

Learning Agility and Personal Agency in University-Based Nascent Entrepreneurs

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Abstract. *This paper examines the relationship between learning agility and personal agency among nascent entrepreneurs within the framework of social cognitive theory. The analysis is based on the data from the 10th GUESSS round, administrated among university students in Bulgaria in 2023. Learning agility is defined as an individual's preference (and more broadly – ability) for engaging with unique learning experiences. The study finds out that female nascent entrepreneurs are more agile in terms of learning, as well as graduate students in comparison with bachelors.*

We conduct explorative factor analysis of 13 items measuring personal agency using the concepts of resilience and adaptability, life-satisfaction and self-efficacy across different entrepreneurial stages: nascent, active and non-entrepreneurial.

Personal agency is the ability to take decisions and perform actions to achieve one's goals and influence the environment and others. Personal agencies assume self-confidence, internal locus of control and dynamic capabilities. We find a significant positive correlation between learning agility and two of the factors identified - resilience, as well as with life-satisfaction, but not significant relationship with the third factor - self-efficacy.

Social cognitive theory and our observations suggest that fostering resilience and life satisfaction from one side and learning agility from another are self-reinforcing each other. Fostering learning agility could lead to more effective entrepreneurial education and leadership development.

Keywords: learning agility, personal agency, self-efficacy, life-satisfaction, resilience, nascent entrepreneurs.

Introduction

Agility became a *conditio sine qua non* for contemporary businesses. The fast technological change, complexity and uncertainty in the business environment require firms to set their dynamic capabilities as a top priority. Once developed as a niche management tool aimed at increasing efficiency of software project management, agile management is now diffusing all sectors and layers of management. Companies and their employees are forced by the changing business demands to learn continuously, faster and differently from the past. Education, both at primary, secondary schools and universities, is also adapting. In the turbulent era we are living in, the only constant is change.

The paper focuses on a particular type of agility, which is seldomly studied, and this is learning agility, and particularly the self-assessed preference over unique styles of learning, compared to what others typically do. For a comprehensive literature review on learning agility one can consult Nayak and Malik (2024). The general concept is quite larger than the one we would use in the paper, constrained by the availability of data we have.

Although agility is often preached and thought, still a lot of employees and management prefer the classical waterfall management and are not ready to adapt. Agile management is a social behavior and as such is a subject of observational learning in the context of Bandura's social cognitive theory (Bandura, 2001). Agility could be learnt in a nutshell (we will refer to this as agility learning), yet it depends on various personal (and organizational) characteristics.

The classical way of learning is much more aligned with the classical way of management, so in order to have efficient agility learning we would need learning agility, or changed or innovated way of learning. The best theoretical alignment of the relationship between the learning agility and personal characteristics would be provided by the concept of personal agency, a central part of the social cognitive theory (Bandura, 1990). Yet, there is an obvious empirical research gap in that relationship as there are only four papers in Scopus and Web of Science with both terms 'learning agility' and 'personal agency' and they do not explore it. Furthermore, DeRue et al (2012) state that "academic community has been largely absent from ... discussion of learning agility".

We would hypothesize that people with stronger personal agencies would have higher learning agility. People who believe in their capabilities to cope with difficult situations, who are creative and satisfied with their life would prefer unique ways of learning, including from experience. We would explore what are the factors of the personal agency, which correlate with higher learning agility. As students progress in their studies (and getting into the business) the environment becomes more turbulent and hence we would expect that graduate (master and PhD) students to be more agile in terms of their learning styles.

Various prior studies well documented by DeRue et al (2012) looked into demographically coherent groups (managers, employees of large companies), yet we did not find studies of entrepreneurs. Due to data constraints, we would focus only on nascent student entrepreneurs, as we have the data for learning agility only about them.

Literature review

Our paper is grounded in the social cognitive theory and benefits in particular from three major perspectives - Bandura's theory of perceived self-efficacy (Bandura, 1990), Billett's work on subjectivity and learning (Billett, 2011), and research on learning agility (Meuse et al., 2011). They collectively offer an insight into how individuals develop resilience and take control of their personal and professional growth, how navigate challenges and transform their experiences into meaningful development.

Learning agility

In an age where adaptability is key, the concept of learning agility has gained traction. Learning agility refers to an individual's ability to acquire knowledge quickly, apply it in new contexts, and continuously develop in response to change. A recent bibliometric analysis of learning agility (Nayak and Malik, 2014) between 2010 and 2023 found a rapid increase in publications after 2021. It clusters the publications in four groups, mainly linked with key factors driving learning agility.

The first cluster focuses on behavior, internship and experiential learning theory, where the importance of learning agility is delineated in order to stay updated with the latest changing environment as well as fostering relevant teaching and learning practices. A major conclusion is that hands-on experience, rather than theoretical instruction, is a crucial driver of learning agility.

The second cluster expands on ways to foster learning agility by creating opportunities for intergenerational collaboration through communities of practice and learning. Easing learning agility into different age groups can benefit both younger and senior employees in addition to the

managers responsible for enterprise development based on continuous knowledge sharing and learning.

The third cluster explores the relevance of learning agility to the higher education and information and communication technologies. The individuals who embrace change and seek new challenges demonstrate high learning agility.

The last cluster represents learning agility in the context of leadership development and talent management. The two-dimensional model of leadership potential is emphasized, which uses cognitive and behavioral competencies to evaluate one's leadership potential. Incorporating learning agility into leadership development ensures that the future leaders are equipped with the skills they need to succeed in a rapidly changing environment. A key conclusion from papers in this cluster is that organizations, which foster learning agility in their leaders also create more adaptive and resilient teams.

These findings suggest that organizations should prioritize the practice of learning agility in their employees, so that they can navigate complexity, take risks, and learn from failure. Moreover, individuals who cultivate learning agility are better positioned for success in dynamic professional environments.

Stephen Billett's research on subjectivity, self, and personal agency in learning provides another dimension to understanding personal development, particularly in workplace settings (Billett, 2011). He argues that learning is not a passive process but an active negotiation between individual experiences and social structures.

Learning at work is shaped by both social norms and individual agency. Billett proposes a relational interdependence between these two forces. The workplace provides opportunities for learning, but individuals must actively engage, interpret, and construct knowledge based on their own experiences and perspectives. Employees have personalized learning trajectories, with one's unique learning experience, shaped by their past experiences, values and personal subjectivities. Lastly, individuals selectively engage with workplace norms, sometimes embracing or resisting them based on their own perceptions.

Billett challenges the notion that workplace learning is purely dictated by external conditions. Instead, he emphasizes how workers exert personal agency in shaping their own development.

In Bulgaria, a recent study by Vutsova et al. (2023) explored learning agility of university students towards social responsibility. Yet, it did not have any personal agency factor studied.

Personal agency

Albert Bandura's concept of perceived self-efficacy (Bandura, 1990) highlights how an individual's belief in their ability to succeed influences their motivation, thought processes, and behavior. Bandura argues that people are not just passive recipients of external forces but rather active agents who shape their own psychological functioning through self-perception. He identifies four key processes that self-efficacy affects individuals.

The first one is the cognitive process, where high self-efficacy leads to positive thinking patterns, visualization of success, and strategic problem-solving. Conversely, low self-efficacy fosters doubt and avoidance behaviors. The second is the process of motivation, meaning those with strong self-efficacy set higher goals, remain committed to them, and show perseverance, even in the face of obstacles. The third is the affective process, a person's emotional regulation and even the ability to cope with stress and shortcomings in life. High self-efficacy reduces anxiety and depression and increases one's determination to overcome challenges.

Lastly, this is the selection process, where people tend to seek and prefer environments that align with their self-perceived strengths and goals, shaping their career and personal development paths.

Studies have shown that altering perceived self-efficacy can significantly impact motivation and performance. For example, in controlled experiments, individuals who were falsely led to believe they had high competence in a task exhibited greater persistence and success. This underscores how much our beliefs shape real-world outcomes.

Nascent entrepreneurs

Nascent entrepreneurs in Bulgaria are extensively studied in Yordanova (2021) and Yordanova et al. (2023). Those studies identified university-related factors (i.e. research excellence and perceptions of business development support) increasing the likelihood of engaging in activities to prepare for or start a business.

Various studies look in the relationship between the entrepreneurial agency, which is a niche personal agency, and locus of control (i.e. McMullen et al., 2021). So, it is natural to expect that people with internal locus of control will have relatively higher self-efficacy. Also, quite often entrepreneurial intentions are very dynamic and oscillate between start-up and a big company and then back, assuming that gaining different experience will help nascent entrepreneurs learn in a diverse way.

Methodology

The paper uses data from the 10th GUESSS (Global University Entrepreneurial Spirit Students' Survey) round, conducted between October and December 2023. We analyzed 1742 responses by university students in Bulgaria, weighting by the relative size of the respective universities in terms of actively enrolled students in bachelor's, master's and PhD's programs in 52 universities. The GUESSS initiative is coordinated by St. Gallen University and it is the world largest monitoring of entrepreneurial intentions and inclinations towards entrepreneurship. However, we change perspectives by focusing on learning agility and personal agency.

Personal agency is measured by 13 items on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) (see table 1). Cronbach's alpha is 0,902. Item analysis leads to alphas between 0,893 and 0,896 with only one exception of alpha being 0,903, which is not a significant change and we retain the item in the analysis.

We also performed a sub-sample reliability and item analysis and conclude that the items demonstrate robust internal consistency within each sub-sample, supporting their validity and reliability across three groups of university students - non-entrepreneurs, nascent and active entrepreneurs.

Active entrepreneurs (14 %) are defined as being self-employed or already running their own business. Nascent entrepreneurs (26%) are defined as those who are currently trying to start their own business or to become self-employed but are not yet active. The group of non-entrepreneurs consists of all remaining students (60%).

The 13 items are based on previously validated Satisfaction With Life Scale (Diener et al., 1985), modified original 5-point Likert Self-Efficacy scale (Zhao et al., 2005) and modified 5-point Likert Brief Resilient Coping Scale (Sinclair and Wallston, 2004). We did not find any empirical evidence of testing these items for the case of Bulgaria previously, although earlier data from 2021 exists.

In order to understand better the personal agency of the studied subjects, we performed exploratory factor analysis using principal component analysis (PCA) as an extraction method with varimax rotation for the full sample and the three sub-samples. We used this method as we have many interrelated variables, and it maximizes the variance of squared loadings of a factor across all variables. All four Kaiser-Meyer-Olkin tests indicated sampling adequacy levels higher than 0,87.

From the literature review we expect to have a positive correlation between learning agility and personal agency measured by concepts like self-efficacy, resilience and fulfillment, all three measured by the 13 items from the “about you” question in the GUESSS data. We would control for gender and age influence on both personal agency and learning agility.

Learning agility is operationalized by the question “*I prefer to try my own unique way when learning new things rather than doing it like everyone else does*”, which has been asked only to the nascent entrepreneurs, hence the focus of the paper to this group of students. Yet, we believe that providing the larger context for the personal agency (also for active entrepreneurs, as well as for non-entrepreneurial students) will be beneficial for the holistic understanding of the concept. Responses to these questions are again recorded on a 7-point Likert scale as in the 13 items from above.

The statistical analysis was conducted using IBM’s SPSS version 25.

Results and discussions

Understanding personal agency

Around a third (28) of all correlations (78) between the 13 items of personal agency are moderate (between 0,3 and 0,5) and high (above 0,5), in addition to the fact that all 78 correlations are statistically significant ($p=0,000$), which suggests high multicollinearity and thus the data is suitable for applying PCA. Due to limitations of the paper the full correlation table is not reported.

Table 1. Factor analysis for personal agency

Items		Full Sample	Non-entrepreneurial	Nascent	Active	
My life is close to my ideal	Life Satisfaction and Wellbeing	0,804	0,796	0,823	0,909	Life satisfaction and business success
The conditions of my life are excellent		0,827	0,823	0,875	0,759	
I am satisfied with my life		0,834	0,824	0,844	0,833	
So far, I have gotten the important things I want in life		0,782	0,784	0,746	0,807	
If I could live my life over, I would change almost nothing		0,662	0,702	0,561	0,563	
I can successfully discover new business opportunities	Self-efficacy	0,784	0,82	0,698	0,744	Entrepreneurial resilience
I can successfully create new products		0,887	0,901	0,871	0,754	
I can successfully commercialize ideas		0,726	0,737	0,59	0,77	
I can think creatively		0,521	0,545	0,543	0,765	
I believe I can grow in positive ways by dealing with difficult situations	Resilience and Adaptability	0,818	0,795	0,893	0,709	Entrepreneurial resilience
Regardless of what happens to me, I believe I can control my reaction to it		0,809	0,811	0,821	0,786	
I look for creative ways to alter difficult situations		0,787	0,782	0,798	0,868	
I actively look for ways to replace the losses I encounter in life		0,756	0,761	0,723	0,623	
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0,896	0,882	0,879	0,871	
Bartlett's Test of Sphericity (Significance level)		0,000	0,000	0,000	0,000	
Total Variance Explained		70,81%	70,08%	72,25%	66,66%	

Source: Authors’ calculations.

One of the items (“I can think creatively”) exhibits cross-loadings to two factors in two of the samples (full sample and nascent entrepreneurs). In both cases the second factor is “resilience and adaptability” with factor loadings 0,587 and 0,65, respectively). However, due to the conceptual fit, this item belongs and remains assigned to the self-efficacy factor.

We performed robustness analysis of the factor analysis by switching off the weighting and the results are stable – both factors and loadings (all coefficients are practically the same). We did subsequent reliability analysis and the only increased Cronbach alpha (with more than 0,03) if item is deleted is observed for the question *“If I could live my life over, I would change almost nothing”*. The factor loadings for this item are the lowest among all other items. This might be explained by the existence of students, contented with their life, who would somewhat disagree with the statement, as they are quite agile and learn quickly from experience and would therefore be inclined to change something as a demonstration of their agility. However, we would retain the item as the model’s characteristics are good enough even without dropping the item.

The explorative factor analyses for nascent entrepreneurs, non-entrepreneurs and the full sample result in basically three structurally similar factors describing the personal agency (with variations in factor loadings). The total variance explained is high enough (70 to 72%) and the highest is for the nascent entrepreneurs (72.25%).

Factor 1 represents subjective life satisfaction, fulfilment and wellbeing. The factor assumes a cognitive-judgement process facilitating behavioral decisions (change something in life or abstaining or deferral of decision). Those students, who score high on this factor tend to feel more satisfied with their life and its course. The item about important achievements in life increases self-esteem and optimism and serve as a resource to set new goals and objectives in life. Succeeding in what one wants, coupled with satisfaction from the result, reinforces the agency of the subject.

Factor 2 is self-efficacy blended through the entrepreneurial lenses. Self-efficacy is a central component of personal agency and represents the subjective belief that one has the capability to achieve results and in principle is in control of his/her own destiny. As our target group for the paper is the nascent entrepreneurs, the factor represents the entrepreneurial creative thinking and innovation skills or the ability of the individual to discover opportunities, create new products and think outside the box. In other words, the self-efficacy could be viewed as an entrepreneurial agency.

Interestingly, the item “I can think creatively” scored lower than the rest with just 0.521 making it not as related to the factor of creativity as the other items. The reason might be hidden in too broad interpretation of the meaning. Students might not think of themselves as very creative but still manage to successfully recognise opportunities, create new products or/and commercialise ideas, as creativity might be associated by the individuals with the mindsets of artists for example.

Factor 3 represents resilience, emotional regulation, agility and adaptability, or how individuals react and respond to challenges and how they cope with difficulties. Many of the items in this factor are de-facto self-efficacy measures (i.e. control of reaction to what happens, I can grow – learn and develop – after difficulties). Resilience is also agency, a dynamic capability to overcome unexpected adversities.

Factor analysis for the active entrepreneurs leads to lower levels of explanation (67%) and only two factors. Basically, Factor 2 and Factor 3 are merged and the item “I can successful discover new business opportunities” is assigned to the Factor 1. This suggests that life-satisfaction includes and assumes business success for entrepreneurs.

Understanding learning agility

Learning agility responses are skewed towards individualistic (unique) ways of learning, as compared to the others. 64% of the nascent entrepreneurs rather agree (5, 6 or 7 on the 7-point scale) with this pattern of learning, 6% disagree (1, 2, or 3) and 30% are neutral (4). Even if we take as neutral the responses 3,4 and 5, then the skewness is even bigger. The mean value is 5,36 and the median is 5. This is expected, as nascent entrepreneurs are often more individualistic. This is not a problem, as the skewness of the learning agility is the lowest compared with the 13 items in nascent entrepreneurs. All skewness is negative, suggesting a concentration of the data on the right side.

At the same time, the skewness of the learning agility is the lowest, comparing with the skewness of every of the 13 items.

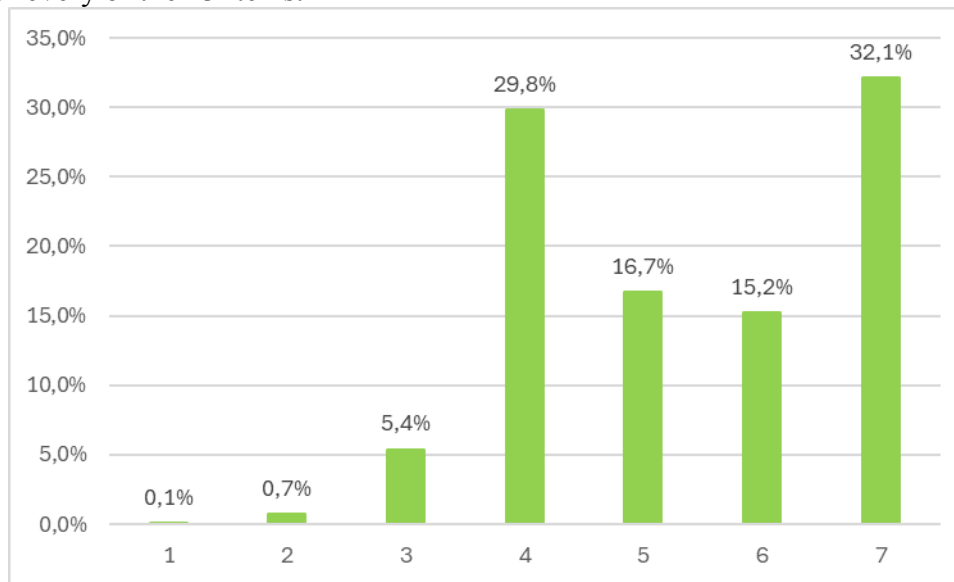


Figure 1. Distribution of responses on item “I prefer to try my own unique way when learning new things rather than doing it like everyone else does (1=strongly disagree, 7=strongly agree)”

Source: Authors’ calculations.

We are interested in the relationship between learning agility and personal agency factors. It turns out that the self-efficacy factor is not correlated, but both Resilience and adaptability and Life satisfaction and wellbeing are significantly and positively, although weakly correlated. Moderate correlations are observed between the learning agility and two of the items from the resilience scale. The strongest coefficient is 0,471 (“*I look for creative ways to alter difficult situations*”) and the other one is 0,427 (“*I believe I can grow in positive ways by dealing with difficult situations*”). Both are significant at $p=0,000$.

Table 2. Correlation between learning agility and personal agency factors

		Resilience and Adaptability	Life Satisfaction and Wellbeing	Self-efficacy
Learning Agility	Pearson Correlation	0,395**	0,308**	-0,037
	Sig. (2-tailed)	0,000	0,000	0,506

** Correlation is significant at the 0.01 level (2-tailed).

Source: Authors’ calculations.

It is difficult to make speculations about the causality direction of this relationship, based on the data alone, but we believe, based on Bandura's Social cognitive theory (SCT) that the learning agility leads to higher resilience. SCT also assumes a positive feedback loop between life satisfaction and learning agility. Higher life satisfaction can provide the emotional and psychological resources needed to experiment with new learning methods and take educational risks. Agile learners who explore new ways of understanding and interacting with the world may achieve greater personal and professional growth, which in turn contributes to a higher sense of life satisfaction.

Lack of correlation between entrepreneurial self-efficacy and learning agility in nascent entrepreneurs is primarily due to the lack of correlation between learning agility and the self-assessed ability to create new products (this item has the highest factor loading, see Table 1). Yet, nascent entrepreneurs have no or limited behavioral experience with product development and hence the social cognitive theory could not predict a link with the learning agility.

Gender and age impact

We observe strong gender divide in terms of learning agility, using analysis of variance (ANOVA). Female students tend to agree stronger (one Likert scale-point higher) that they prefer unique way of learning ($p=0,000$, $F=21,081$) compared to their male colleagues. Similarly, female nascent entrepreneurs tend to be more resilient, adaptable and satisfied by the course of their lives. Whether men set higher targets and expectations or women are simply more emotionally intelligent, and their observational learning is more efficient are questions worth exploring further.

The third factor, self-efficacy does not distinguish between males and females within level of significance $p<0.05$. This is a similar finding to one in Zhao et al (2005).

If we allow larger margin of error ($p=0,085$) then male nascent entrepreneurs would exhibit higher self-efficacy compared to females.

Learning agility increases after bachelor studies, both because graduate studies require more independent learning and because students gain experience in business in-between. The formal correlation between age and learning agility is low (0,145) and level of significance is $p=0,011$.

Conclusion

The paper explored the dynamics between learning agility and personal agency in university-based nascent entrepreneurs, controlling for gender and level of studies and framed through social cognitive theory. The study finds that female and graduate nascent entrepreneurs display higher learning agility compared to their counterparts. The study employed explorative factor analysis on items from the Satisfaction With Life Scale, Self-Efficacy Scale and Brief Resilient Coping Scale, which were administrated within GUESSS 2023 survey in Bulgaria.

The paper fills an empirical research gap and discovered significant but weak correlations between learning agility and resilience and adaptability, and, between learning agility and life satisfaction and wellbeing.

The research underscores the importance of fostering learning agility to enhance effective entrepreneurial education and leadership development, suggesting that these qualities are interlinked and mutually reinforcing.

The major limitation of the study is that it is based on already collected data on nascent entrepreneurs without the opportunity to compare results across the other two groups – active

entrepreneurs and non-entrepreneurial students. Possible extension of the research includes developing a comprehensive learning agility scale and piloting it in Bulgaria.

Additional research direction worth taking into account is to study the interplay between personal agency and learning agility on dynamic capabilities and performance.

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