Scientific Research Publishing

Psychology, 2021, 12, 1561-1574
https://www.scirp.org/journal/psych
ISSN Online: 2152-7199
ISSN Print: 2152-7180

To Have What It Takes: A Multi-Tiered Psychological Resource Model of First-Generation College Student Success

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How to cite this paper: Zysberg, L., Verlinden, K., & Zingerle, C. (2021). To Have What It Takes: A Multi-Tiered Psychological Resource Model of First-Generation College Student Success. *Psychology, 12,* 1561-1574.
https://doi.org/10.4236/psych.2021.1210098

Received: September 13, 2021
Accepted: October 22, 2021
Published: October 25, 2021

Abstract

First generation students typically show more difficulties adapting to academic studies and lower attainments than their counterparts hailing from academic families. While the literature offers insights into factors associated with these outcomes, there is little understanding of the processes underlying this phenomenon. This study presented and tested a model combining demographic, individual level and interpersonal level resources, all drawn from the field of positive psychology, to account for first generation and non-first generation students' academic attainment in college. A sample of 199 students attending college in Germany, 38% of whom reported being first generation students, filled out a demographic questionnaire, including a report of the GPA, as well as measures of grit, self-efficacy, emotional intelligence and sense of coherence and social support. The results support a double mediation model that suggests that personal resources and social support mediate the association between background variables (gender), being a first-generation student and college GPA. The results are discussed in the context of positive psychology theories and our existing knowledge of the challenges first generation students encounter in academia.

Keywords

First Generation Students, Sense of Coherence, Self-Efficacy, Emotional Intelligence, Grit, Social Support, Academic Achievement

1. Introduction

The importance of academic education as means of social mobility, and social

justice, has received significant attention in educational and sociological settings (e.g.: Stuart, 2012). Attaining academic degrees has been consistently associated with improved socio-economic status, and even better health status (Azhar et al., 2014; Fiscella, & Kitzman, 2009). Academic education is often regarded as a major tool for socio-economic mobility and can therefore serve and be of special importance to students who are the first in their families to pursue academic training (Haveman and Smeeding, 2006). That being said it is also noted in the literature that first generation students (FGS), might negotiate more challenges and hardships on their way to attaining academic education compared with students coming from families that are academically established (Schwartz et al., 2018). It seems then that the same students who would benefit the most from academic education, and will take part in mobilizing underprivileged populations, are the ones who meet higher levels of difficulties and are at risk of dropout, compared with their peers hailing from academic families (Aymans & Kauffeld, 2015). It is therefore of added value to examine the nature of challenges FGS meet while exploring the personal resources that may play a role in their academic attainment.

To address the issues above, this study presented and tested a multi-tiered resource-based model accounting for FGS performance in college, relying on a conceptual framework borrowed from the field of positive psychology.

2. First Generation Students

Since the 1990s, studies present a consistent and somewhat dismaying picture for FGS in academia: They arrive in college with less knowledge about academic education, and the academic system, report receiving less support from their families, and report experiencing more stress regarding their studies (Pascarella et al., 2004; York-Anderson & Bowman, 1991). No wonder then that FGS also experience a starker gap between their high-school learning experience and their college experience. They also attain lower GPA than their peers hailing from academic families (Palbusa & Gauvain, 2017; Strayhorn, 2007).

Beyond social and educational factors as mentioned above, other studies examined the role of individual characteristics and resources that may underlie FGS performance in college. One of the popular factors studied is self-efficacy (or the belief in one's own ability to successfully meet requirements or fulfil a task), and the evidence indeed suggest that FGS show lower levels of self-efficacy in general and academic self efficacy in particular (e.g.: Ramos-Sánchez & Nichols, 2007). Other studies looked at additional personal factors such as locus of control, self-esteem, and more, all showing evidence of being lower with FGS, compared to their peers (e.g.: Aspelmeier et al., 2012). While the evidence is there for a broad array of factors, an organizing framework or model that will offer insight into underlying processes is still lacking. We propose using the general framework of positive psychology as a guide to the formation of a preliminary model of FGS resources that allow the students to effectively (or less effectively) meet academic demands and attain academic success.

3. The Study Model

Positive psychology has presented, about 40 years ago an alternative to the clinical approach that dominated psychology until that time: It suggested that instead of focusing on pathology and prevention, at least certain fields touching everyday psychological function (e.g.: work, studies, etc.) need to focus on the salutogenic aspects of human functioning (Antonovsky, 1996). In the passing decades research has focused on specific concepts and factors associated with personal resources that serve as potential for effective coping and flourishing in challenging circumstances (Ouweneel et al., 2011), and some even suggest stress-related growth (Park, Cohen, & Murch, 1996). While some evidence does point to the relevance of major concepts borrowed from positive psychology in FGS college performance (e.g.: the study of resilience and emotional intelligence in FGS versus non FGS, see: Alvarado et al., 2017), there is currently no published comprehensive model examining the roles of positive psychology concepts alongside personal background variables and interpersonal factors, which is the goal of the current study.

The Model Components

Demographics: Studies have pointed out a few demographics that may play a pivotal role in the way we manage and mobilize resources when coping with challenges: Gender has been one of the most frequently studied factors in accessing and utilizing positive psychology resources such as Emotional intelligence, resilience, hope etc. (Fischer et al., 2018; Le Masson et al., 2016). Education and income level (often conceptualized as socio economic status, SES) have often been considered intervening factors (Reynolds & Cruise, 2020) and were thus measured and controlled for in our study, as well as age.

The following concepts are factors borrowed from the field of positive psychology, often associated in existing research and theory with daily life outcomes in work or educational settings and were thus at the focus of the present study:

Grit: Grit encompasses the ability of an individual to pursue long-term goals with enthusiasm and persistence. This non-cognitive competence is related lifetime educational attainment (Duckworth & Quinn, 2009) and with professional success (Vallerand, Houlfort, & Forest, 2014).

Self-Efficacy (*SE*): Going back much farther than the appearance of positive psychology the concept was nonetheless embraced by the field. The concept pertains to the extent to which individuals perceive themselves as capable of meeting a challenge or successfully completing a task (Artino, 2012). People who have a high self-efficacy are more likely to enter challenging life situations than people with a low self-efficacy experience. In addition, studies show that students with high self-efficacy are less likely to drop out of their studies and identify more with their university than students with low self-efficacy (Ramos-Sánchez & Nichsols, 2007). In addition, further studies underline that self-efficacy is linked to the performance of cognitive tasks and the problem-solving process during the assess-

ment process and that as a result better grades can usually be achieved (Agustiani, Cahyad, & Musa, 2016; Bouffard-Bouchard, 1990; Niemivirta & Tapola, 2007; Multon, Brown, & Lent, 1991; Ouweneel et al., 2011, 2013).

Sense of Coherence: Sense of coherence (SOC) is defined as a global orientation that expresses the extent to which a persistent yet dynamic sense of trust can be felt in terms of the influence that one's own behaviour has on the environment in that the individual perceives it as structured, predictable and explainable (Antonovsky, 1996). A high sense of coherence is in proportion to a high degree of resilience (Shankland et al., 2019) and to educational success (Salamonson et al., 2016).

Emotional Intelligence: Emotional Intelligence (EI), as the ability to (correctly) perceive, understand and influence one's own and others' feelings, is associated both with resilience (Armstrong et al., 2011) and educational success (MacCann et al., 2011; Thomas, Cassady, & Heller, 2017). EI is association with positive educational outcomes, among others is attributed to individuals' higher ability of effectively managing emotions, and harnessing them to facilitate problem solving as well as adaptive behaviors in challenging conditions.

While positive psychology tends to focus on personal resources primarily, it does suggest other resources, namely social and interpersonal resources are at play in our adaptation in unexpected circumstances. Of all these resources social support is perhaps the most studied and validated.

Social Support: Social support is a concept which is highly relevant to almost any type of effective coping with challenges and therefore people with a high experience of social support can be considered particularly resilient (Reinelt et al., 2015). It represents the extent to which individuals perceive meaningful others' availability to them, and their willingness and ability to meet their expectations and needs. The literature typically differentiates between at least two types of support—socio-emotional and instrumental (Yuh & Choi, 2017).

Based on the above literature we may draw a process line or a model of resources anchored in positive psychology theory accounting for FGS academic attainment in College. We start with demographics, which associate with the availability of personal resources, which in turn associate with recruiting social support, finally correlating with academic achievement. The model is graphically presented in **Figure 1**.

4. Method

4.1. Settings and Sample

Participants included 199 undergraduate students enrolled in a public, small sized university in Midwest Germany. The area is a heavily urbanized and industrialized area of the country which is experiencing growth and development. The area is diverse in terms of religious and ethnic composition of the population but the campus from which the sample was taken is predominantly Christian.

The participants' age ranged 19-42 (mean = 23.22; sd = 3.56). Eighty-five

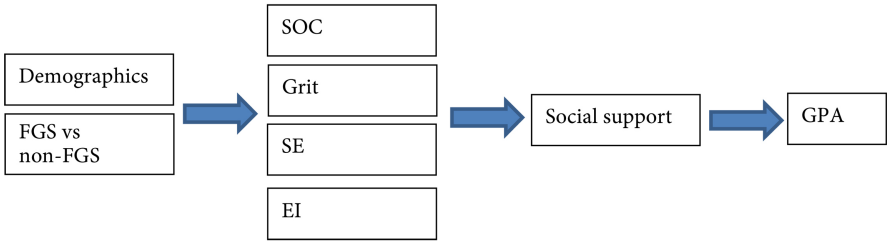

Figure 1. The proposed model.

percent were women, and the rest were men. Almost 92% reported their religion as Christian, 3.5% identified as Muslims and the remaining 4.5% did not report their religious affiliation.

The participants were recruited in lectures which are obligatory for all students in their third and fifth semester. The data collection took place in the mornings under the same instructor. The participants voluntarily agreed to fill out an on-line-based survey.

4.2. Measures

Data collection was carried out using standardized, validated self report measures of each of the variables appearing in the study model:

1) ***Academic attainment***. Academic achievements were assessed by self-reported grand point average (GPA). While not necessarily a sensitive indicator of academic performance, it is nonetheless a popular measure used in various settings, including academic research, candidate selection and more (Nasir & Ikbal, 2019).

2) ***Social Support***. The questionnaire includes four own created items, because no questionnaire was available for the specific sample. Typically, social support scales do not capture individual levels of support at college. Therefore, a separate questionnaire was developed, which scored 0.8 on the parallel test reliability test. It measures the experience of the social support within the categories: family, friends, fellow students and university/college. Sample item: "I get the help that I need from my fellow students."

The answers were given with the help of a 5-stage Likert-scale (1 = strongly agree; 5 = strongly disagree). The sum of the given answers gets divided by the number of questions (four). A low score (1) equates a high level of experienced social support on the contrary a high score (5) corresponds a low level of social support.

3) ***Sense of Coherence***. The Leipzig Short Scale (SOC-L9), based on the SOC-29 Scale, developed by Antonovsky (1996) consists of nine items and measures the constructs comprehensibility, manageability and meaningfulness in the subjective assessment of the participant. Sample item: "If you think about life, you often: [Answer options from:] (1) have the feeling that it is wonderful to live; to (7) wonder why you are alive anyway". "In the empirical studies, for the total scale (SOC-29) reported predominantly good to very good internal consistencies

(Cronbach's Alpha between 0.82 and 0.95" (Schumacher et al., 2000). The answers get summed up so min = 9 and max = 63. The lower the score the better the sense of coherence and the other way round.

4) ***Grit***. The questionnaire includes twelve items and measures the "individual's capacity to persistently and enthusiastically pursue long-term goals. This non-cognitive skill is an important prerequisite for educational and vocational success" (Fleckenstein et al., 2014). Fleckenstein et al. translated the English scale [by Duckworth et al. (2007)] and tested it on a sample of N = 173 pre-service teachers. Sample item: "I often set a goal but later choose to pursue a different one." The answers were given with the help of a 5-stage Likert-scale (1 = strongly agree; 5 = strongly disagree). Reverse score for questions 7 to 12. The sum of the given answers gets divided by the number of questions (twelve). A low score (1) equates a low level of grit on the contrary a high score (5) corresponds a very high level of grit. The average in Germany is 3.81 (Fleckenstein et al., 2014).

5) ***Self-Efficacy***. The SEW questionnaire, developed by Schwarzer & Jerusalem (1999) includes ten items and measures "one's perceived competence to cope with a broad range of stressful or challenging demands" (Schwarzer & Jerusalem, 2003). Sample item: "I can always manage to solve difficult problems if I try hard enough." The range of options of answers reaches from 1 = strongly agree to 5 = strongly disagree. The given answers get summed up (min = 10; max = 40). A low score (10) equates a high level of self efficacy on the contrary a high score (34+) corresponds a low level of self efficacy. The internal consistency is 0.76 to .90, with the majority in the high 0.80s (Schwarzer & Jerusalem, 2003).

6) ***Emotional Intelligence***. The Trait Emotional Intelligence Questionnaire-Short Form-questionnaire (TEIQue-SF) by Cooper & Petrides (2010) contains 30 items and is designed to measure global trait emotional intelligence. "Trait emotional intelligence refers to a constellation of emotional self-perceptions located at the lower levels of personality hierarchies" (Cooper and Petrides, 2010). Answers were given by a scale from 1-strongly agree to 7 strongly disagree. The given answers get summed up (min = 30; max = 270). M = 160 and SD = 19.4. The higher the score, the better the Emotional Intelligence and the other way round. The EI can be measured through self-report items like: "I'm good at understanding the way other people feel." "At the global level, the TEIQue-SF showed very good precision across most of the latent trait range" (Cooper & Petrides, 2010).

7) ***Demographics***. A dedicated questionnaire was used to collect background information regarding the participants' gender, Socio economic status, age, religious affiliation and so on.

4.3. Procedure and Ethical Considerations

The study was approved by the university's IRB. Data was collected using a non-identifying entrance into an online survey. Students were briefed that their choice whether to participate or not will have no bearing on their grades or assessments. Data provided was kept anonymous from the moment students entered

the information. All the participants were approached within the time frame of two large introductory classes help by the same faculty member.

5. Results

5.1. Descriptive Statistics

Before testing the study model, the main variables included in the analyses were examined for normality, internal consistency and distribution coefficients. These analyses are summarized in Table 1 presented below.

We next examined the preliminary associations between the study variables using a Pearson correlation matrix, presented herein. See Table 2, next page for details.

The correlation matrix provides some support to our hypothesized model: Individual resources correlate among themselves and between them and social support. Of the demographics, only gender showed significant associations with any of the individual resources and therefore is the only demographic included in the analyses.

5.2. Model Testing

We next tested the full model using AMOS 20.0, to run a path analysis. While the full model (see Figure 1) was not fully supported by the original analysis, omitting the non-significant paths provided an empirical model well-fitting the data, as described in Figure 2, next page.

The results portray a double mediation model in which gender and being a FGS associate with lower levels of individual resources which in then associate with social support which then associates (along with gender) with students' GPA. This tiered model supports the possibility that individual resources facilitate the recruitment and use of social support and perhaps other related social resources to better cope with academic challenges.

6. Discussion

FGS are documented to show higher levels of difficulty in coping with the

Table 1. Descriptive statistics for the study variables (n = 199).

	Social support	SOC	Grit	SE	EI
Mean	1.951	43.256	4.625	21.889	154.693
Std. Deviation	0.693	6.169	0.530	4.005	18.065
Skewness	0.747	−0.561	−0.408	0.176	−0.570
Std. Error of Skewness	0.172	0.172	0.172	0.172	0.172
Kurtosis	0.115	0.734	−0.088	0.431	0.176
Std. Error of Kurtosis	0.343	0.343	0.343	0.343	0.343
Minimum	1.000	20.000	3.000	10.000	91.000
Maximum	4.250	58.000	5.917	34.000	190.000

Table 2. Correlation results.

Variable	gender		FGS		AP		SoSu		Soc		Grit		SE		TEIQ_SF
1. t_Gender	—														
2. FGS	0.033		—												
3. AP	−0.114		−0.028		—										
4. Summe_SoSu	−0.118		0.030		0.101		—								
5. Summe_Soc	0.128		−0.178		−0.095		−0.355	***	—						
6. Summe_Grit	0.169	*	−0.192	*	−0.048		−0.111		0.392	***	—				
7. Summe_SE	−0.060		0.084		0.005		0.232	***	−0.476	***	−0.357	***	—		
8. Summe_TEIQ_SF	0.181	*	−0.079		−0.110		−0.406	***	0.690	***	0.445	***	−0.595	***	—

*$p < 0.05$, **$p < 0.01$, ***$p < 0.001$.

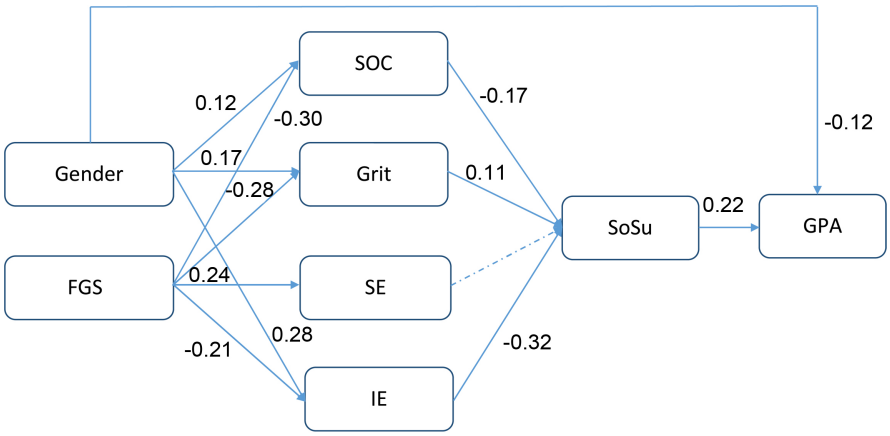

Figure 2. The empirical model results of the path analyses. FGS: First Generation student; SOC: Sense of Coherence; SE: Self efficacy; EI: Emotional Intelligence; SOSU = Social Support; GPA = Grand Point Average. Chi Square = 57.32; df = 11 $p < 0.01$. CFI = 0.94 NFI = 0.93 RMSEA = 0.05.

demands of academia and attain lower grades in college compared with their peer hailing from academic families. While the literature is rich with evidence of factors associated with this gap, no comprehensive process-model has been offered or tested within this context so far. This study proposed a model based on major concepts borrowed from the growing field of positive psychology. The model involves three tiers of factors: demographics, personal resources, and social support as a path of interactions between personal and social resources leading to academic attainment.

6.1. Theoretical vs. the Empirical Models

The results obtained in a sample of 199 German college students provided support to the model, with slight alterations: of all the background and demographic variables, only gender played a role alongside being FGS as an exogenic factor in the models. While gender showed association already reported in the literature with our main model variables (e.g.: Reiff et al., 2001; Lundström et al., 2019), being FGS associated negatively with all individual resources (including with SE

which was reverse scored) which in term associated with social support. Eventually Social support showed a positive association with GPA. This path suggests that FGS may be at a disadvantage since they arrive on campus with lower levels of psychological capital—the resources required to cope with a demanding social environment (Luthans et al., 2010). The model also highlights the way these personal resources may work to determine the participants' performance in college: these resources associate with perceived social support which emerges from the model as a pivotal resource related to college related performance. The importance of social support in understanding human coping and adaptation is well documented throughout long years of theory development and research (Malecki & Demaray, 2006; Mishra, 2020). No wonder then that it may serve as a compensating factor for students who arrive on campus with less knowledge of "the system" than others who had academic experience in their families.

6.2. Theoretical Contribution

Theoretically our findings add to the literature examining the role of positive psychology in general and emotional resources in particular within a context that is often viewed as, cognitive' in nature. The model we propose underlines the relevance of emotional and social factors in higher education environments (Gilar-Corbi et al., 2020; Jaeger & Eagan, 2007). It also suggests a conceptual link between individual level emotional factors and social level behavior and resources (at least at the perceived level). While none of these findings is new, their combination and the successive path they create in our model add to our understanding of how individual recruit and mobilize resources to successfully mitigate challenges in academia and how previous exposure and support may engender these processes.

Our model suggests that personal resources serve as the basis for social support which in turn is one of the strongest factors associated with coping with challenges, including academic and social challenges (MacKinnon, 2012). While the literature on the theoretical role of personal level and individual level resources is somewhat divided, this study supports a model in which individuals level resources allow gathering and recruiting social resources which in turn translate into performance.

6.3. Implications for Practice

The model supported in this study may also inform practitioners as they search for ways to empower FGS and ease their transition into academic studies: While personal resources such as SOC, EI, SE and grit build up and form through the lifespan, there is some evidence that targeted interventions may result in better skills resulting from these resources (see for example: Betz & Schifano, 2000; Kaur, 2011).

An additional way to intervene with FGS resulting from our model is through social support—as academic institutions can form various support groups (like peer-to-peer mentoring), access to counselors and other means of increasing so-

cial support—which should, in particular, have a gender-specific and intersectionality-sensitive perspective—which seems to play an important role in our path associating being a FGS with academic attainment. College and university counselors and equal opportunity/retention officers may use our model as a basis for targeted interventions with FGS to reduce attrition and enhance achievement and performance of this important yet volatile body of students.

6.4. Study Limitations

A few aspects of this study need to be addressed in order to better understand the extent to which our findings may be generalized in varying contexts: Our sample, while adequate in terms of statistical power is limited to a single institution in a single educational setting. Additional contexts and more varied samples may allow better generalization of the model. While we used standardized, validated measures in this study they were all self report format, known to be marred with biases that might undermine internal validity (Donaldson & Grant-Vallone, 2002). Using test format measures, observational measures, and more diverse measures of academic performance may add to the validity of our results.

6.5. Directions for Future Studies

The study model, while accounting and validating directions documented and studied before, may also direct future studies based on questions left unanswered. Thus the role of Gender is highlighted by this model and it seems to work in a complex manner that should be further explored. The double-mediation model may indeed offer some insight into how personal resources help us adapt and effectively cope with challenges, but it only gives us a peek into what seems like a complex conceptual inter-correlations and interactions that need to be further explored. The model proposed and tested here is provides insight into one possible path associating being a FGS and academic attainment, as additional factors and sources for hardship alongside resources for more effective coping still remain to be explored.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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