

RUNNING HEAD: Is two always better than one?

Is two always better than one?: A moderation analysis of self-concordance and self-efficacy on well-being and goal progress

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Abstract

Past research has shown that motivation is an important predictor of goal-related behaviors. Sheldon and Elliot (1999) proposed the Self-Concordance Model (SCM), to distinguish between personal goals that reflect intrinsic interests and values (self-concordant goals) and personal goals that are pursued because of self-imposed and social pressures (self-discordant goals). Another important motivational construct is self-efficacy, people's beliefs in their capabilities to exercise control over their level of functioning and their environment (Bandura, 1996). Self-efficacy has been shown to predict goal attainment and well-being as people who are self-efficacious put more effort and commitment towards their goals (Koestner, Horberg, Gaudreau, Powers, Di Dio, Bryan, Jochum & Salter, 2006). Despite the unique contribution of self-concordance and self-efficacy, little is known about their combined effects. I performed a study with 135 university students to investigate whether two self-regulatory processes could in fact be better than one. Results using hierarchical regression analyses indicated that self-efficacy did moderate the relationship between self-concordance and the outcome variables. Self-concordance was associated with greater well-being and goal progress for those high on self-efficacy ( $\beta = .21, p < .05$ ;  $\beta = .33, p < .01$ ) while negatively relating to well-being and goal progress for those low on self-efficacy ( $\beta = -.22, p = .07$ ;  $\beta = -.19, p > .05$ ). It appears that two motivational processes combined, self-concordance and self-efficacy, are in fact better than one.

Imagine that you are preparing for an exam that takes place tomorrow morning. You have studied for a week, you did the reading, you went to every class, and you feel like you have done everything you could possibly do to prepare for the exam. Unfortunately, I may have left out some important considerations of this goal pursuit process: did you make sure that you are pursuing this goal because it represents your underlying values and how confident are you in your ability to achieve your goal? The reasons people pursue a goal (goal self-concordance) and the belief in their capabilities to achieve it (self-efficacy) are two motivational processes that can either help or hinder one's exam performance and subjective well-being. The current study will investigate how the reasons people pursue goals, specifically how the self-concordance of one's goals and one's level of self-efficacy can combine to produce salutary outcomes, specifically goal attainment and subjective well-being.

#### *The Self-Concordance Model*

The several reasons for which people pursue goals predict performance independently. Sheldon and Elliot (1999) proposed the Self-Concordance Model (SCM), to distinguish between personal goals that reflect intrinsic interests and values and personal goals that are pursued because of self-imposed and social pressures. The SCM focuses on idiographic goals and the degree to which regulation of behavior is either externally or internally motivated. According the SCM there are four reasons in which people pursue personal goals, and these four reasons can be placed along a continuum ranging from controlled to more autonomous forms of motivation (Sheldon & Kasser, 1995). Extrinsic motivation refers to pursuing goals because of pressure from others (e.g.; your parents want you to study hard) or to gain something in return (e.g.; a reward).

Introjected motivation refers to pursuing a goal to avoid feelings of guilt or anxiety (e.g.; if I do not do well I will disappoint my parents). Identified motivation refers to pursuing an activity because it is highly important but may not be enjoyable in and of itself (e.g.; I study because having a strong work ethic is important to me). Finally, intrinsic motivation refers to pursuing a goal because of the fun and enjoyment that the task itself will provide (e.g.; pursuing an academic goal because it feels good). Self-concordant goals are pursued out of intrinsic and identified motivations and non-self-concordant goals are pursued out of introjected and external motivations. According to the SCM, self-concordance of personal goals should be positively related to subjective well-being, effort expenditure, and goal attainment.

#### *Self-Concordance and Subjective Well-being*

The SCM posits that pursuing self-concordant goals leads to increases in subjective well-being. Subjective well-being is defined as the experience of having a positive balance between positive and negative affect, while at the same time having a strong sense of satisfaction with one's life in general (Diener, Suh, Lucas, & Smith, 1999). This definition includes both affective and cognitive judgments of one's contentment with life. Subjective well-being has recently been measured with domain specific measures of job and school satisfaction. Several studies support the link between self-concordance and subjective well-being (Sheldon & Kasser, 1998; Sheldon & Houser-Marko, 2001).

Koestner, Lekes, and Powers (2002) conducted a meta-analysis that showed the link between self-concordant goal pursuit and subjective well-being. More specifically, Sheldon and Kasser (1995), using a prospective correlational design, showed that people

with self-concordant goals were higher on subjective well-being indicators such as openness, empathy, self actualization, positive mood, vitality and role system integration. They reasoned that by choosing self-concordant goals people satisfy their own organismic needs resulting in more positive affect. Sheldon and Kasser (1998) used a correlational design with a number of time points with a single goal analysis to show that the SCM accounts for changes in subjective well-being. Sheldon and Elliot (1999) replicated these findings by showing that the results are also true for longer term goals and they extended those findings to demonstrate that the results also apply when using an aggregate or person level analysis. They also showed that the entire process leading from inception to effort to attainment to changes in well-being can be modeled at the same time. Sheldon and Houser-Marko (2001) used a concurrent design with three time points to show that self-concordant goal pursuit can result in an upward spiral of increases in subjective well-being over time. Overall, the positive relationship between goal self-concordance and subjective well-being has been extensively supported with the use of different study designs, methods and levels of analysis (Sheldon & Houser-Marko, 2001; Sheldon & Elliot, 1999, 1998, Sheldon & Kasser, 1998).

#### *Self-Concordance and Goal Attainment*

People generally feel good when they achieve their goals and one way to ensure goal attainment is by pursuing self-concordant goals (Koestner et al., 2002). Many studies have shown that self-concordance generally predicts goal attainment (Sheldon & Kasser, 1998; Sheldon & Elliot, 1999; Sheldon & Houser-Marko, 2001; Downie, Koestner, Horberg, & Haga, 2006). Sheldon and Houser-Marko (2001) found that the positive effect of self-concordance on goal progress and subjective well-being was

maintained over and above the effects of self-regulatory skills, goal efficacy, and goal commitment and this effect held up over a three month time period. The relationship between goal self-concordance and goal attainment was further supported by a meta-analysis that showed that self-concordance was positively linked to goal attainment with a moderately strong effect size ( $d+ = .37$ ; Koestner et al., 2002).

### *Self-efficacy*

Another important motivational process that helps people succeed at goal attainment is self-efficacy, people's beliefs in their capabilities to exercise control over their level of functioning and their environment (Bandura, 1996). Self-efficacy refers to the belief in one's capabilities to organize and execute the courses of actions required to manage current and future situations. It can influence the choices we make, the effort we put forth, how long we persist in the face of obstacles and how we feel (Bandura, 1995, 1997). It is not surprising then, that self-efficacy can influence school success. The relationship between self-efficacy and academic achievement has been extensively supported (Robbins, Lauver, Langely, Le & Davis, 2004).

### *Self-efficacy and Achievement*

A meta-analysis conducted by Robbins et al., (2004) that used 109 studies with different designs (ie; cross-sectional, randomized, prospective-longitudinal, and correlational), showed strong relationship between self-efficacy and achievement outcomes in colleges as they found a moderate effect size ( $\rho = .359$ ). Several variables were included: self-efficacy, achievement motivation, academic goals, institutional commitment, perceived social support, social involvement, academic related skills, contextual influences, and general self-concept. After controlling for socio-economic

status and grade point average, they found that academic self-efficacy was the best predictor of college outcomes for students enrolled in a four year college or university in the United States. Lent, Brown, and Hackett, (1994) found that students with stronger self-efficacy beliefs persevered and succeeded in their academic coursework more so than students with lower self-efficacy beliefs, as they were able to prepare themselves better academically (Lent, Brown, & Hackett, 1994). Bandura, Barbaranelli, Caprara, and Pastorelli (1996) used path analysis to show that academic efficacy was significantly related to academic achievement ( $r = .45, p < .0001$ ). Specifically, they found that children that had high self-efficacy beliefs had higher scholastic achievement both independently and in relation to others because it promoted higher academic aspirations and pro-social behavior. In a related study, Zimmerman, Bandura and Martinez-Pons (1992) also used path analysis to show that students' academic self-efficacy at the beginning of a semester predicted final grades in a social studies class, such that high levels of self-efficacy resulted in higher grades for that semester. Bandura (1997), using several studies, found that self-efficacy determined achievement outcomes in various fields such as education, work, or sports. Self-efficacy has been shown to predict goal attainment as people who are self-efficacious put more effort and commitment towards their goals (Koestner et al., 2006). It is quite clear that self-efficacy is related to achievement, and since goal attainment feels good it must also be related to well-being (Brown, Lent & Larkin, 1989, Koestner et al., 2002; Bandura, 1997).

#### *Self-Efficacy and Subjective Well-Being*

A recent longitudinal study showed that academic self-efficacy predicted life satisfaction five years later over and above the effects of academic achievement and peer

performance in middle school (Vecchio, Gerbino, Pastorelli & Caprara, 2007). Similarly, Lent, Singley, Sheu, Gainor, Brenner, Treistman, and Ades (2005) conducted two studies that showed that satisfaction in a particular life domain was predicted by self-efficacy, perceived goal progress and environmental resources. Specifically, self-efficacy explained unique variance in subjective well-being (comprised of life satisfaction, positive affect and domain life satisfaction) even after controlling for affectivity and extraversion (Lent et al., 2005). Also, two longitudinal studies were conducted by Judge, Bono, Erez and Locke (2005), one with university students and the other with employees, showed that one's core self-evaluations (which comprise generalized self-efficacy, self-esteem, locus of control, and neuroticism) were positively associated with both job satisfaction (study 1) and life satisfaction (study 2). A longitudinal study conducted across three age groups (ages 11, 13, and 15) showed that both social support and self-efficacy influence one's sense of community, which is strongly positively related to subjective well-being (Vieno et al., 2007). In a study with six different age groups ranging from age 20-70, showed that self-efficacy positively influenced one's cognitive and affective components of subjective well-being (Caprara & Steca, 2007). Since self-efficacy and self-concordance independently lead to salutary outcomes, it is possible that they could be combined to produce even better outcomes.

#### *Self-efficacy as a Moderator*

In one of the first studies using self-regulation as a moderator, Senecal, Nouwen, and White (2000) found that intrinsic motivation led to positive outcomes in diabetes patients only for those patients that were also high on self-efficacy. We reasoned that since self-concordance is made up of intrinsic or identified levels of motivation, self-

concordance should also be able to be combined with self-efficacy to produce positive outcomes. Sheldon and Kasser (1998), in three studies in the academic domain, showed that the relationship between self-concordance and goal progress was actually quite low ( $r = .02$ ;  $r = .08$ ;  $r = .09$ ), and interestingly, this relationship became high when effort was involved. Effort is produced when people are self-efficacious. Both these studies seem to suggest that self-concordance could be combined with self-efficacy to produce goal progress and other positive outcomes.

#### *Rationale for combining self-concordance and self-efficacy*

Given that self-concordance and self-efficacy are both self-related motivational processes that independently contribute to salutary outcomes, such as goal attainment and subjective well-being, it is conceivable that both could reside in the individual at the same time producing even greater positive outcomes. This study aims to study two motivational processes together rather than in competition with one another, which has never been done before. The aim of this study was to examine the moderating role of self-efficacy in the relationship between self-concordance and goal progress and subjective well-being.

#### Hypothesis

In general, we hypothesize that self-concordance will positively relate to subjective well-being and goal progress. Specifically, self-concordance will have a strong positive effect on subjective well-being only for those people who are also high on self-efficacy. We expect that self-concordance will have a negative effect on subjective well-being only for those people who are also low on self-efficacy. Self-concordance is expected to have a strong positive effect on goal progress only for the students that were

also high on self-efficacy. Self-concordance will strongly diminish goal progress only for those students who are also low on self-efficacy.

## Method

### *Participants*

The sample consisted of 189 undergraduate students, but only 135 participants completed the entire Time 1 and Time 2 questionnaires and were included in the analyses (female = 100, male = 35). Out of the participants that were excluded, only one student failed to set an academic goal and consequently was excluded from the analyses, 43 completed only Time 1 measures, eight completed only Time 2 measures, and three were multivariate outliers. The students were enrolled in various programs of study including health sciences (n = 46), arts (n = 23), sciences (n = 24), business (n = 13), engineering (n = 1) social science (n = 27) and one unknown, at a Canadian university. The age of the participants ranged from 17 to 46 (M = 19.59, SD = 3.73). The sample included first year (n = 90), second year (n = 27), third year (n = 12), and fourth year students (n = 4), as well as two unidentified students. Participants were treated in a manner consistent with the ethical standards of the American Psychological Association.

### *Measures*

*Self-Concordance (Time 1).* Participants were asked to set a realistic personal academic goal that they could realistically strive for during the next month. Self-concordance was measured using Sheldon and Kasser's (1995, 1998) method of measuring self-concordance in terms of the reasons people have for pursuing a goal. Using four questions, participants rated their level of self-concordance on their personal goal. The items were rated on a 9 point Likert type scale ranging from 1 (not at all for this

reason) to 9 (totally because of this reason). The four types of reasons were, external (“because somebody else wants you to, or because you will get something from someone if you do it”), introjected (“because you would feel ashamed, guilty, or anxious if you did not”), identified (“because you really believe that it is an important goal to have; you endorse it freely”), and intrinsic (“because of the fun and enjoyment which the task/goal itself provides”). This procedure was used successfully in prior studies that measured self-concordance (Koestner, Lekes, Powers, 2002). As in previous research, a self-concordance index for the goal was calculated by subtracting the sum of extrinsic and introjected ratings from the sum of intrinsic and identified ratings (Grolnick & Ryan, 1987; Sheldon & Kasser, 1995, 1998).

*Self-Efficacy (Time 1)* The Academic Efficacy subscale from the Patterns of Adaptive Learning Scales was used to assess school self-efficacy (Midgley, Maehr, Hruda, Anderman, Anderman, Gheen, Kaplan, Kumar, Middleton, Nelson, Urdan, 2000). This measure contained five items that were rated on a 7-point Likert-type scale that ranged from 1 (does not correspond at all) to 7 (corresponds totally). Participants responded to the self-efficacy questions while keeping in mind how each item corresponded to their life at the university at the current moment. In this sample, the internal consistency of the self-efficacy scale was acceptable ( $\alpha = .93$ ).

*Subjective Well-Being (Time 2)*. The Short Positive and Negative Affect Schedule (Short-PANAS; Mackinnon, Christensen, Korten, Jacomb, Rodgers, 1999) and the Satisfaction With Life Scale (SWL; Pavot & Diener, 1993) were used to measure subjective well-being. The short-PANAS contained 9 items with 4 items measuring positive affect and 5 items measuring negative affect. All items were rated on a 7 point

scale ranging from 1 (a little or not at all) to 7 (totally). The Satisfaction With Life Scale has five items rated on a 7 point scale ranging from 1 (not at all agree) to 7 (totally agree). Participants were asked to reflect on their current feelings when responding to the three scales. The internal consistency of the three scales was acceptable: positive affect ( $\alpha = .94$ ), negative affect ( $\alpha = .93$ ), and life-satisfaction ( $\alpha = .93$ ). The subjective well-being variable was created by subtracting negative affect from the sum of the positive affect scores and the life-satisfaction scale scores (e.g., Miquelon, Vallerand, Grouzet, & Cardinal, 2005; Sheldon et al., 2004).

*Goal progress ( Time 2).* Participants were asked to rate their level of progress made on their self-set academic goal over the last month. Goal progress was rated with three questions using a 9-point Likert-type scale.

#### *Procedure*

This study used a short term prospective design with two measurement points. At Time 1, two weeks prior to mid-term examinations, participants were asked to set a realistic academic goal to strive for over the next month, and then they completed a goal self-concordance measure, and the Academic Efficacy subscale. At Time 2, two weeks after mid-term examinations, participants completed the goal progress questions, and finally the well-being measures.

Participants were recruited from undergraduate classes through the Integrated System of Participation in Research where students from introductory psychology courses had the chance to participate in studies for bonus marks towards their course completion activities. Students were also recruited through laboratory members' advertising of the study during short, pre- arranged presentations to classes. Participants

who volunteered were given an identification code to access the survey on the internet. Participants were instructed to complete the survey independently in a quiet environment away from distraction. Subjects provided electronic informed consent prior to the first packet of questionnaires and were debriefed through email directly after completion of the second survey.

## Results

### *Preliminary Analyses*

A total of 189 participants participated in this study, but only 135 completed both the first and second questionnaire, yielding a retention rate of 71%. Attrition analyses indicated that the participants who completed the second survey did not differ significantly from those who dropped out after Time 1 on any of the Time 1 variables: self-concordance,  $F(1, 176) = .52, p > .05$ ; self-efficacy,  $F(1, 176) = 1.67, p > .05$ . Similarly, participants who dropped out after Time 1 did not differ significantly in terms of gender,  $F(1, 176) = 0.17, p > .05$ ; age  $F(1, 176) = 0.15, p > .05$ ; or academic level,  $F(1, 176) = 0.24, p > .05$ . Using the Mahalanobis distance critical value for nine variables,  $\chi^2(9) = 14.06, p < .05$ , six participants were identified as multivariate outliers. The resulting 129 participants were included in the main analyses, and the descriptive statistics are available in Table 1.

### *Analyses*

Self-efficacy and self-concordance were only moderately positively correlated, as these are different yet related processes (Table 1). Self-efficacy correlated positively with subjective well-being and goal attainment (Table 1). These results are consistent with previous studies on self-concordance and self-efficacy (Koestner et al., 2006).

*Subjective Well-Being at Time 2.* A moderated hierarchical regression was performed on Time 2 subjective well-being. The centered scores of self-concordance and self-efficacy were entered at the first step. The multiplicative term of the self-concordance centered variable and the self-efficacy centered variable were entered at the second step. As shown in Table 2, there was a significant interaction between self-concordance and self-efficacy when predicting well-being. Self-concordance had a strong positive effect on subjective well-being only for students who were also high on self-efficacy ( $\beta = .21, p < .05$ ). As expected, the effect of self-concordance on well-being diminished for those low on self-efficacy ( $\beta = -.22, p = .07$ ). Simple slope analyses are shown in Figure 1.

*Goal Progress at Time 2.* As shown in Table 2, the interaction between self-concordance and self-efficacy on goal progress was significant. Results of simple slope analyses are shown in Figures 2. Self-concordance had a strong positive effect on goal progress only for the students that also were high on self-efficacy ( $\beta = .33, p < .01$ ). As expected, the positive effect of self-concordance on goal progress diminished for those who were low on self-efficacy ( $\beta = -.19, p > .05$ ).

#### *Ancillary Analyses*

Ancillary analyses were performed on each of the three indicators of subjective well-being, separately. Results indicated that the interaction between self-efficacy and self-concordance was a substantial predictor of positive affect,  $F(2, 128) = 13.40, \Delta R^2 = .02, \beta = .21, p < .05$ , negative affect  $F(2, 128) = 15.20, \Delta R^2 = .04, \beta = -.19, p < .05$  and life-satisfaction  $F(2, 129) = 10.45, \Delta R^2 = .02, \beta = 1.74, p = .09$ . The results of simple slope analyses at high and low levels self-efficacy were highly similar to those reported

with the overall index of subjective well-being. Results of simple slope analysis for positive affect at low levels of self-efficacy were ( $\beta = -.16, p = .20$ ) and at high levels of well-being ( $\beta = .27, p = .02$ ). For negative affect at low levels of self-efficacy were ( $\beta = .28, p < .05$ ) and at high levels of self-efficacy ( $\beta = -.11, p = .32$ ). Lastly, for life satisfaction at low levels of self-efficacy, ( $\beta = -.12, p = .36$ ) and at high levels ( $\beta = .17, p = .14$ ).

### Discussion

The current study investigated the role of self-efficacy in the relationship between self-concordance and goal attainment and subjective well-being. We found that students with high levels of self-concordance showed greater progress on their academic goals and increased levels of subjective well-being only for those students who were also high on self-efficacy. What was interesting was that those students with high self-concordance had lower levels of goal attainment and levels of subjective well-being when they were low on self-efficacy. This makes sense and is consistent with the literature on self-efficacy as it has been shown that students with higher levels academic efficacy show greater persistence, effort, and intrinsic interest in their academic learning and performance than those with lower levels of efficacy (Schunk, 1984).

Although we found strong support for our hypotheses in this study, it is important to mention a few limitations to this study. Firstly, the results from this study are not able to be generalized to other populations. The fact that we only conducted one study with a population of University students means that the results might only hold true with a cohort of students ages 17-24. Therefore, it is important that future research includes other populations such as people who are older or perhaps people who solely work

instead of studying only University students. If the results are consistent with many different populations, our results would then be generalizable. Future research should also include more ways of measuring self-efficacy, for example, a sense of community is highly linked to self-efficacy and this could be taken as a different approach to measuring self-efficacy (Vieno, Santinello, Pastore, & Perkins, 2007). We used a correlational design, which does not allow us to determine causality and thus future research should be done using different study designs such as experimental and longitudinal studies. Personal efficacy not only determines persistence and effort but it also can determine coping (Bandura, 1977). Therefore, future research should investigate whether the interaction of self-concordance and self-efficacy could predict coping strategies. Thus, people high on self-concordance and self-efficacy would cope better than those with lower levels of self-efficacy. If this proves true, then interventions could be created which help people increase their levels of self-concordance and self-efficacy to help people cope better.

The findings from our study are important for a variety of reasons. Knowing more about the relationship between self-concordance and goal attainment through self-efficacy adds to the literature on the Self-Concordance Model. This study is unique as it sheds more light on the SCM because it specifies the conditions that self-concordance can help and sometimes hinder performance. For example, we found that high self-concordance and low levels of self-efficacy are negatively related to performance outcomes. It also adds to the literature on self-regulation as researchers in the last few years have tended to put self-concordance and self-efficacy in competition with each other, to see which one is more effective in goal attainment and well-being but our study

is the first to show that these variables are complimentary rather than competing constructs (Senecal, 2000; Bandura, 1997; Brown, Lent & Larkin, 1989). Since the combination of self-concordance and self-efficacy predicts goal attainment, and subjective well-being interventions could be created to help students achieve their academic goals, have higher levels of well-being and succeed in school.

In conclusion, the results of our analyses show that self-efficacy is a moderator in the relationship between goal self-concordance and subjective well-being and goal progress in a sample of University students. Most importantly, this is one of the first studies that shows that within the Self Concordance Model, self-concordance does not always lead to positive outcomes, as self-concordance can lead to lower levels of subjective well-being and diminished goal progress when a person is low on self-efficacy. Also, this study showed that two motivational processes, self-concordance and self-efficacy can both reside in an individual at one time and when they do, the consequences are better than ever. In conclusion, this study has shown that two motivational processes are in fact much better than one.

Table 1: Descriptive statistics and bivariate correlations between the variables

	1	2	3	4	5	6	7
1. Self-Concordance at Time 1	----						
2. Self-efficacy at Time 1	.43**	----					
3. Positive affect	.28**	.40**	----				
4. Negative affect reversed	.18*	.43**	.63**	----			
5. Life satisfaction	.18*	.37**	.76**	.60**	----		
6. Well-being	.24*	.46**	.91**	.84**	.90**	----	
7. Goal progress	.19*	.31**	.29**	-.21*	.33**	.33**	----
<i>M</i>	4.80	5.11	4.56	3.12	4.15	5.57	4.86
<i>SD</i>	4.92	1.08	1.42	1.48	1.49	3.76	1.70

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

Table 2: Interactive effects of self-concordance and self-efficacy on well-being and goal progress

Effects	B	t	B
Time 2 well-being			
Step 1 $\Delta R^2 = .23$ , $\Delta F(2, 128) = 18.60$ , $p < .01$			
Goal Concordance	.02	.27	.02
Self Efficacy	1.62	5.56**	.47**
Step 2 $\Delta R^2 = .04$ , $\Delta F(1, 127) = 7.60$ , $p < .01$			
Goal Concordance X Self efficacy	.15	2.76**	.21**
Time 2 Goal progress			
Step 1 $\Delta R^2 = .10$ , $\Delta F(2, 130) = 7.17$ , $p < .01$			
Goal Concordance	.03	.98	.09
Self Efficacy	.43	3.01**	.27**
Step 2 $\Delta R^2 = .06$ , $\Delta F(1, 129) = 9.03$ , $p < .01$			
Goal Concordance X Self efficacy	.08	3.01**	.24**

Note. All the reported parameter estimates are from Step 2. \*\*  $p < .01$ . \*  $p < .05$

Figure 1: Simple slope analysis of self-concordance on subjective well-being at high and low levels of self-efficacy

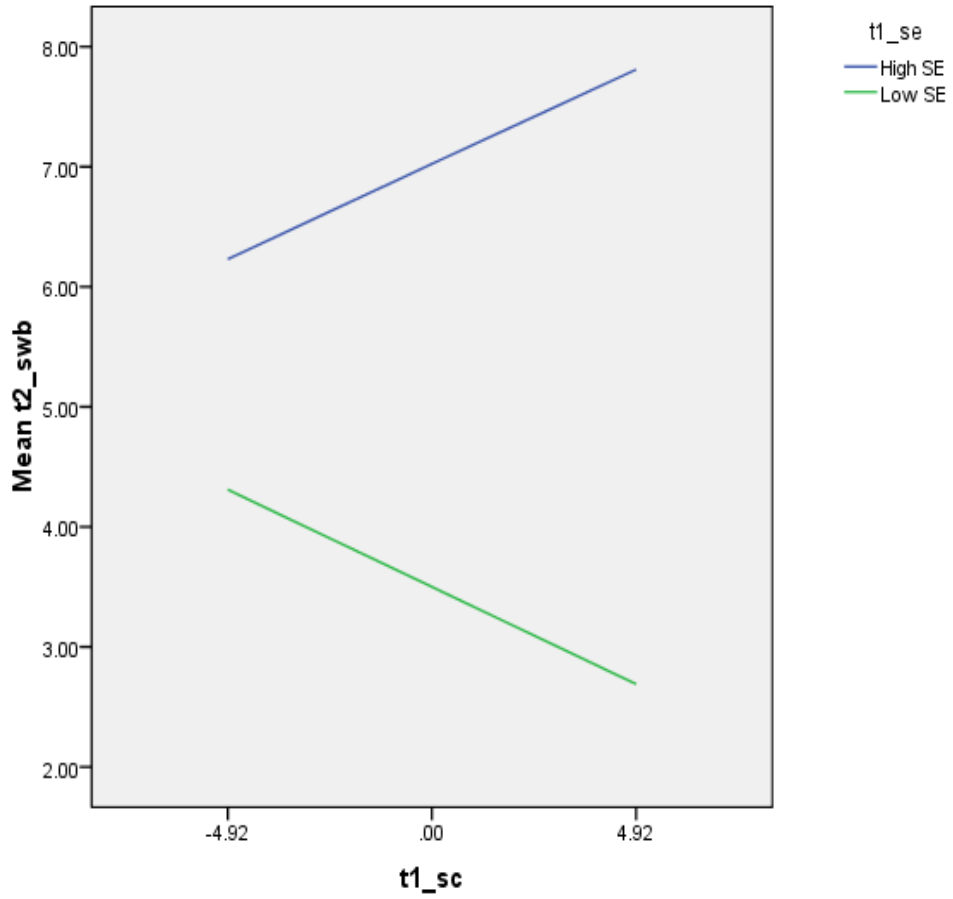
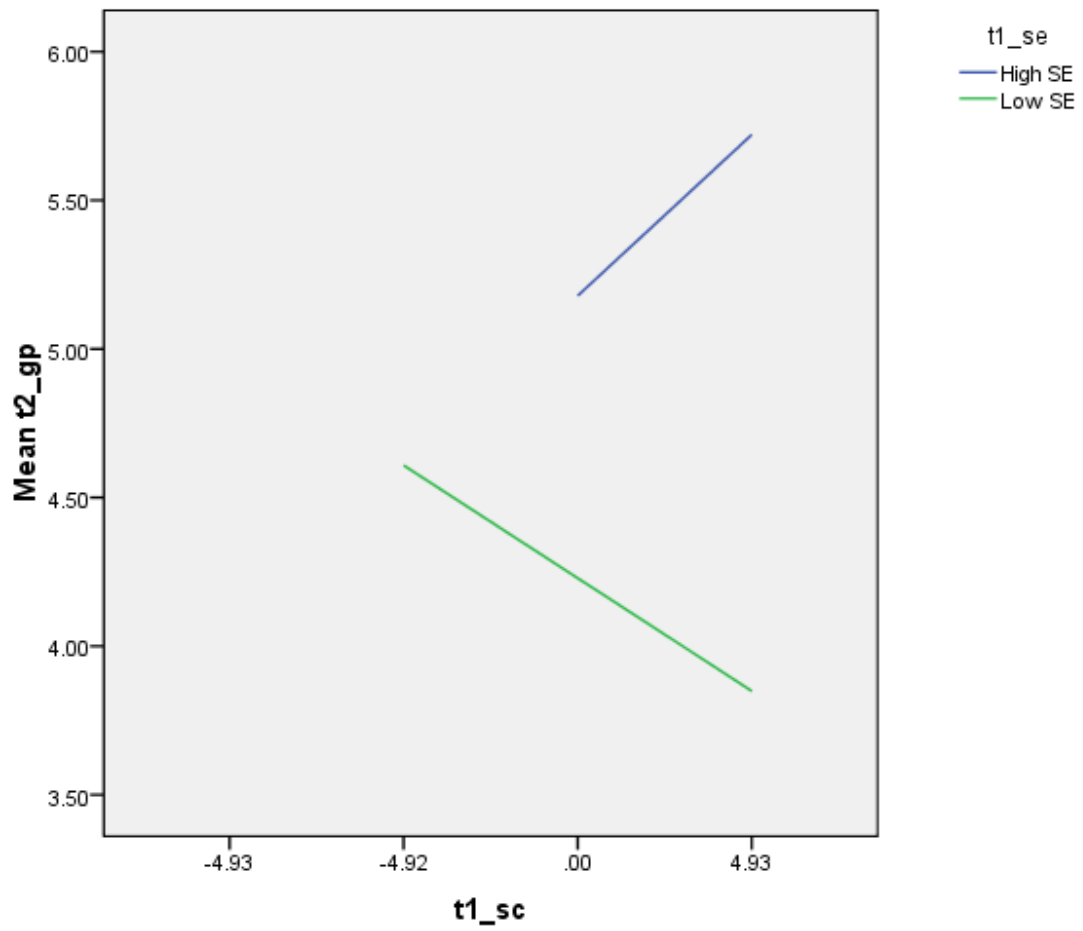


Figure 2: Simple slope analysis of self-concordance on goal progress at high and low levels of self-efficacy



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