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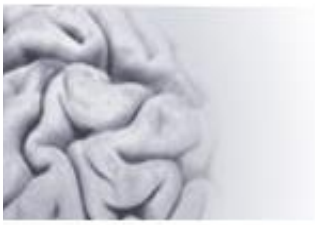

The relation between a growth mindset and career success

A new perspective on how to achieve more career success

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Abstract

Previous research showed that a growth mindset, the belief that human skills and traits can be developed, is positively related to academic success. Other research shows a positive relation between a lifelong learning mindset, where someone is focused on learning opportunities, and career success. The current study investigated the relation between a growth mindset and subjective and objective career success. This would be useful for career success interventions. In addition, we expected that subjective and objective career success would be related. 96 graduates from the Master of Psychology of Leiden University filled in a survey. The results showed no relation between a growth mindset and subjective and objective career success. However, we found a small positive relationship between subjective and objective career success. Future research could investigate the relation between a growth mindset and career success, by taking career stages, learning from error, and the controllability belief into account.

Keywords: growth mindset; subjective career success; objective career success

Layman's Abstract

This study investigated if people who believe traits and skills can always be improved (who have a growth mindset), are more likely to be successful in their careers. Previous findings show that these people get better grades than people who believe that they are born with a fixed level of traits and skills. Another study found that people focused on learning have more success in their careers. Could it be that people who believe in the possibility of improvement of traits and skills experience more career success? 96 graduates of Leiden University with a Master's degree in Psychology filled in a survey with questions about growth mindset, and career success divided into the opinions and feelings about their career success and the times promoted, the amount of salary, and the number of job responsibilities. We found no proof that people with a growth mindset have more career success. However, we did find a connection between opinions and feelings about career success and the times promoted, salary, and the number of job responsibilities. We think that the duration of your career, the ability to learn from mistakes, and the belief that you can fix your mistakes might be important to find a relation between a growth mindset and career success. Therefore, we suggest that future studies should investigate this.

Introduction

The relation between a growth mindset and career success

Are you successful in your career? If you are, you are probably happy about that. If you are not, you are probably wondering how you could change that. Being successful and happy in our careers is what most of us find important. Career success has many benefits. We are less likely to quit our jobs, we feel better about our careers, we feel better about ourselves, and it improves our general health (Spurk et al., 2019). Thus, we could say that career success would help us become happier in life. However, most of us do not know how exactly we could achieve a successful career. If you know how you could control your career success, your life would be much easier. Therefore, you might wonder: what can I do to become successful in my career?

A wide variety of factors influence career success (Spurk et al., 2019). For example, your education, how involved you are with your work, how good you are at your tasks, how you solve problems, the network you are in, and many more factors all influence your career success (Spurk et al., 2019). Although Spurk and colleagues (2019) provide a clear overview of what is important for career success, they do not say if a growth mindset is also important for career success.

Someone with a growth mindset believes that human traits and skills, like intelligence and talent, can be developed by training (Dweck, 2017a). Thus, if we would adjust our behavior and thoughts to a growth mindset, would that mean we could achieve career success? Previous research found that a growth mindset is positively related to academic success (Yeager et al., 2016). What if we take this a step further? Does a growth mindset also have a relation to the amount of success in their career? Research

shows that mindset is related to objective and subjective career success in undergraduates (Drewery et al., 2020). Objective career success is an external and observational measure of career success (e.g., promotions, salary, and job responsibilities; Spurk et al., 2019). Subjective career success is an evaluation and a more internal measure of someone's career success (e.g., career satisfaction, growth and development, life-work balance, meaningfulness, influence, job satisfaction, recognition, quality of work; Shockley et al., 2016). However, previous research does not show if there is a relation between a growth mindset and objective and subjective career success after graduation. The current study will provide insight into the possible relation between a growth mindset and objective and subjective career success in graduates. This study will contribute to expanding the literature about the influence of a growth mindset. Next to that, the current study is useful for future interventions about a growth mindset. If there is a positive relation between a growth mindset and career success, then these growth mindset interventions could be used to help people get more career success. Therefore, let us dive into a possible action to take to achieve career success: adapting to a growth mindset.

Theoretical background

The growth mindset is part of a theory about the influence of thought developed by Dr. Carol S. Dweck (Dweck, 2017a). This theory states that mindsets are belief systems that influence our thoughts, emotions, and behavior (Dweck, 2017a). As mentioned earlier, someone with a growth mindset believes that human traits and skills, like intelligence and talent, can be developed by training. The opposite is the fixed mindset. This is when one believes that human traits and skills are fixed, and thus cannot be changed (Dweck, 2017b).

We expect someone with a growth mindset to experience more career success, because people with a growth mindset will see ‘making an effort’ as necessary to become better at a task (Dweck, 2017a). People with a growth mindset experience more difficult tasks as a chance to become better. When they are challenged, they are more likely to keep trying because they believe that they can become more skilled (Dweck & Yeager, 2019). This is seen as challenge-seeking behavior. Thus, in the end, people with a growth mindset will keep trying to improve. People with a fixed mindset will see a task as proving their ability. Therefore, they will avoid tasks that are harder because failing would imply that they are not smart enough. They do not believe they could become better at it by trying over and over like people with a growth mindset. Challenging tasks are therefore more avoided by people with a fixed mindset (Rege et al., 2020). Consequently, fixed-minded people are less successful because they do not try to become better (Dweck, 2017a). We do not state that a growth mindset is better than a fixed mindset. Both mindsets have their behaviors and thoughts benefits. We only imply that, according to the literature, we expect that people with a growth mindset have more career success.

The experience of more success when people adjust to a growth mindset was already shown in some studies. Yeager and colleagues (2019) show in their study that a growth mindset intervention of one hour could already positively impact the GPA scores in core courses, mathematics, and science of secondary scholars. However, lower-performing students’ GPAs improved in core courses and science, and not in mathematics. During this one-hour online intervention, the students learned about the ability to develop traits and skills over time. This study shows that a growth mindset

intervention could help to increase skills and get the student more success in their courses. Thus, this study connects a growth mindset to academic success. However, this study does not show whether a growth mindset is also related to the student's success after graduation, specifically in their careers. To our knowledge, no research has investigated the relation between a growth mindset and career success.

However, Drewery and colleagues (2020) did look at another mindset, a lifelong learning mindset, and its relation with objective and subjective career success. The term lifelong learning mindset means a focus on finding opportunities to learn (Drewery et al., 2020). This could be compared to a growth mindset, where someone also has a focus on learning more to improve their skill. A lifelong learning mindset focuses on an opportunity to learn. A growth mindset believes that every human trait and skill can be learned (Drewery et al., 2020; Dweck, 2017a). There is some overlap between these mindsets. However, when one has a lifelong learning mindset, that does not mean that they also have a growth mindset. For example, someone with a lifelong learning mindset starts learning a new skill. They will be focused on all the learning opportunities to become better at it (Drewery et al., 2020). Thus, extra guidance or reading more books about it. The lifelong learning mindset makes sure that the person is not missing any opportunities to learn. Possibly, this will improve their ability to perform their skills successfully. On the other hand, there is someone with a growth mindset. This person starts learning a new skill and they fully believe that they can learn it. Therefore, they will seek out opportunities to learn, which is the same in someone with a lifelong learning mindset. However, someone with a growth mindset will also be better at not giving up after failure, they want to try harder levels of that skill, they will ask for feedback, and

they will believe that they can improve their skill (Yeager et al., 2016; Dweck, 2017a; Dweck & Yeager, 2019), thus they will keep trying. You see that there is an overlap between a lifelong learning mindset and a growth mindset in seeking opportunities to learn. However, a growth mindset is more about dealing with setbacks and believing in the possibility of improvement.

Although a lifelong learning mindset does not entail everything that a growth mindset does, the study of Drewery and colleagues (2020) does connect mindset to career success. They found a positive relation between a lifelong learning mindset and subjective career success, and a positive relation between a lifelong learning mindset and objective career success. That is, students who have a lifelong learning mindset have more promotions, perform better according to their supervisors, are happier with their careers, are more willing to work extra for their careers, and believe that they can do a good job. Since there is some overlap between a lifelong learning mindset and a growth mindset, we expect similar results for people with a growth mindset. However, the study about lifelong learning mindset used undergraduate financial students doing a four-month internship as their sample to measure career success. Thus, we cannot be sure what a growth mindset would mean for people who are graduated and are actually working on their careers. Next to that, as discussed above, a lifelong learning mindset does not cover all the behaviors and thoughts that a person with a growth mindset would show. We could only conclude from the lifelong learning mindset study that mindset could be connected to the career success of undergraduates. Therefore, in the current study, we want to look for a positive relation between a growth mindset, and objective and subjective career success in graduates.

However, we have to take into account that objective and subjective career success are related to each other, although the relation is relatively small (Ng et al., 2005; Abele & Spurk, 2009; Abele et al., 2011; Spurk et al., 2019; Pico-Saltos et al., 2021). The literature does not give a clear view of what we could expect of the relation between objective and subjective career success, because it depends on the variables that are measured in the other studies (Abele & Spurk, 2009; Abele et al., 2011; Spurk et al., 2019). There is to our knowledge no previous research the relation between a growth mindset and objective and subjective career success. A growth mindset is therefore a new variable and we cannot know how this influences the relation between objective and subjective career success. Next to that, it is important to look at this relation because if a growth mindset is related to the two types of career success, we should also explore if the reason is the relation between subjective and objective career success. Research shows that objective and subjective career success are still used as separate types of career success (Abele et al., 2011; Spurk et al., 2019; Pico-Saltos et al., 2021). Thus, we will investigate the relation between a growth mindset and objective career success, and a growth mindset and subjective career success. In addition, we will look at the relation between objective and subjective career success in our sample.

In summary, we expect people with a growth mindset to have more subjective career success. Next, we hypothesize that people with a growth mindset will have more promotions, higher salaries, and more job responsibilities (objective career success). Lastly, we will look at the relation between objective and subjective career success. We expect that these two will be related to each other. We will test these hypotheses by using three questionnaires to measure growth mindset, subjective career success, and objective

career success. In doing so, we will answer the research question: “What is the relation between a growth mindset and objective and subjective career success?”

Method

Design

This study was a correlational survey study design. There were four dependent variables: 1) subjective career success, and objective career success: 2) promotions, 3) salary, and 4) job responsibilities. We used one independent variable: growth mindset. Growth mindset and subjective career success were measured on a continuous scale. The item to measure promotions was on a interval level. Salary and job responsibilities were measured on an ordinal level.

The current study was part of a larger study that investigated the career paths of alumni of two Master’s programs at Leiden University: Economic and Consumer Psychology (ECP) and Social and Organizational Psychology (SOP). The items used to calculate the scores of subjective career success, objective career success, and mindset were part of the survey that was used in the larger study.

Participants

The participants were alumni of the Leiden University Psychology Master programs that graduated between August 2016 and February 2022. This sample was chosen because the current study was part of a larger study that investigated the career paths of alumni of the Masters: Social and Organizational Psychology and Economic and Consumer Psychology. Before, a study had been done with alumni from the ECP Master that graduated before February 2016. Therefore, we only included Mater Psychology alumni that graduated after February 2016. During the study, we noticed that we did not

have enough participants. Therefore, we decided to include every alumni with a Psychology Master from Leiden University that graduated after February 2016. Thus, we excluded the participants who were no alumni of the Psychology Masters of Leiden University. Next to that, we only included participants that filled in every item from the Subjective Career Success Inventory and the three questions about objective career success (promotions, salary, and job responsibilities). One participant missed one item from the Dweck Mindset Instrument. We decided to still include this person because they gave us enough items to still calculate the growth mindset. The other participants in this sample filled in all the items of the Dweck Mindset Instrument. From the 160 participants, we used the data from 96 alumni that filled in the questionnaire. The exclusion of the other participants will be explained in more detail in the Results section. Of the participants, there were 21 males, 72 females, 1 other, and 2 preferred not to say. The average age was 27,8 (SD = 4.92, range: 21-57). The highest level of education of 93 participants was University Postgraduate (Master's degree), 2 attained a Doctorate (PhD) and 1 chose "other". 72,9 percent of the sample was from the Netherlands, 19,3 percent was from Europe (besides the Netherlands), and 7,8 percent are from outside of Europe.

Beforehand, we calculated the sample size we would need to test the hypotheses with enough statistical power by using the G*Power3 (Faul et al., 2007). We used the effect sizes of study 1 in the article of Drewery and colleagues (2020) to calculate the sample size for the subjective and objective career success variables. We used a linear multiple regression with an F-test set as the test family. We calculated the sample size for subjective career success with the squared correlation of $r = .09$, an $\alpha = .05$ and the $\beta = .8$, with one predictor. The sample size for subjective career success should be at least $N =$

82. Next, we calculated the sample size for the objective career success factors (promotions, salary, and job responsibilities). To calculate the sample size we used the squared correlation of $r = .17$, an $\alpha = .05$ and the $\beta = .8$, with three predictors. The sample size for the objective career success factors should be at least $N = 58$. Our sample consists of 96 participants. This is higher than both calculated sample sizes for subjective and objective career success. Therefore, we have enough power to perform a MANOVA.

Measures

Subjective Career Success Inventory

Subjective career success was measured by using the validated Subjective Career Success Inventory (Shockley et al., 2016). This questionnaire has 24 items, divided into eight constructs of three items each, on an answering scale from 1 *(strongly disagree)* to 5 *(strongly agree)*. The eight constructs are: Recognition (e.g.: "my supervisors have told me I do a good job"), Quality of work (e.g.: "I am proud of the quality of the work I have produced"), Meaningful work (e.g.: "I think my work has been meaningful"), Influence (e.g.: "decisions that I have made have impacted my organization"), Authenticity (e.g.: "I have felt as though I am in charge of my own career"), Personal life (e.g.: "I have been able to have a satisfying life outside of work"), Growth and development (e.g.: "I have expanded my skill sets to perform better") and Satisfaction (e.g.: "my career is personally satisfying"). The reliability was $\alpha = .892$, which is good for scientific purposes. We computed the subjective career success variable by making a new variable that consisted of the mean score on the questions of the Subjective Career Success Inventory. There are no reversed-scored items in this questionnaire. The average subjective career success in

our sample was 4.38 (*SD* = .52). A high score represents more subjective career success. The Subjective Career Success Inventory can be found in Appendix A.

Dweck Mindset Instrument

Growth mindset was measured using the Dweck Mindset Instrument (DMI) (Dweck et al., 1995). This questionnaire measures where on the dimension between a fixed and a growth mindset someone is. The participants are asked for their opinion on 8 questions about intelligence (e.g.: "You can always substantially change how intelligent you are") and 8 questions about talent (e.g.: "You can change even your basic level of talent considerably") on a scale from 1 *(strongly agree)* to 5 *(strongly disagree)*. The reliability is $\alpha = .932$, which is very good for scientific purposes. We computed the growth mindset score by calculating the mean of the Dweck Mindset Instrument. After recoding the reversed-scored item, the average score on the Dweck Mindset Instrument was 3.73 (*SD* = .78). High scores represent more growth mindset. The Dweck Mindset Instrument can be found in Appendix B.

Objective Career Success

The participants filled in three questions to measure objective career success. We asked the participants about their current monthly salary. They chose between twelve categorized answering options (0-1000, 1001-2000, 2001-3000, .., till above 10 000), including a no salary option. No participants chose the category of "*More than 10.000 euro*", therefore salary was measured on an ordinal level. The average salary category was between 2001-3000 (*M* = 3.94, *SD* = .90). Then, they answered three yes/no questions about the ability to delegate work, if they have responsibility for a project and if they have a leadership position. We summed the number of yes on these three

questions to calculate the job responsibility score. On average the participants had 1.53 job responsibilities (*SD* = .95, range: 0-3). Thus, the participants had on average 1 or 2 out of the 3 job responsibilities. In addition, we used the question from the alumni study about the number of promotions someone has had. The participants could choose between seven options: no promotions, 1, 2, 3, 4, 5, and more than 5 times). No participants chose the last category of "*More than 5 promotions*", therefore we treated promotions as an interval level variable. The average number of promotions in the current sample is 1.93 (*SD* = 1.01). This means that on average participants had been promoted almost once, because no promotion was coded as 1, and once promoted was coded as 2. The measures for objective career success can be found in Appendix C.

Procedure

We gathered the participants for the current study by using Facebook and LinkedIn to send direct messages and general messages on the Psychology Master group pages. First, the participants were informed about the study and had to give their consent for using their answers for the current study. Next, we checked if they were alumni of the Leiden University Psychology Master. As mentioned above we decided to broaden our sample in order to get enough participants. We chose to use two surveys to get more responses because the survey of the larger study would limit us to only two groups of Psychology Master Alumni. Next to the survey with alumni questions, we decided to also use a survey with subjective and objective career success and mindset items, excluding the alumni questions. Therefore, we could include more people in our sample and got enough participants.

We based the order of the questionnaires on getting the lowest influence of other questionnaires on the subjective career success questionnaire. Therefore, we started with the subjective career success to not let the answers the objective career success influence the answers on the subjective career success. Then the participants filled in the longest questionnaire (alumni questionnaire) so that they would not have to do that at the end. This was only applicable to the participants who filled in the survey from the larger study. Next, they answered the items of the Dweck Mindset Instrument. After that, the participants answered the questions about the objective career success and completed the survey with some demographic questions about age, gender, nationality, and their highest education level. There was also room for comments about the survey in this section.

This took the participants about 15 minutes for the survey of the larger study and about 5 minutes for the shorter version. Finally, the participants got a debriefing about the subject and purpose of the current study.

The questionnaires were put together using Qualtrics. The participants used this program to fill in the survey. The data was gathered and put into the database of Leiden University.

Ethics

The current study is approved by the Psychology Ethics Committee of Leiden University. During the study, we followed the ethical guidelines.

Statistical analyses

We used IBM SPSS 27 to test the hypotheses. First, we screened the data and deleted any test cases we added ourselves. We computed the scores for each variable. Next, we checked the assumptions before performing the MANOVA. We performed a

MANOVA with the four dependent variables: subjective career success, promotions, salary, and job responsibilities. The independent variable was mindset, we used this as a covariate. This test showed us the results that we could use for the hypothesis that a growth mindset is related to subjective career success and objective career success (promotions, salary, and job responsibilities). After that, we tested with Spearman's correlation analysis to see whether subjective career success and promotions, salary, and job responsibilities (objective career success) are related to each other. This showed the individual correlations between each of the objective career success variables to subjective career success. We also tested this hypothesis with the MANOVA, this analysis showed us if there were any connections between subjective career success and every objective career success variable together.

Results

Data Screening

Before we analyzed the data, we screened the data on full completion of the survey, date of survey completion, and graduation date. Of the 160 people that filled in the survey, 65% completed the whole survey. The end of data collection was on the 3rd of October 2022, therefore we only included people who filled in the survey before the 4th of October 2022. Fortunately, all participants did, therefore we could use them for the current study. However, of the 104 people, 92% graduated after February 2016, which was one of our exclusion criteria. This gave us a final sample of $N = 96$.

The relation between a growth mindset and career success

Assumptions

To test the relation between a growth mindset and career success, we analyzed the data using a MANOVA. First, we checked all the assumptions before performing a MANOVA. All the assumptions were met, except for the normality assumption for the objective career success variables (promotions, salary, and job responsibilities). However, each of the dependent variables had at least 15 participants in it. Thus, the MANOVA is robust for the normality assumption (Pallant, 2016). The assumptions of homogeneity of variance-covariance matrices could not be checked because we did not have between-subjects factors in this analysis.

However, there were several outliers on growth mindset, monthly salary, and promotions when checking for univariate outliers. There were two outliers on growth mindset that scored relatively low (more than three standard deviations below the mean). Salary showed six participants that scored relatively high (three participants scored more than one standard deviation above the mean, and three more than two standard deviations above the mean). Salary also showed eight participants that scored relatively low (three participants scored more than one standard deviation below the mean, three more than two standard deviations below the mean, and two more than three standard deviations below the mean). Promotions showed five participants that scored relatively high (three participants with more than two standard deviations above the mean, and two with more than three standard deviations above the mean). We chose not to delete the outliers from our dataset because it is possible that some people earn way more money than others and

could have been promoted more. Next to that, it could be possible that there are people who have a more fixed mindset than other people. There were no multivariate outliers.

We chose to continue our analyses because our sample was large enough that the assumptions of normality and equality of variance would not impact our results (Pallant, 2016).

Main analysis

We performed a MANOVA with the growth mindset as the independent variable and subjective career success, promotion, salary, and job responsibilities as the dependent variables. Our total sample was $N = 96$. There was no significant relation between a growth mindset and subjective career success (F (1,94) = .192, p = .662, partial eta squared = .002). There was also no significant relation between growth mindset and the objective career success variables promotions (F (1,94) = .106, p = .746, partial eta squared = .001), salary (F (1,94) = .329, p = .568, partial eta squared = .003), and job responsibilities (F (1,94) = .013, p = .908, partial eta squared < .001). Thus, we found no support for our hypothesis that a growth mindset has a positive relation with subjective career success. Neither did we find support that a growth mindset has a positive relation with promotions, salary, and job responsibilities (objective career success).

Relation between subjective and objective career success

Assumptions

To test the relation between subjective and objective career success, we analyzed the data with Spearman's correlation analysis. The variables in our data did show some non-normal distribution and outliers. Therefore, we choose the Spearman correlation analysis because it is robust against extreme violations of normality (Havlicek &

Peterson, 1976) and outliers (Blest, 2000). The other assumptions for this analysis were met.

Main analysis

The MANOVA showed no significant relation between the dependent variables: subjective career success, promotions, salary, and job responsibilities (F (4,91) = .104, p = .981). However, the correlational analysis showed that subjective and objective career success (promotions, salary, and job responsibilities) are significantly correlated with each other as shown in Table 1. The correlations between subjective career success (SCS) and promotions, salary, and job responsibilities are positive and small.

Table 1

Correlations between subjective career success (SCS) and objective career success (promotions, salary, and job responsibilities)

Variables		SCS		Promotions		Salary	
	n	*r*	*p*	*r*	*p*	*r*	*p*
Promotions	96	.230	.024	-	-	-	-
Salary	96	.274	.007	.544	<.001	-	-
Job responsibilities	96	.230	.024	.322	<.001	.321	<.001

Table 1 also shows that the objective career success variables “promotions, salary, and job responsibilities” are significantly correlated with each other. The correlation between job responsibilities and promotions is positive and moderate. Salary and job responsibilities have a moderate positive correlation. The correlation between promotions and salary is positive and large.

The significant small correlations between subjective and objective career success support our hypothesis.

Discussion

The current study investigated the relation between a growth mindset and subjective and objective career success. We expected that people with a growth mindset would have more subjective career success and more promotions, a higher salary, and more job responsibilities (objective career success). In addition, we expected that subjective and objective career success are related to each other.

Growth mindset and subjective and objective career success

The results showed no support for the hypothesis that a growth mindset has a positive relation with subjective career success. Neither did we find support for the hypothesis that a growth mindset has a positive relation with the number of promotions, salary, or more job responsibilities. The findings of the current study seem to be inconsistent with previous research discussed in the introduction (Yeager et al., 2016; Drewery et al., 2020). These findings raised the question of why we did not find a relation between a growth mindset and career success.

We found additional research that is in line with the findings of the current study. The research shows that it could be possible that the belief in improvement is not enough for a link between mindset and career success (Chen et al., 2020). It could be that believing that you can improve your skills, does not mean that you know how. Next to that, a growth mindset mediates the relation between being able to learn from errors and performing well at your job (Caniëls et al., 2021). This could be a possible explanation for the results we found in the current study. A growth mindset might only lead to success when the person with a growth mindset knows how to learn from the mistake. If they do not know how they can improve, they would not have more career success than

someone with a fixed mindset. Would this mean that the sample in the current study might not know how to improve their career? Compared to the study of Drewery and colleagues (2020) and Yeager and colleagues (2016), the current study used graduates instead of undergraduates to measure success. It could be that the undergraduates get more guidance and feedback because they are more focused on learning. Thus, they are better informed about how to learn from errors. Someone who is graduated is expected to do their job well and might only get help when they would ask for it. Thus, it is more likely that graduates focus on doing the job well, than to focus on learning from errors. However, this reasoning is speculative and needs to be tested in the future.

Furthermore, the study by Song and colleagues (2020) also supports this reasoning. They found that believing that you can control what is necessary to attain your goals, will lead to success. To get success, someone who failed must believe that the causes for failure are controllable by them (Song et al., 2020). If not, they cannot improve their skill. Someone with a growth mindset believes that they can improve their skill with enough effort and practice (Dweck, 2017a). However, does that mean that they will always find how to and believe that the cause of failure is controllable by them? We could argue that the people in the current study might not be able to control the reasons that they fail, or they do not believe that they are in control to change them. This could be because of organizational regulations or a work environment where they do not have a voice in decision-making. Having a voice in an organization is important for a problem-solving mindset, which is a mindset that focuses on finding creative solutions for problems (Curhan et al., 2010). Moreover, the participants of the current study just entered the workforce. Therefore, it could be that as a “new” employee they might not yet

have a voice in decisions. The ability or belief that someone is not in control of solving the problem possibly negatively influences someone's possibility to be successful at their job. This might be why the current study did not find a relation between a growth mindset and subjective and objective career success.

Relation between subjective and objective career success

Next to the relation between a growth mindset and the two types of career success, we also investigated if there was a relation between objective and subjective career success. The current study showed no relation between subjective and objective career success when we did the MANOVA with the growth mindset and the four dependent variables (subjective career success, promotions, salary, and job responsibility). However, we did find support for the relation between subjective and objective career success with the correlational test. This test showed that subjective career success is positively related to promotions, salary, and job responsibilities. This means that someone with more subjective career success also has more promotions, a higher salary, and more job responsibilities. However, the relations between subjective career success and promotion, salary, and job responsibilities are small. Thus, the current study found conflicting results. What does this mean for the possible relation between subjective and objective career success?

We believe both results are indicating the scientific and practical need for more research on this relation. On the one hand, the current study supports previous claims about the distinctiveness of subject and objective career success (Ng et al., 2005). On the other hand, the results support the relation between subjective and objective career success (Abele & Spurk, 2009). Below, we discuss why we think that there is a relation

between subjective and objective career success, although one of the tests showed no support, and what could explain the small relation in the current study. In addition, we discuss why it is important for research to investigate this relation further.

The significant correlations found in the current study are in line with previous research about the positive relation between objective and subjective career success (Ng et al, 2005; Abele et al., 2011; Spurk et al., 2019; Pico-Saltos et al., 2021). Although the MANOVA showed no support for this relation, the previous research gives us reason to pay attention to the possibility of a relation between these types of career success. Most research suggests that we could see these types of career success as distinct concepts that have an influence on each other (Spurk et al., 2019). These findings support our claim to believe that there is a relation between these types of career success. However, we do acknowledge that this relation is small and needs more investigating.

Previous research shows how subjective and objective career success influence each other (Abele & Spurk, 2009). Over time, subjective career success influences objective career success (Abele & Spurk, 2009). People who experience subjective career success will have more objective career success in the future because the positive experiences now positively affect self-confidence and motivation (Abele & Spurk, 2009). Therefore, they would perform better. Which may get them promoted, gives them more job responsibilities, and gives them a higher salary. As a consequence, this will lead to more subjective career success. This effect has been shown after seven years of working (Abele & Spurk, 2009). The participants in the current sample graduated between one month to six years. Therefore, the participants could be experiencing the influence of

subjective and objective career success on each other. This could be a possible explanation for the current findings. However, this reasoning is speculative.

Other research explains why the relation between objective and subjective career success is small (Ng et al, 2005). The small relations might represent the distinctiveness between subjective and objective career success (Ng et al., 2005). It could be that this is the case because people value career success differently. Some people find salary, being promoted, or having many responsibilities at work important and think that that is being successful. Other people feel that being satisfied with your career is being successful. Next to the difference between people, research has shown that what people think is successful early in their career, changes during their lifespan (Ng et al., 2005; Abele & Spurk, 2009; Hupkens et al., 2021). What people find important at the beginning of their career changes in the later stages of their career (Hupkens et al., 2021). For example, people in the first career stage find financial security less important than recognition for their work. This switches during their career (Hupkens et al., 2021). The distinctiveness between subjective and objective career success that we see between and within people might explain why we found a small relation.

The discussed literature suggests reasons for a possible relation between subjective and objective career success. We believe that understanding the relation between these types of career success is important for future research. If we do not understand how subjective and objective career success are related, we find ourselves with more questions when researching their relation with other factors. If we understand this relation, we can better understand their relation to other factors.

Additional findings

The current study found relations between the objective career success measures. Promotions and salary show a large positive relation with each other. This would mean that the number of promotions that someone got also increases their salary. This makes sense because people probably get promoted to higher functions that pay them more.

The relations between job responsibilities and promotions, and job responsibilities and salary were positive and moderate. This means that the more promotions someone has gotten the more job responsibilities someone has, and the more job responsibilities someone has higher their salary is. This is somewhat surprising because research shows that people are more likely to be promoted after six years of working (Zamudio & Meng). The current sample has working experience between one month and six years. There could be other variables at play that we did not measure that would explain these relations. We speculate that this relation is logically explained by that people who get promoted will have more job responsibilities and therefore will be paid more.

Strengths and limitations

To our knowledge, the current study was the first to research the relation between a growth mindset and career success in graduates. Therefore, we contribute to expanding our knowledge of the growth mindset and its connection to career success. Besides being the first, the current study had some more strengths. For one, we chose to only include participants that were graduated for at least one month, in comparison with previous research that tested the relation between mindset and success in undergraduates (Yeager et al., 2016; Drewery et al., 2020). Next, we had enough participants for the statistical power of our statistical analyses. That makes our analysis more reliable. In addition, we

used standardized and validated questionnaires for subjective career success and the growth mindset. Both questionnaires had high reliability.

However, the current study has some limitations. The first limitation is that the participants in the current sample graduated between one month to six years ago. This means that they are in the first career phase (Hupkens et al., 2021). In the first seven years after graduation objective career success is slowly increasing and subjective career success is slowly decreasing (Abele & Spurk, 2009). However, this effect is only significant after seven years. The current study investigated the relation between a growth mindset on career success in the first career phase. This could have had an impact on the results we found in the current study. Therefore, the current study could only indicate that a growth mindset might not have a relation with subjective or objective career success in the first career phase. Thus, we cannot say anything about the future career stages. A sample of people with a wider range of graduation years would give us a clearer view of the relation between a growth mindset and career success. It might be that there is no relation in the early career phase, but only in later phases. Moreover, it could be that the number of years working moderates the relation between a growth mindset and career success. Other studies have already shown that time influences the amount of subjective and objective career success that someone experiences (Ng et al., 2005; Abele & Spurk, 2009).

The second limitation is that the current study did not take other factors into account that could influence the relation between a growth mindset and career success. Next to having a growth mindset, literature shows the importance of someone knowing how to learn from errors (Caniëls et al., 2021) and if they believe the causes of failure to

be in their control (Song et al., 2020). The current study measured the thoughts about a growth mindset but not the actions that one would take that could indicate a growth mindset. The design of the current study was not fit to take these factors into account.

Future recommendations

We suggest that future researchers should compare the relation between a growth mindset and career success in different career phases. Time could be a moderator in this relationship. It might be that the career stage is essential to see the effect of a growth mindset on career success. According to the literature, we would expect that people with a growth mindset would have more subjective and objective career success in other career stages than people with a more fixed mindset (Abele & Spurk, 2009). This knowledge would provide us with insight into if there is indeed no relation between a growth mindset and career success, or whether there is a relation that depends on the career stage that people are in.

Next to that, future researchers could do a study where they not only measure growth mindset thoughts but also behaviors that someone with a growth mindset would show. Researchers could include measuring behaviors of learning from error and a questionnaire that measures if someone believes that their failures are controllable by them. Future research could look if there is a relation between a growth mindset and career success only in people who show more learning from error behavior and believe that they can control their failures, compared to less learning from error behavior and less belief in control. These influences could indicate if a growth mindset intervention alone is enough to improve career success, or that there is a need for training in learning from error skills and adjusting controllability beliefs as well.

Implications

The purpose of the current study was to gain more insight into the relation between a growth mindset and subjective and objective career success. We could now state that there was no relation between a growth mindset and subjective and objective career success in the first career stage. This is useful for future research that could look at the relation between a growth mindset and subjective and objective career success in later stages. If there would be a relation, we could still argue for promoting growth mindset interventions in early careers because it could positively affect future career success.

Next to this, the conflicting results about the relation between subjective and objective career success give us reason to further investigate this. Researchers should investigate this relation in order to get a clear understanding on how objective and subjective career success influence each other. This knowledge can be used by employees and employers to increase subjective and objective career success.

Conclusion

The current study aimed to investigate the relation between a growth mindset and subjective and objective career success. In addition, we looked at the relation between subjective and objective career success. We found no relation between a growth mindset and subjective and objective early career success in our sample. We found conflicting results for the relation between objective and subjective career success. We argue that there is support for the claim that objective and subjective career success are related. However, there is more research is needed on how these two types of career success influence each other. Next to that, we recommend future research to investigate the relation between a growth mindset and career success by also taking into account career

stages (time), learning from errors, and the belief that the cause of failure is controllable. This information would provide us with whether there is indeed no relation between a growth mindset and career success, or if there are other factors that play an important role in this relation. This information is useful if we want to improve people's career success with growth mindset interventions or if we have to look for other interventions.

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Appendix A

Subjective Career Success Inventory (SCSI) full set of items

Recognition:

...my supervisors have told me I do a good job

...the organizations I worked for have recognized me as a good performer

...I have been recognized for my contributions

Quality work

...I am proud of the quality of the work I have produced

...I have met the highest standards of quality in my work

...I have been known for the high quality of my work

Meaningful work

...I think my work has been meaningful

...I believe my work has made a difference

...the work I have done has contributed to society

Influence

...decisions that I have made have impacted my organization

...the organizations I have worked for have considered my opinion regarding important issues

...others have taken my advice into account when making important decisions

Authenticity

...I have been able to pursue work that meets my personal needs and preferences

...I have felt as though I am in charge of my own career

...I have chosen my own career path

Personal life

...I have been able to spend the amount of time I want with my friends and family

...I have been able to have a satisfying life outside of work

...I have been able to be a good employee while maintaining quality non-work relationships

Growth and development

...I have expanded my skill sets to perform better

...I have stayed current with changes in my field

...I have continuously improved by developing my skill set

Satisfaction

...my career is personally satisfying

...I am enthusiastic about my career

...I have found my career quite interesting

Appendix B

Dweck's Mindset Instrument (DMI) full set of items

1. You have a certain amount of intelligence, and you really can't do much to change it
2. Your intelligence is something about you that you can't change very much
3. No matter who you are, you can significantly change your intelligence level
4. To be honest, you can't really change how intelligent you are
5. You can always substantially change how intelligent you are
6. You can learn new things, but you can't really change your basic intelligence
7. No matter how much intelligence you have, you can always change it quite a bit
8. You can change your basic intelligence level considerably
9. You have a certain amount of talent, and you can't really do much to change it
10. Your talent in an area is something about you that you can't change very much
11. No matter who you are, you can significantly change your level of talent
12. To be honest, you can't really change how much talent you have
13. You can always substantially change how much influence you have
14. You can learn new things, but you can't really change your basic level of talent
15. No matter how much talent you have, you can always change it quite a bit
16. You can change even your basic level of talent considerably

Appendix C

Objective career success

Salary

What is your monthly salary (in euros, after taxes - 'netto") at this moment?

- No salary
- 0 – 1000 euros
- 1001 – 2000 euros
- 2001 – 3000 euros
- 3001 – 4000 euros
- 4001 – 5000 euros
- 5001 – 6000 euros
- 6001 – 7000 euros
- 7001 – 8000 euros
- 8001 – 9000 euros
- 9001 – 10000 euros
- More than 10000 euros

Promotions

How many promotions did you get after graduation?

- 0
- 1
- 2
- 3
- 4
- 5
- More than 5

Job responsibilities

Please read each sentence below and mark the corresponding box for your job at this moment.

1. I have a permission to delegate work
2. I have a project responsibility
3. I have an official leadership position.