**Goal progression in young adulthood: How the use of self-regulation strategies and self-efficacy influence goal progress over time**

*Master’s thesis*

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**Abstract**

The current study examines how the use of self-regulation strategies and self-efficacy can influence goal progress over time. Enhanced knowledge about goal progress is crucial in order to help individuals accomplish their goals more effectively. The sample only consists of individuals in young adulthood since it has been regarded as a critical period for long-term goals. The final sample size was 47 participants, mostly consisting of Icelandic individuals. The study was conducted digitally, but multiple measurement tools were used. Participants were asked to set themselves a goal for the upcoming month, and a month later the goal progress was assessed. It was expected that there is a positive effect of self-regulation strategies on goal progress. Furthermore, it was hypothesized that the effect for situational self-regulation strategies is stronger than for non-situational self-regulation strategies. At last, it was expected that the effect of self-regulation strategies on goal progress is mediated by self-efficacy, such that self-regulation strategies have an indirect effect on goal progress through self-efficacy. The results indicate that self-regulation strategies enhance goal progress over time. However, in contrast to predictions, situational self-regulation strategies were not found to be more effective in promoting goal progress, in fact the effect was stronger for non-situational self-regulation strategies. At last, contrary to expectations, self-efficacy was not found to mediate the relationship between self-regulation strategies and goal progress. These findings reveal the importance of self-regulation strategies in promoting goal progress for individuals in young adulthood. The findings can therefore provide a deepened understanding about the different processes that can influence how individuals successfully achieve their long-term goals.

*Keywords:* Goal progression, self-regulation strategies, self-efficacy, self-control, young adulthood, goal-directed behavior

**Introduction**

Goal-directed and planful behaviors play an important part in people’s lives and can significantly contribute to their well-being (Dietrich et al., 2013). The various challenges and demands that people experience at particular live stages can influence the personal goals they construct (Salmela-Aro et al., 2007). A particularly critical period of life is young adulthood where various goals are first formed that are central for personal development (Bangerter et al., 2001). During this period individuals evaluate different options for their identity and direction of life by exploring and committing to their later adult roles (Hill et al., 2011). Goal-directed behavior is a behavior that is directed toward achieving a particular goal that individuals set for themselves and has shown to be an extremely important component of young adulthood (O'hora & Maglieri, 2006; Bangerter et al., 2001). The present study will therefore investigate how goal progress in young adulthood is influenced by factors (self-regulation and self-efficacy) that are potentially essential for the goal progress to be effective.

Goals are internal representations of desired end states, such as losing ten kilograms or graduating from university (Austin & Vancouver, 1996). Goals serve as standards by which individuals evaluate and direct their behavior (Schmidt & DeShon, 2009). When individuals recognize that their current progress is inadequate to reach their desired goal, an action is taken for the goal progress to be more effective. In that way individuals can increase their intrinsic motivation and effort to get closer to their desired end goal state. Therefore, people’s beliefs regarding the goal progress can influence their goal-directed behavior. Furthermore, other beliefs such as people’s beliefs about their abilities to effectively reach their goals can be an important factor for the goal progress to be successful (Schmidt & DeShon, 2009).

**Self-efficacy and goal-directed behavior**

Research has shown that self-efficacy beliefs can influence people’s performances in various tasks of life, for instance goal-directed behavior (Bandura & Locke, 2003; Pajares, 2002). Self-efficacy reflects people’s beliefs about their capabilities to perform a particular behavior. Self-efficacy beliefs are not concerned with the skills that one has but with judgments of what one is able to do to carry out relevant tasks, and therefore determines how individuals think, behave and motivate themselves (Bandura, 1986). Self-efficacy influences the choices people make, but most people engage in tasks in which they feel confident in and avoid tasks that they do not feel competent in. Strong self-efficacy beliefs can therefore enhance personal development in various ways, for instance by successfully achieving long-term goals (Pajares, 1997).

In the context of goal-directed behavior, self-efficacy can stimulate people’s commitment to their goals. By believing that one has the ability to achieve the goal, it is more likely that the individual stays committed to the goal (Tinaz et al., 2020). Self-efficacy seems to help persist in the face of hardship by promoting resilience. With sufficient self-efficacy, individuals remain determined in pursuing their goals, despite potential hardship that could interfere with the goal progress (Schmidt & DeShon, 2009). This suggests that sufficient self-efficacy is an important factor for individuals to achieve their long-term goals (Schmidt & DeShon, 2009). Furthermore, it has been shown that self-efficacy can influence people’s decision to employ self-regulation strategies (Kitsantas, 2000). For instance, a study revealed that students with high self-efficacy engage in more effective self-regulation strategies, for example by monitoring their academic time effectively and persisting when confronted with academic challenges (Pajares, 2002).

**General self-regulation and self-regulation strategies**

Based on previously mentioned effect of self-efficacy on self-regulation, self-regulation seems to be another important factor in goal-directed behavior. Self-regulation enables individuals to follow their goal-directed behaviors over time and helps to control distractions as well as adapting in challenging circumstances (Boekaerts & Maes, 2005; Tinaz et al., 2020). Self-regulation is defined as a multi-component, self-monitoring process that targets individuals’ cognitions, actions and emotions (Boekaerts & Maes, 2005). Self-regulation influences various life outcomes such as health, wealth and crime and is therefore crucial for living a successful life (Moffitt et al., 2011). Self-regulation as a trait has been investigated extensively and is usually defined as the ability to delay immediate gratification and focus on long-term goals (Gillebaart, 2018; De Ridder & Gillebaart, 2017).

Traditional definitions of self-regulation have focused on the important role of effort and inhibition in order to achieve long-term goals (Gillebaart, 2018; De Ridder & Gillebaart, 2017). Effortful inhibition involves overriding unwanted responses that are predominant in order to acquire long-term goals (De Ridder & Gillebaart, 2017). However, research has shown that self-regulation strategies cannot rely solely on effortful strategies, since inhibiting predominant responses requires effort. Using effortless self-regulation strategies has even proved to be more effective (De Ridder & Gillebaart, 2017; Gillebaart, 2018). Individuals with high self-control seem to rely on effortless strategies by creating environments for themselves that are compatible with their long-term goals (Gillebaart, 2018). Effortless strategies of this kind are defined as situational self-regulation strategies, where individuals intentionally choose to be in situations that favor their long-term goals over situations that can jeopardize their goals (Duckworth et al., 2016).

Self-regulation strategies involve the means that individuals use in order to help themselves reach their goals. Self-regulation strategies are various, but they can involve individuals shifting their behavioral or cognitive reactions to tempting situations or intentionally manipulating their surroundings or circumstances in order to achieve their long-term goals (Hennecke & Bürgler, 2020; Duckworth et al., 2016). Self-regulation strategies can therefore be helpful to maintain self-control in challenging situations and are thus more broad than self-regulation as a trait (Hennecke & Bürgler, 2020). By manipulating one’s circumstances, individuals can diminish the experience of the inner struggle that usually rises up when trying to maintain self-control. Self-regulation strategies can thus be more effective for successfully reaching goals compared to self-regulation as a trait (Duckworth et al., 2016). With that being said, the present study will look at the specific effects of different self-regulation strategies on goal progress and will therefore not be examining the trait self-regulation as a whole.

Research has suggested that situational self-regulation strategies are more effective for reaching long-term goals than other self-regulation strategies (Duckworth et al., 2016). This has been suggested since situational strategies can be helpful in preventing impulses earlier by modifying people’s environment. That in turn leads to less attention and cognitive load which makes it easier for individuals to control their behavior (Mann & Ward, 2007; Duckworth et al., 2016). However, further research is needed to establish when particularly situational strategies are more effective than other self-regulation strategies (Duckworth et al., 2016). More information is needed to demonstrate how effective self-regulation strategies are over longer periods of time and in what context (Duckworth et al., 2016; Aldao, 2013). The present study will therefore investigate whether situational strategies are more effective than other self-regulation strategies for reaching long-term goals. Situational strategies in this study will be composed of two self-regulation strategies that will be measured, situation selection and social support. These two strategies both involve individuals choosing circumstances that is compatible with reaching their goals and are therefore defined as the situational strategies of the study.

Previous research has identified various self-regulation strategies that individuals use in order to effectively achieve their goals (Patrick & Hagtvedt, 2011). Since the present study focuses on the distinction between situational strategies and non-situational strategies, the self-regulation strategies will be presented based on that distinction. The situational strategies are situation selection and social support. Situation selection is defined as making small changes to one’s environment, for instance by selecting appropriate situations, that can help individuals to better regulate their behavior in order to reach their goal (Mann et al., 2013). Social support is when individuals choose to be around other individuals that provide them with support and motivation in order for them to keep working towards their goals (Schunk & Zimmerman, 2003).

The other self-regulation strategies of the study are defined as non-situational since they are more related to changing individuals’ cognitions or attitudes instead of circumstances in order to achieve their goals. The non-situational strategies are self-monitoring, planning, automatization, initiation, self-reinforcement, cognitive change, persistence and inhibition (Kitsantas, 2000; Mann et al., 2013; Schunk & Zimmerman, 2003). Self-monitoring is defined as deliberately focusing attention to one’s behavior (Kitsantas, 2000). Planning helps individuals maintain their goals by arranging how they will achieve their goals. Additionally, the goal progress is easier if individuals do not have to consciously attend to their environment, thus by automatizing the required behavior with habits can promote goal-directed behavior (Mann et al., 2013). Initiation is the ability to start a behavior or a task in order to reach a goal. Self-reinforcement is when people provide themselves with rewards contingent on performing a response that can help with reaching the goal (Schunk & Zimmerman, 2003). Furthermore, people may also use cognitive change to maintain a positive interpretation of the situation even when the goal progress is not going as they wish, which relatedly helps them to stay persistent to their goal. At last, inhibition is a strategy when undesired behaviors that are conflicting with the goal are suppressed in order to reach the goal (Schunk & Zimmerman, 2003).

Research has shown that self-regulation is positively connected to self-efficacy, and that self-regulation plays a significant role in promoting self-efficacy. People with high self-regulation seem to pay more attention to their goals and are more likely to maintain stable self-efficacy in relation to future tasks (Yang et al., 2019). Furthermore, self-efficacy also plays a crucial role in promoting self-regulation, effective academic self-regulation skills are dependent on high self-efficacy beliefs (Lee et al., 2014). Additionally, a study revealed that goal progress and self-efficacy mediated the effect of self-regulation on subjective well-being. This suggests that self-regulation can indirectly affect subjective well-being through higher levels of self-efficacy and goal progress (Briki, 2018). Self-regulation and self-efficacy are both concepts that have proven to be essential for goal-directed behavior and goal progress. However, there is no conclusive finding to the relationship between self-regulation and self-efficacy (Yang et al., 2019). For instance, self-efficacy has often been regarded as a precursor that enhances self-regulation, whereas self-regulation has also been regarded as a trait that enhances self-efficacy (Jain & Dowson, 2009). This present study will thereby investigate this relationship further in relation to goal progress.

**Hypotheses and expectations**

In sum, previous literature has provided good underpinnings about the importance of self-regulation strategies and self-efficacy for the successful achievement of long-term goals. Nevertheless, it is still necessary to study this subject further to gain enhanced understanding about these processes in relation to goal progress. Enhanced knowledge about these processes can be used to help people achieve their goals more effectively, but the goal progress is more likely to be successful when individuals have better knowledge about what specific strategies they have to use in order to accomplish their goals. The present study will therefore investigate how the use of self-regulation strategies and self-efficacy influence goal progress over time. The first aim of the study is to investigate the effect of self-regulation strategies on goal progress. Furthermore, based on earlier research suggesting that situational self-regulation strategies are more effective for reaching long-term goals (Duckworth et al., 2016), the second aim is to examine whether the effect will be stronger for situational self-regulation strategies. Situational self-regulation strategies in this study will be defined as the combination of two self-regulation strategies measured in this study, situation selection and social support. The final aim of the study is to investigate whether the effect of self-regulation strategies on goal progress is mediated by self-efficacy.

It is hypothesized that there will be a positive effect of self-regulation strategies on goal progress, such that the use of self-regulation strategies promotes successful goal progress. Furthermore, it is expected that the effect of situational self-regulation strategies is stronger than for non-situational self-regulation strategies. At last, it is hypothesized that self-efficacy mediates the effect of self-regulation strategies on goal progress, such that self-regulation strategies have an indirect effect on goal progress through self-efficacy (see figure 1). Since young adulthood is a critical period where individuals form goals based on their desired direction in life, participants in this study will only be individuals in their young adulthood years. However, knowledge from this study could benefit all age groups that are interested in forming goals and goal-directed behavior. For instance, knowledge from this study could be used to develop special intervention programs that are specialized in improving self-efficacy and helping people to set self-regulation strategies for themselves.

**Figure 1.**

*The expected relationship between self-regulation strategies and goal progress mediated by self-efficacy*

![Graphical user interface

Description automatically generated with medium confidence]()

**Method**

**Participants**

A total of 127 individuals completed the first survey of the study. However, because of missing data, 34 participants were excluded from the analysis. Therefore, a total of 93 participants from the first survey were used. A total of 47 individuals completed the second survey of the study. Thus, the final sample of the study on which the analysis was performed, was 47 in total. A power analysis with G\*power was performed to calculate the required sample size for this study (Faul et al., 2007). The calculated required sample size was 118, thus the final sample of 47 participants was not sufficient to get enough power for the analysis. The age range of participants was from 18-29 years old, the mean age was 22.94 years with a standard deviation of 2.87. The age range for the period of young adulthood has been defined differently over the years and is therefore not fixed (Enstad, et al., 2019; Petry, 2002). This particular age range was chosen for this study based on the article by Arnett et al. (2014) that defined young adulthood ranging from this age. A total of 15 males and 32 females completed both surveys. The largest nationality group of the sample was Icelandic (N = 20). Nine participants were Dutch, and the rest was from another nationality (N = 18). Distribution of the educational level of the participants can be seen in table 1.

**Table 1.**

*Educational level of the sample*

|  |  |  |
| --- | --- | --- |
|  | Frequency | Percent |
| High school | 16 | 34 |
| College | 7 | 14.9 |
| Trade/technical/vocational training | 1 | 2.1 |
| Bachelor’s degree | 20 | 42.6 |
| Master’s degree | 1 | 2.1 |
| Prefer not to say | 1 | 2.1 |
| Other | 1 | 2.1 |

Participants were largely recruited from the personal background of the researcher. Firstly, participants were university students living in a student accommodation in Utrecht where the researcher of this study is currently living. Secondly, participants were Icelandic individuals with different educational backgrounds that the researcher knows. Thirdly, participants were recruited through the Sona System, where Dutch bachelor’s students were able to participate and get a course credit for participation. The sample is therefore a convenience sample.

**Experimental design**

There was no manipulation in the present study and goal progress was only measured at one time point. Therefore, the design of the present study is a correlational design. The independent variables are the ten self-regulation strategies and the dependent variable goal progress. Self-efficacy was analyzed as a mediator.

**Procedure**

The study was approved by the Ethical Review Board of the Faculty of Social and Behavioral Sciences of Utrecht University and was filed under number 21-0777. The research was conducted digitally, participation was voluntary and anonymous. Multiple measurement tools were used which were implemented through the free survey software Qualtrics. First, participants were recruited by sending potential participants message about the purpose of the study and whether they would be willing to participate in it. The link for the study was included in the message, so participants who agreed to participate could immediately complete the first questionnaire. The participants were first briefed by means of an introductory text about the experiment and then they were asked to sign an informed consent before participating in the experiment. Participants were asked to report demographic information. During the first timepoint, participants were asked to choose their own goal that they wish to work on for the upcoming month which was assessed with the GSSI questionnaire. This was an open-ended question, so participants were able to choose any goal they wanted. Goal was defined as something important to the participants that they would want to achieve for the next coming month. Participants were also asked to indicate how they perceive this goal in terms of importance and attainability. Additionally, participants’ self-regulation and self-efficacy was assessed. Self-regulation was measured with the Brief Self-Control Scale, which asks about people’s general self-regulation as a trait (BSCS; Tangney et al., 2004). Self-efficacy was assessed with the New General Self-Efficacy Scale, but it measures people’s general self-efficacy (Chen et al., 2001). At the end of the first assessment, participants were asked to provide their email address in order for the second questionnaire to be automatically sent to them. After one month, an automatic link was sent to the participants’ email addresses where they were asked about how their goal has been progressed (Koestner et al., 2012). Additionally, they were asked to display which self-regulation strategies they used to achieve their goal, in which ten different strategies were measured. The self-regulation strategies were only assessed in the second time point, to explore what strategies participants had already used in order to achieve their goal.

**Measures**

*Demographics*

Participants were asked about their gender by asking them whether they identify as male, female or nonbinary. Next, participants were asked about their age and response options were from 18-29 years. Furthermore, they were asked about their highest level of education and the response options were: High school, college, trade training, bachelor’s degree, master’s degree, professional degree, doctorate degree, prefer not to say and other. At last, they were asked about their nationality which was an open question, so participants were able to write down their own nationality.

*GSSI*

This questionnaire assesses participants’ most important goal that they are going to pursue in the next month. The questionnaire assesses how participants feel about their goal and how important it is for them. This is assessed by asking participants to indicate to what extent they agree with statements about goal perception on a scale from 0 through 100. Examples of statements about goal perception are *„When I reach this goal, I feel proud and happy”* and *„I don’t like the things I have to do for this goal”*. Additionally, it includes one statement that measures self-efficacy; *„I doubt whether I can achieve this goal“* which is reverse coded. Furthermore, the questionnaire estimates what self-regulation strategies participants used to reach their goal, but it measures ten different strategies. The ten different strategies are: planning, monitoring, social support, situation selection, cognitive change, automatization, persistence, inhibition, initiation and self-reward. Examples of statements estimating the different strategies are *„I check whether I’m doing the right thing” (monitoring)* and *„I keep going when it’s difficult” (persistence).* The statements for the self-regulation strategies are scaled from 0 through 100 (See Appendix A). The last question of the questionnaire which asks about self-regulation strategies was presented in the second assessment of the study. Therefore, the last question was separated from the rest of the questionnaire since the other part of the questionnaire was presented in the first assessment. The internal consistency for the self-regulation strategies of this questionnaire revealed a Cronbach’s alpha of .788.

*Self-efficacy*

To measure self-efficacy an adapted version of a questionnaire developed by Sherer and colleagues (SGSE; 1982) was used (Chen et al., 2001) which is called the New General Self-Efficacy Scale (NGSE). This questionnaire includes eight statements for example „*I will be able to achieve most of the goals that I set for myself*“ and is scored from 1 (*strongly disagree*) through 5 (*strongly agree*) (See Appendix B). Internal reliability for the SGSE scale has been sufficient (α = .86) and the test-retest reliability high (r = .90) (Chen et al., 2001). Scores range from 12 (the lowest) to 40 (the highest), with a higher score demonstrating higher self-efficacy (Chen et al., 2001). The internal consistency of this scale revealed a Cronbach’s alpha of .804.

*Trait self-control*

To measure the trait self-control, The Brief Self-Control Scale (BSCS; Tangney et al., 2004) was used. This questionnaire includes 13 statements like *„I am good at resisting temptation”* and is scored from 1 (*not at all*) through 5 (*very much*) (See Appendix C). Internal consistency for BSCS has been adequate (α = .85) and the test-retest reliability as well (r = .89) (Tangney et al., 2004). Scores range from 13 (minimum) to 65 (maximum), with a higher score indicating higher self-control (Tangney et al., 2004). The internal consistency of this questionnaire gave a Cronbach’s alpha of .802.

*Goal-progression*

Goal progress was assessed using three items: „I have made a lot of progress toward my goal, “„I feel like I am on track with my goal plan,“ and „I feel like I have achieved my goal.“ Ratings are on a 7-point Likert scale from 1 (*strongly disagree*) through 7 (*strongly agree*) (Koestner et al., 2012). The scale has shown to have good internal consistency (α = .92) and the test-retest reliability as well (r = .79) (Koestner et al., 2012). Previous research has calculated the mean of several follow-up reports to calculate the summary of goal progress (Koestner et al., 2012), but since goal progression was only measured at one point in this study, it was assessed by calculating the mean of the three items. The internal consistency for this scale showed a Cronbach’s alpha of .913.

**Data-Analysis**

The statistical analyses in the study were conducted with the statistical software SPSS (version 26) and additionally the SPSS macro PROCESS. An alpha level of .05 was used as a significance level for all the statistical analyses. First, the data was prepared for analysis. Missing values were excluded from the study. Missing values were defined as cases that did not complete the second survey of the study. A new variable was computed to combine the two situational self-regulation strategies of the study, situation selection and social support, to one variable. The non-situational self-regulation strategies were also combined to one variable. Additionally, another variable was computed to combine the three questions assessing goal progression into one variable. A preliminary analysis was conducted for both assessments to provide an overview of the frequency and distributions of the descriptive statistics of the study.

After all participants had completed both assessments of the study, a correlation analysis was performed to see what self-regulation strategies were positively correlated to goal progress. First, a correlation analysis was performed for the average of the self-regulation strategies and goal progress. Next, the correlation was analyzed with respect to the distinction between the situational and the non-situational strategies. Additionally, a correlation analysis was performed to explore whether self-control as a trait was positively correlated to the self-regulation strategies. It was performed by examining the average of the self-regulation strategies. Next, a linear multiple regression was performed as a means to answer the first aim of the study, whether there is a positive effect of self-regulation strategies on goal progress. The first regression was performed by analyzing the self-regulation strategies individually with goal progress. To answer the second aim of the study, whether situational strategies are more effective than non-situational self-regulation strategies, another linear multiple regression was performed. The regression was performed separately for the combined situational strategies and the combined non-situational strategies.

In order to explore the last aim of the study, whether the relationship between self-regulation strategies and goal progress is mediated by self-efficacy, a mediation analysis by means of an extension program for SPSS, PROCESS macro v3.5 by Andrew F. Hayes was conducted. First, a mediation analysis was conducted where self-efficacy was analyzed as a mediator between the average of the self-regulation strategies and goal progress. At last, a mediation analysis was performed with respect to the distinction between the situational and non-situational self-regulation strategies. The mediation analysis was only conducted for the self-regulation strategies that were positively correlated to goal progress, the other strategies were excluded from the meditation analysis. To test the significance of the indirect effect of self-efficacy, bootstrapping procedures were conducted by computing the 95% confidence interval.

**Results**

Descriptive statistics for the main variables of the study can be seen below in table 2. Descriptives can be seen for the average of the self-regulation strategies as well as the strategies individually.

**Table 2.**

*Descriptive statistics for the main variables*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | N | Minimum | Maximum | Mean | Std. Dev. |
| Self-control | 47 | 1.46 | 4.08 | 2.895 | .579 |
| Self-efficacy | 47 | 2.75 | 5.00 | 3.949 | .417 |
| Self-regulation strategies | 47 | 29.11 | 90.90 | 60.356 | 16.037 |
| Planning | 47 | 12.00 | 100.00 | 64.17 | 22.57 |
| Monitoring | 47 | 6.00 | 100.00 | 63.83 | 24.38 |
| Seeking social support | 46 | 0 | 100.00 | 45.41 | 36.31 |
| Situation selection | 47 | 10.00 | 100.00 | 65.19 | 27.60 |
| Cognitive change/reappraisal | 47 | 0 | 100.00 | 56.51 | 24.64 |
| Automatization | 47 | 5.00 | 100.00 | 62.72 | 27.07 |
| Persistence | 47 | 7.00 | 100.00 | 70.93 | 24.61 |
| Inhibition | 46 | 20.00 | 100.00 | 70.45 | 23.52 |
| Initiation (reverse coded) | 47 | 0 | 100.00 | 48.06 | 27.23 |
| Rewarding oneself | 47 | 1.00 | 100.00 | 56.89 | 30.58 |
| Goal progress | 47 | 1.67 | 7.00 | 5.092 | 1.431 |

A correlation analysis was first performed to examine what self-regulation strategies were positively correlated with goal progression. The average of the self-regulation strategies revealed a significant correlation with goal progression, *r* = 0,584, *p* < .001. This indicates that the self-regulation strategies as a whole enhance goal progress. The correlation results for the individual strategies and goal progression can be seen below in table 3.

**Table 3.**

*Correlation between the individual strategies and goal progression*

|  |  |
| --- | --- |
| Self-regulation strategies | Goal Progression |
| Planning | .125 |
| Monitoring | .319\* |
| Seeking social support | .252 |
| Situation selection | .452\*\* |
| Cognitive change/reappraisal | .174 |
| Automatization | .458\*\* |
| Persistence | .439\*\* |
| Inhibition | .551\*\* |
| Initiation (reverse coded) | .439\*\* |
| Rewarding oneself | .296\* |

*Note.* \**p*<.05, \*\**p*<.01.

The results revealed a positive correlation for seven of the self-regulation strategies with goal progression, as can be seen from table 3. This implies that most of the individual self-regulation strategies promote goal progress. However, three strategies (*planning*, *seeking social support* and *cognitive change*) had a low and a non-significant correlation. Furthermore, only one of the situational self-regulation strategies (*situation selection*) revealed a significant correlation of *r* = .452, *p* < .001, whereas the other situational self-regulation strategy (*seeking social support*) revealed a non-significant correlation of *r* = .252, *p* = .091. The strategy *inhibition* had the strongest correlation with goal progress, *r* = .551, *p* < .001.

Moreover, a correlation analysis was performed to explore the correlation between self-control as a trait and the self-regulation strategies. The results revealed that there was no correlation between the average of the self-regulation strategies and self-control as a trait, *r* = .281, *p* = .056. Thus, the results showed that self-control does not seem to be related to the self-regulation strategies. Self-control was therefore not taken into account for the regression analyses of the study and not examined any further.

A linear multiple regression was performed to explore whether there is a positive effect of self-regulation strategies on goal progress. All of the self-regulation strategies were included in the regression analyses. A significant regression equation was found (*F*(10, 34) = 2.417, *p* = .027), with an R2 of .416. According to this, the ten self-regulation strategies account for a significant 41,6% of the variance for goal progress. This suggests that there is a positive overall effect of self-regulation strategies on goal progress. However, only one self-regulation strategy, *inhibition* (*p* = .024) was a significant predictor for goal progress when the other strategies were held constant. This self-regulation strategy also had the highest correlation with goal progression in the correlation analysis. Results for the first regression analysis can be seen below in table 4.

**Table 4.**

*Results of the first linear multiple regression analysis*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B | Std. Error | Beta | t | Sig. |
| (Constant) | 2.457 | 1.069 |  | 2.298 | 0.28 |
| Planning | .003 | .010 | -.045 | -.274 | .786 |
| Monitoring | -.009 | .012 | -.150 | -.764 | .450 |
| Seeking social support | -.001 | .007 | -.028 | -.161 | .873 |
| Situation selection | .012 | .009 | .238 | 1.324 | .194 |
| Cognitive change/reappraisal | -.007 | .011 | -.124 | -.618 | .541 |
| Automatization | .009 | .009 | .175 | 1.014 | .318 |
| Persistence | -0.10 | .013 | -.174 | -.825 | .415 |
| Inhibition | .028 | .012 | .456 | 2.360 | .024\* |
| Initiation (reverse coded) | 0.12 | .009 | .227 | 1.314 | .198 |
| Rewarding oneself | .006 | .008 | .131 | .802 | .428 |

*Note.* \**p*<.05, \*\**p*<.01.

Another linear multiple regression was calculated to examine whether the situational self-regulation strategies are more effective than the non-situational self-regulation strategies. The regression analysis was performed separately for the situational and the non-situational strategies. Firstly, a regression analysis was performed for the situational self-regulation strategies. A significant regression equation was found (*F*(1, 45) =9.899, *p* < .001), with an R2 of .425. Based on this, the situational self-regulation strategies account for a significant 42.5% of the variance for goal progress. Secondly, a regression analysis for the non-situational strategies was performed. A significant regression equation was found (*F*(1, 45) =24.391, *p* < .001), with an R2 of .593. According to this, the non-situational self-regulation strategies account for a significant 59.3% of the variance for goal progress. Therefore, both the situational and the non-situational strategies seem to have an effect on goal progress, although the effect for the non-situational strategies seems to be stronger. Results of the regression analyses for both the situational and the non-situational self-regulation strategies can be seen below in table 5.

**Table 5.**

*Results of the second linear multiple regression analysis*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | B | Std. Error | Beta | t | Sig. |
| Situational strategies | .023 | .007 | .425 | 3.146 | .003\*\* |
| Non-situational strategies | .056 | .011 | .593 | 4.939 | .000\*\* |

*Note.* \**p*<.05, \*\**p*<.01.

Self-efficacy was examined as a mediator of the relationship between the average of the self-regulation strategies and goal progress. The simple main effect of self-efficacy on goal progress was non-significant, (*b* = -.0440, *t* = (44)-.097, *p* = .923), whereas the simple main effect of self-regulation strategies on goal progress was significant (*b* = .052, *t* = (44)4.45, *p* < .001). The significance of the indirect effect of self-efficacy was tested by looking at the bootstrapping results. The 95% confidence interval ranged from [-.0098, .0073] which reveals that the indirect effect of self-efficacy was non-significant. Thus, the relationship between the average of the self-regulation strategies and goal progress was not found to be mediated by self-efficacy. As figure 2 illustrates, the standardized regression coefficient between the self-regulation strategies and self-efficacy was significant, as was the standardized regression coefficient between self-regulation strategies and goal progress. However, the standardized regression coefficient between self-efficacy and goal progress was found to be non-significant. The standardized indirect effect was (.0098) (-.0440) = -.0004.

**Figure 2.**

*The relationship between the self-regulation strategies and goal progress mediated by self-efficacy*

![Graphical user interface, application

Description automatically generated]()

*Note.* \**p*<.05, \*\**p*<.01.

Furthermore, another mediation analysis with self-efficacy as a mediator was performed by examining the situational and non-situational self-regulation strategies separately. First, a mediation analysis for the situational self-regulation strategies was performed. The results showed that the simple main effect of self-efficacy on goal progress was non-significant (*b* = .251, *t* = (44).505, *p* = .616), whilst the simple main effect of the situational strategies was significant (*b* = .022, *t* = (44)2.764, *p* = .008). The bootstrapping results revealed a 95% confidence interval from [-.0034, .0059], which indicates that the indirect effect of self-efficacy for the relationship between the situational strategies and goal progress was non-significant. As figure 3 shows, the standardized regression coefficient between the situational self-regulation strategies and self-efficacy was significant, as was the standardized regression coefficient between situational self-regulation strategies and goal progress. However, the standardized regression coefficient between self-efficacy and goal progress was found to be non-significant. The standardized indirect effect was (.0053) (.2506) = .0013.

**Figure 3.**

*The relationship between the situational self-regulation strategies and goal progress mediated by self-efficacy*

![Graphical user interface, application

Description automatically generated]()

*Note.* \**p*<.05, \*\**p*<.01.

At last, a mediation analysis for the non-situational strategies was performed. The results revealed that the simple main effect of self-efficacy was non-significant (*b* = .007, *t* = (44).017, *p* = .986), whereas the simple main effect for the non-situational strategies was significant (*b* = .056, *t* = (44)4.572, *p* < .001) The bootstrapping results showed a 95% confidence interval that ranged from [-.0075, .0083]. Therefore, it implies that the indirect effect of self-efficacy for the relationship between the non-situational strategies and goal progress was non-significant. As figure 4 illustrates, the standardized regression coefficient between the non-situational self-regulation strategies and self-efficacy was significant, as was the standardized regression coefficient between non-situational self-regulation strategies and goal progress. However, the standardized regression coefficient between self-efficacy and goal progress was found to be non-significant. The standardized indirect effect was (.0096) (.0075) = .0001.

**Figure 4.**

*The relationship between the non-situational self-regulation strategies and goal progress mediated by self-efficacy*

![Graphical user interface, application

Description automatically generated]()

*Note.* \**p*<.05, \*\**p*<.01.

Thus, the relationship between the situational and the non-situational self-regulation strategies and goal progress was not found to be mediated by self-efficacy. The self-regulation strategies revealed to have an effect on goal progress, whereas self-efficacy did not.

**Discussion**

The general aim of the current study was to investigate the effect of self-regulation strategies and self-efficacy on goal progress. The focus of the study was on individuals in young adulthood. Firstly, it was examined how the use of self-regulation strategies influences goal progress over time, and whether there is a positive effect of self-regulation strategies on goal progression. Furthermore, it was examined whether situational self-regulation strategies are more effective for goal progress, compared to non-situational self-regulation strategies. At last, it was explored whether the effect of self-regulation strategies on goal progress is mediated by self-efficacy.

Support was found for the first hypothesis of the study, exploring whether there is a positive effect of self-regulation strategies on goal progress. In line with expectations, the self-regulation strategies revealed to promote goal progress over time. However, results also revealed that when looking at the strategies individually, it is different for each of the strategies how effective they are in promoting goal progress. For instance, three of the self-regulation strategies revealed that they have no effect on goal progress. Therefore, although the results revealed that the overall effect of self-regulations strategies is positive, it needs to be taken into consideration that each of the strategies should be looked at separately to get a clearer picture of this relationship.

Results for the second hypothesis of the study were not in line with expectations, examining whether situational self-regulation strategies are more effective than non-situational strategies in promoting goal progress. The study revealed that both situational self-regulation strategies and non-situational strategies were a predictor for goal progress. However, the effect of the non-situational self-regulation strategies was stronger than the effect of the situational strategies. Therefore, the second hypothesis of the study could not be confirmed. The fact that the effect of the non-situational strategies was stronger could possibly be explained by the fact that the non-situational strategies were more numerous than the situational strategies. The only two situational strategies might therefore not have been able to reveal how effective they are when compared to the other eight non-situational strategies. Moreover, individuals are not always able to select their situations freely in favor to their goals (Duckworth et al., 2016). Instead, they might be forced to rely on other self-regulation strategies to reach their goals, which could also explain why the non-situational strategies revealed to be more effective. Although the non-situational strategies revealed to have a stronger effect on goal progress, the situational strategies did nevertheless show that they have an effect on goal progress as well.

Finally, the last hypothesis of the study, whether self-efficacy mediates the relationship between self-regulation strategies and goal progress, could not be supported. It was revealed that self-efficacy does not mediate the relationship between self-regulation strategies and goal progress. When the situational and non-situational self-regulation strategies were examined individually with self-efficacy, the results showed that they both had an effect on goal progress, whereas self-efficacy did not have any effect on goal progress. Therefore, it can be assumed that self-regulation strategies play an important role in enhancing goal progress, whereas self-efficacy does not seem to play a role in this relationship. Although previous research has shown that self-efficacy can stimulate peoples’ commitment to their goals (Tinaz et al., 2020), it does not seem to be as effective in promoting goal progress as the self-regulation strategies revealed to be.

However, previous research has suggested that performance in tasks tends to be lower for individuals who have higher self-efficacy in that task (Schmidt & DeShon, 2009). During circumstances when individuals have higher self-efficacy, it can lead to an inflated interpretation of their performance. That in turn causes individuals to spend less effort and time on actions that are necessary for achieving their goals, which consecutively can lead to lower performance (Schmidt & DeShon, 2009). Hence, the relationship between self-efficacy and goal progress appears to be more complex than it may seem. Previous research has both found support for a positive and a negative relationship between self-efficacy and goal-progress (Tinaz et al., 2020; Schmidt & DeShon, 2009). This might explain the fact that a non-significant relationship was found in the current study. Therefore, some support has been found for the unexpected findings of this study.

**Limitations, strengths and future research**

The present study included several limitations, thus the results need to be interpreted with caution. The first limitation of the research was the sample. Firstly, the dropout of the participants was tremendous, but 63% of the participants did not complete the second survey and could therefore not be included in the final analysis. Therefore, the sample size was not sufficiently big to get adequate power for the analysis. Another shortcoming of the study was the distribution of the educational level of the sample, since most of the participants were university students. The educational background of the participants did therefore not provide a representative sample based on the general population. Furthermore, the distribution of the nationality of the sample was skewed as well, but a big proportion of the sample were Icelandic individuals. Due to the fact that the sample was a convenience sample, it was not possible to control for this uneven distribution. Future research should aim to replicate a study like this with a larger sample size that would be drawn out of randomness. At last, another limitation of the research was the measuring instrument for the self-regulation strategies. The ten different self-regulation strategies were only measured with one question each, but more questions might be needed to provide a more thorough measure for all the individual strategies.

Despite the previously mentioned limitations, the study also contained several strengths that needs to be regarded as well. First, both surveys were short and easy to implement, which should have prevented fatigue in participants. Moreover, since the research was conducted digitally, it was easy for participants to fill it in whenever it was convenient for them. Furthermore, the questionnaires conducted in the study have all been recognized as measurements with sufficient internal consistency.

It is crucial to keep in mind that this research was conducted during peculiar times due to the Covid-19 pandemic. Given that most students have been obliged to perform their studies from home because of the pandemic, it is possible that this might have interfered with their motivation to work towards their goals. When daily habits are distorted as they have during the pandemic, it can decrease peoples’ motivation and thus make them less likely to perform as efficiently as they would during ordinary circumstances. It would be interesting to conduct this study again when the impact of the pandemic has passed by and explore whether different results would be found.

**Practical implications**

This study gives important knowledge about the effect of self-regulation strategies in promoting goal progress for people in young adulthood. Given that this study revealed that self-regulation strategies are a crucial factor when it comes to goal progress, this knowledge could be used in practice. For instance, intervention programs could be developed that are specialized in training people to implement self-regulation strategies in their daily life to accomplish their goals. Despite the fact that participants in this study were only individuals in their young adulthood years, the findings from this study could benefit other age groups. Since individuals set themselves goals at any stages during their lifetime, the implementation of interventions from this study could be directed to other age groups. However, it could be that people use different strategies during different periods of their life. Thus, it might be useful to perform more research regarding differences between ages in the use of self-regulation strategies.

Due to the fact that self-regulation strategies can be used to manipulate peoples’ surroundings in order to successfully achieve long-term goals (Duckworth et al., 2016), it emphasizes the importance of teaching individuals how to use self-regulation strategies. For instance, classes directed to achieving goals could incorporate courses about the use of self-regulation strategies in their agenda. Furthermore, enhanced understanding about the individual self-regulation strategies and how effective they are can be used to help individuals achieve their goals more effectively. By focusing more on the self-regulation strategies that showed to be the most effective, individuals could possibly achieve their goals in a shorter amount of time and with less effort. At last, based on the unexpected fact that self-efficacy had no effect on goal progress, it needs to be considered whether self-efficacy is in fact a crucial factor when it comes to goal-directed behavior. The effect of self-efficacy on goal progress seems to be more complex and thus needs to be explored further.

Affiliating previous findings and the contribution to this study, it can emphasize the importance of self-regulation strategies for achieving goals and offer possible approaches to help individuals set self-regulation strategies for themselves. This study is crucial to gain more understanding about the processes that influence goal progress. It both revealed information about what processes seem to be important for successful goal progression and what processes seem to be less important. The current study could therefore be useful when deciding what factors needs to be focused on when goals are being formed and implemented. Since goal-directed behavior plays a crucial part in people’s lives and can remarkably contribute to their well-being (Dietrich et al., 2013), investigating possible processes that could enhance the goal progress is necessary.

**Conclusion**

The aim of the present study was to explore how self-regulation strategies and self-efficacy influence goal progress in young adulthood. Results revealed that self-regulation strategies enhance goal progress over time. However, it was shown that in fact non-situational strategies are more effective than situational strategies in promoting goal progress. The results also revealed that self-efficacy does not mediate the relationship between self-regulation strategies and goal progress. In fact, it does not seem to have any effect on goal progress whatsoever. It can be concluded that, in order to successfully achieve long-term goals, it is crucial to implement self-regulation strategies in daily life. However, more research with a larger sample size is needed to get a better understanding about these processes in relation to goal progress.

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**Appendix A**

**GSSI English version**

Please indicate your most important goal for the coming month:

………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………………….

1. How important is this goal to you? [scale 0-100]
2. How attainable is this goal to you? [scale 0-100]
3. When do you want to achieve this goal?
   1. In a few days
   2. In one week
   3. In a few weeks
   4. In one month
   5. In three months
   6. This is a goal I am always working on
4. How do you feel about this goal? Indicate to what extent you agree with the statements. [scale 0-100] These questions indicate goal perceptions
   1. I doubt whether I can achieve this goal. (self-efficacy (reverse coded))
   2. It is a matter of luck whether I will achieve this goal. (locus of control)
   3. I want to achieve this goal because other people expect this from me. (extrinsic motivation)
   4. This is a goal that I fully support myself. (intrinsic motivation)
   5. I don’t like the things I have to do for this goal. (task aversion)
   6. When I reach this goal, a lot of tension falls off me. (prevention focus)
   7. When I reach this goal, I feel proud and happy. (promotion focus)
5. What actions do you take to achieve this goal? Indicate to what extent you agree with the statements. [scale 0-100] These questions indicate self-regulation strategies
   1. I make a plan how I’m going to do it. (planning)
   2. I check whether I’m doing the right thing. (monitoring)
   3. I ask other people for help. (seeking social support)
   4. I am actively looking for opportunities to achieve my goal. (situation selection)
   5. I stay positive when achieving the goal does not get closer. (cognitive change/reappraisal)
   6. I make a habit of the things that I have to do to achieve my goal. (automatization)
   7. I keep going when it is difficult. (persistence)
   8. I suppress the urge to quit. (inhibition)
   9. I know what I have to do, but I keep putting it off. (initiation (reverse coded))
   10. I reward myself when achieving the goal gets closer. (rewarding oneself)

**Appendix B**

**New General Self-Efficacy Scale**

**Instructions:** Participants are told that (a) general self-efficacy relates to “one’s estimate of one’s overall ability to perform successfully in a wide variety of achievement situations, or to how confident one is that she or he can perform effectively across different tasks and situations,” and (b) self-esteem relates to “the overall affective evaluation of one’s own worth, value, or importance, or to how one feels about oneself as a person.”

**Instructions:** Please circle your answer below.

1. I will be able to achieve most of the goals that I set for myself.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|  |  |  |  |  |

2. When facing difficult tasks, I am certain that I will accomplish them.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|  |  |  |  |  |

3. In general, I think that I can obtain outcomes that are important to me.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|  |  |  |  |  |

4. I believe I can succeed at most any endeavor to which I set my mind.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |

5. I will be able to successfully overcome many challenges.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|  |  |  |  |  |

6. I am confident that I can perform effectively on many different tasks.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|  |  |  |  |  |

7. Compared to other people, I can do most tasks very well.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|  |  |  |  |  |

8. Even when things are tough, I can perform quite well.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Strongly disagree | Disagree | Neither agree nor disagree | Agree | Strongly agree |
|  |  |  |  |  |

**Appendix C**

**The Brief Self-Control Scale**

**Not at all**  **Very much**

1. I am good at resisting temptation 1 2 3 4 5

2. I have a hard time breaking bad habits 1 2 3 4 5

3. I am lazy 1 2 3 4 5

4. I say inappropriate things 1 2 3 4 5

5. I do certain things that are bad for me, if they are fun 1 2 3 4 5

6. I refuse things that are bad for me 1 2 3 4 5

7. I wish I had more self-discipline 1 2 3 4 5

8. People would say that I have iron self- discipline 1 2 3 4 5

9. Pleasure and fun sometimes keep me from getting work done 1 2 3 4 5

10. I have trouble concentrating 1 2 3 4 5

11. I am able to work effectively toward long-term goals 1 2 3 4 5

12. Sometimes I can’t stop myself from doing something, 1 2 3 4 5  
 even if I know it is wrong

13. I often act without thinking through all the alternatives 1 2 3 4 5

*Note*. Items 2, 3, 4, 5, 7, 9, 10, 12, and 13 are reverse keyed.