.8 Summary

The importance of the psychological needs has been shown analysed and discussed. There were clear signs of sense of autonomy through empowerment to take operational decisions. Even if the airlines have many strict rules, autonomy could be perceived by the pilots if they felt that they had the authority to take decisions within those boundaries. Secondly there training and learning through colleagues provided a sense of competence. Thirdly, sense of Relatedness was highlighted as the Informants described the importance of relationships to their colleagues. Autonomous motivation, Intrinsic motivation was therefore promoted through these factors. Moreover, the pilots feel intrinsically motivated from their passion for flying and exercising leadership and teamwork while leading their crew. Some of the pilots has a passion for fuel efficiency practices which is aligned with the company’s goals which would be a good example of autonomous motivation. The most common extrinsic factor was the salary. However, the pilots generally expressed that it was only important up to a certain level, thereafter time off was more important. However, the salary seemed to be a strong motivational factor for the commuting pilots.

In some settings the pilots experienced controlled motivation due to low sense of relatedness to management and a lack of autonomy due inability to control their working hours. For some of them this leads to a frustration which during their career this has resulted in stress. The sense of stress was in these cases often related to their ability to align their personal and professional life, resulting in an inability to plan their time. When being controlled, a sense of fairness is important to not undermine motivation for the pilots. If the pilots do not perceive fairness, there were one drastic example where the pilot changed career.

Most of the pilots had similar perceptions and were overall motivated by the same motivational factors. However, the pilots who did not resident on the same location as the base indicated that they felt controlled indicating they perceived more controlled motivation.

Therefore, the extrinsic motivational factors were more present leading to that the commuting pilots were more extrinsically motivated than the ones who did not commute. Further the commuting pilots perceived a higher degree of stress and dissatisfaction from not being able to control their schedule as well as working hours compared to the pilots who lived close to their base.

5 Conclusion

This thesis has the following research question:

In a context where a pilot has limited control over working hours:

1. How pilots are motivated under these circumstances, and what factors contribute to their motivation?

The study suggests that, despite having limited control over their working hours, pilots are motivated by various factors. The interviewed pilots are autonomously motivated in some aspects and experienced controlled motivation from other aspects. Pilot motivation is influenced by a combination of intrinsic and extrinsic factors. Intrinsic motivation comes from a passion for flying and taking leadership of the crew, as well as the sense of autonomy through empowerment, competence through training, and relatedness through caring colleagues. Extrinsic motivation is driven by factors such as being monitored, which can lead to a fear of punishment, and the perception of a fair salary. It was also observed that having the ability to affect one's schedule would strongly influence extrinsic motivation.

5.1 Theoretical Contributions

The aim of this thesis was to describe and analyse employee motivation given limited control over working hours. This study has fulfilled its aim of describing and analysing pilot motivation from the aspects of the key concepts. By discussing and analysing how the pilots are motivated this thesis gives insights to how these professionals are motivated and how various factors contribute to their motivation.

In this chapter I will in the context of aviation discuss how my finding further describes and validates the SDT.

5.1.1 Summary of key findings

Sense of Autonomy

The pilots described that they worked within a framework of strict rules and processes. However, the pilots value the amount of autonomy within this frame. This takes place in form of their ability and empowerment to take operational decisions while operating which leads to a sense of autonomy.

Sense of Competence

All pilots perceived a high sense of competence at work. This is due to continuous learning through trainings and knowledge sharing among colleagues. The informants generally described that they felt capable and effective which promotes autonomous and intrinsic motivation.

Sense of Relatedness

All informants described that they feel cared for and therefore perceives a high sense of relatedness their colleagues which promotes autonomous and intrinsic motivation. However, the pilot's sense of relatedness to management lacks which leads controlled motivation.

Autonomous motivation

The pilots described that they felt autonomously motivated while at work. Firstly, the autonomous motivation comes from the factor of empowered to take operational decisions within a frame of rules, this leads to a sense of autonomy. Secondly, they feel effective from training and learnings from colleagues which leads to a sense of competence. Thirdly, the pilots feel cared for and that they have meaningful connections with their colleagues leading to a sense of relatedness which gives them a sense of happiness. Therefore, these psychological needs seem to be important factors for Autonomous motivation.

Intrinsic motivation

In this study I found that pilots were intrinsically motivated through a passion for flying and exercising leadership. Furthermore, the pilots were intrinsically motivated based on the sense of autonomy from feeling comfortable to raise any concerns related to decision making, the sense of competence, from the sense of being able to fly safely with a good service level and, the sense of Relatedness from team spirit.

Extrinsic motivation

Extrinsic motivation also played an important role for pilot motivation. The pilots described that the salary was important up to a certain level, excessive salary was not important, the pilots rather preferred time off. However, the compensation had to be perceived as fair relative to the amount of work. Extrinsic motivation was more important for the pilots who commuted to work (the base where he starts, and finish work was not the same as where he lived). The two pilots who commuted indicated that they it was worth it for the salary, however they also indicated that they perceived more stress relative to the other pilots.

Controlled motivation

The unpredictable working hours that pilots operate under result in a sense of controlled motivation for several pilots. This seemed to be caused by a reduced sense of Autonomy as the pilots could not align their working hours with their personal life and resulted in stress. Further, the factor of fairness seemed to be important if the pilot felt controlled or not.

5.1.2 Integration with existing literature

The findings within this study supports and extend previous research within the effect on motivation from work time control, and motivation from jobs requiring physical attendance and the SDT. Previous research within healthcare and manufacturing found that motivation is influenced by the individual's ability to control his working hours (Epstein, et al., 2018; Kubo, et al., 2013). This study differs from those where individuals have more traditional work environment. This is due pilots operate in a high-stress environment characterised by long duty hours, irregular work schedules, overnight trips, and extended periods of wakefulness (Venus, et al., 2022).

This study extends existing knowledge and bridge the gap in the literature by applying the SDT to pilots. Further, this study shows how we can analyse and understand pilot motivation, and the SDT can be used to analyse what motivates pilots whilst having limited control over working hours. New insights is generated in sense of autonomy, sense of competence, sense of relatedness, autonomous motivation, intrinsic motivation, extrinsic motivation, and controlled motivation in the context of this study. Finally, this study is challenging the SDT by showing that pilots can maintain intrinsic and autonomus motivation despite facing external control.

5.2 Managerial implications

5.2.1 Increase pilot motivation

This study suggests that by allowing the pilots to have more control over their working hours their sense of autonomy would increase which would improve pilot motivation. Further this will reduce frustration over their inability to control their time which would improve motivation. By giving the pilots more control over their working hours.

Secondly, as the perception of fairness is important regarding their salary it is important to ensure that pilots perceive their salary as fair relative to the amount of work. By ensuring this the sense of controlled motivation could be reduced.

5.2.2 Improving Work Environment

This study has found that in the light of variable and irregular working hours pilots have good relations with their colleagues. However, there is room for improvement regarding the sense of being cared for from management. Pilots perceive that their interaction with management is limited and asks for more interaction and a two-way dialogue. The limited interaction could result from the pilot's variable working hours. To facilitate more interaction between pilots and management, management could alternate their working hours to match when the pilot's roster and thereby become more visible and present.

5.3 Limitations and Future Research

5.3.1 Limitations of the study

The limited (8) number of participants which limit the ability to transfer the results to a broader context. The sample size could therefore limit the ability to draw wide ranging conclusions about pilot motivation. Furthermore, the diversity of the interviewees was limited as they all were Swedish. This should be considered as it can influence how representative the findings are for the entire pilot population.

The study's methodology in form of a qualitative research brings subjective interpretations of data. These could reduce the reliability of the study's findings. Further, the use of personal stories presents a risk that the interviewees personal experiences may be coloured by their personal perspectives which is not representing the whole population.

5.3.2 Suggestions for Further research

To improve the understanding and to be able to generalise findings to a higher degree future research could use a broader diversified and geographically spread group. By including quantitative methods, the results could be further validated. Further this could be combined with longitudinal studies which could track change over time.

Other factors that could affect pilot motivation could be organisational culture and the role of technology and automatization. Lastly, studies that focus on how intended actions improve pilot motivation or not would be valuable for management to prioritise initiatives.

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Appendix

Appendix 1 The Interview Guide

Introduktion

- Kan du börja med att berätta
- Kan du beskriva ditt ansvarsområde?
- Kan du beskriva en typisk arbetsvecka?

1) Sense of Autonomy

- a) På vilka sätt känner du att ditt jobb tillåter dig att fatta beslut eller göra val?
 - i) Hur viktig är detta för dig?
 - ii) Vilka delar bidrar mest till din tillfredsställelse?
- b) Hur skulle du beskriva din grad av frihet (känslan att vara fri)?
- c) Hur skulle du beskriva din möjlighet till att påverka dina arbetstider och ditt schema?
- d) Överlag, hur nöjd är du med din karriär som pilot?

2) Sense of Competence

- a) Kan du berätta om när du kände dig kompetent och effektiv i din roll?
- b) Kan du berätta hur du upplever att dina arbetstider påverkar dina möjligheter till att göra ett bra jobb?
 - i) Kan du berätta om några resurser eller hjälpmedel som underlättar för dig?

3) Sense of Relatedness

- a) Kan du berätta om hur dina relationer till dina kollegor påverkar din motivation?
- b) Kan du berätta om hur dina relationer till dina chefer påverkar din motivation?
- c) Kan du berätta om ett tillfälle då du kände att du hade support från dina arbetskamrater?
- d) Kan du berätta om ett tillfälle då du kände att du hade support från dina eller chefer?
 - i) Hur påverkade det din inställning till ditt jobb?

4) Autonomus motivation

- a) Finns det arbetsuppgifter eller ansvarsområden i din roll som du upplever är kopplade till dina personliga värderingar?
- b) Finns det arbetsuppgifter eller ansvarsområden i din roll som du upplever är kopplade till dina personliga mål?
 - i) Vilka är de arbetsuppgifterna?
 - ii) Kan du berätta om hur du integrerar dessa uppgifter i ditt dagliga arbetsliv?
- c) Gör du något extra på jobbet som inte ingår i dina ordinarie arbetsuppgifter men som är viktigt för dig personligen?
 - i) Varför är det viktigt för dig?
- d) Överlag hur skulle du beskriva ditt välbefinnande kopplat till ditt arbete som pilot?
 - i) Har detta förändrats under din karriär?
- e) Kan du berätta om dina personliga värderingar kopplat till ditt arbete?
- f) Kan du berätta om dina personliga mål kopplade till ditt arbete?

5) Intrinsic Motivation

- a) Kan du beskriva en situation eller uppgift inom ditt arbete som du känner starkt för personligen och som du gladeligen engagerar dig i?

- i) Vad gör den situationen eller upplevelsen så betydelsefull för dig?
- b) Vilka delar av ditt jobb upplever du personligen som mest givande?
 - i) Kan du berätta om hur de påverkar din motivation?

6) Extrinsic Motivation

- a) På vilket sätt påverkar lön din motivation till att arbeta?
- b) På vilket sätt påverkar din jobbsäkerhet din motivation till att arbeta?
- c) Finns det några andra externa faktorer som påverkar din motivation till att arbeta?
- d) Kan du beskriva hur dina förmåner lön etc. är kopplat till din arbetsinsats?
- e) Kan du utveckla hur dessa faktorer påverkar dig?

7) Controlled Motivation

- a) Kan du beskriva press eller krav från ditt jobb som du upplever som utmanande?
 - i) Hur hanterar du dessa utmaningar?
- b) Hur påverkar belöningar din motivation på jobbet?
- c) Hur påverkar bestraffningar din motivation på jobbet?
- d) Ur din erfarenhet vilken av belöningar eller bestraffningar har påverkat din motivation mest?
 - i) Finns det någon typ av bestraffning som motiverar dig mer än andra?
- e) Hur mår du och hur känner du inför att schemat ska släppas?
- f) Överlag hur skulle du beskriva ditt välbefinnande kopplat till ditt arbete som pilot?
 - i) Har detta förändrats under din karriär?
- g) Hur påverkar möjligheten att kontrollera när du börjar och slutar arbeta din motivation?
- h) Hur påverkar ditt arbetsschema och möjligheten att kontrollera dina arbetstider din sömnkvalitet?
- i) Hur påverkar möjligheten att kontrollera när du börjar och slutar arbeta din motivation?
- j) Har det funnits tillfällen då du kände dig likgiltig, att jag struntar i mitt schema eller att det spelar ingen roll?
 - i) Vad hjälpte dig att övervinna och gå till jobbet?
 - ii) Vad får dig att gå till jobbet när du känner dig ointresserad av det?