

Est.
1841

YORK
ST JOHN
UNIVERSITY

Min, You, Laborde, Sylvain, Agnes, S and Vaughan, Robert S. (2021) Influence of personality and emotional competences on academic performance: direct and indirect pathways mediated by perceived stress. *Current Issues in Personality Psychology*, 10 (1). pp. 61-70.

Downloaded from: <https://ray.yorks.ac.uk/id/eprint/5655/>

The version presented here may differ from the published version or version of record. If you intend to cite from the work you are advised to consult the publisher's version:

<https://doi.org/10.5114/cipp.2021.111423>

Research at York St John (RaY) is an institutional repository. It supports the principles of open access by making the research outputs of the University available in digital form. Copyright of the items stored in RaY reside with the authors and/or other copyright owners. Users may access full text items free of charge, and may download a copy for private study or non-commercial research. For further reuse terms, see licence terms governing individual outputs. [Institutional Repositories Policy Statement](#)

RaY

Research at the University of York St John

For more information please contact RaY at
ray@yorks.ac.uk

1 **Influence of personality and emotional competences on academic performance: direct**
2 **and indirect pathways mediated by perceived stress**

3

4

5

6

7

8 Min, Y¹., Laborde, S^{1,2}., Agnes, S².,

9

&

10

Vaughan, R. S³.

11

12

13 ¹Normandie Université, UFR Psychologie, EA3918 CERREV, Caen France

14 ²German Sport University Cologne, Institute of Psychology, Department of Performance

15 Psychology, Germany

16 ³York St John University, UK

17

18

19

20 Word Count: 4850 inclusive

21

22

23

24 Contact Details: Sylvain Laborde, German Sport University Cologne, Institute of Psychology,

25 Department of Performance Psychology, Germany; Email: s.laborde@dshs-koeln.de

26
27
28
29
30
31
32
33
34
35
36
37
38
39

Abstract

Among the factors influencing academic performance (AP), individual differences at the trait level such as personality and emotional competences (EC) have been found to play a critical role, similarly to state variables such as perceived stress (PS). The aim of this study was to clarify whether the influence of personality (big five) and EC on AP (general point average) is direct and/or mediated via PS. 537 undergraduate students from a French university (112 male and 425 female, $M_{age} = 19.84$ years, $SD_{age} = 1.74$ years, range = 18 - 30 years; first year: $n = 293 - 55\%$; second year: $n = 162 - 30\%$, third year: $n = 82 - 15\%$) filled out the test battery around three weeks before final examination. Path analysis showed that AP was directly predicted by conscientiousness (+), neuroticism (+), extraversion (-) and perceived stress (-), while perceived stress was predicted by neuroticism (+) and by intrapersonal EC (-). Results illustrate the robust influence of conscientiousness on AP, while EC was not found to influence directly AP, but indirectly via its effect on PS.

Introduction

40
41 Understanding the predictors of academic performance is of utmost interest for
42 educational researchers, teachers, and of course for students themselves (Droppert et al.,
43 2019; Kim et al., 2017; Stajkovic et al., 2018). Academic performance can be influenced by
44 factors beyond intelligence such as meta-cognitions (Ohtani & Hisasaka, 2018), health (Shaw
45 et al., 2015), class attendance and social support (Kassarnig et al., 2018), behavioral and
46 emotional characteristics (Park et al., 2019), and also by personality traits, e.g., the Big Five
47 (McCrae & Costa, 2008), and emotional dispositions (e.g., Saklofske et al., 2012). The current
48 study focuses on the latter. We aim to clarify whether the influence of the big five and
49 emotional competences (EC) on academic performance is direct, or mediated via a state
50 affective variable, perceived stress.

51 Perceived stress, reflecting an appraisal of the situation where demands tax or
52 overcome resources (Lazarus & Folkman, 1984). University students usually perceive
53 academic life to be stressful and demanding (Hammer et al., 2010; Kausar, 2010; Wan et al.,
54 1992). Specifically, they report experiencing a range of emotional and cognitive reactions to
55 this perceived stress, in particular due to external pressures and self-imposed expectations,
56 involving adjusting to both academic and social demands (Misra & McKean, 2000). In
57 students, perceived stress was found to be negatively associated with academic performance
58 (Duchesne & Larose, 2018; Frazier et al., 2019; Gustems-Carnicer et al., 2019). Among
59 students, perceived stress is also negatively associated with performance-related factors such
60 as coping self-efficacy, resilience, and social support (Frazier et al., 2019). Students
61 perceiving less stress use less avoidant-coping strategies and more problem-focused coping
62 strategies (Gustems-Carnicer et al., 2019). Understanding how individual differences affect
63 perceived stress and appraisal is therefore relevant to understand how to deal with it (Kilby et
64 al., 2018). In an academic context (Saklofske et al., 2012), the five subcomponents (self-

65 perception, interpersonal, decision making, self-expression, and stress management) measured
66 with the Emotional Quotient Inventory (Bar-On, 2002) were found to be negatively related to
67 perceived stress, while for the big five, extraversion, agreeableness, and conscientiousness
68 were found to be negatively related, and neuroticism positively related. However, whether
69 perceived stress mediates the relationship between individual differences and academic
70 performance has not yet been examined, thus we aim to address this gap.

71 According to meta-analyses, the big five has been consistently found to be related to
72 academic performance (Poropat, 2009; Stajkovic et al., 2018; Vedel, 2014). Specifically, a
73 positive association was reported between grade point average and agreeableness, and
74 openness, with the strongest relationship found with conscientiousness. Conscientious
75 students usually show greater motivation and effort toward their studies (Chamorro-Premuzic
76 & Furnham, 2014; De Raad & Schouwenburg, 1996). Neuroticism and extraversion seem to
77 be less connected with academic achievement, and hypotheses about potential connections are
78 rather ambiguous (Tetzner et al., 2019). Among the big five traits, neuroticism may be most
79 relevant when considering potential mediation via perceived stress, while the other traits may
80 be mediated by other mechanisms. Neuroticism is expected to increase perceived stress in
81 students due to focusing on negative affectivity (Schmidt et al., 2013), which may in turn
82 influence negatively academic performance.

83 EC refer to how individuals differ in the way they identify, express, understand,
84 regulate, and use own (i.e., intrapersonal) and others' (i.e., interpersonal) emotions (Brasseur
85 et al., 2013). They are assessed with self-report measures such as the profile of emotional
86 competences (PEC; Brasseur et al., 2013). The theory of EC builds on emotional intelligence
87 (EI) research, but uses the concept of competences, given competences contrary to
88 intelligence can be taught and learned. The current study is to our knowledge, the first based
89 on the theory of EC using the PEC to investigate its relationship with academic performance.

90 To date, previous research showed that trait EI was related positively to academic
91 performance, as found in a meta-analysis (Perera & DiGiacomo, 2013). Several pathways
92 have been suggested to explain this relationship (Perera, 2016), specifically its association
93 with perceived stress (Laborde et al., 2010; Watson & Watson, 2016).

94 Regarding the respective influence of the big five and EC on academic performance,
95 previous research showed that trait EI - measured via self-report - (Di Fabio & Palazzeschi,
96 2009, 2015; Downey et al., 2013; Mancini et al., 2017; Saklofske et al., 2012; Siegling et al.,
97 2015) and ability EI - measured with performance tests - (Di Fabio & Palazzeschi, 2009)
98 usually predict additional academic performance variance beyond the big five. Trait EI was
99 also found to predict academic motivation beyond the big five (Siegling et al., 2015). Some
100 contrary evidence exists as well, for example, academic performance was predicted by
101 conscientiousness and openness positively, and neuroticism negatively, while only one of the
102 EI subcomponents (adaptability) was found to be related to academic performance, with a
103 small effect size (Saklofske et al., 2012). Two drawbacks can be identified in this line of
104 research: first, so far, differences between intrapersonal and interpersonal EC on the way they
105 influence academic performance has received little attention (for an exception see Saklofske
106 et al., 2012), while this may help to better understand how EC may be related to academic
107 performance. Second, potential mediators were not taken into account, and we focus in this
108 research on perceived stress.

109 To sum up, this study aims to clarify the pathways linking the big five and EC to
110 academic performance, and to clarify whether some of these relationships may be mediated
111 via perceived stress. Using path analysis and based on theory and on previous research
112 findings, we hypothesize that for the big five and academic performance, direct positive
113 relationships with conscientiousness, agreeableness, and openness will be found (Poropat,
114 2009; Vedel, 2014), while no direct relationships are expected with neuroticism and

115 extraversion. In addition, we predicted that neuroticism will have an influence on academic
116 performance via perceived stress (Schmidt et al., 2013; Tetzner et al., 2019). Regarding
117 intrapersonal and interpersonal EC, we hypothesize both a direct pathway to academic
118 performance as well as an indirect pathway mediated via perceived stress (Brasseur et al.,
119 2013; Di Fabio & Palazzeschi, 2009, 2015; Downey et al., 2013; Mancini et al., 2017).

120 **Method**

121 **Participants**

122 537 undergraduate psychology students from a French university (112 male and 425
123 female, $M_{age} = 19.84$ years, $SD_{age} = 1.74$ years, range = 18 - 30 years; first year: $n = 293$ –
124 55%; second year: $n = 162$ – 30%, third year: $n = 82$ – 15%) participated in the study and
125 gave permission for their exam results to be retrieved at the end of the academic year. In order
126 to determine mediation effects with bias-corrected bootstrapping, Fritz and Mackinnon (2007)
127 recommend a minimum sample of 400 participants for medium indirect effects. The study
128 was approved by the Ethics committee of the local university (N° 07/2017).

129 **Materials**

130 *The Profile of Emotional Competences (PEC; Brasseur et al., 2013)*

131 The PEC comprises 50 items and encompasses 10 subscales (intrapersonal
132 identification, intrapersonal expression, intrapersonal comprehension, intrapersonal
133 regulation, intrapersonal utilization, interpersonal identification, interpersonal expression,
134 interpersonal comprehension, interpersonal regulation and interpersonal utilization) of 5 items
135 each, grouped into two factors (intrapersonal EC and interpersonal EC) and one global EC
136 score. Each item consists of a short statement, to which participants are asked to indicate how
137 closely they identify using a five-point scale, from 1 “The proposal does not fit you at all or
138 that you never react in this way” to 5 “you recognize yourself completely in what is described
139 or that it happens to you very often”. Sample items are: “I use my feelings to improve my

140 choices in life” or “I feel uncomfortable if people tell me about their problems, so I try to
141 avoid it”.

142 ***Big-Five Inventory (Plaisant et al., 2010)***

143 The French version of the Big Five Inventory (Plaisant et al., 2010) is a 45-item self-
144 reported scale, reflecting the five main dimensions: extraversion, conscientiousness, openness,
145 agreeableness, and neuroticism. The Big Five Inventory French version (BFI-Fr) does not use
146 single adjectives as items because such items are answered less consistently than when they
147 are accompanied by definitions or elaboration. It uses 45 short phrases based on the trait
148 adjectives known to be prototypical markers of the Big Five. Each item consists of a short
149 statement begin with “I see myself as someone who...”, to which participants are asked to
150 indicate how closely they identify using a five-point scale, from 1 “Disagree strongly” to 5
151 “Agree strongly”. Sample items are: “Tends to be lazy” or “Can be somewhat careless”.

152 ***Perceived Stress Scale (PSS; Bellinghausen et al., 2009)***

153 Compared to the original 14-item scale (Cohen et al., 1983), this 10-item version of
154 the French adaptation is validated within the French working population. The scale comprises
155 two distinct factors: perceived work overload and perceived personal efficacy. Each item
156 consists of a short statement, to which participants are asked to indicate how often they felt or
157 thought a certain way by using a five-point scale, from 1 “Never” to 5 “Very often”. Sample
158 items are: “In the last month, how often have you felt that things were going your way?” or
159 “In the last month, how often have you felt nervous and stressed?”.

160 **Procedure**

161 A convenience sampling procedure was used in 2018. The students participated in the
162 study during class settings around three weeks before end of year examination. The survey
163 included the instruments listed above, a set of demographic questions, and a section where
164 students could give their student ID number and allow this to be used to retrieve their final

165 result (grade point average) at the end of academic year. Students gave also their permission
166 for their end-of-the-year grade to be accessed. The grade point average was based on a scale
167 from 0 to 20, and corresponds to the average of exam results related to a certain number of
168 subjects (see Table 1 for the detail of the subjects). For the first and second academic year,
169 there were 8 exams counting each for 6 ECTS (European Credit Transfer and Accumulation
170 System), and 6 exams counting for 2 ECTS each. In the third academic year, there were 10
171 exams counting for 6 ECTS each. The full description of subjects can be seen in Table 1. The
172 full test battery took around 20 minutes to complete. Students were informed that
173 participation in the study was voluntary, and that they could withdraw their participation in
174 the study at any point without giving explanations, and without consequences.

175 Insert Table 1 here

176 **Data analysis**

177 First zero-order Pearson correlations were computed. Then we tested the hypothesized
178 model via path analysis with the software AMOS 22.0 (see Figure 1). Goodness of fit was
179 assessed with the χ^2 index, the Comparative Fit Index (CFI), the Tucker Lewis Index (TLI),
180 the standardized root mean square residual (SRMR), and the root mean square error of
181 approximation (RMSEA). Following recommendations (Hu & Bentler, 1999), values below
182 0.08 for the SRMR and below 0.06 for the RMSEA show an acceptable fit. Regarding CFI
183 and TLI, values higher than 0.95 indicate an acceptable model fit (Hu & Bentler, 1999). In
184 addition we provide the χ^2 -value as a subjective index of fit, with small values indicating a
185 good fit (Jöreskog, 1993).

186 Insert Figure 1 here

187 **Results**

188 All variables indicated acceptable internal consistency scores. Full descriptive
189 statistics and zero order correlations can be seen in Table 1. Zero-order correlations indicated

190 that four variables were significantly related to academic performance: conscientiousness (r
191 = .34, $p < .001$), extraversion ($r = -.10$, $p = .020$), neuroticism ($r = .12$, $p = .004$), and
192 perceived stress ($r = -.10$, $p = .020$). No correlations were found with global EC, inter-EC or
193 intra-EC and academic performance ($p > .05$). However, they were correlated with perceived
194 stress, for global EC ($r = -.37$, $p < .001$), intra-EC ($r = -.48$, $p < .001$), and inter-EC ($r = -.12$,
195 $p = .006$).

196 Insert Table 2 here

197 The hypothesized model did not yield satisfactory fit. Based on estimates and
198 modifications indices suggestions fitting our theoretical background, we adapted the
199 hypothesized model (see Figure 2). The final model fit was $\chi^2(5) = 19.544$, CFI = .98, TLI
200 = .93, RMSEA = .07, SRMR = .04. Path analysis showed that academic performance was
201 directly predicted by (standardized estimates are provided): conscientiousness (.33),
202 neuroticism (.21), extraversion (-.11) and perceived stress (-.18), while perceived stress was
203 predicted positively via neuroticism (.46) and negatively by intrapersonal emotional
204 competences (-.24).

205 Insert Figure 2 here

206 Discussion

207 Our study aimed to investigate the direct influence of the big five traits and emotional
208 competences on academic performance, as well as a potential mediation via perceived stress.
209 Specifically, we hypothesized a direct pathway to academic performance for three of the big
210 five traits (i.e., openness, agreeableness, and conscientiousness) as well as for intra- and
211 interpersonal emotional competences, and an indirect pathway for neuroticism, as well as for
212 intra- and interpersonal emotional competences via perceived stress. As our hypothesized
213 model did not show a good fit to the data, we refined our model based on estimates and
214 modification indices analysis suggested by AMOS, in line with our theoretical background.

215 The final model showed a direct positive pathway between academic performance with
216 conscientiousness, neuroticism, and a direct negative pathway with extraversion and
217 perceived stress. In addition, an indirect pathway was found with perceived stress, predicted
218 positively by neuroticism and negatively by intrapersonal emotional competences.

219 The findings regarding the direct pathway between conscientiousness and academic
220 performance is the most robust of the literature (Poropat, 2009; Stajkovic et al., 2018; Vedel,
221 2014). Regarding extraversion and neuroticism, their relationship with academic performance
222 is considered as rather ambiguous (Tetzner et al., 2019). For extraversion, it may be that the
223 negative relationship found here could be explained by the fact extroverted students may be
224 distracted by non-relevant academic tasks (Bidjerano & Dai, 2007). The positive relationship
225 with neuroticism may be explained by the additional efforts put by students high in
226 neuroticism into exam preparation in order to cope with a potential threatening event
227 (Rosander et al., 2011). The fact that openness and agreeableness did not appear as predictors
228 in our sample, contrary with what was found in previous meta-analyses (Poropat, 2009;
229 Vedel, 2014), may be due to the fact that the characteristics of the end of year exams (e.g.,
230 mostly multiple choice questionnaires) did not rely on aspects related to openness such as
231 curiosity (Gatzka & Hell, 2018), or regarding agreeableness that cooperation with peers and
232 teachers had little influence on exam results (Miller et al., 2003).

233 The negative relationship between perceived stress and academic performance is in
234 line with previous research (Duchesne & Larose, 2018; Frazier et al., 2019; Gustems-Carnicer
235 et al., 2019). Pre-stress examination may be detrimental to academic performance in that it
236 hinders learning and memory retrieval during the exam. Two traits were found to influence
237 perceived stress, negatively with intrapersonal EC, and positively with neuroticism. Dealing
238 optimally with one's own emotions may certainly help in reducing perceived stress, with the
239 implementation of effective coping strategies (Saklofske et al., 2012); while dealing with

240 others' emotions was not found to have any influence here, which is potentially linked to the
241 finding with agreeableness noted above. Regarding neuroticism, the focus on negative
242 affectivity tends to increase perceived stress (Schmidt et al., 2013), potentially due to
243 increased anxiety and negative cognitions (Gallagher, 1990). The case of neuroticism is
244 interesting, given it was found to have either a positive direct influence on academic
245 performance, and a negative influence when mediated via perceived stress, which speaks for
246 the ambiguity of the relationship between neuroticism and academic performance as pointed
247 out in previous research (Tetzner et al., 2019).

248 Regarding the relationship between EC and academic performance, no direct
249 relationship was found, contrary to previous research with EI (Di Fabio & Palazzeschi, 2009,
250 2015; Downey et al., 2013; Mancini et al., 2017; Perera & DiGiacomo, 2013). Our findings
251 are rather similar to the ones of Saklofske et al. (2012), who found that academic performance
252 was more associated to the big five traits than with EI. Future research has to investigate
253 whether the questionnaires used to assess EI/EC may play a role in the findings, given they
254 reflect different theoretical backgrounds (Laborde & Allen, 2016). Also differentiating self-
255 report (trait perspective) and performance measures (ability perspective) of EC may prove
256 helpful, given previous research showed that ability EI predicted academic performance more
257 in comparison to trait EI (Di Fabio & Palazzeschi, 2009).

258 The main limitations of our study is that we did not control for cognitive ability
259 (Meyer et al., 2019; Ohtani & Hisasaka, 2018) or previous academic performance (Thomas et
260 al., 2017). Further, only psychology students of one university took part to this study, which
261 makes it difficult to generalize the findings regarding academic performance. Additionally,
262 we could not check the distribution of achievement for each separate subject constituting the
263 grade point average. This issue should be investigated in future research, given different
264 emotion regulation factors will be involved in challenging (i.e., where few students achieve

265 high grades) vs. less challenging exams (i.e., where most students achieve high grades).

266 Finally, our design was cross-sectional, which impedes any causal interpretation of the data.

267 **Conclusion**

268 Our study investigated the influence of the big five and EC on academic performance,
269 and specifically whether the relationship with specific traits would be mediated via perceived
270 stress. We found that academic performance was directly predicted by conscientiousness (+),
271 neuroticism (+), extraversion (-) and perceived stress (-), while perceived stress was predicted
272 by neuroticism (+) and by intrapersonal emotional competences (-). Future research should
273 clarify whether these results extend to other samples, and also to which extent the EI/EC
274 assessment (choice of instrument; self-report vs. performance test) influences the results.
275 These findings provide a further understanding about how individual differences may
276 influence academic performance, and may therefore inform the development of interventions,
277 identifying the students who may benefit most from a stress management intervention to
278 prepare them for exams and future related outcomes.

279 At the practical level, the development of stress management interventions can be
280 informed by the findings of a recent meta-analysis (Amanvermez et al., 2020) showing that
281 stress management interventions for college students were particularly effective in reducing
282 stress, depression, and anxiety, and specifically for students reporting high-stress levels.
283 Based on the categorization used in this meta-analysis, the stress management interventions
284 may target the following aspects: cognitive-behavioral therapy with for example cognitive
285 restructuring and stress inoculation; third-wave concepts¹ focusing on acceptance, defusion,
286 values, and mindfulness; mind-body interventions, including meditation, muscle relaxation,

¹ In short, first wave therapy refers to the first “wave” of scientifically-based psychotherapy, and corresponds to behavioral therapy as developed in the 1950’s, second wave therapy refers to cognitive behavioral therapy as developed in the 1970’s, and third wave therapy is seen as an evolution of traditional cognitive behavioral therapy emphasizing contextual and experiential change strategies in addition to more direct and didactic ones (for a detailed discussion, see Ost, 2008).

287 breathing exercises, guided imaginary techniques, and biofeedback, and finally skills training
288 interventions focusing at improving social, academic, or coping skills. As we see, the range of
289 potential stress interventions addressing students' needs is quite large. Although some of them
290 could be potentially learned autonomously by the students themselves, we would strongly
291 recommend educational institutions and universities to provide a dedicated support service to
292 help students coping with stress, given the impact it has on their academic performance.

293

294

References

295 Amanvermez, Y., Rahmadiana, M., Karyotaki, E., de Wit, L., Ebert, D. D., Kessler, R. C., & Cuijpers,
296 P. (2020). Stress management interventions for college students: A systematic review and
297 meta-analysis. *Clinical Psychology: Science and Practice*. <https://doi.org/10.1111/cpsp.12342>

298

299 Bar-On, R. (2002). *Bar-On Emotional Quotient Inventory: Short. Technical manual*. Multi-Health
300 Systems.

301

302 Bellinghausen, L., Collange, J., Botella, M., Emery, J.-L., & Albert, É. (2009). Validation factorielle
303 de l'échelle française de stress perçu en milieu professionnel [Factorial Validation of the
304 French Scale for Perceived Stress in the Workplace]. *Santé Publique*, 21(4), 365-373.
305 <https://doi.org/10.3917/spub.094.0365>

306

307 Bidjerano, T., & Dai, D. Y. (2007). The relationship between the big-five model of personality and
308 self-regulated learning strategies. *Learning and Individual Differences*, 17(1), 69-81.
309 <https://doi.org/10.1016/j.lindif.2007.02.001>

310

311 Brasseur, S., Grégoire, J., Bourdu, R., & Mikolajczak, M. (2013). The Profile of Emotional
312 Competence (PEC): development and validation of a self-reported measure that fits
313 dimensions of emotional competence theory. *PLoS ONE*, 8, 1-8.
314 <https://doi.org/10.1371/journal.pone.0062635>

315

316 Chamorro-Premuzic, T., & Furnham, A. (2014). *Personality and Intellectual Competence*. Taylor &
317 Francis. <https://books.google.fr/books?id=M0t4AqAAQBAJ>

318

319 Cohen, S., Kamarck, T., & Mermelstein, R. (1983). A Global Measure of Perceived Stress. *Journal of*
320 *Health and Social Behavior*, 24(4), 385-396. <https://doi.org/10.2307/2136404>

321

322 De Raad, B., & Schouwenburg, H. C. (1996). Personality in Learning and Education: A Review.
323 *European Journal of Personality*, 10(5), 303-336. [https://doi.org/10.1002/\(sici\)1099-0984\(199612\)10:5<303::aid-per262>3.0.co;2-2](https://doi.org/10.1002/(sici)1099-0984(199612)10:5<303::aid-per262>3.0.co;2-2)

325

- 326 Di Fabio, A., & Palazzeschi, L. (2009). An in-depth look at scholastic success: Fluid intelligence,
327 personality traits or emotional intelligence? *Personality and Individual Differences*, 46(5-6),
328 581-585. <https://doi.org/10.1016/j.paid.2008.12.012>
- 329
330 Di Fabio, A., & Palazzeschi, L. (2015). Beyond fluid intelligence and personality traits in scholastic
331 success: Trait emotional intelligence. *Learning and Individual Differences*, 40, 121-126.
332 <https://doi.org/10.1016/j.lindif.2015.04.001>
- 333
334 Downey, L. A., Lomas, J., Billings, C., Hansen, K., & Stough, C. (2013). Scholastic Success.
335 *Canadian Journal of School Psychology*, 29(1), 40-53.
336 <https://doi.org/10.1177/0829573513505411>
- 337
338 Droppert, K., Downey, L., Lomas, J., Bunnett, E. R., Simmons, N., Wheaton, A., Nield, C., & Stough,
339 C. (2019). Differentiating the contributions of emotional intelligence and resilience on
340 adolescent male scholastic performance. *Personality and Individual Differences*, 145, 75-81.
341 <https://doi.org/10.1016/j.paid.2019.03.023>
- 342
343 Duchesne, S., & Larose, S. (2018). Academic competence and achievement goals: Self-pressure and
344 disruptive behaviors as mediators. *Learning and Individual Differences*, 68, 41-50.
345 <https://doi.org/10.1016/j.lindif.2018.09.008>
- 346
347 Frazier, P., Gabriel, A., Merians, A., & Lust, K. (2019, Aug-Sep). Understanding stress as an
348 impediment to academic performance. *Journal of American College Health*, 67(6), 562-570.
349 <https://doi.org/10.1080/07448481.2018.1499649>
- 350
351 Fritz, M. S., & Mackinnon, D. P. (2007, Mar). Required sample size to detect the mediated effect.
352 *Psychological Science*, 18(3), 233-239. <https://doi.org/10.1111/j.1467-9280.2007.01882.x>
- 353
354 Gallagher, D. J. (1990). Extraversion, neuroticism and appraisal of stressful academic events.
355 *Personality and Individual Differences*, 11(10), 1053-1057. [https://doi.org/10.1016/0191-](https://doi.org/10.1016/0191-8869(90)90133-c)
356 [8869\(90\)90133-c](https://doi.org/10.1016/0191-8869(90)90133-c)
- 357
358 Gatzka, T., & Hell, B. (2018). Openness and postsecondary academic performance: A meta-analysis of
359 facet-, aspect-, and dimension-level correlations. *Journal of Educational Psychology*, 110(3),
360 355-377. <https://doi.org/10.1037/edu0000194>
- 361
362 Gustems-Carnicer, J., Calderón, C., & Calderón-Garrido, D. (2019). Stress, coping strategies and
363 academic achievement in teacher education students. *European Journal of Teacher Education*,
364 42(3), 375-390. <https://doi.org/10.1080/02619768.2019.1576629>
- 365
366 Hammer, L. B., Grigsby, T. D., & Woods, S. (2010). The Conflicting Demands of Work, Family, and
367 School Among Students at an Urban University. *The Journal of Psychology*, 132(2), 220-226.
368 <https://doi.org/10.1080/00223989809599161>
- 369
370 Hu, L. t., & Bentler, P. M. (1999, 1999). Cutoff criteria for fit indexes in covariance structure analysis:
371 Conventional criteria versus new alternatives. *Structural Equation Modeling: A*
372 *Multidisciplinary Journal*, 6(1), 1-55. <https://doi.org/10.1080/10705519909540118>

373
374 Jöreskog, K. G. (1993). Testing structural equation models. In K. A. Bollen & J. S. Long (Eds.),
375 *Testing structural equation models* (pp. 294-316). Sage.

376
377 Kassarnig, V., Mones, E., Bjerre-Nielsen, A., Sapiezynski, P., Dreyer Lassen, D., & Lehmann, S.
378 (2018, 2018/04/24). Academic performance and behavioral patterns. *EPJ Data Science*, 7(1),
379 10. <https://doi.org/10.1140/epjds/s13688-018-0138-8>

380
381 Kausar, R. (2010). Perceived Stress, Academic Workloads and Use of Coping Strategies by University
382 Students. *Journal of Behavioral Sciences*, 20, 31-45.

383
384 Kilby, C. J., Sherman, K. A., & Wuthrich, V. (2018). Towards understanding interindividual
385 differences in stressor appraisals: A systematic review. *Personality and Individual*
386 *Differences*, 135, 92-100. <https://doi.org/10.1016/j.paid.2018.07.001>

387
388 Kim, S., Fernandez, S., & Terrier, L. (2017). Procrastination, personality traits, and academic
389 performance: When active and passive procrastination tell a different story. *Personality and*
390 *Individual Differences*, 108, 154-157. <https://doi.org/10.1016/j.paid.2016.12.021>

391
392 Laborde, S., & Allen, M. S. (2016). Comment: Measurement and the Interpretation of Trait EI
393 Research. *Emotion Review*. <https://doi.org/10.1177/1754073916650498>

394
395 Laborde, S., Dosseville, F., & Scelles, N. (2010). Trait emotional intelligence and preference for
396 intuition and deliberation: Respective influence on academic performance. *Personality and*
397 *Individual Differences*, 49(7), 784-788. <https://doi.org/10.1016/j.paid.2010.06.031>

398
399 Lazarus, R. S., & Folkman, S. (1984). *Stress, appraisal and coping*. Springer.

400
401 Mancini, G., Andrei, F., Mazzoni, E., Biolcati, R., Baldaro, B., & Trombini, E. (2017, Aug). Brief
402 report: Trait emotional intelligence, peer nominations, and scholastic achievement in
403 adolescence. *Journal of Adolescence*, 59, 129-133.
404 <https://doi.org/10.1016/j.adolescence.2017.05.020>

405
406 McCrae, R. R., & Costa, P. T. (2008). The five-factor theory of personality. In O. P. John, R. W.
407 Robins, & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp.
408 159-181). Guilford Press.

409
410 Meyer, J., Fleckenstein, J., Retelsdorf, J., & Köller, O. (2019). The relationship of personality traits
411 and different measures of domain-specific achievement in upper secondary education.
412 *Learning and Individual Differences*, 69, 45-59. <https://doi.org/10.1016/j.lindif.2018.11.005>

413
414 Miller, J. D., Lynam, D., & Leukefeld, C. (2003). Examining antisocial behavior through the lens of
415 the five factor model of personality. *Aggressive Behavior*, 29(6), 497-514.
416 <https://doi.org/10.1002/ab.10064>

417
418 Misra, R., & McKean, M. (2000). College students' academic stress and its relation to their anxiety,
419 time management, and leisure satisfaction. *American Journal of Health Studies*, 16(1), 41-51.

420
421 Ohtani, K., & Hisasaka, T. (2018, 08/01). Beyond intelligence: a meta-analytic review of the
422 relationship among metacognition, intelligence, and academic performance. *Metacognition*
423 *and Learning*, 13, 1-34. <https://doi.org/10.1007/s11409-018-9183-8>

424
425 Park, Y., Seo, D. G., Park, J., Kim, B., & Choi, J. (2019). The influence of behavioral and emotional
426 characteristics on academic achievement of middle school students: A growth modeling
427 approach. *School Psychology International*, 40(5), 433-455.
428 <https://doi.org/10.1177/0143034319853010>

429
430 Perera, H. N. (2016, 2016/02/17). The Role of Trait Emotional Intelligence in Academic Performance:
431 Theoretical Overview and Empirical Update. *The Journal of Psychology*, 150(2), 229-251.
432 <https://doi.org/10.1080/00223980.2015.1079161>

433
434 Perera, H. N., & DiGiacomo, M. (2013). The relationship of trait emotional intelligence with academic
435 performance: A meta-analytic review. *Learning and Individual Differences*, 28, 20-33.
436 <https://doi.org/10.1016/j.lindif.2013.08.002>

437
438 Plaisant, O., Courtois, R., Réveillère, C., Mendelsohn, G. A. A., John, O. P. P., & Guertault, J. (2010).
439 Validation par analyse factorielle du Big Five Inventory français (BFI-Fr). Analyse
440 convergente avec le NEO-PI-R. *Annales Médico-psychologiques, revue psychiatrique*, 168,
441 97-106. <https://doi.org/10.1016/j.amp.2009.09.003>

442
443 Poropat, A. E. (2009, Mar). A meta-analysis of the five-factor model of personality and academic
444 performance. *Psychol Bull*, 135(2), 322-338. <https://doi.org/10.1037/a0014996>

445
446 Rosander, P., Bäckström, M., & Stenberg, G. (2011). Personality traits and general intelligence as
447 predictors of academic performance: A structural equation modelling approach. *Learning and*
448 *Individual Differences*, 21(5), 590-596. <https://doi.org/10.1016/j.lindif.2011.04.004>

449
450 Saklofske, D. H., Austin, E. J., Mastoras, S. M., Beaton, L., & Osborne, S. E. (2012). Relationships of
451 personality, affect, emotional intelligence and coping with student stress and academic
452 success: Different patterns of association for stress and success. *Learning and Individual*
453 *Differences*, 22, 251-257.

454
455 Schmidt, L. I., Sieverding, M., Scheiter, F., & Obergfell, J. (2013). Predicting and explaining students'
456 stress with the Demand–Control Model: does neuroticism also matter? *Educational*
457 *Psychology*, 35(4), 449-465. <https://doi.org/10.1080/01443410.2013.857010>

458
459 Shaw, S. R., Gomes, P., Polotskaia, A., & Jankowska, A. M. (2015). The relationship between student
460 health and academic performance: Implications for school psychologists. *School Psychology*
461 *International*, 36(2), 115-134. <https://doi.org/10.1177/0143034314565425>

462
463 Siegling, A. B., Vesely, A. K., Petrides, K. V., & Saklofske, D. H. (2015, Apr 1). Incremental Validity
464 of the Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF). *Journal of*
465 *Personality Assessment*, 1-11. <https://doi.org/10.1080/00223891.2015.1013219>

466

- 467 Stajkovic, A. D., Bandura, A., Locke, E. A., Lee, D., & Sergent, K. (2018). Test of three conceptual
468 models of influence of the big five personality traits and self-efficacy on academic
469 performance: A meta-analytic path-analysis. *Personality and Individual Differences*, 120, 238-
470 245. <https://doi.org/10.1016/j.paid.2017.08.014>
- 471
472 Tetzner, J., Becker, M., & Brandt, N. D. (2019, Jun 7). Personality-achievement associations in
473 adolescence-examining associations across grade levels and learning environments. *Journal of*
474 *Personality*. <https://doi.org/10.1111/jopy.12495>
- 475
476 Thomas, C. L., Cassady, J. C., & Heller, M. L. (2017). The influence of emotional intelligence,
477 cognitive test anxiety, and coping strategies on undergraduate academic performance.
478 *Learning and Individual Differences*, 55, 40-48. <https://doi.org/10.1016/j.lindif.2017.03.001>
- 479
480 Vedel, A. (2014). The Big Five and tertiary academic performance: A systematic review and meta-
481 analysis. *Personality and Individual Differences*, 71, 66-76.
482 <https://doi.org/10.1016/j.paid.2014.07.011>
- 483
484 Wan, T.-y., Chapman, D. W., & Biggs, D. A. (1992). Academic stress of international students
485 attending U.S. universities. *Research in Higher Education*, 33(5), 607-623.
486 <https://doi.org/10.1007/bf00973761>
- 487
488 Watson, J. C., & Watson, A. A. (2016). Coping Self-Efficacy and Academic Stress Among Hispanic
489 First-Year College Students: The Moderating Role of Emotional Intelligence. *Journal of*
490 *College Counseling*, 19(3), 218-230. <https://doi.org/10.1002/jocc.12045>
- 491
492