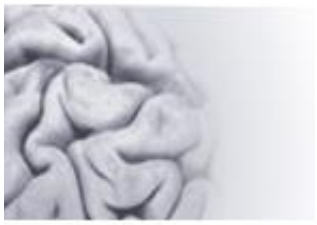
Can changing your mindset make your rich and happy? Influence of mindset on objective and subjective career success

Portmann, Laurin

Universiteit Leiden

Faculteit der Sociale Wetenschappen



Can changing your mindset make you rich and happy?

Influence of mindset on objective and subjective career success

Laurin A. Portmann

In collaboration with Livv Wetting and Maila Tjoeng

Master thesis Psychology, specialization Economic and Consumer Psychology
Institute of Psychology
Faculty of Social and Behavioral Sciences – Leiden University

Date: 02-12-2022
Student number: 3446417
First examiner of the university: Anouk van der Weiden
Second examiner of the university: Manon Schutter

Abstract

People perceive a human action or outcome differently depending on their belief to what extent human abilities are modifiable. This comes from the differences in how people view the flexibility of their intelligence, personality, and skills. This phenomenon is defined as the spectrum of fixed versus growth mindset and is considered to have an influence on academic success (Dweck et al., 1995; Dweck & Yeager, 2019). The study from Drewery and Colleagues (2020) about lifelong learning mindset, gives us reasons to believe, that a growth mindset also has a positive influence on subjective and objective career success. We conducted four linear regressions with Psychology Master's graduates from Leiden University (N = 94). We did not find any significant results to support our hypothesis. However, this thesis does provide the reader with interesting future research recommendations.

Keywords

Mindset, objective career success, subjective career success, job satisfaction, salary, hierarchical position, promotions

Layman's Abstract

When faced with a challenge, people either believe they can rise up to overcome the challenge or they perceive it as unachievable and back down. This can be explained with the construct of mindset, where someone has either a more fixed mindset and does not believe in the possibility of ability improvement, or a more growth mindset, where they think capabilities are not fixed and can improve. Literature suggests that a growth mindset influences academic success and lifelong learning mindset influences career success. We have reasons to believe that a growth mindset also influences career success. We investigated this theory through statistical analysis of data collected from 94 alumni from all Psychology Master's programs at Leiden University. We were unable to conclude based of our results, that a growth mindset has a positive influence on career success. But we did find some potential explanation for these results and provide the reader with improvement suggestions for future research

Introduction

Can changing your mindset make you rich and happy?

Most people spend the majority of their lives working. As such, it is essential that a person feels good about the work they do to have lived a satisfying life. Even though working is only one of the many contributors to life fulfillment (Gattiker & Larwood, 1988), it contributes greatly to life satisfaction. If an individual believes they have lived up to their standard or have even surpassed it, they will hence have a higher life satisfaction. To help people access their very best selves from a career perspective, they must succeed at what they are doing professionally and believe so intrinsically as well. Being and believing that you are successful greatly improves one's feelings of self-worth, which reduces the risk of becoming depressed towards the end or during one's professional life (Korman et al., 1981). Regardless, focusing on salaries and positions as metrics for evaluating career success is not enough (Shockley et al., 2016). We need to look at the definitions of career and success, and further examine the influences and antecedents of a successful professional career. With this knowledge, we can educate people to help them achieve greater career success (Abele et al., 2011a; Spurk et al., 2019). But what factors contribute to career success?

The *human capital theory* (Becker, 1962) says that the knowledge and the experiences we strive to gain throughout our lives depend on their value in the labor market. Given that certain knowledge and experiences are rewarded differently, this leads to differences in life success and career success (i.e. salary, position). In terms of the *contest mobility perspective*, people's success depends on their professional achievements which are directly attributed to their applied level of effort. In contrast, there is the

concept of *sponsored mobility*. Rather than achieving success independently, here people are elevated by the people of power in an organization who see great potential in them and guide them to achieve greater success. Moreover, the effect of sponsored mobility is impacted by a person's big five personality traits (Judge et al., 1999; Ng et al., 2005; Wu et al., 2008). Additionally, a person's professional success is positively correlated with how much they continue learning throughout their career, also known as the *lifelong learning mindset* (Drewery et al., 2020). A person with a lifelong learning mindset is described as having personality characteristics of curiosity, strategic-thinking, and resilience.

Few studies have been done on the influence of mindset on career success apart from Drewery's 2020 lifelong learning mindset investigations. The lifelong learning mindset aligns with the idea that people judge a specific human action or outcome differently depending on their belief to what extent human abilities and intelligence are modifiable (Dweck, 2006; Dweck & Yeager, 2019; Yeager et al., 2019). This gives us reasons to believe that a person's mindset influences career success. Nevertheless, there is still a lot unknown as there is limited research on the topic of mindset.

Given the important role career success plays in a person's life, we want to know how and if their mindset influences their success for the better or worse. This thesis will contribute to the existing theories by providing a clearer picture of the influence of mindset on career success as there are few publications on this specific topic. We want to know if we can replicate Drewery and colleagues (2020) findings about the influence of a lifelong learning mindset on career success; however, instead of only looking at the lifelong learning mindset, defined as curiosity, resilience, and strategic thinking, we will

apply the broader mindset definition as defined by Dweck and colleagues (2006; 1995; 2019; 2019). We will combine different scientifically accepted questionnaire instruments to assess mindset and two different career success types: objective and subjective career success. The developed questionnaire can then later be used by other academics with or without modifications if they do research on this topic.

With our findings, we hope to help society by providing more facts and implementations regarding the influence of mindset on career success. If mindset has a significantly positive influence on career success, it would be important to put more focus on the construction and support for the development of a growth mindset in pupils and students to create more successful future working professionals.

Theoretical Background

Subjective and Objective Career Success

A commonly accepted definition of a career is the progression of a person's professional experiences throughout time, with specific emphasis on the significance of time. This definition does not make assumptions about where people work or what professional success represents (Arthur et al., 2005). When we use the word success in the context of a career, we typically refer to success as a positive outcome and the antonym of failure. Additionally, we conclude that we are successful based on both introspective examination and the opinions of people surrounding us (Gunz & Heslin, 2005). Literature suggests that there are two kinds of career success: one that is observable and measurable by external indicators, and one that is more personal and experienced by oneself (Hughes, 1958). In the current state of research, we divide career

success into *objective career success* (OCS) and *subjective career success* (SCS) (Drewery et al., 2020; Heslin, 2005; Hughes, 1958; Spurk et al., 2019).

OCS is considered as the success in work that can be acknowledged by individuals other than the employee itself. OCS is operationalized by comparing an individual's career with social norms of compensation, salary growth, work hierarchy level, number of promotions, and the occupational prestige (Abele et al., 2011b; Drewery et al., 2020; Heslin, 2005; Judge et al., 1999). OCS can be measured with the *managerial career success measure* (MCSM) from Dries and colleagues (2009) or by assessing compensation, work hierarchy level, and the number of promotions. However, as mentioned above, OCS alone is no guarantee for happiness. An already 40-year-old study found that managers who are perceived as highly successful by society commonly tend to not feel as satisfied with their achievements as expected (Korman et al., 1981). This shows that there is more to success than objective values.

SCS is described as the satisfaction and perceived success of one's career. More precisely, SCS is an individual's subjective assessment and evaluation of their career and what the outcomes mean to them (Ng et al., 2005; Shockley et al., 2016; Spurk et al., 2019). Areas most commonly used to define SCS are career satisfaction, the perception of one's success, and a multidimensional qualitative approach (Shockley et al., 2016). The qualitative metrics included in the multidimensional concept may be how well someone performs at work, relationship with co-workers, financial success, life outside of work, autonomy, satisfaction, or having a perceived impact or purpose.

In other, mostly older papers, success is referred to as extrinsic and intrinsic success. Extrinsic success, similar to OCS, is defined with objective and observable

metrics, including salaries and promotions. Intrinsic success is described as the subjective perception of a person's career and is mostly measured in job satisfaction, like SCS (Gattiker & Larwood, 1988; Judge et al., 1999). Although the terminology may vary, the ideas are the same.

There already exists a significant amount of literature on the topic of career success with variable results and conclusions accordingly. Scientists agree on the distinction between objective and subjective career success, but there is a low correlation between SCS and OCS. The correlation is higher in private sectors than in public sectors, though still low. Nevertheless, objective and subjective career success are fundamentally distinct (Abele et al., 2011b; Ng et al., 2005; Spurk et al., 2019). However, with as broad of a topic as career success, there exists a broad range of competing perspectives on what does and does not influence career success. In general, authors tended to draw conclusions from their research findings alone rather than comparing and analyzing existing evidence on this topic (Spurk et al., 2019).

The Spectrum of Growth and Fixed Mindset

People perceive a human action or outcome differently depending on their belief in regards to what extent human abilities are modifiable. This comes from the differences in how people view the flexibility of their intelligence, personality, and skills. This phenomenon is defined as the spectrum of fixed versus growth mindset (Dweck et al., 1995; Dweck & Yeager, 2019). In a growth mindset, a person believes their capabilities are not limited, and if they were to put effort into areas of weaknesses, they could improve. Whereas, in a fixed mindset, a person feels these characteristics, such as intelligence or character, are predetermined and permanent and, therefore, they have less

motivation to achieve new skills. This leads to a vicious cycle because a person with a fixed mindset does not attempt things they are not good at and hence, do not improve their skills as much as if they would believe in a more growth mindset and the flexibility of characteristics (Dweck et al., 1995; Dweck & Yeager, 2019; Yeager et al., 2019).

Influence of Mindset on Objective and Subjective Career Success

We have reasons to assume that mindset is an antecedent of subjective and objective career success. But unfortunately, there is not a lot of research done on mindset and its influence on career success yet and we, therefore, decided to investigate the broader concept of fixed versus growth mindset as the measurement instrument (Dweck, 2006; Dweck et al., 1995; Dweck & Yeager, 2019). From the literature, we derived the influence of personality traits on career success, the influence of mindset on life success, and improved success in schools after interventions. Drewery and colleagues (2020) gives us reasons to believe there is a positive effect of a growth mindset on SCS and OCS, and because the definition of lifelong learning mindset is close to that of a growth mindset, we want to find out if the influences of a growth mindset are also applicable for career success, more precisely SCS and OCS.

This thesis aims to identify a positive influence of a growth mindset on subjective and objective career success, and we will do so by sending out questionnaires to people who graduated with a Psychology Master's from Leiden University. Specifically, we want to compare people's differences in SCS or OCS depending on their position on the spectrum of growth vs. fixed mindset. Our first two hypotheses are namely; *"A growth mindset is positively related to subjective career success"* and *"A growth mindset is positively related to objective career success"*. With these two hypotheses, we want to

test the assumption that there is a general superiority of a growth versus a fixed mindset by examining the career success and mindset of alumni. In general, our goal is to demonstrate that mindset indeed plays a role in career success and the potential implications for people in educational institutions, proving that our educational system needs to focus more on developing a growth mindset in children, adolescents, and adults.

Methods

Design

This study is a quantitative correlational survey design with continuous predictors. Mindset is the independent variable, and objective and subjective career success are the dependent variables. This thesis is a sub-project of a larger research project in which we take part of as interns. The larger research project investigates what former Leiden students from the Master's programs Economic and Consumer Psychology (ECP) and Social and Organizational Psychology (SOP) are doing for work and their satisfaction with the Master's program. The goal of the research is to improve the promotion of both Master's programs by providing future students with accurate information regarding post graduate career opportunities.

Participants

Recruitment and Inclusion and Exclusion Criteria

We began surveying SOP and ECP alumni using a combination of questions which would inform both the objectives of this thesis and of our internship; however, participation was not as high as expected. As a result, we decided to broaden our inclusion criteria and created a second, shorter survey for which our target group was all psychology Master's alumni from Leiden University and only included questions

regarding topics that are important for this thesis on the mindset and career success. Only the questions that were included in both surveys were analyzed in this thesis.

In both surveys, we only included people who graduated between February 2016 and January 2022 since there was already a report on the occupation of alumni who graduated between 2010 and February 2016. Furthermore, we only included people who answered at least 80% of each measurement. Participants could be of all gender. Lastly, we completed the survey ourselves, reading the questions and answering them, and determined that 199 seconds (approximately three seconds for each question) is needed for the mindset specific survey and 412 seconds for the initial survey with both mindset and alumni questions. We decided to exclude people who answered the surveys faster than these calculated times as we concluded it to be impossible to read all questions thoroughly and answer them truthfully in less time.

The first survey for ECP and SOP alumni has been online since August 19, 2022 and is currently available as we are still collecting data for our internship. For this thesis, we only used data that was collected up until the October 3, 2022. The second mindset specific survey for all Psychology master's alumni was online between September 22 until October 3, 2022. Altogether, we were able to use data from 94 of the 149 participants that started our surveys, as further described in the results section.

Our participants were recruited through LinkedIn and Facebook alumni groups by posting the link of our online Qualtrics-survey. We also looked up who graduated with a psychology master's from Leiden University using the Leiden University Alumni section of the Leiden University's LinkedIn page and contacted them directly by a short message with the link to our survey ("*Hi, my name is Laurin, Could you help us by filling in our*

survey about the ECP master's and alumni's career paths? In case you already filled it in, thank you, otherwise, we'd be really grateful. Thank you, kind regards Laurin (or Maila, or Livv) https://leidenuniv.eu.qualtrics.com/jfe/form/SV_37wsGYOixQTfsgu").

Sample Characteristics

We had 94 participants that we could use for the analysis. Out of these people, 21.3% identified as male, 75.5% as female, 1.1% as non-binary and 2.1% preferred not to state their gender. The average age (M = 27.86, SD = 4.91, range: 21-57) is in the late twenties. All participants had a range of 21 countries of origin, but with 72.3% most people were Dutch by origin, followed by 5.3% from Germany and third most the UK with 3.2% from all participants (N = 94). Most participants (33.0%) stated that the grade category of (Mdn = "7.5 – 8"), describes their received grades, throughout their Master's best. More precisely, 87.3% of all participants were between grade "7" and "8.5", so most students are around the same grades.

Measures

Mindset

The survey that we used, contained three already used surveys. For the operationalization of mindset, we used the Dweck Mindset Instrument (DMI) (Dweck, 2006; Dweck et al., 1995). It contained 16 questions, eight normally and eight reversed coded. There were eight items about intelligence (e.g. "*You have a certain amount of intelligence, and you really can't do much to change it",* "*You can change your basic intelligence level considerably*") and eight items about talent (e.g. *"Your talent in an area is something about you that you can't change very much*", "*No matter who you are, you can significantly change your level of talent*"). People were asked how much they

would agree on statements on a six-point Likert scale from 1 ("*strongly disagree*") to 6 ("*strongly agree*"). A high altogether score indicated more of a growth mindset, and a low score more of a fixed mindset. Both intelligence and talent had four reverse-coded items, that we had to recode to analyze the results accordingly. The Cronbach's Alpha was with .923 sufficient. The average mindset of all participants (*N*=94) was a little higher than in the middle (*M* = 3.72, *SD* = 0.79).

Subjective Career Success

We used the subjective career success inventory from Shockley and colleagues (2016), consisting of eight topics, with three normally coded questions for each topic, on a five-point Likert scale from 1 ("*disagree*") to 5 ("*agree*"). The eight questions cover the following topics: Recognition (e.g., "*Considering my career as a whole my supervisors have told me I do a good job*"), Quality Work (e.g., "*Considering my career as a whole I have met the highest standards of quality in my work*"), Meaningful Work (e.g. "*Considering my career as a whole the work I have done has contributed to society*"), Influence (e.g., "*Considering my career as a whole the organizations I have worked for have considered my opinion regarding important issues*"), Authenticity (e.g. "*Considering my career as a whole I have chosen my own career path*"), Personal Life (e.g., "*Considering my career as a whole I have been able to spend the amount of time I want with my friends and family*"), Growth and Development (e.g., "*Considering my career as a whole I have stayed current with changes in my field* "), and Satisfaction (e.g., "*Considering my career as a whole I have found my career quite interesting* "). The Cronbach's Alpha for SCS was sufficient with .894. The average SCS of all participants (*N*=94) was relatively high (*M* = 4.37, *SD* = 0.52).

Objective Career Success

Lastly, we asked three questions to measure OCS, inspired by Abele and colleagues (2011a). Firstly, about salary ("*What is your monthly salary (in euros, after taxes- "netto") at this moment*") where people can choose from 12 different options going from ("*no salary*") up to ("*More than 10000 euros*") in 1000-euro steps. Secondly, one question containing three sub-questions about the hierarchical position ("*I have a permission to delegate work*", "*I have a project responsibility*", "*I have an official leadership position*") with dichotomous answers ("*yes*" or "*no*"), ending in the categorial variable hierarchical positions ranging from ("3") to ("0"). A 3 indicates, a high hierarchical position, where all participants answered the three questions with a yes, 2 means they answered two questions with a yes, 1 they answered one question, and 0 means, that they did not answer a single question with a yes. Thirdly, one question about the number of promotions they received in their working life so far, where people could choose from ("0") until ("more than 5"). The Cronbach's Alpha for OCS could not be calculated since we measured it with three different variables. The average OCS of all participants (*N*=94) consisted of three different scores: average salary, average amount of promotions, and average hierarchical position. Of all participants, 80.9% did not earn more than 3000 Euros a month (after taxes), and 62.8% earned between 2001-3000 Euros a month after taxes (*Mdn* = "2001 - 3000 euros"). On average, people did receive less than two promotions after graduation (*M*= 1.91, *SD*= 0,99). For hierarchical positions, people are on average in the middle of our defined variable (*Mdn* = 2), meaning that most people fulfill two out of the three dichotomous categories for hierarchical positions.

Operationalization mindset on SCS and OCS

To assess whether mindset influences SCS or OCS, we operationalized as follows. For mindset, we corrected the eight reversed scores from the 16 questions and took the average score for those that had filled out at least 80% out of the questions and took this as the mindset score. For SCS, we similarly computed a mean score using all 24 questions. Lastly, for OCS, we separated it into subcategories because we did not find it very representative to combine all questions into one variable. The OCS score was operationalized into salary, number of promotions and hierarchical position. Hierarchical position consists of three categories, and because it was measured by three dichotomous variables ("*I have a permission to delegate work*", "*I have a project responsibility*", "*I have an official leadership position*"), we decided to make it a categorical scaled variable. The scale includes 0 ("*very low position*"), 1 ("*low position*"), 2 ("*medium high*") and 3 ("*very high*").

Procedure

The ECP and SOP survey starts with the information letter including the consent form, followed by the unique ID that enables participants to retrieve their answers at any time. After the consent form, participants are asked a question about what master's they did, followed by the SCS questions, ECP and SOP Alumni survey, the Dweck Mindset Inventory, OCS, some Demographic questions, an open response where participants can place comments or questions, and ends with the debriefing. The other survey, which was for all psychology alumni from Leiden University, has the same questions and order but does not include the 71 ECP and SOP alumni questions. We built the survey in a way that every question could have been skipped except for the consent question. Further, we included a skip logic so participants would automatically skip certain questions

depending on their response (e.g., someone who said that they graduated before 2016 would go directly to the end).

Additionally, the surveys included a section on demographics where participants were asked about their gender, age, what country they are from, and one about their highest educational level. We asked people in the ECP and SOP survey questions about being an alumni from Leiden University, and since this is not looked at in this thesis we will just give two example questions out of all 71 questions in this section e.g. how they liked the master's ("*Looking back, how would you evaluate the entire programme on a scale from…")* with options from one to ten or what they are doing exactly ("*What was your first position after graduation*") with an open answer.

Ethics

We did not have an active role in the submission of our ethical approval; however, our principal investigator who is also our supervisor, did the submission, and our research got the approval of the psychology ethics committee from Leiden University. Nevertheless, we do have an active role in guaranteeing that the basic principles according to the Code of Ethics 2016 from Leiden University are adhered to. What makes our data-gathering process a little special, is that we are not going to delete the data after ten years, but since the data is coded and we will delete the data from our laptops immediately after finishing our internships, that still goes in accord with the Code of conduct.

Statistical Analyses

With the effect sizes as reported in the study of lifelong learning mindset (Drewery et al., 2020) we made an a priori g*power analysis, to test the relationship

between independent and dependent variables. For both OCS and SCS, we used a linear regression with an F-test. For SCS we used the squared correlation = .09, $\alpha = .05$ and $\beta = .8$, and one predictor. With this information, we calculated a needed sample size of $N = 82$. For OCS we used the squared correlation = .17, $\alpha = .05$ and $\beta = .8$, and three predictors. With this information, we calculated a needed sample size of $N = 58$. Our sample size is $N = 94$ and therefore big enough to be able to detect an effect of mindset with a power of .80.

We screened the data and checked the assumptions. I used four simple linear regressions, with mindset as my continuous predictor variable and either SCS or OCS divided into three outcome variables salary, promotions, and hierarchical position as a continuous outcome variable. We used IBM SPSS 27 to test all our confirmatory and exploratory analyses.

Results

Data Screening and Exclusion

ECP and SOP Alumni Survey

Of all 83 participants who started the first survey about mindset and alumni questions, 44 (53%) were excluded because they did not meet the study criteria, 36 (43.3%) did not answer enough questions, which means not at least 80% from each subgroup of questions. For Mindset this were 35 (42.1%), for SCS questions 22 (26.5%), and the five OCS questions (leadership 3, 1 salary, 1 promotions) 34 (40%). 38 (45.7%), did not graduate later than January 2016. Lastly, 22 participants (26.5%) answered the survey too fast, which means faster than in 412 seconds (6.8min). The slowest person from the excluded people (range: 26-298) had 298 seconds. All these exclusions resulted

in a final total of 39 participants that could be included in the final analyses of all 94 participants.

All Psychology Master's Alumni Survey

Of all 66 participants who started the second survey that was only about mindset and career success, 11 (16.7%) participants were excluded because they did not meet the study criteria. All 11 (16.7%) did not answer 80% from each group of questions. Specifically, 11 (16.7%) did not answer enough for the mindset part, 9 (13.6%) not answer enough SCS questions, and 11 (16.7%) not answer all five OCS questions (leadership 3, 1 salary, 1 promotions). Further, 4 (6.1%) participants did not graduate later than January 2016, and lastly, 9 (13.6%) answered the survey to fast, meaning the completed the survey in under 199 seconds (3.3min). The slowest person from the excluded people (range: 32-170) finished in 170 seconds. All these exclusions left us with a final total of 55 participants from this survey that were included for the analysis.

All together that left us 39 from the first survey and 55 from the second one, 94 participants for the entire thesis in total.

Assumption Check

The data gathered from the survey was reviewed to check for outliers and to ensure the applicability of the assumption made for all four simple linear regressions of my dependent variables. There were no outliers in our entire data set (N=94) that had to be excluded. The assumptions of linear regression are namely linearity, normality, homoscedasticity, and independent errors. All assumptions are met except for the assumption of normality, which was violated for the regressions between mindset and OCS (salary, promotions, and hierarchical positions). Given that linear regression is

robust against skewness, the non-normality was determined to not be a problem (Field, 2013).

Confirmatory analyses

Mindset and Subjective Career Success

For our first hypothesis, to find out if someone's mindset can positively predict a person's subjective career success, I computed a linear regression with the mean mindset scores as an independent variable and the mean SCS scores as the dependent variable. The results showed that mindset explains 0.2% of the variances in SCS. Nevertheless, we see a positive correlation between mindset and SCS; however, it is not significant with $R = .046$ and $R^2 = .002$ and a nonsignificant F- test with a very low effect size $F(1,92) = 0.19$, $p = .663$, $f^2 = .002$.

Mindset and Objective Career Success

To investigate if mindset can positively predict objective career success in Leiden Psychology Master's alumni, I computed a linear regression with the mean mindset scores as an independent variable, and analyzed three separate regressions because salary, promotions, and hierarchical positions cannot be grouped into one logical variable.

Mindset and Salary. The results of the first regression with mindset and salary showed that mindset could explain 0.4% of the variances in salary. Though with very small effect size, and not significant with $R = .059$ and $R^2 = .004$. And a nonsignificant F-test with a very low effect size $F(1,92) = 0.32$, $p = .571$, $f^2 = .004$. Meaning, that it cannot be predicted that someone has a higher salary by simply looking at their mindset.

Mindset and Promotions. The conducted linear regression of mindset and promotion showed similar results, even though mindset was able to explain 0.2% of

variances in promotions, it was a very low correlation and nonsignificant. The effect size was very low as well R = .042 and R^2= .002 and $F(1,92) = 0.16$, p=.687 , f^2 = .002.

Mindset and Hierarchical Position. Finally, to measure if a more growth mindset can predict a hierarchical position, I also computed a linear regression between mindset and hierarchical positions. This linear regression showed the least significant results of all regressions computed in this thesis, with mindset not even being able to explain a promille of variances 0.00%. The regression is nonsignificant and has no effect at all R = .016 and R^2= .000 and $F(1,92) = 0.23$, p=.880 , f^2 = .000.

Exploratory Analyses

Intelligence-Mindset or Talent-Mindset

I decided to do an exploratory analysis as well. As previously described, the mindset variable consists of 16 items. Eight out of these 16 items pertain to intelligence and eight are about talent. Since our participants are all psychology students, I wanted to determine if the results might be biased, and therefore not significant, because all psychology students learn about the construct of IQ. The idea of intelligence and the construct of IQ postulated that an IQ remains relatively constant over a person's lifetime. Therefore, I was curious if there would be a difference between these two components of the mindset variable. More precisely, if the mindsets themselves might be different for the eight questions of the talent part compared to the eight intelligence questions in that the intelligence questions do not show significant results. For this purpose, I conducted two more linear regressions: intelligence-mindset vs SCS, and talent-mindset vs SCS.

The results for the intelligence-mindset and SCS regression were not significant. Even though intelligence-mindset was able to explain 1.2% of variances in SCS, the

effect size was low as well with R = .109 and R^2= .012, and $F(1,92) = 1.104$, p=.296, f^2 = .012. The linear regression for the exploratory variable of talent-mindset and SCS found that talent-mindset was able to explain 0.1% of variances in SCS. The trend was not significant and the effect size was very low with R = .038 and R^2= .001, and $F(1,92)$ =0.131, p=.718 , f^2 = .001.

I conducted the same analyses for OCS, but it was not significant either with similar results for all areas of objective career success with $F(1,92) < 1$ and $p>.05$.

Gender Effects

Literature suggests that there is a sexist bias against women in working spaces. There are different types of sexism in professional settings, but they often point to women being discriminated in the workplace. Even though women are the largest gender group with Bachelor's, Master's, and PhD's level education, they are still hold significantly less present in high positions (Hideg & Shen, 2019). For example, when I think about the demographics of my classmates, there are always strikingly fewer men in the lectures. This made me think that there might also be a sexism bias in the data we collected, which may be the reason for our non-significant results. If we apply sexism to our question of does mindset influence SCS and OCS, it would mean that if a woman were to have the same level of growth mindset as her male counterpart, she would not reach the same OCS or SCS because of societal injustice. To explore this idea, I conducted four exploratory one-way between subject ANOVAs, to compare the effect of mindset (IV) on gender (DV) in OCS salary, promotions, hierarchical position and SCS. There are four categories of gender that people could choose from ("*male*", "*female*", "*non-binary*", and "*prefer not to say*"). I only distinguish between male and female, since

the other two options were only one non-binary person and two, who preferred to not share their gender. This smaller investigated group ($N = 91$) with only men ($n = 20$) and women ($n = 71$) had no significant effect of IV gender on DV mindset or the four conditions. The ANOVA showed for mindset [$F(1, 89) = 1.93$, $p = 0.168$], for SCS [$F(1, 89) = 1.67$, $p = 0.199$], for Hierarchical Position [$F(1, 89) = 1.03$, $p = 0.313$], for Promotions [$F(1, 89) = 0.28$, $p = 0.595$] and for Salary [$F(1, 89) = 2.75$, $p = 0.101$]. Even though none of the effects were significant, there were still trends to see in the differences in means. Males tend to be ($M = 3.49$, $SD = 1.02$) on average lower on the mindset-scale than females ($M = 3.76$, $SD = 0.07$). Nevertheless, men have a trend in showing higher OCS in hierarchical positions and promotions and SCS than women. Men have the following means in hierarchical position ($M = 1.75$, $SD = 0.85$), promotions ($M = 2.05$, $SD = 1.05$), and SCS ($M = 4.51$, $SD = 0.50$). Compared to women's averages hierarchical position ($M = 1.51$, $SD = 0.97$), promotions ($M = 1.92$, $SD = 0.98$), and SCS ($M = 4.34$, $SD = 0.52$). Concerning salaries, our data show the same median for men and women (Mdn = "2001 – 3000 euros"). This indicates there is a trend of men having a higher career success, even though they do not have a higher score on the growth vs fixed mindset-scale.

Discussion

All results in our data indicate that there is no significant trend between mindset and career success. The data do not support our theory that a more growth mindset has a positive influence on objective career success or subjective career success. In this section, I will discuss possible reasons why our results are nonsignificant. Even though we have

enough statistical power to conclude that mindset has no effect on career success, our initial reasoning and review of literature suggested otherwise.

The first exploratory analysis about the possible influence of preformed concepts of intelligence shows that there is no significant trend. When we correct for a potential bias in the already formed concept of intelligence in psychology alumni and split the variable of mindset into intelligence-mindset and talent-mindset, the effect is greater in intelligence-mindset on SCS than talent-mindset on SCS, though in both they are nonsignificant. In conclusion, the idea of a bias due to a misconception of intelligence can be neglected as it is not the reason for our nonsignificant findings.

The other exploratory analysis evaluated the impact of gender on the mindset and career success hypothesis and found non-significant results in all areas. Because this ANOVA is for exploratory reasons, we ran the tests even though the power is not high enough, especially for the group of men (n = 20). Although there are no significant effects, we can see trends in which women are on average score higher on mindset and yet men are on average higher in SCS and in two of the three OCS variables (all besides salary) that are investigated in this thesis. This can mean several things. Firstly, that a growth mindset might have a different impact on women than on men, or that mindset might even work the other way around in that a growth mindset in women potentially hinders their career success while a fixed mindset fosters it. However, this seems very unlikely and would need to be investigated with a higher power sample. Secondly, it supports the idea of a gender bias, and that sexism hinders women to achieve the same career success as men when they have the same conditions, especially since all participants are alumni of a Psychology Master's. The fact that women are the majority

among graduates in Bachelor's, Master's, and PhD's but are less represented than a third in high positions in western countries (Hideg & Shen, 2019) seems very alarming. Our findings do not stand in contrast with this.

So far, none of the literature above can explain the reasons for nonsignificant results. We have enough participants to gain enough power for our effect, and it is suggested there is a strong influence of mindset on success in other research (Drewery et al., 2020; Dweck, 2006; Dweck et al., 1995; Dweck & Yeager, 2019).

A possible explanation for our non-significant result for hypothesis two regarding the influence of mindset on objective career success could be that mindset interventions were found to be most beneficial for students who are struggling in school, have lower grades and or are at risk of dropping out of school. This indicates that mindset is particularly important for at risk students (Burnette et al., 2013; Paunesku et al., 2015). It was also shown that a mindset intervention shows most beneficial effects for this group of people (Dweck & Yeager, 2019). Unfortunately, it is not possible to analyze differences in mindset depending on people's grade for multiple reasons. Firstly, 94.7% of the participants had an average grade of 7 or higher during their Master's, and this is considered more than average in the Dutch grading system (*ECTS Grading Tables - Leiden University,* n.d.). Secondly, the number of people that fall in the category of low grades is not enough to raise the power to measure the effect. Thirdly, we would also have to include people who did not finish their Master's to test this idea correctly since at risk students are assumed to have the highest influence of mindset on career success. This was out of the scope of this thesis because we did not address or include people who did not finish their Master's. Therefore, it can also be the case, that we do not see any effect

because the effect is not strong enough on university students, or even more specifically, it may not be strong for Psychology Master's students.

Another possible explanation could be the theory of Insufficient Effort Responding (IER). IER is when participants out of boredom or occasional carelessness do not take a survey seriously enough and answer the questions untruly. This is not just a random measurement error, because it can also lead to both Type I and Type II errors (Huang et al., 2015). Further, IER is commonly happening in research areas such as personality testing, job analysis, needs assessment ratings, or online surveys. Since most of the studies in our reference list are part of one of these areas, IER can be one of the reasons why they have found results even though they might not be any (Type I error), or the reason why we do not see a result even though there might be one. Unfortunately, Huang and colleagues (2015) implicate not testing for IERs after the analysis of nonsignificant results, because the chance of Type I errors would be too big. However, researchers suggest data screening as a measure for IER, as in checking for survey time and creating infrequency scales (Huang et al., 2015; Meade & Craig, 2012). We did include the check for survey time in our data screening.

Yet, another possible reason for non-significant results could be that most papers in my literature were either about general school or high school success (Burnette et al., 2013), or university students as in Drewery and colleagues' (2020) lifelong learning mindset where they investigated the career success of undergraduates university students in an accounting and financial program. Hence, the theory may not be as appliable for working adults or for people in more social fields such as psychology. Maybe it only

applies to certain fields, as economic studies showed similar results as well (Janssen & Van Yperen, 2004).

Strengths and Limitations

One of the limitations I like to address is that only 62% of all people who started a survey finished it. This seems problematic since we wanted to screen all Leiden University Psychology alumni, and even though we managed to contact a reasonable number of people, there is still potential information lost. Unfortunately, we did not start our questionnaire with questions that could give us information about the participants that left the survey before finishing it. Therefore, we could not see a possible bias in participants that dropped out in our data. For this reason, I can only speculate about the presence of an attribute that all these people who did not finish have in common. Because some of the people who completed the survey commented that the survey was boring in the open answer, I assume boredom played a part in some participants not completing the survey. As mentioned above, this can be a problem because of IRE and the possibility that the people who filled out the questionnaire did this untruthfully (Huang et al., 2015). The mindset questions can seem especially repetitive, so people may have not filled them out carefully or even answer them dishonestly to finish the survey faster. This is something that future investigators should take into consideration by shortening the time to complete the survey. Because our longer survey took participants 23.4 minutes on average, 43% of people did not take the time to complete all questions in the survey.

We only analyzed responses from people who graduated after January 2016. This may not be a sufficient time period to see an effect on career success given that people who graduated in 2016 have had a relatively short career. Furthermore, we did not

distinguish between people who have been working for the past six years from people who just started half a year ago, which may have an impact and have caused biases in our data. Since success and achievements are made over time, research suggests examining careers in the perspective of a lifetime. Therefore, one must take into account the length of the career when analyzing career success (Arthur et al., 2005; Steindórsdóttir et al., 2023; Zacher & Froidevaux, 2021).

Lastly, we do not distinguish between different career types or forms of promotion or job changes. If a person moves horizontal and not vertical on their career, it does not mean that this leads to less OCS, especially in the case for younger adults. Interestingly, hierarchical career movements for older adults seem to be rewarded with higher salary than for younger adults (Steindórsdóttir et al., 2023). Nevertheless, most people still have a traditional career type, and move up in the traditional career ladder over time (Dries et al., 2009).

One of the big strengths of this thesis is the power. We have enough participants to generate a power of .80 and generally good control for interference variables since all our participants come from the same field of study.

Implications

Generally, knowing that there is not a lot of research about the influence of growth mindset on subjective and objective career success and that the few studies that exist indicate a significant effect makes me wonder if there might be a publication bias. In other words, other researchers who also did not find a significant effect did not publish their results, as in the case of my supervisor who had one other study before ours with no significant results.

There is no clear answer or explanation for my non-significant findings although some solid approaches give us an idea of what could have led to these results. I hope future researchers can enlighten more about the influence of mindset on objective and subjective career success.

Recommendations for Future Research

Future research should investigate the theory of mindset impacting career success using a more diverse data set with a wider range of genders and professions to confirm if trends exist outside those examined in this thesis. Additionally, given that success, whether objective or subjective, is often more significant and better rewarded later in life, then future studies should ensure that data is collected for people with long-term careers, both with horizontal and vertical career changes.

Conclusion

We were able to identify a few limitations of our study which should be taken into consideration in future investigations. We gathered sufficient data to form a strong conclusion that mindset does not impact career success of young professionals who graduated with a Master's in psychology from Leiden university. With all the reasoning above, and especially Dweck (2006; 1995; 2019; 2019) proving the influence of mindset on different kinds of success (e.g., school), it seems odd that those influences should stop in career success. In general, the topic of mindset and its influences on career success still lacks in research and therefore should be considered in future studies.

References

Abele, A. E., Spurk, D., & Volmer, J. (2011a). The construct of career success: Measurement issues and an empirical example. *Zeitschrift Für ArbeitsmarktForschung*, *43*(3), 195–206. https://doi.org/10.1007/s12651-010-0034-6

Abele, A. E., Spurk, D., & Volmer, J. (2011b). The construct of career success: Measurement issues and an empirical example. *Zeitschrift Für ArbeitsmarktForschung*, *43*(3), Article 3. https://doi.org/10.1007/s12651-010-0034-6

Arthur, M. B., Khapova, S. N., & Wilderom, C. P. M. (2005). Career success in a boundaryless career world. *Journal of Organizational Behavior*, *26*(2), 177–202. https://doi.org/10.1002/job.290

Becker, G. S. (1962). Investment in Human Capital: A Theoretical Analysis. *Journal of Political Economy*, *70*(5, Part 2), 9–49. https://doi.org/10.1086/258724

Burnette, J. L., O'Boyle, E. H., VanEpps, E. M., Pollack, J. M., & Finkel, E. J. (2013). Mind-sets matter: A meta-analytic review of implicit theories and self-regulation. *Psychological Bulletin*, *139*(3), 655–701. https://doi.org/10.1037/a0029531

Drewery, D. W., Sproule, R., & Pretti, T. J. (2020). Lifelong learning mindset and career success: Evidence from the field of accounting and finance. *Higher Education, Skills and Work-Based Learning*, *10*(3), 567–580. https://doi.org/10.1108/HESWBL-03-2019-0041

Dries, N., Pepermans, R., Hofmans, J., & Rypens, L. (2009). Development and validation of an objective intra-organizational career success measure for managers. *Journal of Organizational Behavior*, *30*, 543–560. https://doi.org/10.1002/job.564

Dweck, C. S. (2006). *Mindset: The new psychology of success* (1st ed.). Random House.

Dweck, C. S., Chiu, C., & Hong, Y. (1995). Implicit Theories and Their Role in Judgments and Reactions: A Word From Two Perspectives. *Psychological Inquiry*, *6*(4), 267–285. https://doi.org/10.1207/s15327965pli0604_1

Dweck, C. S., & Yeager, D. S. (2019). Mindsets: A View From Two Eras. *Perspectives on Psychological Science*, *14*(3), 481–496. https://doi.org/10.1177/1745691618804166

ECTS Grading tables—Leiden University. (n.d.). Retrieved November 10, 2022, from https://www.universiteitleiden.nl/en/education/about-our-education/leiden-study-system/ects-grading-tables

Field, A. (2013). *Discovering Statistics Using IBM SPSS Statistics*. SAGE.

Gattiker, U. E., & Larwood, L. (1988). Predictors for Managers' Career Mobility, Success, and Satisfaction. *Human Relations*, *41*(8), 569–591. https://doi.org/10.1177/001872678804100801

Gunz, H. P., & Heslin, P. A. (2005). Reconceptualizing Career Success. *Journal of Organizational Behavior*, *26*(2), 105–111.

Heslin, P. A. (2005). Conceptualizing and evaluating career success. *Journal of Organizational Behavior*, *26*(2), 113–136. https://doi.org/10.1002/job.270

Hideg, I., & Shen, W. (2019). Why Still so Few? A Theoretical Model of the Role of Benevolent Sexism and Career Support in the Continued Underrepresentation of

Women in Leadership Positions. *Journal of Leadership & Organizational Studies*, *26*(3), 287–303. https://doi.org/10.1177/1548051819849006

Huang, J. L., Liu, M., & Bowling, N. A. (2015). Insufficient effort responding: Examining an insidious confound in survey data. *Journal of Applied Psychology*, *100*(3), 828–845. https://doi.org/10.1037/a0038510

Hughes, E. C. (1958). *Men and their work*. Glencoe, Ill.,: Free Press. http://archive.org/details/mentheirwork00hugh

Janssen, O., & Van Yperen, N. W. (2004). EMPLOYEES' GOAL ORIENTATIONS, THE QUALITY OF LEADER-MEMBER EXCHANGE, AND THE OUTCOMES OF JOB PERFORMANCE AND JOB SATISFACTION. *Academy of Management Journal*, *47*(3), 368–384. https://doi.org/10.2307/20159587

Judge, T. A., Higgins, C. A., Thoresen, C. J., & Barrick, M. R. (1999). THE BIG FIVE PERSONALITY TRAITS, GENERAL MENTAL ABILITY, AND CAREER SUCCESS ACROSS THE LIFE SPAN. *Personnel Psychology*, *52*(3), 621–652. https://doi.org/10.1111/j.1744-6570.1999.tb00174.x

Korman, A. K., Wittig-Berman, U., & Lang, D. (1981). Career Success and Personal Failure: Alienation in Professional Managers. *Academy of Management Journal*, *24*(2), 342–360. https://doi.org/10.2307/255846

Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, *17*(3), 437–455. https://doi.org/10.1037/a0028085

Ng, T. W. H., Eby, L. T., Sorensen, K. L., & Feldman, D. C. (2005). PREDICTORS OF OBJECTIVE AND SUBJECTIVE CAREER SUCCESS: A META-ANALYSIS.

Personnel Psychology, *58*(2), 367–408. https://doi.org/10.1111/j.1744-6570.2005.00515.x

Paunesku, D., Walton, G. M., Romero, C., Smith, E. N., Yeager, D. S., & Dweck, C. S. (2015). Mind-Set Interventions Are a Scalable Treatment for Academic Underachievement. *Psychological Science*, *26*(6), 784–793. https://doi.org/10.1177/0956797615571017

Shockley, K. M., Ureksoy, H., Rodopman, O. B., Poteat, L. F., & Dullaghan, T. R. (2016). Development of a new scale to measure subjective career success: A mixed-methods study: Subjective Career Success. *Journal of Organizational Behavior*, *37*(1), 128–153. https://doi.org/10.1002/job.2046

Spurk, D., Hirschi, A., & Dries, N. (2019). Antecedents and Outcomes of Objective Versus Subjective Career Success: Competing Perspectives and Future Directions. *Journal of Management*, *45*(1), 35–69. https://doi.org/10.1177/0149206318786563

Steindórsdóttir, B. D., Sanders, K., Arnulf, J. K., & Dysvik, A. (2023). Career transitions and career success from a lifespan developmental perspective: A 15-year longitudinal study. *Journal of Vocational Behavior*, *140*, 103809. https://doi.org/10.1016/j.jvb.2022.103809

Wu, P.-C., Foo, M.-D., & Turban, D. B. (2008). The role of personality in relationship closeness, developer assistance, and career success. *Journal of Vocational Behavior*, *73*(3), 440–448. https://doi.org/10.1016/j.jvb.2008.08.005

Yeager, D. S., Hanselman, P., Walton, G. M., Murray, J. S., Crosnoe, R., Muller, C., Tipton, E., Schneider, B., Hulleman, C. S., Hinojosa, C. P., Paunesku, D.,

Romero, C., Flint, K., Roberts, A., Trott, J., Iachan, R., Buontempo, J., Yang, S. M., Carvalho, C. M., … Dweck, C. S. (2019). A national experiment reveals where a growth mindset improves achievement. *Nature*, *573*(7774), 364–369. https://doi.org/10.1038/s41586-019-1466-y

Zacher, H., & Froidevaux, A. (2021). Life stage, lifespan, and life course perspectives on vocational behavior and development: A theoretical framework, review, and research agenda. *Journal of Vocational Behavior*, *126*, 103476. https://doi.org/10.1016/j.jvb.2020.103476

Appendix A

Shockely and colleagues' (2016) Subjective Career Success Inventory (SCSI) full set of items

Considering my career as a whole…
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 (2006) 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 Questions inspired by Abele and colleagues (2011a)

Salary

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

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

Promotions

How many promotions did you get after graduation?

o 0
o 1
o 2
o 3
o 4
o 5
o 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.