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When support is important: A study of leaders with a fixed digital mindset and their employees' active usage or avoidance towards new technology – the mediating effect of perceived developmental supervisor support

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Acknowledgement	iii
Abstract.....	iv
1.0 Introduction.....	1
<i>1.1 Research Question and Conceptual Model.....</i>	<i>2</i>
Figure 1. Conceptual Model	4
<i>1.2 Intended Contribution of the Research.....</i>	<i>4</i>
2.0 Theoretical Background and Hypotheses	5
<i>2.1 Mindsets and Implicit Person Theories.....</i>	<i>5</i>
2.1.1 Fixed Mindset	6
2.1.2 Growth Mindset.....	6
<i>2.2 Digital Mindset.....</i>	<i>7</i>
2.2.1 Digital Mindset and Change Readiness	7
<i>2.3 Employees' Active Usage or Avoidance of New Technology (A Job Crafting Perspective)...</i>	<i>8</i>
<i>2.4 Hypotheses Relating Leader's FDM to Employee's Active Usage or Avoidance of New Technology</i>	<i>10</i>
<i>2.5 Hypotheses Related to the Mediating Role of PDSS</i>	<i>12</i>
<i>2.6 Digital Mindset Intervention: Helping Leaders Go from Fixed to Growth Digital Mindset</i>	<i>15</i>
3.0 Research Method.....	17
3.1 Sample	17
3.2 Procedure	17
3.3 Research Design.....	18
3.4 Measures	19
3.4.1 Independent Variable: Leader's FDM.....	20
3.4.2 Dependent Variable: Employees' Active Usage or Avoidance to New Technology	20
3.4.3 Mediating Variable: PDSS	21
3.5 Intervention.....	21
4.0 Analysis	22
5.0 Results	24
5.1 Principal Component Analysis.....	24

5.2 Descriptive Analysis.....	24
5.3 Hypotheses Testing.....	25
6.0 General Discussion	28
6.1 Digital Mindsets and Active Usage or Avoidance to New Technology.....	28
6.2 PDSS.....	30
6.3 Practical Implications	33
6.4 Limitations and Future Research.....	34
7.0 Conclusion.....	36
References	37
Appendix	44
Appendix A: Principal Component Analysis	44
Appendix B: Information Letter.....	48
Appendix C: Intervention	50

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Abstract

In this thesis, we intend to make a contribution to the literature of the importance of a leader's mindset. We aim to look at whether a leader that holds a fixed digital mindset will be of importance for their employees work performance in terms of digitalization and new technologies (e.g. tools, software programs and AI) in the workplace. Our study examined 912 participants in total, leaders (N=153) and employees (N=759), within a big Nordic bank. Their digital mindset was investigated in relation to the concept of job crafting where the employees' approach or avoidance towards new technology at work were variables we looked into. A multilevel framework was used to review the data that we were able to gather from leaders and employees in different departments within the Nordic bank.

What we found, was that employees perceived developmental supervisor support (PDSS) mediated the relationship between a leader's fixed digital mindset (FDM) to employees' active usage towards new technology. However, it did not mediate the relationship between a leader's FDM and avoidance to new technology. Finally, limitations, directions for future research and practical implications are discussed.

1.0 Introduction

People often establish implicit schemas (Ross, 1989) or theories (Dweck, Chiu, & Hong, 1995) to explain their surroundings and make sense of the external world. Implicit schemas or theories about human attributes, like intelligence and personality, has been coined “mindsets” by researcher Carol Dweck (2017). A mindset is defined as fundamental beliefs regarding the extent to which human attributes like intelligence and personality are malleable or fixed. In this research, having a *growth mindset* refers to having the fundamental belief that human attributes can be changed and improved through effort. A *fixed mindset*, on the other hand, refers to having the fundamental belief that human attributes are fixed, such that there is little that can be done to change or improve them. Having a growth mindset enhances a person’s ability to develop and improve by influencing them to seek out challenges that they can learn from and helping them to see negative feedback and failures as a springboard for growth. Conversely, a fixed mindset can impede a person’s ability to change and improve, because these people will be more likely to see negative feedback and failures as a sign of their own incompetence and thus to stick to doing those things they do well (e. g. Dweck, 2006).

Research on mindsets is often concerned with how a person’s own mindset relates to the ways in which he or she engages in learning or performs in achievement contexts where learning is important. However, a person’s mindset can also be important for how they support and evaluate others’ learning and performance in achievement settings. An important line of research in this area indicates that a leader’s fixed mindset influences how they perceive their employees’ ability to change and improve through effort. This has implications for the amount of support this leader provides to his or her employees, and the extent to which he or she acknowledges performance improvements (Heslin, Latham, & VandeWalle, 2005; Heslin & VandeWalle, 2008). A leader’s mindset, and the extent to which it is fixed, is therefore of importance for the level of support that employees receive, and hence how they perform and more generally adapt in work contexts where learning is needed.

The present research seeks to take what is known about mindset, and in particular, how leader’s fixed mindset can influence the level of developmental support they provide to employees, and apply it to the current context of work that is increasingly concerned with digital transformation (e.g., Colbert, Yee, & George,

2016). Employees' acceptance and usage of new technology has long been held as important for the success of technological change initiatives (Davis, Bagozzi, & Warshaw, 1989) and is emphasized also in contemporary accounts of what is needed for organizations to be successful with digital transformation (e.g., Kane, 2017). Recent research finds that employees' acceptance of a newly introduced technology is related to the beliefs they have about the quality of the relationship with their leader, and how these beliefs increase perceptions that new technology is useful for performing one's work (Magni & Pennarola, 2008). However, no known research has addressed how leaders' mindset could relate to the level of support they provide to employees, and how this support could, in turn, influence employees' acceptance and usage of new technology. This is unfortunate, because in times of digital transformation where technology and artificial intelligence (AI) are becoming a dominating part of the workday, it is particularly important that leaders have an idea of how such changes may affect the employees and the organization as a whole.

By providing employees with support needed to develop their abilities working with new technology, the transition can be experienced as a smoother process for the parts involved, which may in turn maximize the benefits of using technology. Further, leaders often act as role models for their employees and should therefore be an inspiring person by being one of the first people to use new technologies, to test out e.g. new tools and programs, but also to be good examples as active users.

Research on mindsets indicates that the extent to which leaders see technological ability as fixed, could have important implications for how much effort they put into providing their employees with the support needed to develop new skills and competencies. This, in turn, should have implications for the extent to which employees actively engage in new technology, and thus the success of new technology initiatives.

1.1 Research Question and Conceptual Model

Given this background, our thesis aims to investigate the following research question: *Does a leader's fixed mindset as it relates to technological competence (referred to moving forward as leader's fixed digital mindset) influence the extent to which their employees' actively use (or avoid) new technology introduced at work?* The research model applied to address this question consists of two core

variables: leaders' fixed digital mindset and employees' active usage (or avoidance) of new technology introduced in the workplace. Leader's FDM is conceptualized in line with the fixed/growth mindset literature. By adding digitalization to Dweck's description of the two mindsets, they will be transformed into digital mindsets. This mindset consists of a leader's view of technology and whether there is a desire to embrace new technology or a desire to keep the old.

Employees' active usage or avoidance of new technology is conceptualized based on recent accounts of approach and avoidance job crafting (Bruning & Campion, 2018; F. Zhang & Parker, 2019). It is defined as the self-initiated efforts made by employees to modify their work in ways that allows them to actively engage with and expand their use of new technology, or to actively avoid or reduce their time spent working with new technology. Further, we investigate developmental supervisor support (in this thesis sometimes referred to as only support) as a mediating variable seen in light of the employees' perception. This is defined in the following: *Developmental supervisor support* is reflected in supervisory behavior aimed at assisting employees' personal and professional development through the provision of helpful performance feedback, guidance, and learning opportunities (Rafferty & Griffin, 2006; Y. Zhang & Chen, 2013). Importantly, developmental supervisor support is more individualized and change-oriented than emotional forms of supervisor support aimed and caring and showing concern for employees' well-being (Rafferty & Griffin, 2006).

In considering the relationship between these variables, we assume based on previous research that there will be a negative relationship between leaders' FDM and employees' PDSS. Further, we expect that PDSS will mediate a negative relationship between leader's FDM and employees' active usage of new technology, such that leaders with higher levels of FDM will provide their employees with less developmental support, which will result in less active usage and perhaps even more avoidance of new technology. Figure 1 depicts the conceptual model:

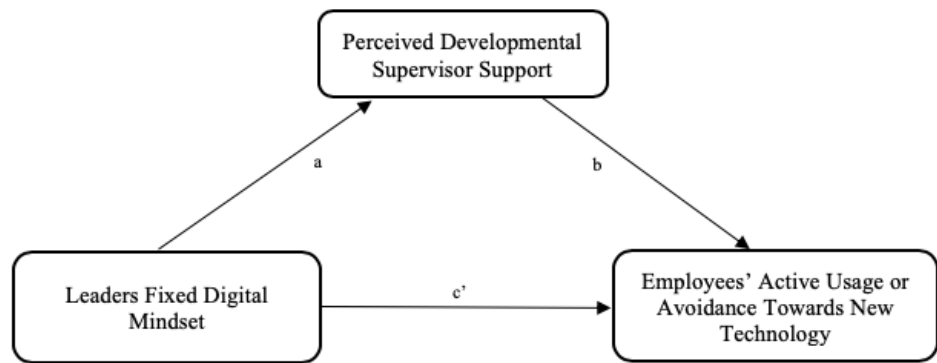


Figure 1. Conceptual Model

Our study further considers if an intervention could help leaders with a FDM to become aware of potential consequences this may have for their employees in terms of technology acceptance and usage, and thus influence their perceptions of technological competence in a better way. This could have positive implications for development support and employee's active usage of new technology.

1.2 Intended Contribution of the Research

Traditional work environments are changing and will look increasingly different due to the influx of new technology. Helping employees make this transition in a good way is important for both employee well-being and organizational survival. Accordingly, the intention with this thesis is to give leaders greater insight into how their mindset regarding technological ability may influence their employees' acceptance and usage of new technology. In providing this insight, we hope to help leaders become more mindful of the ways that they view technological ability and the efforts they make to provide employees with developmental support. Another intention of the thesis is to examine the possibility of changing a leader's FDM to become more growth-oriented by introducing a simple intervention. In carrying out this research, we hope our findings can provide greater insight into how to effectively manage digital transformation, either in terms of mindset awareness or other aspects that we find to be of importance, such as employees PDSS.

2.0 Theoretical Background and Hypotheses

2.1 Mindsets and Implicit Person Theories

Carol Dweck (2006) distinguished between different implicit theories that was later relabeled fixed and growth mindset, a term coined by Dweck herself more than 30 years ago. A mindset per se can be understood as the implicit theories or assumptions that people hold about the plasticity of ones abilities (Dweck, 1986). Implicit person theories are understood as different implicit beliefs that influence how individuals make inferences, judgments and reactions (Dweck et al., 1995). Dweck's research distinguishes between two implicit theories.

First, there is those who believe personal attributes are innate and are often referred to as *Entity theories*. Contrary, someone who follows *Incremental theories* think of intelligence and abilities as something that can be changed and developed with effort, thereby it is malleable (Dweck et al., 1995). When faced with a negatively loaded event such as a situation that feels difficult to master, those who hold an entity theory and an incremental theory respond differently. For example, a person who fails a test who holds an entity theory will be more inclined to blame the intelligence, which is seen as something fixed and unchangeable. Conversely, those who fails a test holding an incremental theory are more likely to blame their effort (Dweck et al., 1995).

There is no right and wrong between the two, the different mindsets refer to the way reality is looked upon and the difference between the two can be illustrated with the following example: imagine someone who steals clothes from a store; those with an entity theory in mind will identify this person's moral as weak. Someone with an incremental theory in mind will believe that this person was desperate. It is important to mention that the two views may vary between different personal attributes. This means that someone may look at intelligence as fixed, while at the same time they can look at someone's moral as something malleable and changeable (Dweck et al., 1995).

A study on pupils in sixth and seventh grade done by Henderson and Dweck (1990) showed that the students' implicit theories of intelligence affected their performance in terms of grades. Those with an entity theory in mind who performed poorly on their test in the sixth grade often performed poorly in seventh grade too. However, those who performed good in sixth grade performed good in seventh

grade as well. On the other hand, those with an incremental theory in mind who performed poorly in sixth grade increased their performance in seventh grade due to increased effort or change of strategy. In addition, those who performed good in sixth grade also performed good in seventh grade (Dweck et al., 1995).

Although two distinct mindsets are identified, one does not exclude the other, rather, they are found to lie somewhere along the continuum between the growth and the fixed mindset prototypes (Heslin & VandeWalle, 2008). Moreover, most people hold a mixture of these two (Dweck, 2015). Research claims that individuals hold two different implicit theories about the existence of personal resources (e. g. Dweck, 2006). Therefore, fixed and growth mindsets may in turn result in different judgments and response patterns across tasks and situations (Dweck et al., 1995). In the preceding sections we will elaborate the two different terms further.

2.1.1 Fixed Mindset

Individuals with a fixed mindset tend to seek situations where their abilities or intelligence can be validated (Dweck & Leggett, 1988). People who fall into this category are more likely to avoid situations where they could be perceived as incompetent and they tend to look for situations where they can show their competence. Research shows that individuals with a fixed mindset will, when faced with challenges or obstacles, decrease effort or remove themselves from the situation (Dweck & Leggett, 1988). The same research implies that if the individuals truly think they are talented or competent enough, results will be achieved with less effort. Similarly, they will give up if they do not experience immediate results. According to Yeager and Dweck (2012), people with a fixed mindset are also more inclined to turn down help, since that could somehow label them as incompetent. For the same reason, these people rarely seek help.

2.1.2 Growth Mindset

In contrast to individuals with a fixed mindset, those with a growth mindset are more likely to seek situations where they can increase their abilities and intelligence (Dweck & Leggett, 1988). Personal confidence tends to be improved when faced with obstacles or challenges due to their belief that those situations will enhance their learning and improve their results (Yeager & Dweck, 2012). Effort is obviously a necessity to master something new. Thus, when faced with obstacles or

challenges, people with a growth mindset are inclined to embrace the situation with more effort and as a consequence, new skills are learned. In contrast, while people holding a fixed mindset are prone to turn down help, those with a growth mindset seek for help with the intention to use this help to reach learning goals (Yeager & Dweck, 2012).

2.2 Digital Mindset

Ever since digital economy became a familiar word in the 1990's, organizations has become more "digital" in their way of thinking (Oswald & Kleinemeier, 2017). The term *digital mindset* has been used in relation to digital transformation as a buzzword to express the need to think differently (Solberg, Traavik, & Wong, 2018). In other accounts, a digital mindset has been explained as an individual's ability to fail fast, test new ideas, be collaborative and agile (Lipman, 2017). In our study, however, we work with a conceptualization of digital mindset that is based on Dweck's (2017; Dweck & Leggett, 1988) description of the fixed and growth mindset. Digital mindset is defined in the present research as individual beliefs about the extent to which technological competence is malleable or fixed. This in turn results in different judgments and response patterns both with regards to one's own behavior, and in relation to others in the context of technological change (Solberg et al., 2018).

2.2.1 Digital Mindset and Change Readiness

New technology implementation is a type of organizational change. In regard to the theory above on mindsets, one can assume that leaders and employees' mindset can be important for the level of success in terms of how ready and prepared they are for change. Digital mindset is therefore somewhat linked to change readiness. *Change readiness* is by Armenakis and colleagues (Armenakis, Harris, & Mossholder) defined as an individual's "beliefs, attitudes and intentions regarding the extent to which changes are needed and the organization's capacity to successfully undertake those changes" (1993, p. 681). Although the term has been assigned several definitions since the time of Armenakis et al.'s work, most of them seem to derive from the original definition (Rafferty, Jimmieson, & Armenakis, 2013). Compared to the individual level, there is still scant research on an organization's readiness for change and when change ideally should be implemented (Weiner, 2009). Organizational readiness has been defined as the

“organizational members’ change commitment and self-efficacy to implement organizational change” (Weiner, 2009, p. 68), which points to the importance of engaging the individuals in the process to be successful.

The concept of change readiness consists of two elements; cognitive and affect. Affective components relates to emotions such as love, hate, sadness, happiness, annoyance, excitement, anger and acceptance (Rafferty et al., 2013, p. 114) and have been paid considerably less attention than the cognitive component. Although a lot of research is based on the definition by Armenakis and colleagues, a multilevel review from 2013 looks into whether the affective component should be included in the definition of change readiness (Rafferty et al.). Despite the discussion of whether or not it should be included, there is undeniably emotional responses associated with organizational change. The affective components can in turn influence how ready the organization is for change (Piderit, 2000).

Cognitive components on the other hand, relates to five different change beliefs. The first one, *discrepancy*, is understood as a belief that change is needed. The second one, *appropriate*, refers to how an individual believe that change is an appropriate response to a situation. *Efficacy* means an individual’s ability to implement a change, while *principal support* is explained as an individual’s belief that the organization will provide relevant information and resources to go through the change. Lastly, *valence*, is how the individual is evaluating costs and benefits with a change in relation to his or her job and role (Rafferty et al., 2013). The cognitive components can be seen in relation to having a mindset that is positive to change, hence a growth mindset. This mindset characterizes individuals’ who embrace technological change and they can therefore be said to hold a digital mindset.

2.3 Employees’ Active Usage or Avoidance of New Technology (A Job Crafting Perspective)

The TAM model, or the technology acceptance model (Davis et al., 1989) has traditionally been used as a fundament for explaining employee responses towards new technology. However, it is today being questioned as digital changes are larger and more complex than when TAM was first introduced. TAM also seems to fall short as it fails to include cultural, social and emotional aspects when trying to explain the adoption of technology (Bagozzi, 2007). Because of this, a job

crafting perspective is used in this thesis to explain employees' approach or avoidance to new technology. Job crafting per se refers to the creative and improvised process where employees redefine and shape their jobs (Wrzesniewski & Dutton, 2001) and is seen as any physical and cognitive changes in the individuals' tasks or relations. Job crafting are self-initiated changes made by the employees to attain and/or optimize their personal work-related goals which is mostly driven by their motivation to promote meaningfulness in the job. Job crafting is also found to be related to positive outcomes like employee well-being (Tims, Bakker, & Derks, 2013) and meaningfulness at work (Berg, Grant, & Johnson, 2010). However, job crafting can also result in behavior that makes them avoid certain changes, for example use of new technology. This may in turn not be beneficial for the organization, as avoiding use of technology can result in poor competitiveness on an organizational level. Employees' behavior that changes their way of crafting the job can also lead to avoidance of using technological tools or digital mandates. On the other side, individuals can also craft their jobs to embrace technologies, with an approach-like behavior.

The section above introduced employees' active usage or avoidance of new technology, however, this do not refer to the outcome of job crafting. Rather, active usage or avoidance of new technology is conceptualized and operationalized based on recent accounts of approach and avoidance job crafting (Bruning & Campion, 2018; F. Zhang & Parker, 2019). By using a job crafting-based conceptualization and measure, one can move beyond employees' outward acceptance and usage of new technologies. This can give better insight into how they take initiative to actually change their way of working in order to use new technologies more actively or avoid-reduce working with new technology. This is beneficial because some technological changes are mandated (Kane, 2017), making face-value acceptance and usage inevitable. For this reason, the element of motivation is therefore of interest in terms of job crafting.

In terms of motivation, the outcome of that specific behavior is the determining factor of whether one choose to approach or avoid technology. If the individual finds that a desirable goal is achievable, the individual can benefit from using an approaching behavior. For a negative outcome, avoidance will be the natural response or behavior (Elliot, 1999). Other and broader theories, such as transactive theories discuss approach and avoidance as something mixed; one can

both approach and avoid situations at the same time (LePine, Podsakoff, & LePine, 2005).

Two types of job crafting behaviors, which are also approaching behaviors, is *seeking job resources* and *seeking challenges*. These are both found to be positively related to organizational performance in terms of work engagement (Bakker, Hakanen, Demerouti, & Xanthopoulou, 2007; Crawford, LePine, & Rich, 2010). Examples of approaching crafting activities are behavior that are directed towards goals that are improvement-based or problem-focused, e.g. being engaged in new technology and trying to learn and implement it. Avoidance crafting activities on the other hand aims at eliminating or reducing an unpleasant outcome, e.g. not using- or trying to learn new technology (Bruning & Campion, 2018, pp. 501-502).

2.4 Hypotheses Relating Leader's FDM to Employee's Active Usage or Avoidance of New Technology

As showed in the literature concerning fixed mindset, these individuals tend to be reluctant to engage in change-related activities in fear of not mastering the new situation. Hence, new technology may seem threatening for fixed mindset individuals, leaders and employees. New technology can seem particularly intimidating if organizational changes require them to engage in activities where they lack competence or need to master new competence (Todd, 2003). Based on this, one can posit that individuals with a fixed mindset may engage in job crafting aimed at undermining or avoiding implementation of new technology. Consequently, leaders with a fixed mindset that are hesitant to use the new technology might, according to social learning theory, have employees with similar attitude and behavior.

In 1978, Albert Bandura suggested a new theory for explaining why humans behave the way they do, namely the *Social Learning Theory*, which suggests that external factors affect human behavior (Wood & Bandura, 1989). In his study, Bandura tested whether watching aggressive behavior would make those who watched reproduce behavior resembling the behavior of the aggressive person, which it was found to do. Based on this, one can draw a line between this example and an office setting scenario, where a leader who behaves in a certain way will in turn have employees doing the same when watching their leader. In terms of new

technologies, a leader who is reluctant to use new tools or software programs will, according to the social learning theory, have employees that can adopt the same behavior.

Based on social learning theory one can assume that leaders' digital mindset and hence their behavior will be somewhat related to their employee's behavior. Nevertheless, this theory accounts for the influence of a person's behavior on another person's behavior. Accordingly, a leader's and an employee's mindsets are not necessarily related. Instead, one can posit that a leader having a particular mindset displays a particular type of behavior. The employees might in turn take note of this behavior and become more likely to adopt it themselves. This indicates that social learning theory could be used in relation to understand the effect of a leader's behavior and how that may affect the behavior of their employees.

Although Bandura discovered a relationship between watching and performing aggressive behavior, he further discovered that imitation of behavior was more likely to occur if a person's self-efficacy was high. *Self-efficacy* can be understood as a person's belief of whether one have the ability to perform a certain behavior (Salas, Tannenbaum, Kraiger, & Smith-Jentsch, 2012), meaning that if a person is watching a specific behavior and believe that he or she could do the same, they would be inclined to copy the behavior.

In addition to employees' self-efficacy, role modeling is another concept that can substantiate an explanation of a leader's digital mindset and employees' active usage or avoidance towards new technology. *Role modeling* is another mechanism behind social learning theory and is the process where one identifies a person to look up to and internalizes the role models' values, behavior and attitudes in the process. Eventually, one will start identifying oneself with the role model (Cerasoli, Nicklin, & Ford, 2014). Transferring the theory of role models and social modeling to the workplace, one can assume that employees who has a leader with a dominating fixed digital mindset is additionally prone to avoid new technology themselves. This assumption is based on the fixed mindset literature where these people often avoid doing things they not already manage or expect to fail due to lack of knowledge on the current topic (i.e. new technologies).

In sum, theories from social learning theory can be applied when trying to illustrate how leader's having a FDM can influence their employees' active usage or avoidance of new technology at work. Specifically, we hypothesize that:

Hypothesis 1a: *There will be a negative relationship between leader's FDM and employees' active usage towards new technology*

Hypothesis 1b: *There will be a positive relationship between leader's FDM and employees' avoidance of new technology*

2.5 Hypotheses Related to the Mediating Role of PDSS

Several studies have explored the individual mindset in conjunction to the field of education. For instance, one study suggested that a teacher's belief about student abilities had an impact on the teachers educational approach (Swann & Snyder, 1980). This study showed that the teacher was giving more attention to pupils that they were told to had higher abilities compared to someone with lower abilities. This can be seen in relation to the theory of individuals with a fixed mindset and how they approach others in terms of new technology, where e.g. a fixed mindset leader provides less support to someone they believe have lower abilities.

A study from 2006 show the same phenomenon (Heslin, Vandewalle, & Latham). Here, it was studied whether individual beliefs about other peoples' mindset was associated with their willingness to help others (e.g. subordinates). They found that managers were prone to help and support subordinates when the manager held an incremental theory compared to an entity theory. When managers with an incremental view believed personal attributes like intelligence could be developed, the managers holding an entity view believed the same attributes were fixed, for example due to heritage.

Similar to managers being prone to help subordinates if they were holding a certain view, the same phenomenon has also been found for the younger generation (Heslin et al., 2006). In students and children, there has been found an association between holding a fixed mindset and being disinclined to devote time and other resources in other people's performance improvement. Contrary, holding a growth mindset is found to positively predict prosocial behavior such as helping others without a need to get anything in return. In their study, Heslin et al. (2006) found that those with an entity theory could provide higher quantity and quality

advice to a so-called poor performing employee if they received an incremental induction in advance.

Fixed mindset individuals provide less support to others due to several reasons (Dweck & Leggett, 1988). One reason is related to ones' perception of not mastering a specific task. In situations like this, these individuals will, according to the theory of fixed mindset, avoid the situation to prevent being caught as a low performer or as being incompetent. Another reason is that individuals with a fixed mindset believe that helping people who are already, in their eyes, low performers or incompetent, is a lost case. This is also partly linked to motivation, as fixed mindset individuals who believe that low performers cannot be helped, do not necessarily have the motivation to help them either.

Although social learning theory could serve as an explanation for a direct relationship between a leader's FDM and employees' avoidance of new technology (or the reluctance to actively use it), there could be other indirect mechanisms that explain this relationship. Building on the research outlined above, we hypothesize that leader's FDM will be negatively related to PDSS. Developmental supervisor support is, as outlined in the introduction, a term that is more individualized and change-oriented than emotional forms of supervisor support that focus more on the employees well-being (Rafferty & Griffin, 2006). Although these two types are tightly connected, they are still two distinct ways of giving support. Others also operate with the term coach or employee coaching, which can be described as a practical, one-on-one feedback provided by managers, with the aim of improving the employees work performance, behavior and prevent derailments (Hall, Otazo, & Hollenbeck, 1999). By "change-oriented" we will in this thesis emphasize change related to increased use of technology in the workplace.

As research suggests that leader's having a fixed mindset will engage in less coaching behavior, we assume that leader's having a FDM will do the same, and that the lack of effort put into coaching their employees will be experienced as low levels of PDSS. Thus, we distinguish between the actual support that employees receive from their supervisors and their perception of support received. The first refers to the quantity of supportive behaviors the individual actually receives, while the latter refers to the perceived experience and subjective satisfaction with the support (Haber, Cohen, Lucas, & Baltes, 2007), which is also the main focus for the next hypothesis. Accordingly, we hypothesize that:

Hypothesis 2: There will be a negative relationship between FDM and PDSS

Organizational leaders are more than ever being confronted with demands to develop themselves to be able to perform developmental leadership towards their employees (Rafferty & Griffin, 2006). This demand is due to the environmental change that is happening where today's employees are expecting more from their leaders for example in terms of technological savviness (Bannon, Ford, & Meltzer, 2011). Waterman, Waterman and Collard (1996) writes about how employees' career path have changed from being more dependent on one employer to now be more concerned about creating their own career-path. This change means that employees are more aware of their own choices on how to develop new skills to make themselves more resilient to technological changes in the near future. Based on this one can assume that employees are more prone to absorb information and be more willing to receive developmental supervisor support from either their leader or others with more experience than them. This to achieve new skills, that in the future, will make them more attractive for future employers. Therefore, since someone with a fixed digital mindset are less likely to provide support if they do not feel savvy enough with the specific subject or situation, we hypothesize that:

Hypothesis 3a: PDSS mediates the negative relationship between leader's FDM and employees' active usage towards new technology

Hypothesis 3b: PDSS mediates the positive relationship between leader's FDM and employees' avoidance of new technology

Change readiness can be seen in relation to a digital mindset in that people who are positive to change and desires personal and organizational development, often holds a growth mindset. Since the belief in oneself and others ability to develop is one of the characteristics of having a growth mindset, one can argue for the advantages of having this mindset in organizations undergoing change. Based on theory, one can further assume that people with a dominating, growth digital mindset is better prepared and suited for change as they tend to be better at testing new ideas, trying out new things and acting agile. Conversely, people with a

dominating fixed mindset hold beliefs regarding change that differs from beliefs held by growth mindset people, both in terms of affect and cognition. For example, change might be associated with less positive emotions, like annoyance or even anger. Similarly, in regard to the five cognitive components mentioned in the introduction (i.e. discrepancy, appropriate, efficacy, principal support and valence), one can assume that there is less understanding for undergoing change, hence discrepancy and appropriate. Also, the individual's self-efficacy tends to be weaker for people with this mindset, meaning that they might not believe they can handle change as well as people with a growth mindset. Further, they might also believe that the organization will not be able to provide them with all relevant resources during the change. Lastly, experiencing change can be seen as less relevant and not worth going through for people holding a fixed compared to a growth mindset. In contrast, we would assume that the participants in our study holding a growth digital mindset should display greater willingness to learn new technologies and to use technology for improving everyday work.

2.6 Digital Mindset Intervention: Helping Leaders Go from Fixed to Growth Digital Mindset

Even though fixed and growth mindsets is not a part of a person's personality, the assumptions we have about people holding either mindset seems to be relatively stable over time (Robins & Pals, 2002). However, it is possible to manipulate an established mindset through the use of an intervention (Wood & Bandura, 1989), although there is mixed evidence-based research on whether the *intervention* per se can have an impact on someone's mindset (Donohoe, Topping, & Hannah, 2012). Despite some doubt regarding the impact of interventions, there is literature pointing at the possibility of influencing peoples' mindsets. For instance, a study from 2012 (Rattan, Good, & Dweck) found that teachers with a fixed mindset started comforting students with poor math results by telling them it was OK not to be good at math instead of encouraging them to improve. This resulted in students becoming more demotivated than before. Another study showing that mindsets can be influenced and thereby changed despite its relative stability, is from 2013 (Visser). Here, Heslin and colleagues (2005), managed to develop a growth mindset in managers through a workshop lasting for 1,5 hour that

induced five incremental self-persuasion principles that served as the incremental manipulation.

Other studies have shown the relative easiness of influencing mindsets, for example by using simple multiple-choice questions (Visser, 2013). Because people's beliefs about their own, personal characteristics can influence the way they think and behave, it increases the importance of further investigating the power of mindsets. Their perceived technological capacity will in this case be of particular interest and we are again referring to Bandura's theory of self-efficacy and the individuals strong or weak sense of self-efficacy (1978).

Dweck supports the belief that it is possible to move from having a fixed mindset to a growth mindset since it is possible to change personal beliefs (2015). Based on this, one can expect that changing your personal mindset is possible, since a mindset is defined as a set of beliefs. However, Dweck also emphasize that one should not block out one's fixed mindset thoughts and deeds but rather embrace them and try to work with and through them (2015). She further suggests that the danger of blocking these is that one can end up with a false growth mindset (Dweck, 2015). A *false growth mindset* can be explained as someone who claims they have a growth mindset, but their actions do not follow through. One can only start the journey of moving towards a growth mindset by learning and improving the way to think and act (Dweck, 2015) and by embracing and acknowledging that one has a fixed mindset. Having a growth mindset does not only involve being open and flexible, it also encompasses dedication to personal development and growth.

The environment and its surroundings have also been found to be of significant importance for influencing mindsets and developing a growth digital mindset in general. Nevertheless, it is important to have in mind that changing peoples' attitudes are somewhat difficult once they are established (Abdul Rashid, Sambasivan, & Abdul Rahman, 2004). It is necessary for the development of a growth mindset to be surrounded by a climate which allows people to believe that ability to learn is important for effort and persistence (Bettinger, Ludvigsen, Rege, Solli, & Yeager, 2018; Zeng, Hou, & Peng, 2016). This highlights the importance of creating a supporting learning environment in the workplace for promoting a growth digital mindset. Since we want to use an intervention with the objective of influencing a fixed digital mindset in the direction of becoming a growth digital mindset, we hypothesize that:

Hypothesis 4: *By manipulating a leaders' digital mindset to become less fixed, employees' active usage towards new technology can be improved.*

3.0 Research Method

The theoretical grounding for the research approach was presented above. Based on this, the following includes a description of how the empirical research process of this master thesis was proceeded in practice.

3.1 Sample

We invited 2132 employees and 249 leaders from different departments within a big Nordic Bank to participate in our research project, which served as the only organization providing this study with respondents. The sample consists of participants in leadership positions and their employees. Even though the bank is being located in several Nordic countries, this study only concerns Norwegian leaders and their Norwegian employees. This is to prevent language misunderstandings in the electronic survey, which was created in Norwegian. The sample consists of both men and women in working age from approximately 23 until age of retirement. The study did not discriminate among leaders on different levels but included leaders on every level throughout the organization. Leaders will in this context be defined as “managers having personnel responsibility”.

3.2 Procedure

The Norwegian Centre for Research Data (NSD) was contacted before starting data collection, to ensure that we were following ethical guidelines, also in terms of participant anonymity. To ensure that the potential participants was informed about the objectives of our research project, they were contacted by e-mail by an employee from the bank's HR department a few days in advance of receiving the survey invitation. Information letter is attached (*see Appendix B*). Both leaders and employees were informed about their rights, confidentiality, how the data would be handled (and by whom). They were also assured that the data would only be used for research purposes. Before the survey was sent out to our participants, we paired employees and leaders. Those left without a match were excluded from the sample as we considered the direct link (leader-employee) necessary for our study.

For questionnaire time 1, leaders and employees in the bank were approached and invited to complete a survey late January 2019. Out of the 2381 invited we received a total of N=912 responses, employees (N=759) and leaders (N=153). The next step was to identify the leaders who leaned towards a fixed mindset based on the first questionnaire. This step will be elaborated further in the text box below.

For questionnaire time 2, all the participants who completed the survey the first time (N=759 employees and N=153 leaders), were invited to do a final survey containing the same questions. A total of 346 participants completed surveys for time 2 (N=252 employees and N=94 leaders). A drop-out rate like this was expected from time 1 to time 2. Our sample size (time 1: 912 and time 2: 346), was fairly adequate (Fritz & MacKinnon, 2007) when using bootstrap to detect the mediated effect. The total drop-out rate from time 1 to time 2 was 38%. This indicates a high response rate that could be due to the flexibility of answering on either a computer, phone or a tablet, which made it more convenient to participate.

A few adjustments were made to improve the survey from time 1 to time 2, like the duration time for completing the survey, which was changed from one to two weeks. Moreover, the survey automatically stopped one week after respondents last activity during time 1, which made the reminder we sent out less helpful. Therefore, during time 2 this was changed to two weeks to secure higher response rate. In addition, a progress bar was added to ensure predictability for the participant. For both time 1 and time 2, a reminder was sent out one week into the data collection.

3.3 Research Design

In order to investigate the research question and to test the formulated hypotheses above, an electronic questionnaire using an online survey software, Qualtrics was used. This method is situated in the field of quantitative research method. Although qualitative studies are useful for insights in psychological processes in the workplace, a quantitative approach was chosen, as it can provide us with a large amount of data which will be valuable for this study. As we were dealing with a large sample and since a questionnaire is able to provide us with large quantities of data, this was a natural choice. Also, a questionnaire makes the

data scalable and standardized. Potential disadvantages with using this method will be addressed in the discussion part of the thesis.

Special note regarding the intervention procedures:

During our intervention phase, we discovered two actions that should have been handled differently in hindsight. For transparency, as well as ethical reasons, this is something we will explain in the following text box.

First, the mean of 2.00 on the fixed mindset measure was used as a threshold to identify leaders with a fixed mindset. The idea behind using 2.00 was its close distance to the next number in the leaders' scores ($\mu=2.106$ vs. $\mu =2.33$) based on the surveys. However, since a score of 2,00 generally indicates that respondents disagreed with the statements made in the fixed mindset measure, these leaders should belong to the leaders with a growth mindset rather than those with a fixed mindset. Sending the intervention to this group of leaders (32 in total) was a mistake. In attempt to correct this, we identified the leaders with a score at 2.00 who had received the intervention. These leaders were informed about the mistake and then given a new profile score, this time indicating that they were leaning towards a growth-oriented digital mindset.

Second, we experienced a sorting mistake in Excel when sorting out the different leaders according to their fixed digital mindset scores. As a result, 11 leaders were sent the digital mindset intervention, when in fact they had a score that did not indicate a fixed mindset. Those who wrongly received an intervention due to this mistake were also informed and given a new profile. As a result, to the aforementioned hypothesis 4 was not further investigated and tested for.

3.4 Measures

All responses were obtained on a five-point Likert-type scale ranging from one = strongly disagree to five = strongly agree. The questionnaire consisted of questions regarding the leaders' and employees' attitudes towards new technologies at work. As mentioned above, the survey was given in Norwegian to prevent language misunderstandings from the electronic survey. This also builds on Kahneman's (2011) assumption that participants should answer in their mother tongue to prevent misunderstandings that could decrease the reliability of the results. However, as stated in previous research, translation may harm the quality of the items and should therefore be carefully executed (Berkanovic, 1980). To secure the validity of our measures our supervisor was included in the translation process.

The survey conducted for leaders contained questions regarding perceived usefulness and ease of use of new technologies at work, voluntariness of the technologies, their own job crafting and how they would rate their own technological competence. The survey conducted for the employees contained some of the same questions, e.g. perceived usefulness and ease of use, but also questions regarding perceived developmental supervisor support, psychological safety and digital self-efficacy. We could have looked into all these variables, however, due to interest and priorities we chose to focus on PDSS as a possible mediator. The following paragraphs will focus on the three measures used in our study, namely the independent, dependent and mediating variable.

3.4.1 Independent Variable: Leader's FDM

The measures for digital mindset include different statements were half of the items represent fixed mindset and the remaining half represent growth mindset. The questions used are developed by our supervisor together with her colleagues for other research (Solberg et al., 2018).

The following two examples represent statements indicating a fixed mindset; *“A person's level of technological savviness is something basic about them, and there isn't much that can be done to change it”* and *“Not much can be done to change how well a person will keep pace with technological change.* The following two examples represent statements indicating a growth mindset; *“Everyone is a certain kind of person, and some will fare better with technological changes than others”* and *“No matter who a person is, they can significantly improve their level of technological competence”* and *“Even a person with only basic technological skills can improve considerably if they work hard enough”*. Higher scores on the items related to fixed mindset indicate a more fixed digital mindset.

3.4.2 Dependent Variable: Employees' Active Usage or Avoidance to New Technology

The 16 items used measuring employees' active usage or avoidance of new technology were divided into four categories; avoid, reduce, approach and expand. These questions are also developed by our supervisor together with her colleagues for other research (Solberg et al., 2018). Two examples with statements representing avoidance are; *“I make changes in the way I do my work that allows*

me to avoid using new technological systems/platforms” and “I organize my work in a way that allows me to largely avoid interacting with new technologies”. Two examples representing active usage are; *“I make an effort to be one of the first to learn about and try out new technologies at work”* and *“I seek out or develop, on my own, projects at work where I can learn new technological systems and platforms”.*

3.4.3 Mediating Variable: PDSS

PDSS was measured using nine items from Linda Lai (2009) and is based on an earlier measure from Greenhaus et al. Following are two examples of statements measuring this variable; *“My supervisor takes the time to learn about my career goals and aspirations”* and *“My immediate supervisor gives me useful feedback on my performance”.*

3.5 Intervention

The intervention (*see Appendix C*) was given to leaders we identified with a fixed mindset and it was based on principles from a study conducted by Heslin and VandeWalle (2008). In this study, an incremental intervention with five components was used. In our intervention, we adopted the element called “counter-attitudinal idea generation” from one of the five principles. This component refers to a question asked to the leader, with the intention to make them reflect upon the importance of developing own abilities and why. Heslin and VandeWalle (2008) also used a component called scientific testimony, where the point was to base their assumptions on science. In our intervention, we also included a video from a Ted Talk with Carol Dweck herself (2014). In the video Dweck goes in depth explaining a growth mindset and also tries to illustrate that the brain is capable of growing like a muscle when it is stimulated.

The intervention was developed to directly address issues that have been shown in prior work in regard to consequences of leaders having a fixed mindset with the purpose of creating an awareness for its recipients. The strategy behind it was to create an easily absorbable, as well as an understandable text. We also aimed at being as concrete and to the point as possible. The document contained information regarding the potential consequences for employees if a leader was holding a fixed mindset in terms of technology at work. In addition, it contained information about how to become more growth-oriented. This intervention was

given in Qualtrics and for us to better monitor whether or not the intervention file was opened and read, a short question was added where the leaders could tick of if they had “read and understood” the document.

4.0 Analysis

The analysis was conducted in several stages. As a first step, exploratory principal component analysis with promax rotation was conducted on all leader-rated and employee-rated study items to evaluate the factor structure and determine item retention. This analysis is a recommended initial step to get an overview of the structure of the data to identify potential outliers or define classes (Jolliffe, 2011). Since some items in our survey was translated from English to Norwegian this was a crucial first step. Here, items with loadings greater or equal to .50 on the main factor were retained whereas items that had cross-loadings of .35 or greater were removed (Lai & Kapstad, 2009). Next step, reliability was tested estimating the Cronbach’s alpha values. The threshold for Cronbach's alpha to be considered an "internally consistent measure" is .70, even though this number tends to vary among researchers (Peterson, 1994). Thereafter, descriptive analysis was conducted to estimate means, standard deviations as well as bivariate correlations between all our variables.

The independent variable in this study, a leaders' FDM, resides at a different level of analysis (group level) than the remaining variables that reside at the individual level. This implies that the data are nested within a macro structure, i.e., employees within groups that share the same leaders. Thus, there are potentially shared variances among employee-rated measures due to non-independence (Snijders & Bosker, 2012) that could bias the standard error estimates. We therefore had to apply hierarchical linear modelling (HLM) (Bryk & Raudenbush, 1992) to test the degree of interdependence between groups.

To test the degree of interdependence between employees having the same leader, we ran a "null model" using Mixed Models analysis in SPSS, specifying leaders as the level 2 variable and the employee outcomes of interest as the outcome variables, but without specifying any predictors. Doing this allowed us to calculate the intraclass correlation (ICC) from the information reported in the Estimates of Covariance Parameters table. The ICC represents the proportion of the total variation in the specified dependent variable explained by the grouping structure

and can range from 0 to 1 (Statisticshowto, 2016). It is used to determine whether there is significant clustering of observations within higher level units, and thus if methods that control for within and between group variance are required to carry out the statistical analysis. The ICC values for the employee usage and avoidance outcome variables were zero, indicating no shared variance within clusters. The ICC value for PDSS support was .07, which is low, and the between group variance was non-significant. Accordingly, it was regarded as safe to proceed with hypothesis testing using standard regression procedures.

Hypotheses 1a, 1b and 2 were tested using linear regression modeling in SPSS version 25.0. To test the direct-effect hypotheses, the dependent variables were regressed onto the independent variable (leader's FDM). To test the indirect-effect hypotheses, 3a and 3b, Process macro for SPSS (version 3.3.01; Model 4), created by Andrew Hayes (www.afhayes.com) was used. The process macro allows for simultaneous testing of the entire mediation models and also incorporates bootstrapping techniques for estimating indirect effects, which is currently preferred by methodologists over the causal steps and Sobel test strategies (Baron & Kenny, 1986). McKinnon and colleagues (2002; MacKinnon, Lockwood, & Williams, 2004) is one of them who recommends this test over the Sobel test due to its higher power as well as it maintains more control over the Type I error rate. Type I error refers to concluding for a relationship when there in fact is none (Banerjee, Chitnis, Jadhav, Bhawalkar, & Chaudhury, 2009). Sobel test and other causal steps strategies are only recommended in studies with large samples (Preacher & Hayes, 2008).

The process analysis calculates whether the independent variable can influence the dependent variable through the use of one or more intervening variables or mediators (Preacher & Hayes, 2008). In our study we use what is referred to as simple mediation as we only have one mediator (see figure 2). All tests are conducted with a 95% confidence interval with the use of bootstrapping with 5,000 resampling's. *Bootstrapping* is a method where the data is repeated, in this case 5000 times, to construct confidence intervals for the indirect effect. If this interval range do not include zero it can be argued for that the effect of the independent variable to the dependent variable is mediated trough the mediation variable (Preacher & Hayes, 2008). Hypothesis 4 was not investigated further as explained earlier in the assignment (see text box).

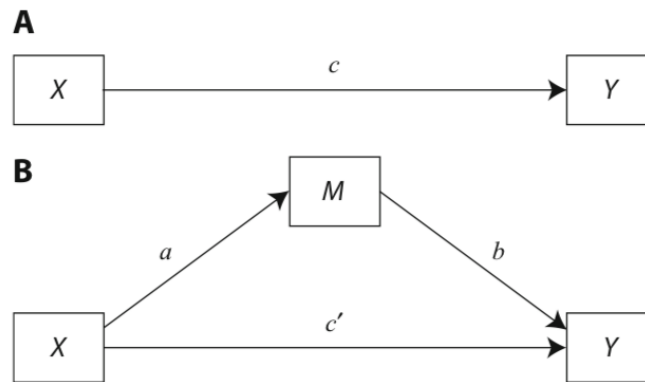


Figure 2. Illustration retrieved from (Preacher & Hayes, 2008, p. 880). (A) illustrates the direct effect where X affects Y . (B) Illustrates a simple mediation design where X is hypothesized to exert an indirect effect on Y through M .

5.0 Results

5.1 Principal Component Analysis

In our principal component analysis (*see Appendix A*) only items with a loading of .50 or higher on the target construct (Nunnally & Bernstein, 2007) were included in the computed scales. As we had experienced cross loadings with the growth mindset items in T1 we decided to only use the fixed digital mindset items. Based on the decision rule above, item 3 from the fixed mindset measure was dropped from the variable calculation. The principle components analysis reveals that all of the employee-rated items load onto their respective factors, with the loadings for all items above .50.

5.2 Descriptive Analysis

As already stated in the analysis the generally held threshold for Cronbach's alpha is .70 to be considered an "internally consistent measure". The Cronbach's alpha for leader's FDM based on the three acceptable items identified in the PCA is .67, which is a little low, but fairly acceptable (Peterson, 1994). Since the factor structure of these three items and Cronbach's alpha was adequate, we compute the fixed digital mindset variable as the mean value of these three items. The same goes for our other variables PDSS and employees' active usage or avoidance to new technology. Their Cronbach's alpha was also based on respectively four items each identified in the PCA and they all fulfilled the criteria to be higher than .70. This indicated that the final scales all had acceptable reliability estimates with coefficient alphas ranging from 0.67 to 0.95 (parenthesized in table 1).

Table 1 reports descriptive statistics, correlations (bivariate) and measures of scale reliabilities. As all the correlations have acceptable values this is an indication that multicollinearity is not a problem (Myers et al., 2006). However, although the correlation matrix is satisfying, this is only giving an indication of the relationships between the variables. It is therefore necessary to perform a regression analysis to test the proposed hypotheses (*1a, 1b and 2*) further together with process analysis to test the mediation hypotheses (*3a and 3b*). However, before performing the regression- and process analysis, a null model will be our next step.

TABLE 1 Descriptive Statistics, Correlations, and Scale Reliabilities

Variables	Mean	SD	1	2	3	4	5	6	7	8
1. T1_LFM	2.21	.60	(.67)							
2. T2_LFM	2.09	.63	.48**	(.71)						
3. T1_PML	3.82	.76	-.15*	-.013	(.95)					
4. T1_JCAv	1.75	.70	.08	.06	-.12**	(.92)				
5. T1_JCAp	3.02	.72	-.04	-.01	.17	-.14**	(.89)			
6. T2_PML	3.83	.74	-.16*	-.12	.72**	-.08	.26**	(.94)		
7. T2_JCAv	1.75	.68	.00	-.03	-.11	.62**	-.25**	-.20*	(.93)	
8. T2_JCAp	3.02	.77	-.17	-.10	.30**	-.31**	.71**	.42**	-.30**	(.91)

N=118 Coefficient alphas indicating scale reliabilities are in parentheses. * $p < .001$, ** $p < .01$, *** $p < .001$. T1_LFM = Time 1 leaders fixed mindset, T2_LFM = Time 2 leaders fixed mindset, T1_PML = Time 1 perceived mastery leadership, T1_JCAv = Time 1 job crafting avoidance, T1_JCAp = Time 1 job crafting approach, T2_PML = Time 2 perceived mastery leadership, T2_JCAv = Time 2 job crafting avoidance and T2_JCAp = Time 2 job crafting approach

5.3 Hypotheses Testing

Results from the regression models are presented in table 2 together with the process results. As we use both regression and process analysis, we will use unstandardized coefficients when referring to the results to assure transference between the two analyses and will not refer to the total effects once again when presenting the process results. Simple linear regression was applied in two steps to check the relationship between a leader’s FDM, employees’ active usage or avoidance to new technology and PDSS.

In step 1, findings indicate that the relationship between a leader’s FDM and employees’ active usage to new technology at time 1 was negative but not significant ($B = -.055, SE = .079, p > .05$). When looking at the same relationship, but with the outcome variable measured at time 2 and using employees’ active usage of new technology at time 1 for controlling the relationship, the result still was not significant ($B = -.112, SE = .070, p > .05$). Hypothesis 1a is therefore not supported. For hypothesis 1b we see, looking at the outcome measured at time 1, that the relationship between a leader’s FDM and employees’ avoidance to new technology

is positive, but again not significant ($B=.10, SE=.08, p>.05$). When looking at the same relationship, but with the outcome measured at time 2 and controlling for the time 1 measure, the relationship is also not significant ($B=-.06, SE=.09, p>.05$). Hypothesis 1b is therefore not supported.

In step 2, we looked into the relationship between a leader’s FDM and PDSS. Results indicated that a leader’s FDM and PDSS was negatively related, and significant ($B=-.20, SE=.08, p <.01$). This indicates that hypothesis 2 is therefore supported.

In hypothesis 3a and 3b, we predicted that PDSS would mediate the relationship between a leader’s FDM and their employees’ active usage or avoidance to new technology. In testing these hypotheses, we specified the outcome measures from the time 2 survey as the dependent variables. Employees’ active usage towards new technology at time 1 was used as a covariate. This covariate has a statistical relationship to the two different dependent variables ($T2_JCAp: B=.69, SE=.05, p<.0001$ and $T2_JCAv: B=-.25, SE=.07, p<.001$), hence qualify the requirements to serve as a covariate (Salkind, 2010). First, we refer to findings related to hypothesis 3a, see figure 3 for a summary of the results. Then, we will look at findings related to hypothesis 3b, see figure 4 for a summary of these results.

TABLE 2 Process
Influence of Leaders Fixed Digital Mindset on Employees’ Active Usage or Avoidance to New Technology through Employees Perceived Developmental Supervisor Support

Independent variable (IV)	Mediating Variable (M)	Dependent Variable (DV)	Influence of IV on M (a)	Influence of M on DV (b)	Total influence (c)	Direct influence (c')	Point estimate/Indirect influence (ab)	SE	95% CI	
									Lower	Upper
1. T1 LFM →	PML	T2 JCAp	-.28**	.15*	-.11	-.07	.04	.0251	-.1013	-.0042
2. T1 LFM →	PML	T2 JCAv	-.28**	-.07	-.06	-.078	.02	.0213	-.0150	.0705

5000 bootstrap samples; T1_LFM =Leaders Fixed Digital Mindset time 1; PML = Perceived Developmental Supervisor Support; T2_JCAp = Employees’ Active Usage of New Technology time 2; T2_JCAv = Employees Avoidance to New Technology time 2.
 * $p<.05$ ** $p<.01$ *** $p<.001$

Findings related to hypothesis 3a indicate that the a’path leading from leader’s FDM to PDSS was negative and significant ($B=-.28, SE=.09, p<.01$). Findings also indicate that the b’path leading from PDSS to employees’ active usage towards new technology was positive and significant ($B=.15, SE=.06, p<.05$). Further, the indirect effect of leader’s FDM on employees’ active usage towards new technology was negative ($B=-.04, SE=.03$) and significant, as indicated by a confidence interval that did not include zero [$CI\ 95\% (-.1013, -.0042)$]. In accordance with Preacher and Hayes’ (2004) two assumptions, the c’path is different from zero ($B=-.11$) and the indirect effect is significant. Our

findings therefore indicate a significant indirect effect between leader’s FDM, PDSS, and employee’s active usage towards new technology. Thus, Hypothesis 3a is supported.

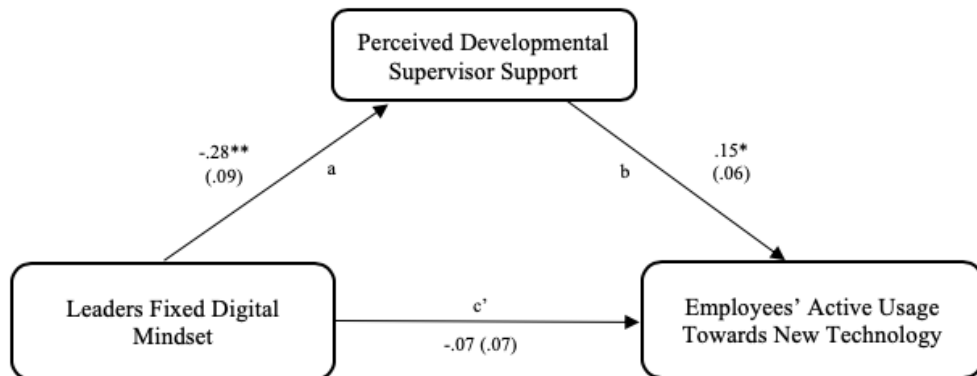


Figure 3. Unstandardized coefficients and standard errors (in parentheses) for the indirect effects of leader’s fixed digital mindset (time 1) upon employees’ active usage towards new technology (time 2) through perceived developmental supervisor support (time 1) ($n = 184$). $p > .05$; $*p < .05$; $**p < .01$; $***p < .001$.

Findings related to hypothesis 3b indicate that the b’path leading from PDSS to their avoidance towards new technology was negative but not significant ($B = -.07$, $SE = .07$, $p > .05$). Further, the indirect effect of leader’s FDM on employees’ avoidance towards new technology was positive ($B = .02$, $SE = .02$), however not significant, as indicated by a confidence interval that did include zero [$CI 95\% - .0150, .0705$]. In accordance with Preacher and Hayes’ two assumptions, the c’path is different from zero ($B = -.06$) however, the indirect effect is not significant. Our findings therefore indicate that no indirect effect exists between leader’s FDM, PDSS, and employee’s avoidance towards new technology. Thus, hypothesis 3b is not supported.

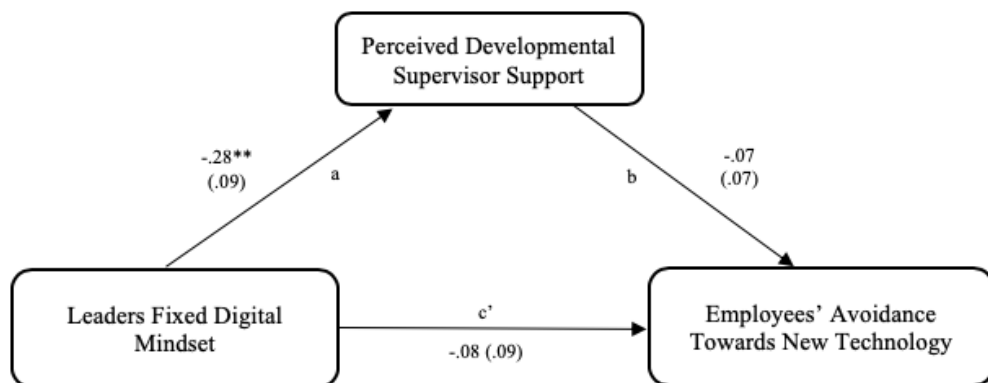


Figure 4. Unstandardized coefficients and standard errors (in parentheses) for the indirect effects of leaders fixed digital mindset (time 1) upon employees’ avoidance towards new technology (time 2) through perceived developmental supervisor support (time 1) ($n = 184$). $p > .05$; $*p < .05$; $**p < .01$; $***p < .001$.

6.0 General Discussion

The research question explores the relationship between a leader's FDM and their employees' active usage or avoidance to new technology. In this master's thesis, we draw upon Heslin and colleagues research (2006) about leaders implicit person theories and employees' PDSS. Work based on growth and fixed mindset (Dweck & Leggett, 1988) has been a central part of this thesis to better understand a leader's potential influence on subordinates' active usage or avoidance to workplace technology. This was based on a job crafting perspective. After thorough analyses, we found that PDSS served as a mediating variable for hypothesis 3a, influencing the relationship between the independent and dependent variable. A second intention with this thesis was to see if our study could create new ways of managing new technologies in the workplace, either in terms of mindset awareness or awareness for the importance of providing employees with individual and change-oriented support.

6.1 Digital Mindsets and Active Usage or Avoidance to New Technology

In terms of digital mindsets and employees' active usage or avoidance to new technology, we hypothesized in 1a that there was a negative relationship between a leader's FDM and employees' active usage to new technology. We assumed that the leaders' FDM would directly influence the employees' attitudes and behavior in the meeting with technology. This implies that if employees have a leader with a FDM they would engage less in new technology. We further hypothesized in 1b that a leader's FDM would be positively related to employees' avoidance to new technology. This would imply that a leader with a FDM potentially influence the employees to avoid new technology at work. Based on our findings, neither hypotheses 1a nor 1b was supported.

According to social learning theory, we would expect to find support for both hypotheses, in that a leader- no matter their digital mindset- often function as a role model for the employees in a way that they imitate and adopts their behavior and attitudes. For example, if a leader holding a FDM is skeptical and reluctant to use new technology, we would assume based on this theory, that their employees would adopt this attitude to a certain extent and avoid new technology themselves.

This is not necessarily due to the leaders' mindset, but the behavior of the leader in which the employees imitate.

However, since hypotheses 1a and 1b was not supported, several aspects will in the following try to explain reasons for this. Looking at literature on e.g. self-motivation and self-regulation, one can anticipate that employees do not feel as dependent on the leader as first supposed. Theories of self-regulation states that people actively participate in their own learning process and construct goals, strategies and meanings (Pintrich, 2000). Employees from our participant pool might have a relatively high degree of self-regulation which in turn could have influenced our result. Furthermore, even though these employees have leaders with FDM, they can still be able to mobilize forces into the process of learning new technology and engage in this learning based on own principles and self-initiative.

In addition to the theories of self-regulation, theories of self-motivation and self-leadership can be a contributive factor in the explanation of why hypotheses 1a and b was not supported. In its simplest form, self-motivation is the force that drives the individual, whereas self-leadership is the process through which people influence themselves to achieve the self-direction and self-motivation necessary to behave and perform in desirable ways (Houghton & Neck, 2002, p. 672). In regard to technology avoidance or approach, the individual can take responsibility for own progress and learning by forming the job and also use self-motivation to approach new technology, even if they have a leader who is not keen to use technology or develop own or others skills.

Another, and more practical explanation for our findings can be physical distance between the leader and its employee in terms of spread locations. For example, offices might be located at different locations which minimizes the daily interaction. Trust is an important factor for physical distance to work between employees and their leaders (IH & AAS, 2008). Distance can also make the leader increasingly stressed, since lack of control can be a consequence of the distance. This again can contaminate their employees and cause demotivation.

Organizational structures are today flatter than before (Hagaseth, 2016), making the influence leaders have on employees less substantial. This organizational structure is particularly recognizable for a Scandinavian working culture which is also the case for the Nordic bank used in this thesis.

The examples above illustrate possible explanations for why employees who have leaders with a FDM still can engage in, and actively use new technology. Contrary, employees could avoid new technology because they themselves hold a FDM and will therefore not be influenced by the mindset of their leader. Nevertheless, in this study we did not investigate the mindset of the employee and for this reason we will not be able to draw a line between their mindset and avoidance.

6.2 PDSS

In our study, PDSS is the main topic of interest and compared to *received* support, only *perceived* support has been consistently linked to health (Haber et al., 2007). Studies have shown that support and training are good investments for organizations since that is found to increase employees job performance (Park, Kang, & Kim, 2018; Settoon, Bennett, & Liden, 1996), which in turn can lead to more profitable organizations. It is therefore likely to assume that as organizations constantly need to develop in regard to technology, adapt new skills etc., developmental supervisor support is a substantial contributor to organizational development (Park et al., 2018).

Hypothesis 2 postulated there was a negative relationship between the fixed digital mindset of the leader and the employees perceived developmental support from their leader. This would imply that employees from our participant pool who had a fixed digital mindset leader would experience less degree of individual and change-oriented support. This hypothesis was supported and our findings align with what Heslin and colleagues (2006) found, in that people holding a fixed mindset were less likely to invest in others performance improvement. Even though this study was conducted on children and students, we expect that the same finding can be generalized and transferred to leaders and employees dealing with technology, hence our study.

Why was this hypothesis supported? Because those who holds a fixed mindset believe certain characteristics are not possible to develop, is it fairly reasonable to draw a line between this mindset and lacking developmental support. Further, employees that are already shown to be talented or who outperform their colleagues, will receive better treatment and more support from the leader (Heslin et al., 2006). These employees can be seen as a better “investment” and hence

receive increased *actual* support, which in turn affects the individuals *perceived* experience of developmental support. This is relatable to the so-called Pygmalion-effect whereby other's expectations of a person affect the same individual's performance. Rosenthal and Jacobson found in 1965 that by telling teachers that a certain group of students was talented and so-called "growth spurters", they performed better, even though the group of students were chosen at random (Rosenthal & Jacobson, 1968). Such expectations can make a leader with a FDM give increased support to those employees they perceive as brighter than the rest.

Hypotheses 3a and 3b expected that employee's PDSS could serve as a mediating effect between a leader's FDM and employees' active usage or avoidance towards new technology. Meaning that we assume to see that our mediator affects the relationship between our independent variable and our dependent variable.

Hypothesis 3a was supported as we found the indirect effect to be negative and significant. Our findings therefore indicate that while there is no direct relationship between a leader's FDM and the employee's active usage towards new technology, a leader's FDM is negative, yet significantly, related to PDSS. The mediator is in turn positively related to employee's active usage towards new technology. This indicates that PDSS mediates the negative relationship between a leader's FDM and employees' active usage of new technology, suggesting that if employees experience perceived support from their supervisor, they are more likely to approach and actively engage in new technology at work. On the other side, support like this could be rejected due to the employee's mindset if they lack confidence. However, if they do accept help, they might only put in effort if the employees consider themselves as talented or intelligent enough.

As referred to earlier, employees' acceptance of new technology is related to the beliefs they have about the quality of the relationship with their leader (Magni & Pennarola, 2008). Because hypothesis 3a was supported, this might indicate that the employees from our participant pool have a good relationship with their leaders.

To summarize, the direct relationship between the independent variable and the dependent variable was not significant. The negative relationship between the independent variable and the mediator was significant. The mediator was in turn positively related to employee's active usage towards new technology. This indicates that PDSS does not mediate the positive relationship between a leader's FDM and employees' avoidance to new technology. Hypothesis 3b was therefore

found not to be supported as the indirect effect was negative and not significant. This suggests that despite experiencing PDSS, the employees are not more likely to avoid new technology.

The result of hypothesis 3b was not in accordance with our predictions, nor in accordance with the theory related to role models and social modelling presented in the theory section. If leaders provide support and hence use technology actively, we would assume that social modeling and role models influence their employees and that employees mirror their behavior to avoid technology less. Since hypothesis 3a was supported, it was therefore to us surprising that the mediator did not have the same effect in hypothesis 3b.

A possible explanation for why PDSS did not have an effect on employee's avoidance to new technology can here be explained by the mindset of the employees. If the employees have a fixed mindset themselves, they will, as described in theory, be reluctant to receive help if this can further strengthen the impression of them being incompetent. They might therefore continue to avoid new technology even though they are given support.

Motivation is another factor that can decide whether supervisor support has an affect (Heslin et al., 2006), and lack of motivation is often associated with low performers. What happens if low performers don't increase their performance and continues to be low performers after several sessions with coaching or developmental supervisor support? Developmental supervisor support can be resource demanding and we therefore assume that this could be linked to studies regarding low performers. Potential costs and use of resources should be taken into account in terms of the amount of developmental support leaders could provide. Leaders can overestimate their own beliefs in relation to how much potential for improvement an employee have, and they might end up in a dysfunctional relationship. Since possibility and probability are two different things and although an employee have the possibility to change it does not mean that the probability is just as high (Dweck et al., 1995). This means that they use more resources than what the organization would benefit from.

We further hypothesized that by manipulating the digital mindset of the leader, one could see an improvement in the employees' active usage towards new technology. However, since our manipulation did not go as planned, hypothesis 4 was not further investigated. Yet, we have earlier referred to literature that supports

the notion that mindsets can be manipulated with interventions. It would have been interesting to investigate the lasting effect of a manipulation. Heslin et al. (2006) found in their study that their induction lasted for six weeks, and they also experienced greater results with the incremental induction compared to the control group, indicating that interventions can last for a few weeks. Heslin and colleagues had two workshops during these six weeks, in our case, we did not have the resources nor the time to perform training etc. to manipulate participants in our participant pool. It would also have been of interest to test how much repetition is necessary to keep a manipulated mindset at a wanted/satisfying level. Although several studies have found a change in the baseline mindset after introducing an intervention, it should be mentioned that one is not yet sure about the lasting effects of the manipulation. Despite showing significant increase in growth mindset scores after being given intervention (Donohoe et al., 2012), it was in the same study also found a decline at follow up, where the impact of the manipulation was no longer preserved. This indicates that one should not presuppose that long-term effectiveness of interventions will sustain after some time.

6.3 Practical Implications

Despite the limitations of this study that will be discussed later in this paper, our findings can potentially provide organizations, leaders and their employees involved in change (i.e. new technology at work) with important implications for practice. In line with the findings from this thesis as well as additional supplement from existing theory, this study offer knowledge about a topic that, to our knowledge, never before has been addressed. Our findings imply that leaders with a fixed mindset can negatively relate to support perceived by the employees. This implies that if supervisor support is important for employees in the workplace, it is beneficial for the organization to promote a growth mindset.

Further, our findings also imply how PDSS can influence employees' acceptance and usage of new technology. This is important knowledge, since organizations digitize and digitalize more than ever. Moreover, we know from research that investing in the employees' training and by providing support, job performance increases (Park et al., 2018). Also, AI and tools using AI is a big part of the workday as well as in our private life.

Support does not have to be associated solely with something positive, as it is found to depend on the employees self-esteem (Deelstra et al., 2003). In their study, it was found that individuals with low self-esteem tends to respond negative when receiving support from the supervisor. However, the employees' self-esteem was not tested for in our study and we can therefore not state whether their self-esteem would have been influenced by the mediating variable. This would nevertheless be interesting for future research.

Although this thesis continuously discusses the individual as well as organizational benefits of having a growth-oriented mindset, it is important to remember that Dweck herself argue for the norm of having mixture of both mindsets and that people rarely holds either mindset in its pure form (Dweck, 2015).

6.4 Limitations and Future Research

In the introduction, we asked the following research question: *Does a leader's fixed mindset, as it relates to technological competence (referred to moving forward as leader's fixed digital mindset) influence the extent to which their employees' actively use (or avoid) new technology introduced at work?* In accordance with our findings, we claim that a relationship between the independent and the dependent variable exists as long as the element of PDSS is present for the employees. This means that felt support is the crucial factor for whether or not the employees will be influenced by their leader's FDM. In the following, limitations in our study and suggestions for future research will be discussed.

Although hypotheses 2 and 3a were supported, all our findings should be interpreted in light of its limitations. First, this study solely relies on self-reports, which is a target of criticism as it may involve common method bias (CMB) (Podsakoff, 2003). Social desirability bias, a variant of CMB, means that participants answer in a way that is considered particularly favorable (Adams et al., 2005), e.g. through exaggeration or understating statements that can put you in a unfavorable light (Bell, Bryman, & Harley, 2015). Nevertheless, according to Saunders (2011), the social desirability bias is usually unlikely to appear with self-completed questionnaires while others argue that social desirability is not so problematic as anticipated (Ones, Viswesvaran, & Reiss, 1996). However, there is always a risk that participants in our study can have rated themselves as more eager users of new technology than what is the truth. They can also state that they

experience technology as easier to use than what they actually think. In addition to CMB, there is a potential risk of misinterpreting questions, mixing the alternatives or randomly choosing without considering any of the options properly.

This study consists exclusively of participants from the same financial institution with relatively similar academic and occupational background. The majority of participants in our study consists of mid-aged, Norwegian men and women. We are therefore fully aware of the relative homogenous segment that might represent a threat to the external validity by making the findings harder to generalize to other institutions and sectors (Bell et al., 2015). That being said, we have included participants at different levels and in different positions around the organization, hence, the results might therefore be generalizable to other banking and finance institutions.

Moreover, the e-mail sent to potential participants containing the survey invitation, said deadline for responding to the survey was two weeks. However, Qualtrics closed the survey after only one week. As a consequence, those who did not complete the questionnaire the first time and later tried to complete after seven days, were not able to complete. Nevertheless, we assume that the probability of people having a desire to complete the survey after leaving it halfway finished is minor, and we do therefore not consider this as a substantial limitation.

In the theory section we also briefly mentioned the phenomenon of having a false growth mindset, i.e. someone who is claiming to hold a growth mindset even though the persons actions do not follow through and is more relatable to a fixed mindset (Dweck, 2015). We do acknowledge that there is a risk that leaders who received the intervention can have obtained a false growth mindset and answered the second questionnaire based on what they found socially desirable. Hence, they were getting a score that is leaning towards having a growth mindset. Leaders who praise effort alone instead of the actual hard work behind it, can be an example of having a false growth mindset (Dweck, 2016). Even though testing for a false growth mindset is difficult, it would be interesting to test it together with intervention for future research.

Also, it would be interesting to look at the relationship between gender and a specific digital mindset. This study did not include any sociodemographic control variables, such as age, gender or education. Using gender as control variable could

potentially help to rule out sociodemographic differences that could serve as alternative explanations of the results.

Furthermore, it would be interesting to look at the number of employees holding a fixed mindset and investigate the relationship between this number and their leader's mindset. Lastly, it would be interesting to identify the financial costs- as well as other costs- related to investing in growth mindset-promoting activities among leaders and employees.

7.0 Conclusion

As organizations experience increased pressure to perform on every level e.g. due to cutting-edge technology, the urge to find efficient ways to work and to manage new technology at work is getting even more important than before. Employees' acceptance and usage of new technology has long been held as important for the success of technological change initiatives. In this master's thesis, we extend the mindset literature by identifying potential consequences of a leader's fixed digital mindset towards their employees' approach or avoidance of new technology. The latter was grounded in a job crafting perspective.

We hope this study will create an increased awareness of the importance of employees perceived developmental supervisor support. One of the strongest arguments for emphasizing this variant of support is its proven increase in job performance, which in turn can lead to a more profitable and competitive organization.

Our main finding indicates that while there is no direct relationship between leader's fixed digital mindset and employee's active usage towards new technology, leader's fixed digital mindset is negatively related to perceived developmental supervisor support, which in turn is positively related to employee's active usage towards new technology. These findings suggest that developmental supervisor support served as a mediator between a leader's fixed digital mindset and employees' active usage towards new technology. In other words, when new technology is introduced at work: this thesis shows *when support is important*.

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Appendix

Appendix A: Principal Component Analysis

APPENDIX A Principal Component Analysis with Promax Rotation

Employee-rated scales time 1

Items	T1_ PML	T1_ JCAv	T1_ JCAp	T1_ SelfEff	T1_ Useful	T1_ Easeofuse	T1_ PSnon Safe	T1_ PSSafe
T1_Useful1: Ny teknologi som blir introdusert på jobb, forbedrer generelt min arbeidsinnsats					<u>.83</u>			
T1_Useful2: Ny teknologi som blir introdusert på jobb, øker generelt produktiviteten min					<u>.92</u>			
T1_Useful3: Ny teknologi som blir introdusert på jobb, øker generelt min effektivitet i jobben					<u>.91</u>			
T1_Useful4: Generelt sett mener jeg at ny teknologi er nyttig i forhold til jobben min					<u>.58</u>			
T1_Easeofuse1: Hvordan samhandle med og bruke nylig innført teknologi på jobben, er generelt sett klart og forståelig for meg						<u>.73</u>		
T1_Easeofuse2: Bruk av ny teknologi som blir introdusert i jobben, krever generelt sett ikke mye mental innsats for meg						<u>.84</u>		
T1_Easeofuse3: Generelt sett synes jeg at ny teknologi som blir introdusert i jobben er lett å ta i bruk						<u>.87</u>		
T1_Easeofuse4: Jeg opplever generelt sett at det er enkelt å bruke ny teknologi på jobben til det jeg ønsker å bruke den til						<u>.70</u>		
T1_SelfEff1: Jeg er trygg på min evne til å mestre ny teknologi som blir implementert i jobben min				<u>.76</u>				
T1_SelfEff2: Jeg tror på min evne til å effektivt bruke nye teknologiske verktøy som blir implementert på jobben				<u>.82</u>				
T1_SelfEff3: Jeg føler meg sikker på at jeg har den nødvendige kompetansen til å ta i bruk ny teknologi på en tilfredsstillende måte				<u>.72</u>				
T1_SelfEff4: Jeg er trygg på at jeg kan lære å bruke det aller meste av ny teknologi som blir innført på jobben				<u>.97</u>				
T1_SelfEff5: Jeg tror at jeg kan mestre det aller meste av ny type teknologi som jeg setter i gang med				<u>.92</u>				
T1_SelfEff6: Uansett hva slags type ny teknologi som blir introdusert i jobben er jeg sikker på at jeg vil kunne mestre det				<u>.69</u>				
T1_PML1: Min nærmeste leder tar seg tid til å sette seg inn i mine behov og ønsker om videreutvikling	<u>.86</u>							
T1_PML2: Min nærmeste leder er opptatt av om jeg når mine utviklingsmål eller ikke	<u>.86</u>							

Employee-rated scales time 1

Items	T1_ PML	T1_ JCAv	T1_ JCAp	T1_ SelfEff	T1_ Useful	T1_ Easeofuse	T1_ PSnon Safe	T1_ PSSafe
T1_PML3: Min nærmeste leder gir meg nyttige tilbakemeldinger om mine prestasjoner	<u>.83</u>							
T1_PML4: Min nærmeste leder gir meg nyttige råd og støtte til å forbedre mine arbeidsprestasjoner	<u>.86</u>							
T1_PML5: Min nærmeste leder støtter kompetanseutviklingen min	<u>.88</u>							
T1_PML6: Min nærmeste leder gir meg utfordringer som utvikler og styrker mine kunnskaper	<u>.88</u>							
T1_PML7: Min nærmeste leder gir meg mulighet til å delta i prosjekter o.l. som øker min arbeidsevne	<u>.80</u>							
T1_PML8: Min nærmeste leder gir meg den støtten jeg ønsker ut fra mine behov og mål	<u>.86</u>							
T1_PS1: I arbeidsgruppen min blir enkelte ansatte latterliggjort eller avvist for å være <teknologisk inkompetente>							<u>.90</u>	
T1_PS2: Når noen i arbeidsgruppen min gjør en feil ved bruk av ny teknologi eller ved bruk av nye teknologiske systemer, vil det senere bli brukt mot dem							<u>.89</u>	
T1_PS3: Det er vanskelig for ansatte å spørre andre i arbeidsgruppen om hjelp ved bruk av ny teknologi							<u>.66</u>	
T1_PS4: Det er alltid rom for å ta opp problemer og vanskelige saker knyttet til ny teknologi i arbeidsgruppen min								<u>.73</u>
T1_PS5: I arbeidsgruppen min blir vi oppmuntret til å eksperimentere med bruk av nye teknologiske systemer og verktøy, selv om dette betyr at vi kan begå feil fra tid til annen								<u>.80</u>
T1_PS6: I arbeidsgruppen min verdsetter vi hverandres unike ferdigheter og talent for læring ved bruk av ny teknologi								<u>.80</u>
T1_JCAv1: Jeg gjør forandringer når det kommer til måten jeg utfører arbeidet mitt på slik at jeg unngår å bruke nye teknologiske systemer		<u>.82</u>						
T1_JCAv2: Jeg organiserer arbeidet mitt sånn at jeg i stor grad slipper å sette meg inn i ny teknologi		<u>.89</u>						
T1_JCAv3: Jeg unngår å jobbe med de som krever at jeg bruker ny teknologi og forandrer dermed hvordan jeg forholder meg til andre på jobben		<u>.86</u>						
T1_JCAv4: Jeg organiserer arbeidet mitt slik at jeg minimerer kontakten med de som forventer at jeg bruker nye teknologiske systemer.		<u>.83</u>						
T1_JCRed1: Jeg prøver finne snarveier som gjør at jeg kan redusere tiden og anstrengelsen		<u>.70</u>						

jeg bruker til å jobbe med nye teknologiske systemer

Employee-rated scales time 1

Items	T1_PML	T1_JCAv	T1_JCAp	T1_SelfEff	T1_Useful	T1_Easeofuse	T1_PSnon Safe	T1_PSSafe
T1_JCRed2: Jeg finner måter å unngå å jobbe med oppgaver som krever bruk av ny teknologi, slik at jeg slipper å bruke tid og anstrengelse på det		<u>.88</u>						
T1_JCRed3: Jeg sørger for å samarbeide med andre som kan hjelpe meg med arbeid hvor det er behov for å bruke nye teknologiske systemer, slik at jeg selv slipper å jobbe med dette		<u>.80</u>						
T1_JCRed4: Jeg sørger for å samkjøre arbeidet mitt med andre, slik at de kan ta de delene som krever å jobbe med nye teknologiske systemer		<u>.80</u>						
T1_JCApp1: Jeg gjør en innsats for å bli en av de første til å lære om, og prøve ut, ny teknologi på jobb			<u>.60</u>					
T1_JCApp2: På egenhånd oppsøker/utvikler jeg prosjekter på jobb hvor jeg kan lære om nye teknologisystemer og plattformer				<u>.72</u>				
T1_JCApp3: Jeg tilbyr meg å gjøre andres arbeid i nye teknologisystemer, slik at jeg kan tilegne meg mer personlig erfaring ved å jobbe med disse teknologiene					<u>.72</u>			
T1_JCApp4: Jeg innleder profesjonelle forhold til mennesker som er utenfor min nærmeste arbeidsgruppe, for å fremme egen kunnskap og erfaring med ny teknologi						<u>.81</u>		
T1_JCExp1: Jeg utvider arbeidsrollen min ved å tilføye aktiviteter for å hjelpe andre til å lære og bruke ny teknologi				<u>.83</u>				
T1_JCExp2: På eget initiativ arrangerer jeg spesielle aktiviteter på jobben for å hjelpe andre til å lære og bruke ny teknologi					<u>.79</u>			
T1_JCExp3: Jeg tar initiativ for å forsikre meg om at kollegaers bekymringer og tilbakemeldinger om nye teknologisystemer og plattformer blir hørt og tatt tak i						<u>.78</u>		
T1_JCExp4: Jeg tar aktivt initiativ til positive samhandlinger med og mellom andre på jobben, i et forsøk på å øke læring og bruk av ny teknologi						<u>.75</u>		

Factor loadings less than .30 are not shown; underlined loadings are included in the final scales. T1_PML: Perceived Developmental Supervisor Support, T1_JCAv: Employees' Avoidance to New Technology, T1_JCAp: Employees' Active Usage to New Technology, T1_SelfEff: Self Efficacy, T1_Useful: Perceived Usefulness, T1_EaseofUse: Perceived Ease of Use, T1_PSnonSafe: Psychological safety non safe, T1_PSSafe: Psychological Safety Safe.

APPENDIX A Principal Component Analysis with Promax Rotation

Employee-rated scales time 2

Items	T2_ PML	T2_ JCAv	T2_ JCAp	T2_ SelfEff	T2_ Useful	T2_ Easeofuse	T2_ PSnon Safe	T2_ PSSafe
T2_Useful1					<u>.77</u>			
T2_Useful2					<u>.95</u>			
T2_Useful3					<u>.94</u>			
T2_Useful4					<u>.68</u>			
T2_Easeofuse1						<u>.77</u>		
T2_Easeofuse2						<u>.87</u>		
T2_Easeofuse3						<u>.91</u>		
T2_Easeofuse4						<u>.70</u>		
T2_SelfEff1				<u>.72</u>				
T2_SelfEff2				<u>.68</u>				
T2_SelfEff3				<u>.74</u>				
T2_SelfEff4				<u>.94</u>				
T2_SelfEff5				<u>.95</u>				
T2_SelfEff6				<u>.84</u>				
T2_PML1		<u>.89</u>						
T2_PML2		<u>.84</u>						
T2_PML3		<u>.87</u>						
T2_PML4		<u>.88</u>						
T2_PML5		<u>.89</u>						
T2_PML6		<u>.84</u>						
T2_PML7		<u>.63</u>						
T2_PML8		<u>.81</u>						
T2_PS1							<u>.91</u>	
T2_PS2							<u>.90</u>	
T2_PS3							<u>.60</u>	
T2_PS4								<u>.78</u>
T2_PS5								<u>.81</u>
T2_PS6								<u>.65</u>
T2_JCAv1	<u>.80</u>							
T2_JCAv2	<u>.84</u>							
T2_JCAv3	<u>.84</u>							
T2_JCAv4	<u>.83</u>							
T2_JCRed1	<u>.71</u>							
T2_JCRed2	<u>.86</u>							
T2_JCRed3	<u>.90</u>							
T2_JCRed4	<u>.86</u>							
T2_JCApp1			<u>.59</u>					
T2_JCApp2			<u>.70</u>					
T2_JCApp3			<u>.80</u>					
T2_JCApp4			<u>.82</u>					
T2_JCExp1			<u>.83</u>					
T2_JCExp2			<u>.86</u>					
T2_JCExp3			<u>.78</u>					
T2_JCExp4			<u>.71</u>					

Factor loadings less than .30 are not shown; underlined loadings are included in the final scales. T2_PML: Employees' Perceived Supervisor Support, T2_JCAv: Employees Avoidance to New Technology, T2_JCAv: Employees' Active Usage to New Technology, T2_SelfEff: Self Efficacy, T2_Useful: Perceived Usefulness, T2_EaseofUse: Perceived Ease of Use, T2_PSnonSafe: Psychological safety non safe, T2_PSSafe: Psychological Safety Safe.

APPENDIX A Principal Component Analysis with Promax Rotation

Items	Leader-rated scales time 1 and 2	
	T1_LFM	T2_LFM
LFM1: En persons teknologiske ferdigheter er iboende og er derfor ikke noe man kan gjøre noe med	<u>.73</u>	<u>.78</u>
LFM2 Hvorvidt en person vil være rask og kompetent til å bruke ny teknologi, henger tett sammen med hva slags type person de er. Dette er ikke noe som kan endres i stor grad	<u>.76</u>	<u>.81</u>
LFM3 Det er lite som kan bli gjort for å forandre en persons evne om å holde tritt med teknologisk utvikling. Vi er alle forskjellige og noen vil takle teknologiske forandringer bedre enn andre	.53	.44
LFM4 Selv om en person noen ganger kan lære nye ting, kan du egentlig ikke endre en persons grunnleggende evne til å tilpasse seg ny teknologi	<u>.77</u>	<u>.75</u>

Factor loadings less than .50 were excluded in the study; underlined loadings are included in the final scales.
LFM: Leaders Fixed Digital Mindset

Appendix B: Information Letter

Tema: "Ledere og ansattes oppfattelse av og holdninger til ny teknologi på arbeidsplassen"

Kjære bedrift X-ansatt,

Vi ønsker din deltakelse i vår masteroppgave. Her kommer en formell godkjenning samt et notat fra ansatt X i Talent Acquisition, avdeling Oslo:

"Bedrift X har som mål å være en samarbeidspartner med relevante studentmiljøer og høyskoler/ universiteter. Derfor lar vi fra tid til annen utvalgte studenter få samarbeide med oss om å skrive Masteroppgave – der vi selv kan få verdifull nytteverdi I retur. Dette er en sådan disse studentene skriver sin oppgave på BI om hvordan lederatferd muligens kan bli endret/ påvirket av de omstruktureringer/ digitaliseringer og prosesser som vi alle gjennomgår. For å øke kvaliteten på oppgaven vil vi oppfordre deg til å svare på og delta i undersøkelsen. Mange svar sikrer god kvalitet og dermed bedre grunnlag for at vi kan tolke resultatet som valid for Bedrift X. Takk for at du deltar!"

Hva innebærer det for deg å delta?

Svare på et elektronisk spørreskjema på mobil/pc

Antatt tidsbruk: ca. 3-4 min

Du vil få tilbakemelding om din personlige profil etter endt studie

Alle som deltar vil motta en forklaring av studiens formål og funn etter studiets slutt

Vedlagt finner du et dokument med dine rettigheter ved deltakelse.

Mvh

Student 1 og Student 2.

Vedlegg: [Dine rettigheter](#)

Dine rettigheter

Kjære mottaker av denne spørreundersøkelsen,

Vedlagt kan du lese om dine rettigheter ved å delta i spørreundersøkelsen som er utarbeidet av to masterstudenter ved Handelshøyskolen BI i Oslo.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke samtykke tilbake uten å oppgi noen grunn. Alle opplysninger om deg vil da bli anonymisert. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta eller senere velger å trekke deg.

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Vi vil bare bruke opplysningene om deg til formålene vi har fortalt om i dette skrevet. Vi behandler opplysningene konfidensielt og i samsvar med personvernregelverket.

- De som har tilgang til, samt behandler dataene fra spørreundersøkelsen, er forfatterne bak masteroppgaven v/ Student 1 og Student 2 i tillegg til deres veileder Elizabeth Solberg.
- *Navnet og kontaktopplysningene dine vil erstattes med en kode som lagres på egen navneliste adskilt fra øvrige data.*
- *Bedriften vil ikke være angitt ved navn, kun ved bransje.*

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

All persondata slettes etter prosjektets slutt. Prosjektet skal etter planen avsluttes 1.7.2019.

Dine rettigheter

Så lenge du kan identifiseres i datamaterialet, har du rett til:

- innsyn i hvilke personopplysninger som er registrert om deg,
- å få rettet personopplysninger om deg,
- få slettet personopplysninger om deg,
- få utlevert en kopi av dine personopplysninger (dataportabilitet), og
- å sende klage til personvernombudet eller Datatilsynet om behandlingen av dine personopplysninger.

Hva gir oss rett til å behandle personopplysninger om deg?

Vi behandler opplysninger om deg basert på ditt samtykke.

På oppdrag fra Handelshøyskolen BI har NSD – Norsk senter for forskningsdata AS vurdert at behandlingen av personopplysninger i dette prosjektet er i samsvar med personvernregelverket.

Hvor kan jeg finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:

- *Handelshøyskolen BI ved student 1, student 2 eller Elizabeth Solberg (veileder).*
- Vårt personvernombud: Vibeke Nesbakken (vibeke.nesbakken@bi.no)
- NSD – Norsk senter for forskningsdata AS, på epost (personvernombudet@nsd.no) eller telefon: 55 58 21 17.

Appendix C: Intervention

Informasjonsskriv for deg som har en personprofil som passer med et «Fixed Mindset»

Hva vil det si å ha et Fixed Mindset?

Psykologen Carol Dweck kom i 2007 ut med boka «Mindset: The New Psychology of Success» hvor hun introduserte to hittil nye konsepter. Bevisstheten rundt ulike *tankesett* har vist seg å gi store, positive konsekvenser for enkeltindivider så vel som bedrifter; nemlig Growth og Fixed Mindsets.

Etter resultater fra gjennomført spørreundersøkelse tenderer din personprofil å lene seg mot et *Fixed Mindset*. I det følgende vil du kunne lese en kort beskrivelse av hva dette vil si, hvilke konsekvenser et slikt tankesett potensielt kan ha for deg som leder og til slutt hvordan man kan utvikle seg i retning av et Growth Mindset. Vi vil også påpeke at dette kun er en indikasjon tatt med utgangspunkt i en relativt kort spørreundersøkelse. Det må også nevnes at et tankesett kun er svakt korrelert med personlighet og dette er derfor ikke en beskrivelse av din personlighet.

Ledere med et Fixed Mindset- potensielle konsekvenser for ansatte:

Personer med et Fixed Mindset har en større tendens til å se på intelligens og kunnskap som noe statisk- man er slik man er, gjerne fordi man er «født med det». Dette gjelder også ved innføring av ny teknologi på arbeidsplassen: å sette seg inn i nye metoder, verktøy og digitaliseringsprosesser kan oppleves som mer mentalt krevende for personer som faller i kategorien Fixed Mindset.

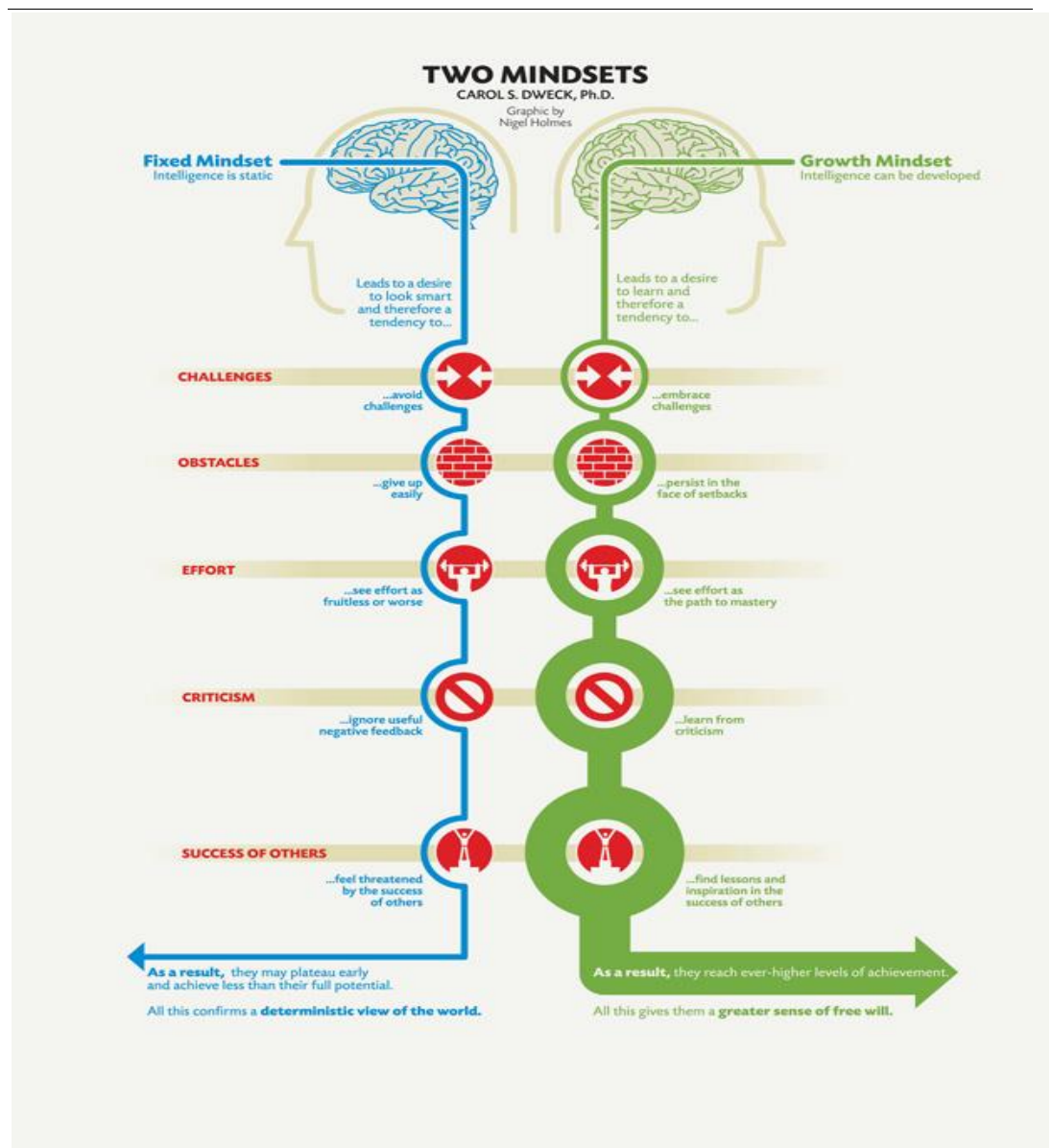
På en arbeidsplass hvor det i økende grad innføres digitalisering, burde hver og en medarbeider ideelt sett ha en dynamisk holdning til forandringer og innføring av ny teknologi. Som leder står man i en sterk posisjon til å påvirke sine ansatte, og hvordan man formidler bruk av ny teknologi på arbeidsplassen kan være med å forme hvordan ansatte ser på dette. Medarbeidernes tankesett kan også endres gjennom sosiale læringsprosesser, enten ved egen atferd eller gjennom å skape et arbeidsklima som oppfordrer til spesifikk atferd blant medarbeidere. Det er derfor verdifullt for ledere å være bevisst på eget tankesett, hvordan det viser seg i praksis og hvordan det oppleves. For å ta et eksempel: forskning viser at å gi en bestemt type ros kan ha motsatt utviklingseffekt. En leders oppmuntring og støtte er viktig, men å gi ros i form av å tillegge ansatte bestemte egenskaper og fokusere på hvem de *er*, snarere enn hva de *gjør* kan bidra til å fremme et Fixed Mindset. Bevissthet rundt hvordan man kommuniserer skryt og anerkjennelse kan derfor være av betydning.

Hvordan gå mer i retning av et «Growth Mindset»

Et Growth Mindset er ansett som en kontrast til et Fixed Mindset og er kjennetegnet ved at man er meget positiv til endringer, utvikling og læring. Man anser intelligens og evner som noe man i større grad kan utvikle og ser på hjernen som en muskel som kan trenes.

Nedenfor kan du finne en kort, oppsummert liste over hvordan en person karakterisert med et Fixed Mindset kan gå i retning av å bli mer Growth-orientert ved å stille seg følgende spørsmål:

- Jeg og/eller mine ansatte er ikke god på teknologi: *Hva er det jeg/de går glipp av og ikke forstår?*
- Ny teknologi er for vanskelig å lære for enkelte av mine ansatte: *Å få ansatte til å lære seg ny teknologi kan ta tid og krefter*
- (Som leder) kan jeg ikke gjøre dette bedre: *Jeg kan alltid forbedre meg, så jeg fortsetter å prøve*
- Mine ansatte er smarte mennesker: *Mine ansatte er hardarbeidene og skaper derfor resultater.*



Mer informasjon

Vil du lese mer om hva det vil si å ha et Fixed Mindset?

Nedenfor finner du linken til en Ted Talk med Carol Dweck hvor hun snakker om hvordan man kan utvikle et Growth Mindset:

<https://www.youtube.com/watch?v=hiiEeMN7vbQ>

Artikkelen under tar for seg en enkel oversikt over begrepene Fixed og Growth Mindset, hvor blant annet én av de tre forskerne på feltet er vår veileder til denne masteroppgaven:

<https://kapital.no/blogg/riktig-tankesett-digital-endring>