Reality check: changes in business students' psychological resources as they move towards graduation

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Abstract:

This study examines the trajectory of student psychological resources over the course of business education. Business education should equip students with positive psychological resources so that they can succeed. Most business school programs focus on the development of skills in communication, critical thinking, and quantitative, technological, and functional knowledge, while omitting training that affects students' psychological resources to succeed in business. This study employs the psychological capital (PsyCap) instrument to measure psychological resources. Comparisons of freshmen and seniors showed that freshman scored higher on four of the five PsyCap dimensions. Business students followed for two years showed significant drops in need for achievement and need for feedback. To counter reduced psychological resources, business schools should explore the implementation of training interventions. Future research should replicate longitudinal measures of business student psychological resources that have profound implications for business education.

Article:

1 Introduction

Most business school programs focus on the development of skills and functional knowledge. What may be missing from these programs, however, are efforts to build student psychological resources. This study contributes to the literature by examining the development of psychological resources over a business student's college career. Luthans et al. (2014, p.191) argue that "a much-overlooked approach for overcoming barriers to academic success and ultimately preparing today's business students for professional success may be found in the proactive development of positive psychological resources." Psychological resources consist of hope, efficacy, resilience, and optimism, all subscales of psychological capital, better known as PsyCap (Luthans et al., 2014). Business education is supposed to equip students with positive psychological resources so that they can succeed in an ever-changing business world.

Research has examined student psychological resources to a limited extent. Luthans et al. (2006) used an experimental study design to develop a PsyCap intervention in college students. Luthans et al. (2012) found that PsyCap was related to academic performance. Luthans et al. (2014) also found that PsyCap could help improve academic performance in business students using a short training intervention. Their study used a pre-test-post-test control group design with 200 business students at two mid-sized universities in the Midwestern United States. PsyCap has been used to measure affective, continuance, and normative commitment to change of almost 400 undergraduate students in management in Sri Lanka. The results revealed that PsyCap had a positive and significant effect on affective and normative commitment to change and a negative effect on continuance commitment to change (Naotunna, 2015). Koperski (2017) explored the moderating effects of PsyCap on the relationship between work-school facilitation, work-school conflict, and school performance and study engagement. The study found that increasing PsyCap in college students while improving the fit between work and school-work roles can improve students' academic performance.

We use two measures of psychological resources. In addition to the newer PsyCap measure, we use a classic measure of psychological resources: Miner sentence completion scale (MSCS) (Smith and Miner, 1983; Miner et al., 1989, 1994; Miner and Raju, 2004). To our knowledge, this study is the first to use these two well-known measures of psychological resources in the same study. Luthans et al. (2014) demonstrated a relationship between academic psychological capacity and student academic performance. The PsyCap approach is based on the notions of a process psychology and positive psychology. Process psychology derives from process philosophy, as proposed by Whitehead (1933). It is based on the notion that the cornerstone of metaphysical reality is change. Underlying the study of behaviour is the idea that each occasion of human experience influences future experiences and is causally influenced by previous occasions. Any given experience consists of a process of apprehending previous experiences and reacting to them. This is known as process psychology. Such a process sequence is never deterministic. Consequently, free will is essential and inherent in this approach.

This paper is structured as follows: we begin with a literature review of PsyCap and the MSCS. Then, we provide the hypotheses and discuss the methodology and results. We conclude with limitations and possible future research avenues.

2 PsyCap

PsyCap is a construct from positive psychology, which is the scientific study of positive human functioning (Seligman and Csikszentmihalyi, 2000; Peterson and Seligman, 2004). Positive psychology has gained many adherents in recent years (see http://positivepsychology.org). Several domains related to the workplace have emerged, including positive organisational behaviour (e.g., Luthans, 2002a, 2002b; Wright, 2003; Luthans and Youssef, 2007; Nelson and Cooper, 2007; Luthans and Youssef-Morgan, 2017), positive organisational scholarship (Cameron et al., 2003; Cameron and Caza, 2004), and PsyCap (Luthans et al., 2004, 2005; Luthans and Youssef, 2004; Luthans et al., 2006, 2007a).

Positive organisational scholarship is part of positive psychology but focuses on the organisational component rather than the individual component (Dutton and Glynn, 2007). According to Cameron et al. (2003, p.10), "the desire to improve the human condition is universal and the capacity to do so is latent in most systems." Observing individuals in organisations is known as positive organisational behaviour and refers to the "study and application of positively oriented human resource strengths and psychological capacities that can be measured, developed, and effectively managed for performance improvement in today's workplace" [Luthans, (2002c), p.59]. 'Human' means all people working at all levels of a family business or another organisation (Luthans et al., 2004).

Positive organisational behaviour can be measured through PsyCap at the individual, team, and organisational levels. PsyCap consists of four major components: hope (goals), efficacy (can-do belief or confidence), resilience (ability to bounce back from adversity), and optimism (positive attitude towards achieving goals). Together, these components make the 'HERO within' (Luthans, 2002b, 2005; Luthans et al., 2007a, 2007b; Luthans and Youssef, 2007). However, Luthans (2002c) raises an important point that PsyCap is not 'pop psychology'. For a component of PsyCap to be considered, it must be grounded in theory and research, have valid measurement, be open to development, and have an impact on desired outcomes. There have been major psychometric reviews on PsyCap in terms of conceptualisation and measurement, and all have deemed the construct valid and reliable at the individual, group, and organisational levels (e.g., Dawkins et al., 2013, 2015, 2018; Newman et al., 2014; Harms et al., 2018). In addition, each of the four components of PsyCap has been found to affect workplace outcomes distinctly and to remain consistent (Bouckenooghe et al., 2018).

Avey et al. (2011) conducted a meta-analysis of research on PsyCap and found that PsyCap in employees contributes to favourable attitudes, behaviours, and performance and contributes unfavourably to employee attitudes, such as cynicism, turnover intentions, job stress, and anxiety, and undesirable employee behaviours, such as deviance. A more recent meta-analysis found similar results (Kong et al., 2018). Organisational climate, organisational justice, leadership, leader-member exchange, and occupational stress all influence factors with PsyCap using different weightings. PsyCap was also found to affect job satisfaction, attitude, performance, organisational citizenship, and undesirable behaviours. Luthans and colleagues maintain that PsyCap can be improved in individuals through short-term training (including online) (Luthans et al., 2008) and can lead to performance improvement over time (Luthans et al., 2006).

Despite the major psychometric positive reviews of PsyCap, there are some criticisms. At the conceptual level, Schneider (2011) argued that positive psychology fails to explain past heinous behaviours, such as those perpetrated by the Nazi Party or Stalinist Communism. Even Seligman (1995) acknowledged that merely feeling good about oneself may distort one's perceptions of reality. These conceptual criticisms notwithstanding, research has shown that PsyCap is related to important organisational outcomes such as job satisfaction and organisational commitment (Kong et al., 2018).

Hackman (2009) argued that there was an over-emphasis on individual-level variables rather than cross-level interactions, such as those among individuals and groups, in an organisational

and cultural context. Dawkins and Martin (2010) also noted that PsyCap had received scant research attention at multiple levels and had limited methodologies. To a great extent, these factors have has been considered in more recent research, as studies have examined the individual, group, team, and organisation levels and have found PsyCap to be valid and reliable at all levels (e.g., Dawkins et al., 2013, 2015; Newman et al., 2014; Harms et al., 2018). In addition, in examining each of the four components of PsyCap (hope, efficacy, resilience and optimism), research has found that each affects outcomes distinctly and remains consistent not only in the workplace but also in other environments, such as universities and schools (Bouckenooghe et al., 2018).

Measuring the PsyCap of business students is particularly important because graduates bring a portfolio of skills and knowledge as well as psychological resources (Luthans et al., 2007b) into the workplace. We assume that the business school experience should increase in PsyCap as students gain knowledge and proficiency in using the tools of business. Thus, it should be possible in a test-retest format to find gains in PsyCap scores. While PsyCap is a relatively new measure of psychological resources, the MSCS has long been used to measure psychological resources in the form of motivation.

3 MSCS

The MSCS is rooted in task motivation theory. As such, it follows McClelland's (1961) work on the need for achievement. Task psychological resources theory centres on the entrepreneurial role. The scale measures achievement psychological resources in five separate motive patterns: achievement, risk taking, feedback of results, personal innovation, and planning for the future. Sometimes, these five motives can be substituted for one another to produce an overall index of task psychological resources (e.g., Locke and Henne, 1986). McClelland's (1961) work in the *Achieving Society* was based on scored stories in response to Thematic Apperception Test pictures. The scoring of the stories included some risk taking, feedback, and innovation, but these factors only counted in the total achievement score. Task psychological resources theory makes it possible to measure each of these five features of the entrepreneurial role separately.

Task psychological resources theory holds that the pushes and pulls of sanctions are built into a task to be performed. Control does not come from superiors, professional norms, or peer group members, but rather from the work itself and the way it is structured. Task psychological resources theory is also a positive approach to psychological resources based in the argument that person-organisation fit leads to the happiest and most satisfied employees and managers. The work redesign stream of research is based on this premise (see, e.g., Perlow and Kelly, 2014). Task psychological resources theory usually deals with person-organisation fit. When this fit is off-centre, the businessperson is likely to fail in business and go bankrupt. Thus, for students going through a business school curriculum, we expect that their education would prepare them psychologically and resourcefully to face the challenges they will encounter after graduation.

Achievement is based on the individual's desire to succeed through his or her own efforts and to be able to take credit for an organisation's success. The *risk-taking* measure is based on the desire to take moderate risks when personal effort can contribute to the results of the risk taking.

Feedback of results is based on the individual's need for clear and consistent feedback on his or her performance. *Personal innovation* is based on a desire to produce innovative solutions to common business problems. *Planning for the future* is based on the desire to think about future goals and to have a goal-setting mindset. Using these five motives, Miner and colleagues have examined the entrepreneurial motive extensively and have achieved considerable success in predicting entrepreneurial outcomes (Smith and Miner, 1983; Berman and Miner, 1985; Miner et al., 1989, 1994).

While achievement motivation has long been a valid predictor of entrepreneurial behaviour and success, recent studies have cast doubt on whether it is enhanced by business education (e.g., Oosterbeek et al., 2010). Indeed, Karlan and Valdivia (2011) found that adding business training for Peruvian microentrepreneurs produced little or no observable impact on key outcomes, such as revenue, profits, or employment. From this result, it might be inferred that achievement motivation remained unchanged even after training.

Several scholars have criticised the MSCS form T because of its lack of construct validity and reliability data. Miner (2005) showed that reliabilities of .90 for the subscales have been achieved. While the validity and reliability of the instrument may be questioned, it is apparent that it has shown predictive validity (Miner et al., 1989, 1994). Thus, criticisms of the lack of construct validity and reliability can be appeased: the subscales of the MSCS form T showed predictive validity in both these studies; thus, it follows that the instrument must have sufficient reliability to enable significant predictive correlations. Moreover, if the constructs do predict important real-world outcomes, the lack of proof of construct validity seems beside the point.

The work of Oosterbeek et al. (2010) suggests that while students may gain knowledge from business education, they may not gain motivation or psychological resources. We propose to test whether business education enhances psychological resources. Business programs implicitly assume that motivation and psychological resources are enhanced as students progress through their programs, but this is an assumption that needs to be tested.

4 Hypotheses

Given the work already carried out on students using the PsyCap (Luthans et al., 2006, 2012, 2014; Naotunna, 2015; Koperski, 2017), we expect that PsyCap scores should increase over the span of a business student's education. More specifically, we expect that upper-level, more mature students should be more hopeful, self-efficacious, resilient, and optimistic than their fellow freshman students. More formally:

> H1. Seniors should have significantly higher PsyCap scores than freshmen, as they have had the benefit of at least three years of business education.

Given Miner et al.'s (1989, 1994) work on achievement psychological resources, we expect achievement and other motivation scores to increase over the span of a business student's education. That is, there should be a marked increase of achievement psychological resources over the course of a student's business school education as well as an increased preference for moderate risks, an increased preference for performance feedback, an increased desire for

personal innovation, and an increased inclination to be a planner and a goal setter. More formally:

> H2. Seniors should have significantly higher MSCS form T scores than freshmen, as they have had the benefit of at least three years of business education.

5 Methods

5.1 Study 1

We tested a pilot sample of the survey with 20 students to ensure readability and understanding. All the measures in this study were administered online via Qualtrics. After improvements, the survey was administered after institutional review board approval was received. We recruited five different groups totalling 1,069 students from a business school in a mid-sized south-eastern university. The first group contained freshmen and a few sophomores taking the introduction to entrepreneurship course. The second group consisted of business majors who were taking upper-level courses in entrepreneurship (advanced BUS ENT), while the third group comprised students who represented 12 different non-business majors from across the university taking entrepreneurship courses (non-business ENT). The fourth group was general business students taking a required junior-level common body of knowledge course. The fifth group consisted of senior students working on an internship project (internship); this course was not required in their major. This study was thus cross-sectional, in that it involved measuring students at one point in time.

5.2 Study 2

A sample of 214 business students was given the MSCS form T early in their program and then late in their program. We took measures primarily when the students were second-semester sophomores and first or second-semester seniors. While there was some variation among students in the time between measures, none of the measures were closer in time than 18 months or longer than 24 months. This study was thus longitudinal, and the results were based on individual change scores.

5.3 Study 3

This study was based on a large sample ($N = 1,184$) of students accumulated over five years. Employing the MSCS form T, we compared freshman ($N = 155$) with seniors ($N = 1,029$). As each student was measured only once, this was a cross-sectional design.

6 Results

6.1 Study 1

Table 1 shows the means and standard deviations for the five samples on all the PsyCap scales. As Table 1 shows, the means vary considerably. As noted previously, the advanced business student group included students in ten different upper-level entrepreneurship courses and thus

was the largest group. The second-largest group was the general business group; this group contained students taking the organisational behaviour course. The third-largest group was the non-business students who took entrepreneurship courses listed in their department. This group was made up of ten different majors: English, geology, gerontology, hospitality and tourism, music performance, consumer apparel and retail, library and information studies, education, African American studies, and political science. These students made up a good cross-section of the majors offered in the entrepreneurship cross-campus program (Welsh, 2014), which consists of approximately 50 courses in 27 departments.

Table 1. PsyCap: descriptive statistics

PsyCap scale	Groups	*N*	Mean	Standard deviation
Self-efficiency	Freshman	76	59.14	10.10
	Advanced BUS ENT	490	58.18	7.34
	Non-business ENT	186	57.19	9.16
	General business	247	56.29	8.56
	Internship	63	55.98	7.71
	Total	1,062	57.51	8.25
Hope	Freshman	76	56.01	8.15
	Advanced BUS ENT	490	54.99	6.31
	Non-business ENT	186	55.11	6.73
	General business	247	54.66	6.44
	Internship	63	52.81	6.82
	Total	1,062	54.88	6.61
Optimism	Freshman	76	57.82	10.61
	Advanced BUS ENT	490	57.13	7.81
	Non-business ENT	186	56.75	8.90
	General business	247	56.26	7.80
	Internship	63	55.19	7.63
	Total	1,062	56.80	8.23
Resilience	Freshman	76	54.95	10.67
	Advanced BUS ENT	490	54.60	8.73
	Non-business ENT	186	52.85	8.96
	General business	247	52.65	8.97
	Internship	63	52.22	9.08
	Total	1,062	53.73	9.04
Total score	Freshman	76	227.92	35.06
	Advanced BUS ENT	490	224.91	25.09
	Non-business ENT	186	221.90	29.12
	General business	247	219.87	26.26
	Internship	63	216.21	26.52
	Total	1,062	222.91	27.10

Although it might be expected that the students from across the curriculum would have the highest standard deviation because this group represents ten different majors, this was not the case. The freshmen (mostly) taking the introduction to entrepreneurship course had the largest standard deviation across all five scales. They also had the highest mean across all five scales. The descriptive statistics are not what would be predicted from the literature. The scores of students in their final internship project were the lowest of all the groups. Over the course of

education, the set of tools and knowledge increase, so we expected that students' psychological resources would also increase. Our results uncover two sets of resources, which we would expect to overlap. There is no question that students accumulate certain skills and that knowledge increases over their college career, but the results indicate that psychological resources do not necessarily increase as students' college careers progress; these are independent of academic knowledge and skills. In general, our results show that students lose psychological resources over their college careers. Hypothesis 1 was not confirmed. In fact, the results were just the opposite of what was hypothesised. As this is one study at one university, the results are likely not generalisable to all universities. Additional studies are required to fully understand this phenomenon.

Table 2 shows the one-way ANOVA for these groups. Given the sample size, it is not surprising that four of the five ANOVA comparisons are significant at the 5% level. Optimism does not show a significant difference across the groups, but the other four scales do. The F ratios are not large, indicating modest strength of the effect. However, as this is a field study lacking experimental precision, the strengths of the effect are unlikely to be large. In fact, none of the $\omega 2$ are greater than .01. However, given that the ANOVA produces significant results, we are free to examine the differences between groups. Hypothesis 2 was also not confirmed but the results were the opposite of what was hypothesised. Clearly, our belief that psychological resources should be increased over students' time in business school seems not to be the case.

Table 2. One-way ANOVA comparing PsyCap across groups

Groups		Sum of squares	df	Mean square	F	Sig.
Self-efficacy	Between groups	953.477	4	238.369	3.538	.007
	Within groups	71,205.989	1,057	67.366		
	Total	72,159.466	1,061			
Hope	Between groups	440.171	4	110.043	2.592	.050
	Within groups	45,926.642	1,057	42.450		
	Total	46,321.813	1,061			
Optimism	Between groups	367.537	4	91.884	1.358	.246
	Within groups	71,496.531	1,057	67.641		
	Total	71,864.068	1,061			
Resilience	Between groups	1,060.201	4	265.050	3.273	.011
	Within groups	85,585.513	1,057	80.970		
	Total	86,645.714	1,061			
Total score	Between groups	9,168.582	4,	2,292.146	3.146	.014
	Within groups	770,146.375	1,057	728.615		
	Total	880,314.957	1,061			

Table 3 shows the least significant difference (LSD) multiple comparisons for each of the scales. The largest difference among the groups is the comparison of the freshman group with the final internship project. Across all the comparisons, there are only two minus signs. In only two cases comparing younger students with older students do the older students come out ahead. This is a remarkable finding in itself, quite separate from the statistical significance. Three of the five comparisons are significant at the 5% level, and the total scale comparison is the largest of any comparison in Table 3. Freshman PsyCap means are uniformly higher than senior means. These

data seem counterintuitive, and it is reasonable to surmise that the results are unique to the PsyCap instrument.

Table 3. LSD multiple comparisons: self-efficacy, hope and optimism

PsyCap	Group	Compared with	Mean difference
Self-efficacy	Freshman	Upper level BUS ENT	0.96
		Non-BUS ENT	1.95
		General business	2.85**
		Internship	3.16*
	Upper level BUS ENT	Non-BUS ENT	0.98
		General business	1.89**
		Internship	2.19*
	Non-BUS ENT	General business	0.90
		Final ENT project	1.21
	General business	Internship	0.31
Hope	Freshman	Upper level ENT	1.02
		Non-BUS ENT	0.91
		General business	1.35
		Internship	3.21**
	Upper level BUS ENT	Non-BUS ENT	–0.11
		General business	0.33
		Final ENT project	2.18*
	Non-BUS ENT	General business	–0.44
		Final ENT project	2.30*
	General business	Internship	1.85*
Optimism	Freshman	Upper level ENT	0.68
		Non-BUS ENT	1.07
		General business	1.55
		Internship	2.63
	Upper level BUS ENT	Non-BUS ENT	0.39
		General business	0.48
		Internship	1.56
	Non-BUS ENT	General business	0.48
		Final ENT project	1.56
	General business	Internship	1.07
Resilience	Freshman	Upper level ENT	0.35
		Non-BUS ENT	2.09
		General business	2.30
		Internship	2.73*
	Upper level BUS ENT	Non-BUS ENT	1.75*
		General business	1.95*
		Internship	2.38*
	Non-BUS ENT	General business	–0.21
		Final ENT project	0.63
	General business	Internship	0.43
Overall	Freshman	Upper level ENT	3.02
		Non-BUS ENT	6.02
		General business	8.06*
		Internship	11.72

PsyCap	Group	Compared with	Mean difference
	Upper level BUS ENT	Non-BUS ENT	3.00
		General business	5.04*
		Internship	8.70*
	Non-BUS ENT	General business	2.04
		Final ENT project	5.70
	General business	Internship	3.66*

Note: *p < 0.05 and **p < 0.01.

6.2 Study 2

Table 4 shows the results of this MSCS form T measures of student psychological resources. In general, the average psychological resources scores in these measures decrease from time 1 to time 2. Table 5 shows that the psychological resources scores decrease significantly in two of the five scales. For all but two of the psychological resources scores, the means decrease from time 1 to time 2 even though only two are significant decreases. Need for feedback and need for achievement show significant drops from time 1 to time 2. Whatever the effect PsyCap is reflecting in groups of freshmen versus groups of seniors, the MSCS constructs seem to be showing the same downward trend in a totally different sample.

Table 4. Descriptive statistics and t-tests for MSCS form T constructs

Construct	Mean	N	Std. dev.	t^a
Personal innovation time 1	1.41	214	2.359	−1.235
Personal innovation time 2	1.61	214	2.473	
Risk-taking time 1	−.09	214	2.168	−0.704
Risk-taking time 2	.03	214	2.286	
Planning time 1	2.47	214	2.230	0.823
Planning time 2	2.32	214	2.178	
Feedback time 1	3.87	214	2.440	2.758**
Feedback time 2	3.31	214	2.851	
Achievement time 1	2.71	214	2.457	3.236*
Achievement time 2	2.11	214	2.509	

Notes: [a] t-tests were within-subject.
**$p < .01$ and *$p < .05$.

Table 5. Means and standard deviations of MSCS form T constructs

Variables		N	Mean	Std. dev.	t
Personal innovation	Freshmen	155	.91	2.337	−1.58
	Seniors	1,029	1.25	2.549	
	Total	1,184	1.21	2.524	
Risk-taking	Freshmen	155	−.03	2.285	0.09
	Seniors	1,029	−.04	2.163	
	Total	1,184	−.04	2.179	
Planning	Freshmen	155	2.25	2.453	1.03
	Seniors	1,029	2.05	2.214	
	Total	1,184	2.05	2.214	
Feedback	Freshmen	115	3.77	2.548	2.67**
	Seniors	1,029	3.13	2.814	
	Total	1,184	3.21	2.788	

Variables		*N*	Mean	Std. dev.	*t*
Achievement	Freshmen	155	2.37	2.492	2.10**
	Seniors	1,029	1.94	2.530	
	Total	1,184	1.99	2.528	

Note: **p < 0.01.

6.3 Study 3

Table 5 shows an entirely different sample of business school students taken over five years. MSCS form T results show that both need for achievement and need for feedback drop significantly between freshmen and seniors. In this case, the sample (at least the senior sample) is much larger than it was in Study 1 and Study 2. The magnitude of the drops is approximately the same in both Study 2 and Study 3.

In summary, research has clearly shown the efficacy of training with business students (Luthans et al., 2006, 2014). Luthans et al. (2008) used web-based training on PsyCap to improve performance in a business setting after just two hours, providing evidence that PsyCap can be used for general business training.

7 Discussion

All three studies show that students have decreased psychological resources scores over the course of their business school education. What seems clear is that younger students have higher perceived hope, self-efficacy, resilience, optimism, self-achievement, and desire for feedback than their older classmates who are finishing their programs. Having established this effect in all three studies, it is unlikely that it is simply sampling error. This study confirms the findings of Oosterbeek et al. (2010) that though business education may add knowledge, it does not add psychological resources or motivation. If this is widely true, business educators need to rethink the content of the business curricula.

Potential explanations for this drop in psychological resources are myriad. One logical post-hoc hypothesis is that business education presents the complexity of the modern business world to students. As students come to understand the complexity of what they will be undertaking after graduation, this knowledge has a sobering effect. Another explanation may lie in the area of maturation. The studies show that this period of life is marked by great changes in the structure and function of the brain. The changes in function affect response inhibition, calibration of risk and reward and emotional regulation. As Steinberg (2017) suggests, middle adolescence has heightened vulnerability to risk taking and problems in regulating affect and behaviour. Late adolescence is marked by maturation of the frontal lobes, which facilitate regulatory competence. These physical changes in the brain might be accompanied by concomitant changes in PsyCap and motivation.

Luthans et al. (2014) demonstrated that PsyCap can be increased through training. The data in this study show support to the notion that psychological resources training might prevent these resources from decreasing and could potentially increase them during business education programs. Indeed, half a century ago, McClelland (1961) showed that it is possible to train people to have a higher need for achievement. While most business education aims to provide a

portfolio of knowledge and skills, the psychological resources aspect (at least of this program) is generally neglected. If the data from these three studies hold up under cross-validation in other business schools, it would indicate that psychological resources do not parallel the growth in knowledge and skills acquired over time in a business school environment. This is the main finding of this study.

8 Conclusions

A primary limitation of this study is that the student sample came from one business school in the Southeastern United States. The results might be different for other universities. Even so, it is necessary to explain this result. Why should students who are finishing their majors and undertaking a senior project have lower PsyCap scores than younger, less experienced students? How can we account for the freshman advantage? We offer two potential explanations for these (admittedly) tentative data. First, as students go on through their program of study, they begin to face some of the obstacles that entrepreneurs do, and this makes them less sanguine about their chances of realising their own small business aspirations. Second, there may be physical/physiological maturation effects for these differences. It is well established that younger adolescent brains are more prone to taking risks (Steinberg, 2017). Perhaps, the effect is a combination of these two factors. More longitudinal data from other business schools are necessary to answer this question.

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