Institute of psychology

## **Procrastination and its Negative Emotional Consequences**

How are procrastination related to negative emotional consequences of procrastination and how can it be measured?

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# PROCRASTINATION AND IT'S CONSEQUENCES: A NEW APPROACH

PROCRASTINATION AND IT'S CONSEQUENCES: A NEW APPROACH

**Foreword** 

The master project has been a fun and unexpected short journey. I emailed my supervisor

after hearing about his current projects in the field of procrastination. While the specific

subject matter of the project has changed somewhat over the period of the master study, the

general idea of studying negative consequences was provided by my supervisor Prof. Frode

Svartdal and has been present since the start of the project. The questionnaire was developed

by me and fellow master student Karen Sofie Ødegaard.

This project would not have been possible without a lot of people who have helped and

assisted in various ways. First, thanks to my supervisor Prof. Frode Svartdal who have

supervised me in the whole process and provided the basic idea of the project. Thank you to

Karen Sofie who I collaborated in collecting data. Thanks to Jesper and Torstein at the office

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Supervisor Prof. Frode Svartdal.

Fund Ramm

Amen Diper

Master-student Amund Blikra.

# PROCRASTINATION AND IT'S CONSEQUENCES: A NEW APPROACH

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Sammendrag

Forskning på prokrastinering har flere utfordringer som hindrer oss fra å forklare relasjonen

mellom prokrastinering og variabler som prokrastinering har kjente relasjoner med. Denne

studien har forsøkt å måle direkte konsekvenser av prokrastinering og videre analysere

sammenhengen mellom prokrastinering og dens kjente relasjoner med negative konsekvenser

av prokrastinering. På denne måten kan vi observere de problematiske trekkene med

prokrastinering på en mer direkte måte. Dette prosjektet målte negative emosjoner knyttet til

prokrastinering gjennom selvrapport og fant måleinstrumentet både reliabelt og valid. Studien

fant videre at negative emosjoner knyttet til prokrastinering hadde en signifikant relasjon med

prokrastinering. Negative emosjoner relatert til prokrastinering predikerte også subjektivt

velvære når det var kontrollert for både prokrastinering og nevrotisisme. De direkte

implikasjonene fra resultatene er noe begrenset da det kan være mange alternative forklaringer

bak funnene. Det ser imidlertid ut til at negative emosjoner relatert til prokrastinering fanger

problematiske aspekter ved prokrastinering. Dette er noe som de vanlige

prokrastineringsskalaene ikke fanger opp, spesielt den mer spesifikke rollen nevrotisisme og

mestringstro har i forhold til subjektiv velvære. Vi har også identifisert en sårbar gruppe som

det burde forskes mer på.

Nøkkelord: Prokrastinering, negative emosjoner, mestringstro, subjektiv velvære,

metodologi

#### **Abstract**

Much of the research on procrastination have several challenges that keeps us from explaining the relationships between procrastination and correlated factors. By measuring direct consequences of procrastination and analysing the relations between procrastination and its known relations with negative consequences of procrastination, we can observe the problematic aspects of procrastination more directly. The current research measured negative emotional consequences attributed to procrastination through self-report and found the measure both reliable and valid. The current research also found that negative emotions attributed to procrastination was significantly related to procrastination. It also predicted satisfaction with life even when both procrastination and neuroticism were controlled for. The direct implications we can take from these results are however still limited as there are plausible alternative explanation of these findings. It does however seem that the negative emotions attributed to procrastination captures the problematic aspects with procrastination. This is something the most used procrastination scales do not capture. Specifically, the contributions of neuroticism and self-efficacy. We have also identified a group that suffers from procrastination that should be studied further. More generally, the knowledge on procrastination and its challenging effects should be better informed to students in the educational institutions.

*Keywords:* Procrastination, negative emotions, self-efficacy, subjective well-being, methodology

#### Introduction

Have you ever postponed a task that you know would get you in a worse position if you are not doing it? Then you probably have procrastinated. "To procrastinate is to voluntarily delay an intended course of action despite expecting to be worse off for the delay" (Steel, 2007, p. 2). People procrastinate in various domains of life but is especially frequent among students in academic settings (Afzal & Jami, 2018; Atalayin et al., 2018).

Procrastination is a problem as it is related to multiple bad outcomes (Steel, 2007). This includes lower subjective well-being (Assur, 2003; Van Eerde, 2016; Habelrih & Hicks, 2015), depressive symptoms (Aziz & Tariq, 2013; Hernández et al., 2019; Constantin, 2018) and lower performance (Balkis, 2013).

## The Research on Procrastination

The literature concerning procrastination are focused on various approaches (Steel, 2017; Van Eerde, 2003; Klingsieck, 2013). Causes and correlates, outcomes and individual differences, are all broad themes Steel (2007) reviews in his metanalysis. While the scope of research on procrastination can be considered broad, considerable parts of the literature on procrastination research are focused on specific topics and themes. Especially individual differences are well studied (Steel, 2007). An example of this is for example on how personality influence procrastination (Adesina, 2011; Schouwenburg & Groenewoud, 2001; Lay & Schouwenburg, 1993; Anderson, 2001).

Much of the research on procrastination is cognitive in nature (Steel, 2007). Social aspects have been a topic in some research (Conti, 1996), but have not had the same focus as cognition (Nordby et al., 2017). Likewise, biological psychology has not traditionally been a common topic for research on procrastination. There are however some exceptions as the biological studies by Zhang et al. (2020), but these are exceptions.

Procrastination is thought to be a large societal problem, and it is therefore important to study the factors influencing it. While procrastination is researched extensively, there are certain problems related to the methodologies used. An example of this is the inherent difficulty of analysing the complex behaviour related to procrastination. As procrastination is a broad term describing delay, the possible causes and consequences are endless. The current research aim to propose a solution to some of these issues and incorporate the solutions in a study on procrastination and the negative emotions attributed to it. In the following section, some of the methodological problems will be discussed.

## Procrastination and its Methodological Problems

There are two main methodological problems that will be explored. Firstly, issues concerning the measurements of procrastination. Secondly, the concerns regarding the causal relationships we can assume between procrastination and the negative outcomes related to it. There are also additional issues that are connected to both points.

Svartdal et al. (2018) argued that measuring procrastination using self-reported measurements are biased in the sense that the study has problems to differentiate between trivial procrastination and the more problematic type. While there certainly is a significant relationship between procrastination and the negative outcomes, there is no way of knowing which of the factors influencing procrastination score lowest in the bad outcomes.

The second problem with research on procrastination is that it is hard to assume causal relationships between procrastination and the variables related to it. Procrastinatory behaviour and its relation to negative outcomes are extremely complicated. It is also hard to justify procrastination as a direct influence on other variables. This is because procrastination as a behavioural tendency does not have any inherent traits that influence other variables. It can therefore be argued that the causal explanation of a relationship is almost never

procrastination, but rather an underlying variable connected to a biological, cognitive or social factor. You can get a bad grade because of procrastinating, but it would for example be hard to justify procrastination as a direct cause for depression even when procrastination and depression are significant related.

The reliance on variance analysis and surveys is a third issue that encompass both the two methodological problems connected to measurements and causal relations. In a scathing review of the psychological research's reliance on variance and surveys, Toomela, (2010), highlights issues regarding causality and the lack of direct observation. Toomela (2010) claims that causality is impossible to imply without directly observing a phenomenon. As an example we have a person located in a blue room reporting that he is stressed. We cannot conclude that he is stressed due to the effect of being in the blue room. The person could be stressed because of a lot of different unknown reasons. Such challenges is even more striking to study for procrastination due to its complex nature.

There is not much purely behavioural research on procrastination (Gamst-Klaussen et al., 2019). Measuring procrastination through self-reporting in a survey does measure procrastination well (Svartdal et al., 2020), but there is much information lost. Steel et al. (2018) solved this partly by measuring procrastination through a longitudinal study across multiple goal stages. Methods like these capture the dynamics of how procrastination and other variables changes in relation to each other. Although these measure captures important aspects of a situation, the limitation of measuring a behavioural tendency still persists. Although we know how procrastination works over time, we still only get a superficial view of how procrastination works in relation to other variables. In other words, we still do not know which processes that underlies the behaviour.

Even though Toomela (2010) has a good point in claiming the problems of direct observations, there are multiple examples of traits of research that can compensate for this problem. Lack of alternative explanations, strong theories, and big effect sizes are all factors that could imply causation between variables. There are some good examples were these factors are studied in research on procrastination. Variables like conscientiousness seems like an important factor influencing procrastination (Ferrari & Pychul, 2012). Being structured and organised are in other words logically very important in getting things done. Task characteristics effect on procrastinatory behaviour is also assumed to have a causal effect as it can be manipulated and tested in a somewhat controlled environment (Ackerman & Gross, 2005). These examples are however about how variables influence procrastination.

It is harder to study how procrastination influences other variables. Procrastinations relation to long-term issues are one such problem. Steel (2007) questions the predictive validity of procrastination and admits that the outcomes of procrastination may be caused by other factors such as increasing depression or decreasing self-efficacy. While procrastination is typically defined as something inherently bad, there is room for discussion of the severity of procrastinatory behaviour as there currently seems to be difficult to find a way of differentiating severe or less severe procrastination. As some procrastinatory behaviour is less harmful than other procrastinatory behaviour, this poses the question whether procrastination always is bad?

## Maladaptive or Adaptive Delay

An adaptive reaction to a need to do a task, is simply do the task in order to escape the discomfort of thinking of it. Procrastinators, however, do not do the things they are supposed to. Often with negative outcomes. Procrastination and its relation to negative outcomes has been studied extensively (Steel, 2007). There are however ideas of how some procrastinatory

behaviour are less harmful than other procrastinatory behaviour, and even have some benefit. The idea of active and passive procrastination is one such example. While the passive procrastinator is paralyzed by indecision, the active procrastinator like to work under pressure and delay deliberately to get the rush of being forced to work to the very end of a deadline (Chu & Choi, 2005). Chu and Choi (2005) found that active procrastinators are more like non-procrastinators then passive procrastinators in term of purposely use of time, self-efficacy, and academic performance. The idea of active and passive procrastination has been criticized and Chowdhury, Shamarukh and Pychyl (2018) and Steel (2010) argued that purposely delaying is not something that constitutes procrastination in the way the broader field of research views it.

Although there are multiple ways to look at procrastination, the present study will follow Steel's (2007) definition of procrastination that states that the procrastinator must know they will get problems and also that it will go against their intentions. As procrastination is extremely complicated to study and analyse it is helpful to narrow the different elements of procrastination. Steel (2007) made efforts to do this with excluding adaptive delay from his definition of procrastination. To assume that all procrastination is similarly harmful would however not be correct. While Steel (2007) postulates that procrastination never is good, there still is no way of differentiating severe and less severe procrastination. While the effect of procrastinatory behaviour is largely negative, the relation between procrastination and negative outcomes are not well explained in terms of what causes what. Steel (2007) states that the outcomes of procrastination may be a result of other unknown variables.

## **Procrastination and its Consequences**

Solely looking at procrastinatory behaviour through its long-term negative consequences through self-report makes it almost impossible to assume causality between variables. Svartdal and Nemtcan (2022) have similar complaints with the methodology. Instead of only looking at pure procrastinatory measures, they aimed on distilling the problematic aspects of procrastination by measuring the immediate consequences of procrastination. The main idea was that by differing the more severe consequences from the less severe consequences, this would differentiate the trivial procrastination from the more severe kind. Furthermore, the severity of the procrastination would not only manifest in short term consequences, but also long-term outcomes. These consequences would thus also influence the long-term outcomes of procrastination.

Additionally, Steel (2007) argues that the temporal proximity between procrastination and its punishments makes it harder to act on long-term goals. Studying short-term consequences should therefore be more powerful in informing behaviour than long-term consequences, as punishments and rewards are closer in time for the short-term consequences. In other words, short-term consequences are easier to act on than longer-term consequences. A third point is that the consequences are directly connected to the procrastinatory behaviour, which has less sources of possible errors, simply because the time between the behaviour and consequences are much closer than other procrastinatory behaviour.

There are multiple ways of applying this type of research, as procrastination has different short-term consequences (Svartdal & Nemtcan 2022,). We can for example look at social consequences and how these are affected by or are affecting procrastinatory behaviour and long-term consequences. This paper will however focus on negative emotions and cognitions related to procrastination and its long-term consequences. In the next section, the paper will discuss how emotions can work as a driver for procrastinatory behaviour and how

these new methods can be applied on the understanding of direct consequences of procrastination.

## **Feelings as Information**

Procrastination is often seen as a self-regulatory failure of behaviour (Steel, 2007). Similarly, the way people regulate emotions can also lead to procrastinatory behaviour. Tice and Bratslavsky (2000) argues that the need people have to feel good hinders self-control in other areas. This is studied both directly and indirectly in the procrastination literature. Lee and Hall's (2020) research support this idea and found that negative emotions attributed to procrastination was significantly related to procrastination. The research on task characteristics focus on how a task can make people feel bored or otherwise uncomfortable to the extent that they do the task less effectively or not at all. Mood is also researched in relation to procrastination (Steel, 2007). There have also been recent studies of how students attribute emotions to their procrastination

There is also research on personality that studied how neuroticism relates to procrastination (Steel, 2007). There are consistently found small significant correlations between procrastination and neuroticism (Steel, 2007). Steel (2007) however, argues that neuroticism is a bad predictor for procrastinatory behaviour. The relation between neuroticism and procrastination is in Steel's (2007) opinion firstly explained by the fact that neurotic people are being more critical of themselves while assessing their procrastinatory behaviour. Secondly, Steel (2007) argues that the effect of neuroticism on procrastination is largely caused by people that is low in conscientiousness. The idea is that you procrastinate because you are less conscientiousness, and simply experience negative emotions as a byproduct (Steel, 2007). Although neuroticism may be a bad predictor for procrastinatory behaviour, the research on procrastination have mostly been focused on negative emotions as

a personality trait. By studying negative emotions as direct consequences, it might be possible to find different results and relations. Namely using consequences of procrastination as a predictor for both the outcomes of procrastination and the procrastination itself. Next it will be discussed how there might be mechanisms of how emotions and negative cognitions works as a driver for procrastinatory behaviour.

In an article studying peoples metacognitions about procrastination, Fernie and Spada (2008), found that a recurring theme around people's reasons for procrastinating was emotional regulation. One theme was about escaping boredom, while another one was about escaping an anxiety inducing decision (Fernie & Spada, 2008). These people see procrastination as a tool to escape an unpleasant situation. These metacognitions highlight two common processes in how people learn, namely learning by association and by consequences. By applying how people learn through associations and learning through consequence to procrastination, we can make sense of what on the surface seem like illogical and strange behaviour.

There are mechanisms related to association that enforce this behaviour. Firstly, we associate negative emotions and thoughts to a situation we have procrastinated before. Flettet et al. (2017), studied which automatic thoughts and feelings people had to procrastination. They found that engaging in certain situations will be uncomfortable and we will want to escape these negative emotions and thoughts. The easiest method is escaping through procrastination.

This point show how procrastinators learn through consequences or association. On the other hand, procrastination as a producer of stress, anxiety and frustrations have been a consistent theme in the research (Steel, 2007; Klingsieck, 2013). These consequences should lead to less procrastination as procrastination is punished in the long term with lower

performance and lower satisfaction with life. An explanation of this inconsistency can be the temporal proximity of the situation and its punishments and rewards. Learning from long-term consequences to past procrastinatory behaviour is hard as the process of punishments and rewards get less powerful if there is a long time between the punishment and the actual action (Steel, 2007). Steel's et al. (2018) research supports this notion and found that more time between the action and goals of said action predicted more procrastination.

Another related problem with applying consequence learning to procrastination is that we do not necessarily relate future consequences to procrastination. Although we might see procrastination as a negative behaviour, relating it to future consequences are harder. For example, a person might think they failed because they are inherently stupid, while the real reason was procrastinatory behaviour. How vividly people see themselves in the future can influence how much people procrastinate (Blouin-Hudon & Pychyl, 2015). The longer in the future is the longer it is to imagine your goals and various consequences of these goals.

The last points show how hard it can be to learn through long-term consequences. As short-term consequences are closer in time and more directly related to the activity, they are easier to learn from. There are two processes related to emotions that facilitates procrastination from short-term consequences. Firstly, will doing a more pleasurable activity instead of doing the task you find uncomfortable, reward you through the relief of not having to do it anymore. Additionally, will the negative cognitions and emotions people have in relation to procrastination punish the person for staying in an uncomfortable situation.

These effects depend on different factors as procrastinatory behaviour is complex, but both association learning and consequence learning seem to theoretically enforce procrastinatory behaviour. To summarise, procrastinatory behaviour is rewarded by the experience of relief. Not procrastinating is punished by the negative emotions and thoughts

the person experience by doing the activity. Additionally, the situations people procrastinate in are associated with negative emotions and are more aversive than other situations. Because of long temporal distance between the procrastinatory behaviour and the consequences it is also hard to learn from.

While escaping an uncomfortable situation can be a strong motivator to procrastinate, just doing the task would probably be as effective. While a lot of people do procrastinate, there are also a huge group that does not procrastinate (Steel, 2007). Especially if we do not include academic procrastination where the surroundings make students extra prone to procrastination (Svartdal et al., 2020; Nordby et al., 2017). An alternative explanation of why people procrastinate can be due to cognitions. How emotion and cognitions influence on behaviour is a complex topic and it can be hard to quantify how much and in which way they influence each other (Normann, 2019, Chapter 3). There is however little doubt in the broader research community on procrastination that cognition influence procrastinatory behaviour (Steel, 2007; Klingsieck, 2013). In the next section it will be explored why some people do what they are supposed to do despite the discomfort.

## **Cognitive Evaluation and Procrastination**

There are likely those who do the tasks they are supposed to do when the discomfort is inescapable by doing something else. Working late the night before an assignment is an example. Another solution would be to not deliver the assignment at all. The same can be said about reading just before an exam versus not taking the exam. A difference between these two solutions can be how the individual cognitively evaluates these situations. While both might find studying boring and difficult, their thoughts might differ somewhat. By differentiating between the cognitions of the two examples we can have a general idea of what differentiates the procrastinators who solve the discomfort by doing the task, and those

who solve the discomfort by escaping the task. Cognitive appraisal theory suggests that how you act and feel depends on how you cognitively evaluate a situation (Normann, 2019, Chapter 3).

Self-efficacy is a term for these kinds of cognitions and are established as an important predictor for procrastinatory behaviour (Bandura & Locke, 2003; Klassen et al., 2008; Wäschle et al., 2014; Xiaodong & Hongchun, 2021). Self-efficacy is defined as "the belief in one's capabilities to organize and to execute the courses of actions required to produce given attainments" (Bandura, 1997, p. 3, as cited by Yerdelen et al., 2015). Self-efficacy is seen as important in regulating emotions (Xiaodong & Hongchun, 2021), and it can be argued that people that are high in self-efficacy procrastinate less because they regulate their emotions better. Research by Yerdelen et al. (2015) supports this idea as they found that both anxiety and procrastination were related to low self-efficacy.

There are also theories who separate cognitive evaluations between primary and secondary evaluations (Normann, 2019, Chapter 3), but these theories are outside the current research scope. It would be hard to make meaningful distinctions between cognition and emotion's effects on other variables, without objective biological measures, and a more controlled environment. By focusing on one of the variables, and testing for overlap with the other variable in minor analyses, is one possible strategy. If one variable cancels out the other one, it would be a confirmation that the effect of both variables is connected.

## **Negative Emotions and Bad Outcomes**

Negative emotions as we have discussed might be a driver for procrastinatory behaviour depending on cognitions. Additionally negative emotions might also partly explain why procrastination is related to long term issues. As discussed earlier, procrastination are related to a lot of bad outcomes. Satisfaction with life is one of those outcomes (Assur, 2003;

Van Eerde, 2016; Habelrih & Hicks, 2015). Satisfaction with life is simply how pleased and happy you are with your own life. Measurements of satisfaction with life consists of cognitive and emotional dimensions (Xiaodong et al., 2021). As satisfaction with life is emotional in nature, negative emotions in relation to procrastination might be a cause for the negative relation between satisfaction with life and procrastination.

Procrastinators might experience life as less satisfactory because they experience more negative emotions and negative cognitions, not necessarily because people procrastinate. Research shows that people that experience negative emotions and cognitions to a larger degree than others have lower satisfaction with life (Arrindell et al., 1999). An alternative explanation could be that neuroticism explains this relation as neuroticism are related to both procrastination (Steel, 2007), and satisfaction with life (Arrindell et al., 1999). People who have strong negative emotions in their daily lives, do procrastinate more than others and have lower satisfaction with life. On the other hand, the relation between neuroticism and procrastination is weak (Steel, 2007), which means that a lot of neurotic people do not procrastinate.

A second alternative explanation of the relation between procrastination and subjective well-being is self-efficacy. As discussed earlier self-efficacy can help people process emotions, which might override the emotional urge to procrastinate. Additionally, Xiaodong et al., (2021) found that self-efficacy worked as a moderator for the relation between procrastination and subjective well-being. They found that procrastination was a worse predictor for subjective well-being for students with higher self-efficacy. This can mean that while procrastinators generally are less satisfied with their lives, self-efficacy can help people cope better with the results of their procrastination.

As subjective well-being is both cognitive and emotional in nature, emotions should still play an important role. While the cognitive evaluation gives the affect context, the strength of the emotional reaction should depend on neuroticism. People diverge in the strength they feel negative emotions (Thompson, 2007). If you both procrastinate and are neurotic, these emotions should be even more intense compared with persons that are not neurotic. While self-efficacy can mitigate some of these negative emotions, negative emotions should still influence both procrastinatory behaviour and its relation to subjective well-being.

To summarise, the relation between procrastination and subjective well-being, should theoretically be explained by negative emotions attributed to procrastination. While this also depends on cognitive context and neuroticism, negative emotions attributed to procrastination should capture problematic aspects of procrastination that typical procrastination measures do not cover. The next section will go through the present study.

## **The Present Study**

The typical procrastination story presented in the research is the idea of the dangerous life of a procrastinator. Procrastination is related to a whole host of issues (Steel, 2007; Klingsieck, 2014), but the research available have no real way of differentiating serious procrastination from trivial procrastination. Instead of only studying self-report measures of procrastination, we aim to look at negative consequences of procrastination in the form of negative emotions.

As this is a new perspective (Svartdal & Nemtcan, 2022), we must validate and test the reliability of the scales measuring affective consequences. To use these scales further in the study we need to ensure that they are valid and reliable. As discussed earlier, studies of consequences of procrastination instead of pure procrastination measures, can give us further

understanding of procrastination and its correlates. Developing good measurements for consequences of procrastination will thus be important for future research with similar approaches. These scales should also be valid in that they reflect real emotions. This can be tested by checking if the negative emotional consequences overlap with other scales that measures emotions. People who have negative emotions related to consequences of their procrastinatory behaviour also experience negative emotions in their daily lives.

We also aim to study the relationship between different emotional consequences of procrastination. If negative emotions attributed to procrastination is explaining the relation between procrastination and its outcomes, negative emotions attributed to procrastination have to be related to both variables. Additionally, both positive and negative emotional consequences may work as a driver for procrastinatory behaviour and checking for a relation, is the first step to test this idea. Theoretically people should learn to procrastinate more by short term consequences than long term consequences. As people do not want to experience negative emotions, short term emotional consequences should lead to more procrastination. The distance between behaviours and punishments is also a factor that favours short term consequences as people learn easier by short term consequences.

Third and lastly, we want to test if these consequences predict the negative outcomes of procrastinators better or differently than pure procrastination measures. As discussed earlier, procrastination as a concept does not work well theoretically at influencing other variables directly. While it does work well at capturing problematic behavioural tendencies, it does not capture processes in the same way measuring more concrete concepts as emotions or cognitions does. Despite this, procrastination is related to a lot of problematic variables. Subjective well-being is one such variable. Negative emotional consequences of procrastination should predict subjective well-being better or differentially than the pure procrastination measures. As subjective well-being is negatively related to neuroticism,

experiencing more negative emotions should logically lower your subjective well-being. If this prediction is supported by the data, controlling for alternative explanations is the next step. While it is important for negative emotional consequences to be related to scales that measures emotions, these measures could potentially explain this relation. That would mean that it is neuroticism that explains the subjective well-being and that the emotional consequences of procrastination simply were a by-product of being neurotic. If the effect of negative emotions attributed to procrastination persists after both procrastination and neuroticism is controlled for, we will also include self-efficacy in the model. We expect that the negative emotions attributed to procrastination no longer will be significant. As discussed earlier both negative emotions attributed to procrastination and self-efficacy should both predict lower subjective well-being and overlap, as cognitions and emotions are depending on each other.

The present study intends to firstly test the reliability and validate the scales measuring emotions attributed to procrastination. Secondly, we want to test how emotions attributed to procrastination relates to procrastination. Thirdly we want to test if the consequences of procrastination in the form of negative emotions attributed to procrastination can predict lower subjective well-being. The main hypothesis of the thesis is that emotional consequences of procrastination predict lower subjective well-being.

#### **Methods**

## **Procedure and Materials**

The study design was a survey. The questionnaire was made using Qualtrics, see the questionnaire setup in appendix 1. It was distributed to students through social media and chain e-mails where the participants received a link to the survey and some general information on the project. In the next section the scales used will be discussed.

## **Participants**

The sample group consisted of 388 persons where 333 finished the whole study. The mean age was 24,7 with a range of 18-61. Although being a student was not a requirement, most of the participants are full time students, with 351. Studying mostly students could be problematic for the generalisation of the data and will be discussed in the discussion section. All participants gave informed consent, and no sensitive data was stored. The project had ethical approval of the relevant ethical committee. The participants were not at any point deceived during the survey.

#### **Scales**

The survey included multiple scales that was not solely related to the current research hypothesises. The other master-student that used the same survey data had other hypothesises and needed different scales. Description of the used scales and the relevancy and context for each scale that was used will be further discussed below. Additionally, the validity and reliability will be assessed for each scale.

## The Satisfaction with Life Scale (SWLS)

Here we wanted to measure an important aspect and outcome of a person's daily life. Furthermore, it needed to be a scale that had a negative relationship with procrastination as we wanted to test if the new scales explained the relationship between procrastination and known important outcomes. The SWLS is a reliable and valid scale (Arrindell et al., 1999) and has reported a Cronbach's alpha of .82. The present study reported a Cronbach's alpha of .84. The scale is a 5-point Likert scale and consists of 6 items. The participants were asked to assess how satisfied they are with their lives on multiple statements. An example question was to assess how near their lives was to their ideal life.

## The Irrational Procrastination Scale (IPS)

This is a widely used scale measuring procrastination (Svartdal, 2017; Svartdal et al., 2016), which has reported a Cronbach alpha of .93 (Svartdal, 2017). There is evidence of a significant negative relation between SWLS and procrastination (Svartdal, 2017), which means we can test if the relationship between procrastination and SWLS changes if we include negative consequences to a model. The IPS also captures the problematic aspects of the procrastination (Svartdal, 2017), since it also focusses on behavioural delay. Because we want to test if negative consequences of procrastination predict long-term consequences better than the pure procrastination measures, it is important to be stringent in the uses of procrastination measures. As the IPS have done efforts to exclude trivial procrastination, the scale is a good fit. The IPS is a 5-point Likert scale with 6 items. In the IPS the participants get questions if they have delayed unnecessarily with adverse effects. A question was for example if their lives had been better if they had done tasks earlier. The present study reported a Cronbach's alpha of .94.

## The International Negative Affect Schedule Short Form (I-NAS-SF)

This test in which degree people experience negative emotions in their daily lives. This is a valid and reliable scale with a reliable consistency measured to Cronbach alpha of .74 by Thompson (2007). This is used to test if the negative emotions attributed to procrastination is connected to actual emotions and works as a control variable when predicting subjective well-being. The I-NAS-SF is a 5-point Likert scale with 5 items. The participants were asked to which degree they normally felt various emotions. They were asked if they were upset, hostile, ashamed, nervous and afraid. The present study measured a Cronbach's alpha of .76.

## The General Self-Efficacy Scale (GSE)

This tests in which degree people believe they can handle future tasks. This is relevant for the project as it captures how people handle difficult emotional and behavioural situations. The GSE has measured a Cronbach alpha of .85 (Jian-Feng et al., 2015) and self-efficacy is correlated to both procrastination and subjective well-being (Xiaodong et al., 2021). The present study reported Cronbach's alpha of .91. The GSE is 5-point Likert that consists of 10 items. The scale asks the participants how the person views themselves in getting things done. One of the questions asked the participants in which degree they managed to always solve difficult problems if they tried hard enough.

## The Negative and Positive Emotions Attributed to Procrastination Scale

These scales are relevant because they capture the emotions people relate to procrastinatory behaviour. The scales were first developed by Lee and Hall (2020). Most research on emotions related to procrastination are related to neuroticism (Steel, 2007), and these scales have been the only reliable and valid scales that has been applicable to the analysis of emotions attributed to procrastination. The negative emotions attributed to procrastination had a Cronbach alpha of .76, while positive emotions had a score of .67 (Lee & Hall 2020). The negative emotions attributed to procrastination is a 5-point Likert scale with 6 items. The participants get asked in which degree they feel various emotions when they recall past procrastinatory behaviour. The participants get asked about guilt, shame, regret, anger, helplessness and apathy. The positive emotions attributed to procrastination is a 5-point Likert scale with 5 items. The participants got asked similar questions to the scale measuring negative emotions, but with positive emotions. The positive emotions that were asked about was surprise, pride, hope and relief. Since the scales has not been translated to Norwegian before, and not used in this specific context before, both reliability and validity of these scales will be analysed and discussed.

## **Hypothesises**

It is here given a schematic overview of the hypothesises used in the study.

## 1. Reliability and Validity of Emotions Attributed to Procrastination

- **1A.** The negative and positive emotions attributed to procrastination scales are both valid and reliable.
- 1B. The negative emotions attributed to procrastination scale are positively related to I-NAS-SF.

## 2. Emotions Attributed to Procrastination and Procrastination

- **2A.** The negative and positive emotions attributed to procrastination scales are positively related to procrastination.
- **2B.** Positive emotions attributed to procrastination scales are positively related to procrastination.
  - **2C.** Relief attributed to Procrastination are positively related to procrastination.

## 3. Negative Emotions Attributed to procrastination, SWLS and Procrastination

- **3A.** Negative emotions attributed to procrastination predict lower subjective wellbeing when procrastination is controlled for in the student group.
- **3B.** Negative emotions attributed to procrastination predict lower subjective wellbeing when procrastination and I-NAS\_SF is controlled for.
- **3C.** Negative emotions attributed to procrastination does not predict lower subjective wellbeing when I-NAS-SF and general self-efficacy is controlled for.

## **Data Analysis**

The statistical software SPSS 28(IBM corp.2021) was applied for analysing data. Cronbach's alphas were computed for all scales not used in previous research. For the same scales, correlations between items, kurtosis and skewness were calculated. Correlations and regression analysis was used to test the other hypothesises.

## **Results**

## **Scales**

Descriptives was tested for all scales (see Table 1). All scales had reasonable means, standard deviations, skewness and kurtosis except from the positive emotions attributed to procrastination scale. Additionally, reliability was tested for the negative emotions attributed to procrastination and positive emotions attributed to procrastination.

**Table 1**Descriptives of All Variables Used in the Study

Scales	Mean	Range	SD	Skewness	Kurtosis	
NEATP	3.20	1.00-6.00	0.63	0.10	-0.92	
PEATP	1.60	1.00-6.00	0.67	2.45	9.54	
IPS	3.21	1.00-5.00	1.00	-0.03	-0.86	
SWLS	3.46	1.20-5.00	0.75	-0.41	-0.05	
I-NAS-SF	2.25	1.00-6.00	0.78	0.89	1.32	
GSE	3.73	1.6-5.00	0.63	-0.24	0.12	

Note. NEATP = Negative emotions attributed to procrastination, PEATP = Positive emotions attributed to procrastination, IPS = Irrational procrastination scale, SWLS = satisfaction with life scale, I-NAS-SF = International negative affect schedule short form, GSE = General Self-efficacy scale. SD = standard deviation.

**Table 2**Correlation Matrix of All Scales Used

	GSE	IPS	SWLS	I-NAS-SF	NEATP	PEATP	RATP
GSE		27**	.47**	40 <sup>**</sup>	34**	073	021
IPS	27**		35**	.208**	.27**	.095	032
SWLS	.47**	35**		39**	33*	13*	041
I-NAS-SF	40 <sup>**</sup>	.208**	39**		.505**	.29**	.13*
NEATP	34**	.27**	33**	.505**		.32**	.008
PEATP	073	.095	13*	.291**	.32**		.70**
RATP	021	032	041	.13*	.008	.70**	

Note. \* = p < .01 \*\* = p < .001. NEATP = Negative emotions attributed to procrastination, PEATP = Positive emotions attributed to procrastination, IPS = Irrational procrastination scale, SWLS = satisfaction with life scale, I-NAS-SF = International negative affect schedule short form, GSE = General Self-efficacy scale. SD = standard deviation.

## The Negative Emotions Attributed to Procrastination Scale

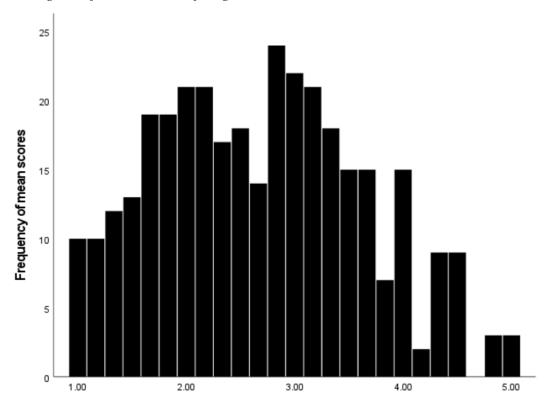
The scale consisted of 5 items and was found internally consistent (a= .86). The items were to a large degree strongly correlated with each other (see Table 3). As expected, shame and guilt were the strongest correlation. The scale was also quite normally distributed (See Figure 1) and have not too much kurtosis or skewness (see Table 1). We found a large positive correlation between I-NAS-SF negative emotions and negative emotions attributed to procrastination r(336) = .51, p < .01.

**Table 3**Correlation Matrix of the Negative Emotions Attributed to Procrastination Scale

	Guilt	Shame	Regret	Anger	Helplessness	Apathy
Guilt		.764	.667	.667	.544	.222
Shame	.764		.585	.598	.577	.327
Regret	.667	.585		.595	.468	.237
Anger	.593	.598	.595		.528	.238
Helplessness	.544	.577	.468	.528		.422
Apathy	.222	.327	.237	.283	.422	

*Note.* All correlations were highly significant, p < .001.

**Figure 1**Histogram of Mean Scores of Negative Emotions Attributed to Procrastination



The positive emotions attributed to procrastination scale

The scale was internally consistent (a = .73). The items were reasonably correlated with each other (see Table 4). Skewness and kurtosis were both high (see Table 1). The mean scores were centred around low scores and not normally distributed (see Figure 2).

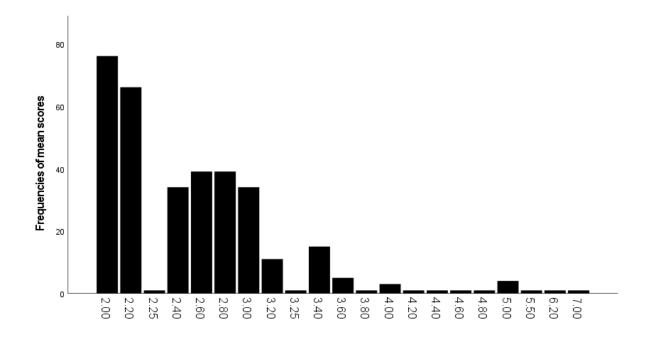
**Table 4**Correlation Matrix of the Translated Positive Emotions

Attributed to Procrastination

	Surprise	Pride	Hope	Relief
Surprise		.39	.30	.41
Pride	.39		.40	.63
Норе	.30	.40		.52
Relief	.41	.63	.52	

*Note.* All correlations were highly significant, p < .001.

**Figure 2**Histogram of Mean Scores of the Positive Emotions Attributed to Procrastination Scale



Relations between negative and positive emotions attributed to procrastination and procrastination.

We found a positive correlation between negative emotions attributed to procrastination and procrastination, r(337) = .27, p < .01. There was not found a significant positive correlation between positive emotions attributed to procrastination and procrastination. There was not found a significant positive correlation between relief attributed to procrastination and procrastination.

## Predicting SWLS with Negative Emotions Attributed to Procrastination as a Predictor.

A linear regression model was calculated predicting SWLS based on negative emotions attributed to procrastination b = -0.33, t(333) = -6.4, p < .01. A significant regression model was found, F(1, 333) = 41.3, p < .01, with a  $R^2$  of .11. As hypothesized negative emotions attributed to procrastination would significantly negatively predict SWLS.

Controlling for Procrastination. After including IPS as a predictor variable a linear multiple regression model was calculated predicting SWLS based on negative emotions attributed to procrastination b = -0.25, t(333) = -4.99, p < .001, and IPS b = 0.289, t(333) = -5.63, p < .001. A significant regression model was found. F(3, 333) = 37.7, p < .001, with a  $R^2$  of .18. These results were in line with the hypothesis. The participants that have negative emotions attributed to their procrastination have lower subjective well-being than other participants even when controlling for procrastination. This means that a group of people who procrastinate at the same level have different emotional consequences and score consistently different on subjective well-being.

Controlling for the I-NAS-SF. After including the I-NAS-SF scale as a predictor variable to the regression model, a linear multiple regression model was calculated using negative emotions attributed to procrastination b = -0.12, t(333) = -2.17, p = .031, IPS b = -0.031, IP

0.265, t(333) = -5.33, p < .01, and I-NAS-SF b = -.27, t(333) = -4.9, p < .001. A significant regression model was found F(3, 333) = 34.9, p < .01, with a  $R^2$  of .23. While it was considerable smaller, there was still a significant effect of negative emotions attributed to procrastination on SWLS.

Controlling for General Self-efficacy Scale (GES). After including the GES scale as a predictor variable to the regression model, a linear multiple regression model was calculated using negative emotions attributed to procrastination b = -0.08, t(333) = -1.47, p = .141, IPS b = -0.21, t(333) = -4.39, p < .001, I-NAS-SF b = -0.18, t(333) = -3.33, p < .001, and GES b = .30, t(333) = 5.84, p < .001. A significant regression model was found F(4, 333) = 37.3, p < .001, with a  $R^2$  of .30. By including the GSE in the model, the effect of the negative emotions attributed to procrastination is no longer significant. This means that there is an overlap between GSE, SWLS and negative emotions attributed to procrastination. This was hypothesized as we argued that self-efficacy relates to negative emotions attributed to procrastination.

## **Discussion**

Generally, most results were in line with our hypothesises. Firstly, the scale measuring negative emotions attributed to procrastination were both reliable and valid. It also was positively related with the international negative affect schedule short form (I-NAS-SF) scale and the irrational procrastination scale (IPS). Positive emotions attributed to procrastination was however not significantly related to procrastination. Negative emotions attributed to procrastination was significantly negatively related to the satisfaction with life scale (SWLS) when both IPS and I-NAS-SF was controlled for. Negative emotions attributed to procrastination was no longer significant when the general self-efficacy scale (GSE) was controlled for. Each of the hypothesises will be discussed in relevant orders.

## Reliability and Validity of Emotions Attributed to Procrastination

## Negative Emotions Attributed to Procrastination

While the scores were consistent with each other, validity also needs to be evaluated. Does the scale portray the actual emotions of the participants? An alternative explanation of these results is that attitudes influence the answers. More specifically it can be questioned if the participants with negative attitudes of procrastination would score high on negative emotions attributed to procrastination. While attitudes could explain how you feel about your procrastinatory behaviour, the questionnaire asked what the participant felt about their own procrastination, not what they felt towards procrastination in general. The research on attitudes and procrastination does not suggest that students have especially negative attitudes toward procrastination (Chen et al., 2020). The participants between the age 16 and 30 had more negative attitudes towards procrastination than people of other ages (Chen et al., 2020). The present study data has a mean age just over 24.5, so the age would suggest that the participants of the present study had more negative attitudes than other age groups. Males and people without higher education were however also groups with more negative attitudes in other studies. This does not match with the present study where most of the participants were students and not majorly male. The negative emotions attributed to procrastination was also quite normally distributed (see Figure 1), while the scale measuring attitudes towards procrastination was centred around negative scores. Since the scales were so differently distributed, this would indicate that they measured different concepts. In conclusion there are aspects of the current research's participants that implies that they may have negative attitudes towards procrastination. But on the other hand, the phrasing of the survey should be explicit enough so that the participants would not mix their negative attitudes towards procrastination in general with their negative emotions attributed to their own procrastination.

Another issue with the scale's validity is that we do not measure emotions directly. There might therefore be a difference between the self-reported emotions and the actual emotions the participants felt. While there is no real way of testing this directly with the current data, comparing the scale to established scales in a similar field can tell us whether there is some validity to the scale. As a litmus test, we correlated the negative emotions attributed to procrastination to the I-NAS-SF scale, which test neuroticism (Thompson, 2007). A significant positive correlation in the present study implies that there is an actual emotional basis of the scale. While the I-NAS-SF scale does not measure emotions directly either, people should have a general idea of how they feel.

While negative attitudes may influence the negative emotions attributed to procrastination, there might be discrepancies between the actual emotions the participants felt when they procrastinated, and what they answered on the survey. Despite small caveat, negative emotions attributed to procrastination seems to measure negative emotions attributed to procrastination well. The scale is not overly skewed (see Table 1), and the items are reasonably correlated with each other (see Table 3) in addition to a good Cronbach's alpha. The scale is also correlated with the other variables we hypothesised it would correlate with (see Table 2), which shows that it measures what we claim it measures.

## Positive Emotions Attributed to Procrastination

While the present study found a relatively high alpha for the positive emotions attributed to procrastination scale, there are some difficult issues with using the scale. People do generally have very little positive emotions towards their procrastinatory behaviour (see Table 1). The descriptive analysis also showed that the scale was heavily skewed towards lower values. The variance was also very low. While this scale may be perfect in measuring positive emotions attributed to procrastination, predicting anything using these measures is

difficult. If each student scored similarly on a test, you would not be able to predict future test scores based on the test. This is because there were no meaningful differences in the students' scores, and the scale measuring positive emotions attributed to procrastination is therefore not helpful.

On the other hand, these issues may also be related to an inherent weakness of the scale. In a situation where procrastination is framed very negatively, it could be hard to access positive emotions. A possible way to test this would be to test if the positive emotions attributed to procrastination was related to a general positive affect scale. The problem with this solution is simply that procrastinators that have positive emotions attributed to procrastination should not necessarily have more positive emotions in their daily lives than others. This is why the present research did not consider it.

#### Positive Emotions and Procrastination.

There was not found significant relation between positive emotions attributed to procrastinatory behaviour and procrastination. Limiting the correlation to the item measuring shame and procrastination still did not get any significant relation. Based on these results there is no evidence in the current research that supports positive emotions as a driver for procrastinatory behaviour. Lee and Hall (2020) found similar non-significant results. As these results uses similar scales as the present study, the measures could be similarly flawed. There are some obvious flaws with the measurements that could influence the results as discussed earlier, but the non-relations could also be due to other explanations.

An explanation of the results is that while people might have positive emotional consequences of their procrastination, they may not associate these emotions to the actual situations they procrastinate in. The negative emotions may be so prevalent in the situations that positive emotions get pushed away when the participants are recalling how they felt.

## **Negative Emotions Attributed to Procrastination and Procrastination**

As hypothesised negative emotions were positively correlated to procrastination. With a correlation of .27 it was larger than the correlation of .2 which is often found in the literature (Steel, 2007). This is to be expected because direct consequences of procrastination should be more strongly connected to procrastination then a general affect scale. People who have bad emotional consequences of their procrastination should procrastinate more than others. As discussed earlier, the situation they procrastinated in can extremely aversive and hard to stay in. This is also in line with results from Lee and Hall (2020) who also found a significant relation between negative emotions attributed to procrastination and procrastination. Although they had different reasonings behind their research and studied academic procrastination instead of general procrastination, the methods used was similar enough to make the results comparable to the present research.

The relatively weak correlation does not necessarily mean that negative emotions attributed to procrastination are not a driver for the more problematic procrastinatory behaviour. As discussed earlier it is hard to separate harmful and less harmful procrastination. While some people might procrastinate because they do not get obvious harm from it, others might procrastinate with severe consequences because the situation is so uncomfortable that they continue procrastinating despite the obvious bad consequences. Additionally, emotions are a theoretical powerful argument as an explainer of behaviour. If you have largely negative emotional experiences with an activity, it makes sense to do it less.

Cognition might also explain this relation. In the introduction it was argued that cognition function as context while the emotions are strengthening the cognitions effect on behaviour. An example is a situation where two students have a deadline on a paper that is upcoming. Both people have procrastinated until now and are experiencing stress. The person

with the better self-efficacy might regulate their emotional reaction better and finish the paper, while the other person might give up. Depending on whether you think you can handle this situation or not, you will give up or work harder. As self-efficacy is negatively related to procrastination and also to negative emotions attributed to procrastination (see Table 2). The present study supports this idea.

In conclusion there is a significant relation between negative emotions attributed to procrastination and procrastination. This is supported by solid theoretical reasoning, but to test this more stringently, variables such as self-efficacy should be controlled for.

### Negative Emotions Attributed to Procrastination and Low SWLS

As discussed earlier negative emotions attributed to procrastination should somewhat predict lower SWLS for different reasons. The most important factor is that students that experience negative emotions in relation to their procrastinatory behaviour leads to more emotional negative experiences. As a lone predictor, negative emotions attributed to procrastination was a significant predictor. This means that people that experience more negative emotions in relation to procrastination are generally less satisfied with their lives. It is hard to make claims of causal explanation of the relation as there are multiple possible alternative explanations of the findings. In the next sections some of the alternative explanations will be discussed.

The first alternative explanation of this relation could be procrastination. This is in line with the present research showing that procrastination and negative emotions are positively related (see Table 2). Procrastination and negative emotions attributed to procrastination are both negatively related to SWLS. If these overlapping relations are the same persons, procrastination may be the real explainer of the variance. This makes however

little theoretical sense. While procrastination is an important behavioural measure, there is little to the behaviour that should influence SWLS directly.

After controlling for procrastination, the effect from negative emotions attributed to procrastination did not disappear but was reduced. A certain overlap was expected as negative emotions attributed to procrastination should cover some of the problematic aspects of procrastination. As argued earlier the effect of procrastination should be better covered by its instant consequences. In this project only negative emotions related to procrastination was measured. If all relevant consequences were controlled for, we argue that they should explain different parts of procrastinations related to SWLS. We argue that the explained variance of SWLS shared by procrastination and negative emotions attributed to procrastination, are better explained by negative emotions attributed to procrastination.

Another alternative explanation is that neuroticism explains the relation. People that generally feels negative emotions in their daily lives have both lower subjective well-being (Arrindell, Heesink & Feij, 1999), and more negative emotions attributed to procrastination (see Table 2). When we controlled for neuroticism by adding the I-NAS-SF scale to the regression equation, the negative emotions attributed to procrastination effect on SWLS lessened, but was still significant. A possible explanation of this is that neurotic people that procrastinate have stronger reactions to bad situations produced by procrastination. A neurotic person who fails an exam will probably have stronger reactions to the failure than a less neurotic person.

Which of the variables that are causing the shared explained variance is unclear, but the shared explained variance implies that there is a group that both have high scores of neuroticism, emotions attributed to procrastination and lower SWLS-scores. Regardless of

the real cause of these results, the people in this group struggles immensely compared to the group who procrastinates without having the bad consequences and outcomes.

A third alternative explanation is that the relation could be explained by negative cognitions. We tested this by adding the GSE to the regression model. GSE measures how well we think we can do general tasks. After adding the GSE scale the negative emotions were no longer significant. This was expected as self-efficacy has been shown to be important in regulating emotions (Xiaodong et al., 2021). People with lower self-efficacy handle difficult situation in a less healthy way and experience more negative emotions in relation to procrastination.

The negative emotions attributed to procrastination was originally highly significant with a good amount of explained variance, but the effect disappeared completely after all control-variables was added to the regression model. This is mainly explained by the fact that the most influential variables "eat" the explained variance from the "lesser" variables in the regression analysis. In the final regression equation multiple influential variables was included who all "ate" explained variance from the negative emotions attributed to procrastination. This is however only a problem related to procrastination since it is unfit for directly influencing other variables. This is not a problem for both self-efficacy and neuroticism seems to be an underlying cause for the relation between procrastination and subjective well-being, supported both by the present data and existing theory and literature.

While negative emotions attributed to procrastination does not necessarily cause this relation, it still serves as an important purpose. Namely as a measure to capture problematic aspects of procrastination. Negative emotions attributed to procrastination's effect on subjective well-being overlaps with the influence of both GSE and I-NAS-SF. This suggests that negative emotions attributed to procrastination capture aspects of both neuroticism and

self-efficacy's effect on satisfaction with life. This is however somewhat speculative, and our theoretical arguments should be tested more stringently before any further conclusions are made.

## **Students as Participants**

While we did not measure academic procrastination, many of the participants are probably university students. A benefit is that procrastination is extremely prevalent among students (Rothblum et al., 1986), and that it should therefore be easy to find effects in such environments. A possible problem is that the effects found might be exaggerated and not applicable to other groups than students. While students do procrastinate more than other groups, procrastination are also somewhat domain specific (Klingsieck, 2013). This means that people procrastinate more in academic settings than in other domains of life. This means that students might answer more similarly to other groups in a general procrastination measure. In addition, the results showed that the IPS did not have high amounts of skewness and kurtosis. Even though the procrastination measure might be slightly affected by the number of students among the participants, the measures seem to be reliable. In addition, it also behaves similarly in relation to other variables measured in other studies. IPS is significantly related to SWLS, negative emotions attributed to procrastination, I-NAS-SF and self-efficacy in the present study. These are all relations observed in earlier research.

### **Limitations and Future Research**

While this paper to a certain degree has criticized the procrastination literature for using variance analysis, this paper also has used much of the same statistical methods. While the current research circumvented some of the issues with looking at more direct consequences of procrastination, some of the issues persists. Causality cannot usually be assumed between two correlated variables. The present study can for example not claim that

negative emotions attributed to procrastination causes lower subjective well-being. This is mainly because there are a series of alternative explanations that needs to be analysed.

Additionally, the present study has not observed procrastination or negative emotions directly. Using online surveys are very practical, but a weak point is that a researcher can for example not directly observe a cell through surveys and/or self-report. While people have an idea of their emotions and behaviour, there are both information missing and the information you get are less reliable. A student can have forgotten the strength of certain emotions they had when they procrastinated and answer too highly or lowly on how strong of an emotion they felt. An objective biological measure will not have the same issues.

To summarise there are numerous limitations related to the present research and study design, but hopefully the experience from the present study can be a basis for solving some of the complex nature of procrastination. There are multiple different ways the current project can inspire future research projects. An idea could be to include Steel's (2018) behavioural measures in a project including negative emotions attributed to procrastination. In a such project we could study how procrastination and negative emotional consequences interact over time with other variables. Another interesting research line is to design a mixed method study. The project could start with a quantitative analysis to identify the possible vulnerable subgroup. After this group has been identified and some participants have shown interest in doing quantitative follow-up interviews, this information can give the field of research more knowledge on the group that has the worst outcomes of procrastinators.

A more complex project could include biological measures since it is usually more objective. The test could try to see how these biological measures overlap with the scales measuring emotional consequences in the present study. Such an experiment would however be difficult to set up as it would be hard to simulate students genuinely experiencing

procrastination and negative emotions in a lab. The ethics of such a project would also be considerably more questionable. It would be needed to simulate procrastinatory behaviour which we know cause people considerable harm. A less invasive project could be to follow students in a semester and try to make negative emotions available through reminding the students of a task they may or may not have procrastinated. Researchers can simultaneously measure negative emotions through brain scans.

### **Implications**

While there are conclusions the present study cannot make, there are some strong implications. Firstly, students clearly experience negative emotions in connection to their procrastinatory behaviour. The different emotions also seem connected with each other depending on the type of emotion. Shame and guilt are for example the most correlated and score the highest values. Students that experience strong negative emotions attributed to their procrastinatory behaviour also procrastinate more than their peers, although the cause and effect of the relation are unclear. Positive emotions such as relief seems to have no effect on the other measured variables. On the other hand, the measures of the positive emotions are flawed as discussed earlier. Lastly, negative emotions attributed to procrastination predicts lower SLWS when both procrastination and neuroticism are controlled for. Even though cause and effect of these relations are hard to make, there seems to be a vulnerable group of people that both experience negative emotions in relation to their procrastinatory behaviour and have lower satisfaction with life than their peers. Although there are still a lot of uncertainty concerning the study group, the present results show significant negative emotions attributed to procrastination and SWLS. It should therefore be important to identify and help this group of students, and hopefully the present results can be basis for further research on this important field. In a wider sense, better knowledge and understanding of behaviour related to procrastination would help universities and other educating institutions

to take this issue seriously and facilitate and inform students about how to cope with this challenge.

### **Conclusion**

The study has tried to better understand how procrastination are related to negative emotional consequences and how it can be measured. The main hypothesis of the thesis is that emotional consequences of procrastination predict lower subjective well-being, and generally most results were in line with this. The scale measuring negative emotions attributed to procrastination were both reliable and valid. It also was positively related with the international negative affect schedule short form (I-NAS-SF) scale and the irrational procrastination scale (IPS). Positive emotions attributed to procrastination was however not significantly related to procrastination and does not seem to influence procrastination.

Negative emotions attributed to procrastination was significantly negatively related to the satisfaction with life scale (SWLS). Negative emotions attributed to procrastination was no longer significant when the general self-efficacy scale (GSE) was controlled for. There are still a lot of uncertainty concerning the group used in this study, but the results show that there is a significant relation between negative emotions attributed to procrastination and satisfaction with life. It is therefore important to identify and help this group of students, and the present results can be a basis for a better design of future research.

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## Appendix

Vi ber deg her svare på noen spørsmål knyttet til hvordan du opplever jobb med oppgaver. Dette
kan være studierelaterte oppgaver (studenter) eller mer generelle oppgaver du gjør. Svar på
spørsmålene så nøyaktig du kan. Det er ikke rette eller gale svar her, vi er ute etter din erfaring og
dine oppfatninger.

Det tar ca. 7-10 min å besvare spørsmålene. Om du vil, kan du delta i trekningen om gavekort (2-3000 kr) som takk for din deltakelse. Nærmere informasjon gis på siste side av undersøkelsen.

Svarene gis <u>anonymt</u>, og kan ikke spores tilbake til den som svarer. Du deltar frivillig og kan når som helst avslutte undersøkelsen. Dette prosjektet ledes av professor Frode Svartdal, UiT, og er godkjent av forskningetisk komité.

På forhånd tusen takk!

Ved å trykke "Neste" under velger jeg å delta i denne undersøkelsen.

Kjønn			
O Kvinne (1)			
O Mann (2)			
Alder			

Jeg er		
O Student (heltid) (1)		
O Student (deltid) (3)		
O I jobb / annet (9)		

SWLS. Her finner du fem utsagn om tilfredshet med livet. Velg det svaralternativ som passer best for deg.

	1. Stemmer svært dårlig (1)	2. Stemmer ganske dårlig (2)	3. Stemmer litt (3)	4. Stemmer ganske godt (4)	5. Stemmer svært godt (5)
På de fleste måter er livet mitt nær idealet mitt (1)	0	0	0	0	0
Mine livsforhold er utmerkede (2)	0	0	0	0	0
Jeg er tilfreds med livet mitt (3)	0	0	0	0	0
Så langt har jeg fått de viktigste tingene jeg ønsker i livet (4)	0	0	0	0	0
Hvis jeg kunne leve livet på nytt, ville jeg nesten ikke endre noe (5)	0	0	0	0	0

# Her finner du noen påstander som angår tendens til å UTSETTE TING. Vurder i hvilken grad disse utsagnene passer på deg

	1. Passer svært dårlig (1)	Passer stort sett ikke (2)	Passer litt (3)	Passer godt (4)	5. Passer svært godt (5)
1. Jeg utsetter ting så lenge at det går ut over velvære og effektivitet (1)	0	0	0	0	0
2. Livet mitt ville vært bedre om jeg hadde gjort ting tidligere (2)	0	0	0	0	0
3. Når jeg burde gjøre noe, gjør jeg gjerne noe annet i stedet (3)	0	0	0	0	0
4. Når jeg ser tilbake på dagen, vet jeg at jeg kunne utnyttet tiden bedre (4)	0	0	0	0	0
5. Jeg venter med å gjøre ting mer enn hva som er fornuftig (5)	0	0	0	0	0
6. Jeg utsetter ting (8)	0	0	$\circ$	$\circ$	0
SELF <b>Jeg betrakt</b> e	er meg selv som e	n som utsetter t	ing (en "prokras	tinatør")	
O JA (1)					
O NEI (8)					

# OTHERS Andre betrakter meg som en prokrastinatør

O JA (1)

O NEI (4)

Tenk tilbake på situasjon(er) der du har **utsatt planlagte og/eller viktige oppgaver unødvendig**. Du har «prokrastinert».

Når jeg tenker tilbake på slike situasjoner, medførte min utsettelse at...

	1. Passer svært dårlig (1)	Passer stort sett ikke (2)	Passer litt (3)	Passer godt (4)	5. Passer svært godt (5)
jeg fikk negative reaksjoner fra andre (eks. at venner eller bekjente kommenterte at jeg utsetter ting unødig). (1)	0	0	0	0	0
jeg opplevde  meg som dårligere enn andre (eks. at andre jobbet mye raskere og ble ferdig lenge før meg) (2)	0	0	0	0	0
at jeg <u>har gått</u> glipp av ting (eks. at jeg ikke overholdt en viktig frist) (3)	0	0	0	0	0
at jeg har tapt på å være sen (eks. at jeg var for sent ute med å betale en regning og fikk et stort inkassogebyr) (4)	0	0	0	0	0
at jeg fikk tidsnød eller kom i bakleksa (eks. at jeg ikke leste et kapittel anbefalt før en forelesning, slik at jeg ikke skjønte forelesningen) (8)	0	0	0	0	0
at jeg <u>ble plaget</u> av negative følelser (eks. skam, anger, skyldfølelse, eller bekymring) (9)	0	0	0	0	0

at jeg ble skuffet over meg selv (eks. at jeg egentlig hadde forventet at jeg skulle klare det jeg hadde bestemt meg for, men mislyktes) (12)	0	0	0	0	0
at jeg <u>fikk</u> <u>bekreftet at jeg er</u> <u>dårlig på å</u> <u>gjennomføre</u> <u>ting</u> (13)	0	0	0	0	0
Page Break ——					

## Her finner du noen påstander om MOTIVASJON OG OPPLEVELSER I PRESTASJONSSAMMENHENG. Vurder i hvilken grad disse utsagnene passer på deg

	1. Passer svært dårlig (1)	Passer stort sett ikke (2)	Passer litt (3)	Passer godt (4)	5. Passer svært godt (5)
1. Jeg er redd for å mislykkes i vanskelige situasjoner der mye avhenger av meg (1)	0	0	0	0	0
2. Jeg er ubekvem med ting der jeg ikke er sikker på å lykkes (2)	0	0	0	0	0
3. Selv om ingen ser om jeg skulle mislykkes, er jeg redd for oppgaver jeg ikke kan løse (3)			0	0	0
4. Selv om ingen ser det, er jeg anspent i nye situasjoner	0	0	0	0	0
5. Hvis jeg ikke skjønner noe umiddelbart, blir jeg anspent (8)	0	0	0	0	0
6. Det at jeg utsetter ting fører i det lange løp til mer stress for meg (13)	0	0	0	0	0
7. Å utsette ting til siste liten har tidligere kostet meg dyrt (14)	0	0	0	0	0

Her finner du noen påstander om HVORDAN DU SER PÅ DEG SELV NÅR DET GJELDER Å FÅ TING

GJORT. Vurder i hvilken grad disse utsagnene passer på deg

	1. Passer svært dårlig (1)	Passer stort sett ikke (2)	Passer litt (3)	Passer godt (4)	5. Passer svært godt (5)
Jeg klarer alltid å løse vanskelige problemer hvis jeg prøver hardt nok (1)	0	0	0	0	0
2. Hvis noen motarbeider meg, så kan jeg finne måter og veier for å få det som jeg vil (2)	0	0	0		0
3. Det er lett for meg å holde fast på planene mine og nå målene mine (4)	0	0	0	0	0
4. Jeg føler meg trygg på at jeg ville kunne takle uventede hendelser på en effektiv måte (8)	0	0	0	0	0
5. Takket være ressursene mine så vet jeg hvordan jeg skal takle uventede situasjoner (9)	0	0	0	0	0
6. Jeg kan løse de fleste problemer hvis jeg går tilstrekkelig inn for det (14)	0	0	0	0	0
7. Jeg beholder roen når jeg møter vanskeligheter fordi jeg stoler på mestringsevnen min (15)	0	0	0	0	0

8. Når jeg møter et problem, så finner jeg vanligvis flere løsninger på det (16)	0	0	0	0	0
9. Hvis jeg er i knipe, så finner jeg vanligvis en vei ut (17)	0	0	0	$\circ$	0
10. Samme hva som hender så er jeg vanligvis i stand til å takle det (18)	0	0	0	0	0

PROCRASTINATION AND ITS CONSEQUENCES: A NEW APPROACH	62
Her er noen påstander om HVA DU GJORDE SISTE UKE. Vurder i hvilken grad utsagnene passer deg. Altså:	for

# "I uken som gikk ..."

1var det ting jeg skulle gjort men jeg ikke fikk gjort (1)  2engasjerte jeg meg i mange forskjellige aktivitetre (2)  3gjorde jeg gode valg om hva slags ting jeg engasjerte meg i (3)  4var jeg en aktiv person som oppnådde de tingene jeg hadde bestemt meg for å gjøre (6)  5opplevde jeg at mye av det jeg gjorde egentlig var flukt fra ubehagelige ting (4)  6brukte jeg mye tid på a gruble over mine problemer (5)  7engasjerte jeg meg i ting som kunne avlede oppmerksomheten fra å tenke på ubehagelige ting (10)  8gjorde jeg ting		1. Passer svært dårlig (1)	Passer stort sett ikke (2)	Passer litt (3)	Passer godt (4)	5. Passer svært godt (5)
meg i mange forskjellige aktiviteter (2) 3gjorde jeg gode valg om hva slags ting jeg engasjerte meg i (3) 4var jeg en aktiv person som oppnådde de tingene jeg hadde bestemt meg for å gjøre (6) 5opplevde jeg at mye av det jeg gjorde egentlig var flukt fra ubehagelige ting (4) 6brukte jeg mye tid på å gruble over mine problemer (5) 7engasjerte jeg meg i ting som kunne avlede oppmærksomheten fra å tenke på ubehagelige ting (10)	jeg skulle gjort men jeg ikke fikk	0	0	0	0	0
gode valg om hva slags ting jeg engasjerte meg i (3)  4var jeg en aktiv person som oppnådde de tingene jeg hadde bestemt meg for å gjøre (6)  5opplevde jeg at mye av det jeg gjorde egentlig var flukt fra ubehagelige ting (4)  6brukte jeg mye tid på å gruble over mine problemer (5)  7engasjerte jeg meg i ting som kunne avlede oppmerksomheten fra å tenke på ubehagelige ting (10)	meg i mange forskjellige	0	0	0	$\circ$	0
aktiv person som oppnådde de tingene jeg hadde bestemt meg for å gjøre (6)  5opplevde jeg at mye av det jeg gjorde egentlig var flukt fra ubehagelige ting (4)  6brukte jeg mye tid på å gruble over mine problemer (5)  7engasjerte jeg meg i ting som kunne avlede oppmerksomheten fra å tenke på ubehagelige ting (10)	gode valg om hva slags ting jeg engasjerte meg i	0	0	0	$\circ$	0
at mye av det jeg gjorde egentlig var flukt fra ubehagelige ting (4) 6brukte jeg mye tid på å gruble over mine problemer (5) 7engasjerte jeg meg i ting som kunne avlede oppmerksomheten fra å tenke på ubehagelige ting (10)	aktiv person som oppnådde de tingene jeg hadde bestemt meg for å	0	0	0	0	0
mye tid på å gruble over mine problemer (5)  7engasjerte jeg meg i ting som kunne avlede oppmerksomheten fra å tenke på ubehagelige ting (10)	at mye av det jeg gjorde egentlig var flukt fra ubehagelige ting	0	0	0	0	0
meg i ting som kunne avlede oppmerksomheten fra å tenke på ubehagelige ting (10)	mye tid på å gruble over mine	0	0	0	0	0
8gjorde jeg ting	meg i ting som kunne avlede oppmerksomheten fra å tenke på ubehagelige ting	0	0	0	0	0
som var artige (11)		0	0	0	$\circ$	$\circ$

# Her finner du noen flere påstander som angår tendens til å UTSETTE TING. Vurder i hvilken grad disse utsagnene passer på deg

	1. Passer svært dårlig (1)	Passer stort sett ikke (2)	Passer litt (3)	Passer godt (4)	5. Passer svært godt (5)
1. Når jeg har en tidsfrist, søler jeg ofte bort tiden med å gjøre andre ting (1)	0	0	0	0	0
2. Selv ting jeg skal gjøre som bare krever at jeg setter meg ned og gjør dem, kan bli utsatt i dagevis (2)	0	0	0	0	0
3. Jeg tar meg ofte i å gjøre ting som jeg skulle gjort for flere dager siden (3)	0	0	0	0	0
4. Jeg sier hele tiden «Jeg skal gjøre det i morgen» (6)	0	0	0	0	0
5. Jeg venter vanligvis med å begynne å gjøre noe jeg skal gjøre (4)	0	0	0	0	0

# Når jeg tenker på situasjoner der jeg har utsatt unødvendig, føler jeg...

	Ikke i det hele tatt (2)	Litt (3)	En del (5)	Mye (6)	Svært mye (7)
Skyld (1)	0	$\circ$	$\circ$	$\circ$	$\circ$
Skam (2)	0	$\circ$	$\circ$	$\circ$	$\circ$
Anger (3)	0	$\circ$	$\circ$	$\circ$	$\circ$
Sinne (på meg selv / andre) (4)	0	$\circ$	$\circ$	$\circ$	$\circ$
Hjelpeløshet (5)	0	$\circ$	$\circ$	$\circ$	$\circ$
Apati (6)	0	$\circ$	$\circ$	0	$\circ$
Overaskelse (11)	0	$\circ$	$\circ$	$\circ$	$\circ$
Stolthet (12)	0	$\circ$	$\circ$	$\circ$	$\circ$
Håp (13)	0	$\circ$	$\circ$	$\circ$	0
Lettelse (14)	0	$\circ$	$\circ$	$\circ$	$\circ$

(I-PANAS-SF) Tenk på deg selv og hvordan du normalt føler deg. I hvilken grad føler du generelt på disse følelsene?

	1. Aldri (1)	2 (2)	3 (3)	4 (4)	<b>5. Alltid</b> (6)
Opprørt (1)	0	$\circ$	$\circ$	$\circ$	$\circ$
Fiendtlig (2)	0	$\circ$	$\circ$	$\circ$	$\circ$
Årvåken (3)	0	$\circ$	$\circ$	$\circ$	$\circ$
Skamfull (4)	0	$\circ$	$\circ$	$\circ$	$\circ$
Inspirert (5)	0	$\circ$	$\circ$	$\circ$	$\circ$
Nervøs (6)	0	$\circ$	$\circ$	$\circ$	$\circ$
Bestemt (7)	0	$\circ$	$\circ$	$\circ$	$\circ$
Redd (9)	0	$\circ$	$\circ$	$\circ$	$\circ$
Aktivert (10)	0	$\circ$	$\circ$	$\circ$	$\circ$

CTNES Tenk tilbake på situasjoner hvor du har utsatt planlagte og/eller viktig oppgaver unødvendig. Du har "prokrastinert"

Når jeg tenker tilbake på slike situasjoner...

	1 <b>Aldri</b> (1)	2 (2)	3 (3)	4 (4)	5 <b>Alltid</b> (5)
1. Tenker jeg på hvor mye verre ting kunne vært. (1)	0	0	0	0	0
2. Føler jeg meg lettet når jeg tenker på hvor mye verre ting kunne vært. (2)	$\circ$	0	$\circ$	0	0
3. Tenker jeg på hvor mye bedre situasjonen/ting kunne vært hvis jeg hadde handlet annerledes. (4)	0	0	0	0	0
4. Tenker jeg på hvor mye bedre situasjonen/ting kunne vært hvis jeg ikke hadde feilet i å handle tidligere. (5)	0	0	0	0	0
5. Tenker jeg på hvor mye bedre ting kunne ha gått. (8)	0	0	0	0	0
6. Føler jeg meg trist når jeg tenker på hvor mye bedre ting kunne ha gått. (9)	0	0	0	0	0
Page Break —					

SFFA Nesten ferdig. Tenk tilbake på situasjoner hvor du har utsatt planlagte og/eller viktige oppgaver unødvendig. Du har "prokrastinert"

Vurder i hvilken grad disse utsagnene passer for deg

	1. Passer svært dårlig. (1)	Passer stort sett ikke. (2)	Passer litt. (3)	Passer godt. (4)	5. Passer svært godt. (5)
1. Jeg misliker meg selv fordi jeg velger å utsette ting. (1)	0	0	0	0	0
2. Jeg kritiserer meg selv fordi jeg velger å utsette ting. (2)	0	0	0	0	0
3. Jeg tenker nedsettende om meg selv fordi jeg velger å utsette ting. (3)	0	0	0	0	0
4. Selvom utsettelsen ikke er bra for meg, tilgir jeg meg selv for å komme meg videre. (10)	0	0	0	0	
Page Break —					

TLF Takk for at du svarte på denne undersøkelsen. Om du vil være med i trekningen om et gavekort (2-3000 kr, Elkjøp), oppgi ditt mobilnummer her. Dette slettes når undersøkelsen er ferdig.

**AVSLUTT** 

Takk for at du deltok!

Om du vil vite mer om prosjektet, gå til www.procrastination.no